# **Editor's Message**

#### Dear Readers

I am truly honoured to edit the special issues of the Indian Economic Journal. While writing this message towards the end of 2022, I would like to retrospect the impact of COVID-19 pandemic on the normal activities of the IEA. It has reminded us the need to ensure continuity and taught us the culture of strengthening human fabric and solidarity.

This year in August 2022 we celebrated India's 75th year of Independence. Over these 75 years we have recorded substantial advancements in many fields from Agriculture to Space Exploration. However, in areas like Human Development Indicators, inequalities and poverty, the progress has lagged far behind when compared with countries that are similarly footed. Moreover, there has been huge variations observed in the indicators between and within states. If India has to become more efficient, competitive and resilient, it needs to learn lessons from its development history as well as from its crisis years of 1966, 1981 and 1991. India also is set to become a USD 10 trillion economy to become the third largest economy by the year 2030. In this context the overarching theme of the 105th Annual Conference is taken as "India at 75: Reviewing Indian Economy for Sustainable Development." The sub themes are: 1. Lessons Learnt from the Past for Planning and Rapid Growth; 2. Drivers of High Economic Growth; 3. Social and Economic Equality for Inclusive Growth; 4. Efficient Resource Use & Environmental Protection; and 5. Green and Inclusive Growth for Sustainable Development. The articles in the volumes of the special edition of IEJ are select articles from each sub-theme.

The Indian Economic Journal (IEJ) is an important organ of the Indian Economic Association (IEA) that provides support and services to professionals and researchers both in India and overseas. For over a century the IEA has been one of the largest and the oldest body of teachers, researchers, academicians, and policy makers drawn from the background of Economics and affiliate discipline. Founded in 1917, the IEA is a, "not-for-profit, non-political, and scholarly" voluntary professional association with membership open to those who fulfil the eligibility criteria laid by the constitution of

IEA. Through regular outreach programs like, "Conferences, Courses, Publications and Seminars" IEA disseminates information among scholars to increase their understanding of economics. Both IEJ and IEA work in tandem encouraging members to share their research work findings and contribute scholarly articles in Annual Conferences and for publishing in special editions of the IEJ by maintaining relevance of the journal.

The Indian Economic Journal was founded by Prof. C.N. Vakil and Prof. R Balakrishna in 1953 and has over the years become a coveted internationally acclaimed journal in Economics due to high ethical and quality standards maintained by successive editors. The IEJ is at present included in the 'Abstract Services' of the American Economic Association through their Journal of Economic Literature. I take the opportunity to acknowledge the contributions of Prof. Sukhadev Thorat in transforming Conference Volumes of IEA into special editions of Indian Economic Journal and Dr. Anil Kumar Thakur, Chief Convener of IEA for taking efforts to sustain the quality and ratings of IEJ along with the Managing Editor of IEA, Prof. Sudhanshu Bhushan.

I would like to thank all the authors, and co-authors for their scholarly article contributions for the 105th Annual Conference. I also express my deepest gratitude to editorial team that is fully engaged and committed to the success of these outstanding volumes. I also thank all the authors, reviewers and the editorial support team, especially the services extended by Dr. Kumari Manisha Mrs. S. Sunitha, Dr. Taibangnganbi, Mr.R. Subramanian and Dr. M. Dillip Anand in bringing out the special issues of IEJ in scheduled time. Last but not the least, my sincere thanks to Mr. A. Aashik Ahamed, TAMCOS Ltd. Chennai and his team our print service provider for their neat execution and timely delivery of print collaterals.

**B.P. Chandramohan** 

THE INDIAN ECONOMIC ASSOCIATION

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# Special Issue, Conference 2022

# CONTENTS

1.	Linkage Of FDI Inflow With SelectedMacroeconomic Variables: AnEconometric AnalysisSushanta Kumar Tarai	8.	Public Expenditure and EconomicGrowth Nexus in IndiaManish Kumar RawatAshok Mittal
2.	Impact of Research and Development Expenditure on Financial Performance and Market Value of Listed Central Public Sector Enterprises with particular reference to Industrial Maharatnas, Navratnas, and	9.	ROLE OF CAPITAL STRUCTUREON FIRM PROFITABILITYT. Sita RamaiahN.S. SudeshRadha Mohan Chebolu
	Miniratnas Rama Krishna Yelamanchili	10.	<b>Analysis of expenditure asymmetry in</b> <b>India Comparative</b> Darshini J S
3.	TRENDS IN THE PUBLICFINANCES OF STATEGOVERNMENTSTamma Koti Reddy	11.	<b>International Trade and FDI: Two key</b> <b>Drivers of Economic Growth</b> Debjani Mitra Sudipta Sarkar
4.	Determinants of Showrooming and Webrooming Buying Conduct Abhishek Kumar Nirmalya Debnath Jayanta Das Aparna Bhardwaj	12.	An Analysis of Financial Status of Municipal Corporation of Karnataka Dhananjaya K.B Anil Kumar H.B 127 India in Global Value Chains: An
5.	The Co-integrating Relationshipbetween Oil PricesDMV Lakshmi Velagala		<b>Empirical Analysis</b> Dhanalakshmi R Navitha Thimmaiah
6.	India's Growth Dynamics and Contribution of Total Factor ProductivitySurajit Sengupta Ratan Kumar Ghosal	14. 15.	Foreign Direct Investment in India: Pros and Cons Budhen Kumar Saikia 145 A Study On India-Asean Relations With Special Reference
7.	A GRANGER CAUSAL ANALYSIS OF TAX-SPEND HYPOTHESIS Duragesh Pujari R R Biradar		J Antoni Samy 151

16.	Digital Connectivity, Usage and Effects: Reflections from Rural Gujarat Hansa Jain
17.	<b>The Impact of Public Health</b> <b>Expenditure on the Economic</b> <b>Development of a Country</b> Amit Kumar Banisetti Nishant Yelisetti Rama Krishna 175
18.	<b>Impact of Financial Inclusion</b> <b>on Economic Growth of J&amp;K - A</b> <b>Time Series Analysis.</b> Annam Mushtaq G.M. Bhat
19.	<b>Strategic Importance of Service</b> <b>Sector in Indian Economy: With</b> <b>Special Reference to Pandemic</b> <b>Period</b> Pradeep Kumar Singh 195
20.	<b>Reviewing Monetary Policy</b> <b>and Indian Economy</b> <b>for Sustainable Growth</b> Sudip Jana 207
21.	<b>Crypto Currency Investments in</b> <b>India: An Exploratory Research</b> Laila Memdani Raghavendra Sode 216
22.	<b>The Nexus of Inflation, Export-</b> <b>Import and Exchange Rate:</b> <b>An Evidence from India since</b> <b>Economic Reforms</b> Neeraj Kumar Gargie S Anand Pooja Choudhary 220

23.	<b>An Investigation of Migrants'</b> <b>Livelihood Status During Pre and</b> <b>Post Migration</b> Vikas Pradhan Mahendra Pal 232
24.	Critical analysis of India's Foreign Trade and its Influence on the Economy M.Sekar 239
25.	Agricultural Trade Performance & Trade Intensity of Russia With India Kiran bala Das247
26.	Dynamics Of Balance Of Payments In India: An Approach To Strategy Of Financing Current Account By Capital Account Dhiraj Kumar Bandyopadhyay
27.	<b>Demographic Dividend in India:</b> <b>Opportunities and Challenges</b> Sharanappa Saidapur 274
28.	Rural banks as a key driver in economic growth And employment generation in India" An analysis Dhananjaya K.B 280
29.	Analysis of the Growth and Performance of Micro, Small and Medium Enterprises in India Pritam Kumar 290
30.	<b>Foreign Direct Investment And</b> <b>Indian Economy</b> Priyanka Rajput299

<b>31. Hum</b>	a <b>n Capital Development: A</b>
Study	y
Divys	a Priyadarshi
Rake	sh Kumar
<b>32. URB</b>	ANIZATION
Laksl	nmi Chatterjee 315
33. Micr	o Enterprises: A Means of
Emp	loyment in Bihar
Ranje	eet Kumar 325
34. The I	Role of Microfinance in Rural
Wom	nen Development – A case
study	of Shikaripura Taluk
Netra	avathi
35. Drive	ers of High Economic
Grow	wth - An Appraisal
Angr	ej Singh 347
<b>36. Role o</b>	of FDI In Indian Economy
Rahu	l Moreshwar Labhane 354
37. The M	fonetary Policy during
Shoc	ks: An Analysis of India's
Resp	onse to COVID-19
Amit	Kumar360
38. Self-R	Reliance of Indian Economy -
A My	/th or A Reality?
Suchi	itanand k. Malkapure 370
39. Foreiş in: A Patte India	gn Direct Investment (FDI) Review on Trends and orns of Capital Inflow in
Asha	H S Jarisha

41.	An empirical analysis of Indian Industry: Production function Approach M Aruna IRS Sarma
42.	<b>The Impact of COVID-19 on the</b> <b>Volume of Labour remittances</b> Madhu, G. R Uma, H.R
43.	<b>Consumption of Food and Data:</b> A driving force behind economic growth Dilip Singh Sharad Tiwari
44.	<b>Institutional Changes In</b> <b>Agriculture In Bihar</b> Shashi Kumari 417
45.	An analysis on Reformation of PDS in India G. Rajaram U. P. Reshmi
46.	A study on the relationship between technology spread effect on tertiary sector of Bangalore in Karnataka state of India Suha sehar .N
47.	A Study on Human Capital Development and Economic Growth in India Growth in India P. Chennakrishnan 432
48.	<b>An Overview Of Sri Lanka</b> <b>Economic Crisis 2022</b> Prity Kumari
<b>49.</b>	<b>Trends and Pattern of</b> <b>Urbanization in Bihar during</b> <b>1961-2011 : An Analytical Study</b> Brajesh Pati Tripathi

50. Indian agriculture: Issues and challenges Sheik Hyder Ali D S 448	56. Economic And Human Capital Development Swargesh Kumar 500
<ul> <li>51. Harnessing Demograpic Divident To Achive Inclusive Growth Vineet Kumar Alok Kumar</li></ul>	<ul> <li>57. Liberalization and its Impact on Retail Sector Laxmi Kumar</li></ul>
<ul> <li>Bharat Bhushan</li></ul>	Forward Kumar Manorath J. B. Singh M.S. Gupta 511 59. The Valuation of Human
<ul> <li>South Asia Sanjay Kumar Sumbul Samreen</li></ul>	Resources and Human ResourceAccounting - Tracing the GlobalPerspective and DevelopmentPragyan PushpanjaliAnand Mishra
Merchandise Trade With China In Post Reform Era Shraddha Mishra Ankita Tiwary	<b>60. A Road Map Of India In The</b> <b>Economic Complexity</b> Siddhartha S Navitha Thimmaiah

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# Linkage Of FDI Inflow With Selected Macroeconomic Variables: An Econometric Analysis

#### Sushanta Kumar Tarai

#### Abstract

There is an association of FDI inflow with economic performance. FDI can result in better provision of employment opportunities, which can strengthen GDP and improve productivity, thereby contributing to economic performance. It is therefore important to assess the phenomenon of high economic growth in a country. Based on the economic growth the study empirically examines the linkage of FDI inflow with selected macroeconomic variables which are the main indicators of economic growth. The proxy variables for economic growth are taken such as GDP, inflation, foreign exchange reserve, employment rate and interest rate using data collected from a secondary source like World Development Index (WDI). For the stationary of the data, the test like Augmented Dickey-Fuller (ADF) Test has been applied along with the lag selection criteria which are Akaike Information criteria (AIC). The model. Vector Error Correction Model has been used to find the long-run and short-run causality among the variables where the Johansen Cointegration test for the long-run causality and short-run causality Wald test has been applied. Wald tests to conclude the objective of the study. The data span for the study is from 1992 to 2020. Wald tests show the bidirectional causal relationship in all variables. Therefore, this study concludes by recommending, the strategy to improve FDI inflow to improve the competitiveness of their products and enhance GDP and employment rate, whereas inflation is negatively associated with FDI Moreover, the study suggests that reserves accumulation can be implemented in India provided that excess of reserves are invested in alternative sources such as economic infrastructure projects and regional infrastructure development.

Key words: Co-integration, FDI, GDP, Inflation

JE classification: C32, F21, E23,

#### Introduction

There is an association of FDI inflow with economic performance. FDI can result in better provision of employment opportunities, which can strengthen GDP and improve productivity, thereby contributing to economic performance. It is therefore important to assess the phenomenon of high economic growth in a country. (Jayachandran & Seilan, 2010) in their paper investigated the relationship between Trade, Foreign Direct Investment (FDI) and economic growth for India over the period 1970-2007. The results of the Granger causality test showed that there is a causal relationship between the examined variables. Economic growth, trade and FDI appear to be mutually reinforcing under the open-door policy.

(Ray, 2012) in his paper suggested that for FDI to be a noteworthy provider of economic growth, India would do better by focusing on improving infrastructure, and human resources, developing local entrepreneurship and creating a stable macroeconomic framework and conditions favourable for productive investments to augment the process of development. Using the cointegration approach for the period, 1990-91 to 2010-11, on basis of the ordinary Least Square Method suggests that there is a positive relationship between foreign direct investment (FDI) investment and GDP and vice versa. The Granger causality test finally confirmed the presence of uni-directional causality which runs from economic growth to foreign direct investment. The error correction estimates gave evidence that the Error-Correction Term is statistically significant and has a negative sign, which confirms that there isn't any problem in the long-run equilibrium relationship between the independent and dependent variables.

(Sultan, 2013) in his study examined the nature of the relationship between export and FDI in India over the period 1980-2010 using the Johansen co-integration method, he found a stable long-run equilibrium relationship between FDI and export growth.

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The result of Granger causality based on the vector error correction model (VECM) showed that causality runs from export to FDI inflow direction and not from FDI inflow to export direction. In the short run, however, neither export Granger causes FDI inflow nor FDI inflow Granger causes export from India. (Shahzad & Al-swidi, 2013) used the authentic annual data for the period 1991 to 2011, using the ADF test to check the stationary of the data, confirmed that GDP growth rate, exports, imports and balance of payment have positive significant effects on FDI inflows in Pakistan. On the other hand, the inflation rate was not significant in determining the FDI inflows in the country. However, the GDP growth rate and Balance of Payment tends to be a significant determinant of FDI inflows when the moderating effect of Political stability is accounted for and strongly suggested that political stability is crucial for the country's domestic and foreign investment expansion in the future course of direction.

(Sissani & Belkacem, 2014) their paper studied the relationship between country risk, inflation, GDP, FX reserves, exports and their impact on foreign direct investments (FDI) attractiveness to Algeria. The multiple linear regression models during 1990-2012 showed a negative relationship with inflation with R=0.92 and R2=0.85. (Tripathi et al., 2015) suggested that policymakers and regulators are required to push reform agenda in the domestic market for attracting huge FDI inflows in the country. They have attempted to find out the existence of a relationship between FDI and six macroeconomic factors— Exchange rate (rupees per \$), Inflation (WPI), GDP/IIP (a proxy for Market size), Interest rate (91 days T-bills), Trade Openness and S&P CNX 500 Equity Index (profitability) using monthly and quarterly data for the period starting from July 1997 to December 2011. The results showed a significant correlation between FDI and all macroeconomic variables (except for Exchange rate).

(Latief & Lefen, 2018) aimed to analyze the effect of exchange rate volatility on international trade and foreign direct investment (FDI) in developing countries along "One Belt and One Road" using panel data for the period 1995 to 2016. They revealed that exchange rate volatility affects both international trade and FDI significantly but negatively in OBOR-related countries, which correlates with the economic theory arguing that exchange rate volatility may hurt international trade and FDI. They applied Generalized Autoregressive Conditional Heteroscedasticity (GARCH) (1,1) and threshold-Generalized Autoregressive Conditional Heteroscedasticity (TGARCH) (1,1) models to measure the exchange rate volatility also employed a fixed effect model to analyze the relationship of exchange rate volatility with international trade and FDI.

# 1. Objective

To investigate the relationship between FDI and macroeconomic indicators;

# 2. Hypotheses

H<sub>0</sub>: FDI has no positive impact on Economic Growth.

# 3. Methodology

For **the** stationary of each variable, the Augmented Dickey-Fuller test (ADF) has been used and for lag selection, the Schwarz Information Criterion and Akaike Information Criteria have been used. For the long-run co-integrating relationship the Johansen co-integration test is used. Hence the basic empirical investigation has two purposes first one is to examine the long-run relationship between FDI inflow and Economic Growth and the second one is to examine the short-run dynamic causal relationship between FDI inflow and Economic Growth. Short-run and long-run using the Vector Error Correction Model (VECM) method causality test suggested by Engle and Granger is used. To check short-run causality, Wald Test (Wald Chi-Squared Test) is used. For diagnostic checking Least Square Method has been used and for checking serial correlation in the residuals Heteroskedasticity Test and Breusch-Pagan-Godfrey have been used.

# 4.1 Descriptive Statistics

	GDP	Inflation	FOREX	Employment	Interest Rate	FDI
Mean	1199.86	7.14	194.52	51.46	5.58	20.18
Median	880.32	6.50	157.94	53.89	5.75	13.65
Maximum	2831.55	13.23	590.23	54.81	9.19	64.36
Minimum	273.83	3.33	9.36	41.33	-1.98	0.07
Std. Dev.	873.06	3.07	165.53	3.83	2.47	19.30
Skewness	0.56	0.41	0.47	-0.95	-0.94	0.52
Kurtosis	1.85	1.79	2.16	2.75	4.21	1.96
Jarque-Bera	3.20	2.65	2.01	4.62	6.24	2.70
Probability	0.20	0.27	0.37	0.10	0.04	0.26
Sum	35995.79	214.11	5835.54	1543.88	167.48	605.51
Sum Sq. Dev.	22104882.00	273.27	794598.20	424.74	177.07	10799.51

# **Table 1: Descriptive Statistics**

Source: Computed by Author by Using E-Views software

# 4.2 Correlation

# **Table 2: Correlation Result**

	GDP	Inflation	FOREX	Employment	Interest Rate	FDI
X1	1.00	-0.26	0.97	-0.96	-0.36	0.93
X2	-0.26	1.00	-0.22	0.21	-0.36	-0.17
X3	0.97	-0.22	1.00	-0.94	-0.43	0.97
X4	-0.96	0.21	-0.94	1.00	0.28	-0.92
X5	-0.36	-0.36	-0.43	0.28	1.00	-0.39
Y	0.93	-0.17	0.97	-0.92	-0.39	1.00

Source: Computed by Author by Using E-Views software

The study applies the ADF unit root tests to test the stationarity of the variables before conducting the cointegration test.

Variables	Level V	alue (Probability)	1st Diffe	1st Difference (Probability)		
	Intercept	Trend & Intercept	Intercept	Trend & Intercept		
GDP	0.99	0.62	0.00*	0.00*		
Inflation	0.97	0.5	0.00*	0.02*		
FOREX	0.81	0.35	0.01*	0.00*		
Employment Rate	0.48	0.31	0.03*	0.00*		
Interest Rate	0.63	0.29	0.00*	0.04*		

#### Table 3: Panel Unit Root Test Result

Source: Computed by Author by Using E-Views software, note: \* indicates stationary.

Table 3 provides clear information about the level probability values of the five independent variables which are higher than 0.05 both in intercept and trend & intercept. It shows that these variables have unit roots. Since the Null hypothesis is the series is having unit-roots. Therefore, the first-order difference between these variables is taken into the consideration. And it is seen that all variables are stationary at 1<sup>st</sup> difference.

#### 4.3 Lag Selection Criteria

#### **Table 4: Lag Selection**

VAR Lag Order Selection Criteria

Endogenous variables: X1 X2 X3 X4 X5 Y

Exogenous variables: C

Date: 10/09/22 Time: 22:34

Sample: 1992-2020

Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-272.92	NA	774454.80	22.07	22.22	22.11
1	-193.95	132.66	2895.05	16.48	17.06	16.64
2	-183.82	14.59	2745.71	16.38	17.41	16.67
3	-133.97	30.07*	287.70*	13.84*	15.73*	14.36*
4	-165.29	22.23	1410.66	15.62	17.09	16.03

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Computed by Author by Using E-Views software

So here out of all lag selection criteria, all are showing four lags. Hence the majority of cases are showing 3 lags. So here 3 lags are selected. In each criterion except LR, the lower the value better the lag selection principle is there.

#### 4.4 Models

# 4.4.1 VECM (Vector Error Correction Methods):

Already we have the lag selection criteria and co-integration test. Now we will move to Vector Error Correction Criteria. So here the null hypothesis is variable is stationary. But the p-value is less than 5%. Hence  $H_1$  is accepted, that is series is not stationary at level. So we will go for  $1^{st}$  difference.

So the summary is both independent variables are non-stationary at level, but when the author converts into 1<sup>st</sup> difference, both series are stationary. Hence both are stationary in the same order. That is why the author applied the Co-integration test. Now we will go for VECM Model.

So the guideline is if the variables are co-integrated or have long-run association ship then we can run restricted VAR, i.e, VECM model. But if the variables are not co-Integrated, we cannot use the VECM model rather we shall run unrestricted VAR. So here all three variables are co-integrated, we can go for the VECM model.

# 4.4.2 The Co-integrating Model

And the system equation models

So here D(Y) is the target variable and the VECM model automatically converts the variables into  $1^{st}$  difference. For example, here the variables are coming with D(y),  $D(x_1)$ ,  $D(x_2)$ ,  $D(x_3)$ ,  $D(x_4)$ , and  $D(x_5)$ . Furthermore, here each variable is having three lags, according to the lag criteria selection.

D(Y) = target variable,

C(1) = the coefficient of the co-integrating model and

C (1) is also the Error Correction Term or Speed of adjustment towards equilibrium.

So there are two issues 1. Long-run causality 2. Short-run causality

#### 4. Results And Findings

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.84	1.15	0.73	0.48
R-squared	0.94	Mean dep	pendent var	71.22
Adjusted R-squared	0.86	S.D. dep	endent var	80.59

#### **Table 5: Least Squares Methods**

Source: Computed by Author by Using E-Views software

Here the R-squared value is more than 60% which is 64%, so the model is a good fit. Again regarding the residuals diagnostic, the author further checks the Breusch-Godfrey Serial Correlation test

#### 5.1 Long-Run Causality

If this C (1) is negative in sign and significant, a long-run causality runs from  $X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$  and  $X_5$  to Y. So here the p-value of C (1) is 0.48 which is more than 5%. This is not significant, meaning that there is no long-run causality running from GDP, Inflation, FOREX, Employment Rate, and Interest Rate to FDI Inflow. And the second issue is as follows:

#### 5.2 Short Run Causality:

Here the coefficients of all the three lags of  $1^{st}$  independent variable which is GDP are C (5), C(6), and C(7). So if they are zero (H<sub>0</sub>=C (5)=C(6)=C(7)=0), it can be said there is no short-run causality running from GDP to FDI Inflow. So to check it we will go to the Wald test (Wald Chi-Squared Test)

Table 6: Wald test									
	GDP (X1)	Inflation (X2)	FOREX (X3)	Employment Rate (X4)	Interest Rate (X5)				
H <sub>0</sub> Hypoth esis	C(5)=C(6)=C( 7))=0	C(8)=C(11)= C(10)=0	C(11)=C(12)=C (13)=0	C(14) = C(15) = C(16) = 0	C(17)=C(18)=C (19)=0				
Probabi lity	0.05	0.38	0.03	0.03	0.08				

Source: Computed by Author by Using E-Views software

#### 5.3 Panel Causality Analysis Results

The way of the Relationship	Lag	Probability Values	Results
$GDP \rightarrow FDI$ Inflow	1	0.01*	GDP is the main cause of
	2	0.00*	FDI IIIIOw
	3	0.04*	
FDI Inflow $\rightarrow$ GDP	1	0.04*	FDI Inflow is the main

		2	0.00*	cause of GDP
		3	0.00*	
	Inflation $\rightarrow$ FDI Inflow	1	0.09	Inflation does not cause
		2	0.23	FDI Inflow
		3	0.69	
1	FDI Inflow $\rightarrow$ Inflation	1	0.14*	FDI Inflow is the main
		2	0.24	cause of Inflation
		3	0.01*	
	$FOREX \rightarrow FDI$ Inflow	1	0.00*	FOREX is the main cause
		2	0.00*	of FDI Inflow
		3	0.03*	
1	FDI Inflow $\rightarrow$ FOREX	1	0.01*	FDI Inflow is the main
		2	0.00*	cause of FOREX
		3	0.04*	
	Employment Rate $\rightarrow$ FDI Inflow	1	0.09	The Employment Rate
		2	0.12	does not cause the GDP
		3	0.08	
1	FDI Inflow $\rightarrow$ Employment Rate	1	0.03*	FDI Inflow is the main
		2	0.00*	cause of the Employment Rate
		3	0.00*	
	Interest Rate $\rightarrow$ FDI Inflow	1	0.26	Interest Rate is the main
		2	0.43	cause of FDI Inflow
		3	0.01*	
1	FDI Inflow $\rightarrow$ Interest Rate	1	0.12	FDI Inflow does not
		2	0.00*	Cause Interest Rate
		3	0.16	

Source: Computed by Author (\* mark indicates significant)

Table 7 shows that there is no causal relationship between inflation to FDI inflow. The main reason for having all lag values is greater than 0.05. This scenario is also similar concerning the relationship between Employment Rate to FDI Inflow. As a result the null hypothesis which is "no causality relationship" is accepted. Moreover, in the case of Interest Rate to FDI Inflow, there is no significant relationship is coming.

# 5. Analysis And Discussion

GDP, Inflation, FOREX, Employment Rate, and Interest Rate are integrated into a different order. These five variables are not having a cointegration relationship. The result of the cointegration between FDI inflow and GDP rejects the hypothesis of the existence of a long-run relationship between these two. No long-run equilibrium relationship between FDI inflow and FDI outflow in the case of India. An increase in FDI inflow since 1992 has huge relation with the increase in income of the country.

#### 6. Conclusion

The Granger-causality test results conclude that GDP, FOREX, Employment Rate, and Interest Rate statistically significantly influence FDI, whereas, the inflation rate is an insignificant variable to predict FDI inflows. Further, the growth analysis result claims that the total FDI inflows grow exponentially at a rate of 23% per annum. However, as stated by the results of the Chow test, 1991-92 (the year of initiation of the New Economic Policy in India) is a statistically significant structural break year in the context of FDI inflows in India. The recent inflow of short-term investments in India has given rise to a stronger US dollar which in turn resulted in soaring GDP growth and employment opportunities.

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# Impact of Research and Development Expenditure on Financial Performance and Market Value of Listed Central Public Sector Enterprises with particular reference to Industrial Maharatnas, Navratnas, and Miniratnas

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#### Abstract

This paper measures the effect of research and development (R&D) expenditure on financial performance and market value of state-owned enterprises. We postulate that R&D expenditure, lagged R&D expenditure, and R&D intensity (RDI) will have significant positive impact on revenue, net profit margin, return on equity, and market value. We source data of 21 listed industrial central public sector enterprises categorized as Maharatnas (9), Navratnas (5) and Miniratnas (7) over a period of eight years (2015-2022). We observe a significant increase in R&D expenditure by sampled companies. However, the average R&D expenditure to revenue is meagre 0.86%. Our panel data is balanced and we apply fixed effect and random effect models to test the hypotheses. Results indicate significant positive effect of R&D expenditure on sales. However, there is significant negative impact of lagged R&D and RDI on sales. There are no other significant effects of R&D expenditure on response variables. We notice that revenue is positively related to net profit margin; revenue and net profit margin are positively related to return on equity; finally revenue, net profit margin and return on equity are positive and significantly influence market value.

Keywords: R&D investments, Financial Performance, Firm Value, State-Owned Enterprises, Panel Data Analysis

#### I. Introduction

The purpose of this paper is to focus on the impact of research and development expenditure on revenue, net profit margin, return on equity and market value of listed industrial central public sector enterprises (CPSEs) in India. In recent years, Government of India (GoI) is giving much priority to innovations and R&D activities. However, the expectations are not met and the transition is slow. As per the recent India innovation index (2021-22) of National Institute for Transforming India (NITI Aayog), the gross expenditure on research and development (GERD) in India is 0.7% of GDP. India's gross expenditure on R&D is meagre \$ 43 per capita, where as Brazil spends \$ 173, Russia spends \$ 285 and Malaysia spends \$ 293. An important aspect of this report is that the Indian government is the major contributor of country's R&D expenditure, GOI share is more than 55% in GERD. The contribution of public enterprises, private enterprises, universities, and research organization is very low. Especially, spending on R&D by private businesses and universities. In contrast, developed countries spend anywhere between 2.9% and 4.5% on GERD and contribution of private business and universities is high. A report by Principal Scientific Adviser, GoI, highlights that CPSEs play an important role in the R&D ecosystem in India. In order to further strengthen CPSEs role in R&D, a few suggestions were made. Following those suggestions, the department of public enterprises, Government of India, set a parameter that the expenditure on R&D / innovations, initiatives as percentage of profit before tax (PBT) should be 2%. In this context this study gains importance by studying the R&D expenditure of listed industrial central public sector enterprises during previous eight financial years.

It is strongly advocated that R&D investments may increase firm's future revenue, financial performance and market value. The firm may get the benefit of R&D expenditure in the long run. There is also an uncertainty that instead of getting benefit the firm may lose its investment, if the R&D initiative fails. This uncertainty makes managers rethink about their R&D investment decisions.

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Especially, in the arena of state-owned enterprises (SOEs) it is argued that SOEs are inefficient in innovations and mangers do not wish to take risk of failure of R&D activities. In addition, certain other causes like, bureaucracy, conflict between private interests and public responsibilities of SOE managers, sureness that the government can protect losses, political capture of business objectives, government exploitation of the firm's wealth transfer to supporters etc. cause SEO mangers to be too cautious about R&D spending. Even though there are stipulated norms for spending on R&D for Maharatnas, Navratnas, and Miniratnas, many of them do not reach the stated targets.

In this paper, we use four dependent variables, Sales / Revenue, Net Profit Margin (NPM), Return on Equity (ROE) and Market Value (Market Capitalization) and three explanatory variables R&D expenditure, Lag R&D expenditure and R&D Intensity - R&D to Revenue (RDI), to check the impact of research and development on financial performance. The sample consists of 21 listed industrial public sector enterprises categorized as Maharatnas, Navratnas, and Miniratna. We hypothesize that R&D explanatory variables have significant positive effect on dependent variables after controlling for size, age, listing age and other model specific variables. The analysis includes pooled OLS, balanced panel fixed effect model, we use Hausman's test and observe that fixed effect model is appropriate for our dataset. The hypothesis of a significant positive effect of R&D expenditure on sales / revenue is accepted. Moreover, we find significant negative effect of lagged R&D expenditure and RDI on sales. The other hypotheses were rejected. We do not find any impact of R&D on NPM, ROE or Market Value.

Section II presents the review of extant literature. This is followed by Section III that describes data and methodology. Section IV presents results of descriptive statistics, fixed effect and random effect models. Section V draws conclusions, practical implications and highlights the scope for future research.

#### II. Literature Review

The impact of research and development expenditure on corporate's financial performance and market value is extensively studied in the literature. However, whether research and development spending can certainly improve revenue, profitability and market value and the level of its effect is still under discussion. On one hand, research and development investment can initiate innovations that enhance corporate's revenue and reduce costs. There is substantial indication that research and development activity tend to increase corporate's future profitability (Eberhart et al. 2004), has a positive effect on a corporate's market value (Armstrong et al. 2006). On the other side, the costs of research and development costs and benefits is more challenging. In few scenarios it is shown that the risk of investment failure overshadows the benefits.

The idea of this paper stems from the works of Xu and Sim (2018), Lee and Xuan (2019), and Sharma (2019) who mention that there are only limited number of studies that focus on research and development activities in state owned enterprises (SOE) of developing countries, such as India or Bangladesh. In the existing literature there is little evidence that provide for the differencing effect of research and development activities in the context of central public sector enterprises at firm level and category level. The paper fills this gap by providing an empirical analysis of Indian listed industrial central public sector enterprises at firm level and category classification level. In addition, the paper emphases on the market value approach that hypothesizes that in efficient financial markets, market value should appropriately reflect the future projected returns from research and development investments. In this way, by linking firm performance with research and development investment, we

will measure the impact of R&D expenditure on market value of the firm. To the best of our information, this paper is the first to address this issue in the Indian context.

There are papers that studied the association between R&D expenditure and productivity. It is hypothesized that R&D is an important endeavor for corporate's knowledge that would lead to creation of innovative products, sophisticated knowhows, improved productivity, and higher growth (Seo, Kim, & Lee, 2018; Xu and Sim, 2018; Koutroumpis, Leiponen, & Thomas, 2020). Jefferson and Singh (1998) find that the ratio of R&D spending to sales revenue has a positive impact on firm revenue. The higher the ratio the higher the revenue. It is also posited that research and development investments can help corporate's gain modern technologies and allows it to offer innovate products to the customers, ultimately lead to positive impact on corporate's financial performance (Jung & Kwak, 2018; Xu & Sim, 2018). Extant literature provides evidence that there exists a positive relationship between research and development expenditure and firm profitability (Apergis and Sorros, 2014; Avaydın & Karaaslan, 2014; Kocamis & Gungor, 2014). On the other side, some studies indicate that R&D spending has no impact on the firm's profitability (Yucel and Kurt, 2003). There are studies that find the effect of R&D intensity on market value of the firm. Lev and Sougiannis (1996) report that research and development expenditure increases corporate's profitability and thus positively affect market value. Ehie and Olibe (2010) find that research and development investments in the industrial sector are connected to higher market value. Few other studies also report similar significant positive impact of RDI on market value (Kamran et al., 2011; Yanni Wang et al., 2016). On the other hand, few studies report no relation between RDI and financial performance and market value (Bouaziz, 2016). Kim et. al. (2018) argue that the degree of information asymmetry related with research and development investments is higher, as the investments have higher firm specific risk. Research and development investments can lead to information asymmetry between managers and investors. Moreover, higher level of R&D investments intensifies information asymmetry, thereby hostilely affect market value. Empirical research supports the argument that asymmetric information between investors and managers is severe in firms with high R&D investments (Cui & Mak, 2002)

In the context of state-owned enterprises, Boeing and Sandner (2016) report that to guard the interests of shareholders, SOE managers, who have few encouragements to push research, will under invest in research and development activities. Guo et. al. (2018) postulate that state owned enterprises have multiple goals including social and political contributions, because of which the relationship of research and development with financial performance and market value is less established. In similar context, Teng and Yi (2017) find that different types of government ownership have different levels of resources that affect firms' research and development activities. They show a positive relationship between research and development investment and financial performance of firms owned by the central government, but a significant negative relationship for firms owned by local governments.

Recently, Hazarika (2021) reports that research and development investments reap financial profits that will ultimately counterweight the cost of initial investment. The author also reports significant curvilinear relation between RDI on revenue and net profit margin. Opoku-Mensah & Addai (2021) show that research and development investments effects firms' market value positively. In another paper, Le Thanh & Binh (2022) find that research and development investment has positive effect on revenues, net profit margin, and return on equity (ROE). Rahman and Howlader (2022) find significant positive association among research and development investment, firm financial performance and market value. In another context, Francesco Mazzi et. al., (2022) report that investors find research and development related information helpful in their investment decision making.

Taking clues from the extant literature we posit four hypotheses for this paper. One, research and development expenditure will have significant positive effect on revenue of the firm. Two, R&D

expenditure help firms to improve their profitability measured in terms of net profit margin. Three, R&D expenditure yields higher returns to the equity holders, in the sense, the ROE will improve. Finally, R&D investment will have significant impact on market value of the firm. We test these hypotheses at firm level and category level. Based on hypotheses we built eight models and examine these with balanced panel data analysis using pooled OLS models, fixed effect models and random effect models.

# **III.Data and Methodology**

The paper measures impact of research and development expenditure on financial performance and market value of listed industrial central public sector enterprises (CPSEs) in India with particular reference to Maharatna, Navratna, and Miniratna. In India, there are 255 active CPSEs of which 98 are categorized as Maharatnas (11), Navratnas (13) and Miniratnas (74), as on February 2022. The paper considers CPSEs listed on the Indian stock market. Our sample period covers eight years from 2015 to 2022. From the 98 ratnas, 48 are listed on the market. We then exclude 23 CPSEs those are in service sector with no noticeable spend on R&D. We exclude another four CPSEs with listing age less than eight years. Finally, we restrict the sample to 21 industrial CPSEs. The paper uses secondary data of these 21 companies. Data are collected from the Prowess IQ database of the Centre for Monitoring Indian Economy (CMIE). Missing data from Prowess IQ is sourced from annual reports of the CPSEs and Bombay Stock Exchange. The study uses balanced panel data, and the total number of observations is 168. Table 1 reports preliminary information about the sample CPSEs across three ratnas.

# **III.1 Sampled CPSEs**

Category - Company	Year of Incorp.	List- ing	Mcap (Rs. Cr)	GoI Share (%)	EPS (TTM, Rs)	P/E					
	Maharatna										
Bharat Heavy Electricals Ltd.	1964	1992	18750.91	63.17	1.18	45.71					
Bharat Petroleum Corpn. Ltd	1964	1992	71672.11	52.98	40.52	8.16					
G A I L (India) Ltd.	1984	1997	64194.89	51.52	23.64	6.19					
Hindustan Petroleum Corpn. Ltd.	1952	1992	34151.55	54.90	44.99	5.35					
Indian Oil Corpn. Ltd.	1959	1995	1,03,014.43	51.50	17.13	4.26					
N T P C Ltd.	1975	2004	1,48,310.51	51.10	17.16	8.91					
Oil & Natural Gas Corpn. Ltd.	1993	1995	1,68,764.45	58.89	32.04	4.19					
Power Grid Corpn. Of India Ltd.	1989	2007	1,49,274.69	51.34	24.51	8.73					
Steel Authority Of India Ltd.	1973	1992	31863.66	65.00	29.09	2.65					
Navratna											

Table 1: Primary details of sample CPSEs

Bharat Electronics Ltd.	1954	1993	67018.49	51.14	11.37	24.20		
Engineers India Ltd.	1965	1997	3762.87	51.32	6.13	10.93		
N M D C Ltd.	1958	1997	31591.93	60.79	32.07	3.36		
National Aluminum Co. Ltd.	1981	1992	14289.00	51.28	16.07	4.84		
Oil India Ltd.	1959	2009	20587.43	56.66	35.85	5.30		
Miniratna-1								
B E M L Ltd.	1964	1993	5307.80	54.03	32.32	39.44		
Balmer Lawrie & Co. Ltd.	1924	1990	1903.27	61.80	7.18	15.50		
Chennai Petroleum Corpn. Ltd.	1965	1992	4101.02	67.29	244.94	1.12		
M O I L Ltd.	1962	2010	3183.53	64.68	18.53	8.44		
Mangalore Refinery & Petrochemicals	1988	1992	12758.92	88.58	36.76	1.98		
N H P C Ltd.	1975	2009	34303.79	70.95	3.52	9.70		
Rashtriya Chemicals & Fertilizers Ltd.	1978	1992	4835.55	75.00	12.38	7.08		

From Table 1 it is apparent that the sample CPSEs are in business for very long period. The years since incorporation range between 98 years and 29 years. On the other hand, average listing age of these corporates is 24 years. The combined market capitalization of these 21 listed CPSEs is approx. INR 10 lakh crores, as on July 30, 2022. Furthermore, all these corporates report positive EPS for trailing twelve months (TTM) and their price-earnings (P/E) multiple range between 1.12 and 45.71.

# **III.2 Dependent variables**

We use four financial indicators, revenue, net profit margin (NPM), return on equity (ROE), and Market Value (MV) as the dependent variables of the study. Revenue is income generated through core operations of the CPSEs. NPM and ROE are important accounting ratios commonly used in the literature to measure financial performance. NPM is the net profit divided by revenue. ROE is the net profit divided by shareholder equity. MV is Market Capitalization (Full). MV is a measure of a corporate value and is calculated as product of the number of shares outstanding and the market price of the stock. MV represents the investors opinion of a corporate's net worth and the value of a corporate's equity in the market. All these values are sourced on financial year basis.

# **III.3 Explanatory variables**

We use three explanatory variables: Research and Development expenditure (R&D) and Research and Development Intensity (RDI) and Lagged R&D value to test whether there exists a non-linear relationship. R&D is the corporate's research and development expenditure. While considering R&D

expenditure, one point that springs in the mind is whether the corporates precisely report their R&D expenditure. Current day accounting standards provide clear guidelines regarding classification and reporting of R&D expenses correctly. In addition, tax credits on R&D expenditure also make corporates report R&D expenses truthfully. RDI is measured as R&D expenditure divided by revenue. Lagged R&D is one year lag of R&D expenditure.

# **III.4 Control variables**

Control variables are recognized and added to the model to observe the influence of other factors, which are theoretically important determinants of financial performance and corporate value. Without presence of control variables, the empirical model is possibly mis-specified, and assessed coefficients become biased due to the problem of omitted variables. We use four control variables, namely, size (total assets), age of the CPSEs, listing age, and Year. Size is measured as natural logarithm of a corporate's total assets. Similarly, age and listing age of the CPSEs are also in natural logarithm form. Log transformation not only results in easy interpretation of outcomes, but it also makes the distribution of the series close to a normal distribution. Year is the annual dummy variable to capture the common economy wide factors faced by CPSUs.

# **III.5 Models**

# Company Fixed and Random Effects Models (N>T)

$$\begin{split} SALES &= \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI_{i,t} + \beta_5 TOTALASSETS_{i,t} + \beta_6 AGE_{i,t} + \\ \beta_7 LISTAGE_{i,t} + \epsilon_{i,t} \ (Eq. \ 1) \end{split}$$

 $NPM = \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI \beta_5 SALES_{i,t} + \beta_6 TOTALASSETS_{i,t} + \beta_7 AGE_{i,t} + \beta_8 LISTAGE_{i,t} + \epsilon_{i,t} (Eq. 2)$ 

$$\begin{split} ROE &= \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI_{i,t} + \beta_5 NPM_{i,t} + \beta_6 SALES_{i,t} + \\ \beta_7 TOTALASSETS_{i,t} + \beta_8 AGE_{i,t} + \beta_9 LISTAGE_{i,t} + \epsilon_{i,t} \ (Eq. 3) \end{split}$$

$$\begin{split} MARKETVALUE &= \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI_{i,t} + \beta_5 ROE_{i,t} + \beta_6 NPM_{i,t} + \\ \beta_7 SALES_{i,t} + \beta_8 TOTALASSETS_{i,t} + \beta_9 AGE_{i,t} + \beta_{10} LISTAGE_{i,t} + \epsilon_{i,t} (Eq. 4) \end{split}$$

# Category Fixed Effect Models (N < T)

$$\begin{split} SALES &= \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI_{i,t} + \beta_5 TOTALASSETS_{i,t} + \beta_6 AGE_{i,t} + \\ \beta_7 LISTAGE_{i,t} + \epsilon_{i,t} \ (Eq. \ 5) \end{split}$$

$$\begin{split} NPM &= \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI \ \beta_5 SALES_{i,t} + \beta_6 TOTALASSETS_{i,t} + \beta_7 AGE_{i,t} + \beta_8 LISTAGE_{i,t} + \epsilon_{i,t} \ (Eq. \ 6) \end{split}$$

$$\begin{split} &ROE = \beta_1 + \beta_2 RNDEXP_{i,t} + \beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI_{i,t} + \beta_5 NPM_{i,t} + \beta_6 SALES_{i,t} + \\ &\beta_7 TOTALASSETS_{i,t} + \beta_8 AGE_{i,t} + \beta_9 LISTAGE_{i,t} + \epsilon_{i,t} (Eq. 7) MARKETVALUE = \beta_1 + \beta_2 RNDEXP_{i,t} + \\ &\beta_3 LAGRNDEXP_{i,t} + \beta_4 RDI_{i,t} + \beta_5 ROE_{i,t} + \beta_6 NPM_{i,t} + \beta_7 SALES_{i,t} + \beta_8 TOTALASSETS_{i,t} + \beta_9 AGE_{i,t} + \\ &\beta_{10} LISTAGE_{i,t} + \epsilon_{i,t} (Eq. 8) \end{split}$$

# **IV.Results and Discussion**

# **IV.1 Descriptive Statistics**

R&D Expenditure									
(INR Cr.)	2015	2016	2017	2018	2019	2020	2021	2022	Total
	1978.	2006.	1875.	2024.	2121.	2197.	2271.	2492.	16968.
Maharatna	54	97	78	17	07	65	01	85	04
	632.5	761.2	863.7	1048.	1020.	1118.	1051.	1173.	7669.9
Navratna	4	6	3	12	65	89	7	07	6
	106.3		112.2	137.6	105.5	141.3	178.6	179.6	1049.4
Miniratna	3	88.13	2	6	7	1	1	5	8
	2717.	2856.	2851.	3209.	3247.	3457.	3501.	3845.	25687.
Total	41	36	73	95	29	85	32	57	48
RDI (%)									
	0.48	0.53	0.44	0.40	0.38	0.50	0.60	0.52	
Maharatna	%	%	%	%	%	%	%	%	0.48%
	1.93	2.16	2.09	2.24	1.82	1.89	1.72	1.70	
Navratna	%	%	%	%	%	%	%	%	1.94%
	0.54	0.51	0.55	0.62	0.47	0.59	0.67	0.58	
Miniratna	%	%	%	%	%	%	%	%	0.57%
	0.84	0.91	0.87	0.91	0.76	0.86	0.89	0.82	
Total	%	%	%	%	%	%	%	%	0.86%

Table 2: R&D expenditure and RDI over the period 2015-2022

Table 2 presents the R&D expenditure and percentage of R&D expenditure to sales over the period 2015-2022. During these eight years, CPSEs spent INR 25,687 Cr., on R&D. However, R&D expenditure as a percentage of revenue stands very low at less than one percent. Maharatnas spent highest amount, but Navratnas spent higher percentage of revenue towards R&D. It is apparent that there is consistent increase in R&D expenditure on year-on-year basis. In contrast, average percent of spending remained more or less uniform.

Table 3: Summary statistics of pooled data

Variable	Mean	Median	Std. Dev	Skewness	Kurtosis
MARKET VALUE (Rs. Cr)	44,473.38	25,975.14	52725.89	1.84	3.41
TOTAL ASSETS (Rs. Cr)	89,936.16	47,641.00	105349.94	1.39	0.76

The Indian Economic Journal - ISSN 0019-4662

SALES (Rs. Cr)	78,209.51	24,743.15	132602.04	2.63	6.97
R&D EXP (Rs. Cr)	152.90	26.88	252.03	2.04	3.15
RDI	0.86%	0.15%	0.02	3.13	9.83
NPM (%)	13.07	10.14	13.01	0.83	0.12
ROE (%)	11.15	11.84	17.55	-7.20	75.07
AGE (Years)	54.10	57.00	15.27	0.72	1.25
LIST AGE (Years)	24.55	28.30	6.58	-1.07	-0.44

Table 3 displays the summary statistics of the variables of this paper. The average market value of the sampled CPSEs is Rs. 44,443 crores, average total assets are Rs. 89,936 crores, and the average sales are Rs. 78,209 crore, and average expenditure on R& D is Rs. 153 crores. The average net profit margin stands at 13 percent and return on equity is 11 percent. The key pointed noticed here is RDI which is a ratio between R&D expenses and revenue measured, is very low, not even one percent (0.86%). Furthermore, the median RDI is much lower at 0.15 percent. The mean values are higher than their median values indicating positive skewness in the pooled series. These results indicate heterogeneity in among observed variables.

Variable	Maharatna	Navratna	Miniratna
Revenue (CAGR)	6.15%	8.40%	3.69%
NPM (Avg. Annual)	9.58%	21.10%	11.83%
ROE (Avg. Annual)	12.80%	14.14%	6.89%
Market Valuation (CAGR)	1.25%	3.61%	9.29%
R&D Expenditure (CAGR)	2.93%	8.03%	6.78%
RDI Percentage (Avg. Annual)	0.48%	1.94%	0.57%
Total Assets (CAGR)	6.20%	4.14%	2.73%
Average Age of Incorporation (Years)	49	59	57
Average Listing Years	25	24	24

From Table 4 we can make out that there is a significant growth in the study variables over the sample period. However, these growth rates are not similar among the three ratnas. For example, The CAGR of R&D expenditure of Navratnas (8.03%) is high followed by Miniratnas (6.78%). It is clearly visible that

all the ratnas witness significant CAGR in revenue (on average 6%), market value, total assets and RDI. Similarly, the NPM and ROE also have high average annual rates. Profitability ratios of Navratnas are clearly much higher than other two ratnas. Miniratnas yield low profitability. However, there is no consistence in any of the variables among three categories. This clearly shows heterogeneity in the sample corporates.

#### **IV.2** Panel unit root test

Our panel data have small time dimension (T=8) because of which we expect that the non-stationarity of variables to not be an alarm, given the context of fixed and random effects model applied in this paper. Still, panel unit root tests are supportive to identify the right form in which the variables should be included in the model. Since the panel data used in this study have time series dimension, we first test for the presence of unit roots, that is whether the series are stationary or non-stationary. This step is important, because if the series are non-stationary, the results produced from such data usually incline to be spurious and may lead to inconsistent outcomes.

To check the cross-sectional dependence (CSD), there exists a number of panel unit root tests (Im, Pesaran & Shin, 2003; Levin, Lin & Chu, 2002). These tests have their null hypothesis that all the panels are non-stationary, while the alternative hypothesis is that the panels are stationary. The Levin-Chin-Chu test works well with panel series where T is between 5 and 250 and where N is between 10 and 250. Our panel contains T=8 and N=21, thus, the fitness of Levin-Chin-Chu test to our data series. So, we apply the Levin-Chin-Chu test to observe whether our panel series have unit roots or are they stationary. In addition, we apply, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square, and PP - Fisher Chi-square to validate the results of Levin-Chin-Chu test. Before performing unit root tests, we run cross order correlation to observe the correlations among study variables. Table 5 presents cross order correlations and Table 6 presents panel unit test results.

MarketValue	TotalAssets	Sales	NPM	RoE	RnDExp	RDI
1	.770***	.608**	.231**	.286**	.375***	-0.065
	1	.826**	0.045	0.075	.397**	170 <sup>*</sup>
		1	360**	0.080	.321**	247**
			1	.214**	184*	-0.057
				1	0.046	-0.002
					1	.515**
						1
	MarketValue 1	MarketValue TotalAssets 1 .770 <sup>**</sup> 1	MarketValue         TotalAssets         Sales           1         .770**         .608**           1         .826**         1           1         .608         1	MarketValue         TotalAssets         Sales         NPM           1         .770**         .608**         .231**           1         .826**         0.045           1        360**         1	MarketValue         TotalAssets         Sales         NPM         RoE           1         .770**         .608**         .231**         .286**           1         .770**         .608**         .231**         .286**           1         .826**         0.045         0.075           1        360**         0.080         1         .214**           1         .1         .214**         1         .214**	MarketValue         TotalAssets         Sales         NPM         RoE         RnDExp           1         .770**         .608**         .231**         .286**         .375**           1         .826**         0.045         0.075         .397**           1         .826**         0.045         0.080         .321**           1        360**         0.080         .321**           1         .214**        184*           1         0.046         1

Table 5: Cross-order correlations

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

Table 5 displays the result of cross-order correlation analysis. R&D expenditure is positively related to market value, total assets, and sales. On the other hand, R&D expenditure is negatively related to net profit margin. RDI has significant negative relation with all the study variables except, R&D expenditure. Net profit margin is negatively correlated with sales and is statistically significant. Return on Equity has no relation with sales, but significant positive relation with market value. There are certain significant and insignificant correlations among the sampled variables. The significant correlations are small indicating the absence of multicollinearity. The multicollinearity issue may arise in the regression analysis and yield a biased estimation. To inspect this issue, we conduct a multicollinearity diagnosis and estimated the collinearity tolerance and variance inflation factor (VIF). We run a simple linear regression with market value as dependent variable and other variables as explanatory variables. The collinearity tolerance values ranged between 0.4 and 0.8. Similarly, the VIF values ranged between 1 and 6. These test values support the argument of no multicollinearity among study variables.

Variable	Statistic	Prob.**	Test for
Age	-25.987	0.00	ln
ListAge	-49.824	0.00	ln
MarketValue	-14.908	0.00	ln
NPM	-6.865	0.00	Level
RDI	-29.775	0.00	Level
RDISqr	-206.469	0.00	Level
RnDexp	-13.150	0.00	ln
RoE	-5.378	0.00	Level
Sales	-3.235	0.00	ln
TotalAssets	-11.755	0.00	ln

 Table 6: Panel Unit Root Test (Levin, Lin & Chu)

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat. -6.92 (p=0.00)

ADF - Fisher Chi-square 93.49 (p=0.00)

PP - Fisher Chi-square 61.14 (p=0.02)

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution.

All other tests assume asymptotic normality.

From the results as presented in Table 6, it is clear that while NPM, RDI, Squared RDI, and ROE are stationary at level. On the other hand, Age, ListAge, Market Value, R&D expenditure, sales, and total

assets are non-stationary at level. Non stationary time series can, nevertheless, be converted into stationary by transformation. We applied natural logarithm transformation. Once this was done all the variables became stationary.

# **IV.3 Pooled OLS and Breusch-Pagan test**

We initially run pooled ordinary least squares regression for all the four models. We then run Breusch-Pagan residual cross-section dependence test to test the null hypothesis of no cross-section dependence (correlation) in residuals. In other words, the Breusch-Pagan test examines the null hypothesis of homoskedasticity. A rejection of null hypothesis confirms the heteroskedasticity in the panel data series. For our four models the p-values are 0.00 Sales (Statistic=496.54, df=210, p=0.00); NPM (Statistic=300.06, df=210, p=0.00); ROE (Statistic=382.50, df=210, p=0.00); Market Value (Statistic=419.00, df=210, p=0.00) and the result rejects hypothesis of homoscedasticity and indicates that the panel data is heteroscedastic. This result guides us towards examination of fixed effects or random effects model.

# **IV.4 Panel Fixed and Random Effects Estimation**

In this section, we present the findings of fixed and random effect models used in the study. We framed four models for company level data and another four models for category level data. For each of the four models of company level data, we first run both fixed and random effect models. We then run Hausman test to check the appropriateness of the model. Hausman test suggests us, whether fixed effect model or random effect model is appropriate for the given dataset. The null hypothesis of Hausman test recommends random effect model and the alternative hypothesis suggests fixed effect model. The hypothesis is tested at five percent significance level. For three of the four models (SALES, NPM, & MARKETVALUE), Hausman test recommended fixed effect model and for one model (ROE) it suggested random effect model. Results are presented in table 7.

Our first model measures the impact of R&D expenditure on sales / revenue of the firms. In this model we use R&D, R&D(t-1), and RDI as explanatory variables, size (total assets), age, and listing age as control variables. From table 7, it is visible that the effect of R&D expenditure on sales is positive and statistically significant at five percent significance level. In contrast, the effect of lagged R&D expenditure is negative and statistically significant. Similarly, the effect of RDI on sales is also negative and statistically significant at one percent level. The results indicate that R&D expenditure in current financial year helps companies to increase their revenue. However, lagged R&D expenditure has negative effect. The RDI, which is a ratio of R&D expenditure and revenue is also negative. This result may be because of varied levels of R&D expenditure by sampled CPSEs and extremes in their sales or revenue. In this study we notice that the percentage of spending of R&D to sales is bare minimum, less than one percent of the revenue. Another point is there is a significant growth in revenue, but no such growth in R&D expenditure. In addition, during certain years there was a drop in R&D expenditure. These reasons may result in negative relation between RDI and sales.

We do not find any statistically significant effect of R&D, lagR&D, and RDI on NPM, ROE, and market value. At the firm level R&D expenditure will have two-fold effect. One, on revenue and the other is on operational efficiency. Using R&D activities companies innovate new products or upgrade existing products to improve sales and meet customer demand. On the other side, R&D activities may help firm to reduce cost of manufacturing, minimize input costs, maximize output, optimum utilization of resources and improved productivity. All these will help firm to reduce its cost of goods sold and boosts operating profit margins. But, in the case of sampled companies, we do not notice any such cascading effect of operational efficiency, because of which there is no effect of R&D expenditure on

NPM and ROE. The paper finds that Sales, and NPM are the levers of ROE. There exists a positive and statistically significant effect of sales and NPM on ROE at 1% level of significance.

Another important finding of this paper is the absence of impact of R&D on market value of the firm. The market value of the firm is normally influenced by financial performance of the firm and to the large extent influenced by investors' expectations about current and future performance of the firm. Investors discount all the available information about the firm while making investment decision. Information sharing by the firms play an important role in influencing the investors decision. In this study we notice that there is an information asymmetry with regard to the R&D expenditure of the firms. We are skeptic about how effective CPSEs are in sharing their R&D related information with stakeholders. The CPSEs spent less than one percent of their operational revenue on R&D, but may have made some significant innovations or efficiencies, still they are unable to share this information with investors and stakeholders on a timely manner. This information asymmetry may lead to insignificant effect of R&D on market value of the firm.

Results presented in table 7 disclose that market value of the firm is influenced by Sales, NPM, and ROE. Net Profit Margin (NPM) is positive and statistically significant at 1% level, whereas, ROE and Sales have positive impact at 5% level of significance. All the estimated models have F-Statistic value and statistically significant at 1% level. Furthermore, the R<sup>2</sup> values are close to 1. To check the accuracy and forecast ability we observed multiple criterions like Akaike info criterion (AIC), Schwarz information criterion (SIC), and Hannan-Quinn criterion. In addition, we computed few forecast t parsimonious tests, like Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), Mean Absolute Percen Error (MAPE), Theil Inequality Coefficient, and Bias Proportion. We observe that all the calculated accuracy and forecast test results are with in the threshold limits.

	SALES	(FE)	NPM (	FE)	ROE (	RE)	MARKET VA (FE)	LUE
Variable	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
С	-2.10	- 1.14	-0.79	-1.62	-0.27	- 0.64	18.54***	3.81
RNDEXP	0.08**	2.18	0.01	0.61	0.03	1.05	-0.05	-0.51
LAGRNDEXP	-0.06**	2.33	0.01	0.79	-0.02	0.98	0.04	0.66
RDI	-22.2***	- 4.41	-0.74	-0.51	0.66	0.58	-2.23	-0.16
ROE	-	-	-	-	-	-	0.46**	2.05
NPM	-	-	-	-	0.78***	4.25	2.84***	2.93
SALES	-	-	1.00	(0.32)	0.07***	2.65	0.54**	2.27
TOTALASSET	0.21	1.54	0.34	(0.73)	-0.06*	-	-0.04	-0.12

Table 7: Company wise Fixed Effects / Random Effects Model (N>T)

S						1.79		
AGE	2.42***	3.98	1.26	(0.21)	0.01	0.21	-3.74**	-2.20
LISTAGE	0.21	0.92	-1.80	(0.08) *	0.04	0.78	0.18	0.30
R-squared	0.99		0.90		0.14		0.92	
F-stat (Prob.)	592.19	0.00	40.03	0.00	2.89	- 0.01	49.05	0.00
Haven Test	· -		(7		(0			

Significance values. \*\*\*, \*\*, \* are at 10% level, 5% level, and 1% level respectively.

#### **IV.5 Panel Fixed Effects Estimation at aggregate level**

Table 8 provides the results following equations 5 to 8 mentioned above. These four equations measure the impact of R&D, lagR&D, and RDI on Sales, NPM, ROE, and Market Value of the firm at aggregate level i.e., category level. For the aggregate level panel analysis, we run only fixed effect model, because N<T. Random effect model is appropriate or examined when number of cross sections (N) are greater than periods (T). In this paper we have three cross sections (Maharatna, Navratna, and Miniratna) and eight periods (2015-2022), so it is advisable to apply only fixed effect model. Results show that R&D expenditure has no effect or association with sales, NPM, ROE and market value. Results from equation 6 (NPM) confirm the positive effect of sales on NPM at five percent significance level. Similar result is visible with equation 8 (market value). Here, NPM generates positive returns on market value which is statistically significant at 5% level. We also find direct effect of ROE on market value at 10% significance level. Except these notable positive effects, we do not find any other positive or negative or significant effects of explanatory variables on dependent variables. A key finding from the aggregate level analysis is that R&D, lagR&D and RDI have no effect on financial performance and market value of sampled CPSEs. This finding needs to be analyzed from the point of vie of cumulative spending of CPSEs on R&D and diversity in their R&D expenditure. There is a clear deviation in the R&D expenditure of Maharatna, Navratna, and Miniratna. As discussed in the descriptive section, Navratna spent large amount and Miniratnas spent smaller amount towards R&D. All the sampled CPSEs are in industrial or manufacturing sector and there is dire need for investments in R&D. However, only meagre amount that is less than one percent of revenue is spent on R&D. We are of the opinion that there is wide scope of these CPSEs to investment on R&D to produce innovate products. Similarly, there is a great opportunity to improve their operational efficiency while spending on R&D. The paper results contrast with earlier research which show significant positive effect of R&D expenditure on financial performance and market value of the firms.

	SALES	(FE)	NPM (	FE)	ROE (	(FE)	MARKET VAI	LUE (FE)
Variable	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
С	3.88	0.30	-5.02*	-1.82	-9.73	-0.73	27.47	0.84

Table 8: Category Fixed Effects Model (N<T)

The Indian Economic Journal - ISSN 0019-4662

RNDEXP	0.26	1.39	-0.02	-0.38	-0.32	-1.78	-0.32	-0.64
LAGRNDEXP	-0.03	-0.21	0.02	0.61	0.00	-0.01	0.29	0.88
RDI	-43.00	-1.56	3.03	0.47	-18.72	-0.67	-8.86	-0.13
ROE	-	-	-	-	-	-	1.46*	1.94
NPM	-	-	-	-	1.70	1.33	8.76**	2.64
SALES	-	-	0.14**	2.26	0.29	0.91	0.21	0.27
TOTALASSETS	0.34	0.31	-0.08	-0.35	-1.34	-1.35	-1.40	-0.55
AGE	-0.17	-0.02	1.82	1.16	6.88	0.97	-2.55	-0.14
LISTAGE	0.92	0.41	-0.84	-1.75	-1.64	-0.71	1.15	0.20
R-squared	1.00		0.92		0.56		0.99	
F-statistic (prob.)	464.42	0.00	14.15	0.00	1.27	0.36	54.17	0.00

Significance values. \*\*\*, \*\*, \* are at 10% level, 5% level, and 1% level respectively.

#### V. Conclusion

Our findings confirm that R&D expenditure has significant positive impact on revenue of industrial central public sector enterprises. There is a persistent increase in the amount spent on R&D by public sector enterprises. However, these significant spending not yielding higher profit margins, higher returns to equity holders, and not helping in market value. We see a great potential for R&D investment in CPSEs and larger benefits for the firms and the economy. The sampled public sector enterprises are considered as high R&D intensive industries to Medium-high R&D intensive industries. They are in the business of Energy, Refinery, Mineral, Electricity, Fertilizers, Electronics, Steel, Oil and Gas etc. There is every possibility that these corporates can earmark up to 2% to 5% of their PBT for R&D. Their R&D spending can help develop innovative products, improve operational efficiency, and contribute to the sustainable development goals of the country.

At the same time, we are of the opinion that there is an information asymmetry. We performed a quick content analysis of these companies' annual reports, sustainability reports, CSR reports, and websites to analyze our results and understand whether R&D investments yield any benefits to these organizations. We observe that few firms have designed innovative products, developed improved processes, worked on UN-SDGs, and worked on climate issues. However, this information is not widely shared with the investors on a regular basis. We opine that if the information is shared with stakeholders on a continuous then it would have influenced the market value of the firms. As the Government of India is incentivizing public sector enterprises through implementation of the research report on R&D ecosystem, changes in MoU of CPE, the mangers in CPSEs should explore the opportunities to improve the financial performance and market value of the CPSEs. Future research should concentrate on antecedents of low R&D investment, managers role in R&D, and policy support for R&D from GoI.

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#### TRENDS IN THE PUBLIC FINANCES OF STATE GOVERNMENTS

#### Tamma Koti Reddy

#### ABSTRACT

This study provides an overview of the trends in Public Finances of the State Governments in India since 1985-86. In this context, the study investigated the effect of Development and Nondevelopment. Expenditure on combined state's Gross State Domestic Product growth (GSDP) using Multiple Regression model for the period 1990-91 to 2021-22. The results of the study indicate that the effect of development expenditure on the combined state's GSDP is positive and statistically significant while the effect of non-development expenditure on the combined state's GSDP is negative and statistically insignificant. The Fiscal position of the state government has worsened in the last two years as compared with the previous years due to the adverse impact of COVID-19. The author opines that gradually rising Public debt has become a major concern for State Governments in India. The rise in both Revenue and capital expenditure of the states during the second wave of COVID-19 contributed to the economic recovery of states. The author stressed the need for designing a constructive road map that facilitates higher revenue mobilization, reduction of unproductive expenditure, attaining debt

sustainability, minimizing the losses of DISCOMS, and increasing the volume of capital expenditure for the good fiscal health of the State governments.

Key Words: Development Expenditure, Non-development Expenditure, Fiscal Deficit, Multiple

Regression, GDP growth

#### I. INTRODUCTION:

The State Governments in India have witnessed a deterioration in all major fiscal indicators since the early 1980s. Though the fiscal situation has improved after the implementation of FRBM (Fiscal Responsibility and Budget Management) rules, the American crisis in 2007-08 has shown a negative impact on the fiscal position of states in the subsequent years. Since 2015-16 the State Government's fiscal position has been worsening due to a shortfall in Revenue Receipts, a raise in committed expenditure, Implementation of Pay Commission Recommendations, Huge investment in infrastructure, farm loan waivers, and takeover of power distribution companies under Ujwal Discom Assurance Yojana. In the years 2019-20 and 2020-21 state governments have witnessed a sharp fall in their tax revenue receipts, own non-tax revenue receipts, and transfers from the centre.

In recent years gradually rising outstanding liabilities has become a major concern for State Governments in India. The aggregate Public debt of state government's marginally declined from 17.2 percent of GDP in 2011-12 to 16.6 percent of GDP in 2014-15 and is expected to reach 25.1 percent of GDP. As per the Budget estimates for 2022-23, the top indebted state is Rajasthan and its Debt-GSDP ratio is projected at 39.8 percent followed by Bihar (38.7 percent), Kerala(37.2 Percent), West Bengal(34.2 percent), Madhya Pradesh(33.3 percent) and Andhra Pradesh with 32.8 percent(**RBI Bulletin June 2022**). The Central government has allowed the State governments to maintain their Fiscal deficit of up to 4 percent of their GSDP due to a sharp fall in Revenue receipts, increased Expenditure, and borrowings of the State governments given the COVID-19 pandemic.

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The volume of the Fiscal deficit of the state government increased substantially from Rs. 7521 cr in 1985-86 to Rs.18, 900 cr in 1991-92 and then it rose to Rs.87,922 cr in 2000-01 and further it is estimated at Rs.8,18,584 cr in 2021-22(BE). Since 1985-86, the State governments have recorded a Revenue surplus during 1985-87 and also from 2006-07 to 2008-09. The Revenue deficit of the State government rose significantly from Rs.1088 cr in 1987-88 to Rs. 5651 cr in 1991-92 and then it rose to Rs.55, 316 cr in 2000-01 and further to Rs.1, 17,779 cr in 2021-22(BE). The Gross Primary deficit of the State government's recorded surplus during 2006-07 and 2007-08. However, the Gross primary deficit has increased from Rs. 4581 cr in 1985-86 to Rs.7956 cr in 1991-92 and then to Rs. 36,937 cr in 2000-01 and further to Rs.3, 80,015 cr in 2021-22 (Economic Survey 2021-22).

The volume of the Fiscal deficit of the state government increased substantially from Rs. 7521 cr in 1985-86 to Rs.18, 900 cr in 1991-92 and then it rose to Rs.87, 922 cr in 2000-01 and further it is estimated at Rs.8, 18,584 cr in 2021-22(BE). Since 1985-86, the State governments have recorded a Revenue surplus during 1985-87 and also from 2006-07 to 2008-09. The Revenue deficit of the State government rose significantly from Rs.1088 cr in 1987-88 to Rs. 5651 cr in 1991-92 and then it rose to Rs.55, 316 cr in 2000-01 and further to Rs.1,17,779 cr in 2021-22(BE). The Gross Primary deficit of the State government's recorded surplus during 2006-07 and 2007-08. However, the Gross primary deficit has increased from Rs. 4581 cr in 1985-86 to Rs.7956 cr in 1991-92 and then to Rs. 36,937 cr in 2000-01 and further to Rs.3, 80,015 cr in 2021-22(**Economic Survey 2021-22**).

# Table 1.1: Average Annual Growth of Major Deficit Indicators of State Governments

Year	scal Deficit	venue Deficit	Primary Deficit
1985-86 to 1989-90	2.85	0.34	1.51
1990-91 to 1994-95	2.82	0.72	1.06
1995-96 to 1999-00	3.38	1.66	1.40
2000-01 to 2004-05	4.04	2.22	1.34
2005-06 to 2009-10	2.24	0.48	0.58
2010-11 to 2014-15	2.16	0.20	0.64
2015-16 to2019-20	2.82	0.22	1.14
2020-21 to 2021-22	4.2	1.25	2.2

(As Per cent of GDP)

# Source: Author's own calculation

Table 1.1 reveals the average growth of major deficit indicators of state governments in India as a percent of GDP for the period 1985-86 to 2021-22. The average annual growth of Fiscal deficit as a percent of GDP which was 2.85 percent during 1985-90 gradually increased to 2.82 percent during 1990-95 and to 3.38 percent during 1995-2000 and then the same increased to 4.04 percent during 2000-2005. It is observed from the above table that there was a sharp fall in the average annual growth of Fiscal deficit as a percent of GDP since 2005-06. The same rate declined from 2.24 percent during 2015-2020 and further to 4.2 percent during 2020-211 to 2021-22 due to the impact of COVID-19 on state's finances. The average annual growth of Revenue deficit as a percent of GDP was high during 2000-01 to 2004-05. The same rate declined to 0.48 percent during 2005-2010 and then to 0.20 percent during 2010-15, gradually increasing to 0.22 per during 2015-2020 and further

to 1.25 percent during 2020-2022. The average annual growth of the Primary deficit was in the range of 1.00 to 1.50 percent of GDP during 1985-2005 gradually declining in the subsequent years. Again during 2020-21 to 2021-22, the average annual growth of the Primary deficit was registered as high as 1.25 percent due to the impact of the COVID-19 pandemic on the state's finances.

# **1.2 OBJECTIVES OF THE STUDY;**

The main objective of the study is to know the effect of Development and Non-development expenditure on the combined state's GSDP for the period 1990-91 to 2021-22. The specific objectives are

1. To study the trends in growth in total receipts, total expenditure, and total liabilities of all states for the period 1985-86 to 2021-22

2. To study the trends in major deficit indicators of state governments as percent of GDP for the period 1985-86 to 2021-22

# **1.3 LITERATURE REVIEW:**

Atri Mukherjee, Somnath Sharma, et al (2022) have attempted to examine the Risk Analysis in State Finances using Stress tests. The authors opine that the reduction in state government expenditure on non-merit goods, stabilizing the debt levels, and raise in capital expenditure would facilitate the State governments to improve their fiscal conditions. The study stressed the need for improving the operational efficiency of DISCOMs to avoid losses.

Kaliappa Kalirajan et al (2009) have examined whether governments in India within a federal framework have been able to foster development equitably across its states. The results of the study indicate the importance of huge expenditure on education and health for equitable development across the states. The authors opine that the General government should concentrate on improving the economic services to reduce the regional imbalances in terms of economic service

**Panchanaz Das** (2016) in his work "Debt Dynamics, Fiscal Deficit, and Stability in Government Borrowing in India: A Dynamic Panel Analysis" has attempted to examine whether the composition of expenditure of the subnational governments has an impact on the degree of indebtedness using A panel analysis for the 17 non-special category states for the period 1980–2013. The study reveals that the state-specific factors affecting fiscal performance play a major role in government borrowing.

**Saravan and A. Joseph Durai** (2012) has attempted to examine the pattern and determinants of economic growth of major Indian states for the period 1960-2008. The study employed the growth in SDP and DDP to examine the intra-state and inter-state differentials in terms of growth.

# **1.4 METHODOLOGY**

The study is based on secondary data. Development expenditure, Non-development expenditure, and Combined GSDP growth of states are the variables employed in the study. The annual data on Revenue expenditure, Capital expenditure, Fiscal deficit, revenue deficit, Gross primary deficit, development, and Non-development expenditures, Combined State's GSDP and Liabilities of State Governments are composed of Present and Previous Economic Surveys, Handbook of Statistics on Indian Economy of RBI, Indian Public Finance Statistics, State Finances- A Study of Budgets of RBI, and RBI Bulletins. A multiple regression model is used to study the effect of independent variables on the dependent variable.

#### **Model Specification:**

 $Y_{i} = \beta_{0} + \beta_{1}x_{1} + \beta_{2}x_{2} + \mu_{i}$ GDP =  $\beta_{1}$ (Development Expenditure) +  $\beta_{2}$  (Non- Development Expenditure) +  $\mu_{i}$   $Y_{i} = \text{GDP} = \text{Dependent Variable}$   $\beta_{0} = \text{Intercept}$   $\beta_{1} = \text{slope coefficient of } x_{1}$   $\beta_{2} = \text{slope coefficient of } x_{2}$   $x_{1} = \text{Development Expenditure}$ 

 $x_2$  = Non- Development Expenditure

 $\mu_i = \text{Error Term}$ 

#### **II TRENDS IN PUBLIC FINANCES OF STATE GOVERNMENT'S**

#### 2.1 Revenue receipts of the State Government's

The Revenue receipts of the State government's consist of Tax revenue, non-tax revenue and transfers from the centre. The State government's own tax revenue includes revenue earned from Sales tax, land revenue, SGST, State excise duties, Stamps & Registration charges etc. The Non-tax revenue of the State government's includes Interest payments, Dividends & Profits etc. Transfers from centre includes State's share in central taxes, share in Central sponsored schemes, grants or loans and Finance Commission grants etc. Total receipts of the State government's consists of both revenue and capital receipts. Capital receipts includes loan recoveries and other receipts, borrowings and other liabilities. Total receipts of the State government's consists of both Revenue and capital receipts of the State government's consists of both Revenue and capital receipts increased from Rs. 46,555 cr in 1985-86 to Rs. 1,07,773 cr in 1991-92 and then rose to Rs. 3,42,214 cr in 2000-01 and further to Rs. 45,72812 cr in 2021-22.

The total Revenue receipts of the State government's has increased significantly from Rs. 33,424 cr in 1985-86 to Rs. 80,536 cr in 1991-92 and then it rose to Rs. 34,54,540 cr in 2021-22. Tax revenue has maintained an increasing trend and dominated in the total revenue receipts of the State government's during the period 1985-86 to 2021-22. The volume of State's own tax revenue rose substantially from Rs. 21,811 cr in 1985-86 to Rs. 52,604 cr in 1991-92 and then to Rs. 1,64,314 cr in 2000-01 and further to Rs. 22,84,493 cr in 2021-22. The Non-tax receipts also rose from Rs. 11,613 cr in 1985-86 to Rs. 27,932 cr in 1991-92 and further to Rs. 11,70,047 cr in 2021-22 (Economic Survey 2021-22). The total Capital receipts also rose from a mere Rs. 13,131 cr in 1985-86 to Rs. 27,238 cr in 1991-92 and further to Rs. 11,18,272 cr in 2021-22.

# 2.2. Development & Non-development expenditures and Combined GSDP growth of State governments

The Revenue receipts of the State government consist of Tax revenue, non-tax revenue, and transfers from the centre. The State government's tax revenue includes revenue earned from Sales tax, land revenue, SGST, State excise duties, Stamps & Registration charges, etc. The Non-tax revenue of the State government includes Interest payments, Dividends & Profits, etc. Transfers from the centre include State's share in central taxes, share in Central sponsored schemes, grants or

loans, and Finance Commission grants, etc. Total receipts of the State government consist of both revenue and capital receipts. Capital receipts include loan recoveries and other receipts, borrowings, and other liabilities. Total receipts of the State government consisting of both Revenue and capital receipts increased from Rs. 46,555 cr in 1985-86 to Rs. 1,07,773 cr in 1991-92 and then rose to Rs. 3,42,214 cr in 2000-01 and further to Rs. 45,72812 cr in 2021-22.

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# 2.2. Development & Non-development expenditures and Combined GSDP growth of State governments

Development expenditure of State governments includes expenditure on Economic and Social Services, while the Non-development expenditure consists of expenditure on general services and Administrative Services. Development expenditure directly contributes to accelerating economic development, while Non-development expenditure does not contribute directly to economic development. The Development expenditure of the State government is increasing at a faster rate as it rose from Rs. 31,732 cr in 1985-86 to Rs.266,473 cr in 2004-05 and further to Rs. 2,911,409 cr in 2021-22. The Non-development expenditure of the State governments also increased from rs.9618 cr in 1985-86 to Rs.185,152 cr in 2004-05 and then it rose to rs. 1,287,898.6 cr in 2021-22. The proportion of Development expenditure in the total expenditure declined from 70.72 percent in 1985-86 to 51.8 percent in 2004-05 and again rose to 63 percent in 2021-22. The proportion of Non-development expenditure of the State governments declined from 33.5 percent in 2004-05 to 29.1 percent in 2012-13 and then to 27.9 percent in 2021-22. The trends in the average annual growth of Development expenditure, Non-development expenditure, and combined GSDP growth are presented in the following table 2.2

Year	Development penditure (%)	levelopment expenditure (%)	ined GSDP Growth (%)
990-91 to 1994-95	12%	16.98%	3%
995-96 to 1999-00	11%	14.60%	4%
000-01 to 2004-05	8%	9.72%	6%
005-06 to 2009-10	15%	9.53%	11.0%
010-11 to 2014-15	14%	11.49%	18%
015-16 to2019-20	9%	10.80%	25%

# Table 2.1. Trends in the Average annual growth of Development & Non-development expenditure and Combined GSDP growth of State governments

Source: Author's own calculation

It can be observed from the above table 2.1 that there was a sharp decline in the average annual growth of development expenditure from 12 percent during 1990-95 to 11 percent during 1995-2000 and then to 8 percent during 2000-05. The average annual growth in Development expenditure was high during 2005-10. The same rate gradually declined to 14 percent during 2010-15 and then 50 9 percent during 2015-2020 and has improved to 14 percent during 2020-22. The average annual growth in Non-development expenditure gradually declined from 1990-91. The same rate was registered at a high during 2010-15 and then declined marginally in the subsequent years. The average annual growth in Combined State's GSDP increased substantially since 1990-91. In the entire study period, annual growth in combined GSDP was highest during 2020-22.

#### 2.3. Trends in Revenue expenditure & Capital expenditure

Since 1985-86 there has been a substantial increase in the total expenditure of the State government both the Revenue account and Capital account. The total expenditure of states reached the extent of Rs. 46,23,092 cr in 2021-22. The volume of Revenue expenditure has grown significantly from Rs. 32,770 cr in 1985-86 to Rs.71,776 cr in 1990-91 and further to Rs. 35,72,319 cr in 2021-22. The Capital expenditure of the states also increased from Rs. 12,097 cr in 1985-86 to 19,312 cr in 1990-91 and then to 52,010 cr in 2000-01 and further to Rs.10,50,773 cr in 2021-22. The proportion of Capital expenditure in the total expenditure has increased substantially in the states such as Kerala, Bihar, and Andhra Pradesh, while it declined in the states of Haryana, Jharkhand, UP, and Punjab. The trends in the average annual growth of revenue expenditure, capital, and Total expenditure are presented in the following table 2.2.

Year	nue Expenditure (%)	ital expenditure (%)	tal expenditure (%)
1 to 1994-95	14	12.22	14
6 to 1999-00	13	8.36	12
1 to 2004-05	9	18.08	11
6 to 2009-10	13	5.97	11
1 to 2014-15	13	10.90	13
6 to2019-20	10	10.45	10
1 to 2021-22	12	18.09	13

Table 2.2. The trends in the Average annual growth of Revenue, Capital and TotalExpenditures

#### Source: Author's own calculation

The above table 2.1 provides information on the Average annual growth of Revenue expenditure, Capital expenditure, and total expenditure over the period 1990-91 to 2021-22. It is clear from the above table that the average annual growth in revenue expenditure declined from 14 percent during 1990-95 to 13 percent during 1995-00 and then to 9 percent during 2000-05 and the same increased to 13 percent during 2005-10. The same rate declined to 10 percent during 2015-20 and then it rose to 12 percent during 2020-22. The average annual growth in capital expenditure was registered at a
high during 2000-05. The average annual growth in total expenditure was in the range of 10-14 percent in the entire period under study. It is inferred from the above table that the average growth in Revenue expenditure was lower than the Capital expenditure during the period under study.

## **III. RESULTS AND DISCUSSION:**

Multiple regression model is used to study the effect of independent variables on dependent variable.

### Table-3

### **Regression Results**

. \*(3 variables, 33 observations pasted into data editor)

•	reg	loggdp	logde	lognde
---	-----	--------	-------	--------

Source	SS	df	MS	Numbe	er of obs	=	33
				- F(2,	30)	=	568.32
Model	4.20094247	2	2.10047124	l Prob	> F	=	0.0000
Residual	.110878145	30	.003695938	R-sq	uared	=	0.9743
				- Adj 1	R-squared	=	0.9726
Total	4.31182062	32	.134744394	Root	MSE	=	.06079
loggdp	Coef.	Std. Err.	t	P> t	[95% Co	onf.	Interval]
logde	.8858757	.1598246	5.54	0.000	.559470	02	1.212281
lognde	2039561	.1590644	-1.28	0.210	52880	09	.1208968
_cons	8.110321	.1194689	67.89	0.000	7.86633	33	8.354309

Combined GSDP of State governments is the Dependent variable and Development Expenditure, Non-development Expenditure is the independent variable. Multiple Regression analysis is employed to check the impact of independent variables on the Dependent Variable.

It can be observed from above table 3.1. when there is a 1% change in Development Expenditure there will be 0.88% change in Combined GSDP and the p-value should be <0.05. In the above analysis, the p-value can be observed as 0.000 < 0.05, which means that the Development Expenditure is statistically significant and positive. Hence, it is inferred that the effect of development expenditure on the Combined GSDP of State governments is positive and significant.

From the above table, it can also be observed that the Non-development expenditure does not have any impact on Combined GSDP, because the p-value is greater than 0.05. Hence it is inferred that the effect of Non-development expenditure on the Combined GSDP of State governments is Negative and statistically insignificant.

## **IV.CONCLUSION:**

This study focused on investigating the effects of both development and Non-development expenditures on the Combined State's GSDP growth over the period 1990-91 to 2021-22 using the multiple regression model. The results indicate that the effect of Development expenditure on the Combined State's GSDP is positive and statistically significant, while the effect of Non-development expenditure on the Combined State's GSDP is Negative and statistically insignificant. It indicates that there is a need in enhancing development expenditure to achieve higher growth.

More Public expenditure toward the creation of economic and social infrastructure is indispensable for economic development. The rise in the combined GSDP of States reflects enhancing economic activities in the economy. State governments have to maintain Fiscal discipline by sustaining liquidity, credibility, and solvability. Fiscal discipline is crucial for maintaining Macroeconomic stability and improving the economic progress of the State governments. State governments should not rely heavily on more market borrowings as the higher cost of borrowings will worsen their capability to undertake productive activities. State governments should take proper steps to maintain the deficits within manageable limits. State governments should design a constructive road map that facilitates higher revenue generation, reduction in public expenditure on non-merit goods, minimizing the losses of DISCOMS, attaining debt sustainability, and enhancing the capital expenditure

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## Determinants of Showrooming and Webrooming Buying Conduct: A Systematic Literature Review using PRISMA Framework

Abhishek Kumar Nirmalya Debnath Jayanta Das Aparna Bhardwaj

Abstract - Omnichannel retailing continues to bother the retailing community with multifarious risks and opportunities for the retailing community. In one hand it widens the product exploration avenues for a buyer guiding him to make the best yet cheapest selection and on the other hand it creates continuous challenges and threats for the sellers. The study attempts to investigate the omnichannel buyer features in the light of showrooming and webrooming. Scopus database supported by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was adopted for accessing research articles and sorting the most appropriate papers on the basis of the need and objective of the study. 87 research articles were suitably subjected to further analysis. A significant number of studies are from India which is followed by countries like – USA and Spain. Statistical analysis in majority of the studies were carried out with the help of Structural Equation Modelling. A good number of studies also applied the PLS – SEM method for conducting the analysis. The study is an attempt to (i) throw light on the omnichannel buying phenomenon in the context of showrooming and webrooming (ii) figure out the buying behaviour stimulators in the omnichannel retailing domain (iii) classify the studies into five extensive topics and (iv) recognize some demanding field for tomorrow.

Keywords - omnichannel retailing, showrooming, webrooming

#### Introduction

The domain of consumer buying and procurement exercise is encountering expeditious transitions through evolving automation and mechanization tools like Robotics, Cloud Computing, Data Science, Artificial Intelligence etc. in the elastic world of retail trade. The buying judgement practice of the consumers has turned out to be multifaceted and progressively complicated. The sellers are in their ongoing endeavours to stay competitive with the retailing challenges through offering buyers with a blend of physical and digital purchase amenities.

Omni–channel as per Lazaris and Vrechopoulos, 2014, implies an amalgamation of offline and electronic medium offering flawless purchase feeling, with the liberty to access the purchase medium at any point and any moment. Beck and Rygl, 2015, denoted multi-channel retailing as an arrangement of trading actions through multiple or all prevalent platforms wherein the buyers are unable to elicit medium interrelationship or the seller also has no regulation on buying medium amalgamation.

According to Statista 2020a, the population of global web browsers has amplified from 3.65 billion in the year 2017 to 4.57 billion in the year 2019. The global data congestion is also anticipated to reflect a monthly surpassing of 77 exabytes in 2022 from a monthly data traffic of 11.5 exabytes in 2017. The population of Indian web browsers is also likely to expand correspondingly reaching 666.40 million by 2023. Moreover, Statista 2020a anticipates the population of mobile web browsers to be around 492.68 million within 2022.India as per Statista 2020a reports has surfaced as the world second largest buyer marketplace and has also evolved as the rapidest budding e – commerce Asian marketplace exhibiting 44% CAGR as per 2015 to 2020 Forrester Research Online Retail Forecast. The Indian e – business is anticipated to climb US\$200 billion as per 2018, India Brand Equity Foundation, within 2026.

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The Indian mobile web browsers population exhibited noteworthy growth during 2013-2018, which further in 2018, jumped to 478 million browsers. Youths comprising of 46% of urban and 57% of rural users below the age of 25 years has been reported to largely access mobile internet. Users within the age group of 25 to 44 years are almost identically spread across both urban and rural India as per IAMAI 2017. Within 2019, the Generation Z users is anticipated to be the youngest age group exceeding the Millennials in acceptance of mobile gadgets. As reported by the Interactive Advertising Bureau (IAB 2018), mobile gadgets are evident to be accessed during 63% of the buying activities both by the urban and rural Indian youths. Fascinatingly, it is also evident that the exclusivity of both physical and virtual buying modes is declining. Indeed, the 1980 -2000 millennials are gradually insisting on a flawless buying experience. As per study conducted by Rapp et al. , 2015, it is observed that around 50% of buyers search for the most preferred choice during returning goods bought on the web and about 40% buyers desired to check and examine a product in physical outlets before finally buying it digitally.

This sort of buying situation is universally regarded as showrooming. Objectives of digital buying can be intensified and resourcefully administered by enriching the website layout constituents like graphic attractiveness and applicability imparting a n elevating digital experience to the buyers (Kuhn and Petzer 2018). Likewise, webrooming behaviour implies the access of digital mediums prior to brick-and-mortar store purchase as per Flavian, Gurrea, and Orus 2016. Instantaneous product obtainability is the sole motivation behind such kind of buying.

Then again, the challenges that yet stay back in the light of amalgamated flawless experience can be grouped as reliable experience, linked buying, combined retailing, malleable accomplishment / returns, tailored communication and updated, speedier and memorable experience as per Dempski et al. 2019. With the hike in retail buying through virtual electronic platforms buyers look for omnichannel accomplishment alternatives to be accessible. According to Dempski et al. 2019, Accenture endorsed and authenticated a study finding by Online Retail Forecast 2019, of Forrester Research stating that that omnichannel alternatives offered by a seller centre around flawless buying experience.

On the basis of study conducted by Arora et al. (2020), whereby the buyer emotions across 45 countries were observed during the covid -19 pandemic it was identified that along with purchasing more of essentials as compared to optional item segments, the customers favoured to carry on with online buying mode even though the offline shops were opened. Moreover, a noteworthy hike in digital minimal exposure utility service is anticipated. Consequently, this article is an attempt to pinpoint buyer behaviour magnitudes pertinent to omnichannel buying along with defining the rational anchorages and procedural styles implemented as yet in the related literature.

This study is expected to further the detection of probable research gaps aiding in the formulation of future research. A detailed content analysis was undertaken for summarising the procedures and bases of information as evident in the literature. The significant elements of the buyer behaviour in the omnichannel setting were detected in the light of omnichannel buying scenario in common and showrooming and webrooming specifically.

# **Review of Literature:**

Rapid changes in technology have brought about enormous shifts and changes in the way in which the sellers offer their products to the buyers and accordingly there has been significant transformation in the way in which the shoppers gather product information and finally procure their necessities. Immense evolution in the buying and selling modes and techniques available in the current day market as in one hand created a variety of options for the buyers also on the other hand gave rise to numerous challenges for the sellers.

# **Omnichannel Retailing and Buying:**

According to Verhoef, Kannan, and Inman 2015, buyer shifting around purchasing platforms with the aid of computer or mobile phone are all components of a purchaser's omnichannel buying experience. Omnichannel arrangement flawlessly blend and amalgamate a buyer's digital and physical shopping process (Yadav and Pavlou 2014). According to Piotrowicz and Cuthbertson 2014; Pawar and Sarmah, 2015, the basic characteristic of omnichannel buying rests on the clouding of the boundaries of digital and physical buying platforms. Buyers constantly examine products in the offline stores to study and sort out their most suitable item which they then instead of buying in the physical offline outlets go for procuring through a contending online seller. This buyer's tendency and attitude of free running is referred to as showrooming according to Mehra, Kumar, and Raju 2013.

According to Richter 2013, showroomers take the help of mobile devices in around 50% to 60% of their physical store visits to correlate items for probable purchase (Rapp et al. 2015). As per Gallup, 40% Americans have encountered showrooming (Swift 2013), and around 48% of the showroomers went to a physical offline store without any intention of genuine buying (Richter 2013). Sellers with only offline brick and mortar outlet encounters the adversities of showrooming incident as per Kramer, 2014. Added to this, showrooming also narrows down the field of professional selling goals and objectives as per Spaid and Flint 2014. On the contrary, webroomers search and gain product knowledge through any digital platform and thereafter buy the item at the physical outlets. This is a highly prevalent practice among millennials between the age group of 18 years to 35 years as per Marketing Charts 2013.

It is observed that more than above 40% of buyers look for deals and discounts on their mobile phones while examining products in the physical outlets as per Smith, 2015. On the basis of Criteo survey data, at the minimum 10% to 15% of physical outlet selling can be accredited to the webrooming buying phenomenon as reported by Smith, 2015. According to Neslin et al. 2014, in the current field of omnichannel exploration and study, prior scholars established an outline of omnichannel buyer's judgement of the medium to opt and the product to choose for purchase and investigated buyer's omnichannel purchase trip and the stimulators of physical and digital buying platforms with the help of an explanatory investigation (Pawar and Sarmah 2015).

# Multichannel to Omnichannel Retailing:

Buyers purchase and look for the best buying offers according to Rajamma, Paswan & Ganesh, 2007 but currently they are shifting and transforming their pattern, mode, channel andeven their reason to buy (Nelson & Leon 2012). The buyers go through a totally diverse buying system based on whether the buying is performed digitally or in physical channel (Brynjolfsson, Hu & Rahman, 2013). Conventionally, the buying and purchase process used to take place in restricted and specified locations or in the towns and cities. As this was the only option for the buying and selling process for the purchasers, they were bound to interact personally thus building a relationship with the sellers (Kim, Ferrin & Rao, 2008). With the advent and aid of internet, another buying option opened up in front of the shoppers thus allowing them to buy digitally through their computers (Sands et al., 2016). With the outbreak of mobile device systems aided by social media platforms, multichannel buying and purchasing evolved as a shopping expedition whereby buyers have the choice to select their buying pathway that is required to be studied and represented for figuring out (Wolny & Charoensuksai, 2014).

As a consequence, new and recent buying modes evolved like webrooming whereby buyers evaluate items and commodities digitally prior to final verification and physical purchase in the offline outlets (Edwards, 2014) and the opposite method referred as showrooming whereby buyers go to a physical outlets to have a "touch and feel" experience of the product to be ultimately bought digitally through virtual platforms as per Fulgoni, 2014. The phases of the buying system like product knowledge gathering prior to buying and buying around diverse platforms has been referred to as multichannel retailing by Schroder and Zaharia 2008. The enhanced application of buyer accommodating technique in

the light of multichannel retailing upgraded the buying experience and tore environment as per Lazaris et al., 2015. However multichannel lacks in the process of amalgamating various buying platforms and seems unrelated and concentrated mainly on the process and less on the shoppers as per Burke, 2002.

In multichannel although a buyer has access to diverse buying platforms to decide. However, the sellers apply various techniques based on any one buying platform (Lazaris &Vrechopoulos, 2013). As an instance if a buyer gets a coupon during a digital platform purchase he may be unable to claim and replace the same through a physical brick and mortar store. With the development and advancement of technology and mobile devices buyers seek for a flawless buying feel across platforms and the sellers are in the efforts and concentrating to integrate its system in a manner in which it comes out with the avenues to interrelate and interconnect all buying platforms for an individual purchase activity devoid of any limit or border line among diverse platforms. Omnis implies a Latin term meaning "all" or "universal," hence omnichannel refers to "all channels together" (Lazaris &Vrechopoulos, 2013). Multichannel highlights on specific platform while omnichannel focuses on buyer's experience.

Hence, multichannel and omnichannel retailing can be differentiated on the basis of methodology applied and execution tactics used for all platforms. In multichannel buying all platforms are open to the buyers but they are not interrelated. On the other hand, omnichannel retailing provides a consolidated scheme for the buyers. As per observation of Neslin et al., 2006, it is reflected that with the widespread establishment of omnichannel retailing, buyers taking the help of one platform for acquiring product knowledge finally buys through another preferable platform and this buyer attitude is referred as 'research shopping' as per Zhu, Wu and Wang, , 2015.

## Showrooming and Webrooming Buying Phenomenon:

As already stated previously, it is evident that situations in which buyers take the help of physical offline outlets for physical examination of products and thereafter visit an online store for the final buying and a superior price, the showrooming phenomenon takes place. While during multichannel retailing process explorative buying captured certain amount of concentration as per Gensler et al., 2017, in the omnichannel retailing process, immediate showrooming was considered to be a significant topic as per Verhoef et al., 2015). As per UPS, 2016, around 60% buyers now regularly seek product knowledge in brick and mortar stores and consecutively explore in their mobile phones for gathering extra product knowledge about deals, discounts and alluring prices. Buyers during showrooming go to a brick and mortar outlet to have the "touch and sense" affect of an item but finally accomplish the buying process digitally (Rapp et al., 2015). In reality, atleast one third of buyers are found to undergo showrooming for completing their buying task as per Fulgoni, 2014. Product and price lucidity imparted with the aid of mobile systems creates an enormous challenge on the offline retailers regarding defeating or harmonizing the product price in the digital platforms to avoid unwanted consequences of buyers leaving physical outlets without any purchase (Nelson & Leon, 2012). On enquiry regarding reasons for showrooming, three fourth of the respondents reported lower price in digital medium as the influencing factor. According to Zimmerman, 2012, due to the probability of purchase from a rival retailer's digital platform, showrooming attitude of buyers is subject to denouncements.

I Vend Report, 2018, indicated that 91.4% of buyers webroom and 83.3% of buyers showroom across the world. Escalating mobile gadget ownerships play noteworthy role in showrooming intensification as buyers gather product information in their mobile devices while they look at products in a physical store (Kim & Park, 2019;Rapp et al., 2015) to grab the best deal and discount. Regardless of escalated utilization of mobile phone for showrooming studies on mobile showrooming are comparatively less. Sahu et al., 2021, remarked that limited studies with TAM, TPB or UTAUT theories were conducted with no studies on mobile showrooming with the UTAUT model.

A detailed framework of stimulus–organism–response (S-O-R) model was tested by Arora, Ranjan and Sahney, 2020 due to its established effectiveness for interpreting a buyer's interface with the digital and

physical buying atmosphere (Lucia-Palacios et al., 2016; Zhu et al., 2019), together constituting a vital aspect of showrooming cycle (Arora and Sahney, 2018).

According to Mehrabian and Russell, 1974, S-O-R framework was successfully applied by earlier scholars for perceiving consumer behaviour (Peng and Kim, 2014; Luqman et al., 2017). The utility of S-O-R framework in the study of showrooming has been found to be valid on certain grounds. Primarily, the framework was resourcefully used to study buyer inter relations in both the physical (Lucia-Palacios et al., 2016) and digital buying atmosphere (Zhu et al., 2019),which together constitute a vital aspect of showrooming phenomemnon. Secondly S-O-R provides a theoretical outlook on the stimulus aspect of showrooming taking place in both the physical and digital platforms trough perceived showrooming value. Thirdly, the S-O-R concept creates avenues for including the task of analytical and emotional situation in the shape of attitude and desire, which are anticipated to be far superior for understanding the showrooming phenomenon.

In their study by Arora and Sahaney, 2018, a unified framework incorporating Theory of Planned Behavior (Ajzen, 1991) and Technology Acceptance Model (Davis, 1989) was projected. In view of earlier TAM-TPB combined researches it is anticipated that the projected framework will be an enhanced interpreter of the reasons behind showrooming (Venkatesh et al., 2003; Chen et al., 2007; Teo, 2012). In one way TAM creates the ground for including the function of technology and taking into account the digital buying behaviour of showroomers together with determining the all round applicability of showrooming. Alternately, TPB provides the foundation for interpreting buyer's selection of physical medium for product examination accompanied by a digital medium for buying.

According to Edwards, 2014, Webrooming is a system of buying whereby a buyer prior to physical purchase of products in an offline store analyse and examine products in the digital platform. Buyers resort to webrooming basically for ease and expediency. It is also a preferred option for buyers intending to skip shipping costs associated with digital buying (Worldpay, 2015). 88% of shoppers acroos the globe seek digital product information in any online platform prior to physical buying in offline stores as per Ingenico, 2017. One of the prime reason which is anticipated to be the cause for physical buying in brick and mortar store after gathering unline product knowledge is the fact of bringing down the feel of unpredictability (Liang and Huang, 1998; Flavian et al., 2016).

The favourable association between information seeking and reduction of risks was asserted by Flavian et al., 2016. Digital product knowledge gathered by buyers aids them in developing their faith and belief on the selection and physical purchases as per Flavian et al., 2016. The fact that online reviews in digital platforms assist a buyer in making knowledgeable buying judgement was firmly advocated by Flavian et al., 2016. Another aspect of lessening unpredictability in buying through webrooming is that physical store visits provide buyers with a 'touch and feel' experience of the actual product prior to purchase. Touching and physical stores to provide the touch sensation experience of products to the buyers make s them refrain from digital buying (Grewal et al., 2004).

Another vital aspect associated with buying is trust. Trust as defined by Mayer et al. (1995) refers to "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party". This weakness is further amplified in case of digital transactions (Tan and Sutherland, 2004). As per the definition, more the perceived uncertainty lesser will be the trust level on digital platforms (Hong and Cha, 2009). According to McKnight et al. (2004) dearth of trust discourages buyer to go for digital buying.

For transforming calculated showroomers to purchasers it is essential to improvise the physical buying utilities and advantages. According to Schneider and Zielke, 2020, since buyers showroom basically due to lower prices, offers and other benefits, therefore the brick and mortar outlets should also think about

price – matching strategies along with bundled pricing to reduce buyer's tendencies of relating physical buying with digital buying systems. Various kind of on spot offers can also be planned for the buyers visiting the physical outlets. A relative merit of physical store as not found in case of digital platform is sales force team (Kacen *et al.*, 2013). As pointed out by earlier scholars it is evident that buyers are sometimes puzzled by excessive product details in the digital platforms (Alba *et al.*, 1997), which stimulate them to obtain all product explanations physically from the sales team present offline.

Hence it is evident that both showrooming and webrooming shopping phenomenon are with their relative pros and cons creating different opportunities and uncertainities for both the buying and selling community. Therefore in the interest of both the buyers and sellers, it has become highly essential a thorough understanding of the intricacies of both the showrooming and webrooming phenomenon affecting the consumer behaviour so that both the selling and buying community can reap maximum benefits and facilities in the buying – selling process. The sellers are trying every possible options and avenues to attract buyers with lucrative and customized offers (Lemon and Verhoef 2016). There is a lack of studies analysing the stimulating elements driving buyers towards showrooming and webrooming phenomenon.

## Theoretical models

The omnichannel buyer behaviour has been interpreted with the aid of several models and framework. Few of the significant models that are repeatedly applied and broadened in the existing literature review is outlined below.

# Table No. -1

AUTHOR	TITLE	RELATIONSHIPS EXAMINED	SUMMARY OF FINDINGS	STUDY LIMITATIO NS
Chimbora zo et al.	Understandi ng mobile showroomin g based on a technology acceptance and use model	This study aims to interpret buyer's showrooming intention with the help of technology acceptance and use model founded on UTAUT2 with purchase involvement and value consciousness and as showrooming stimulators and mobile dependency as a moderating variable	The findings of the research comes out with proposals that can be adopted by multichannel retailers for combating the showrooming phenomenon.	In this study just two aspects of mobile showrooming was taken account comprising only fashion and electronics product which can also be applied to other product categories since all products may not be identically accessed online.

Arora et al.	Understandi ng consumers' showroomin g behaviour: a stimulus– organism– response (S- O-R) perspective	This study attempts to authenticate factors influencing deliberate and planned showrooming behaviour inter linked with product related factors like time pressure and showrooming self-efficacy.	The inferences of this study revealed the factors leading to intentional and situational showrooming conduct indicating that buyers also showroom due to situational obligations and also to certain extent due to any past showrooming exposure.	There is a need for a quantitative authentication of the qualitative study outcomes to come out with more reliable and deeper insights.
Arora and Sahaney	Antecedents to consumers' showroomin g behaviour: an integrated TAM-TPB framework	This study with the help of an integrated TAM-TPB framework interprets the impact of relative offline search utility and online buying utility on buyer's attitude leading to actual showrooming conduct	The study indicated need for touch criteria along with in store sales personnel support as the major showrooming causes stimulating buyers to make a prior visit to an offline store prior to buying online	The study since limited to consumer electronics product can also be extended to other product categories with an emphasis on a relative study combining showrooming and eebrooming for a deeper interpretation of multichannel retailing.
Arora S., Sahney S.	Webroomin g behaviour: a conceptual framework	With the aid of an integrated TAM - TPB model the study tries to perceive webrooming conduct through factors like search attitude towards online channels, purchase attitude towards offline channels, perceived ease of online search and perceived usefulness of webrooming behaviour mediated by trust and moderated by product type	This study tried to identify the mediating impact of trust and moderating impact of product variety to be the cause behind buyer's visit to an offline store prior to online purchase leading to a better perception of webrooming phenomenon.	To assess the justifiability of the TPB- TAM Model empirical authentication of the same is needed.
Shankar A., Gupta	How does convenience	The study founded on S-O-R framework analyses the impact of offling search	This study tried to find out the impact of	There is a need for a relative study
1 <b>11.</b> , 11.00 all	mpaer	impact of offinite search		relative study

A.K., Behl A.	showroomin g intention? Omnichanne l retail strategies to manage global retail apocalypse	convenience factors and online purchase convenience factors in stimulating buyer's showrooming attit	showrooming motive in omnichannel retailing phenomenon along with coming up with a moderated-mediation framework for analysing showrooming.	of buyers in the developed along with developing markets. Further, demographic variables also needed to be taken into account.
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# Technology Acceptance Model (TAM)

The primary objective behind the TAM model was anticipation of information systems usage. It mainly interprets computer usage behaviour spotlighting on the variables perceived ease of use and perceived usefulness which ultimately anticipates user behaviour (Davis 1985). The model is widely applied by scholars in evaluating buyer motive of new technology acceptance.

# Unified Theory on Acceptance and Use of Technology 2 (UTAUT2)

UTAUT2 Venkatesh et al., 2012, a modification of the actual UTAUT model Venkatesh et al., 2003, which binds 7 variables as foretellers of technology acceptance and use which are effort expectancy, social influence, facilitating conditions, hedonic motivation, price/value, habit and performance expectancy. The UTAUT model advocated by Venkatesh et al. (2003), incorporated performance expectancy as a variable that captures the utility of technology to acquire the desired outcomes of the task in which it is applied. As proposed by Venkatesh et al. (2003), incorporated performance expectancy as a variable which apprehended the utility of technology for attaining the objective of an activity.

# Integrated TRA (Theory of Reasoned Action) and TAM Technology Acceptance Model

(TRA) proposed an individual's attitude and subjective norms to be influencers of his buying intention (Fishbein & Ajzen, 1975). Ajzen and Fishbein (1980) as the supporters of this model, advocated buyer behavioral intention as drivers of consumer behaviour. This theory tries to evaluate the attitude – behaviour inconsistency.

On the contrary, TAM (Technology Acceptance Model) by Davis, 1989 was applied for understanding a user's motive towards acceptance of a new technology

# Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (Ajzen, 1991) is a broadened version of the Theory of Reasoned Action (Ajzen and Fishbein, 1980), including the supplementary function of perceived behavioral control (PBC) for analysing motive behind a conduct.

# Stimulus-organism-response (S-O-R) model:

The S-O-R framework (Mehrabian and Russell, 1974) was productively applied by earlier scholars in interpreting consumer behaviour. (Peng and Kim, 2014; Luqman et al., 2017). The S-O-R framework presupposes that a stimuli (S) in the surrounding brings about shifts in an individual's mentality or psychology (O) that finally generates an observable reflex. as an acceptance or withdrawl (Mehrabian and Russell, 1974).

## Methodology

The methodology applied in the study can be segmented into three levels. In the first level, research papers on the broad area of showrooming, webrooming and omnichannel retailing was searched and identified for analysis. Academic peer – reviewed journal articles were explored with the help of Scopus database. Showrooming, webrooming and omnichannel retailing, showrooming and multichannel retailing, showrooming and cross channel retailing, webrooming and omnichannel retailing, webrooming and multichannel retailing, webrooming and multichannel retailing, webrooming and multichannel retailing. The primary search yielded 166 research articles with the specified keywords.

In the second level PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was applied to sort out the most suitable and appropriate research articles aligned to the actual study context. The articles were thoroughly examined and analysed for pertinence through a finer search on the basis of keywords, document type, subject area, source type and language.

Search for Relevant Papers in Scopus with the Keywords: Showrooming / webrooming / Showrooming and omnichannel retailing / webrooming and omnichannel retailing / showrooming and cross channel retailing / webrooming and cross channel retailing / showrooming and multichannel retailing / webrooming and multichannel retailing

# **PRISMA Framework**





Around 121 research articles were identified to be pertinent to the context of showrooming, webrooming and omnichannel retailing and were taken into account for further study. Now applying the PRISMA framework principle, first of all duplicate research articles were removed. After the duplicate removal the total number of articles turned out to be 87. Thereafter, research articles which were not available for full access were also excluded.

Now in the third level for a focused and domain specific evaluation of the articles, case studies, experimental and qualitative studies were discarded from the list and the final accepted figure of research articles appropriate for the analysis was now 35. These 35 articles comprised the most pertinent and relevant articles for carrying out the literature review.

# Analysis and results

Quite a considerable number of research in the domain have been performed in India although the number may be not that noteworthy with respect to efforts taken up by developed countries. Study of the relevant literatures reveal that majority of the studies are published in the JRCS (Journal of Retailing and Consumer Services), Sustainability (Switzerland), JABES (Journal of Asian Business and Economic Studies), IJRDM (International Journal of Retail and Distribution Management)

APJML (Asia Pacific Journal of Marketing and Logistics), JAMR (Journal of Advances in Management Research), JBR (Journal of Business Research), JIC (Journal of Internet Commerce) and IRRDCR (International Review of Retail, Distribution and Consumer Research).

It appears from the study of literatures that majority of the studies are concentrated in the countries of India, USA and Spain.

Significant level of interest in the domain is also exhibited by Asian nations like – Vietnam, Malaysia and Korea. A considerable number of scholars focused on consumers of physical outlets or online websites.

# Table No.- 2

TABLE - Review of SWebrooming and Omni			
Researcher(s) (Year)	Count ry	Sample Element / Sample Size	Statistical Tools Used (Comments)
Frasquet M., Miquel-Romero M J. (2021)	Spain	showroomers (659)	FsQCA
Chimborazoet al. (2021)	Spain	showroomers (659)	Partial Least Squares (PLS)
Truong T.H.H. (2020)	Vietna m	consumers (265)	PLS method implemented in Smart PLS 3.0
Rajkumar N., Vishwakarma P., Gangwani K.K. (2020)	India	showrooming customers (318)	SPPS and AMOS
Jo W., Kim J., Choi J. (2020)	France	French shoppers (400)	confirmatory factor analysis and logistic regression
Maggioni I., Sands S.J., Ferraro C.R., Pallant J.I., Pallant J.L., Shedd L., Tojib D. (2020)	US	US consumers (400)	Segmentation analysis conducted via latent class analysis (LCA)
Arora et al. (2020)	India	respondents (346)	PLS-SEM
Schneider P.J., Zielke S. (2020)	Germa ny	individuals (564)	confirmatory factor analysis with AMOS 25
Flavián C., Gurrea R., Orús C. (2020)	Spain	customers (210)	CFA using SEM and EQS 6.3 software
Rathee R., Rajain P. (2019)	India	respondents (203)	regression analysis through SPSS

			version 23
Fassnacht M., Beatty S.E., Szajna M. (2019)	US	respondents (299)	MANOVA was conducted
Kim B., Park M.J. (2019)	Korea	respondents (781)	SPSS and AMOS
Fernández N.V., Pérez M.J.S., Vázquez-Casielles R. (2018)	Spain	Customers (4067)	Multiple Linear Regression Analysis using STATA 12 software
Burns D.J., Gupta P.B., Bihn H.C., Hutchins J. (2018)	US	college students (405)	Structural equation modelling and AMOS
Arora S., Sahney S. (2018)	India	respondents (308)	Confirmatory Factor Analysis using PLS
Daunt K.L., Harris L.C. (2017)	UK	consumers (275)	Structural equation modelling
Gensler et al.	US	consumers (556)	
Rejón-Guardia F. and Luna- Nevarez C. (2017)	US	retail consumers (176)	structural equation modelling using technique based on PLS
Arora S., Sahney S. (2017)	India		
Huh J., Kim HY. (2022)	USA	participants (358)	Confirmatory factor analysis (CFA) was conducted using Amos 25.0
Shankar A., Yadav R., Gupta M., Jebarajakirthy C. (2021)	India	online indian consumers (429)	SEM in AMOS version 24. PROCESS Macro
Jain S., Shankar A. (2021)	India	respondents (402)	Confirmatory factor analysis (CFA) and PROCESS Macro
Khoshtaria T., Matin A., Mercan M., Datuashvili D. (2021)	Georgi a	respondents (417)	bivariate linear regression carried out
Aw E.CX., Kamal Basha N., Ng S.I., Ho J.A. (2021)	Malays ia	responses (280)	PLS-SEM was employed
Shankar A., Jain S. (2021)	India	374 luxury consumers in India	SEM using AMOS 26
Manss R., Kurze K., Bornschein R. (2019)	Germa ny	1081 retail customers	CFA was conducted

Aw E.CX. (2020)	Malays ia	students (210)	CFA was conducted
Rathee R., Rajain P. (2019)	India	responses (203)	SPSS version 23.
Aw E.CX. (2019)	Malays ia	responses (300)	Partial Least Square Structural Equation Modelling.
Arora S., Sahney S. (2018)	India	responses (359)	PLS-SEM
Arora S., Sahney S. (2018)	India	responses (374)	PLS-SEM
Johnson O., Ramirez S.A. (2020)	USA	480 Millennial consumers	SPSS Version 24.0
Shankar A., Gupta M., Tiwari A.K., Behl A. (2021)	India	303 indian consumers	Structural Equation Modelling and PROCESS Macro
Li Y., Liu H., Lim E.T.K., Goh J.M., Yang F., Lee M.K.O. (2017)	China	responses (320)	SPSS 19.0



# Figure 1 – Publication of Research Papers in different years

It is evident from Figure 1that significant number of research in the domain of omnichannel retailing was conducted in the past few years. Structural Equation Modelling seemed to be the most preferred statistical tool for analysis that was used. A PLS-SEM combination method was also used in a considerable number of studies.

Apart from that some researchers also employed fuzzy-set Qualitative Comparative Analysis (fsQCA). MANOVA and

confirmatory factor analysis and logistic regression were also the other used techniques. The variables are represented in Table - 3A and 3B. Table - 3A represents variables having frequency more than once in various studies and 3 B represents variables of single frequency. Some of the most predominant

variables are – Need for touch, online risk perception, subjective norms, immediate possession, need for interaction, monetary savings, internet savviness, past showrooming experience.

SI. No.	FACTOR	NUMBER OF STUDIES
1	Social influence	2
2	Perceived value of showrooming	3
3	Perceived risk	2
4	Monetary savings	3
5	Search costs online	2
6	Showrooming intention	3
7	Price consciousness	3
8	Internet shopping savviness	2
9	In store shopping savviness	2
10	Time pressure	3
11	Past showrooming experience	2
12	Attitude	2
13	Retailer loyalty	2
14	Right purchase	2
15	Need for touch	7
16	Online buying preferences	2
17	Switching costs	2
18	Need for interaction	3
19	Socialization	4
20	Sales staff assistance	2
21	Better product assortment	3
22	Product involvement	4
23	Shopping enjoyment	2
24	Quality dispersion	2
25	Price dispersion	3

26	Market Mavenism	2
27	Price	2
28	Perceived search benefits online	2
29	Perceived purchase benefits offline	2
30	Perceived ease of online search	2
31	Perceived usefulness of webrooming	2
32	Attitude towards webrooming	3
33	Online risk perception	5
34	Subjective norms	5
35	Intention to webrooming	2
36	Perceived behavioural control	3
37	lower search cost	2
38	immediate possession	3
39	touch and feel experience	2
40	sales - staff assistance	3
41	webrooming intention	6
42	Perceived ease of searching online	2
43	showrooming	6
44	webrooming	5
45	Perceived usefulness of online reviews	2
46	Product risk /Product Risk	2
47	Financial risk / Financial Risk	2
48	after sales service /After sales service (offline)	2
49	E – distrust	2

Table No. - 3 A

 TABLE - VARIABLES AND NUMBER OF STUDIES (Variables studied more than once)

# Table No. - 3 B

TABLE         VARIABLES IDENTIFIED ONLY ONCE IN THE STUDIES				
Basket flexibility	Situational factors	Innovative purchase	Shipping costs	
Information seeking	Shopping experience	Alternative attractiveness	Shipping rush	
Brand consciousness	Shopping motivation	Inconvenience and dissatisfaction	Online payment	
Perceived showrooming value	Time – effort savings	Fashion	Financing opportunities	
Desire towards showrooming	Webrooming and showrooming	Poduct price	Return policy	
Perceived product type /	Interaction quality	Product characteristics	Payment security	
Showrooming self efficacy	Future buying intention	Wom customer	Brand loyalty	
Desire for social contact	In store buying intention	Comparative product	Price conscious shoppers	
Motivation to conform	Instant gratification	Store availability	Customer service	
Bad conscience during showrooming	Innovative consumption	Store price	Product quality	
Propensity towards showrooming	Online co destruction and co creation	Waiting costs for delivery	Perceived control	
Ethicality of showrooming	Technological speed of change	Value of in store information	Attitude towards online purchasing	
Deals and discounts	Perceived acquisition product value	Quality of in store sales person	Intention to purchase on the stores website	
Online service quality	Product availability	Availability of in – store sales person	Online channel Search attitude	
Costs savings	Trust in in store sales employees	Internet experience	Offline channel purchase attitude	
Perceived ease of purchasing online	Trust in online stores	Product performance risk	Lack of trust	
Perceived usefulness of showrooming	Perceived value of in – store shopping	Product category	Product type and category	
Sub optimal choice	Perceived value of	Reasons for purchasing	Actual webrooming	

regret	online shopping	online	behaviour
High price regret	Gain in quality	Reasons against purchasing online	interest- and deprivation-curiosity
In store value taking	Gain in price	Compatibility with purchasing at retail store	consumer innovativeness
actual showrooming experience	Online search convenience	assurance of delivery	Intention towards webrooming behaviour
actual webrooming experience	Perceived helpfulness of in-store salespeople	price attractiveness	Convenience
Online consumer engagement	Delivery risk	Efficiency shopping	Online Shopping Intention
access to online reviews	Time/Effort saving	Bargain hunting	attentiveness convenience
perceived values	Perceived usefulness of online search	Variety seeking	evaluation convenience

# Table No. - 4

TABLE - Significant Studies with Theories and Models Applied						
AUTHOR	STUDY TITLE	THEORIES & MODELS APPLIED				
Chimborazo- Azogue LE., Frasquet M., Molla-Descals A., Miquel-Romero MJ. (2021)	Understanding mobile showrooming based on a technology acceptance and use model	Theory of Technology Acceptance and Use Model Based on UTAUT2				
Arora S., Parida R.R., Sahney S. (2020)	Understanding consumers' showrooming behaviour: a stimulus-organism-response (S-O-R) perspective	Stimulus–Organism–Response Framework				
Arora S., Sahney S. (2018)	Antecedents to consumers' showrooming behaviour: an integrated TAM-TPB framework	Theory of Planned Behaviour (TPB)				
Arora S., Sahney S. (2017)	Webrooming behaviour: a conceptual framework	TPB and TAM model				
Jain S., Shankar A. (2021)	Exploring Gen Y Luxury Consumers' Webrooming Behavior: An Integrated Approach	integrated Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA) framework.				

Arora S., Sahney S. (2018)	Examining consumers' webrooming behavior: an integrated approach	Integrated Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) framework
Shankar A., Gupta M., Tiwari A.K., Behl A. (2021)	How does convenience impact showrooming intention? Omnichannel retail strategies to manage global retail apocalypse	Stimulus–Organism–Response Framework



Figure 2 – Number of Papers contributed by different Journals



Figure 3– Country wise Paper contributed



Figure 4 – Paperwise citation

### Table No.- 5

TABLE - Research Plan for Omnichannel Retailing					
Comprehensive Themes	Research Questions				
Omnichannel & Retailing Strategy	What would be the impact of demographic factors on showrooming behaviour of customers?				
	Can there be a comparative analysis of showrooming and webrooming behaviour through a unified model?				
	What would be the impact of consumer involvement in determining the level of showrooming with respect to high involvement and low involvement product?				
	What would be the impact of in store mobile usage on showrooming?				
Determinants of Showrooming and Webrooming	How can the findings related to situational showroomers be quantitatively validated?				
	What would be the impact of product category on showrooming?				
	What would be the level of dependence on smartphone in showrooming?				
Technology and Omnichannel Retailing	What is the impact of smartphone usage on webrooming?				
	Can a method be worked out to test the suitability of TAM-TPB model empirically?				
Understanding and Omnichannel Retailing	Can the impact of mobile showrooming on other product categories apart from apparels and electronics be studied.				
	What would be the impact of cultural variables on omnichannel retailing?				
	Why price dispersion have an impact on showrooming?				
Omnichannel Retailing and Customer Experience	What would be the impact of basket flexibility on product other than apparels?				

# Discussion

Although the figure is not so overwhelming still quite a significant number of studies has been carried out on omnichannel retailing based on showrooming and webrooming phenomenon. Findings and interpretations of the studies have been published in several renowned journals of diverse fields. Table - 6 in the study represents few of the important antecedents along with mediating, moderating and outcome variables as observed during the course of study. The study represents significant implications that may be of great help in sorting out unfavourable impacts of the showrooming and webrooming sequence and used for initiating strategies to handle the unwanted situation.

### Table – 6

TABLE - Prime Variables and Man	agerial Implications
Prime Variables	Managerial Implications
Antecedents	
Performance expectancy, social influence, hedonic motivation,	
perceived showrooming value, past showrooming experience,	Mobile marketing actions can be promoted by retailers
deals and discounts, online service quality, cost savings, touch and feel, perceived usefulness of webrooming, perceived ease	Situational showroomers can be handled by providing wider product assortment
of online search	
of online search	
Outcomes	Value pricing may be offered by reatilers to combat showrooming
Showrooming intention, Actual showrooming behaviour, actual webrooming behaviour	
Moderators / Mediators	Three dimensional videos can be provided to customers to combat webrooming
Mobile dependency, Attitude towards showrooming,	
desire towards showrooming, intention towards showrooming	

It has thus become an obligation for the present day Managers to pay attention into the matter and create smooth pathways for the buyers to avail them to examine each and every product dimension for a

satisfied purchase. In-depth understanding of buyer outlook should be possessed by a manager. In the same way for more efficient handling of webroomers deep understanding level of a shopper's exploration conduct in both individual and multiple platforms and try to upgrade the recognized utilities of physical buying (Sahaney and Arora, 2018; Raatikainen and Goncalves, 2016). As noticed by Bell, Gallino, and Moreno, 2018, showrooming conduct is enhanced through introduction of new individual brand outlet (Rapp et al. 2015; Brynjolfsson et al., 2013), leading to a hike in online buying incidences.

Since it is a tough job to work out a persistent action plan for these progressive phenomena the brickand mortar retailers should try to come up with initiatives to upgrade the post sales service quality and lessen the associated risks and uncertainties. Insignificant number of Indian scholars like Sahaney and Arora (2018) and Basak et al. (2017) have investigated this field of marketing. Even though some studies in this domain have been carried out in India still the overall number is considerably low. It may also be realized that noteworthy studies taking place in developed countries cannot be also considered to be equally pertinent in a developing country. Hence this calls for a higher attention of all scholars and researchers to come up with more such studies in the domain.

# Limitations :

As like as other studies this study also suffer from certain limitations. Article search was only done on the basis of keywords and hence certain studies might have been missed. Besides, studies on omnichannel retailing, showrooming and webrooming might have been done in different manner in different countries with varying demographics and thus the results may not be uniformly applicable for all countries. Apart from that the impact of various moderating and mediating variables were interpreted by only a few studies. Varying type of studies on omnichannel retailing made it difficult to come out with a single uniform model adaptable across different territories and situations.

## Future research directions :

Several areas of future research are open for undertaking by researchers. Scholars need to emphasize more on the aspect of buyer value creation. Besides strategy formulation is another important area where the researchers can work on. In future researchers may also look for a comparative study on showrooming and webrooming through a combined model. Coming up with strategies for enhanced management of buyer's showrooming and webrooming conduct will possibly attract higher attention and focus in the days to come.

## **Conclusion :**

In this study existing showrooming and webrooming literature were evaluated with emphasis on omnichannel retailing. As a literature review study its main offering lies in a combined representation of study findings in a brief format. The buyer purchase behaviour is observed to be impacted by an inter connection and association among different variables that create strong study grounds for thorough study of the showrooming and webrooming sequence for a better understanding of the nature of determinants in the process.

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# The Co-integrating Relationship between Oil Prices, Exchange Rate and GDP using VECM Approach

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### ABSTRACT

India's oil bill accounts for more than 80% of total import bill. Historically, oil prices experienced huge fluctuations ranging from more than \$140 per barrel during subprime crisis to negative value during the recent COVID-19 pandemic. Such a huge volatility in oil prices which is one of the major inputs for industrial use and personal consumption is a cause of concern. It has enormous effects not only on the performance of the economy in terms of government's fiscal deficit and central bank's balance of payments but also on the livelihoods of the ordinary people. Huge dollar payments towards the import bill result in depreciation of Indian rupee. Oil price rise combined with currency depreciation is likely to cause unwanted inflation in the economy. Further, unexpected movements in exchange rate are likely to result in unacceptable levels of deficit in balance of payments. The combined effects of all these factors is negative on GDP growth. Rational economic policies are essential to ensure a trade-off between GDP growth and acceptable inflation level. Hence, there is a need for exercising due diligence to bring balance among GDP growth, inflation and exchange rate.

Therefore, the study examines the cause effect relationship between Brent crude oil prices, dollar rupee exchange rate and India's GDP growth over the period 1996-97 Q1 to 2019-20 Q4 using Vector Error Correction Model (VECM). The unit root tests indicate that all the three variables are non-stationary at level and stationary in their logarithmic first differences indicating that they are integrated of order (1). The results of VECM reveal that oil prices move towards exchange rate which in turn moves towards GDP to reach equilibrium during the period 1997Q1-2007Q2. Interestingly during the period 2009Q4-2020Q4, it is observed that oil price changes cause exchange rate changes and exchange rate changes in turn cause GDP growth rates. The study also checks the robustness by subjecting the results of VECM to auto correlation test and normality test. We find that that previous quarter oil prices have negative impact on GDP growth rate and positive impact on current quarter oil prices and exchange rate. It implies that increase in oil prices lead to increase in inflation and fall in GDP growth and vice versa. Increase (decrease) in oil prices also causes increase (decrease) in demand for dollar which in turn results in increase (decrease) in exchange rate. Therefore, the effects of oil price shocks and exchange rate fluctuations on the performance of the economy cannot be undermined. Hence, the study suggests that it is the need of the hour for India to move towards renewable resources, considering the negative impact of non-renewable sources on the economy, depleting reserves and the resultant pollution. The government may consider avoiding imposing additional taxes to avoid rise in oil prices and the resultant effects on country's economic growth. The findings help policymakersformulate judicious economic policies aiming at increasing GDP growth and reducing volatility in oil price changes and exchange rate movements.

Keywords: Exchange Rate, Oil Prices, Gross Domestic Product, Vector Error Correction Model, Stationarity, Co-integration

## I. INTRODUCTION

Impact of oil price shocks on macroeconomic performance has been widely studied since emergence of 1970's energy crisis. Empirical studies in this regard revealed a significant negative relationship between oil prices and economic performance. The evidence is different for oil importing and oil producing countries (Bouzid, 2012). Oil price shocks are more prominent during global business cycles in organisation of petroleum exporting countries (OPEC) (Fiti et al 2016). Oil price changes and economic growth are interactive in OPEC, Russia, China and India, but only unidirectional from oil to

GDP in G-7 countries (Ghalayini, 2011). Strength of relationship between oil prices and exchange rates varies with time and structural changes (Uddin et al. 2013).

It has been a cause of concern for India for decades, as its oil imports contribute to more than 80% of total import bill. Impact of oil price fluctuations which rose to more than \$140 per barrel during subprime crisis reported negative value during the recent COVID-19 pandemic cannot be undermined. There has been an interlinkage between oil prices, exchange rates and GDP growth rate in the era of globalisation. They have considerable effect on the performance of different entities ranging from central banks and governments of the country to ordinary people. Having reviewed the different experiences of different countries with regard to the impact of oil price changes and exchange rate movements on economic growth, the present study aims at examining the relationship between oil prices, exchange rates and GDP growth rate in India using Vector Error Correction Model (VECM).

# **II. LITERATURE REVIEW**

Oil price shocks during global business cycle and financial turmoil affect the relationship between oil prices and four major countries of OPEC i.e. United Arab Emirates, Kuwait, Saudi Arabia, and Venezuela (Ftiti et al, 2016). It takes longer time to reach initial equilibrium level in major oil exporting countries i.e. Russia, Brazil and Mexico than in Norway and Canada (Volkov & Yuhn, 2016). For a large economy like the US, transmission effect of oil prices on growth may not be important, but it plays vital role on small open economies (Abeysinghe, 2001). Even the net oil exporting countries like Indonesia and Malaysia could not protect from the negative effects of increased oil prices. Oil price changes and economic growth in OPEC, Russia, China and India interact, but there is only unidirectional causality from oil price to gross domestic product for G-7 group (Ghalayini, 2011, Alkahteeb, 2019). There is a strong positive relationship between positive oil price changes and industrial output growth in Iranian economy (Farzanegan & Markwardt, 2009). Nigeria government needs to diversify its earnings in agriculture, industrialization and investment in order to reduce huge dependence on crude oil and resultant income fluctuations (Musa, 2019). Negative oil shocks have significant impact on output and the real exchange rate indicating asymmetric effects (Iwavemi & Fowowe, 2011). Foudeh (2017) observed that even though China is the most important trading partner of Saudi Arabia, oil price growth rates do not affect its GDP growth rates, but weaken the positive long run effect on the GDP growth rates when traded with Japan. Long run relationship exists between real GDP growth rate, international oil prices and real exchange rate in Bahrain (Al-Ezzee (2011). The relative share of oil to labor in output and the elasticity of substitution in production are two critical quantities which summarize the long-run effects (Schubert & Turnovsky, 2011).

Crude oil prices have significant impact on Sensex, Nifty 50 and inflation but not on exchange rate and GDP of India (Rahiman & Kodikal, 2019). Basher et al (2012) observed that increase in stock prices of emerging markets leads to increase in oil prices. Russian economy is highly influenced by oil price fluctuations and real exchange rate in the short run and long run (Rautava, 2004). Despite the Russian economy strengthened, the impact of oil prices had not been subdued. The strength of the relationship between oil prices and exchange rates keeps on changing and bank of Japan needs to focus on the importance of oil shocks while designing its exchange rate policy (Uddin et al., 2013).

Pradhan et al (2015) observed long-run economic relationship between economic growth, oil prices, stock market depth, real effective exchange rate, inflation rate and real rate of interest. An increase in oil prices lead to an appreciation of exchange rate which in turn causes an increase in stock market index (Delgado, 2018). The relationship between oil prices and economic growth is not clear (Kurihara, 2015). Soundarapandiyan & Ganesh (2017) emphasize on the need for the use of renewable energy sources like hydro, wind, solar, bio-fuels, nuclear, etc., to address the negative effects of oil price increases and the

resultant impact on India's currency account deficit, exchange rate etc. Contrary to this, Yazdan et al. (2012) found that oil prices do not Granger cause economic growth.

## **III. DATA AND METHODOLOGY**

The study mainly examines the cause effect relationship between oil prices, exchange rates and India's GDP. Quarterly data for brent oil prices, dollar rupee exchange and GDP at factor cost are considered from 1996-97 Q1 to 2019-20 Q4. However, the subprime crisis period from 2006-07 Q3 to 2008-09 Q3 has not been considered due to two reasons. Firstly, frequency of data is only quarterly, number of observations is too less during the crisis period to make separate estimates about the effects of oil and ER on GDP. Secondly, inclusion of the crisis period in the overall study period may lead to biased results due to possible outliers in the data.

The study initially applies Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests to examine the stationarity of the time series of GDP (LGDP), Oil (LOil), exchange rate (LER) and thereby to determine the order of integration.

Subsequently, co-integrating relationship is tested using Johansen test of co-integration (1991) as per Akaike Information Criterion (AIC).

(1)

Two test statistics under Johansen's test of cointegration are as follows:

$$\lambda \operatorname{trace}(\mathbf{r}) = -T \sum_{i=r+1}^{k} \ln(1 - \lambda_i)$$

Maximum Eigen value test:

 $\lambda \max(r, r+1) = -Tln(1 - \lambda_{i+1})$ (2)

 $\lambda$  trace is a joint test with the null that the number of cointegrating vectors is less than or equal to *r* against alternative hypothesis that there are more than *r*.  $\lambda$  max conducts separate tests on each Eigen value, and has as its null hypothesis that the number of cointegrating vectors is *r* against an alternative of *r*+1.

The study further applies Vector Error Correction Model (VECM) to assess the long run association between variables. Co-integration term or error correction term is the deviation from long-run equilibrium which is corrected gradually through a series of partial short-term dynamics. Coefficients of error correction terms service two purposes i) the speed of adjustment i.e. the speed with which deviations from the long-run relationships are corrected. ii) direction of causality.

Vector error correction model consisting of long run and short run causality is formed in both directions as follows:

$$\Delta(\text{GDP})_{t} = \alpha_{0} + \alpha_{1}\varepsilon_{t-1} + \sum_{i=1}^{p} \delta_{\text{GDP},t-i}\Delta(\text{GDP})_{t-i} + \sum_{i=1}^{p} \gamma_{\text{GDP},t-i}\Delta(\text{Oil})_{t-i} + \sum_{i=1}^{p} \theta_{\text{GDP},t-i}\Delta(\text{ER})_{t-i} + \epsilon_{\text{GDP},t}$$
(3)

The Indian Economic Journal

$$\Delta(\text{Oil})_{t} = \alpha_{0} + \alpha_{1}\varepsilon_{t-1} + \sum_{i=1}^{p} \delta_{\text{Oil},t-i}\Delta(\text{GDP})_{t-i} + \sum_{i=1}^{p} \gamma_{\text{Oil},t-i}\Delta(\text{Oil})_{t-i} + \sum_{i=1}^{p} \theta_{\text{Oil},t-i}\Delta(\text{ER})_{t-i} + \epsilon_{\text{Oil},t}$$
(4)

$$\Delta(\text{ER})_{t} = \alpha_{0} + \alpha_{1}\varepsilon_{t-1} + \sum_{i=1}^{p} \delta_{\text{ER},t-i}\Delta(\text{GDP})_{t-i} + \sum_{i=1}^{p} \gamma_{\text{ER},t-i}\Delta(\text{Oil})_{t-i} + \sum_{i=1}^{p} \theta_{\text{ER},t-i}\Delta(\text{ER})_{t-i} + \epsilon_{\text{ER},t}$$
(5)

 $\alpha_0$  is constant term,  $\alpha_1$  is coefficient of error correction term in each of the equations which indicates how the dependent variable adjusts to previous period values of independent variable to achieve long run equilibrium. If at least one coefficient is negative and significant, error correction is said to take place, indicating the causality from one variable to another variable to move towards equilibrium.

 $\Delta$  is first difference operator and p is number of lags for each of the independent variables, as decided by Akaike Information Criterion (AIC).  $\delta_i$ ,  $\gamma_i$  and  $\theta_i$  are coefficients of lagged values of change in LGDP, LOil and LER, which indicate the lagged first differences of the series.  $\epsilon_i$  is error term.

The reliability of the VECM results are checked for serial correlation and normality using Lagrangemultiplier test and Jarque-Bera test respectively to ensure the robustness of the results.

## IV. EMPIRICAL RESULTS AND ANALYSIS

Preliminary analysis (Table 1) reveals that there is a weak negative correlation between GDP and oil prices (-0.17); oil prices and exchange rate (-0.19) and GDP and exchange rate (-0.06) during 1997Q1-2007Q2. During 2009Q4-2020Q4, the relationship between GDP and oil prices turned out to be weak positive (0.05) which is almost close to zero. Negative relationship between oil prices and exchange rate (-0.25) and GDP and exchange rate (-0.23) strengthened during 2009Q4-2020Q4 compared to 1997Q1-2007Q2. It implies changing behaviour of relationship among the variables between pre subprime crisis and post subprime crisis period. Oil and GDP seem to be unrelated with each other after the crisis.

Period	GDP Vs Oil	Oil Vs. ER	GDP Vs. ER
1997Q1-2007Q2	-0.17	-0.19	-0.06
2009Q4-2020Q4	0.05	-0.25	-0.23

# Table 1: Coefficient of Correlation among Variables

As per ADF and PP tests (Table 2), log values of GDP, Oil price and ER are stationary. This is due to the trend and structural changes in GDP, oil prices and exchange rate from time to time. However, first differences of LGDP, LOil and LER are to be stationary. Thus GDP, oil prices and exchange rates are integrated of order (1). Johansen's test of co-integration is also conducted to confirm the presence of co-integrating relationship between the variables.

	At Level				First Differences			
		Augmented Dickey Fuller Test						
	Critical values at 5% level	LGDP	Loil	LER	Critical values at 5% level	LGDP	Loil	LER
1997Q1 -		-1.759 (0.401	0.198 (0.972	-2.757 (0.064		-7.004 (0.000)*	-4.805 (0.000)	-4.252 (0.0005)
2007Q2	-2.955	)	)	)	-2.958	*	**	**
2009Q4		-0.583 (0.875	-1.276 (0.640	-0.429 (0.905		-6.989 (0.000)	-7.029 (0.000)	-6.524 (0.000)
2020Q4	-2.944	)	)	)	-2.944	**	* *	**
				Phillips	S-Perron Test			
1997Q1  2007Q2	-2.955	-1.135 (0.701 )	-0.193 (0.939 )	-2.465 (0.124 )	-2.958	-13.806 (0.000) **	-4.837 (0.000) **	-4.319 (0.000) **
2009Q4 - 2020Q4	-2.944	-0.480 (0.896 )	-1.469 (0.549 )	-0.490 (0.894 )	-2.944	-11.866 (0.000) **	-7.010 (0.000) **	-6.528 (0.000) **

## **Table 2: Results of Stationarity Test**

H<sub>0</sub>: Given series have a unit root i.e. non-stationary

\*\* Significant at 5% level

GDP growth rate, oil and exchange rate are co-integrated with each other indicating long-run relationship among them (Table 3). Even if there is any deviation in the short-run, they move towards equilibrium in the long run.

	Null Hypothesis	Trace Statistic	5% Critical Value	Max Statistic	5% Critical Value
1997Q1- 2007Q2	r = 0	37.168	29.68	23.912	20.97
	r <=1	13.256**	15.41	8.885	14.07
	r <=2	4.37	3.76	4.370	3.76
200004	$\mathbf{r} = 0$	31.607	29.68	23.965	20.97
2009Q4- 2020Q4	r <=1	17.642	15.41	22.272	14.07
	r <=2	5.367	3.76	5.37	3.76

# **Table 3: Johansen Test of Cointegration**

H<sub>0</sub>: No co-integration between the given time series

\*\* Significant at 5% level

Table (4) presents the result of VECM. For the period 1997Q1-2007Q2, significant coefficient of error correction term of -0.16 at 10% level with exchange rate being dependent variable and GDP growth rate as independent variable indicates that exchange rate adjusts at 16% rate towards GDP to reach equilibrium in the economy. It can be inferred that it approximately takes six quarters for exchange rate and GDP to be in equilibrium. The evidence is further subject to robustness checks using Granger causality which confirm the results of VECM. With oil being dependent variable and exchange rate being independent variable, significantly negative coefficient of error correction term (-.508) provides evidence that oil adjusts towards exchange rate at 50.8%. It implies that it approximately takes two quarters to achieve equilibrium between oil prices and exchange rates. Thus, GDP growth rate causes exchange rate changes and exchange rate changes in turn cause oil price changes.

Interestingly, during the period 2009Q4-2020Q4, where GDP is dependent variable and oil price changes as independent variable, GDP growth rate corrects at 6.4% towards oil prices to reach equilibrium. It is also observed that oil prices adjust towards exchange rates at 23.8% indicating that it takes around four quarters to achieve equilibrium. Thus, during 2009Q4-2020Q4 exchange rate changes cause oil price changes and in turn oil price changes cause GDP growth rates.

				GDP and ER Lead	GDP and Oil Lead
			Oil and ER Lead GDP	Oil	ER
		с	0.032 (0.005)	003 (0.968)	009 (0.471)
		e1	0.129 (0.118)	1.668 (0.007)**	160 (0.090)*
		e2	039 (0.117)	508 (0.007)**	.049 (0.091)*
		Lag 1	658 (0.009)**	-2.127 (0.264)	0.355 (0.219)
	GDP	Lag 2	639 (0.007)**	-1.61 (0.363)	.324 (0.228)
	ODI	Lag 3	-0.556 (0.011)**	-1.034 (0.526)	.289 (0.244)
100-01		Lag 4	.393 (0.043)*	917 (0.530)	.208 (0.349)
1997Q1- 2007Q2	Oil	Lag 1	022 (0.360)	.258 (0.147)	.009 (0.751)
		Lag 2	001 ( 0.962)	.194 (0.268)	048 (0.073)
		Lag 3	.010 (0.698)	.367 (0.054)	011(0.711)
		Lag 4	.027 (0.318)	.117 (0.565)	022 (0.479 )
	ER	Lag 1	194 (0.277)	.212 (0.875)	.125 (0.541)
		Lag 2	005( 0.979)	447 (0.730)	.102 (284)
		Lag 3	029 (0.870)	061 (0.964)	.044 (0.829)
		Lag 4	251(0.186)	.881 (0.536)	137 (0.525)
2009Q4-		c	0.027 (0.008)	.001 (0.995)	0.01 (0.703)
2020Q4		el	064 (0.058)*	0.232 (0.566)	.155 (0.075)**

## Table 4: Results of Vector Error Correction Model

	e2	007 (0.337)	238 (0.008)**	.039 (0.048)**
	Lag 1	.216 (0.151)	524 (0.770)	045 (0.907)
GDP	Lag 2	443 (0.002)**	1.471 (0.398)	113 (0.764)
	Lag 3	273(0.069)*	675 (0.706)	.291 (0.451)
	Lag 4	.409 (0.008)**	1.807 (0.327)	299 (0.452)
	Lag 1	.018 (0.189)	.300 (0.071)*	073 (0.041)**
Oil	Lag 2	014 (0.318)	.070 (0.682)	019 (0.608)
	Lag 3	.004 (0.768)	.015(0.920)	019 (0.549)
	Lag 4	007 (0.599)	.283 (0.058)*	058 (0.070)*
	Lag 1	084 (0.179)	.268 (0.720)	.070 (0.664)
ER	Lag 2	134 (0.030)**	.302 (0.682)	.130 (0.413)
	Lag 3	011 (0.861)	1.077 (0.168)	117 (0.489)
	Lag 4	052(0.398)	.991 (0.177)	241 (0.127)

 $H_0$ : There is a long run association between GDP and oil prices, Oil prices and exchange rate and GDP and exchange rate

- \* Significant at 10% level
- \*\* Significant at 5% level

Thus, the study finds that before subprime crisis, GDP growth rates caused exchange rate changes and exchange rate changes caused oil price changes. When the reliability of the VECM results are checked for auto correlation, there is no auto-correlation as evident from insignificant p values of 0.138 for 1997Q1-2007Q2 and 0.112 for 2009Q4-2020Q4. Normality is also observed from the results of Jarque-Bera test of normality (Table 5).

Table 5: Robustness Checks				
Lagrange-multiplier test for auto correlation				
	1997Q1-2007Q2	2009Q4-2020Q4		
Lag 1	13.582 (0.138)	14.309 (0.112)		
(No autocorrelation	at lag order)			
Jarque-Bera test				
GDP	0.031 (0.985)	0.818 (0.664)		
Oil	1.213 (0.545)	0.418 (0.811)		
DR	0.228 (0.892)	1.275 (0.524)		

All	1.472 (0.961)	1.411 (0.923)

 $(H_0: There is a normality)$ 

# V. PRACTICAL IMPLICATIONS AND CONCLUSION

The study examines the relationship between GDP at factor cost, brent oil prices and dollar rupee exchange rate over a period of 1997Q1-2007Q2 and 2009Q4-2020Q4. VECM reveals that exchange rate moves towards GDP to reach equilibrium and oil prices adjust towards exchange rate during the period of 1997Q1-2007Q2. Interestingly during the period 2009Q4-2020Q4, oil price changes cause exchange rate changes and exchange rate changes in turn cause GDP growth rates. The findings help policy makers formulate judicious economic policies aiming at increasing GDP growth and reducing volatility in oil price changes and exchange rate movements.

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## India's Growth Dynamics and Contribution of Total Factor Productivity: Cointegration and Causality

#### Surajit Sengupta & Ratan Kumar Ghosal

## Abstract

This paper examines the growth dynamics of India since the beginning of the liberalization process and tries to find out the proximate explanatory factors behind the high growth trajectory of India. The cross-country growth literature clearly reveals that most of the developed countries have been experienced downswing in the economic growth since 2007 and the process of capital deepening and fall in the trend of total factor productivity growth (TFPG) are claimed to be the crucial explanatory factors. Given this background we also examine whether such kind of downswing trend occurs pertaining to the growth contribution of labour, capital and total factor productivity (TFP). To this end we have computed TFP growth by using Solow residual and cost share weighted method. Following the same method we have also estimated contribution of labour and capital.

We find that Indian economy has achieved very high growth rate ranging from 4.12% to 10.30% between 2004 and 2010 which is followed by a plummeting tendency of growth rate but still it ranges from 7% to 9% between 2001 and 2016. The degree of cross-time variability in the growth rate of real GDP is also found to be high (40.40%). We also find that the contribution of labour and that of capital in this growth trajectory are relatively lower than the contribution of total factor productivity growth (TFPG) which ranges from 1.75% in 1992 to 7.21% in 2016. It clearly reveals that contributions of TFPG i.e. the technological progress has been the main driver of the high growth trajectory of India since liberalization.

Now, to examine the dynamics of this growth process and the relative role of growth contributions of labour, capital and TFPG to this dynamics we have regressed GDP per worker on these three factors and found around 70% of the cross-time variation in the growth is explained by these three factors and the growth of TFP as well as capital are found to be highly significant .However the role of labour is found to be insignificant with negative coefficient. To examine whether the short run fluctuations in the growth of GDP caused by the fluctuations in the contributions of labour, capital and TFP, are corrected, we have done Johansen's cointegration analysis along with the vector error correction model(VECM) after examine the data generating process through ADF and PP test.

We find that all variables are stationary at their first differences and we have also found long run equilibrium relationship between the growth rate of GDP and the growth rate of three explanatory factors such that the statistically negative significant coefficients of error correction terms reveal that the short run volatility are corrected there by driving the growth process towards the long run equilibrium growth path.

# <u>Key Words</u>: India, Growth dynamics, total factor productivity, Cointegration, Vector Error Correction.

## Introduction:

It is true that the developed countries in the globe have experienced downswing in the productivity growth since 2007 following the process of global recession. The proximate explanatory factors responsible for this process have been identified as the process of capital deepening and the fall in the total factor productivity growth. However, India has become an exception towards the protection of her economy from such shock and still India has found its place as Asian tiger in respect of retaining high growth rate of GDP, next to China, as compared to the developed countries. In fact, as a fall out of the liberalization of trade.

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investment and finance Indian economy has been able to reap the benefit of cross border movement of frontier technologies and also the modern embodied capital which have led to achieve the high growth rate of GDP especially since 1997-98 which has reached the figure of around 9.4% during the first decade of the new millennium. One of the most important contributing factor to this laudable growth process has been the tremendous growth process of service sector. In fact, India has experienced a rapid structural transformation after few year of the adoption of liberalization policy such that it is still now experiencing the buoyancy in the service sector led growth. Therefore, apart from the conventional growth of labour and capital the total factor productivity growth has played a major role towards the high growth trajectory of our economy. However, literature is not plenty enough in the area of explaining the role of total factor productivity growth on growth dynamics both at cross-country level as well as country level. Moreover, we have number of studies that describe the determining factors of TFP and its growth. We all know that total factor productivity (TFP) has been considered as one of the crucial sources of economic growth and prosperity. Astonishingly, in case of East Asian NICs high growth rate of GDP was associated with low level of TFPG. [Taso (1985); Yong (1992,1997); Kim and Lau (1994)]. On the other hand, Baier et. al. (2002) in their study on 145 countries has identified that the TFP is responsible for bringing about 20% of the average growth of GDP. TFPG seems to be more important for explaining the growth of GDP per persons employed than the aggregate conventional input growths i.e. growth of labour and capital. Almost similar results have been found by Kim and Park (2017) in their cross-country level analysis covering middle-income countries. In their study they found that total factor productivity growth has contributed significantly in the upward transition of the level of income. Further, in a country specific study on Singapore for identifying sources of economic growth and role of TFP ,Jorgenson and Vu (2018) have found a steady low level TFPG exists in the economy over the period of their study and it is vulnerable to external shocks i.e. TFP has very poor contribution on the growth of the economy.. Again, in another country specific study on India done by Malik et. al. (2021) for determining the role of several factors on productivity have found that financial development has positive and significant impact on TFP in the long run.

Under this backdrop our paper centers round the investigation of the relative role of the conventional factor inputs like labour and capital and also total factor productivity growth (TFPG henceforth) towards the high growth path of India. This paper is structured as follows: section (II) deals with data and methodology used in this analysis; section (III) represents the trend in the growth of GDP and its explanatory factors like growth of labour force, growth of capital and growth of total factor productivity; section (IV) represents the estimation of correlates of this growth in terms of regression analysis; section (V) presents the cointegration results and the results of error correction model and section (VI) gives concluding remarks.

# II: Data and Methodology

Our study is an aggregative level study and it is based on secondary data. Our period of study ranges from 1990 to 2021.For the purpose of our study we have collected data on real GDP and physical capital from PENN World table version 10.0. Real GDP and physical capital (K) are expressed at 2017 constant international US\$. Data on number of employed workers over the period from 1990-2021 have been collected from INDIAKLEMS database. In our study we have computed TFPG by using Cobb-Douglas production function which obeys constant returns to scale. Further, we have also computed TFPG using cost share weighted method. For this purpose data on labour compensation and capital compensation have been taken from the Conference Board Total Economy Database. We have also taken average working hours as well as total labour hours from the Conference Board Total Economy Database.

In our study we use the method of multiple regression to identify the proximate explanatory factors behind the growth of GDP. Since the data is time series data so for overcoming the problem of data generating process we have done the stationarity test by applying ADF and PP tests and found that all the variables are stationary at their first differences. So, we have regressed growth of GDP per persons employed on the growth of labour force measured in terms of labour hours, growth of capital per persons employed and on the growth of total factor productivity by using the following formula: Where,  $\Delta y =$  growth of GDP per persons employed

 $\Delta L_t$  = growth of labour force measured in terms of labour hours over time

 $\Delta K_t$  = growth of capital per persons employed over the period from 1990-2021

 $TFPG_t$  = growth of total factor productivity over the period of our study i.e. 1990-2021

and µt represents error term.

Again for the computation of TFP we use the simple Cobb-Douglas form of the aggregate production function

 $Y = A L^{\alpha} K^{\beta} \qquad (2)$ 

Where,  $\alpha + \beta = 1$ .

For the purpose of our study output per worker is measured as Y, average labour hours per worker is represented by L and K is the physical capital per worker. In fact Y, L and K are measured independently and we statistically estimate A,  $\alpha$  and  $\beta$ . Here, A is known as total factor productivity or aggregate state of technology. Moreover,  $\alpha$  is the share of labour in total output and  $\beta$  is the share of capital. In our study we assume that  $\beta = 1/3$  and  $\alpha = 2/3$  following the existing literature [Klenow and Rodri'guez-Claire, (2005)]. So, the TFP is approximated using Hicks neutral technological progress by

 $A = Y - \alpha L - (1 - \alpha) K.$  (3)

Here, A is the Solow residuals that captures the changes in the output per worker which are not accounted for changes in labour and capital per worker. Further, for the computation of TFPG which is the combination of technological changes and changes in the technical efficiency we have used the following formula:

 $TFPG_t = \Delta Y_t / Y_t - \alpha \Delta L/L - (1-\alpha) \Delta K/K \dots (4)$ 

Further, we have also adopted cost share weighted method for the purpose of the estimation of TFPG and we have used following equation to determine cost share weighted productivity growth:

 $TFPG = dlnY - W_L dlL - W_K dlnK \dots (5)$ 

Where, W<sub>L</sub> and W<sub>K</sub> denote compensation of labour and capital respectively

Further we p r e s e n t the econometric tools for the time series analysis which is used in our study. It is true that in case of any use of time series macro-economic data base for econometric analysis of the integration of the short run dynamics with long run equilibrium relationship between the variables one has to examine initially the stochastic property of the data set and then estimate the long run equilibrium relationship. In this study we have initially examined the stochastic property of database by using of the econometric tools.

In this paper we have applied two popular test for detecting the unit root are namely (1) Augmented Dickey Fuller (ADF) test and (2) Phillips-Perron (PP) test.

If we have a series of Xt then using ADF model we test unit root as follows:

Where,  $\delta = \alpha - 1$ ;  $\alpha = \text{coefficient of } X_{t-1}$ ;  $\Delta X_t = X_t - X_{t-1}$ 

Here, the null hypothesis is  $\delta = 0$  describes that is there is unit root. The alternative hypothesis in the absence of unit root. Another widely used popular non-parametric method for unit root test is PP method.

The form of the model is as below:

Where,  $D_{t-i}$  is a deterministic trend component and the null hypothesis is  $\pi = 0$ .

We have done both of the tests for all the logarithmic values of the series at level and also for their first differences, by choosing the laglength in terms of the Akaike Information Criterion (AIC). After conducting the unit -root tests for examining the stationarity of the series, we have estimated the long-run relationship between the stationary series of our indices by applying the Johansen test of cointegration Again to capture the short -run dynamics of disequilibria we have applied the vector error correction model (VECM) which helps correcting the past periods disequilibrium. The analysis of short-run dynamics is done by first eliminating trends in the variables by taking the difference. This process is likely to give us amore potential valuable information about long-run relationships between the variables. In fact the Granger representation theorem explains the process of modeling the cointegrated I(1) series in the form of Vector Auto regression(VAR) such that it can be constructed either in terms of levels(logarithmic values) of the data series following I(1)or in terms of their first differences, the I(0) variables/ data series, with the addition of an Error Correction Mechanism (ECM) to capture the short run dynamics between the stationary series of our indices by applying the tests for cointegration and the estimation of cointegrating relationships (i.e. Engle and Granger (1987) tests. Engle and Granger have shown that if two series are cointegrated then there will be a causal long run relation between the series in at least one direction. This helps to integrate the short-run dynamics for any two variables X and Y the model can be presented in the following forms of equations (8to11) such that the equations 10&11 incorporate the ECM (Ghosal, 2012).

 $\ln X_{t} = \mu + \sum_{i=1}^{p} \ln X_{t-i} + \sum_{i=1}^{p} \ln Y_{t-j} + v_{t}......(9)$ 

 $\Delta \ln Y_t = \alpha + \sum_{i=1}^{n} y_i + \sum_{i=1}^{n} y_i - \Delta \ln Y_t - j + \psi ECM_t - 1 + u_t$ 

 $\Delta \ln X_t = \mu + \sum_{i=1}^{p} \Delta \ln X_{t-i} + \sum_{j=1}^{r} \xi_j \quad \Delta \ln Y_{t-j} + \chi ECM_{t-1} + v_t$ 

Where ut and vt are the random disturbances with zero mean and they are serially uncorrelated; ECM represents the error correction mechanism for capturing short run dynamics.

#### Section III : Analysis of the Trends in growth of GDP and its explanatory factors

In this section we try to examine the trends in the growth of GDP per worker, growth rate of labour hours, growth of capital per worker and TFPG over the period of our study i.e. from 1990-2021. In case of growth of GDP per persons employed we have found that this rate hovers around the 10 % to -5.7 % over the period of our study. A steady increase in the growth of GDP per worker has been identified over the period from 2002 to 2007. It reaches at peak during 2010 and a substantial fall has been observed during 2019-2020 (Fig-1). Growth rate in the capital per worker remains almost steady over the period from 2006 to 2018 and

a precipitous fall in the growth rate of K has been identified during Covid period. On the other hand growth rate in the average labour hours per worker remains steady and poor over the period of our study and substantial fall in the growth rate has been identified in the pandemic situation. Surprisingly, trends in TFPG shows almost similar as trend in growth of GDP reflects. TFPG in our study reaches its highest position in the year 2010 then it falls again from 2013 it moves upward. The following line diagrams clearly reveals that in India the trends in the growth of GDP per worker and TFPG follow almost same pattern.



## **Source : Authors Estimation**

In our study we have computed TFPG by using simple Cobb-Douglas production function as well as cost share weighted method, the results of which are given in Appendix Table -1. After computing the trend lines we find that both results are compatible. Values of TFPGs under both methods follow almost similar trend (Fig-2). From the figure below we see that the TFPG under both methods reach the peak points in the year 2010 followed by a falling trend up to 2013 and again by an increasing trend up to 2017 and by asteep dwindling trend since 1918.



#### **Source : Authors Estimation**

In this section we have also examined the trends in the contribution of labour per hour, capital per worker and TFPG responsible for changes in the economic growth and prosperity (Fig-3). It is evident from the following figure that barring 2000-2002 the total factor productivity has been the major contributor of economic growth and prosperity in case of India. Contribution of labour over the period of our study reveals bleak picture. Contribution of capital has achieved second place for economic development over the period of our study.





#### Section IV: Estimation of the Correlates of Output growth

In this section for measuring the impact of growth of conventional inputs and TFPG on the growth of GDP per worker we have done multiple regression analysis as depicted in table-1. From the table it is clear that about 71% of the change in the growth of GDP per worker can be explained by the explanatory factors. F value represents that our overall model is fit. Durbin-Watson statistic value reveals absence of the problem of autocorrelation. Our regression model also explores that the impact of TFPG on the growth of GDP per person is positive and statistically highly significant. Remaining other variables constant if we increase TFPG by 1 percentage point then growth of GDP per worker will be increased by almost 0.73 percentage point. On the other hand, under ceteris paribus if we increase capital per worker by 1 percentage point then GDP per worker will also increase by 0.47 percentage point and the impact of this independent variable on dependent variable is highly statistically significant. However, in case of growth of labour measured in terms of average working hours has negative but insignificant impact on the GDP per worker. So, one can plausibly conclude that in case of Indian economic growth process the role of total factor productivity and physical capital are undeniable over the period of our study.

# Table1 : Regression Results on the Impact of Growth of TFP, Labour and Physical Capital on Growth in GDP per persons employed

Dependent Variable	GGDPPE
Independent Variables	Coefficient (p-value)
tfpg	0.7250956 (0.000)
gl	-0.050488 (0.6)
gk	0.4651331 (0.001)
R-Squad	70.99
Adjusted R-Squad	67.51
Log likelihood	73.44348
Prob > F = 0.0000	
Durbin-Watson stat	1.800

Source : Authors' computation. GGDPPE = Growth in GDP per person employed, gl = growth in Labour; gk = growth in physical capital per persons employed; tfpg= total factor productivity growth

# Section V: the results of Cointegration and error correction model

To examine the stationarity of the data generating process we have conducted the test of stationarity of the time series data base, the results of which are given in **table-2**. We find from the table below that both ADF and PP test have indicated the absence of unit roots at their first difference .So . the series is integrated at I(1) level. So, we may now see whether there exists any long run relationship amongst the variables. To see this we apply Johansen's cointegration test the results of which are given in **table 3a and 3b**.

Series	ADF method	PP method
GGDP	-4.058 (0.0038)	-4.052(0.0039)
GL	-3.92 (0.005)	-3.21 (0.002)
GK	-3.168136 (0.041)	-3.209106 (0.0407)
TFPG	-3.1577 (0.032)	-3.02 (0.043)

# Table 2 : Estimated Statistics of Unit Root Tests

#### **Source : Authors Estimation**

It is evident from table 3a and 3b that there exists two cointegrating equations at 5% level of significance. Both trace and maximum Eigen value test give us similar results. So one can plausibly conclude that in case of India there exists long run association between the dependent variable namelygrowth of GDP per worker (GGDP) and the explanatory factors like growth of labour (GL), Growth of Capital (GK) and TFPG.

Finally, normalized cointegrating coefficients have suggested that growth rate of capital per worker, labour and TFPG have positive significant impact on the growth in the long run. While the reverse trend has been observed in case of labour.(table 3c)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.** Critical Value
None *	0.716844	72.63149	47.85613	0.0001
At most 1 *	0.589772	37.30231	29.79707	0.0057
At most 2	0.338677	12.35313	15.49471	0.1408
At most 3	0.027290	0.774748	3.841465	0.3788

Table 3a : Estimated Statistics of Cointegration Rank Test (Trace) for growth of GDP per worker

Trace test indicates 2 cointegrating equation(s) at the 0.05 level

#### **Source : Authors Estimation**

## Table 3b : Unrestricted Cointegration Rank Test (Max-eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.** Critical Value
None *	0.716844	35.32918	27.58434	0.0042
At most 1 *	0.589772	24.94918	21.13162	0.0138
At most 2	0.338677	11.57838	14.26460	0.1275
At most 3	0.027290	0.774748	3.841465	0.3788

Max-eigenvalue test indicates 2 cointegrating equation(s) at the 0.05 level

#### **Source : Authors Estimation**

# Table 3c :Normalized cointegrating coefficients (standard error in parentheses)

GGDP	GK	GL	TFPG
1.000000	-1.829323	36.96624	-4.613959
	(10.3860)	( 0.24060)	(0.72567)

# **Source : Authors Estimation**

The results of the cointegration analysis with vector error correction are given Appindix Table -2.

We all know that the error correction mechanism gives the speed of adjustment within which model will restore its equilibrium following any disturbances. It is evident from **appendix table 2** that the speed of adjustment in case of labour and capital are found to be moderate but highly significant. Where as in case of total factor productivity the speed of adjustment is found to be very with lower level of significance. The explanation behind this long run trend behavior can be given as follows. Since the major driver of the long run growth process that Indian economy has achieved during this period during which there has been a phase wise liberalization in trade, investment and finance which have caused continuous inflow of modern frontier technologies and the most sophisticated technology embodied capital goods so that there has been technological transformation in the aggregate production structure emanating from the micro level. So to capture the exact form of short run volatility in TFPG one has to make the micro-level industry specific study for computing the a contribution of the TFPG to the industry specific output.

## VI. Conclusions

Our study is basically an aggregative level of study based on secondary data. In this study we have tried to capture the role of growth of labour, capital per worker and total factor productivity on the growth of GDP per persons employed over the period from 1990-2021. This paper concentrates on (i) estimation of the growth of real GDP of our economies since liberalization ;(ii) The estimation of the growth contributions of the conventional factors L and K as well as the TFPG which is estimated by undertaking aggregate production function analysis such that TFPG has been estimated in terms of Solow residuals; and finally (iii) the estimation of long rung run relationship between the growth and its explanatory factors by using the method of Johansen cointegration analysis with the error correction model. The entire study is based on secondary data. The major findings of our study can be outlined as follows:

First, we find that our economy has reached high growth trajectory since 2004, albeit with some degree of cross-time variability.

Second, the high growth of Indian economy has been driven mainly by the higher growth of total factor productivity i.e. technological progress which is followed by the capital deepening process.

Third, we find strong positive economically and statistically significant correlation between growth of GDP and the growth of capital and that of TFP.

Finally, our econometric analysis of cointegration and causality clearly reveal a long run equilibrium relationship between the growth of real GDP and that of labour ,capital and TFPG along with the corrections of short run fluctuations of these explanatory factors (labour , capital and TFPG )there by leading to the convergence of the growth process towards the long run growth path. This is established by the statistically significant negative error correction terms and the robustness of the results are also established by the very high P-values of the coefficients.

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# Appendix table 1 : Estimated Trends Values of growth of GDP, Inputs, TFPG and their contributions

Year	GL (%)	GK (%)	GGDP (%)	CL(%)	CK (%)	TFPG (
19						
19	0.0415	1.8836	-0.166	0.0291	0.5651	-0.76
19	-0.114	2.2751	1.641	-0.080	0.6825	1.0393
19	-0.049	1.5938	3.1130	-0.034	0.478	2.6696
19	-0.009	1.6104	4.2460	-0.006	0.4831	3.7692
19	0.0676	3.3702	5.8512	0.0473	1.0110	4.7928
19	0.1318	3.5965	6.6028	0.0922	1.0789	5.431
19	-0.020	3.7775	4.3949	-0.014	1.133	3.2762
19	0.0658	4.0261	4.7990	0.0460	1.2078	3.5450
19	0.0895	5.2068	5.6260	0.0626	1.5620	4.0012
20	0.1941	4.0222	4.3303	0.1359	1.2066	2.9877
20	0.0079	4.4810	1.6367	0.0055	1.3443	0.2869
20	0.1008	3.2321	2.0898	0.07	0.9696	1.0495
20	0.146	3.1446	4.1274	0.1028	0.9433	3.0812
20	0.1765	3.6675	4.9661	0.1236	1.1002	3.7422
20	0.0556	4.3122	6.0860	0.0389	1.2936	4.7534
20	0.1680	7.0887	8.6052	0.1176	2.1266	6.3609
20	0.1914	8.5102	9.980	0.1340	2.5530	7.2938

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20	0.050	7.4939	6.02	0.0352	2.2481	3.743
20	0.0805	7.3876	4.642	0.0563	2.2162	2.3694
20	0.2208	7.6367	10.303	0.1546	2.2910	7.8581
20	-0.004	7.732	6.9806	-0.00	2.3197	4.6640
20	0.1842	6.9004	4.779	0.1290	2.0701	2.5805
20	0.193	6.8453	6.3467	0.1356	2.0536	4.1575
20	0.2684	6.8330	7.5582	0.1879	2.0499	5.3204
20	0.2278	6.6525	7.9212	0.1595	1.9957	5.7659
20	0.1713	6.5302	9.2914	0.1199	1.9590	7.2124
20	0.1283	6.459	6.2515	0.0898	1.9378	4.223
20	0.1824	6.488	7.3315	0.1276	1.9466	5.2572
20	-1.053	3.0104	2.0252	-0.737	0.9031	1.8597
SD	0.2345	2.1055	2.5726	0.1641	0.6316	2.0624
Mean	0.0653	5.0265	5.4272	0.0457	1.507	3.8735
CV	359.07	41.889	47.402	359.07	41.889	53.243

Source : Author's Computation, Here GK, GL => growth rates of Capital & Labor and cl,ck and tfpg are % contribution towards the growth of GDP per persons employed

# Appendix table-2 : Results of Cointegration with VEC

Error Correction:	D(LNRGDP)	D(LNL)	D(LNK)	D(LNTFPG)
COINTEQ1	-0.118028	-0.077448	-0.097958	-3.503274
	(0.04400)	(0.01690)	(0.02465)	(3.22886)
	[-2.68239]	[-4.58293]	[-3.97408]	[-1.08499]
D(LNRGDP(-1))	-1.629648	-1.222733	-1.304230	-142.3597
	(0.77453)	(0.29747)	(0.43389)	(56.8365)
	[-2.10403]	[-4.11044]	[-3.00589]	[-2.50472]
D(LNL(-1))	7.992339	5.486878	7.025249	281.2664
	(3.58693)	(1.37761)	(2.00938)	(263.214)

	[2.22819]	[3.98291]	[3.49622]	[1.06858]
D(LNK(-1))	1.156513	0.550470	1.305937	69.80416
	(0.50870)	(0.19537)	(0.28497)	(37.3290)
	[2.27348]	[2.81755]	[4.58270]	[1.86997]
D(LNTFPG(-1))	0.002469	0.000207	-0.000489	0.249168
	(0.00338)	(0.00130)	(0.00189)	(0.24767)
	[0.73162]	[0.15974]	[-0.25861]	[1.00604]
С	0.092392	0.043915	0.061438	4.456137
	(0.03110)	(0.01194)	(0.01742)	(2.28192)
	[2.97114]	[3.67703]	[3.52685]	[1.95281]
R-squared	0.427888	0.607612	0.743628	0.451574
Adj. R-squared	0.303516	0.522310	0.687895	0.332351
F-statistic	3.440391	7.123081	13.34270	3.787641
Log likelihood	68.84048	96.59199	85.64504	-55.73399
Akaike AIC	-4.333826	-6.247723	-5.492761	4.257516

	Figures in [] ar
Figure in parentheses are standard err	statistics

# **Source : Authors Estimation**

#### A GRANGER CAUSAL ANALYSIS OF TAX-SPEND HYPOTHESIS:

#### **EVIDENCE FROM INDIA**

## Duragesh Pujari R R Biradar

#### Abstract

The Study used the cointegration test and VECM to test the relationship between central and state government's tax revenue and expenditure in India over the period 1970 to 2022BE, for examining four major hypotheses in public finance i.e. tax-spend hypothesis, spend-tax hypothesis, fiscal synchronization, and institutional separation hypothesis. The unit root test based on Phillips-Perron (PP) test shows that the variables are non-stationary in level but stationary in the first difference. Johansen's cointegration method is to identify one cointegrating vector between Tax revenue and expenditure, which suggests that there is a long-run relationship. The result of the vector error correction models evinces that there is one-way causality running from tax revenue to expenditure both in the short-run and long-run supporting the "tax-spend hypothesis. Therefore, the reverse-causality is not found in the analysis either for the short-run or long-run. The study not supported the spend-tax hypothesis, fiscal synchronization hypothesis, and institutional separation hypothesis in India. The study helps in the effective allocation of resources, which depends on the tax base and tax rate. Hence, the study gives insights to center and state governments regarding an increase in tax base and decrease in tax rates, which help to control the fiscal deficit in India. If the economy achieves enhanced economic growth it will be possible to raise revenue from domestic sources.

#### Key Words: Tax Revenue, Expenditure, Fiscal Deficit, Tax-Spend Hypothesis,

## JEL Classification: H2, H5, C4, C5, E12

#### **INTRODUCTION**

The Neo-classical economics of fiscal policies in the field of public finance and the budget deficit, one of the most significant and widely discussed topics in the literature on public finance, are both significantly impacted by the topic of the causal relationship between government revenue and expenditure. Understanding the nature of budget deficits for all economies has been a focus of ongoing research, which is crucial from the standpoint of policy, particularly for a nation like India that consistently runs budget deficits (Rahman and Wadud, 2014). State governments have recently encountered serious budgetary issues. Policymakers are often confronted with the issue of either changing expenditures or taxes. Can the fiscal balance be achieved by modifying one or the other?

In the late 1980s and early 1990s, the massive fiscal deficit that the Indian economy was dealing with and the monetization of the budget deficit harmed the external sector. Government debt became unsustainable as a result of the enormous borrowing, and the government's cash reserves were insufficient to cover even two weeks' worth of imports. The 1991 economic crisis was brought on by this. As a result, structural changes were implemented in 1991, and one of the main focuses of economic reforms was the development of fiscal sustainability through fiscal consolidation. The government passed the FRBM Act in 2003 to stop the worsening financial crisis and reduce the growing fiscal imbalance. To maintain prudent fiscal management, macroeconomic stability, coordination between fiscal and monetary policy, and openness in the government's financial status, the Fiscal Responsibility and Budget Management (FRBM) Act was introduced in 2003. A set of fiscal regulations known as the FRBM Act sets a limit on the fiscal deficit at 3% of GDP and a revenue deficit of zero. Additionally, it has set a limit on the ratio of debt to interest payments.

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The entire goal is to keep state and union government spending in check so that they can run efficiently. A foundation for legal institutions is provided for fiscal consolidation under the FRBM Act. It is now important that both the federal government and state governments take steps to minimize the budget deficit, end the revenue deficit, and produce a revenue surplus in the ensuing years (Mohanty and Mishra, 2017).

Depending on how the deficits are financed, the relationship between revenue and spending will change. Deficit financing options include borrowing domestically, borrowing abroad, and creating new money. If the deficit is funded through seigniorage or the creation of new money, it will lead to inflation and greater government expenditure, which might start a debt spiral and raise tax expectations. Although it is thought that domestic borrowing can help prevent both inflation and external crises, if employed excessively, it has its drawbacks. External crises or balance of payments crises could be brought about by excessive external borrowing. India's governmental borrowings, which are mostly used to pay the deficit, may result in increased taxes in the future.

The tax-spend theory postulates a casual flow from revenue to expenditure. Friedman, one of the proponents of this theory, contends that tax increases will lead to increases in spending, reducing the budget deficit an impossibility. Buchanon and Wagner then divide direct and indirect taxation to accept the influence of revenue and spending with distinct justifications.

Tax-spend hypothesis sees a casual flow running from revenue to expenditure. one of the proponents of this hypothesis was Friedman who claims that an increase in taxes will increase expenditure and reduction of the budget deficit will be a distant dream. Subsequently, Buchanon and Wagner approve the impact of revenue and expenditure with different explanations by bifurcating direct and indirect taxation. They contend that indirect taxes increased government spending. The public perceives that the cost of government spending is higher under direct taxation than under indirect taxation if the expenditures are paid for by other forms of taxation. The crowding-out effect of increased spending and inflation results in higher interest rates, which is how indirect taxation starts. Therefore, contrary to Friedman's claim, the Buchanon-Wagner framework offers a foundation where a higher tax will result in lower government spending when there is a fiscal illusion. This hypothesis denotes a unidirectional causality that runs from revenue to expenditure in econometric parlance (Mohanty and Mishra, 2017).

# 2. EMPIRICAL REVIEW OF LITERATURE

**Payne (1998)** used the Engle-Granger error correction approach to find a relationship between revenues and expenditure decisions at the state level in the USA. The tax-spend hypothesis is applicable in twenty- four states in the USA. Richter and Dimitrios's (2013) study shows strong evidence of a longrun relationship between government spending and revenues. The Granger-causality test indicates that the causality runs from spending to revenues. Therefore, it supports the spend-tax hypothesis in Greece. The results of the Granger causality test by Rahman and Wadud (2014) direct that a unidirectional causality existed, it running from revenue to expenditure. The tax-spend hypothesis existed in Bangladesh. Granger causality results of Khan et al (2021) show the unidirectional relationship from revenues to expenditures which concludes that the Tax-spend hypothesis is supported in Malaysia. A study conducted by Babarinde et al (2021) reveals the existence of a long-run relationship between government revenue and expenditure. The study finds the two-way causal relationship between revenue and expenditure of the states and Federal Capital Territory in Nigeria in the period of study. Therefore, this evidence is confirming the support of the fiscal synchronization hypothesis in Nigeria's states and federal capital territory.

There is numerous research analyzing the relationship between revenue and expenditure, and each of these studies uses a different methodology to study this relationship. Usually, many studies used the Granger causality test either in a vector autoregressive framework or within an error correction system. Some studies find support for the tax-spend hypothesis, while the reverse-causality or spend-tax hypothesis is validated by others. In this context, a study examined the Tax-Spend Hypothesis, the longrun and short-run relationship between government tax revenue and aggregate expenditure in India using time series data from 1970 to 2022 Budget Estimations.

# 3. ECONOMETRIC METHODS AND MATERIALS

The study used secondary data on government tax revenue and government aggregate expenditure of central and state-level governments. Data collected from Reserve Bank of India. The study examines the tax-spend hypothesis, the long-run and short-run relationship between government tax revenue and aggregate expenditure by using Johansen's cointegration procedure and Vector Error Correction Model (VECM) as developed by Granger (1969) and (1986), Engel & Granger (1987) using time series data since 1970 to 2022BE. Several tests are available for testing whether a series is stationary. The study used the PP (Phillips-Perron) test for stationarity, which is designed to be robust for the presence of autocorrelation and heteroscedasticity (Phillips,1988). The tax-spend hypothesis, spend-tax hypothesis, fiscal synchronization hypothesis, and neutrality hypothesis (Institutional Separation) are all examined in this study using the two models that are fitted.

$$TE_t = a_0 + a_1 TR_t + e_{1t}$$
 (Eq.1)  
 $TR_t = b_0 + b_1 TE_t + e_{2t}$  (Eq.2)

Here, TE is a total expenditure; TR is Tax Revenue;  $a_0$  and  $b_0$  are intercepts  $b_0$  and  $b_1$  are coefficients;  $e_{1t}$  and  $e_{2t}$  are the error terms.

if the variables are I (1) and cointegrated then the Granger causality procedure can be employed in the VECM and it can express a fallow.

$$\Delta TE_{t} = c_{1} \sum_{j=1}^{p} a_{1i} \Delta TR_{t-j} + \sum_{j=i}^{p} \beta_{1i} \Delta TE_{t-i} + \phi_{1t} EC_{t-1} + \mu_{t} \quad (Eq. 3)$$
  
$$\Delta TR_{t} = c_{2} \sum_{j=1}^{p} a_{2i} \Delta TE_{t-j} + \sum_{j=i}^{p} \beta_{2i} \Delta TR_{t-i} + \phi_{2i} EC_{t-1} + \nu_{t} \quad (Eq. 4)$$

Here,  $\Delta$  is the first difference stationary and residuals  $\mu_t$  and  $v_t$  are assumed to be normally distributed and white noise.  $EC_{t-1}$  is the one-period lagged error correction term derived from the cointegration equation. The coefficient of the  $EC_{t-1}$  the term infers the long-run causality. The coefficients of error correction terms capture the speed of the short-run adjustment towards the long-run equilibrium. Longrun and short-run Granger causality in the long-run is tested by checking the significance of the parameter of estimates of lagged error correction terms. Negative and statistically significant values of the coefficients of error correction terms indicate the existence of long-run causality.

## **4 RESULTS AND DISCUSSIONS**

## 4.1 Trends in Tax Revenue and Public Expenditure in India

In the present era, every nation spends huge amounts of money on welfare-oriented activities for the overall development of the nation. Creating jobs and eliminating poverty and unemployment are the major activities of governments. In India, both central and all state government's expenditure has had a significant role in increasing welfare as well as economic growth since independence. The central and all state governments' tax revenue and total expenditure both have an increasing trend in India from 1970-71. The increasing tax revenue to GDP ratio indicates that tax efforts have an increasing trend both in the center and all States. Consequently, governments are providing many welfare benefits to people, therefore central and state governments' expenditure size also increased every year from 1970-71. Fig 1 shows the size of the central and state government's tax revenue and expenditure from 1950-2022BE.



Fig 1: Analysis of Tax Revenue and Expenditure to GDP Ratio in India: 1970-2022BE

Note: CTR Central Tax Revenu; CTE Central Aggregate Expenditure; STR States Tax Revenue; STE States Aggregate Expenditure

Source: RBI

# **Table 1: Descriptive Statistics**

Statistics	CTR to GDP Ratio	CTE to GDP Ratio	STR to GDP Ratio	STE to GDP Ratio
Mean	3.497682	7.334515	4.393962	8.145397
Median	2.832210	6.177067	3.165454	6.087873
Maximum	8.948283	17.47373	12.35578	22.00335
Minimum	0.245250	0.562745	0.228540	0.517718
Std. Dev.	2.792255	5.360282	3.928517	6.811204
Skewness	0.516747	0.352787	0.719775	0.631125
Kurtosis	1.813618	1.749788	2.104632	2.085570
Jarque-Bera	5.363824	4.465209	6.226980	5.263828
Probability	0.068432*	0.107249	0.044446	0.071941
Observations	52	52	52	52

Note: (\*) Significant at the 10%; (\*\*) Significant at the 5%; (\*\*\*) Significant at the 1%

# 4.2 Summery of Descriptive Statistics

The summary of descriptive statistics for variables is shown in Table 1. The dispersion in the series is measured by the standard deviation, which is quite small for all variables. All variables' skewness values are closer to zero, which indicates the series' distribution's asymmetry. Kurtosis is also less than 3, indicating that all series under examination have a distribution that is flat or platy kurtic in contrast to the normal distribution. The Jarque-Bera statistic states that at a 10% level of significance, there is no evidence to support the null hypothesis of normal distribution.

# 4.3 Phillips Perron Test for Unit Root

The results of the Phillips Perron unit root (PP) test on each variable in the level and first difference are displayed in Table 2. When computing the unit root, data trends are assumed to be both linear and constant. Due to the calculated value being less than the critical value of the test statistics for both series, the test suggests that the variables are non-stationary at a level. As a result, the series are non-stationary at a level. because the critical value is less than the calculated value of the test statistics for both variables, and stationary at the first difference. Furthermore, it was determined that variables are integrated at the order of one I (1). The unit root results suggest that the series may be co-integrated or that there may be a long-term relationship between tax revenue and total government expenditure (Centre and All States). Based on the Akaiki Information criteria, the study only employed one lag (AIC).

# **Table 2: Phillips-Perron Test**

Variable	Level		First	Difference	Order of Integration
	Intercept	Trend & Intercept	Intercept	Trend & Intercept	
LNCTR	-1.9287	-2.0273	-6.2136**	-6.4765***	I(1)
LNCTE	-2.4436	-1.7035	-6.4555***	-6.7725***	I(1)
LNSTR	-2.1884	-1.4106	-6.0134***	-6.3894***	I(1)
LNSTE	-2.6193*	-0.8720	-5.5921***	-5.8489***	I(1)

Note: (\*) Significant at 10%; (\*\*) Significant at the 5%; (\*\*\*) Significant at the 1%

Probability based on MacKinnon (1996) one-sided p-values

# 4.4 Co-integration Analysis

Table 3 shows the results of the cointegration. The unit root findings indicated that every variable is incorporated into order one I (1). The study then uses the Johansen and Jusilius cointegration test to examine the long-term relationship between government tax revenue and government expenditure. The first step is to choose the right lag time for the VAR approach. The study estimates an unrestricted VAR model in level form of series and selects the appropriate lag length in the model using Akaike Information criterion (AIC) statistics. The AIC is used to determine the ideal lag duration, which is one, while also taking statistical significance into account. With the assumption that there is no trend in the level data but that there is an intercept in the cointegrating equations, the test statistics are estimated. The test is administered at the centre and state levels. Due to trace statistics (16.24) above the critical value, the null hypothesis of no cointegration, r=0, is rejected at the 5 percent level (15.49). Due to trace statistics (4.52) exceeding the critical value, studies cannot accept the null hypothesis for more than one cointegrating equation with r=1 (3.84). The maximum eigenvalue statistics (11.7) are lower than the critical value, which prevents the null hypothesis of no cointegration, r=0, from being rejected at the 5 percent level (14.2). The study, however, rejects the null hypothesis and comes to the conclusion that

there is only one cointegrating vector between tax revenue and expenditure. Because the trace and maximum eigenvalue statistics are greater than the critical value at level and most one in state-level analysis, the null hypothesis cannot be accepted.

			Atrace			λmax	
Vari able	Hypot hesis	Test Statisti	Critical Value for 5% Confidence interval	Hypot hesis	Test Statisti	Critical Value for 5% Confidence interval	
	No. of CE(s)	С		No. of CE(s)	с		
			Cent	re			
	None*	16.247	15.49471	None	11.719	14.26460	
LNC TP	r=0	50	(0.0385**)	h=0	43	(0.1216)	
IK	At	4.5280	3.841466	At	4.5280	3.841466	
&	most 1 *	77	(0.0333**)	most 1 *	77	(0.0333)	
LNC TE	r=1			h=1			
			All Sta	ntes			
	None	21.331	15.49471	None*	17.147	14.26460	
LNS TP	r=0*	83	(0.0059**)	h=0	39	(0.0170**)	
IN	At	4.1844	3.841466	At	4.1844	3.841466	
&	most 1	32	(0.0408**)	most 1*	32	(0.0408**)	
LNS TE	r=1*			h=1			

## **Table 3: Co-integration Test**

**Note:** *Trace test indicates 2 cointegrating eqn(s) at the 0.05 level* 

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

The results demonstrate that at the 5 percent level of significance, the maximum eigenvalue and trace statistics both point to the existence of a single cointegrating vector between tax revenue and expenditure at the Central and state levels. The cointegration results reveal that there is a long-run relationship between tax revenue and expenditure. The cointegration results reveal that there is a long-run relationship between tax revenue and expenditure. In Table 4, the normalized cointegrated vector is estimated and shown. The findings support the study's hypothesis that there is a positive long-run relationship between tax revenue and spending. The center's and all states' expenditures rise by 96.5 percent and 95.4 percent respectively for every 1 percent increase in tax collection. In the case of India's centre and states, the tax-spend hypothesis is supported by the substantial impact of tax revenue on spending.

Level	Normalized Cointegrating Vector
Centre	CTE= 1.018485+0.965083 (0.01685)
All States	STE= 0.989127+0.954677 (0.00653)

#### Table 4: Long-run Relationship Between Revenue and Expenditure

Note: () Standard Error

# 4.5 VECM and Causality Test

Government tax revenue and total spending are causally related to one another, at least in one direction, according to the Johansen cointegration test, which reveals the existence of one cointegrating vector between the two variables. The short-run dynamics were examined, and Granger causality was assessed in both the short-run and the long-run using a VECM. The Granger causality test of equations (3) and (4) includes error components, allowing researchers to distinguish between short-run and long-run causality. The vector error correction models, which are shown in Table 5, are estimated regarding the cointegration relationship. At the center and state levels, the estimated error correction coefficient ECM (-1) is negative and statistically significant in only the expenditure equation. It represents a long-term causal relationship between revenue and expenditure. The coefficient of error term demonstrates how quickly the system makes corrections for the imbalance from the previous year. The error correction term for the government expenditure equation is found to be -0.189 and -0.405 for the center and state levels, respectively. The government expenditure equation's error correction term, which is based on the t-test statistic, is significant at the 5% level. This suggests that in the cointegrating equation, expenditure is a function of revenue in the long run, indicating that revenue affects expenditure over the long run, supporting the Tax-Spend Hypothesis.

According to Table 5, the lagged coefficient of tax revenue's F-statistic is significant for the center at a level of 10% and for the states at a level of 5%. It demonstrates a short-term causal relationship between tax revenue and government spending. There is no evidence of either a long-term or short-term causal relationship between expenditure and tax revenue in the central government and the states when the error term and the coefficient of lagged expenditure term in equation (4) are found to be insignificant.

Control	Dependent	ΔCTE	ΔCTR	ECT (-1)	P-Value
Central	ΔCTE		2.32693***	-0.189155	0.0629
	ΔCTR	2.32693		0.194372	0.1092
All States	Dependent	∆STE	∆STR	ECT (-1)	P-Value
in States	ΔCTE		5.91086**	-0.405053	0.0053
	ΔCTR	1.71678		0.157462	0.1912

Note: \*\* and \*\*\* F values significant at 5% and 10% Level

# 4.6 Diagnostic Tests

Several diagnostic tests, including the Heteroscedasticity test, the Breusch-Godfrey LM Test for serial correlation, and the Jarque-Bera test for normality, have also been conducted in studies. The test findings are presented in Table 6, and it is considered that they do not violate the test's fundamental assumptions.

Central	Dependent	R <sup>2</sup>	F-statistic VEC Residual Seria Correlation LM Tes		VEC Residual Heteroscedasticity Tests
	ΔCTE	0.127155	2.233749**	0.633486	12.43275
	ΔCTR	0.090670	1.528906	(0.9593)	(0.8241)
All	ΔCTE	0.241920	4.893204**	4.786652	15.82622
States	ΔCTR	0.064898	1.064160	(0.3099)	(0.6047)

Note: \*\* and \*\*\* F values significant at 5% and 10% Level () Probability

#### 5. Conclusions and Policy Implications

The Study used the cointegration test and VECM to test the relationship between central and state governments' tax revenue and expenditure in India over the period 1970 to 2022BE. The unit root test based on Phillips-Perron (PP) test shows that the variables are non-stationary in level but stationary in the first difference. The study used the Johansen cointegration test for examining four major hypotheses in public finance i.e. tax-spend hypothesis, spend-tax hypothesis, fiscal synchronization, and institutional separation hypothesis. Johansen's cointegration method is to identify one cointegrating vector between these variables, which suggests that there is a long-run relationship between government tax revenue and expenditure. The result of the vector error correction models evinces that there is oneway causality running from tax revenue to expenditure both in the short-run and long-run supporting "the tax-spend hypothesis. Which evince that Indian fiscal policy abides itself to the rules of FRBM act 2003, of reducing deficit burden and maintaining better fiscal health. Therefore, the reverse-causality is not found in the analysis either for the short-run or long-run. The study not supported the spend-tax hypothesis, fiscal synchronization hypothesis, and institutional separation hypothesis in India. The study results help both center and state governments in the collection of tax revenue from various sources and formulation of annual budgets to control fiscal deficit. The study helps in the effective allocation of resources, which depends on the tax base and tax rate. Hence, the study gives insights to center and state governments regarding an increase in tax base and decrease in tax rates, which help to control the fiscal deficit in India. Expenditure also plays a significant role in controlling fiscal health. Therefore, governments should manage their expenditure through FRBM Act roles and expenditure policies. If the economy achieves enhanced economic growth it will be possible to raise revenue from domestic sources.

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#### Public Expenditure and Economic Growth Nexus in India: Inter-State Panel Data Analysis

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#### Abstract

The present study has made an attempt to reinvestigate the effect of social sector expenditure (SSE) on economic growth (GSDP) for the panel of 15 major States of India from 2001-02 to 2017-18. The study includes a set of control variables namely, Gross Fixed Capital Formation (GFCF), Infant Mortality Rate (IMR), and Tele Density. Using panel data analysis, the study found that SSE has a positive impact on GSDP, thus supporting the Keynesian hypothesis. Further, the coefficients of all the control variables, except IMR, have a positive and significant effect on economic growth, whereas, IMR has a negative impact on GSDP. Therefore, the study concludes that in order to preserve the country's macro-economic stability, governments should raise development expenditures such as healthcare, infrastructure, etc.

Keywords: Social Sector Expenditure, Gross State Domestic Product, Gross Fixed Capital Formation, Panel Data

#### JEL Classification: E62; O40; C23

#### Introduction

Expenditure theories are given by Wagner (1883), Keynes (1936) and Peacock and Wiseman (1961) have established a relationship between public spending and economic growth. Barro (1990) and Nkurunziza et.al (2003), have established public investment as a positive determinant of economic growth. Contrary, Sheehey (1993), Shantayanan et al. (1996), Furceri and Ribeiro (2008), Romar and Romar (2010), Alperet et al. (2016) saw public spending as a detrimental determinant of economic growth.

In theory, there are three approaches to public expenditure i.e. the law of Wagner (1883), the law of Keynes (1936), and the principle of Peacock and Wiseman (1961), which have discussed different aspects of public spending and its effect on economic growth. Wagner's law of "increasing public and state intervention" states that the role of public spending is an endogenous variable in the economic growth cycle. It argues that economic growth leads to higher real income, leading to increased demand for infrastructure, housing, education, and social security services. The Keynesian paradigm claims that public expenditure is an exogenous factor that affects growth, or that public expenditure can be used as a policy instrument for job creation and growth and economic activity stimulus. Peacock and Wiseman concentrated on the trajectory of public spending and claimed that public spending is not following a steady or constant trend but the increase in public spending is taking place in jerks or moves. To support the hypothesis, they gave three distinct concepts Displacement Effect, Inspection Effect and Concentration effect.

Macroeconomists considered many factors that lead to economic growth through public spending. Public spending for any economy consists, broadly classified into two categories namely development and non-development expenditure. Public infrastructure expenditure positively affects growth through the creation of private capital. If the government spends on power generation, transportation, and telecommunications, the rate of return on building a factory is much greater. Nonetheless, public infrastructure spending will adversely affect growth if the government finances such expansionary spending by increasing distortionary taxes, which reduces private investment's rate of return, this leads to the crowding-out effect (Keynesian Economics).

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Economic growth in a country depends on a number of factors, such as savings, investment consumption, government spending, etc. Barro and Sala-i-Martin (1995) and Barro (1996, 2003) analyzed the determinants of economic growth and found that average years of education, life expectancy, human capital, education spending, expenditure ratio, terms of trade, the rule of law index, and the index of democracy were positively related to economic growth, while variables such as government consumption, political instability, inflation, etc. were inversely linked to economic growth (Sharma and Mittal, 2019). Mankiw et al. (1992) and Stern (1991) found that physical capital accumulation and population growth had a greater impact on per capita income. Government action however also plays a vital role in an economy's growth (Stern 1991).

The keynesian school suggests that public spending is viewed as an exogenous factor and used as a tool for controlling economic growth. Based on this assumption, by means of the multiplier effect, many developed and developing countries have used the fiscal policy as a tool to encourage and improve economic growth (King, 2012). Studies validating the Keynesian public spending hypothesis include Pradhan (2007) for India, Babatunde (2008) for Nigeria, Magazzino (2010) for Italy, and Ighodaro and Oriakhi (2010) for Nigeria.

Such mixed empirical outcomes and the rising value and policy implications of public spending in a developing country such as India make the present issue quite important. The present study is therefore aimed at examining the relationship between public spending and economic growth between 15 major Indian states for a span of 17 years (2001-2017) using the Fixed Effect and Random Effect Model approach.

# A Brief Review of Literature

A vast literature is available on the impact of public spending on economic growth and vice- versa. Alper et al. (2016) found that all three dimensions, namely employment, health, and social spending, contribute significantly to economic growth in 18 OECD countries for the period 2002 to 2013. This analysis utilized estimators of Feasible Generalized Least Square (FGLS) based on a panel of balanced datasets. Chen (2005) found that the economic variables affect the standard of knowledge. Economic growth allows the government's ideal response to greater impacts on infrastructure, by changing the share of spending between productive facilities and customers. Expenditure on Social Services (ESS) like health, education, family welfare, and social security is also helpful for economic growth.

Some studies have indicated that public spending has an adverse effect on economic growth. Ram (1986) argued that the overall economic effect of the government size is positive. Shantayanan et al. (1996) observed that the relation between the capital portion of government spending and per capita growth is negative due to the misallocated public spending in favor of capital spending at the cost of current spending in developing nations. Hong (2014) found a strong negative correlation between welfare spending, pension spending levels, and GDP growth, with significant policy implications. Maitra (2018) found that there is a long-term relationship of life expectancy with investment in education, health care, and income.

Seema (2006) found that India has indeed made noticeable improvements in key social indicators on education and health; this is mainly the result of large-scale government programs/schemes since 1980. Using annual time series data spanning the period from 1980 to 2013, Mohapatra and Giri (2016) explored the relationship between the structure of public spending and India's economic growth and assessed a significant positive long-term effect on economic growth from development spending while spending on non-development and revenue reveals a negligible effect on economic growth. Madhumita et al. (2019) studied the causal relationship between government expenditure and economic development in 28 Indian States and demonstrates a causal flow from growth in the real sector to increased public spending for the relatively developed and less-developed states. Gregoriou et al. (2009)

Showed that countries with substantial government current expenditure have strong growth affects which vary considerably across the nations.

## Trend and Composition of Social Sector Expenditure and Economic Growth in India

## **Social Sector Expenditure**

Examining the pattern of Social Sector Expenditure and Economic Growth rate in India, it could be observed from the figure quite below that there was an erratic behavior





## Source: RBI, 2018

Figure 1 indicates that the Gross Domestic Product (GDP) growth rate and social Sector expenditure growth rate (SSE) was the same in 2002. The growth rate of GDP has increased in 2003, while the growth rate of SSE remained virtually constant. Following 2003, the growth rate of SSE grew significantly until 2008-09. In contrast, GDP growth slowly decreased between 2005 and 2008 and sharply decreased during 2008-09. Furthermore, GDP growth has increased significantly between 2009 and 2011 and subsequently declined abruptly from 2011 to 12 and gradually increased afterward. Although the growth rate of SSE dropped significantly during 2009 and 2011, then it increased marginally in 2011-12 and unexpectedly decreased from 2012 to 14. In 2014-2015 it again increased significantly and decreased again in 2015-16. Therefore, it can be understood here that the GDP growth rate is not related to the SSE growth rate. On the contrary, it appears to be an inverse relationship. Therefore, there is a need to study the relationship between GDP and SSE at the disaggregated level.

# Methodology

In this analysis, we used the data model of the Panel to capture the variables ' complex actions and provide a more accurate estimate. In order to deal with variability or individual effects that may or may not be observed, panel data models analyze group (person-specific) effects, time effects, or both. Such effects are either fixed or random. A fixed-effect model investigates how intercepts vary across the group or time period, while a random-effect model explores variations in individual or time-limited components of the error variance. Fixed effects are checked by the F test while the Lagrange multiplier (LM) test tests the random effects. When in every test the null hypothesis is not rejected, the pooled regression of OLS is favored. To remove the heteroskedasticity problem, all the specified variables are transformed into a natural log form. We define the function, for our analysis:

# $LnGSDP_{it} = \alpha + \beta_0 LnSSE_{it} + \beta_1 LnGFCF_{it} + \beta_2 IMR_{it} + \beta_3 Tele_{it} + \varepsilon_{it}$

Where,

 $LnGSDP_{it}$  is the log of Gross State Domestic Product for the state i at time t

 $LnSSE_{it}$  is the log of Social Sector Expenditure for the state i at time t

LnGFCF<sub>it</sub> is the log of Gross Fixed Capital Formation for the state i at time t

IMR<sub>it</sub> is the Infant Mortality Rate for the state i at time t

Tele<sub>it</sub> is the Tele Density for the state i at time t

 $\varepsilon_{it}$  is the error term for the state i at time t

<b>Results of Pooled</b>	OLS.	Fixed	Effect	Model	and	Random	Effect	Model
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Variable	OLS		FEM		REM	REM	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	
SSE	0.58	0.00	0.36	0.00	0.46	0.00	
GFCF	0.19	0.00	0.10	0.00	0.12	0.00	
IMR	-0.01	0.00	-0.014	0.00	-0.009	0.00	
Tele	0.0003	0.65	0.005	0.00	0.003	0.00	
Constant	5.62	0.00	8.65	0.00	7.34	0.00	
F-test	702.50 (0.00)		834.81 (0.00)				
R-square	0.91		0.93		0.93		

Source-Authors Compilation

Firstly, the performance of the pooled OLS regression is compared to the model of fixed effects. It is evident from Table 2, that all goodness-of-fit tests such as F-test, R-square, etc. have been improved by fixed effects model. So the study concluded that the model of fixed effects is better than the model of pooled OLS. Furthermore, the comparison of the pooled OLS estimation results with the model of random effects is achieved by applying the Breusch and Pagan Lagrange Multiplier (LM) test as shown in table 3.

Table 3: Breusch and Pagan Lagrangian Multiplier Test for Random Effects

	Variance	Std. Deviation
LnGSDP	0.72	0.85
Ε	0.03	0.17
U	0.03	0.17

Test: Var $(u) = 0$	
Chibar2 (01) = 294.85	
Prob>Chibar2 = 0.00	

Source- Authors Compilation

The LM test assesses whether there is any random effect. The null hypothesis of this test is that components with individual or time-specific variation of errors are zero: H0:  $\sigma^2 u= 0$ . With the strong chi-square of 294.85 in Table 3, we reject the null hypothesis and conclude that components of the individual or time-specific error variance are not zero i.e. the model of random effects is better than the pooled OLS. Third, we applied the Hausman Specification test to determine the effect is more relevant because both models are important.

Table 4:	Hausman	Test
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	b(FE)	B(RE)	Difference(b-B)	S.E.				
SSE	0.30	0.46	-0.10	0.036				
GFCF	0.10	0.12	-0.018	0.007				
TELE	0.005	0.004	0.001	0.0003				
IMR	-0.014	-0.009	-0.004	0.002				
Where,		·						
b = consistent under Ho and Ha; obtained from xtreg								
B = inconsistent under Ha, efficient under Ho; obtained from xtreg								
Test: H0: difference in coefficients not systematic								
Chi2(4) = 20.63								

Prob>chi2= 0.0004

Source-Authors Compilation

Based on the Hausman definition test as shown in Table 4, the score for chi-squares is 20.63 which is high enough to reject the null hypothesis. So, the study concluded that the fixed effects model is giving better results than the random effects model.

In the Fixed Effect Model (FEM) variables, Gross State Domestic Product (GSDP), Social Sector Expenditure (SSE), Gross Fixed Capital Formation (GFCF), Infant Mortality Rate (IMR), and Tele Density (Tele) are statistically significant at a 5 per cent level of significance. The Social Sector Expenditure (SSE) coefficient has a positive (as expected) and a significant effect on GSDP at a significance level of 5 per cent. The results showed that GSDP would increase by 0.36 percentage point on an average if SSE increases by 1 per cent. This result supports the Keynesian hypothesis.

Gross Fixed Capital Formation (GFCF) estimates the value of acquisitions of new or existing fixed assets by the business sector, governments, and "real" households (excluding their unincorporated enterprises) fewer disposals of fixed assets. Investments or capital formation is maybe one of the keys to realizing India's vision of fast economic growth. Therefore, the GFCF is taken as one of the main variable in this analysis. The GFCF coefficient has a positive (as expected) and important significance

level effect on GSDP at 5 per cent. The results found that GSDP would rise by 0.10 percentage point on average if GFCF rises by 1 per cent.

Infant mortality represents the country's status of socio-economic growth and quality of life and is used for monitoring and assessment of population and health policies. In this analysis, the IMR coefficient has a negative (as expected) impact on GSDP at a meaning level of 5 per cent. The results showed that GSDP will decrease by an average of -0.014 percentage point if IMR increases by 1 percent. These results are similar to past research, such as the Economic Development Center family for Malaysia RAND (1986), Ensor et al. (2010) proposed that, especially at earlier (1936-1965) stages of the development of a nation, the recession had a negative connection with maternal and infant outcomes.

Infrastructure plays a significant role in promoting growth and development. India has become popular in recent years as a fast-growing economy. The telecommunications sector has become a key to socioeconomic development in a country in the 21st century. It is one of the most crucial support services essential for the growth and modernization of different economic sectors. The teledensity is called as an infrastructure proxy here. The coefficient of Tele has a positive (as expected) and significant impact on GSDP at 5 per cent level of significance. The results found that if Tele increase by 1 per cent, GSDP will increase by 0.005 Percentage point on an average. Haider et al. (2017) supported the findings that telecommunication infrastructure is represented by the tele-density growth of a country, which plays a vital role in pushing the growth and development process forward in the global economy. Information communication technologies play a major role in strengthening the country's economy (Sharif and Raza 2016, Raza et al. 2016, Zaman et al. 2016, Raza 2015, Alam et al. (2015). Kaur et al. (2014) indicated that there is a causal relationship exists between the growth and growth of telecommunications, manufacturing, and services sectors.

## **Concluding Remarks**

The question of a relationship between components of public expenditures and economic growth is of vital importance for designing appropriate economic policy for any government. Public expenditures have been undergoing some profound changes after the initiation of economic reforms in India. In comparison with other countries, social sector spending in India has always been very low. There are a number of theories regarding the relationship between public spending and economic growth, with more attention given to two approaches, namely Wagner and Keynesian approaches.

Hence, this article is an attempt to investigates the nexus between public expenditure (especially Social Sector expenditure)and economic growth among 15 major Indian States taking into account other variables, such as Gross Fixed Capital Formation (GFCF), Infant Mortality Rate (IMR) and Tele Density, by using annual data from 2001-02 to 2017–18.

The study applied an extensive data model for the Panel based from 2001-02 to 2017-18 and employed Fixed and Random Effect Models for the empirical investigation. The fixed effect is examined by the F tests while random effects are tested by the Lagrange multiplier (LM) test. The data set has been taken from the Reserve Bank of India's (RBI) Handbook of Indian Statistics.

The study found that the fixed effect model gives better results than the pooled OLS model. This result supports the Keynesian hypothesis. The GFCF coefficient has a positive (as expected) and important significance level effect on GSDP at 5 per cent. IMR coefficient has a negative (as expected) impact on GSDP at a significance level of 5 per cent. The coefficient of Tele Density has a positive (as expected) and significant impact on GSDP at 5 per cent level of significance. The findings suggest that if social sector expenditure is increased by 1per cent, GSDP will grow by 0.36 percentage point on average.

This is clear that there is a direct relation between Social Sector Expenditure and Economic Growth in India. Social Sector Expenditure consists of expenditure on health, education and infrastructure.

Therefore, one should be careful in allocating the expenditure to these activities. To fasten the economic growth in India vis-à-vis States there is a need to increase expenditure on Social Sector

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# ROLE OF CAPITAL STRUCTURE ON FIRM PROFITABILITY: AN EVIDENCE FROM INDIAN FIRMS

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#### Abstract:

The capital structure refers to the equity and debt funding of a firm. The top level management of firm is aimed at maximizing the firm's value and as well reducing the cost of capital. When a firm reached this point, it means that an optimum capital structure has been reached. Optimal capital structure is, perhaps, the most favoured topic for both academicians and managers alike. It is not only for cost minimization that optimal capital structure ignites interest; any company's ability to face competition and uncertainty effectively also depends on capital structure. The current study also draws inspiration from the importance of capital structure and investigates how the Indian companies are faring. The study is focused on individual effect of total debt and total equity ratios on profitability. A sample of 342 companies from BSE index 500 was taken for the study, excluding banks and NBFCs. OLS, fixed effects and random effects methods were used to find the impact of debt on the returns of these companies. The debt ratio is negatively impacting ROA and ROE, but equity ratio (TEA) is positively influencing ROA and ROE. We surmise that capital structure has a significant impact on profitability in concurrence with Azhagaiah and Gavoury (2011) and in contrast to the results reported by Ebaid (2009).

#### Introduction:

To maximize returns and to be efficient in facing competition, finance managers will have to be prudent in deciding the debt and equity mix of a firm, known as capital structure. Firms have many alternative capital structures to choose from – reducing share capital to increase leverage. Further firms have many other instruments to lean upon such as debentures, convertible bonds, lease financing etc. A combination of these instruments that enhance a firm's market value would be the optimal combination. After Modigliani and Millers (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment," plethora of studiesexplored capital structure theory. Haugen, Robert A. and Lemma W. Senbet (1981) established the relevance of the capital structure theory stating that the 'Irrelevance Theory'is inappropriate.

Many a theory has been propagated deal with the capital structure of companies, yet the optimal capital structure has been elusive. Academicians and managers have, at best, achieved combinations that satisfy short-term goals. This lack of understanding among financial fraternity regarding the optimal capital structure has triggered this research. Any attempt to explain an optimal structure has to begin by looking at the very basic notion of capital structure and how it influences profits of any firm.

This paper investigates how far capital structure impacts profitability by examining companies that are listed on the BSE during the period 2012-21. The following section gives a review of literature. The next section describes data and provides relevance of the variables used in analysis. The later section will discuss the result of the empirical analysis. Finally, the last section summarizes the finds of the research and concludes the discussion.

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## **Review of literature:**

Since the mid-20<sup>th</sup> century researchers started examining the role of capital structure in different facets of a firm. Durand (1952), one of the first works on capital structure, argued the relevance of capital structure in firm's valuation. As per Modigliani and Miller (1958) capital structure do not influence the market value of any firm operating in a perfect market. According to them perfect market is characterized by no taxes, no transaction and bankruptcy costs. However, in real world scenario with taxes, tax payable will be inversely proportional to leverage. This will ultimately reduce the weighted average cost of capital, leading to maximization of the firm value. By considering tax benefits determinants of the capital structure, Modigliani and Miller (1963) altered their conclusions to state that firms should leverage to maximize the firm's value. Firm's value depends more on the relative tax rate than the other variables. Subsequent theories considered bankruptcy cost, agency theory, and the peeking order theory to determine optimal capital structure. When the probability of a firm defaulting on its debt is greater than zero – which is directly proportional to the level of debt – bankruptcy costs come into play. While, expenses paid to the third party, such as insolvency administrators and lawyers, are called direct bankruptcy costs, losses that result from reluctant stakeholders to transact during the bankruptcy process are called indirect costs (Titman, S., & Wessels, R 1988). Agency costs are the expenses incurred in managing the business as the managers are hired by shareholders (Jensen and Meckling, 1976). It will be the job of managers to optimize the capital structure by leveraging to increase returns to shareholders. Myers (1984) proposed static trade-off theory that suggested balancing gains (i.e., increased firm vale due to debt) of debt financing with the costs associated with it.Kraus, A., & Litzenberger (1973) stated that "optimal leverage provides a trade-off between the tax benefits of debt and the deadweight costs of bankruptcy."

However, cost of capital, by extension the cost of debt, will vary due to information asymmetry. Between the firm and the possible sources of finance information will vary leading to differences in cost of capital. For instance, internal funds will cost less compared to equity shares or debt. This leads to hierarchy of firm preferences while making decisions related to financing. This hierarchy gave rise to 'pecking order theory', which suggests that firms will first prefer internal funds, then debt financing and lastly equity. Myers(1984) and Mayers and Majluf (1984), considered asymmetric information in their discussions on optimal capital structure.

Some studies have indicated a negative relation between profitability and leverage (Friend and Lang, 1988; Rajan and Zingales, 1995). Further, Graham (2000) noted that large, profitable companies tend to have lower debt compared to less profitable companies. Mesquita and Lara (2003) found negative relationship between long-term financing and debt while short-term financing possessed positive relation with equity. Abor (2005) found positive relation with short-term debt and negative relation with long-term debt.

On the contrary, Roden and Lewellen(1995) found that profitability and total debt are positively associated. Champion (1999) advocated leverage to be one way of improving organizational performance. Hadlock and James (2002) suggested that companies preferred debt anticipating higher return. Other studies also confirmed positive relationship between firm structure and profitability.

Numerous other studies have investigated how capital structure influences profitability, but most of them were outside of India. A few studies were conducted using data from Indian firms. In the few studies that were conducted, results were divided. While, Vătavu (2015) and Nasimi (2016) found a relation between profitability and leverage, Chadha and Sharma (2016) stated that there is no evidence to suggest the same. Many theories tried explaining the optimal capital structure, however, no theory can help figure out optimal capital structure. This study attempts in that direction by studying how capital structure influences profits of BSE index firms using employing panel data regression analysis.

## **Research Methodology:**

The study is based on S&P BSE 500 index companies representing all the sectors of the economy. Of 500 companies, which make for BSE 500, banks and NBFCs are excluded resulting in the sample size of 342 companies. Panel data was used to measure how capital structure impacts profitability as it provides certain benefits like heterogeneous sample assumption, less collinearity among variables and more degree of freedom providing better efficiency. Data between 2012 to 2021 financial years has been taken from 'Prowess' database.

For this study, ROA and ROE are considered to be dependent variables representing the financial performance of firms. ROA measures how efficiently assets have been deployed by the firm and ROE indicates how effectively shareholder capital has been invested. Independent variables are ratio between total assets and total liabilities (TLA) and ratio between total assets and total equity (TEA).

Profitability and leverage ratios are also used for the analysis. EBIT to equity ratio is used for profitability. Short-term debt to capital; long term debt to the capital; and total debt to total capital have been used to indicate leverage.

The determinants of capital structure viz. asset tangibility i.e., fixed assets to total assets ratio (TAN,); tax (TX, tax to EBIT ratio); business risk (BR, percentage change in EBIT to percentage change in net sales); liquidity (LQ, current assets to current liabilities ratio), and the annual inflation rate (IR).

Impact of capital structure on profitability has been measured through correlation, unit root test and regression along with descriptive statistics. The regression is employed through the following equation:

 $ROA_{it} = a_{it} + b_1 TLA_{it} + b_2 TAN_{it} + b_3 TX_{it} + b_4 BR_{it} + b_5 LQ_{it} + b_6 IR_{it} + e_{it} - 1$ 

 $ROA_{it} = a_{it} + b_1 TEAit + b_2 TAN_{it} + b_3 TX_{it} + b_4 BR_{it} + b_5 LQ_{it} + b_6 IR_{it} + e_{it} - 2$ 

 $ROE_{it} = a_{it} + b_1 TLA_{it} + b_2 TAN_{it} + b_3 TX_{it} + b_4 BR_{it} + b_5 LQ_{it} + b_6 IR_{it} + e_{it} - ----3$ 

 $ROE_{it} = a_{it} + b_1 TEA_{it} + b_2 TAN_{it} + b_3 TX_{it} + b_4 BR_{it} + b_5 LQ_{it} + b_6 IR_{it} + e_{it} - 4$ 

Where, ait is the unknown intercept for every firm,

i = 1, ..., 342,

t = 2012,...,2021,

b<sub>i</sub> is beta coefficients

and e<sub>it</sub> is the error term.

The null hypothesis can be stated as TLA has no impact on ROA, that is,  $b_1 = 0$ .

Similarly, TLA has no impact on ROE, can be stated. The same can also be stated for TEA as independent variable.

Ordinary Least Squares, Fixed effect and Random effect were used for analysis and hypothesis testing. The OLS, regression analysis method, finds the line that best fits for a dataset, to visually demonstrate the relationship between the data points.

The fixed effects model explores the relationships between independent variables and explained variables in separate entities, assuming that companies have their own characteristics that influence the relationships between variables.

On the other hand, the random effects model implies a random variation across firms, uncorrelated with explanatory variables. The Hausman test reveals the better model between the fixed and random effects.

The null and alternate hypotheses for this test are that the random effect and fixed effect are appropriate, respectively.

# **RESULTS AND DISCUSSION**

## **Descriptive Statistics:**

Descriptive statistics of the sample are presented in Table 1. The non zero skewness and kurtosis suggest that the distributions are skewed. TLA, TX and BR are negatively skewed and ROA, ROE, TEA, TAN and IR are positively skewed. Also, JB test are zeros implying non-normally distribution. For all the variables, Kurtosis is greater than 3 suggesting that the variables are leptokurtic in nature. Kurtosis of Tax is very high suggesting high probability of extreme nature in taxation. Due to high kurtosis of tax, BR also exhibits high kurtosis.

	ROA	ROE	TLA	TEA	TAN	TX	LQ	BR	IR
Mean	13.65	24.56	58.76	44.82	30.46	18.98	201.76	-132.76	8.38
Std. Dev.	12.34	17.34	21.12	20.43	19.56	26.78	146.58	3654.65	4.08
Skewness	1.65	1.78	-0.78	0.65	1.86	-17.65	3.01	-14.25	0.45
Kurtosis	8.76	9.45	4.36	3.35	4.09	312.43	18.65	176.43	7.23
J B Prob.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE 1. DESCRIPTIVE STATISTICS

(Source: Secondary Data Processed)

# **Correlation Analysis:**

The correlations matrix is presented in Table 2. The negative correlations of debt ratio with both ROA and ROE, indicates debt ratio has negative impact on earnings. Equity is positively related with both ROA and ROE suggesting a positive impact of equity on company's performance. The variables that reduce earnings such as tax, inflation and liquidity show a negatively correlation with returns. Surprisingly, proportion of total liabilities to total assets is also negatively correlated with earnings. This may be indicative of the higher interest on serving liabilities as their proportion in assets increase. It is important to note that TEA, which is a proportion of equity in total assets is positive, indicating lower interests are increasing earnings. As they must be ROA and ROE are showing a high positive correlation with each other. Liquidity, LQ is negatively correlated to TAN, fixed assets to total assets ratio, showing an inverse proportionality between liquidity and fixed assets. BR, business risk, shows positive correlation with tax, TX and LQ. This might be due to the formula used for defining business risk in which tax is one component. Naturally, as tax component increases or liquidity increases, profits will be reduced. Inflation shows a negative correlation with tax, pointing towards fiscal policy of governments that increase taxes to reduce inflation. Generally, higher tax leads low spending capacity of firms and thus resulting in low inflation.

	ROA	ROE	TAN	ТΧ	LQ	BR	IR	TTA	TEA
ROA	1								
ROE	0.898	1							
TAN	-0.413	-0.209	1						
TX	0.156	0.173	-0.087	1					
LQ	0.312	0.086	-0.513	0.098	1				
BR	0.076	0.082	0.078	0.012	0.076	1			
IR	-0.054	0.062	-0.087	-0.011	0.197	0.072	1		
TLA	-0.424	-0.182	0.512	-0.201	-0.432	0.078	0.097	1	
TEA	0.413	0.524	-0.524	0.185	0.365	-0.084	-0.076	-0.912	1

# TABLE 2. CORRELATION

(Source: Secondary Data Processed)

## Unit Root Test:

All the variables must satisfy stationarity test for the better results in regression analysis. To test stationarity of variables, Breitung t-stat; Im, Pesaran and Shin W-stat (IPS W-stat); augmented Dickey–Fuller (ADF) test; and Fisher's Chi- square test are employed. Both 'individual intercept, and 'trend and intercept' form of Chi- square have been used. Table 3 shows the results of unit root tests. The table shows that all the are stationary at 5 percent significance level.

Variable	Model	p-value						
v unuoie	model	LLC	Breitung	IPS	ADF	PP	Inference	
ROA	Intercept	0	_	0.0004	0	0	Stationary	
	Trend	0	0.9102	0.1987	0.0312	0.0002	Stationary	
ROE	Intercept	0	-	0.0242	0.0065	0.0004	Stationary	
	Trend	0	0.7865	0.0762	0.0211	0	Stationary	
TAN	Intercept	0.0086	_	0.0542	0.0765	0.0524	Stationary	
	Trend	0	0.7876	0.0312	0.0374	0.0652	Stationary	
ТХ	Intercept	0.0121	-	0	0	0	Stationary	
	Trend	0	0.0972	0.0011	0	0	Stationary	
LQ	Intercept	0	_	0.1653	0.0423	0	Stationary	

 TABLE: 3 UNIT ROOT TEST RESULT

	Trend	0	0.7812	0.0261	0.0765	0.0052	Stationary
BR	Intercept	0	_	0	0	0	Stationary
	Trend	0	0.4512	0.0121	0	0	Stationary
IR	Intercept	0	_	0.0323	0.0765	0.0824	Stationary
	Trend	0	0	0.0061	0	0	Stationary
TLA	Intercept	0	_	0.0252	0.0281	0.0652	Stationary
	Trend	0	0.8612	0.3865	0.0812	0.0212	Stationary*
TEA	Intercept	0	-	0.0251	0.0312	0.0422	Stationary
	Trend	0	0.9542	0.3898	0.0815	0.0187	Stationary*

(Source: Secondary Data Processed)

# **Result of Regression and Hausman Test:**

As discussed, two regression models with two dependent variables were used to see capital structure is influencing profitability. This results in for regression models. Total debt (TLA) and total equity (TEA) ratios are taken as independent variables along with ROA and ROE as dependent variables and control variables (TAN, TX, BR, LQ, IR). Each model has been tested using OLS, fixed effects and random effects. Tables 4 and 5 show the results of regression.

As evident from Table 4, random effect model is appropriate to explain the relationship among variables as Hausman test reveals. Thus, only random effects results are discussed in detail.

In the first model, TLA, at 5 percent significance is negatively impacting ROA. Even at 1 percent significance level also the TLA shows negative impact on ROA, meaning that, statistically, total debt will reduce profitability, similar to the findings of Vătavu (2015). P-value of no other variable is less than 0.05 indicating on impact on ROA at 5 percent level of significance.

Likewise in model 2, TEA, at 5 percent significance is impacting ROA positively and also at 10 percent significance, meaning that higher equity results in better profitability. No other variable's p-value is less than 0.05 indicating that at 5 percent level of significance these variables do no impact ROA.

TABLE: 4 REGRESSION ANALYSIS— DEPENDENT VARIABLE ROA

	Мс	odel 1		Model 2			
	OLS	FE	RE		OLS	FE	RE
TLA	0.0267	-0.1865	-0.2143	TEA	0.1765	0.1542	0.2345
	(0.0000)	(0.0064)	(0.0000)		(0.0000)	(0.0052)	(0.0000)
TAN	-0.0318	0.0325	-0.0543	TAN	-0.0765	0.0342	-0.0342
	(0.4865)	(0.7534)	(0.5243)		(0.5432)	(0.5432)	(0.4873)
TX	0.0279	0.0343	0.0341	TX	0.0342	0.0345	0.0343
	(0.0532)	(0.0786)	(0.0611)		(0.0421)	(0.0754)	(0.0492)

LQ	0.0023	0.0532	0.0012	LQ	0.0006	0.0031	0.0006
	(0.7685)	(0.8654)	(0.8654)		(0.8654)	(0.4552)	(0.8654)
BR	0.0001	0.0019	0.0364	BR	0.0043	0.0018	0.0032
	(0.5343)	(0.8765)	(0.7265)		(0.7654)	(0.8254)	(0.7654)
IR	0.0532	0.0432	0.0422	IR	0.0251	0.0542	0.0302
	(0.8286)	(0.9564)	(0.7854)		(0.8543)	(0.7543)	(0.7864)
Hausman		0.0765		Hausman		0.0765	

(Source: Secondary Data Processed)

# TABLE: 5 REGRESSION ANALYSIS— DEPENDENT VARIABLE ROE

Model 3					Model 4				
	OLS	FE	RE		OLS	FE	RE		
TLA	-0.0532	0.1842	0.0387	TEA	-0.0426	-0.1276	-0.0412		
	(0.4324)	(0.0852)	(0.5676)		(0.7207)	(0.0473)	(0.5763)		
TAN	-0.1876	0.1259	0.0231	TAN	0.0211	0.1185	0.0151		
	(0.0052)	(0.1235)	(0.8602)		(0.7872)	(0.1345)	(0.7604)		
TX	0.0898	0.1524	0.0572	TX	0.0788	0.0716	0.0654		
	(0.0035)	(0.0165)	(0.0089)		(0.0083)	(0.0212)	(0.0086)		
LQ	-0.0052	0.0031	-0.0076	LQ	-0.0023	0.0041	-0.0023		
	(0.5256)	(0.6726)	(0.7565)		(0.8162)	(0.5608)	(0.7235)		
BR	0.0052	0.0012	0.0036	BR	0.0064	0.0209	0.0386		
	(0.1624)	(0.8527)	(0.8504)		(0.7403)	(0.7654)	(0.8402)		
IR	0.0524	0.0343	0.0823	IR	0.0821	0.02298	0.0876		
	(0.8728)	(0.9876)	(0.8965)		(0.7341)	(0.8632)	(0.7264)		
Hausman		0.0191		Hausman		0.0191			

(Source: Secondary Data Processed)

As evident from Table 5, fixed effect model is more appropriate to explain relationship among the variables as Hausman test results show. Thus, only the fixed effects model results are discussed in detail. In the third model, at 10 percent level of significanceTLA is significantly impacting ROE but not at 5 percent significance. Among other variables, only tax has positive impact at 5 percent significance level while all other variables are impacting at 10 percent significance. The results concur with Abor (2005) but contrast the findings of Tailab (2014) and Vătavu (2015).

In model 4, TEA has a negative impact on ROE at 5 percent significance level. Tax has a significant positive influence on ROE at 5 percent level of significance, as it is in Model 3. It may be because of
increase in tax increasestax shield reducing taxes. This further results in increase in return to equity shareholders. However, no other variable hasany effect on ROE at 5 percent level of significance but are impacting at 10 percent significance. We surmise that capital structure has a significant impact on profitability in concurrence with Azhagaiah and Gavoury (2011) and in contrast to the results reported by Ebaid (2009).

# **CONCLUSION:**

On studying the impact of capital structure on profitability of BSE indexed 500 companies from 2012 to 2021, it can be concluded that capital structure does influence profitability. The ratio of tax to EBIT (TX), the debt ratio (TLA) and business risk (BR), are negatively skewed. Fixed assets to total assets ratio (TAN), inflation rate (IR), equity ratio of (TEA)and liquidity (LQ)i.e., the ratio between current assets and current liabilities, are positively skewed. Debt ratio is negatively impacting ROA and ROE, but equity ratio (TEA) is positively influencing ROA and ROE, as evident from correlation matrix.

Increase in debt is resulting in lower ROA and increase in equity is increasing ROA, as indicated by random effect models (model 1 and 2). These results are in concurrence Vătavu (2015). The fixed effect models (model 3 and 4) indicate a positive correlation between total debt and ROE, while equity and ROE are negatively correlated. As increase in debt results in tax shielding, thereby increasing return to equity shareholders. These results are in contrast the findings of Vătavu (2015). Tax has a significant positive influence on return on equity. This leads to a conclusion that that capital structure significantly influences profitability. The study further assets the findings or Azhagaiah and Gavoury (2011) while differing Ebaid (2009).

The results of this study are useful for investors, lenders, as well as corporate firms. It will also help the financial managers to identify their optimal capital structure in order to maximize the value of the firm. The future study can focus on a larger group of companies or it can be industry-specific.

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# Analysis of expenditure asymmetry in India Comparative analysis of select Indian states

# Darshini J S

# Abstract

The objective of the article is to assess the asymmetric response of the spending to the positive and negative changes in the conditional and unconditional transfers with respect to three major states such as Bihar, Odisha and Punjab for the period from 1980 to 2015. The NARDL time-series regression model has been employed to test asymmetry in spending. The study reveals the role of unconditional transfers in soft budget constraints at the sub-national level. A fiscal restraint form of asymmetry is evident for development part of spending during reduced allocation of central funds and even fungibility of resources is evident. Diversion or reduced allocation of states' own funds could be the possible reason behind such asymmetry. States over-reliance on the central transfers may soften the budget constraints, could distort the local governments' policy decisions. Revenue surplus in the revenue account plays an important role and even influence the pattern of spending at the sub-national level. Along with central dependency, states need to focus more on their budgetary management, prudent debt management. Besides, the paper brings out the influence of political factors on the composition of spending.

# Introduction

Fiscal asymmetry in powers of taxation and expenditure responsibilities all vested in any federal structure. Larger the extent of asymmetry among the sub-national governments both in the capacity to collect revenue and cost of providing public services coupled with comparatively larger assigned expenditure responsibilities are the sources of horizontal and vertical imbalance. In the Indian context, the central government has been assigned a greater share in the divisible pool vis-a-vis the states as part of catering to the larger needs of national importance. Furthermore, a mismatch between revenue mobilization and larger responsibilities has made the states depend on the central Government transfers for providing various socio-economic services. These factors necessitate more dependency on central transfers in the path of fiscal adjustment. Given the nature and design of a federal system like India and the larger responsibilities at the sub-national level, intergovernmental transfers play an instrumental role in shaping the fiscal performance and way of fiscal adjustment at the sub-national level.

As per the existing literature, the factors such as inadequate own source revenue, compositional shift in transfers, inaccurate central tax revenue forecasting method, (Dholakia, 2005) had an adverse impact on states' spending patterns. As documented well in the literature, as compared to the 1980s, transfers started showing a decreasing

trend during the 1990s and further decreased from 4.89% in 1990-91 to 3.79% in 1999-00 before increasing fairly to 4.30% in 2003-04(Chakrabarty et al, 2009). And a significant rise is observed in-between 2004-05, 2005-06 and 2009-10, followed by a sharp decline in the transfers in-between 2007-08 to 2009-10 (Chakrabarty and Bhadra, 2010).

Thus, such variations in the revenue sources may lead to asymmetric response to development spending. Increase in revenue cyclicality may even alter the fiscal space for development spending, in that it may force the states to cut down on their non-committed spending when they find it difficult to reduce their committed spending. Hence, development spending is closely linked to the degree of dependence on central transfers and states' own revenue sources. In this backdrop, this analysis tries to test empirically the validity of an asymmetric response of dependent expenditure to the positive and negative changes in the independent variables.

# 2.1 Scope of the Study

In order to examine empirically the validity of an asymmetric response of expenditure, it is important to specify the scope of this analysis. Since an analysis of non-linearity (asymmetry) between development spending and transfers is the main focus of this paper, to test the response of sub-national spending to central transfers such as unconditional transfers, conditional transfers, the study considers time series NARDL model (Shin et al.,2014) to simultaneously estimating a dynamic long-run and asymmetric relationship between the variables. The present analysis focuses primarily on 3 major states such as Bihar, Orissa, and Punjab. Among 3 states, Bihar and Orissa are the larger dependents on central contribution for more than half of their revenue receipts, whereas Punjab is more own-source revenue to finance its expenditure obligations. The period of analysis is from 1980-1981 to 2014 -2015. Besides transfers, own revenue diversification and political and institutional-reform variables are also employed in the analysis. The data required for the study was compiled from the RBI Bulletin, State Finance documents, CSO and Election Commission of India.

# 2.2 Pattern of Expenditure

States depend on the alternative revenue sources to finance their total volume of expenditure. Comparing the volume of own tax spending and central dependency on spending, in Bihar and Odisha there is a larger dependence on central transfers whereas, Punjab, is relatively more dependent on its own revenue to finance their revenue expenditure which is evident from the table 1. In Odisha, both the own tax spending and central dependency on spending are progressive. Come to the expenditure part, fiscal consolidation efforts has a positive impact on states fiscal performance. The development heads of revenue expenditure is progressive in Bihar and Odisha, while the situation is different in Punjab, with showing constant fall.

	Own Ta	ax Spending			Central Depende	ncy on Spend	ling	
Period	Punjab	Bihar	Odisha		Punjab	Bihar	Odisha	
1980-91	78.12	46.69	40.54		23.23	57.60	57.90	
1991-01	67.73	34.11	34.79		13.69	53.91	48.60	
2001-11	67.82	31.81	46.72		14.05	69.35	54.68	
2011-15	62.92	37.00	56.94		19.24	71.40	55.52	
		Expenditure or	n Developmental	Hea	ds as % of total RI	Ξ		
Period	Pu	ınjab	Bihar			Odisha		
1980-90	68	8.95		68.41			69.80	
1991-00	5	1.08		59.50			.61	
2001-10	40	67.46			54.43			
2011-15	49	9.50	63.58			67.60		

# Table 1: Different categories of expenditure and form of fiscal dependency

Source: Compiled from RBI state finances

# **3.1 Econometric Analysis**

Prior to the estimation of the model, it is necessary to check the order of integration of all the variables. Hence, ADF unit root test is conducted using Akaike Information Criterion for optimal lag length selection. As per the unit root test results, all variables are integrated of order one, I(1) at level and stationary at first difference at 5 % level of significance( table 2).

Table 2: ADF Unit Root Test

		Bihar		Odisha		Punjab	
Variables							
	At Level	At First Difference	At Level	At First Difference	At Level	At First Difference	
In (Unconditional Transfers)	-0.212	-5.615*	-0.366	-7.510*	-1.721	-8.215*	
ln (Conditional Transfers)	- 3.360*	-9.490*	-2.181	-3.223*	- 4.952* *	-9.104*	
Revenue Diversification (HHI Index)	-2.121	-5.625*	-2.057	-7.604*	-1.697	-6.830*	
In(development Expenditure of Revenue Account)	-0.608	-6.326*	0.397	-8.360*	-1.546	-6.071*	

Note: \* significant at 1% level \*\* Significant at 5% level \*\*\* Significant at 10% level

# **3.2 Model Specification -NARDL Model:**

In the non-linear ARDL cointegration approach, explanatory variables are decomposed into positive and negative coefficients (partial sums of positive and negative changes of the same explanatory variable). The model tests whether an increase or decrease in the transfers induces a corresponding impact on the spending along with a change in the sign of positive and negative coefficients of the same explanatory variable or not.

The empirical results from the NARDL time series regression exercise in which development part of revenue expenditure is the dependent variable are presented in table 3 confirms a long-run cointegration in all the models related to Bihar, Odisha, and Punjab. The test results related to long-run asymmetric values at the disaggregated level are presented in the table 4, whereas the long-run asymmetric statistics and Wald test which prove asymmetry are presented in the table 5 and Asymmetry is proved with the Wald test. The short-run estimates of the asymmetric ARDL model are presented in table 6.

States	F_pss	Signifi	cance level	Lower Bound	Upper Bour	ıd	X 2 SC	X 2 BPG	Ramsey F	R2	F- Stat
Bihar	6.96** *					С & Т	17.4 3	1.09 7	0.683	0.9 4	8.59
Odish a	6.20** *	10 %	Cont 2.72	C & T 3.45	Cont 3.77	4.4 5	17.8 0	1.03 7	0.283	0.9 7	9.37
Punja b	8.20** *	1%	4.29	5.17	5.61	6.3 6	18.2 3	0.01 5	3.00	0.9 8	17.9

Table 3: Results of cointegration test statistics of the expenditure asymmetry

Source: Author's compilation.

Table 4:	<b>Estimates of Long-Run</b>	Asymmetric ARDL	(Development e	xpenditure/ Reve	nue Expenditure)
				1	1 /

Variables	Bihar	Orissa	Punjab	
ЕСТ	-0.800**(-3.48)	-0.454**(-2.86)	-0.826***(-6.55)	
$Log \ UCT^+_{t-1}$	-0.173**(-2.86)	0.654**(2.75)	-0.310**(-2.78)	
$Log \ UCT_{t-1}^-$	0.127(0.88)	2.011***(4.25)	0.155**(2.82)	
$Log CT^+_{t-1}$	0.064*(2.21)	-0.019(-0.18)	0.257*(2.44)	
$Log \ CT \ _{t-1}$	-0.049(-0.82)	-0.793***(-3.99)	0.085(0.80)	
$RD t_{t-1}^+$	-1.457**(-2.75)	0.533(0.74)	-0.440*(-1.99)	
$RD \overline{t}_{t-1}$	-0.262(-0.39)	3.611***(5.37)	0.143(0.36)	

Debt Reform Dummy		0.144**(3.08)	
FRBM (FRL)	0.102**(2.34)		
Liberalization Dummy			0.479***(6.07)
Year of assembly Election		0.456**(3.23)	-0.916**(3.04)
Voter turnout	0.005**(2.51)	-0.008***(-3.92)	0.012**(2.90)

Note: t statistics in parentheses \* p<0.10, \*\* p<0.05, \*\*\* p<0.01 denote significant at 10,5,1% levels respectively. Source: Author's compilation.

# Table 5: Estimates of Long-Run Asymmetry (Development expenditure- Revenue account)

Development Expenditure - Long Run Asymmetric coefficients								symmetry( Wald	d test)
States	Biha	ar	Odi	isha	Punjab		Bihar	Odisha	Punjab
UCT	-0.217	-0.241	1.440	-4.424	-0.376	-0.376 -0.189		7.23	12.29
CT	0.081	0.062	-0.043	1.744	0.312	-0.104	7.67	4.21	4.27
RD	-1.820	0.328	1.174	-7.942	-0.533	-0.174	4.16	4.81	3.81

Source: Author's compilation.

 Table 6: Short-Run estimation results of the Asymmetric ARDL (Development expenditure - Revenue account)

Variables	Bihar	Odisha	Karnataka	Kerala	Haryana	Punjab
	0.113	0.385*	0.462	-0.354	-0.040	0.664***
$\Delta Log Y_{t-1}$	(0.66)	(-2.00)	(1.82)	(-1.52)	(-0.21)	(5.10)
	-0.018	0.368**	0.377*	-0.092	-0.089	-0.092
$\Delta Log UCT_t^+$	(-0.21)	(2.62)	(3.01)	(-0.67)	(-0.50)	(-1.75)
	-0.098	-0.430**	0.065	0.088	-0.201	0.135
$\Delta Log UCT^+_{t-1}$	(-0.64)	(-3.49)	(0.49)	(0.52)	(-1.26)	(0.72)
	0.001	-0.388	-1.416*	-0.141	0.351*	0.265
$\Delta Log UCT_t^{-}$	(0.01)	(-1.28)	(-4.41)	(-0.68)	(2.22)	(1.76)
	0.049	0.145	-0.339	-1.248***	0.524*	-0.358
$\Delta Log UCT_{t-1}^{-}$	(0.34)	(0.60)	(-2.18)	(-3.60)	(1.95)	(-3.88)**

$\Delta Log CT_t^+$	0.017	-0.034	-0.196*	0.235***	-0.040	0.332**
	(0.62)	(-0.36)	(-3.04)	(3.61)	(-0.75)	(3.56)
$\Delta Log CT_{t-1}^+$	-0.087***	-0.208**	-0.094	-0.144	0.075	-0.076
	(-3.74)	(-2.49)	(-1.78)	(-1.36)	(0.65)	(-1.94)
$Log CT_t^-$	0.029**	-0.062***	0.063	-0.092	0.145	-0.038
	(2.68)	(-4.05)	(1.42)	(-0.90)	(1.30)	(-1.07)
$\Delta Log CT_{t-1}^{-}$	0.064	0.272*	-0.227*	0.012	-0.211*	0.051
	(1.50)	(2.01)	(-3.23)	(0.16)	(-2.25)	(0.49)
$\Delta RD_t^+$	-1.772**	-1.079*	-0.083	-0.089	-2.229***	-1.541***
	(-4.81)	(-1.97)	(-0.28)	(-0.10)	(-5.63)	(-5.52)
$\Delta RD_{t-1}^+$	0.073	-0.295	0.246	0.729	-0.901***	-0.923
	(0.26)	(-0.56)	(-0.69)	(1.15)	(-3.46)	(-3.08)
$\Delta RD_t^-$	0.374	2.192***	-0.326	-2.158***	0.955***	-0.818*
	(0.87)	(5.05)	(-0.87)	(-3.71)	(4.35)	(-2.05)
$\Delta RD_{t-1}^{-}$	-0.722	-0.876**	-1.314**	-0.726	0.130	0.497
	(-1.89)	(-2.43)	(-3.24)	(-1.20)	(0.36)	(-1.11)
Constant	3.548***	1.952**	3.351***	2.480***	4.337***	3.569***
	(3.55)	(2.91)	(-3.97)	(3.13)	(4.05)	(6.55)

Note: t statistics in parentheses \* p<0.10, \*\* p<0.05, \*\*\* p<0.01 denote significant at 10,5,1% levels respectively.

Long-run coefficients based on analysis of the asymmetry in the development expenditure response to transfers show that the coefficient  $Ln UCT_{t-1}^+$  is positive and significant, in the case of Odisha but negatively significant in Bihar & Punjab. On the other hand,  $Ln UCT_{t-1}^-$  which represents decrease in unconditional transfer is positive and significant among Odisha and Punjab.

Bihar and Odisha being larger beneficiaries of central funds show a greater response in spending. Comparing the both, positive sign in unconditional transfer indicates that Odisha enhanced its spending on developmental activities using central funds and even properly its revenue surplus, whereas it differs in the case of Bihar. In Bihar, negative sign in unconditional transfer indicates failure to enhance spending on development activities. The negative sign of  $Ln UCT_{t-1}^-$  represents continuity in spending even during less allocation of funds in case of Odisha. Conversely, in Punjab spending on development activities continue to decrease irrespective of increase and decrease in the volume of unconditional transfers. Meaning that, in Punjab, spending on

developmental activities are no longer progressive, while in Bihar and Orissa, states continue their spending with increase in the central allocation. In all the states asymmetry is proved with the Wald test for unconditional transfers (table 5). Long-run coefficient of conditional transfers  $Ln CT_{t-1}^+$  is positive and significant, in Punjab and Bihar. On the other hand, the negative coefficient  $Ln CT_{t-1}^-$  is significant in Odisha.

Orissa, continue with its own spending despite a fall in the central allocation, while in Bihar, and Punjab spending increased only during the rise in the conditional transfers. As before, Bihar by and large remained as a largest dependent on central transfers. The negative and positive sign of *variables*,  $Ln UCT_{t-1}^+ \& Ln CT_{t-1}^+$  indicate diversion of resources towards non-development activities when the transfers are unconditional in nature. Conversely, conditional transfers have stimulated spending in Punjab even though it fail to continue its spending during less allocation of central funds. In Bihar and Odisha asymmetry is proved with the Wald test for conditional transfers ( table 4 & 5).

It is evident from both the positive and negative coefficient of another core independent variable revenue diversification that in case of relatively more diversified state Punjab no positive sign has been noticed. In Odisha, state's spending on development activities affected with decrease in the level of diversification. Asymmetry is proved with the Wald test in Bihar, Odisha and Punjab (table 5).

Apart from economic variables political variable such as, Year of assembly elections is found positively significant in Odisha, which is not in Punjab. The results show that spending policies among these states are more influenced by electoral cycle. Voter turnout which represents citizens' active participation in politics in influencing composition of spending is positive and significant in Bihar and Punjab, whereas, it found negatively significant in Odisha.

The overall results reveal the impact of more dependency of Bihar for its overall revenue spending compared to other states. Bihar being a more dependent state on central transfers shows higher level of asymmetry for increase and decrease in central transfers. In the same way, Orissa being second most dependent while, Punjab is being emerging dependent (since 2005) on transfers respond more to increase in transfers, but there is no significant response for decrease in transfers.

In Bihar compared to the 1980s and 1990s, in the last decade, mainly during the postreform, the upturns in transfers and own revenue along with revenue surplus contributed to overall progress in the development component. Development spending remained progressive in the post-reform period but remained more dependent on transfers for its area specific cost sharing development spending. Increase in central transfers helped to improve the fiscal performance of Bihar. Since its central dependency and own tax spending are relatively progressive in post-reform period, development component of revenue expenditure is progressive in its area specific cost sharing programmes, for which it gets central assistance. However, development component of revenue spending increases for conditional transfers but not for unconditional transfers and even state's own revenue allocation not remained progressive during fall in the central allocation on overall spending.

Apart from Bihar, Odisha remained to be the second major dependent on central transfers. In the meantime, it is interesting to note that, own revenue spending is also much progressive during post-reform amid an increase at a decreasing rate on central dependency. Overall higher revenue receipts due to upturns in central transfers and own revenue combined with revenue expenditure-management improved the fiscal performance in Odisha.

In the meantime, state failed to continue its development spending during the fall in the total transfers, but the state retains its allocation even during fall in conditional transfers. It reveals that there are no such differences in the priority in spending among central and state. As noted earlier, it is reverse in the case of Bihar. Although, sluggish growth in development activities due to some structural problems even the aftermath of reform initiatives can be noticed (state finances, various issues).

Punjab a state with relatively larger total revenue expenditure compared to other states under consideration. The history of state finances reveals that, the share of committed spending remained moderate till the mid-2000s, from the second half of 2000s it constantly increased (state finances, various issues). So, it is evident that Punjab has spent more of its transfers for committed spending; its allocation for development part of revenue account is relatively lower compared to non-development spending. In the meantime, since its own tax spending is relatively progressive and even during prereform period, development component of revenue expenditure was progressive and the trend further improved during the period of post-liberalization prior to the FRBMreform. State spending on area specific cost sharing programmes is progressive but not complementary in nature, for which it gets central assistance.

Overall in the post-reform, states like Bihar, Orissa have improved their revenue account balance and even experienced revenue surplus in their revenue account, whereas, Punjab, has experienced revenue deficit situation.

# 4. Conclusion

The present analysis made an attempt to examine the non-linear relationship between different categories of spending and federal transfers. It reveals interesting findings on asymmetric spending. It is evident from the inter-state comparison of fiscal scenario that with larger portion of committed spending, marginal growth in own revenue receipts, states' resort for additional borrowings continues to exist in spite of availability of revenue surplus in the revenue account. So, in the pre and post reform, states resort for obligatory source of revenue continue to exist, but the utilisation purpose has been changed up to some extent in a progressive way. It is evident from the above analysis that, the process and speed of development is heterogeneous across the states and time. The path of fiscal adjustment needs to be appropriate and well planned to retain fiscal space for a longer period and to even to utilise that fiscal space for development purpose.

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#### International Trade and FDI: Two key Drivers of Economic Growth

#### Debjani Mitra Sudipta Sarkar

#### Abstract

Exports play a vital role in the Indian economy. India exports vast number of products and also imports an equal amount of other products. Although India has steadily opened up its economy, its tariffs continue to be high when compared with other countries, and its investment norms are still restrictive. This leads some to see India as a 'rapid globalizer' while others still see it as a 'highly protectionist' economy. Nonetheless, in recent years, the government's stand on trade and investment policy has displayed a marked shift from protecting 'producers' to benefiting 'consumers'. India is now aggressively pushing for a more liberal global trade regime, especially in services.

Economic development is a continuous process of change in macro variables of any economy in desirable direction. Economic growth is a subset of economic development. Since 1947, India has achieved a huge growth rate, also a visible increase in the income level and the standard of living. Among the different important sectors of the Indian Economy, one of the important parts is external sector. International trade is the main pillar of external sectors. Globalisation and liberalisation gave momentum to the process of economic integration. For development of any economy, inflow of foreign currency is needed which can be possible through exports of the economy. Again, Foreign Direct Investment (FDI) can help in promote the exports and grow the foreign reserves of any economy. In 1991, the government introduced major changes in its policy on trade, foreign investment, tariffs and taxes under the name of 'New Economic Reforms'. The main focus of these reforms has been on liberalization, globalization and export promotion activity.

#### Keywords: FDI, International Trade

#### JEL Classification: F63,F13

#### Introduction:

Exports of any country are very crucial for a country's economic development as it has made an increasingly significant contribution to economic growth and substantially to the economic welfare of the people. The foreign trade of a country consists of inward and outward movement of goods and services, which results into outflow and inflow of foreign exchange from one country to another country.

India is an emerging economy with a strong economic growth over the past 4 decades. High economic growth is a target for all countries. With the new economic reforms in 1991, India has created it's own benchmark in the World market. The Govt. regulated the private sector organizations conducted business transactions with fewer restrictions. The main objective behind liberalization was to boost the competition between domestic businesses, promote foreign trade and regulate imports and exports, to develop the global market for a country, reduce debt burden and improve technology and foreign capital. Whereas Globalization focused on securing socio-economic growth, interaction and integration, free flow of goods, services, knowledge, information and people across borders.

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On the other hand, Foreign Direct Investment (FDI) is the investment made by the foreign companies in India to expand their footprints for a multinational presence. In other words, we can say it is an investment in the form of a controlling ownership in a business enterprise in one country by an entity based in another country. International Monetary Fund (IMF) defines FDI as 'The acquisition of at least ten per cent of the ordinary shares or voting power in a public or private enterprise by non-resident investors. In this paper we will specifically focus on Foreign Direct Investment and International Trade as an driver of economic growth. This paper has four sections. Section I will discuss FDI inflow in India: policy and effects . Export as a driver of economic growth will be discussed in section II. In this section we take growth of export intensity as an indicator of economic growth

## Section I: FDI inflow in India: Policy and effects

Multiple studies have been taken place over the time by several economist and have concluded that the role of FDI in accelerating growth happens due to following reasons : firstly, the transfer of knowledge and resources, secondly, the transfer of advanced and efficient innovative technologies, thirdly, broadening the host country's market in the world economy, fourthly, increasing of foreign exchange reserves or balance of payment position through more exports of home grown commodity, fifthly, enhancing employment opportunities for the people of the host country, sixthly, increasing the import substitute goods, and lastly, increasing the domestic savings and investment rates. Thus, we can say that FDI helps the host country to get into the world market and globalize the host country.

In case of India, we have seen that the Government was initially sceptical about foreign investment. But later it gradually started engaging with more of the liberalization and globalization policy stances of other emerging economies from early 1990s. The dimensions of the FDI flows into India could be explained in terms of its growth and size, sources and sectoral compositions. However, after the implementation of the new policy regime of 1991, it is expected to play a much larger role in catalysing India's economic development. It has been observed that there has been a steady growth in the actual FDI inflows in the post-liberalization era. That lead to an increase in annual average growth rate to 6 per cent. But it was seen that India has registered a declining trend of FDI inflows and the FDI- GDP ratio especially in 2003 and 2010. This could be the results of many factors, such as the US sanctions imposed in the aftermath of the nuclear tests, the East Asian melt-down. Trade and technological progress that took place due to globalization has various impact on wages and employment. While higher extent of FDI in an industry leads to higher wage rate in the industry, it has no impact on its employment. On the other hand, higher export intensity of an industry increases employment in the industry but has no effect on its wage rate. Technological progress is found to be labour saving but doesn't affect the wage rate.

The analyses of the origin of FDI inflows to India show that the new policy of 1991 has widen the source of FDI into India.Earlier it was 29 countries in 1991 which increased to 86 countries in 2000 and further to 106 countries in 2003, whose FDI was sanctioned by the Indian Government. Thus, the number of countries investing in India has kept on increasingsince the period of reform. However, large shares of FDI comesonly from a few countries.The FDI stock during 1991 to 1999 from Mauritius is the largest (30.12%) even though the US alone accounted for nearly a quarter (20.19%) of the total FDI inflows. The other top eight countries were Japan, UK, Netherlands, Germany, South Korea, Singapore, France and Switzerland who collectively shared 35.79 per cent of the total actual FDI inflows to India for a decade. This implies that these top ten countries accounted for over 86 per cent of the FDI inflows during the mentioned period.



Source : Data taken from RBI and result are done by Authors

# A) Foreign Investment Policy:

In the year 1948 the import-substitution (IS) policy has been introduced. This policy emphasised on foreign capital and technology in industrialization. Due to abolition of Industrial Licensing policy, a major deregulation took place in July 1991. Foreign firms are endorsed to have a major shareholding and foreign investment up to a maximum of 51% equity in 35 high priority industries receives automatic approval. Foreign investment is also permitted in 22 consumer goods industries. The manufacturing of readymade garments, earlier reserved exclusively for the small-scale industrial undertakings, has been open to large-scale undertakings including foreign companies, subject to export obligation of 50% and investment limit of Rs. 30 million. The new investment policy also spells out more incentives to attract FDI from NRIs and overseas corporate bodies (OCBs) predominantly operated by NRIs. These include 100% share in many areas and full repatriation of profit. FDI in power generation, telecommunications, petroleum exploration, petroleum refining and marketing, transportation sectors (specifically the roads and railways, ports and shipping, and air service) has been offered special incentives by realizing the importance of these sectors for trade and industrial development. Apart from liberalization in foreign investment policy there have also been substantial reforms in trade and payment regimes.

Foreign direct investment (FDI) plays a complementary a company in another country, either by buying a company in the target country or by expanding operations of an existing business in that country. The economic role of FDI is increasingly becoming significant in the Indian economy with the transition of FDI policy from a restrictive phase of seventies and early eighties to a relatively liberal phase of nineties. After liberalization, FDI inwards flows in India have increased tremendously.

# **B)** Components of FDI Inflow:

FDI is of two types direct investment and portfolio investment which we have already discussed. In India the percentage share of direct investment is higher during the period of study. Table 2 shows that the share of direct investment was 94.17% in 1990/91. Then it has decreased to 59.35% in 2000/01 and then increased to 108.03% in 2015/16. It has followed a fluctuating trend. Compared to this the share of portfolio investment has increased from 5.83% in 1990/91 to 40.65% in 2000/01 and then decreased to -8.03% in 2015/16. It is also fluctuating the period under study.

# <u>C)</u> FDI in different Sectors in India:

In India there three main sectors: Primary Sector, Secondary Sector and Service sector. The inflow of FDI is distributed among mining, manufacturing and service sector. Our estimates (Table 3) shows the pattern of sector wise distribution of FDI among the sectors. According to the estimates the percentage share of FDI in manufacturing sector has increased from 17.63% in 2006/07 to 32.08% in 2010/11 and then decreased to 23.40% in 2015/16. Compared to this the share of FDI in service sector has decreased from 81.92% in 2006/07 to 63.95% in 2010/11 and then increased to 74.95% in 2015/16. The share of FDI in mining is very low the figures are 0.45%, 3.96% and 1.65% respectively. Thus we can say that the share of FDI in service sector is higher during 2006/07-2015/16. It also helps in growing the output of Indian service sector and expanding the service exports .

# Section II: International Trade as a driver of growth of

# a) CHANGES IN COMPOSITION OF INTERNATIONAL TRADE

Composition of Trade means the commodities and products which are included in the exports from India to other countries and Imports from other countries in India. Indian foreign trade registered a number of structural changes during the panning period. The percentage of non traditional goods in total exports has continuously increased the exports of chemical and engineering goods have shown a high growth rate. During past few years hand made goods including gems and jewellary have become one of the important export commodities. India is making exports of few traditional items including tea, coffee, rice, pulses, spices, tobacco, jute, iron ore etc.

Besides the imports of petroleum products, capital goods, carbon chemical and compounds, medical and pharmaceuticals products are also imported in Indian Economy. Pulse, gems and stones are also important on large scale but after there processing these are exported from the country. Other imports include edible oils, fertilizers non ferrous metals, paper and paper boards, pulp and waste paper etc. Before 2014-15 there were different categories of exportable commodities but now it has been changed.

**1. Agriculture and Allied Products**-which includes coffee, tea, rice, wheat, raw cotton, tobacco, cashew, spices, oil meal, marine products, sugar and mollases. In 2009-10 Agriculture and allied products export was 62419 crore which increased to 218589 crore in 2020-21 we made 20 categories for exports and 21 categories for imports.

## 2. Ores and Minerals-

Includes iron ore, and all processed minerals which also increased40214 crore in 2009-10 to64233 crore in 2020-21.

**3. Leather & Manufactures**– One of the traditional items of Indian Export is raw hides and skins. India earned about 15551 crore in 2009-10. It touched US \$ 6030.5 million in 2014-15 and increase to 24403 crore in 2020-21.

**4. Gems & Jewellery**- The export of Gems & Jewellary during 2009-10 was 3350 in crore and in 2020-21 it was increased to 22535 in crore.

**5.** Chemicals & Related Products- This category includes basic chemicals, pharmaceuticals, cosmetics, plastic, linoleum, rubber, glass, paints, enamels, residual chemicals and allied products. This category also showed increasing trend year to year. In 2009-10 drugs and pharmaceuticals, organic & inorganic chemicals and plastic & linoleum was 135874 in crore which increased to 191906 in crore in 2020-21 respectively.

**6. Engineering and Electronic Goods-** Engineering goods includes manufacture of metals machinery, instruments transport equipments, iron & steel and all electronic goods. In 2009-10 this was 71856 in crore which increased 318464 in crore in 2020-21.

**7. Textiles & Textile Products-** It includes cotton yarn, natural silk yarn, manmade yarn, carpet, handicraft ,woolen yarn fabrics made up. In 2009-10 this was 101168 in crore which increased to 217731 in crore in 2020-21.

**8. Petroleum Products** - This section shows continuously decreasing trend after 2013-14. In 2009-10 this was 147137 in crore which increasing to 246118 in crore in 2020-21.

## b) Estimates:

Due to introduction of globalization and liberalization Indian exports basket has changed after reform was introduced in the economy of India. The share of primary exports has decreased from 23.83% in 1990/91 to 15.99% in 2000/01 and to 15.37% in 2012/13 and later on it has been fluctuating. Compared to this the share of secondary exports has increased from 74.50% in 1990/91 to 81.25% in 2000/01 and to then decreased to 81.17% in 2018/19. So the secondary sector exports has been experiencing fluctuating trend takes the prime position in Indian exports. Similarly, service sector has also increased during the period under study. The respective figures are: 1.67%, 2.76% and 3.46%. Now we consider the growth rates of exports (Table 1) during the period. The total exports has grown at the rate of 18.30% during the period under study along with the growth rates of 15.38%, 18.68% and 28.12% of primary, secondary and tertiary exports respectively. In period I(1990/91-2000/01) total exports has grown at the rate of 18.63% whereas the growth rates of primary, secondary and tertiary exports respectively. The growth rates have increased in all three sectors exports are 15.56%, 19.30% and 23.97% respectively. The growth rates have increased in all three sectors exports and total exports during period II (2000/01-2018/19) as compared to period I.

#### Imports

Like exports the composition of imports basket of India has also changed during the period under study. The share of secondary imports has taken the prime role and it has taken near about more than 91% of total imports during the period under study. Being a developing country India has imported different goods of secondary sectors as compared to primary sector. Indian imports have been grown at the rate of 20.28% during the total period along with the growth rates of 20.39% of primary imports and 20.45% of secondary imports respectively. The growth rates are higher in period II as compared to period I (Table 1).

To examine the role of foreign trade in economic growth of India, linear regression model has been used Export, Import and Trade Balance at factor cost at constant price is taken as a measure of economic growth; and volume of export, import and trade balance terms are taken as variables of the study. Before applying Ordinary Least Squares (OLS) method, the stationary of the concerned variables are tested using Augmented Dickey Fuller (ADF) Test.

At first we consider, Y = a + b.t. The following model is applied here examine the impact of trade on economic growth,

$$Yt = \alpha + \beta 1 Xt + \beta 2 Mt + Ut$$
$$t = 1.2.3...$$

where,  $\alpha$  and  $\beta$ s are the co-efficients and Ut is the error term which follows normal distribution with mean zero and variance  $\sigma 2$ . Yt is trade balance in time period t, Xt is the export in time t. Mt is the import in time t.

## **Dependent Variable-**

Trade Balance- In the present study , Trade balance is taken as a dependent variable.

Independent Variable – Export , Import.

# ANOVA TABLE -

Source	SS	df	MS	Number of obs	=	29		
				F(2, 26)	=	34105.53		
Model	1.5770e+13	2	7.8851e+12	Prob > F	=	0.0000		
Residual	6.0111e+09	26	231196597	R-squared	=	0.9996		
				Adj R-squared	=	0.9996		
Total	1.5776e+13	28	5.6343e+11	Root MSE	=	15205		
1								

Again, In this table coefficient of their respective variable represents the relation with Trade balance. The t statistics used in testing whether a given coefficient is significantly different form 0. If -calculated t> tab t then null hypothesis is rejected and the alternative is accepted which is good for model. Table presents the result of the regression analysis depicting the impact of foreign trade on economic growth. The value of R2 in the model is 0.99 which shows that 99 per cent of the variation in the dependent variable is explained by the independent variables of the model. The one per cent variation in the dependent variable remains unexplained by independent variables of the study. The adjusted R2 shows that asymptotically the variables can explain approximately 99 per cent of total variation. The implication is that the model has goodness of fit. F-statistic tests the overall significance of the model under study. The value for the F-statistic is 382.22 and is significant. The result of regression analysis shows that export and import have significant positive impact on Trade balance . The results confirm the importance of foreign trade on expansion and growth of Indian economy. Although import is negatively related , overall impact of trade on economic growth represented by economy is positive and highly significant (Table ).

# **AUGMENTED DICKEY FULLER (ADF) TEST-**

Using non-stationary variables in the model might lead to spurious regression which cannot be used for precise prediction (Gujarati, 2003). Hence, our first step is to determine whether the variables have unit roots, that is, whether it is stationary and the order of integration. In order to identify the stationary of the variables under study Augmented Dickey-Fuller (ADF) test is applied. The result of unit root test and the order of integration. It is seen that all the variables are stationary.

v						
Variable	Test statistics	1% critical value	5% critical value	10% critical value	MacKinnon approximate p-value for Z(t)	Decision(at 99% confidence interval)
Year	-	-3.730	-2.992	-2.626	1.0000	Stationary
Trade balance	0.965	-3.730	-2.992	-2.626	0.9939	Stationary
Export	2.047	-3.730	-2.992	-2.626	0.9987	Stationary
Import	2.061	-3.730	-2.992	-2.626	0.9987	Stationary

## Dickey-Fuller test for unit root Number of obs = 28

Augment Dickey Fuller testis done using the STATA16 software. In order to assess for **Unit root** we can use the **Dickey-Fuller** test to examine for stochastic trends. The Dickey Fuller test is one of the most commonly used tests for stationary. The null hypothesis is that the series has a unit root.

Null hypothesis : H:  $\beta 0=0$  (there is a unit root or time series is non stationary)

Alternative hypothesis : H:  $\beta 0 < 0$  (the time series is stationary)

In the ADF test statistics which is greater than critical t-value, the null hypothesis will be rejected and the variables are stationary. Null hypothesis is rejected because all variable are stationary.

#### **Export Intensity:**

Intensity of exports of a country is the ratio between the exports value and the GDP. So, export intensity can be written as  $E_I$ 

 $E_{I} = E/GDP: E_{I} = 0;$  for  $E=0, E_{I} = 1$  for  $E=GDP: 0 \le E_{I} \le 1.$  ------(2)

E=0 means the country is closed and it has not exported anything to the world. Again E=GDP is a situation when total produced Gross Domestic Product has exported. That means there is no domestic demand.

## A) Sector-wise Export Intensity:

#### **Estimates:**

Based on the available the export data and the GDP data in India during 1990/91-2015/16 we have estimated the export intensity at the aggregate level. At the dis-aggregative level we have also estimated the export intensity in respect of agricultural exports, industrial exports and service exports during the period of 1990/91-2015/16. The estimates are shown in Tables 5& 6.

#### a) Total exports:

Our estimates (Table 5 & 6) reveal that in India export intensity has increased from 0.024 in 1990/91 to 0.087 in 2000/01 and to 0.134 in 2015/16. Export intensity has been grown at the rate of 10.68% in India during the period of time.

#### b) Agricultural Exports:

Our estimates (Table 5 & 6) reveal that agricultural export intensity has increased from 0.019 in 1990/91 to 0.062 in 2000/01 and to 0.123 in 2015/16. Agricultural exports intensity has grown at 11.88% a year.

#### c) Manufacturing Exports:

Manufacturing export intensity (Table 5 & 6) has increased from 0.088 in 1990/91 to 0.341 in 2000/01 and to 0.213 in 2015/16. Industrial export intensity has grown at the rate of 11.29% a year.

#### d) Service Exports:

In India Service export intensity (Table 5 & 6) has increased from 0.001 in 1990/91 to 0.004 in 2000/01 and to 0.078 in 2015/16 in India. Service export intensity has grown at the rate of 18.74% a year.

#### **B)** Growth of Export Intensity :

Export Intensity (EI) is defined as the ratio between Export (E) and GDP (D) at time t. That is,

 $EI_t = E_t / D_t - \dots$  (3)

Taking log on both sides of equation (1) we have:

 $\text{Log EI}_{t} = \text{Log } (E_{t}/D_{t}) - \dots - (4)$ 

 $Log EI_t = Log E_t - Log D_t -----(5)$ 

Taking total differentiation of equation (5) with respect to time 't' we get:

 $d (\log EI_t)/dt = d (\log E_t)/dt - d (Log D_t)/dt$ 

 $(dEI_t / dt)/EI_t = (dE_t / dt)/E_t - (dD_t / dt)/D_t$ 

 $G_{EI} = G_E - G_D$  where  $G_{EI} = :$  growth rate of export intensity

Equation (4) implies the growth rate of export intensity( $G_{EI}$ ) is the difference between the growth rates of Export( $G_E$ ) and GDP( $G_D$ ). Now the sign of growth rate of export depends on the resultant effects of growth rates of export and GDP. We can think about two cases here as follows:

Case I:  $G_{EI} > 0$ : The growth rate of export intensity is positive when (a)  $G_E > 0$ ,  $G_D > 0$  but  $G_E > G_D$ . (b)  $G_E > 0$ ,  $G_D < 0$ , (c)  $G_E < 0$  and  $G_D < 0$  but  $|G_E| < |G_D|$ . Thus both (a) and (b) are viable from the economy point of view. But (c) is not feasible.

Case II:  $G_{EI} < 0$ : The growth rate of export intensity is negative growth rate when (a)  $G_E > 0$ ,  $G_D > 0$  but  $G_E < G_D$ . (b)  $G_E < 0$ ,  $G_D < 0$  but  $|G_E| > |G_D|$ , (c)  $G_E < 0$  and  $G_D > 0$ . All these cases are not feasible for the development of any economy.

Our estimates (Table 6) reveal that the growth rates of exports, GDP and intensity in both aggregative and dis-aggregative levels are positive and this implies feasibility condition for development.

#### Section III: Concluding Remarks

India is a developing economy with three sectors viz. Primary sector, secondary sector and tertiary sector. With the reforms of 1991, India has been positively affected. The rise in per capita income and low manufacturing cost of goods led to an increase in standard of living. FDI play vital role in accelerating the exports by many ways. Actually, the developing country like India is suffering from deficiency in capital formation. This will lead to fall in GDP as well as exports. FDI helps in increasing GDP as well as exports. There is a technological gap in the country like India. Thus, to overcome this problem FDI is necessary. Due to low level of capital formation the country like India is suffering from initial risk of investment. Therefore we can say that Globalization has helped in creating bond with the companies and the countries. Now India is at par with other emerging economies in terms of opportunities of health care, employment, education etc. and have more options to opt for the goods and services that are suited best for them. India is an important developing country in the SAARC trade block. India is exporting her exportable commodities to different countries of different trade blocks namely, OECD, OPEC, Eastern European countries, Developing countries and some unspecified countries. First decades of reform periods direction of exports percentage on OECD country was high compare to others country but last decades of reform ie, 2000-01 onwards the scenario has been changed and showing the direction of export percentage is higher on developing countries.

On the other hand FDI play vital role in accelerating the exports by many ways. Actually the developing country like India is suffering from deficiency in capital formation. This will lead to fall in GDP as well as exports. FDI helps in increasing GDP as well as exports. There is a technological gap

in the country like India. Thus to overcome this problem FDI is necessary. Due to low level of capital formation the country like India is suffering from initial risk of investment. This can be overcome by FDI. FDI is also helpful to built infrastructure and associate infrastructure like Research & Development facilities. It also helps in expanding the markets of exports of home country. Finally conclude that there is significant linkages has been shown between FDI and Exports in India. An Econometric results prove that FDI inflows can improve the home countries exports and tremendous growth of service export and service sector as a whole is the inflow of FDI.

In this time of COVID 19 pandemic though Indian economy is decelerating with all other economies but still light of hope in respect of FDI and export is there which can help the economy to boost in near future.

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INDIA'S BOP CRISIS AND EXTERNAL REFORM: Myths and Paradoxes, Arvind Virmani , December 2001

Year	DIRECT INVESTMENT	PORTFOLIO INVESTMENT	TOTAL
1990-91	94.17	5.83	100
1991-92	96.99	3.01	100
1992-93	56.35	43.65	100
1993-94	14.11	85.89	100
1994-95	25.57	74.43	100
1995-96	43.83	56.17	100
1996-97	46	54	100
1997-98	66.05	33.95	100
1998-99	102.54	-2.54	100
1999-00	41.59	58.41	100
2000-01	59.35	40.65	100
2001-02	66.96	33.04	100
2002-03	73.84	26.16	100
2003-04	16.38	83.62	100
2004-05	39.44	60.56	100
2005-06	43.7	56.3	100
2006-07	76.67	23.33	100
2007-08	55.95	44.05	100
2008-09	150.4	-50.4	100
2009-10	53.81	46.19	100
2010-11	53.5	46.5	100
2011-12	73.05	26.95	100
2012-13	56.05	43.95	100
2013-14	88.2	11.8	100
2014-15	51.68	48.32	100
2015-16	108.03	-8.03	100

# Table 1: FDI and Portfolio Investment inflow during 1990/91 – 2021/22

2016-17	84.46	15.54	100
2017-18	64.01	35.99	100
2018-19	100.94	-0.94	100
2019-20	99.02	0.978	100
2020-21	58.65	41.35	100
2021-22	133.37	-33.37	100

Source: Data is taken from RBI and results are done by Authors

Table 2 : Pattern of FDI in Different Sectors during 2006/07-2015/16

Year	Manufacture	Mining	Service	Total
2006-07	17.63	0.45	81.92	100
2007-08	19.18	2.37	78.45	100
2008-09	21.05	0.46	78.49	100
2009-10	22.9	1.19	75.91	100
2010-11	32.08	3.96	63.95	100
2011-12	39.78	0.87	59.35	100
2012-13	35.7	0.38	63.92	100
2013-14	39.75	0.15	60.1	100
2014-15	38.84	0.52	60.64	100
2015-16	23.4	1.65	74.95	100

Source : Same as Table 1

# Table 3: FDI inflow during 2000-2022 across 3 main sectors of the Indian Economy

SL No.	Sectors	% of FDI Inflow
1	Primary	10.76
2	Secondary	49.3453
3	Tertiary	39.89

Source : Same as Table 1

## Table 4: Time Trends of Trade in India during 1990/91-2018/19

	Primary	y Sector	Secondar	ry Sector	Tertiar	y Sector	Total		
Time	Exports	Imports	Exports Imports E		Exports	Imports	Exports Imports		
Total	15.38	20.39	18.68	20.45	28.12	17.73	18.30	20.28	

Period I	15.56	31.21	19.30	18.97	23.97	22.71	18.63	19.55
Period II	18.84	19.80	19.97	24.84	28.71	18.29	20.14	24.30

# Source:Data is taken from RBI and results are done by Authors

# Table 5: Export Intensity in India during 1990/91-2015/16

Voor	Primary Exports	Secondary Exports	Tertiary Exports	Total Exports
I cal	intensity	intensity	intensity	intensity
1990-				
91	0.019	0.088	0.001	0.024
1001				
1991-	0.026	0.121	0.001	0.022
92	0.026	0.121	0.001	0.032
1992-				
93	0.027	0.147	0.001	0.037
1993-				
94	0.036	0.175	0.001	0.046
1004				
1994-	0.036	0 194	0.001	0.051
,,,	0.050	0.171	0.001	0.001
1995-	0.054	0.212	0.001	0.0(1
96	0.054	0.212	0.001	0.061
1996-				
97	0.058	0.217	0.001	0.063
1997-				
98	0.060	0.238	0.001	0.067
1008				
1990- 99	0.057	0.251	0.002	0.067
1000				
1999-	0.054	0.282	0.002	0.071
00	0.034	0.282	0.002	0.071
2000-				
01	0.062	0.341	0.004	0.087
2001-				
02	0.062	0.342	0.004	0.085
2002-				
03	0.081	0.392	0.004	0.099
2002				
2003-	0.081	0.428	0.005	0.106
04	0.001	0.428	0.005	0.100
2004-				
05	0.108	0.506	0.006	0.126
	0.122	0.572	0.006	0.140
2005-				

06				
2006- 07	0.144	0.637	0.006	0.160
2007- 08	0.169	0.657	0.007	0.168
2008- 09	0.178	0.824	0.013	0.202
2009- 10	0.189	0.745	0.014	0.188
2010- 11	0.211	0.932	0.026	0.234
2011- 12	0.147	0.239	0.075	0.147
2012- 13	0.166	0.256	0.076	0.156
2013- 14	0.184	0.284	0.081	0.170
2014- 15	0.140	0.315	0.050	0.159
2015- 16	0.123	0.213	0.078	0.134

Source: Data from Reserve Bank of India. Estimates done by Authors.

# Table 6: Annual Compound Growth Rate Export Intensities in Aggregative and Dis-aggregative Level

Items	Total Period	Period I	Period II
Primary Export Intensity	11.38	12.00	14.94
Secondary export intensity	11.29	12.04	11.49
Service Export intensity	18.74	15.35	19.66
Total export Intensity	10.68	11.78	11.37

Source: Same as in Table 1

## An Analysis of Financial Status of Municipal Corporation of Karnataka with Special reference to Shivamogga City Corporation

Dhananjaya K.B Anil Kumar H.B

#### Abstract

Municipal Corporation is the top and highest form of urban local government as it enjoys comparatively more powers and autonomy in day-to-day administration unlike rural-local government, urban local government in India is not hierarchical. It is the local self-government that helps the state government to look into the welfare of the people of the State. Municipal Corporation have collect revenues from Revenues Receipts like various taxes, fees and charges and Capital Receipts like receiving grants, subsidy and loans and Extraordinary Receipts like fund for development of SC/ST. weaker sections from state and central government. So it is important to municipal corporation should be efficiently used these fund for welfare of citizens. This Study will definitely useful for Development and Management of funds in future. The objectives are Study the trends in Major revenue sources and expenditures of Shivamogga City Corporation, To Study the growth rate of Income and expenditure of the Study area. The secondary data will be obtained from the annual reports, Appropriate Statistical technique like financial techniques, Ratio analysis, Percentage analysis, Trend analysis, Growth rate and Diagrams will be using to explain the finance practices and analyzed Six year data from 2013-14 to 2021-22.

India has implementation and framing modernize of local government form last two decades and committed to put the efforts in local government. The amount of Income and expenditure of Shivamogga City Corporation level that efforts are being made very seriously by the State and Central government to upgrade the Standard of Shivamogga city by allocating various sources of revenue .but the scale and size of investment requirements cannot be met from government budgetary resources, analysis of expenditure side shows that the administration expenses has constantly increase but Revenue receipts of city Corporation's has not increase in same proportion. The body need to build its capacities to tackle the emerging issues and problems which are resulting in undesirable levels of service delivery, insufficient utilization of available resources, information gaps, inadequate resource mobilization and lack of effective planning and monitoring the function.

Key words: city Corporation, budgetary resources, administration expenses,

Utilization of available resources, Ratio analysis

#### **INTRODUCTION**

The Municipal Corporation is one of the civil administration systems. It has been devised, to assist the State Administration to make it to function more effectively and efficiently, endowing subordinate powers through an enactment to the people of defined area with a view to regulate the local and internal business. Municipal Corporation is the top and highest form of urban local government as it enjoys comparatively more powers and autonomy in day-to-day administration unlike rural-local government, urban local government in India is not hierarchical. The Municipal Corporation as an institution is more respectable and enjoys a greater measure of autonomy than other forms of local government.

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In the context of the Indian Constitution, local government bodies are the Subject of the State list and are thereby governed by State statutes, or in the case of Union Territories, by the Union Parliament. Federal recognition of local government was substantively expressed in the 74<sup>th</sup> and 73<sup>rd</sup> Constitution Amendment Acts of 1992. According to the 74<sup>th</sup> Amendment of the Constitution of India urban local government has been classified into three categories- Nagar Panchayats, Municipal Councils and Municipal Corporations. And for strengthening the finances of urban local governments provision of the constitution of State Finance Commissions (SFCs) for every five years and amendment of Article 280 of the Indian Constitution by inserting section 3(c) which requires the Central Finance Commission (CFC) to Suggest measures needed to augment to Consolidated fund of the states to Supplement the resources of municipalities devolved on the basis of the respective SFC recommendations of resource transfer to local governments.

#### **REVIEW OF LITERATURE**

Adhijit Datta (1984): In his study titled "municipal Finances" has given a holistic perspective on the municipal finances, functions and revenues. And he find out, how corporations Gardner their revenues. He has analyzed all the avenues of revenues to the municipal bodies, and the fiscal and financial management by municipal bodies without forgetting the obligations of such bodies towards the general public. He has given some suggestions for the uplift of the financial position of the municipal bodies.

Mohanth, Mistra, Goyal and Jeromi (2007): made a study on "Municipal Finance in India- an Assessment" under Reserve Bank of India and analyses that the performance of Urban Local Bodies, with respect to fiscal parameters and provision of Civic amenities. The study Suggestions were Improving the Municipal financial system and Transparency and Accountability in Municipal Governance in Calcutta and Kanpur.

Ramakrishna Nallathiga (2008): "Trends and Perspectives of Urban Public Finance in Select Countries and India", this paper attempt to analysis of Urban Public Finance of Select Countries of the West and India. In European and America countries the well-structured system of public finances and wider range of financial structures both revenue and expenditure.

Dr.N.M. Makandar (2013): his study entitled "Financial Performance of selected City municipal Corporations in Karnataka" to evaluate the financial health of the selected municipal corporation in five years. He diagnosed the financial health of Study area with the help of per capita income, per capita expenditure, Ratio of income and expenditure. Suggestions were made has need to improvement in sources of revenues for providing service.

Adhay Pethe and Mala Lalvani (2013): A working paper entitled "A Comparative Study of Municipal Finances in Maharashtra: Patterns, Problems and Prospects" to examine the patterns of finances in Urban Local Bodies and Problems especially related to data and suggest ways for remedying the Situation.

Dr. Hitesh Katyal and Raj Kumari (2014): Financial analysis of urban local bodies of India – A study of Selected Municipal Corporations of Punjab, the present study is undertaken to comparative study of financial performance of Municipal Corporation of Ludhiana, Amritsar and Patiala Municipal Corporation to suggest the appropriate policies to maintain and improve their financial position.

#### THE NEED OF THE STUDY

In India all the problems related to the welfare of the citizens like Social justice, rapid growth of economy, Urbanization with higher demand of basic amenities of water, sanitation, public place and these cannot be solved by the Central or State government. It is the local self-government that helps the state government to look into the welfare of the people of the State. In big cities Municipal Corporations

have taken this charge by playing crucial role in providing better amenities in creation and provide quality services to citizens. Municipal Corporation have collect revenues from Revenues Receipts like various taxes, fees and charges and Capital Receipts like receiving grants, subsidy and loans and Extraordinary Receipts like fund for development of SC/ST. weaker sections from state and central government. So it is important to municipal corporation should be efficiently used these fund for welfare of citizens. This Study will definitely useful for Development and Management of funds in future.

## **OBJECTIVES OF STUDY**

- 1. To Study the trends in Major revenue sources and expenditures of Shivamogga City Corporation
- 2. To Study the growth rate of Income and expenditure of the Study area
- 3. To analysis the financial performance of the Shivamogga City Corporation

## HYPOTHESES

• Receipts of Municipal Corporation not enable them to meet the minimum Standards of Services

• Shivamogga City Corporation is not able to raise adequate resources from their own sources to meet total expenditure

## **RESEARCH METHODOLOGY**

The present study basically based on secondary data will be obtained from the annual reports, records of Shivamogga City Corporation, Local self-governments records, journals, KMC Acts, Municipal reports and reference books. Appropriate Statistical technique like financial techniques, Ratio analysis, Percentage analysis, Trend analysis, Growth rate and Diagrams will be using to explain the finance practices and analyzed Six year data from 2013-14 to 2021-22.

## **ORGANIZATIONAL PROFILE**

Shivamogga City Corporation was founded in 17<sup>th</sup> September 2013 to provide civil services and amenities around the 3,22,650 citizens with serves area approximately 70.01 Sq., km. Shivamogga City Corporation consist of various department like public relation, health care, finance and audit, construcation work, street lighting, establishment, public places development, legal services, water works. The City Corporation is headed by municipal Commissioner and Mayor. The Shivamogga City is divided into 35 wards. It has supplies basic amenities like water and sewerage to over 155 MLD.

#### ANALYSIS OF MUNICIPAL REVENUE

To study purposes, Shivmogga City Corporation's municipal revenue can be categorized into three main types: Revenue Receipts, Capital Receipts and Extraordinary Receipts.

Revenue Receipts classified as Tax and Non-tax Revenue. Major Tax sources are property tax, duties, surcharges and Advertisement tax and Fees, penalties. License Fees, water supply charges, sewerage charges, Rent from Commercial complexes, are the major Non-tax revenue sources to shivamogga city corporation.

The Capital Receipts of City Corporation from Grants and Contributions for specific purposes from Central Government- Central Finance, Grants from AMRUT Scheme, MP Local Area, CMSMTDP phase, MLA Local area development fund and other Special Grants like for water scarcity, for land acquisition.

In Extraordinary Receipts of Shivamogga City Corporation important sources are Welfare Funds, SC/ST Development Fund, Economically weaker Fund, National Urban Livelihood mission (NULM) and others

## **DATA ANALYSIS**

Table 01: Shivamogga City Corporation's Distribution of Municipal Revenue in 2013-2014

to 2018-2019

YEA R	20 1	13- 4	20 1	14- 5	201	5-16	201	6-17	201	7-18	2018-19		20 2	19- 0	2020- 21		2021- 22	
INCO ME SOU RCES	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE
REV ENUE REC EIPT S	47 15 .8 5		57 27 .4 0	21 .4 5	84 05 .5 8	46 .7 6	74 87 .5 4	- 10 .9 2	89 75 .3 9	19 .8 7	94 26 .9 7	5. 03	85 89 .6 5	- 8. 88	89 41 .4	4. 09	10 12 8. 9	13 .2 8
CAPI TAL REC EIPT S	59 2. 10		14 04 .2 4	13 7. 16	45 36 .5 9	22 3. 06	55 08 .1 6	21 .4 2	40 95 .2 9	- 25 .6 5	62 44 .0 0	52 .4 7	35 51 .8 1	- 43 .1 2	39 53 .4	11 .3 1	48 78 .9 2	23 .4 1
Ext RAO RDIN ARY REC EIPT S	72 7. 96		14 12 .2 6	94 .0 0	11 84 .5 2	- 16 .1 3	13 66 .6 0	15 .3 7	95 2. 40	- 30 .3 1	12 17 .9 6	27 .8 8	12 29 .6 2	0. 96	13 34 .2	8. 50	18 07 .8 7	35 .5 1
TOT AL REC EIPT S	60 35 .9 1		85 43 .9 0	41 .5 5	14 12 6. 69	65 .3 4	14 36 2. 30	1. 67	14 02 3. 08	- 2. 36	16 88 8. 93	20 .4 4	13 37 1. 1	- 20 .8 3	14 22 9	6. 42	16 81 5. 6	18 .1 8

Source: Computed from Annual Reports of Shivamogga City Corporation

The above table 01 reveals that Municipal revenue of Shivamogga City Corporation in 2013-14 to 2021-22 was collected from different sources. But the growth rate of those receipts has not increase in same proportion. The high growth rate of revenue receipts 46.76% and 19.37% in 2015-16 and 2017-18 financial year and Low growth rate achieved as -10.92% and 5.03% in the financial year of 2014-15 and 2016-17 and 4.09% and 13.28% low growth rate was achieved in the financial year of 2020-21 and 2021-22. because revenue collection decrease in property tax, charges on water supply and rent from commercial complex and other in the shivmogga city corporation.

Chart 01: Shivamogga City Corporation's Distribution of Municipal Revenue in 2013-2014



To 2021-2022

# ANALYSIS OF MUNICIPAL EXPENDITURE

To study purposes, Shivmogga City Corporation's municipal expenditure can be categorized into three main types: Revenue Expenditure, Capital Expenditure and Extraordinary Expenditure.

The Revenue expenditure majorly on Administration expenditure, Expenditure on Street lighting, Repairs and Maintenance Assets, Road, Expenditure on Public Health, Civic and Water supply. In Capital expenditure major expenditure on Land-acquired from road widening, Constructions, Conservation Development, Drainage, Mini water supply Garden, Parks, etc. The Extraordinary expenditure is mainly on SC/ST Development, Disable persons, weaker section and other Disaster management.

# DATA ANALYSIS

The below Table: 02, shows that the municipal expenditure of Shivamogga City Corporation in 2013-14 to 2021-22. The total expenditure of the Corporation increase in every year, but the Growth rate of 40.75% and 42.06% in the year of 2014-15 and 2015-16 was very high compare to other financial year. And very less Growth rate achieved as 15.54%, 16.20% and -4.43% in the financial year or 2016-17, 2017-18 and in 2018-19. And 10.63% and 22.41% growth rate was achieved in the financial year of 2020-21 and 2021-22. It is because of Revenue receipts was not sufficient to make Revenue expenditure in Shivmogga City corporation.

Table 02: Shivamogga City Corporation's Distribution of Municipal Expenditure in 2013-2014

to 2021-2022

YEA R	20 1	13- 4	20 1	14- 5	201	5-16	201	6-17	201	7-18	201	8-19	2019-20		019-20 2020- 21		2021- 22	
EXP ENDI TURE S	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE	A M U NT (I N RS L A K HS )	G RO W TH RA TE	A M O U NT (I N RS L A K HS )	G RO W TH RA TE								
Rev enue Exp endi ture	37 87 .5 2		47 02 .0 6	24 .1 5	59 99 .0 8	27 .5 8	57 28 .5 1	- 4. 51	71 99 .9 1	25 .6 9	76 36 .7 0	6. 07	68 84 .2 7	- 9. 85	76 15 .7 5	10 .6 3	93 22 .3 5	22 .4 1
CAPI TAL EXP ENDI TURE	13 73 .6 4		23 01 .0 4	67 .5 1	48 41 .3 1	11 0. 40	68 92 .2 7	42 .3 6	78 64 .6 9	14 .1 1	64 53 .0 0	- 17 .9 5	42 03 .6 9	- 34 .8 6	59 93 .3 3	42 .5 7	68 83 .1 4	14 .8 5
EXT RAO RDIN ARY EXP ENDI TURE	80 3. 22		13 91 .9 8	73 .3 0	10 85 .5 2	22 .0 2	11 58 .9 2	6. 76	94 7. 40	- 18 .2 5	12 12 .9 6	28 .0 3	12 01 .0 9	- 0. 98	89 8. 05	25 .2 3	20 20 .8 7	12 5. 03
TOT AL EXP ENDI TURE	59 64 .3 8		83 95 .0 8	40 .7 5	11 92 5. 91	42 .0 6	13 77 9. 70	15 .5 4	16 01 2. 00	16 .2 0	15 30 2. 66	- 4. 43	12 28 9. 05	- 19 .6 9	14 50 7. 1	18 .0 5	18 22 6. 4	25 .6 4

Source: Computed from Annual Reports of Shivamogga City Corporation

Chart 02: Shivamogga City Corporation's Distribution of Municipal Expenditure in 2013-2014

to 2021-22



#### INCOME AND EXPENDITURE WITH PROFIT OF SHIVAMOGGA CITY CORPORATION

Table 03: Shivamogga City Corporation's Income and Expenditure with Profit in 2013-2014

To 2021-22
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year	Income	Expenditure	Profit	Profit %
2013-14	6035.91	5964.38	71.53	1.20
2014-15	8543.9	8395.08	148.82	1.77
2015-16	14126.7	11925.91	2200.78	18.45
2016-17	14362.3	13779.7	582.6	4.23
2017-18	14023.1	16012	-1988.92	-12.42
2018-19	16888.9	15302.66	1586.27	10.37
2019-20	13371.1	12289.05	1082.05	8.80
2020-21	14229	14507.13	-278.13	-1.92
2021-22	16815.6	18226.36	-1410.76	-7.74

Source: Computed from Annual Reports of Shivamogga City Corporation

Chart 03: Shivamogga City Corporation's Income and Expenditure with Profit in 2013-2014 to 2018-2019



From the above Table 03 and Chart 03: Overall Income and Expenditure of Shivamogga City Corporation in these nine years find out that Profit percentage was maximum in 2015-16 (18.42%) and the municipal corporation of shivamogga suffered a loss of -12.42% in 2017-18 and -1.92% in 2020-21 and-7.74% in 2021-22 due to increase in expenditure by decease in Capital expenditures and Extraordinary expenditure.

#### CONCLUSION

India has implementation and framing modernize of local government form last two decades and committed to put the efforts in local government. The amount of Income and expenditure of Shivamogga City Corporation level that efforts are being made very seriously by the State and Central government to upgrade the Standard of Shivamogga city by allocating various sources of revenue .but the scale and size of investment requirements cannot be met from government budgetary resources, analysis of expenditure side shows that the administration expenses has constantly increase but Revenue receipts of city Corporation's has not increase in same proportion. Municipal Corporation has need to enhancement in sources of receipts and reduce the administration expenses to earn maximum gain from operation. The body need to build its capacities to tackle the emerging issues and problems which are resulting in undesirable levels of service delivery, insufficient utilization of available resources, information gaps, inadequate resource mobilization and lack of effective planning and monitoring the function. An effective system of City Corporation is important for the political and economic reasons because it shares power and promotes the accountability of City Corporation Services

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Annual Report of Shivamogga City Corporation from 2-13-14 to 2018-19.

#### India in Global Value Chains: An Empirical Analysis Using Trade in Value Added

#### Dhanalakshmi R

#### Navitha Thimmaiah

#### Abstract

The emergence of Global Value Chains (GVCs) has led to increased fragmentation of production processes globally and this has transformed the world economy. GVCs are increasingly being considered as a viable strategy for inclusive and sustained economic growth as they open up the opportunities for emerging market economies like India to increase their presence in international trade in spite of not having any intrinsic comparative advantage because with GVCs, countries just have to focus on specializing in specific production stages and not on producing an entire product. This paper presents a trend analysis conducted at the country level which aims to offer a holistic view of India's participation in GVCs in comparison to selected developed and developing countries. The study used the data from Organisation for Economic Cooperation & Development- Trade in Value Added (OECD-TiVA) Database to obtain measures of backward and forward linkages and estimated GVC participation for selected countries using Koopman's methodology. The study found that India is lagging behind most of the emerging market economies like China, Singapore Korea, Vietnam, Taiwan, Thailand and Philippines in terms of forward linkages and overall GVC participation. Also, India's backward GVC participation has more than doubled during 1995-2018 while its forward GVC linkages have declined. Given the potential of GVCs to create jobs, facilitate technology and skill transfer and boost manufacturing productivity, India should integrate into GVCs more through forward participation i.e. by increasing the share of its domestic value added in exports rather than importing intermediates from abroad (backward participation).

*Keywords:* Global Value Chains; Trade in Value Added; Emerging Market Economies; Sustainability in Trade; Inclusive International Trade

#### Introduction

The emergence of Global Value Chains (GVCs) has led to increased fragmentation of production processes globally and this has transformed the world economy. GVCs have made international trade more inclusive as any country, in spite of not having any intrinsic comparative advantage, can have its presence in global trade by specialising in specific production stages and not on producing an entire product. In this context, GVCs are increasingly being considered as a viable strategy for inclusive and sustained economic growth. With the evolution of GVCs, the way international trade takes place between countries has also changed. A single product today is no longer made within the borders of one country but the production activities involving stages like design, manufacturing, logistics, assembly, distribution, marketing and support services are carried out across different countries to exploit differences in factor costs. Each step in this range of activities adds value to the end product that is ultimately consumed and this entire range of activities that are dispersed globally while bringing a product from its inception to end use is called a 'Global Value Chain'. These internationally fragmented production activities imply that countries today trade largely in intermediate goods and services rather than in finished products.

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The rise of Global Value chains has made the trade led development debate even more complicated. In this era of GVC trade (trade in intermediate goods and services) which today constitutes about 80% of global trade (UNCTAD, 2013), the gains from trade can be determined by looking at the extent of domestic value addition in a country' exports rather than just considering the gross value of exports as recorded by traditional trade statistics. Thus, international trade has to be seen from the perspective of value added trade rather than gross trade. This paper presents a trend analysis conducted at the country level which aims to offer a holistic view of India's participation in GVCs in comparison to selected developed and developing countries. The countries chosen are the G-7 countries, BRICS nations and the Newly Industrialised Countries (NICs) or the Emerging Market Economies (EMEs) like Vietnam, Thailand, Korea, Malaysia, Singapore, Taiwan, Indonesia, Philippines and Hong Kong.

## **Brief Literature Review**

Although literature on GVCs are scarce, there have been growing number of studies on GVC analysis at the global and regional level but such studies are not well complemented by country specific research. This could be due to problem in assessing the value added trade for which measures have been developed recently by various organisations. Studies by Kowalski et al (2015) and Banga (2016) have explored the gains associated with linking into GVCs especially for the developing countries which face scarcity of required skill and technology to manufacture an entire product. GVC participation offers an opportunity for developing countries to boost their economic growth by diversifying their exports. However, gains to through GVC integration depends on factor endowments, trade openness, liberal FDI policy, institutional capacity and political stability, business friendly environment, improved logistics and customs, intellectual property protection and infrastructure (Kowalski et al, 2015; Urata and Baek, 2020; Fernandes et al, 2020;).

Some existing studies with respect to India have analysed various aspects of India's GVC engagement. Ray and Miglani (2020) analyzed the reasons for low integration of india into existing GVCs especially in the manufacturing sector. Bagaria (2021) and Banga (2022) have explored the opportunities and challenges for India in integrating into world economy especially in the context of global crisis created by COVID-19 pandemic. Banga (2018), in her study of Indian manufacturing sector has identified that increasing participation within GVCs facilitates product-sophistication for Indian firms and also, GVC embeddedness boosts firm-level total factor productivity which in turn facilitates economic upgrading within GVCs. The social aspects of GVC integration have also been explored in some of the studies. (Mishra, 2019) has identified that India's GVC participation can also lead to reduced poverty and Deb (2021) has analyzed the impact of GVC engagement on gender wage disparity and found that GVC engagement has not improved relative wages of female workers in India.

While the above mentioned studies have explored different aspects of India's GVC participation such as the drivers of GVC linkages and its potential impact, there is a dearth of studies analysing the nature of India's GVC integration over past two decades (since the evolution of concept of GVC) and the present study proceeds to analyse trends in India's GVC linkages for the period 1995-2018.

## **Measuring India's Participation in GVCs**

India's rapid integration into global economy began after 1991 trade liberalisation and since then India has not been left behind in the global bandwagon of GVCs. From time to time, Government of India has been undertaking initiatives like Make in India and Atmanirbhar Bharat, to integrate India into GVCs by raising the share of manufacturing sector in the GDP and exports. This is because India's comparative advantage lies in manufacturing sector which is labour intensive and holds large employment potential.

India's participation in GVCs can be mapped with the help of value added trade measures which are based on International Input-Output tables that describe the interactions between industries and countries for varied products in all the sectors. These tables are developed by various organisations and

few examples of such datasets are World Input Output Database (WIOD), Organisation for Economic Cooperation & Development- Trade in Value Added database (OECD-TiVA), Global Trade Analysis Project (GTAP) etc.

A country can participate in GVCs in terms of backward linkages and forward linkages where backward GVC participation captures the foreign value-added content in the exports of a country and forward GVC participation is a measure of a country's domestic value-added exports which enter other countries' exports. In this study, the indicators on backward and forward GVC participation are obtained from OECD-TiVA database and GVC participation of India and selected developed and developing countries has been estimated by employing Koopman's methodology.

'Backward Linkages' capture the 'Foreign Value Added (FVA) content of gross exports' which measures the value of imported intermediate goods and services that is embodied in domestic industry's exports. This value added may come from any country upstream and economy purchases intermediate inputs to further use it for processing their exports. It indicates the backward participation in global value chains by the exporting country.

'Forward Linkages' capture the 'Domestic Value Added (DVA) content embodied in gross exports' and implies export of goods which have undergone some value addition domestically by the exporting country. The goods so exported can be finished goods or intermediate goods which have been partially processed in home country and will be exported to another country for further processing. This indicator reflects the value of total domestic value addition done.

In figure 1 below, disaggregation of gross exports into two components of trade – domestic value added and foreign value added is depicted. The domestic value added (DVA) content includes four components of traded goods – viz. goods exported as final goods, goods exported as intermediates which are absorbed in the importing country, goods which are intermediates and post value addition further re-exported to a third country and goods which are exported as intermediates which are reimported to the home country.





Source: Koopman et al (2010)
# **Backward GVC Participation**

An analysis of Backward GVC participation reports the extent of foreign inputs used in the exports of a country. Figure 2 presents growth in backward linkages for selected developed and developing countries from 1995 to 2018 and it reveals that all the G-7 countries except Canada have recorded a positive growth in backward linkages. It is also seen that among the BRICS countries, only Russia experienced a decline in backward linkages and this implies that these economies have mostly followed protectionist trade policies and reduced their dependence on foreign intermediate goods and services for their exports and the highest growth rate among BRICS countries has been recorded by India (104.5%) and this highlights increased reliance of India's exports on raw materials from foreign countries. The highest growth of all the countries studied was seen in the case of Japan (185.13%) followed by emerging market economies Vietnam (122.78%) and Taiwan (115.28%) while Malaysia has recorded fall in backward linkages by 24%. Other countries which have seen tangible growth are Brazil, Germany, France, Italy, Thailand and Korea.





Source: Calculations based on TiVA Dataset (November, 2021)

## Forward GVC Participation

Forward GVC participation can be measured by estimating forward linkages which refers to the DVA in gross exports of intermediate products, that can become part of exports or consumption of a partner country, as a share of gross exports. Figure 3 shows that in case of all the countries, the growth of forward participation has been much slower as compared to backward linkages and in fact the DVA

share of many developed and developing countries have fallen considerably in the period 1995 to 2018. This is seen in case of Vietnam which has experinced the largest fall among all countries (30.07%) followed by South Africa (14.48%), India (12.61%) and Thailand (11.6%). Also, interestingly, even the developed countries like Germany, Japan, France and Italy have witnessed a negative growth rate in forward linkages. Malaysia's forward linkages have grown by 32.81% which is the highest among all countries, followed by Russia, Philippines, Brazil, China and Korea.



Figure 3: Growth in Forward Linkages from 1995 to 2018

Source: Calculations based on TiVA Dataset (November, 2021)

## Participation in Global Value Chains

A country can participate in GVCs through forward and backward linkages. Having obtained the estimates on these two measures from TiVA database, GVC Participation Index can be computed based on a formula proposed by Koopman et al (2010) which is given as -

GVC participation<sub>ir</sub> = 
$$\frac{IVir}{Eir} + \frac{FVir}{Eir}$$

Here, *IVir* represents the indirect value added exports i.e. domestic value added of the r industry exports in country i; *IVir/Eir* represents forward participation, which measures the proportion of a country's value added in exports of intermediate products that enter partner country's exports, as a share of total

gross exports; *FVir* represents the foreign value added of country i in r industry exports. *FVir/Eir* stands for backward participation and measures the share of intermediate products imported from abroad in a country's exports. Figure 4 presents growth in GVC participation of the countries selected for the study.



Figure 4: Participation in GVCs from 1995 to 2018

Source: Calculations based on TiVA Dataset (November, 2021)

It is evident from figure 4 that GVC participation has been steadily increasing for all the countries and Taiwan has witnessed highest growth in GVC participation (30.45%) in the period 1995 to 2018 followed by Vietnam, Brazil, Russia, Korea and Japan. All the G-7 countries have experienced positive growth of GVC participation and all the BRICS nations except South Africa have witnessed tangible growth in overall GVC participation. It is noteworthy that India with GVC participation growth rate of 7.02% lagged behind most of the Newly Industrialised Countries except Hong Kong, Indonesia and Malaysia.



Figure 5 : India's GVC Participation from 1995 to 2018

Source: Calculations based on TiVA Dataset (November, 2021)

Figure 5 presents India's forward linkages, backward linkages and overall GVC participation for the period 1995 to 2018. It can be observed that India's total GVC participation has only witnessed a moderate rise during the period and in 2018, it stands at 61.34% with 41.5% forward and 19.84% backward participation. It is interesting that though India's forward participation in GVCs is more than backward participation, it is on a declining trend. The share of backward linkages in GVC participation has been increasing continuously and this indicates that India has recognised the role of intermediate imports in boosting and diversifying exports. Examining growth in India's forward and backward linkages further confirms this. As evident from figure 3, the forward linkages have fallen by 12.01% for India whereas backward linkages have grown by 104.5% during 1995 to 2018. This finding was also corroborated in the study of Goldar et al (2017); the authors found that during the period 1995-2011, FVA content in India's exports increased by 11% while the DVA content in total exports decreased by 12.36%. Figure 3 also highlights that as compared to other emerging market economies, India's increase in backward linkages has been the highest while it's increase in forward linkages has been among the lowest. A similar observation was made in studies by Banga (2014), Goldar et al. (2017), Veeramani & Dhir (2017); they point out that Indian industries are facing an intense competition linked with the global production sharing and the obvious increased use of imported inputs has caused a generalised decline in growth of domestic value-added share for merchandise and total exports. In contrast to India, China witnessed a growth of 10.4% in forward linkages and 9.07% in backward linkages and its overall GVC participation has grown by 10.2% while the growth rate for India is roughly around 7%.

#### What should India Do?

The limited participation of India in GVCs can be mainly attributed to the stagnant growth of Indian manufacturing sector which has become less export oriented due to its limited share in India's GDP (around 26%). Higher GVC participation and the resultant gains from it are mainly seen in economies which have built sound manufacturing base having enormous potential to boost employment. India's low ability to attract FDI in the manufacturing sector, greater focus on the domestic market, low domestic value-added in manufacturing resulting in low-value added exports and higher dependence on imports and low levels of research and development activities explain limited participation of India in GVCs. Thus, there are a number of policy challenges for India to successfully integrate within global networks, including fuller liberalisation of trade in intermediate components, the need to reduce transaction costs of trade, improve factor market rigidities and develop infrastructure. (Sen & Srivastava, 2011). In this fast-evolving context of GVCs, especially in the post COVID-19 pandemic era, as global companies are looking to diversify their manufacturing and supplier base to build resilience, India has a unique opportunity to emerge as an attractive alternative to China

as a global manufacturing hub by capitalising on its distinct demographic edge, the potential for significant domestic demand and the Indian Government's drive to encourage manufacturing; all of which can increase India's global engagement in a sustainable manner.

## Conclusion

The trend analysis undertaken in this study reveals that india's integration into GVCs is lagging behind most of the emerging market economies like China, Singapore Korea, Vietnam, Taiwan, Thailand and Philippines. While GVC participation has grown between 1995-2018, backward linkages have also grown considerably and share of DVA in India's exports has declined i.e. India is increasingly importing from abroad rather than creating domestic value addition in its exports. Although India's gross output grows and exports rise, if the domestic value added does not increase, then there would be no noticeable production-linked gains like employment generation, technology upgrading, and skill development which ultimately contribute for sustainable and inclusive economic growth and faster catching up with the developed world.

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#### Foreign Direct Investment in India: Pros and Cons.

#### Budhen Kumar Saikia<sup>\*</sup>

#### Abstract:

The present paper focused on pros and cons of Foreign Direct Investment in Indian Economy. Foreign direct investment (FDI) in India has played a very important role in developing the economy. It has in many ways enabled India to achieve a certain degree of financial growth and stability and has allowed India to focus on areas that needed economic attention, and address various issues that continue to challenge the country. India is the fourth largest economy in the world and there is a wide scope for Foreign Direct Investment in various sectors of business. The Government of India having recognized the potential the country offered for Foreign Direct Investment has deregulated the economy and offers stimulating opportunities to attract Foreign Direct Investment into the Country. The Government of India has initiated the liberalized economic reforms from 1991 and has been constantly working towards providing liberalized and easy investment opportunities for Foreign Direct Investment. FDI is defined as the net inflow of investment (inflow minus outflow) to acquire a lasting management interest in an enterprise operating in an economy other than that of investor. Foreign Direct Investment is a direct investment into production or business in a country by a company in another country, either by buying a company in the target country or by expanding operations of an existing business in that country.

It needs to be underscored that FDI in retail is fundamentally different from green field foreign investment in manufacturing while the latter enhances the economy's productive base, enhances technological capability and generates employment in most cases, entry of multinational retail chains has few positive spin-offs. In fact the negative effects in terms of job loss and the displacement of small retailers and traditional supply chains by the monopoly power of the multinational retailers out weighs the supposed benefits accruing to the organized retail sector in terms of increased 'efficiency'. Moreover, India does not have any prior commitments Vis-à-vis the WTO to open up the retail sector. Therefore, the case for opening up the retail sector to FDI does not seem to be justifiable.

There is an urgent need to frame new rules in order to regulate the operations of corporate sectors, which employ the bulk of the Indian population. The UPA Government should consider the proposals seriously and take immediate initiatives to frame a national policy in this regard. Government should try to walk the path of growth with justice and not be based on crony capitalism. The issues and challenges are which need to be addressed in the regulatory, framework for organized retail business. Some policy suggestions are made below which seek to address those issues.

KeyWords: Foreign, Investment, Fund, Production, Employment and Development

#### Introduction:

Foreign direct investment (FDI) in India has played a very important role in developing the economy. It has in many ways enabled India to achieve a certain degree of financial growth and stability and has allowed India to focus on areas that needed economic attention, and address various issues that continue to challenge the country. India is the fourth largest economy in the world and there is a wide scope for Foreign Direct Investment in various sectors of business. The Government of India having recognized the potential the country offered for Foreign Direct Investment has deregulated the economy and offers stimulating opportunities to attract Foreign Direct Investment into the Country. The Government of India has initiated the liberalized economic reforms from 1991 and has been constantly working towards providing liberalized and easy investment opportunities for Foreign Direct Investment.

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FDI in India has increased over a period of time due to the efforts that have been made by the central Government. The Increased flow of FDI in India has given major boost to the country's economy and hence steps should be taken to make sure that the flow of FDI in India continues to grow. India has always sought to attract FDI from major investors of the world. In fact Foreign Direct Investment was introduced in 1991 as Foreign Exchange Management Act (FEMA), driven by Finance Minister Manmohan Singh. As Singh subsequently became the Prime Minister, this has been one of his top political priorities in India. As per the gazette notification amending the Foreign Exchange Management Regulations, 2000, 100 percent FDI is permitted in single brand product retailing and a 51 percent cap has been imposed on equity in multi-branded retail. FDI investments are permitted through private equity or preferential allotments, financial collaborations, through capital markets in form of Euro issues, and in joint ventures. FDI is not permitted in the nuclear, railway, arms, coal and lignite or mining industries.

Number of projects has been announced in areas like distribution and transmission, electricity generation and the development of roads and highways, with opportunities for foreign investors. The Indian National Government has also provided permission to FDIs to provide up to 100 percent of the financing needed for the construction of bridges and tunnels, with a limit on foreign equity of INR1,500 crores (approximately \$ 352.5m). Presently, FDI is allowed in financial services, including the growing credit card business. These services also include the non-banking financial services sector. Foreign Investors are allowed to buy up to 51 percent of equity in private banks, on a condition that these banks must be multinational financial organizations. Up to 45 percent of shares of companies in Global Mobile Personal Communication by Satellite Services (GMPCSS) sector can also be purchased.

## **Conceptual Issues:**

FDI is defined as the net inflow of investment (inflow minus outflow) to acquire a lasting management interest in an enterprise operating in an economy other than that of investor. Foreign Direct Investment is a direct investment into production or business in a country by a company in another country, either by buying a company in the target country or by expanding operations of an existing business in that country.

#### **Classification of FDI:**

FDI is Foreign Direct Investment. There are two types of Direct Investment: 1) Domestic Direct Investment, and 2) Foreign Direct Investment. DDI is done in domestic currency (rupees in India) and FDI brings in Foreign exchange. There are only three sources of Foreign exchanges. 1) Export of goods and services 2) NRO accounts in banks and 3) Foreign Aid qualified as assets.

#### **Objectives of the Paper:**

The main objectives of the paper are as follows;

- 1) To understand the impact factor of FDI on Indian Economy.
- 2) To analyze the pros and cons of FDI on the economic system.
- 3) To suggest means and ways to protect the domestic economy.

#### Methodology:

The present paper is based on secondary data. The secondary data have been collected from the books, journals, magazines, Government reports, census report, economic survey, and news paper for intensive analysis. This paper gives the primary and prelude information of the FDI in India.

#### **Analysis and Discussion**

Now Indian economy is not a mixed economy, but it is an open or market economy. In the early 1990s, Government of India made several changes in the economic policy of the country. This helped in the liberalization and deregulation of the Indian economy. While also opening the country's markets to foreign direct investment due to this large amount of foreign direct investment came into India, through

international companies, Non-Resident Indians (NRIs), and various other foreign investors. This in turn boosted the economic growth of India.

The recommendations of Foreign Direct Investment Promotion Board (FIPB) have approved to investment in India. The total amount of FDI in India was around US \$ 42.3 billion in year 2001. In 2002 this figure became US \$ 54.1 billion; in 2003 this figure was US \$ 75.4 billion, while in 2004 the investment increased to US \$ 113 billion. This indicates that the flow of foreign direct investment in India has rapidly grown over the last few years. Different forms of foreign capital flowing into India include investments in commercial banks of India, NRI deposits and investments in country's debt and stock markets.

## Advantages of FDI in India:

Some of the assumed advantages of FDI in India were in terms of increased capital flow, improved technology, management expertise, access to the international markets, creating employment opportunity, better education, better per-capita income, better products,& services at reasonable price, improved trade and benefit for small enterprises and augment of profit of businessmen in the economy. These benefits are available from the FDI in India. The politicians and policy planners assumed that these advantages are available for Indian retail traders. Politicians, for obvious reasons, speak a language of their own, driven by ulterior motives. Most of the times, they are not even knowledgeable to understand the long term consequences of the populist measures and policies they adopt. Some of the policy makers assume that the FDI is a boon for India but in real sense it is bane for the Indian economy.

### Effects of FDI on Indian Economy:

The need for FDI is justified only in two situations 1) When DDI is inadequate or 2) When foreign exchange is required. On the DDI front, the position as obtained in our country is fairly sound. Banks are flush with funds, the domestic savings rate is one of the highest in the world, market capitalization, constantly on the rise, makes available investable funds; and domestic investments have huge unutilized funds waiting to be deployed in feasible projects. It is gung-ho all around. Therefore, domestically speaking there is no short fall of funds for investment. FDI was argued in favour of consumerism, mall culture, mono culture and high spending attitudes etc. It effects on the taste and habits of Indians, small vendors (Domestic market suffers), and long-run balance of payment position of the Indian economy is jeopardized when the investor manages to recover its initial outlay.

FDI is a debt in flow of mobile foreign exchange. Why? Simply, because the profits or returns it generates will have to be repatriated in foreign exchange. Secondly all the men, material and merchandise imported in the years to come will have to be paid in foreign exchange. Finally, at the time of winding up or selling off the proceeds will flow-out of the country in foreign exchange. And it is noteworthy here; all this will end up in the out flow of foreign exchange, many times more than the initial in flow. So, every FDI is a clear-cut case of liability on foreign exchange. It leads to resource drain and once again India under the hands of foreigners. Therefore, Foreign Investors show interest in the investment in various sectors of Indian economy.

They say: Had FDI not come in, our automobile, telecommunication, aviation banking and many other industries would not have reached global standards. I would say that instead of allowing foreign capital to set up shop here, the country should have used foreign exchange to just import technology, if needed; and set up the same industries with domestic capital. No liability foreign exchange, no profits going out of the country; domestic consumers getting the same products ; and the fruits of exports being reaped by domestic firms and not foreign-all the way a win-win situation for us. But this attitude shows the government is not working in the interest of the economy but is unscrupulously catering to vested interests.

## FDI in Retail Sector:

The Indian retail sector is the second largest employer in India after agriculture, employing over 4 crore (40 million) persons as per the latest National sample survey (NSS) 2009-10. Most of these are small unorganized or self-employed retailers, who are unable to find gainful employment in other sectors of the economy. India's retail trade is largely in the hands of the unorganized sector. Only recently, large super markets, departmental stores and luxury shopping malls have started making their entry in some major cities. These are owned and managed by Indian promoters, though some foreign retailers have made a backdoor entry through franchises and export oriented wholesale activity.

Despite the hype over the high GDP growth in India, NSS 2009-10 has confirmed the trend of jobless growth in the country. Total employment growth has slowed down from an annual rate of around 2.7 percent during 2000-2005 to only 0.8 percent during 2005-2010. Growth in non-agricultural employment fell from 4.65 percent to 2.53 percent. Among all the workers at the National level about 51 Percent are self employed; about 33.5 percent are 'casual labour' and only 15.6 percent are regularly wage salaried employees.

Retail trade contributes around 10-11 percent of India's GDP and currently employs over 4 crores people. Unorganized retailing accounts for 96 percent of the total retail trade. Traditional forms of low-cost retail trade, from the owner operated local shops and general stores to the hand craft and pavement vendors together form the bulk of this sector. Since the organized sector accounts for less than 8 percent of the total workforce in India, and millions are forced to seek their livelihood in the informal sector, retail trade being an easy business to enter with low capital and infrastructure needs, acts as a kind of social security net and refuge source of income for the unemployed. There are serious apprehensions in the minds of small traders that FDI will affect their trade. They feel FDI is a serious threat to their business. Policy is one thing. Apprehension is another issue. We have seen (that) when big traders reduce price, small traders are eliminated from market. But after some time they increase the prices. If big companies adopt unfair trade practices and bring down the prices that will be effect on small traders in India.

#### Augmenting of Unemployment:

A sharp increase in the share of organized retail driven by the global retailers will displace a large number of small retailers, causing massive job losses. Given the already grim employment scenario, this will cause social distressed turmoil.

The Commerce Minister has claimed that FDI in retail will create 10 million (1 crore) jobs in 3 years with 4 million (40 lakhs) jobs created directly and the rest in the back end logistics. The number of stores world wide and employee strength of the top 4 MNC retailers are given below.

Name of the Shops	Number of Stores	Total Number of Employees	Average Employees per-store
Wal-Mart	9826	21,00,000	214
Carrefour	15937	4,71,755	030
Metro	2131	2,83,280	133
Tesco	5380	4,92,714	092

Table-1		
World-Wide Big Business Cente	ers	

Source: Group Websites.

The above table reveals the world wide big business centers at the Globe in 2010-2011. If 4 million jobs are to be created in India in 3 years, even the Wal-Mart, which has the largest average employees per store, will need to open over 18600 supermarkets in India! If the average of the 4 top global retailers are

considered, i.e. 117 employers per store, over 34180 super markets have to be opened in 3 years to employ 4 million people i.e. 644 super markets in each of the 53 cities!! Can these absurd claims made by the Commerce Minister be taken seriously?

Moreover, our estimate suggests that for every job created in the super markets, around 17 jobs will be lost in the Indian unorganized retail sector. Therefore, in case 4 million jobs are created in the super markets over the next 3 years, the entire domestic retail sector in India (40 million plus) will get completely wiped-out. One retailer, which has been widely discussed, has the reputation of bad labour relations, discrimination on the basis of gender, not providing adequate health benefits, and more illegal activities are in big business.

### **Price Rise of Food grains:**

The price of fruits, vegetables and other basic foods of FDI supermarkets are higher than those in traditional markets. Even if supermarkets are able to offer low prices, the low income house holds may face higher food prices because they live far from supermarkets and because of the higher price charged by super markets in low income areas. Thus, there is no direct correspondence between modern retail and lower food prices and therefore with the food security of the poor consumers. Therefore, the inflation containment logic for FDI in food retail does not stand ground. The lack of inadequate storage infrastructure constrains public procurements and contributes to huge wastage of food grains. The price of goods will rise (no guarantee of reasonable price). This leads to increase the inflation rate of food grains in India.

### Pushing Local Traders Out:

Unfortunately, these factors may not necessarily stop the multinational from pushing a significant portion of the local traders out of the market. The multinational may do so by entering into exclusive interlinked contracts with the farmers. It is well known that rural markets in India witness a lot of interlinked contracts. A common interlinking is between the products market and credit market. The local moneylender, who also happens to be a trader, typically enters into an interlinked contract with a farmer by giving him a production loan with the stipulation that the farmer has to sell his output exclusively to the trader-cum-lender. The contract specifies the rate of interest on the loan and the price at which the commodity is to be sold. In such contracts, the trader-cum-lender would give a loan at a lower interest (compared to the interest at which the farmer, can raise a loan by himself) to ensure production efficiency and at the same time buy the product at a price which is much lower than the market price.

Now, the multinational to ensure production efficiency and guarantee un interrupted supply, can indeed enter into an interlinked contract with the farmer through contract farming arrangements. Since the multinational is likely to have access to a cheaper source of funds, it can drive out the local trader by offering a lower rate of interest to the farmer. But this does not improve the condition of the farmer, who will have to receive a lower price as well. His fate will simply shift from the grip of the local moneylender to that of the multinational, and the latter would squeeze as much profit out of the farmer as possible just like the local money lender. However, as the multinational has a better storage facility, it is likely to lift more output from the farmers through interlinked contract farming than the output that was being lifted by local traders (who are now driven out of the market) through interlinked contracts. Therefore, the net out put lifted from the market through interlinked contracts is likely to increase after the entry of the multinationals. This would simply raise the open market price. As already discussed, rise in price would be beneficial to net sellers in the open market and harmful for net buyers. For those under interlinked contracts, the economic condition would hardly change.

To recapitulate, multinationals can procure from the rural market in two different ways. They can either buy directly from the rural market or they can procure by entering into interlinked contracts. We have argued that both would lead to an increase in farm price in the rural market benefiting net sellers and hurting net buyers. Viewed differently, the price rise is likely to benefit the relatively affluent and hurt the relatively poor in the rural sector.

### **Policy Implications:**

The issues and challenges are which need to be addressed in the regulatory, framework for organized retail business. Some policy suggestions are made below which seek to address those issues.

- A system of licensing should be introduced for organized retailers.
- The authority to grant licenses should be the urban local bodies.
- Penal provisions, including withdrawal of licenses, should be laid down for violation of the terms and conditions of licenses by organized retailers.
- A single large format retailer should not be allowed to capture a large share of market.
- Encouragement should be provided to the existing retail chains in the cooperative sectors.
- The State Government or Urban local bodies should levy a cess on the VAT on all goods sold by large format retail outlets.
- Tax incentive should not be provided, either by the State or Central Government.

### Suggestions:

Some of the important suggestions are as follows

- To set up the single information centre for Government Services to various Government agencies.
- Government should impose compulsory getting No-Objection Certificate (NOC) from the domestic partner, before entering into the same or allied business independently to protect the interests of Indian business.
- Governments should have to undertake policies which are people-friendly.
- The State should be providing social protection and social justice for business community and farmers of the society.

#### **Conclusion:**

It needs to be underscored that FDI in retail is fundamentally different from green field foreign investment in manufacturing while the latter enhances the economy's productive base, enhances technological capability and generates employment in most cases, entry of multinational retail chains has few positive spin-offs. In fact the negative effects in terms of job loss and the displacement of small retailers and traditional supply chains by the monopoly power of the multinational retailers out weighs the supposed benefits accruing to the organized retail sector in terms of increased 'efficiency'. Moreover, India does not have any prior commitments Vis-à-vis the WTO to open up the retail sector. Therefore, the case for opening up the retail sector to FDI does not seem to be justifiable. There is an urgent need to frame new rules in order to regulate the operations of corporate sectors, which employ the bulk of the Indian population. Government should try to walk the path of growth with justice and not be based on crony capitalism.

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#### A Study On India-Asean Relations With Special Reference To Trade (1996 - 2018)

#### J Antoni Samy

#### ABSTRACT

India, after attaining its independence chose the model of closed economic set up to stabilize and strengthen its position in the world. The model of import substitution policy did not provide significant benefits to the country and it was forced to adapt liberal trade policy in 1991. India accepted a liberal economic and trade policy in the year 1991. Those agreements were generally called as Free Trade Agreements (FTA). India and the member nations of the Association of Southeast Asian Nations (ASEAN) share colonial and cultural linkages that have evolved since their independence. The launch of India's 'Look East Policy' in 1992, which was later rechristened the 'Act East Policy', There are a few Southeast Asian countries such as Singapore, Malaysia and Thailand that have emerged as major export destinations for India. The composition of trade is the type of good which are highly exported and imported between two regions. There are two categories which can be classified under composition of trade. They are inter-trade and intra-trade. Inter trade is the trade between two regions which is not dominated by the same commodity. The commodity which was highly exported from host country to importing country does not correlate with the commodity which was imported into host country from other country. Intra-trade is a trade scenario where the commodity which was exported from the host country to importing country does correlate with the commodity which was imported into host country from other country. The study analyses the top five commodities which are traded between India and ASEAN and its member countries based on the year 2018-2019. Trade relationship between the countries play an important role on their economy. It is stated that savings gets converted into investment which forms the capital which in turn increases productivity. The trade with ASEAN is expected to increase the economic growth of India. This chapter investigates the impact of exports and imports of India with ASEAN economic bloc on economic growth of India. The variables considered for the analysis have to be tested for stationarity. The study employed Augmented Dicky Fuller (ADF) Unit Root Test to study the presence of stationarity in the series. The study analysed the impact of India's exports to ASEAN bloc on the economic growth of India. The variables GDP and India's exports to ASEAN economic bloc were considered for the analysis. The impact of imports to India from ASEAN on economic growth of India were analysed. Import of raw materials from other countries and converting it into finished product is one means to increase economic growth. The study conducts the test through bound test to analyse whether the theory is applicable for India with respect to imports from ASEAN economic bloc. The increase in exports to ASEAN economic bloc contributes to the economic growth of the country. India should augment its exports to ASEAN economic bloc to have favourable economic condition for India in the long term .The overall objective of the study is to analyze the trade relationship between India and ASEAN economic bloc and also the trade relationship between India and countries within ASEAN economic bloc.

Key Words: ASEAN Trade, International Trade, India Growth

#### INTRODUCTION

India, after attaining its independence chose the model of closed economic set up to stabilize and strengthen its position in the world. The model of import substitution policy did not provide significant benefits to the country and it was forced to adapt liberal trade policy in 1991. India accepted a liberal economic and trade policy in the year 1991. Free Trade Policy which is part of India's New Economic Policy can provide benefit only if India accepts to allow imports from other nations without any quantitative restrictions and at a lower tariff rate.

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The launch of India's 'Look East Policy' in 1992, which was later rechristened the 'Act East Policy', was a watershed event; it ushered in an era of reinvigorated partnership between India and Southeast Asia. Indian policymakers had long ago realized the strategic importance of the ASEAN region. The Act East Policy was a push in the right direction, focused on strengthening relations through greater economic and cultural exchanges.

Today ASEAN has so much to offer, perhaps more, to India, as India has to offer ASEAN and the relationship is seen as mutually beneficial in largely economic terms. ASEAN's phenomenal success as a group of modern industrial and trading nations has opened new opportunities for renewed India ASEAN interaction. Much has been written about the "East Asian Economic Miracle" and, admittedly, its impact is not even across the region. Indeed, Singapore is the only ASEAN economy which can be classified as belonging to the 'top' ring of Asian economies. Along with South Korea, Hong Kong and Taiwan, Singapore is undoubtedly among the "Asian Tigers". However, Indonesia, Malaysia and Thailand have been classified as the "Newly Industrializing Economies (NIEs) and together, all these countries constitute Asia's "Highly Performing Economies" (HPEs). Other ASEAN economies have not done so well. Thus, Philippines, Vietnam, Laos and now Cambodia and Myanmar, remain the laggards. The magnitude of ASEAN's miraculous growth performance is brought out by such simple economic and social indicators as income per person, literacy and longevity.

## **REVIEW OF LITERATURE**

**GAUR (2003)** highlights how the challenges of globalization and growing economic interdependence in Asia is making both ASEAN and India to pursue free trade agreements with their trading partners within and outside the region. With the decline in the markets of Europe and America, China has risen as trade and investment hub and has joined WTO thus affecting competitiveness' in exports and FDI. Along with the inherent limitations of building up liberalized multilateral trade, collapse of WTO talks in Cancun have added urgency to the process.

ASHER AND SEN (2005) suggested that adding India in various economic bloc of Asia would be advantageous for the continent in meeting its challenges and improving its efficiency in negotiating with world countries. East Asian countries which are far ahead in logistics can invest in India as the latter is lagging in it. Emergence of Asia in both east and the west parallel will empower the continent.

**RAJ AGRAWAL (2006)** India, China and ASEAN countries by identifying the sector-specific opportunities that can drive trade and investment flows among these countries and by formulating the key strategic issues for the promotion of trade and investment in this region.

**BATRA (2007)** Using measures like index of trade intensity, complementarity indices and trade bias found that ASEAN+4 has a good potential as a trade bloc in Asia. In fact, India's trade with these countries supports India's inclusion in this trade bloc. In this set of countries, India emerged as a "distant" economy. Thus, any trade agreement in Asia seeking to include India must look for optimal route for India's integration into the trade bloc.

**MOHIDDEEN, ET.AL. (2011)** Impact of free trade agreements with other than ASEAN countries, on Indian economy. The study suggested that the FTA could commit the parties to prepare a timetable for on-going trade and investment reforms, which should be clear and realistic in order to advancing reform process in each economy.

**ELLIS (2014)** had illustrated the brief history of Free Trade Agreements of ASEAN, the theoretical description of ASEAN -China FTA, ASEAN Australia -New Zealand and ASEAN- India FTA were presented in this study.

**NATH JHA AND SALIM** (2015) illustrated the picture of regional co-operation for development of trade between India with ASEAN. The research was empirical. Using the secondary source of data and statistical tools, the study revealed that India's trade relationship with the ASEAN economic bloc was important and increased without any frictions. The authors suggested that India should increase the trade relationship with ASEAN countries.

# **OBJECTIVES OF THE STUDY**

- To observe the trends in exports and imports between India and ASEAN economic block
- To analyze the pattern of India's exports and imports with countries within ASEAN
- To study the composition of India's exports and imports with ASEAN
- To analyze the composition of India's exports and imports with countries within ASEAN
- To identify the impact of India's exports and imports with ASEAN on economic growth of

India.

# METHODOLOGY

The statistical tools used in the research are:

- 1. Simple Percentage Analysis
- 2. Annual Growth Rate (AGR)
- 3. Average Annual Growth Rate (AAGR)
- 4. Compounded Annual Growth Rate (CAGR)
- 5. Correlation
- 6. Augmented Dicky Fuller (ADF) Test
- 7. Regression Analysis
- 8. Autoregressive Distributed Lag (ARDL) Bound Test

## SOURCES OF DATA

This study is based on secondary data. It uses the time series data collected from Trade Statistics, Ministry of Commerce and Industry, Government of India, UNCTAD website and Hand Book of Statistics on Indian Economy, Reserve Bank of India.

## PERIOD OF STUDY

The time period is limited that covers 23 years of period from 1996-1997 to 2018-2019. The data which is used for the study analysis is exclusively relies on secondary data published by the Government. The data analysis is restricted with the free trade between India and ASEAN Countries.

## IMPACT OF FOREIGN TRADE WITH ASEAN ON ECONOMIC GROWTH OF INDIA

The variables considered for the analysis have to be tested for stationarity. The study employed Augmented Dicky Fuller (ADF) Unit Root Test to study the presence of stationarity in the series. The results of ADF unit root test are provided in the following table.

	Level		First Difference				
Variables	None	Intercept	Int &T	None	Intercept	Int &T	Order
GDP	2.65	0.49	-4.72*	-	-	-	I(0)
EXP_ASEAN	3.36	-1.08	-0.85	-1.21	-4.32**	-5.64**	I(1)
IMP_ASEAN	4.46	-1.00	-1.45	-2.46*	-3.84*	-3.73*	I(1)

Table 1. ADF Unit Root Test Result

Source: Author's own computation using E Views.

H0: Unit root in series.

\*\* and \* denotes rejecting H0 at 1% and 5% significance respectively.

The above table 1 presents that the result of the Augmented Dicky Fuller unit root test. Under the ADF test, the null hypothesis of non-stationarity (unit root) is rejected if the test statistic is more negative than the critical values. If a variable is found to be stationary in its raw form without any transformation, it is said to be integrated of order zero i.e. I(0), but if a variable only become stationary after taking its first difference, it is said to be integrated of order one i.e. I(1). From the result above, it can be seen that GDP (Gross Domestic Product) was found to be stationary in its level form. Imports to India from ASEAN economic bloc and Exports from India to ASEAN economic bloc was found to be stationary only after taking their first difference. From the above table, it is confirmed that variables are integrated of different order, i.e. it is a mixture of I(0) and I(1) variables.

## IMPACT OF EXPORTS TO ASEAN ON ECONOMIC GROWTH OF INDIA

The study analysed the impact of India's exports to ASEAN bloc on the economic growth of India. The variables GDP and India's exports to ASEAN economic bloc were considered for the analysis. It was found that GDP is stationary at its level form and India's export to ASEAN economic bloc was found to be stationary after first difference. In a situation where the variables are integrated of different orders, the next step in econometric analysis is to check for the presence of long run relationship among the variables. To do this, Pesaran et al (2001) proposed the bound testing to Cointegration Approach to test the presence of long run relationship (cointegration) among the variables. The impact of India's exports to ASEAN on economic growth of India is tested through bound test.

Table 2 Dound Testing Result.			
Bound Test F-Statistic	Critical Values		
		I(0)	I(1)
	5%	4.94	5.73
11.581	2.5%	5.77	6.68
	1%	6.84	7.84

### Table 2 Bound Testing Result.

Source: Author's own computation using E Views

H0: There is long run relationship among variables.

The above Table 2 presents the ARDL bound test result. The decision rule of rejecting the null hypothesis of no cointegration (no long run relationship) as given by Peseran et al (2011) is if the test statistic is greater than the upper bound. From the Bound testing result above, the test statistic is found to be greater than the upper bound critical values at 5%. Therefore, the null hypothesis is rejected and it is concluded that the variables are cointegrated i.e., they have long run relationship. India's exports to ASEAN have long run relationship with Gross Domestic Product of India.

The presence of cointegration among the variables were confirmed and the next step in the analysis is to estimate the long run relationship among the variables. The result is presented in the Table 3.

## Table 3. Long Run Relationship Estimation Result

Variables	Coefficients	T- Statistic
EXP_ASEAN	0.337	40.868**
С	11.727	105.422**

Source: Author's own computation,

```
H<sub>0</sub>: There is no long run relationship
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\*\*and\* denotes rejecting  $H_0$  at 1% and 5% significance respectively.

From the above, we can thus extract our long run co-integration equation as:

 $Cointeq = GDP - (0.337 * EXP\_ASEAN + 11.727)$ 

The above Table 3 shows the result of long run relationship among the variables i.e., the nature and magnitude of the impact of independent variable on the dependent variable. From the result presented, India's export to ASEAN was found to have a positive effect on GDP at five percent significant level. Since our variables are in their log form, a percentage change in India's exports to ASEAN economic bloc leads to 0.33 percent change in GDP.

## Table 4. Short Run Estimates and Error Correction Model

Variables	Coefficients	T – Statistic
D(EXP_ASEAN)	0.0033	0.159
D(EXP_ASEAN(-1))	-0.0288	-0.955
D(EXP_ASEAN(-2))	-0.0640	-2.495*
D(EXP_ASEAN(-3))	-0.0671	-2.807*
Coint Eq(-1)	-0.4860	-4.796**

Source: Author's own computation,

\*\*and\* denotes rejecting H0 at 1% and 5% significance respectively.

The above Table 4 above shows the short run estimates of the model as well as the Error Correction Term (ECT). The ECT is also known as the speed of adjustment, it captures the

speed at which the economy converges to long run equilibrium in a period of one year following a shock in the economy. The ECT coefficient is found to be -0.4860 which implies that about 48 percent convergence towards long run equilibrium is completed in a period of one year.

The short run relationship between India's export to ASEAN economic bloc and GDP was found to be negative and insignificant at five percent significance level. The relationship between India's export to ASEAN economic bloc with one lag and GDP was also found to be insignificant at five percent level of significance in the short run. India's export to ASEAN economic bloc with lag two and lag three was found to statistically significant at five percent significance level on Gross Domestic Product of India. The relationship between India's export to ASEAN economic bloc and GDP of India was found be negative in the short run. A percentage change in the India's exports to ASEAN economic bloc with two lag leads to a 0.06 percent decrease in India's GDP in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the short run. A percentage change in the India's exports to ASEAN economic bloc with three lag leads to a 0.06 percent decrease in India's GDP in the short run.

There are certain properties in which the residuals of a regression model must satisfy for it to be adjudged as fit for acceptance. The conditions are: the residuals must be normally distributed, it must be free from serial correlation and finally, it must be homoscedastic i.e. it must have constant variance. To identify whether the residuals are normally distributed, the Jarque Bera Normality test was applied. The results of the test are presented in the following chart.



Chart 1. Jarque-Bera Normality Test for impact of India's export to ASEAN on GDP of India

It was found from the above chart 1 that the probability value was 0.49. It is more than 0.05. Therefore, it can be concluded that the residuals are normally distributed.

To examine whether or not the residual is free from serial correlation, the study adopted the Breusch LM Serial Correlation test. The results of the test are provided in the following table.

Table 5. Breusch-Godfrey Serial Correlation LM Test for impact of India's export to ASEAN on GDP of India

Particulars	Value	Particulars	Value
F-statistic	0.522976	Prob. F(1,7)	0.4930
Obs*R-squared	1.042757	Prob. Chi-Square(1)	0.3072

#### Source: Author's Computation using E-Views

It was observed from the above table 5. That the probability value is 0.49 and it is more than probability value 0.05. Therefore, it can be concluded that the model is free from serial correlation.

To test if residuals are homoscedastic or not, the Breusch-Godfrey Hetroskedasticity test was applied. The results of the test are provided in the following table.

# Table 6. Heteroskedasticity Test: Breusch-Pagan-Godfrey for impact of India's export to ASEAN on GDP of India

Particulars	Value	Particulars	Value
F-statistic	1.358067	Prob. F(6,8)	0.3352
Obs*R-squared	7.568925	Prob. Chi-Square(6)	0.2714
Scaled explained SS	2.276769	Prob. Chi-Square(6)	0.8926

Source: Author's Computation using E-Views

It was found from the above table 6. That probability value is 0.33 and it is greater than probability value 0.05. Therefore, it can be concluded that the model is free from Heteroskedasticity.

To test the stability of the model, Ramsey RESET test was applied. The results of the test is presented in the following table.

Specification: LNGDP LNG	DP (-1) LNEXAS LNEXA	AS (-1) LNEXAS	(-2) LNEXAS (-3) LNEXAS		
(-4) C					
	Value	df	Probability		
t-statistic	0.735519	7	0.4859		
F-statistic	0.540988	(1, 7)	0.4859		
F-test summary:					
	Sum of Sq.	df	Mean Squares		
Test SSR	5.47E-05	1	5.47E-05		
Restricted SSR	0.000762	8	9.52E-05		
Unrestricted SSR	0.000707	7	0.000101		

Source: Author's Computation using E-Views

From the above table 7. It was observed that the probability value is 0.4859. It is more than 0.05. Therefore, it can be concluded that the model is stable.

#### IMPACT OF IMPORTS FROM ASEAN ON ECONOMIC GROWTH OF INDIA

The impact of imports to India from ASEAN on economic growth of India were analysed. Import of raw materials from other countries and converting it into finished product is one means to increase economic growth. The study conducts the test through bound test to analyse whether the theory is applicable for India with respect to imports from ASEAN economic bloc. The results of the bound test are presented in the following table.

Table 8. Bound	<b>Testing Result.</b>
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	8
Bound Test	
	Critical Values
F-Statistic	

		I(0)	I(1)
2.136	5%	4.94	5.73
	2.5%	5.77	6.68
	1%	6.84	7.84

Source: Author's Computation using E-Views

H0: There is long run relationship among variables.

The above Table 8 presents the ARDL bound testing result, the decision rule of rejecting the null hypothesis of no co integration (no long run relationship) as given by Peseran et al (2011) is if the test statistic is greater than the upper bound. From the Bound testing result above, the test statistic is found to be lesser than the upper bound critical values at five percent significance level. Therefore, the null hypothesis cannot be rejected and it is concluded that the variables are not cointegrated i.e., the variables do not have long run relationship. India's imports from ASEAN economic bloc have no statistically significant relationship with Gross Domestic Product of India.

To identify whether the residuals are normally distributed, the Jarque Bera Normality test was applied. The results of the test are presented in the following chart.



Chart 2. Jarque-Bera Normality Test for impact of India's imports from ASEAN on GDP of India

It was found from the above chart 2 that the probability value was 0.63. It is more than 0.05. Therefore, it can be concluded that the residuals are normally distributed.

To examine whether or not the residual is free from serial correlation, the study adopted the Breusch LM Serial Correlation test. The results of the test are provided in the following table.

# Table 9. Breusch-Godfrey Serial Correlation LM Test for impact of India's imports from ASEAN on GDP of India

Particulars	Value	Particulars	Value
F-statistic	1.239049	Prob. F(1,5)	0.3163
Obs*R-squared	2.978938	Prob. Chi-Square(1)	0.0844

Source: Author's Computation using E-Views

It was observed from the above table 9. That the probability value is 0.31 and it is more than probability value 0.05. Therefore, it can be concluded that the model is free from serial correlation.

To test if residuals are homoscedastic or not, the Breusch-Godfrey Hetroskedasticity test was applied. The results of the test are provided in the following table.

# Table 10. Heteroskedasticity Test: Breusch-Pagan-Godfrey for impact of India's imports from ASEAN on GDP of India

Particulars	Value	Particulars	Value
F-statistic	4.320596	Prob. F(8,6)	0.0456
Obs*R-squared	12.78133	Prob. Chi-Square(8)	0.1196
Scaled explained SS	0.809370	Prob. Chi-Square(8)	0.9992

Source: Author's Computation using E-Views

It was found from the above table 10. That probability value is 0.045 and it is marginally lesser than probability value 0.05 and greater than the probability value 0.01. Therefore, it can be concluded that the model is free from Heteroskedasticity at one percent level.

	on GDP of I	ndia	
Specification: LNGDP LNGDP (-1	I) LNGDP (-2) LNGI	DP (-3) LNGDP (-4)	
LNIMAS LNIMAS (-1) LNIMAS	(-2) LNIMAS (-3) C	l ,	
	Value	df	Probability
t-statistic	0.901268	5	0.4088
F-statistic	0.812284	(1, 5)	0.4088
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.000160	1	0.000160
Restricted SSR	0.001144	6	0.000191
Unrestricted SSR	0.000984	5	0.000197

#### Table 11. Ramsey RESET Test for impact of India's imports from ASEAN on GDP of India

Source: Author's Computation using E-Views

From the above table 11. It was observed that the probability value is 0.4088. It is more than 0.05. Therefore, it can be concluded that the model is stable.

## CONCLUSION

The trade relationship of the nation with other countries impacts the economic growth and other indicators of the country. The study analyzed the trade relationship between India and ASEAN. The study also focused on India's trade relationship with countries within ASEAN economic bloc. The overall objective of the study is to analyze the trade relationship between India and ASEAN economic bloc and also the trade relationship between India and countries within ASEAN economic bloc

The composition of trade relationship between India and countries within ASEAN economic bloc were analyzed. It was found Cambodia, Indonesia, and Myanmar did not have any commodity in concern. Among the major five commodities exported from India to those countries and among the commodities

imported from those countries to India. There was perfect inter-industry trade between India and Cambodia, Indonesia and Myanmar. It was observed from the composition of the trade between India, Brunei and Laos that one commodity was common in the major five commodities exported from India to those countries and imported from those countries to India. It was found that the trade relationship between India and Malaysia, Philippines and Thailand had two commodities in common in the major five commodities exported from India to those countries and imported from those countries to India. India's trade with Singapore and Thailand had three commodities common in the major five commodities exported from India to those countries and imported from those countries to India. India's trade with Singapore and Thailand had three commodities common in the major five commodities exported from India to those countries and imported from those countries to India. India is enjoying intra-industry trade relationship with Singapore, Thailand, Malaysia, Philippines and Thailand.

The study analysed the impact of India's exports to ASEAN economic bloc on economic growth of India and impact of India's imports from ASEAN economic bloc on economic growth of India. The findings established that there was presence of statistically significant relationship between India's exports to ASEAN economic bloc and economic growth of India. In the short run and long run the impacts were found to be different. In the long run, India's exports to ASEAN economic bloc had a positive impact on the economic growth of India. It was insignificant in the short run. However, India's exports to ASEAN with two lag and three lag had negative impact on economic growth of India. The relationship between imports from ASEAN to India on economic growth of India were analysed. It was found that India's imports from ASEAN did not have statistically significant impact on India's economic growth. The increase in exports to ASEAN economic bloc contributes to the economic growth of the country. India should augment its exports to ASEAN economic bloc to have favourable economic condition for India in the long term.

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#### Digital Connectivity, Usage and Effects: Reflections from Rural Gujarat

Hansa Jain

#### Abstract

The past decade has witnessed phenomenal increase in digital subscribers worldwide. In India, the credit goes to Digital India programme (initiated in 2015) that aimed to connect all the gram panchayats with digital networks. This was associated with introduction of several mobile-based applications for solving rural- specific problems and helping the rural population to overcome their vulnerabilities. Rapid advancement in technology, increase in network speed and affordable internet-enabled mobile phones and data plans have enabled the reach of technology in the hands of all socio-economic groups. Due to lower digital base earlier, rural digital subscribers have increased at a rate higher than that of urban digital subscribers. This is visualized in terms of remarkable increase in data consumption from 0.27 GB in 2014 to 15.7 GB in 2022. Rural area itself accounts for roughly 45 percent of the overall mobile data usage (TRAI). The data usage in rural areas excessively increased by 400 percent during the full lockdown months amid COVID-19 pandemic that included returning of migrant workers to their villages. Since digital technology provides access to information, this should help the residents to come up with ideas for effectively using the local resources and improve socio-economic status. But when the unlocking process began, the migration process for work was repeated. This raises concern about the digital usage pattern and how the technology is affecting rural well-being.

The study is based upon the primary sources of data collected from selected villages of Gujarat. The data usage pattern among males and females was examined and the impact was observed for socioeconomic variables. Digital scores were obtained on the basis of digital usage pattern and its relationship with income and opportunities in farm and non-farm sectors was observed. The field survey was conducted during 2018-19 (the pre-covid times), but it gives an important insight for benefitting from technology usage in the long run.

The study finds that though digital technology is a positive-sum game, but its effects are offset by excess of consumptive use. The excess of leisure time drives the users towards recreational online activities. The study finds two extremes: At one extreme, limited opportunities, poor demand, low income and low education discourage rural people from exploring knowledge and transaction-related engagements. They are more comfortable with risk-free online activities such as gaming, listening to music, watching videos, chatting, etc. At the other extreme, foreign remittances though increase the affordability for highly sophisticated mobile phones, but decreases the willingness of the users to use the technology for learning and earning. Since digital usage is highly prominent among young people, increasing the returns from technology is an urgent need for achieving demographic dividend. The study suggests to increase the confidence level and motivation of people for productive technology usage. Employment generation, business investments, integration of rural market with wider supply chain and infrastructure development are the solution for achieving technological returns in rural areas.

Keywords: Digital connectivity, Rural area, Gujarat, Correlation

#### **INTRODUCTION**

During the past decade, digital subscribers have remarkably increased all over the world. In India, the recent increase in digital subscribers is attributed to their faster growth in rural areas than urban areas (TRAI, Annual Reports). Between 2015 and 2022, rural digital subscribers have almost tripled, while urban digital subscribers have increased by 2.4 times. Due to weaker digital base earlier, rural population reacted swiftly to expansion of digital networks to rural areas under Digital India Programme launched in 2015.

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The intensity of internet usage in the country is visualized from excessive increase in data consumption. Between 2014 and 2022, data consumption increased from 0.27 GB to 15.70 GB (MBiT, 2021). India is now the global leader in monthly data consumption (Economic Survey, 2020-21). Rural area, with 40 percent of the total digital subscribers, account for 45 percent of the overall mobile data usage (Economic Times, Aug., 2, 2021). During the full lockdown months amid pandemic, data usage in rural India spiked by 400 percent (CSC e-Governance Services India Ltd.), as majority of migrant workers returned to their villages. Digital connectivity, by providing access to information, helps the users to generate ideas for utilizing the locally available resources in productive manner. This could have positive implications for the rural income and well-being. However, the scenario is different. When the unlocking process began, these workers started returning to their work places or finding new jobs in urban areas (in case of job loss). This raises concern about the digital usage pattern in rural areas.

Digital connectivity allows the users to perform a number of online activities, ranging from productive to consumptive. Productive technology usage is capital enhancing and helps in reducing the economic and social differences. Consumptive technology usage, on the other hand, is mostly recreational and is likely to have fewer pay-offs (Hargittai, 2010). Productive use of technology includes finding information, increasing knowledge, communication, banking, financial transactions and gaining opportunities. Participation in such activities improves user's skill (via learning by doing), increase confidence and motivate them for undertaking innovative tasks. Whereas consumptive use of technology include browsing sites for personal entertainment, such as watching movies and videos, playing games, socializing with stranger, etc. These activities require less skill, but consume a large amount of data and user's time. The intense use of technology for consumptive purpose implies less use for productive purpose. This may offset the potential of digital returns. Since user's digital skill and utility of digital apps varies, there are range of digital outcomes. Rural areas face the challenge of low education, poor infrastructure, geographical isolation, gender differences and social hierarchies, the question arises to what extent digital connectivity influences their socio-economic variables. Also, since young people are intense users of technology, and about 70 percent of them reside in rural areas, their digital usage pattern is likely to have major implications for the rural economy as a whole.

With this background, the present study examines the digital usage pattern and its effect in selected villages of Gujarat. Gujarat is a highly diversified state in terms of its geography, demography, social and cultural setup. Though the field survey was conducted during 2018-19 (pre-COVID time), but the results give important insights for the effects of technology use in the long run.

## 1. REVIEW OF LITERATURE

Majority of the studies on digital usage are based on developed countries. The differential digital usage pattern is largely been discussed in relation to socio-demographic variables (Blank and Groselj, 2014; Dutton and Blank, 2015; van Deursen and van Dijk, 2014 among others). It has been well documented that as compared to elderly people, youth participate in several types of online activities. In this context, the influence of technological familiarity, peer group (Agarwal, 2009), geographic proximity (Venkatesh and Sykes, 2013) employment needs, etc. have received attention.

Literature show that productive usage of technology is influenced by education level, income, employment status, social status and digital skill (Dobransky and Hargittai, 2016, Garin-Munoz et al., 2019, Martinez-Dominguez and Mora-Rivera, 2020; Räsänen and Koiranen, 2016; van Dijk, 2013; van Deursen and van Dijk, 2014; among others). Accordingly, the studies commented that offline socio-economic differences are reflected in the online world (DiPrete et al., 2011). For example, Donner (2015), Hatos (2019), Pearce and Rice (2013), among others pointed out that young and educated male with higher social status employ internet more productively and for higher economic gains than elderly and less educated people from less privileged group. In contrast, for a young, uneducated and less privileged person, the chances of using the internet for entertainment and leisure activities are high (Zillen and Hargittai, 2009; Jonex and Fox, 2009). Similarly, people in business have high probability for using the internet for information search, communication, market expansion, etc., while an

unemployed person, though use the internet for more hours a day as compared to people who are employed or in school, but their internet use is increasingly related to games and social interaction.

Regarding digital impacts in rural areas, there are contrasting views. While Whitacre et al. 2014; Philip and Williams, 2019) observed increased opportunities in the farm sector and Gallardo et al. (2021) evidenced increase in labour productivity and innovation capacity and spillover effects for the smaller firms suggesting catch-up effect of the technology, several others (for example, Rivera et al., 2014; Khan et al., 2020; Venkatesh and Sykes, 2013) remarked that rural contextual challenges shape the digital usage pattern and, therefore, the impact of technology on income and employment in rural areas is different from that in urban areas. Majority have documented against the full realization of digital gains, as persistent social, economic and territorial factors continue to pose hurdles to this rural segment of the population.

## 2. METHODOLOGY

The study adopted a micro-level approach. Primary data were collected from the selected villages of Gujarat using interview schedules. Respondents were selected using multi-stage random sampling, which include selection of districts, sub-districts, villages and respondents. Selection of district and subdistrict followed population criteria, and for villages both population and distance criteria (distance from highway) were used. Selection of respondents was based on their duration and intensity of usage in the selected household. The respondent with digital connectivity since past five years from the date of survey and has intense technology usage among all the household members was considered for survey. Sample size was 500 equally distributed among the selected villages and had representation from all socio-economic groups as per Census of India, 2011. Sample detail is given in Appendix (A1). The digital activities of the respondent were grouped into information search, communication, social networking and entertainment. All these activities were measured as binary response variables. Here, information search includes the use of Google, Yahoo search, You Tube, etc. Communication includes sending and receiving text messages via email, SMS and instant messaging as well as downloading / uploading files. Social networking includes the use of social media such as Facebook, Twitter, WhatsApp, etc. including virtual platforms for product promotions, discussion, and so on. Entertainment includes listening to musing, watching videos, movies, gaming, etc.

Digital scores were constructed to measure the extent of productive technology usage. For this, weights were assigned to each digital activity on the basis of their importance in rural development (Table 1).

Online activities	Weights
Information search	4
Communication	3
Social network	2
Entertainment	1

 Table 1

 Weights Assigned to Online Activities

Digital score for each respondent was calculated as follows:

 $\Sigma($  x
 x
 Y

 Proportion of online
 Weight assigned to
 Frequency of

 The digital times spont on activity i
 activity i
 ow. A internet it score inducated less productive use of technology.

#### 3. DIGITAL PROFILE OF THE RESPONDENTS

Digital profile of the respondents is summarized in Table 2. Mobile phones, especially smartphones are highly popular for internet access than other devices. They are more affordable and convenient to use from anywhere and at any time. MNOs sporadically offer appealing packages to mobile users. However, gender-based differences and gender-specific societal roles appear to have influence on the digital profile. This is observed in terms of relatively high share of males to access internet from PC/laptop/tablet alongwith mobile phones, high speed network, flexibility in point of internet use. As per the social arrangement, males are free from household chores. They appear to spend their free time by going online. This reflects that social status, spare time, freedom and social support determines the digital intensity of of an individual. These factors are stronger among males than females, allowing males to use technology more intensely.

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T. 1'	% of respondents			
Indicato	Males	Females		
	Mobile phone	100	100	
Device used for internet access	Other devices	12.2	2	
	(PC/ laptop/ tablet)	13.2	2	
Notwork tooknology	2G/ 3G	8.8	48.7	
Network technology	4G	91.2	51.3	
	Home	42.2	100	
	Work place	46.4	21.3	
Points of internet access	Public place (CSC and IK)	20.3	3.4	
	Peer group	63.2	33	
	Anywhere	93.1	27.8	
	Once a day	1.2	9.7	
	1-2 times	5.4	24.6	
Fraguency of internet access per day	2-3 times	12.3	33.5	
Frequency of internet access per day	3-4 times	35.8	23.7	
	4-5 times	32.7	6.4	
	Several times in a day	12.6	2.1	
	<1hr	6.2	36.5	
	1-3 hr	26	54.4	
Duration of internet use per day	3-5 hr	40.6	9.1	
	5-7 hr	22	0	
	>7 hr	5.2	0	

### Digital profile of the respondents

	0	47.7	0
No. of family members using	1	20.5	46.3
internet (excl. respondent)	2	16.8	30.4
	3	10	16.5
	>3	5	6.8

Source: Field Survey

## 4. DIGITAL USAGE PATTERN OF THE RESPONDENTS

Digital usage pattern of the respondents is observed in terms of their digital activities and time allocation for each activity.

### 4.1 Activity-wise Digital Engagement

Fig. 1 show an excessive use of the technology for entertainment and social networking among males than females. About 91 percent of the male respondents go online for entertainment and 82 percent for social networking. Though females use the technology less intensely, social networking and entertainment dominate their overall internet usage. The share of female respondents using technology for social networking is 38 percent, greater than 31 percent for entertainment. This indicate that their behaviour of relational maintenance is reflected in their technology usage. They use the social networking sites for product promotion, sharing ideas, learning tips of cooking and designing, which is relatively productive. Information search and communication is found to be less preferred by the digital users. The responses towards use of technology for information search is approximately 18 percent for males and 13 percent for females. For communication, about 25 percent males and less than 7 percent females responded favourably. This points towards poor digital skill. Using the technology for information search also depends upon the need to generate new ideas. Communication via email and text messages necessitates abilities among the communicating partners to read, write and upload/ download documents and files.





Source: Based on field survey.

The technology usage for other purposes such as business, online shopping, digital transactions, etc. is very less, 15 percent for males and nearly 3 percent for females. In case of business, the technology is

increasingly used for creating orders by sending photos to the dealers and making voice/ video calls. For online shopping, majority of the respondents are found to be proxy shoppers in which somebody else makes payment on their behalf, and they return the money in cash. In most cases, they prefer cash on delivery. Digital transaction is found to be very less. It was found that rural people are least interested in holding debit and credit cards as well as net banking account. The reasons include, firstly, less distance of banks from residence; second, visiting a bank is a part of social activity where they can physically interact not only with officials, but also with friends and relatives; and third, fear of losing money due to fraudulent activities on the digital networks. According to recent report of RBI (2020), young population is now moving towards digital payments via Paytm wallets. Nevertheless, the findings point towards a poor digital skill, a lack of confidence and a lack of drive to use technology productively.

## 4.2 Time-allocation for Each Digital Activity

Time spent on each digital activity gives idea about the intensity of productive technology usage. Respondent's average allocation of time to each digital activity is reported in Table 3. About 38 percent males use the technology for social networking for 1-2 hrs per day, 36 percent for 2-3 hrs per day, and 4 percent for greater than 3 hours per day. For entertainment, it is 3-4 hours per day for 33 percent males, and longer than 4 hours per day for 24 percent males. For news and information search, about 82 percent males use the internet for less than one hour per day, and 18 percent for 1-2 hours per day. For education, about 55 percent males use the internet for less than one hour per day, and 18 percent for 2.3 percent for 1-2 hours per day. For other activities such as business, agriculture, education and politics, majority of them use it for less than one hour during the week. For shopping, it is less than one hour per month for 80 percent male respondents.

Among females, about 48 percent go online for social networking for less than one hour per day, 37 percent for 1-2 hours per day, 35 percent for 2-3 hours per day and 4 percent for 3-4 hours per day. In case of entertainment, 89 percent use internet for less than one hour per day, and the remaining 11 percent for 1-2 hours per day. For news and information search, the internet usage is for less than one hour per day for 95 percent females, and 1-2 hours per day for 5 percent females. For education, 70 percent females use internet for less than one hour per day, 19 percent for 1-2 hours per day and 6 percent each for 2-3 and 3-4 hours per day.

Different Digital Activities (as % of internet users)										
			Av	erage t	ime allo	ocation	(in hrs	)		
Purpose	<	1	1	-2	2	-3	3-	-4	>	4
	Μ	F	Μ	F	Μ	F	Μ	F	М	F
Gujarat										
Social networking (daily)	22.3	48.3	37.8	36.5	35.5	15.2	4.2	0.0	0.2	0.0
Entertainment (daily)	8.4	89.3	11.9	10.7	23.4	0.0	32.8	0.0	23.5	0.0
News and information search (daily)	81.8	94.6	18.2	5.4	0.0	0.0	0.0	0.0	0.0	0.0
Education (daily)	55.4	69.8	22.6	18.6	11.8	5.8	10.2	5.8	0.0	0.0

Table 3
Distribution of Respondents according to Time Allocation for
Different Digital Activities (as % of internet users)

Business (weekly)	65.4	87.9	25.6	8.4	9.0	3.7	0.0	0.0	0.0	0.0
Agriculture(weekly)	92.3	97.6	5.0	1.7	2.7	0.7	0.0	0.0	0.0	0.0
Politics (weekly)	81.3	95.6	9.8	4.4	7.7	0.0	1.2	0.0	0.0	0.0
Shopping (monthly)	83.8	80.0	8.4	10.6	6.3	6.8	1.5	2.6	0.0	0.0

Source: Based on field survey

For other activities such as business, agriculture and politics, more than 80 percent of the female respondents use the internet for less than one hour per week. For shopping, it is less than one hour per month for 80 percent female respondents. On comparing the online time allocation for different activities of males and females, it was observed that though males spend more time online than females, but it is largely less productive. Females utilize their limited online time also for sharing information and ideas, promote new products, explore the government websites, and develop new skills (mainly for cooking, designing, etc.). This reflects that excess of free time discourage males from productive digital engagement. As females get less time for going online, they try to use it more productively.

## 5. DIGITAL SCORES ACCORDING TO DIGITAL USE PATTERN

On the above basis, digital scores were computed for each respondent. It was observed from Table 4 that more than half of the digital users are in the category of low digital scores. The respondents securing high digital scores are less than 15 percent. The male-female comparison in both the states indicate relatively high share of females in the category of high and medium digital scores.

Digital scores	Male	Female
High	10.7	12.4
Medium	35.2	37.3
Low	54.1	50.3

#### Table 4

#### Distribution of Respondents According to Digital Scores (%)

Source: Based on field survey

Table 5 show the average of digital scores in each selected village. All the selected villages in Kachchh show low digital score. states in India and receives a sizeable amount of remittances from abroad. There are many NRIs in the villages of Kachchh. It appears that foreign remittances discourage learning as well as desire to earn. Consequently, technology use is

#### Table 5

#### Average Digital Scores in the Selected Villages

District	Villages	Digital Scores	
Kachchh	Kera	Low	
	Naranpar Pasayati	Low	
	Kidana	Low	

	Mithi Rohar	Low	
Rajkot	Maliyasan	Medium	
	Para Pipaliya	Low	
	Ghuntu	Medium	
	Jambudiya	Low	
	Madhavpur	Medium	
Dorbondor	Balej	Low	
Porbandar	Dharampur	Low	
	Bordi	Low	
	Randheja	High	
Condhinagor	Dolarana Vasana	Medium	
Gandhinagar	Soja	Medium	
	Dingucha	Medium	
	Hajira	High	
Surat	Bhatlai	High	
	Kadod	Medium	
	Vankaner	Medium	

Source: Computed

primarily for leisure. The effect is stronger among young males. About similar situation is observed in the villages of Rajkot. The digital score in the selected villages of Rajkot ranges from low to medium. In Para Pipaliya, economic activity is mainly agriculture. As economic engagement is seasonal, technology is increasingly used for passing the time during off-farming months. The selected villages in Porbandar show low digital score except Madhavpur. These villages have high dependency on less remunerative agriculture. Madhavpur is connected to the national highway and some opportunities are available in the non-farm sector. In Gandhinagar, on the one side, high employment in service sector creates demand for processed food. On the other side, high agricultural productivity is supporting the growth of food processing industries in the villages (Socio-Economic Review, 2019-20, Gujarat State). This has resulted into high digital score in Randheja and medium digital score in Dolarana Vasana and Soja. Dingucha, which is remotely located, has a low digital score. Surat, being a highly developed business centre, attracts workers from all over the country. Its textile and diamond cutting industries provides many opportunities to the villagers. The technology is increasingly used for business purpose and related services. As observed, digital scores are high in Hajira and Bhatlai and medium in Kadod. Vankaner, however, has low digital score. This village has high social backwardness and high dependence on agricultural activity.

It is visualized from Table 6 that digital scores have strong positive relationship with social status, education level, employment status, and strong negative relationship with foreign remittances.

	Soc. Status (SC/ST, others)	Edu. level	Emp. status (main/ marginal)	Distance from highway/ nearest town	Eco. activity	Foreign remittance
Signs of Correlation Coefficient	+ve **	+ve**	+ve**	+ve	+ve**	-ve**

Table 6Correlates of Digital Scores

Note: \*\*, \* represents significant at level 1 and 5 percent respectively. Source: Computed

## 6. DIGITAL USAGE PATTERN AND RURAL DEVELOPMENT

In order to find how digital usage pattern in rural areas influence overall rural development, analysis was carried on the basis of responses towards the change in set of economic and social variables for the past five years preceding the date of survey. The results for the selected villages of Gujarat and Rajasthan are presented in Table 7. For change in economic variables, about 42 percent

### Table 7

## **Responses Towards Change in Rural Income and Correlation with Digital Scores**

	Responses towards digital outcomes (%)				Correlation		
Change in	Highly	Moderately	No	Moderately	Highly	with digital	
	increased	increased	change	decreased	decreased	scores	
	Gujarat						
Economic variables							
Farm income	18.5	23.7	21.5	25.2	11.1	-0.314	
Non-farm income	39.6	32.4	18.6	8.1	1.3	0.418*	
Opportunities in farm sector	15.1	28.4	33.9	16.8	5.8	0.231	
Opportunities in non-farm sector	26.7	41.1	15.9	16.3	0	0.463*	
Migration	18.5	32	24.8	15.4	9.3	0.451*	
Social Variables							
Learning opportunities	71.2	21.8	3.8	3.2	0	0.691**	
Social relations	50.8	30.7	10.9	6.8	0.8	0.582**	
New contacts	9.4	13.3	73.4	3.9	0	0.246	

Note: **\*\***, **\*** represents significant at level 1 and 5 percent respectively. Source: Computed on the basis of field survey.

responded favourably for increase in farm income, 72 percent for increase in non-farm income, 44 percent for increase in opportunities in the farm sector, 68 percent for increase opportunities in the non-farm sector and nearly 45percent for increase in migration. Among the social variables, 93 percent are in favour of increase in learning opportunities, 82 percent for increase in social relations and 23 percent for

development of new contacts. The correlation coefficient between the responses towards improvement in socio-economic variables and digital scores is found to be positive and significant for non-farm income, opportunities in non-farm sector, learning opportunities and social relations. The relationship of digital scores with the income and sources of income in farm sector is, however, not found to be significant.

## 7. CONCLUSION

The difference in digital participation of males and females indicate the influence of social factors. On account of gender-specific roles in society, males are generally free from household and care duties. They try to spend their excess of free time by going online. This means that males have more opportunities than females to get familiar with the technology and turn the usage into benefits. However, the results show their more inclination towards entertainment and social networking, than for information search, communication and other activities such as business, online shopping, digital transactions, etc. This points towards poor digital skill, lack of confidence to undertake new tasks and demotivation towards generating ideas. Low income and lack of opportunities further demotivates them from online business and transaction activities. Instead they try to spend their free time on recreational activities. On account of this, the digital score is found to be low for more than half of the respondents. Foreign remittance though has a significant contribution in state's economy, but it has strong negative relationship with productive technology usage. High social status, education level, employment status and non-farm activity are positively linked to productive digital engagement. The study finds strong positive relationship of technology use with learning opportunities and development of social relations. However, high negative correlation of digital usage with migration indicates that technology is assisting in finding jobs outside the village through social networks. Migration of youth implies less technical know-how in rural areas. Farm income and farm-sector opportunities have weak association with digital usage. Majority of the farmers are marginal and less educated and therefore have less ability to derive positive returns from technology.

It is concluded that digital technology has positive pay-offs for the rural economy, but the positive gains are suppressed due to excessive use of technology for non-productive purpose. In order to increase returns from technology, it is necessary to utilize idle time of people. This suggests for increasing opportunities in rural areas through expansion of business activities, integrating rural market with wider supply chain, and infrastructure development. This would check migration and assist in linking experience of elderly with technical knowledge of youth, ultimately resulting into more returns. Due to resource scarcity, policy measures are required to help poor people to derive returns from digitalization.

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#### Annexures

## A1: Sample Detail

District	Taluka	Villages	Distance from highway	
Gandhinagar	Caudhingan	Randheja	0-5 km)	
	Gandninagar	Dolarana Vasana	>10 km	
	77 1 1	Soja	0-5 km	
	Kalol	Dingucha (+ Mokhasan)	5-10 km	
Rajkot	Rajkot	Maliyasan	0-5 km	
		Para Pipaliya (+ Sanosara _	>10 km	
	Morbi	Ghuntu	5-10 km	
		Jambudiya	0-5 km	
Kachchh	Bhuj	Kera	0-5 km	
		Naranpar Pasayati	5-10 km	
	Gandhidham	Kidana	0-5 km	
		Mothi Rohar	5-10 km	
Surat	Chorasi	Hajira	0-5 km	
		Bhatlai	>10 km	
	Bardoli	Kadod	>10 km	
		Vanakaner	0-5 km	
Porbandar	<b>D</b> 1 1	Madhavpur	0-5 km	
	Porbandar	Balej	5-10 km	
	Ranavav -	Dharampur	0-5 km	
		Bordi (+ Aniali)	5-10 km	

Note: In case, the village population is less than 500, adjacent village was included, assuming that neighbouring villages maintain homogeneity in terms of population characteristics.

# **A2:** Sample Characteristics

Indicators	Description	% of
		respondents
	15-25 yrs	33.4
	25-35 yrs	37.6
Age	35-45 yrs	20.8
	45-55 yrs	4.9
	>55 yrs	3.3
Social status	SC/ ST	16
Social status	Others	84
Monital status	Married	72
Marital status	Others	28
Toma of formila	Nuclear	52.5
Type of family	Joint	47.5
Status in family	Family head	31.4
	Primary	24.1
	Middle	36.9
Education level	Secondary	20.3
	Secondary and above	38
	Graduate and above	8.9
	Employed	81.5
	Unemployed	12.2
Employment status	Student	3.4
	Others	2.9
	Cultivator	29
	Agricultural labourer	25.7
	Self-employed in business	15.7
Main economic activity of the household	Regular wage/ salaried	20.6
	Other labour	7.4
	Others	0.7
	<1 lakh	9
	1-2 lakh	40.6
Annual income of the household (in $\mathfrak{F}$ )	2-3 lakh	33.8
	3-4 lakh	11.8
	>4 lakh	4.8
#### The Impact of Public Health Expenditure on the Economic Development of a Country

. Amit Kumar<sup>1</sup> Banisetti Nishant<sup>2</sup> Yelisetti Rama Krishna<sup>3</sup>

#### ABSTRACT

In this study, we explore the relationship between public health expenditures and economic performance of 22 countries. Healthcare spending can lead to better health opportunities which can strengthen human capital and increase productivity, contributing to economic growth. Therefore, it is important to evaluate the phenomenon of healthcare spending in a country. We collected economic and health data of 22 countries from the World Bank database. The time period of the data is from the year 2000-18. Using visual analytics, the overall results strongly suggest a positive correlation between GDP per-capita (current US\$) and Current health expenditure per-capita (current US\$). Also, the research shows that there is negative correlation between Out-of-pocket expenditure and current health expenditure. The result of Multiple Linear Regression shows that Current Health Expenditure per-capita and Domestic general government health expenditure per-capita (current US\$) has a positive and significant impact on the GDP per-capita of any country. As a result, making investments in healthcare by the government would boost income, GDP and productivity, as well as alleviate poverty. Considering these potential benefits, universal healthcare deserves additional research.

Keywords: GDP per capita, Out-of-pocket expenditure, Public Health expenditure.

#### **1. INTRODUCTION**

In an economy, healthcare spending and the impact it has on the performance of the economy are very important factors for the development of that particular economy. Endogenous growth models emphasize the importance of human capital for economic growth and development (Romer, 1990). It is widely acknowledged that health is one of the most important factors determining economic development, a healthy population means a higher level of productivity. Additionally, health indirectly impacts economic growth because aspects such as child health have an impact on the future income of people. An indirect impact is easier to understand if it is observed in the context of a family. When a family is healthy, both the mother and father can work, earn money, and feed, clothe and educate their children. A healthy and well-nourished child will perform better in school and a better performance in school will positively affect their future income. Generally, if parents make sure that their children will be able to reach adulthood, then they will have fewer children overall, and they can invest more in their health and education. Further, health loss has a greater impact on the poor since the body is the main asset and at times the only one. When these people become ill, they are left with fewer options and suffer greater consequences.

According to researchers like Lucas (1988), Mankiw (1992) Human capital is crucial to economic growth because it serves as a catalyst for economic development. As a result of the health led growth hypothesis (Muysken, 2003), health expenditure contributes to economic growth. According to this theory, health is capital; as a result, investments in health may increase productivity, therefore incomes and the welfare of the population. Bloom and Canning (2000), in their studies highlight that when labour

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is strong, it is more likely for them to develop new skills and knowledge because they expect to reap long term rewards. As a result, workers with poor health will be negatively affecting productivity, this explains the disparity in development between different regions of the world. According to World Health Organization report of 2005, 50% disparity in economic growth between developed and developing countries is due to ill health and low life expectancy.

### **Objectives of the study**

The primary objectives of this study are as follows.

• To study the relationship between the Health Expenditure and Development of an economy especially in the context of Out-of-pocket expenditure.

• To study the relationship between the out of pocket expenditure and current health expenditure of an economy.

This paper consists of six sections. Section-1 consists of introduction, section-2 briefly reviews previous research on the impact of government health expenditure on the economic development of a country, section-3 discusses the importance of public health expenditure empirically using scatterplots, section-4 contains the research methodology that is used in this study. Section-5 contains the results i.e., the impact of Public Health expenditure on the GDP per capita of an economy was discussed using Multiple Regression technique and finally section-6 consists of conclusion.

# 2. REVIEW LITERATURE

A number of factors make health care different from other budget items (Arora, 2001) for example, its consumption is unpredictable and irregular. The value of curative health care is negligible except in the event of illness, which is beyond the control of the individual and whose onset carries a high risk of physical impairment or death. A patient's consumption of health care may be uncomfortable and painful, yet, at best, it allows her utility to be restored to its pre-illness level. As a result, the reduction in health expenditure on other budget items will reduce welfare rather than increase it, as is the case for other goods and services.

A study by Sorkin (1977) examined the impact of health on economic growth in developing countries concluded that a decrease in birth rates positively affected economic growth. As a result, health expenditures increased threefold, from \$83M to \$286M, and outpaced GDP growth. The study showed that health and income were interrelated and concluded that problems affecting healthcare delivery negatively affected economic growth (Strauss et. al, 1998). The effects of health on economic growth for industrialized countries were studied by Arora (2001). In a study that analyzed health indicators from 1965-1990 for developed and developing countries, economic performance in developing countries increased significantly with an improvement in public health (Bhargava et. al, 2001). Acemoglu et. al (2007) suggested that a 1-year improvement in life expectancy increases economic growth by 4%.

Furthermore, Mayer et. al (2001), found that a healthy population may be more important than education for human capital in the long run. With the extended Solow growth model, authors examined 21 African countries for 1961-1995 and 23 Organisation for Economic Co-operation and Development (OECD) countries for 1975-1994 and found 23 OECD health stocks affect growth rate of per-capita income (Gyimah et. al, 2004). Muysken et. al (2004) also investigated whether health is one of the determinants of economic growth and concluded that there is an iterative relationship between economic growth and health. High economic growth leads to investments in human capital and to advancement in health, and population health leads to more labor productivity and economic growth. The Schumpeterian growth theory was used by Aghion et al. (2005) to analyze channels associated with the influence of national health on economic growth. Health is one of the critical dimensions of human capital, according to the

theory. A high life expectancy has also been shown to be critical for sustainable economic growth (Cervellati et al, 2011). Aghion et al. (2011) applied the endogenous growth theory, which proposes that a longer life expectancy enhances economic growth, to study the relationship between health and economic growth. They examined life expectancy for different age groups in OECD countries and found a decline in mortality rates for those under the age of 40 led to an increase in economic growth.

Researchers like Bloom et. al (2004) and Öztürk et. al (2014) has shown that improvements in health can lead to an increase in Gross Domestic Product (GDP) and vice versa. Healthcare plays an important role in human capital development. Piabuo et al. (2017) has showed that by increasing healthcare spending, human capital becomes more productive, thereby contributing to economic growth of a country. Most of the researchers never took South Asian countries particularly India and its neighboring countries in their sample. Therefore, we felt that there was a need for study wherein the situations of India and its neighboring countries should be examined in details. This study bridges this gap by taking the recent and most relevant data from World Bank to analyze the relationship between public health expenditure and economic development of an economy.

# 3. PUBLIC HEALTH EXPENDITURE VS DEVELOPMENT

# 3.1 Public Health Expenditure in India from financial year 2017 to 2020 (in billion Indian rupees)

India's public health expenditure has been steadily rising over the last decade in order to cater to its growing population. In fiscal year 2018, the value of public health expenditure by states and union territories together amounted to around 475.53 billion Indian rupees (Figure-1). This was estimated to be around 1.28 percent of the country's GDP. In comparison, the United States' budget estimates showed an outlay of over 17% of the GDP to public health expenditure in its fiscal year 2018. Including the private sector, the total healthcare spending in the country rose to 3.6% of GDP in 2016 but even this is very low compared with other countries. The average for OECD countries in 2018 was 8.8% of GDP while the healthcare expenditure in the developed countries like the US was 16.9%, China was 5%, Germany was 11.2 %, France was 11.2% and Japan was 10.9%.



Figure 1: Public health expenditure in India FY 2017-2020

Source: World Bank

# 3.2 Health Expenditure in India

As shown in figure-2, Indians spent around 62.4% of their total health expenditures from out-of-pocket expenses in 2017 while the world average was just 18.2%. Healthcare expenses that people pay directly to providers dropped from 74% in fiscal year 2001 to 62% in fiscal year 2018.



Figure 2: Share of current health expenditure in India FY 2001-2018

Source: World Bank

# 3.3 Health Expenditure vs GDP per capita

The figure-3 shows a positive relationship between current health expenditure per-capita (current US\$) and GDP per-capita (current US\$) of 151 countries in the world in the year 2018. The  $R^2$  between them is 66%. From the figure-1, we can make an inference that as the current health expenditure per-capita (current US\$) increases, the GDP per-capita (current US\$) also increases.



Source: World Bank

# 3.4 Out of Pocket Expenditure Vs Health Expenditure

The figure-4 shows a negative relationship between out of pocket expenditure (OOPE) and current health expenditure of 151 countries in the world in the year 2018. As the Current Health Expenditure (% of GDP) by the government decreases, the out of pocket expenditure (% of current health expenditure) increases. Therefore, the government must make sure to increase its expenditure on health as this will ease of the citizen's personal expenditure on health. This will ultimately increase the savings of the people and by doing so every poor will get expensive treatments free of cost which will ultimately increase the labour productivity and thus the GDP per-capita of a country can be increased.



Source: World Bank

# 4. DATA AND RESEARCH METHODOLOGY

The data of 22 countries namely Afghanistan, Bangladesh, Bhutan, Switzerland, Czech Republic, Germany, Denmark, Spain, France, United Kingdom, Italy, Sri Lanka, Luxembourg, Maldives, Netherlands, Norway, Nepal, Slovak Republic, Sweden, India, Pakistan, Maldives were taken to determine the impact of Health expenditure on the respective country's GDP per-capita. The data related to GDP (per-capita US\$), Current Health Expenditure (% of GDP), Out of pocket expenditure (% of current health expenditure) was collected from the World Bank website. The time period of the data is from the year 2000-18. Multiple Regression technique was used to determine the impact Public Health Expenditure on the development of a country. Here, a Multiple Linear Regression model was run where the GDP (per-capita US\$) was taken as the dependent variable and the two independent variables taken were Current Health Expenditure per-capita and Domestic general government health expenditure per-capita (current US\$). Log values of all the variables was taken as the data is non-linear in its distribution.

The mathematical representation of multiple linear regression is shown in equation-1.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

----- (1)

where,

Y = Dependent variable

- $\alpha$  = the intercept (point where the straight line intersects Y and X when X = 0)
- $\beta_i$  = the slope (the changes in Y for every/ past changes in X), where i=1,2,3,...

 $X_1, X_2$  = Independent (explanatory) variables used to predict Y

 $\epsilon$  = Residual (error of the prediction).

Table 1: Data description of model					
Data	Data Description	Source			
GDP (Y)	GDP (per-capita US\$)	World Bank			
CHE (X <sub>1</sub> )	Current Health Expenditure per-capita (current US\$)	World Bank			
DHE (X <sub>2</sub> )	Domestic general government health expenditure per-capita (current US\$)	World Bank			
OOPE	Out-of-pocket expenditure	World Bank			

# 5. RESULTS

After the computed results the, mathematical equation for Multiple Linear Regression can be written as shown in the equation-2. As shown in the table-2, the total number of observations were 416, the  $R^2$  for model was 98%, which means that the independent variables have significant impact on the GDP per capita of a country. The p-value of all the variables is less than 0.05. In other words, all these variables have a significant impact on the economic development i.e., the GDP (percapita US\$) of a country. For a 1% change in Current Health Expenditure per-capita (current US\$) the GDP (per-capita US\$) will increase by 0.45% and for 1% increase in Domestic general government health expenditure per-capita (current US\$), the GDP (per-capita US\$) will increase by 0.29%.

 $\ln(\text{GDP}) = 1.943 + 0.45 \ln(\text{CHE}) + 0.29 \ln(\text{DHE}) + \epsilon \qquad -----(2)$ 

Table 2: SUMMARY OUTPUT					
Regression Statistics					
Multiple R	0.9916 14732				
R Square	0.9832 99777				
Adjusted R Square	0.9832 18904				
Standard Error	0.1024 34267				
Observations	416				

	Coeffic ients	Standar d Error	t Stat	P- value	Lower 95%	Upper 95%
Intercept	1.9433	0.02722	71.377	1.9612	1.8898	1.996
	95828	7	74691	E-234	75213	916
Current Health Expenditure per capita	0.4594 66395	0.02886	15.920 7934	7.6684 3E-45	0.4027 36535	0.516 196
Domestic general government health	0.2998	0.02304	13.007	1.1647	0.2545	0.345
expenditure per capita(current US\$)	13746	9	57848	8E-32	05448	122

# 6. CONCLUSION

The findings indicate that, in general, healthcare spending and GDP per-capita are positively correlated. Furthermore, spending on personal healthcare adversely affects time spent on purchases of goods and services. There is a negative correlation between out-of-pocket expenditure and current health expenditure. The variables Current Health Expenditure per-capita and Domestic general government health expenditure per-capita are having positive and significant impact on the GDP per capita of the 22 countries as their p-value is less than 0.05. Therefore, there is a need to enhance public health spending to a minimum of 5% of the GDP. A key aim of this study was to provide in-depth explanations of how the government can allocate healthcare expenditures in ways that will stimulate economic growth while improving the health of the population. Policy makers must also implement macroeconomic policies that target public health expenditures and economic development. With regards to the potential benefits of health care to the economy, universal access to healthcare is an area that should be researched further.

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#### Impact of Financial Inclusion on Economic Growth of J&K - A Time Series Analysis.

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#### Abstract

This study has endeavoured to evaluate the impact of financial inclusion on the economic growth of J&K using time series data from 1990-2018, using the ARDL approach to co-integration. Indicators of financial inclusion used in the study are 'Number of Bank Branches', 'Number of Saving Accounts' and 'Credit to Agriculture'. The study evaluates the short run and long run impact of financial inclusion on Economic Growth. Real GSDP at 2004-05 base year was used as a proxy for economic growth. ARDL bounds test confirmed existence of a long-run relationship between economic growth and financial inclusion. Results indicated a positive and statistically significant impact of number of bank branches and credit to agriculture on GSDP in long run. While a negative but statistically significant impact of number of saving accounts on GSDP was observed in the long-run. The study tries to provide an insight as to how financial inclusion can become a driver for economic growth and highlights areas which need special attention from government and policy makers so as to direct the region of J&K on a higher economic growth path through improved financial inclusion levels. The study also highlights that how excess savings which are not converted into investments are mere leakage from the economy and can have a negative impact on the economic growth.

#### Keywords

Financial Inclusion, Economic Growth, ARDL modelling technique.

#### 1.Introduction

Financial inclusion over the years has been on front burner for policymakers, large number of nations have introduced thorough measures in order to improve their accessibility and utilization of formal financial institutions. Governments throughout the world have introduced tailored financial services which best suit the unbanked population. To get a fair idea of financial inclusion let us first introduce a few formal definitions of "Financial Inclusion".

"Financial inclusion denotes delivery of financial services at an affordable cost to the vast sections of the disadvantaged and low-income groups. The various financial services include credit, savings, insurance and payments and remittance facilities." (Rangarajan, 2008).

"Financial inclusion is the process of ensuring access to appropriate financial products and services needed by all sections of society including vulnerable groups such as weaker sections and low income groups at an affordable cost in a fair and transparent manner by mainstream institutional players" (Chakrabarty, 2011).

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Therefore, one can say that inclusive finance doesn't mean only accessibility to financial facilities but also those services should be affordable and should be delivered in a timely manner. Access to formal finance is paramount in the sense, it insulates the poor vulnerable population from sudden economic shocks. It also inculcates a saving habit, Financial Inclusion also enhances effectiveness of monetary policy. The basic function of any formal financial institution is to source funds from surplus entities to deficit entities through regulated channels. This task becomes challenging when deficit entities don't have access to formal finance and fall prev to exploitative informal sources of finance. The Rangarajan Committee on Financial Inclusion laid stress on the importance of access to formal finance by the marginalized population, which will also result in inclusive growth. The committee termed "access to finance" as "empowerment" of the vulnerable sections. It is pertinent to note that in developing countries like India financial inclusion becomes more challenging because of lack of financial literacy among the people. People still fear formal financial institutions and find it more comforting to borrow money from their local/village level moneylenders whom they have known all their life and have a feeling of trust for them. These moneylenders charge exorbitant interest rates and exploit the poor. Kempson et al. (2004) in their study identified quite a few reasons for financial exclusion, which they termed as Price Exclusion that is financial services or products are unaffordable, Condition Exclusion, where the products are unsuitable to the needs of the customers. Marketing Exclusion where the advertising of the financial products is faulty. Access Exclusion, that is formal financial institutions are located too far and becomes inconvenient for the poor to reach them. Self-Exclusion, when people consciously stay away from formal financial institutions because of unpleasant past experiences.

#### 2. Economic growth & Financial inclusion Nexus

"The country has moved on to a higher growth trajectory. To sustain and accelerate the growth momentum, we have to ensure increased participation of the economically weak segments of population in the process of economic growth. Financial inclusion of hitherto excluded segments of population is a critical part of this process of inclusion." (Rangarajan, 2008)

A lot of literature is available on the nexus between 'Financial Inclusion' and Economic growth. A lot of studies conducted across various states of India and across countries show that there exists a positive relationship between Financial Inclusion and Economic Growth. It has been observed that optimal flow of funds and a stable financial architecture promotes Economic Growth. In this regard banking institutions play an important role more so for a nation like India which is a bank based economy. It bridges the gap between savers and borrowers. An underdeveloped financial system can prove fatal to economic growth and also promotes unorganized money markets. Hence a strong and stable financial system forms the base of a strong economy. Inclusive finance is not only imperative because it is thought of as increased accessibility to formal finance like credit, insurance and provides reliable saving options but it is also critical for higher economic growth (Claessens and Perotti 2007, Claessens, 2006). The importance of banking system for economic growth was also underlined Schumpeter (1911). According to Schumpeterian view financial institutions can change the appropriation of savings and thus impact productivity and economic growth. Efficient financial institutions can help in economizing the cost of acquiring information and thus influence resource allocation. The view that an efficiently structured disbursement of funds from the banks that have an extensive network can provide credit to many people and hence enhance innovation and development of enterprises was articulated by Goldsmith 1969; McKinnon 1973; and Shaw 1973. Similarly, King and Levine (1993) showed through empirical evidence that robust financial intermediation will lead to Economic Growth in the long run through accumulation of capital & Increased Productivity. Exclusion through the Financial System generates real and rising costs, which are usually borne by people who can barely endure them (Sinclair, McHard, Dobbie, Lindsay & Gillespie, 2009). So in this sense for an inclusive economic growth its imperative that people across classes are made part of the economic growth process. A well developed and accessible financial system not only brings down the transaction & information costs but also has an impact on saving rates, investment judgment, technological developments, hence impacting the long-run Economic Growth (Beck et al. 2009). Kempson et. al (2001) links social exclusion to poverty, deprivation and disadvantage. He argues that if people or communities suffer from a host of problems such as unemployment, poverty, bad health it leads to social exclusion which brings about class division in the society. Similarly, if half the population has accessibility to formal financial institutions, affordable timely credit and is part of the economic growth process, it will create a division in the society and will lead to the social exclusion of the other half. Thus, pushing them further into poverty. Inclusive finance has positive indirect effects on the indicators of human development as it creates business opportunities for every section of the society (Agnello et al., 2012; Nanda & Kaur 2016; Park & Mercado, 2015). For these reasons RBI and Government of India have made efforts over a period of time to make inclusive finance a reality. In 2005 RBI introduced 'No-frills' accounts which did not require any minimum balance. 'General Credit Cards' were introduced to give easy credit up to 25000 rupees for non-farming entrepreneurial needs. The government has also encouraged 'Micro-Finance Institutions' and 'Self-Help Groups' to provide the unbanked population with alternate sources of finance. The business correspondent (BC) model was launched in 2006 to ensure that banking services are delivered at every doorstep.

# Figure 1. is a diagrammatic representation of the nexus between Inclusive finance and Economic Growth.



Economic Growth

Over a period of time the KYC norms have also been relaxed so as to facilitate the process of financial inclusion. A huge impetus was given to financial inclusion by the introduction of "Pradhan Mantri Jan-Dhan Yojna" in the month of August year 2014. Honorable Prime Minister of the country Mr. Narendra Damodardas Modi launched this scheme with the aim to provide banking and financial services without any prerequisite of maintaining a minimum balance. The scheme proved to be a success as 125 million Bank Accounts were opened up until 31.01.2015. These accounts were also provided life insurance cover of rupees thirty thousand by 'Life Insurance Corporation' of India. All these steps taken by the GOI and Reserve Bank of India from time to time are important and have been discussed in detail in the next section.

# 3.Data and Methodology

# 3.1: Variables Used

'Financial Inclusion' is a Multidimensional Phenomenon, so indicators used for Financial Inclusion should be holistic. They should include information about as many aspects as possible. The indicators of financial inclusion should be able to measure three important dimensions, Access, Usage, Quality World Bank (2012). The present study focuses on 3 dimensions of "Financial Inclusion", namely, Penetration of banking services, Accessibility of banking services, and Use of banking services as also used by Sarma (2008) in her study.

Dimension 1: Banking Penetration or accessibility to formal finance is the starting point of Financial Inclusion. Indicators of access show level of penetration and reach of Banking Services, like Bank branch penetration or "Point of Sale" World Bank (2012). Therefore, the present study uses growth rate of bank branches as an indicator.

Dimension 2: Banking services should be easily available to people, so that they can make use of formal financial institutions and don't fall prey to the moneylenders. It can be captured through various measures such as ATM availability, The Number of Bank Employees/ Customer. But time period of this study is such (1990-2018), the relevant data could not be collected. So the present study uses log value of saving accounts as an indicator.

Dimension 3: Merely having a bank account cannot ensure financial inclusion. It is important that people make use of these financial services. For this we also need to assess credit availability to people especially people living in rural areas. For this we have used Credit to Agriculture (Amount Outstanding) to capture this.

The Study makes use of annual time series data for the time under study that is from 1990 to 2018. Variables used are proxy variables for economic growth and financial inclusion respectively in the regression equation. For dependent variable Log of real GSDP (LGSDP) at 2004-05 base year is used. GSDP or GDP is a widely used proxy variable for economic growth of a State or Country respectively. For independent variables, Log of credit to agriculture (LCA), Log of number of saving accounts (LSA) and year on year growth rate of number of bank branches (BBG) is used. Log forms of the variables are used to avoid the problem of stationarity.

# 3.2. Methodology

To assess the "Impact of Financial Inclusion on Economic Growth of J&K", this study employs ARDL framework.

The equation used for the model is:

$$LGSDP = F(LCA, LSA, BBG)$$

(1)

LGSDP is the Gross State Domestic Product, LCA denotes credit to agriculture; BBG is the annual growth rate of the bank branches. L indicates that Variables have been, transformed in Natural Logs.

# 4.Empirical Results

For testing stationarity of variables the study has used the Phillips-Perron (1988) Unit Root Test. Test results at level are reported in the Table 1 and at first difference in Table 2.

# Table 1: Results of PP Test at Level

Variable	PP test with intercept	PP test with trend & intercept
LGSDP	-1.245342	-2.300516
LSA	3.592181	-0.019441
LCA	0.550697	-1.628899
BBG	-1.999620	-2.105491

Critical values at 1%, 5% and 10% levels of significance with intercept are (-3.689194,-2.971853,-2.625121) respectively and critical values at 1%,5% and 10% levels of significance with trend and intercept are (-4.323979,-3.580623,-3.225334) respectively.

Table 1 presents the results of PP test at level. The null hypothesis for the test is that there exists a unit root. Here we have tested the variables for two different specifications i.e. with intercept and with trend & intercept. The results show that all the variables are non-stationary at level and need to be differenced first.

Table 2: Results of PP Test at First Difference

Variable	PP test with intercept	PP test with trend & intercept
DLGSDP	-4.234293	-4.109907
DLSA	-2.882579	-4.542316
DLCA	-5.200500	-5.671010
DBBG	-5.032112	-4.928963

Critical values at 1%, 5% and 10% levels of significance with intercept are (-3.699871,-2.976263,-2.627420) respectively and critical values at 1%,5% and 10% levels of significance with trend and

intercept are (-4.339330,-3.587527,-3.229230) respectively.D denotes the first difference of the series, L indicates that variables have been transformed to natural logs.

Table 2 presents the results of the PP test at first difference, with two specifications i.e. with intercept and with intercept and trend. It is worth mentioning, that all variables were found to be stationary at first difference i.e. Integrated of Order One, I(1).

# 4.1 Lag Length Selection:

The study has selected appropriate Lag Length for the estimated model based on, 'Akaike Information Criteria' i.e. AIC.



Figure 2 Shows That ARDL (1,1,3,0) Is The Appropriate Model For Analysis:

#### 4.2Co-integration Test:

After the order of integration has been established, the ARDL approach to co-integration is employed in order to ascertain the existence of Long-run Relationship between variables, Table 3 shows results of bounds test, which confirms that indeed a long run relationship exists among variables, since the calculated F-statistics is greater than the critical values of the upper level of the bound at 1% level of significance.

Therefore, we conclude the existence of a long run relationship among LGSDP, LSA, LCA, BBG during the study period.

H <sub>0</sub> ; No long- run relationship exists among the variables									
Estimated Model	F-Statistic	1% Values	Critical s	5% Values	Critical s	10% Values	Critical	2.5% Values	Critical
LGSD= F(LCA,LSA,BBG)	6.262777	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
		4.29	5.61	3.23	4.35	2.72	3.77	3.69	4.89

#### Table 3: Autoregressive Distributed Lag Bounds Test Using ARDL (1,1,3,0) Model

#### 4.3Long-run results of the ARDL model:

Once the existence of long run association among variables has been established, the next step is estimation of short run and long run estimates of the ARDL Model. Long run estimates of Model are given in Table 4. Long run estimates point out LCA and BBG have positive coefficients. Whereas, Long-run Coefficient of LSA is negative. To be more precise one percent increase in LCA increases the GSDP by 45.72%, ceteris paribus. Similarly, 1% increase in BBG will cause a 1.66% increase in GSDP. The results are in line with similar study of **Iqbal and Sami (2017)** who also found a positive, statistically significant Impact of bank branches on Gross Domestic Product. **Julie (2013)** witnessed a strong positive relationship among GDP & bank branch networks in Kenya. While in the long run 1% increase in LSA will cause a 74.96% decrease in GSDP i.e. in long-run saving accounts exert a negative impact on economic growth. There are quite a few reasons for this, first and foremost J&K is a consumption driven economy, GSDP is highly dependent on consumption activities.

Since banking penetration has increased considerably over the years it has also increased the number of saving accounts and consequently the amount of savings mobilized by the commercial banks . But unless and until these savings are translated into investments they are just a leakage from the economy. The lending rate of the banks has overall been very low in J&K as compared to India and other neighboring states and UTs as is evident from the J&K Economic Survey 2014-15, which reports that the Credit Deposit Ratio (CDR) has been rather sluggish. CDR in Jammu & Kashmir was 26.25 per cent, as on 30<sup>th</sup> September 2014 while it was 73.67% for India, Chandigarh was at 135.85 per cent & Punjab at 73.01 per cent. J&K was at number 33 in Comparison with thirty six States/UTs (30<sup>th</sup> September 2014) in CDR (J&K Economic Survey, 2014-15). The credit deposit ratio in September 2017 in J&K was just 47.21 while at the same time it was 73.3% at all India (J&K Economic Survey 2017). The CDR is used as an indicator for measuring the business performance of banks. The CDR was at a highest of 62.5% in 2007 and at lowest of 25.7% in 1997. During the study period (1990-2018) for 13 years the CDR has been between 30% and 40%. For a period of 9 years during 1990-2018 it has stayed between 40% and 50%. It comes to show that lending by banks has been tardy. This result is also supported by (Bofinger and Ries 2017), they opine that excess savings could be problematic economically. When savings are greater than investments, it means aggregate supply is more than the aggregate demand i.e. the effective demand is feeble & if this situation persists it can have negative impact on long run economic growth. It's only when savings are translated into investments productivity will increase and will lead to higher economic growth. A similar study conducted in Indonesia by Pardede and Zahro (2017) supports our findings. They found out that because of the "wait and see" approach of the investors, investments were getting postponed and proving to be detrimental for long run economic growth of the region. A similar study conducted by Dahiya and Kumar (2020) advocated that a mere increase in accessibility and penetration of formal financial services was not sufficient, usage of the formal financial services is actually what matters in the end. The ultimate aim is that the savings are translated into investments which will eventually result in higher GDP.

Even if because of increase in number of bank branches, people have easy access to saving bank accounts and due to higher level of financial inclusion a saving habit is inculcated, what finally matters is how much is invested out of these savings for higher economic growth otherwise increase in savings can decrease the aggregate demand and exert a negative influence on the long run economic growth.

Table 4: Long-run	Coefficients	Using ARDL	(1.1.3.0)	Model
Table 4. Long-Tun	Coefficients	Using multi	(1,1,0,0)	, mouch

Dependent Variable; LGSDP						
Variables	Coefficients	Standard Error	t- Statistic	P-Value		
LCA	0.457240	0.080875	5.653643	0.0000***		
LSA	-0.749619	0.184105	-4.071695	0.0008***		
BBG	0.016611	0.005448	3.049213	0.0073***		
С	21.373928	2.000934	10.681976	0.0000***		

\*\*\* indicates 1% level of significance.

#### 4.4Short run results of the ARDL model:

Table 5 gives the short run estimates using ECM version of the ARDL model. It shows that D(LCA) and D (BBG) exert a positive and statistically significant impact on the economic growth which is in accordance with the theoretical background of financial inclusion. More bank branches and higher agriculture credit will translate into higher and more inclusive economic growth. While D(LSA) is negative and statistically insignificant.  $D(LCA_{2})$  is negative and statistically significant, this could be attributed to the increasing trend of converting agriculture land to horticulture land for higher profits. Due to continuous growth in economy, income, urbanization & globalization demand for High Value Commodities (HVCs) such as fruits, vegetables, livestock products is increasing at a rapid speed. Horticulture possesses a relative advantage in its production and also labour absorption over the staple food items (J&K Economic Survey 2014-15). As a consequence of this large scale conversion, agriculture credit is now mostly used for this purpose. Since a lot of investment is initially required for developing of an orchard, on the contrary paddy cultivation does not need large scale investment but also yields less returns, which has now prompted the farmers to convert their paddy lands into orchards. "The Tribune" on 13<sup>th</sup> April 2016 reported that the region was undergoing a considerable switch in agricultural activities over few decades now. This also has resulted in reduction of rice production, as people have been converting vast paddy fields in full grown orchards. Paddy cultivation is more labour intensive and fetches less profit as compared to fruits like apples, walnuts. Farmers now prefer planting apples and walnuts which serve as cash crops. According to Head, Fruit Sciences Division, "Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir", farmers know that horticulture is lucrative for this reason they diversify and produce cash crops such as apples and walnuts. But what is worrying is total area which was under paddy cultivation in Kashmir has shown a declining trend over the years. Since 2012, the area under paddy cultivation has shrunk from one lakh fifty eight thousand hectares to one lakh forty one thousand hectares in 2015, which shows a decrease of sixteen thousand seven hundred hectares (J&K Economic Survey Report 2014-15). On the other hand horticulture land in J&K has expanded from two lakh ninety five thousand hectares from 2007 to 2008 to three lakh sixty thousand hectares from 2014 to 2015, (J&K Economic Survey Report 2014-15). It has also led to a decline in food grain production. Since a full grown orchard will be able to produce output only in the long run, the conversion of agriculture land to horticulture land will exert negative influence on GSDP in short-run as it will decrease the output initially. As reported by the J&K Economic Survey 2014-15 horticulture already accounts for 45% of the economic return in the agriculture sector, and naturally due to large scale conversion of agriculture land it will further depress the agricultural yield. Deficiency of food grain in the region of J&K has grown to be at 40% (CSAP of J&K, 2015), and is likely to increase in the future because there has been significant decline in the area which was under paddy cultivation especially in the region of Kashmir because farmers switched over to more lucrative horticulture crops (Shaheen et al. 2018). Within the agriculture sector rice crop faces immense competition from the horticulture sector mainly because of the profitability and economic viability.

The model contains an 'Error Correction Term' i.e.  $ECM_{-1}$ . Coefficient of ECT is nothing but Adjustment Coefficient, it captures the proportion of disequilibrium in economic growth, in one time period which, is corrected in the next time period. Greater ECT sooner the economy will come back to equilibrium rate of growth. Error Correction Term needs to be between 0 and -1. Where -1 indicates that 100 per cent of the disequilibrium in the growth is corrected in following year. The model's estimated error correction term is -0.953 and is significant at 1% level of significance.

Dependent Variable; LGSDP					
Variable	Coefficient	Standard Error	t-statistic	P-Value	
DLCA	0.200693	0.083104	2.414974	0.0273**	
DLCA <sub>t-1</sub>	0.020496	0.117603	0.117603	0.8637	
DLCA <sub>t-2</sub>	-0.168738	0.089251	-1.890596	0.0758*	
DLSA	-0.079173	0.405483	-0.195255	0.8475	
DBBG	0.015834	0.005910	2.679470	0.0158**	
ECT(-1)	-0.953237	0.192312	-4.956722	0.0001***	
ECM = LGSDP - (0.4572*LCA -0.7496*LSA + 0.0166*BBG + 21.3739)					

Table 5. Error Correction Estimates results using ARDE (1,1,5,0) whole	Table 5: Error	Correction	<b>Estimates</b>	results using	ARDL	(1, 1, 3, 0)	) Model
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\*\*\*, \*\*,\* denote significance at 1%,5% and 10% respectively.

# 4.5Stability and Diagnostic Checks:

Table 6 presents the Diagnostic Tests to look for possible presence of Serial Correlation, Heteroscedasticity and Normality of Residuals. The results of the tests conclude that residuals are free from Serial correlation, Heteroscedasticity and are normally distributed.

# Table 6: Diagnostic Tests

Test Statistic	Null Hypothesis (H <sub>0</sub> )	Test Statistic	P-Value
Lagrangian Multiplier Test	There is no serial correlation	1.154541	0.5614
Breusch-Pagan-Godfrey Test	There is no Heteroscedasticity.	7.875142	0.4458
Jarque- Bera Test	Residuals are normally distributed	2.349287	0.308929

As evident from Table 6, we fail to reject null hypothesis in case of the Lagrangian Multiplier Test i.e. residuals are free from serial correlation. Similarly, in case of Breusch-Pagan-Godfrey Test we again fail to reject the null hypothesis of no heteroscedasticity. Lastly the results of the Jarque- Bera Test signify that the residuals are normally distributed.





Fig. 3 indicates that the CUSUM plot remains well inside the critical lines at 5% level of significance, so we can conclude that model is structurally stable.

#### Figure 4: Plot of CUSUMSQ Test



Since the CUSUM of Squares plot remains well inside the critical bounds at 5 per cent level of significance and transcends the, bounds in a long time horizon and then comes back so we can conclude that the residual variance is somewhat stable.

#### 5.Conclusion

The study used, 'Number of Bank Branches', 'Number of Saving Accounts' and 'Credit to Agriculture' as proxies for financial inclusion. This study tried to evaluate the short run and long run impact of Financial Inclusion on Economic Growth by making use of the ARDL approach to co-integration. For this purpose this study made use of the annual data from 1990-2018 for the variables under study. Real GSDP at 2004-05 base year was used as a proxy for economic growth. Credit to agriculture, Number of Bank Branches, Number of Saving Accounts were used as proxies for Financial Inclusion. ARDL bounds test confirmed existence of a long-run relationship between Economic Growth and Financial Inclusion. Results of this study indicate a positive and statistically significant impact of number of bank branches and credit to agriculture on GSDP in long run. While there is a negative but statistically significant impact of number of saving accounts on GSDP in long-run.

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# Strategic Importance of Service Sector in Indian Economy: With Special Reference to Pandemic Period

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#### ABSTRACT

Services sector has become significant part of growth for many economies in the world and becomes very important particularly for India. The area where India has done extremely well in the past several years is in trade in services. In relation to economic development, India has achieved a level where the services sector has dominate the scene and it has become the core of the growth process especially during the last several years. Services sector has originated as the leading and prominent with high growth potential sectors of the Indian economy and is well-known series of structural transformation from agrarian economy to a primarily service economy.

This paper examines India's changing production structure with the help of A. Holub's methodology. This paper also tried to assess the impact of pandemic period (covid 19) on the growth and performance of services sector. Further, highlighting the importance of services sector in Indian economy. For the data analysis, A. Holub's methodology, regression analysis and t-statistics have been applied. The study based on Secondary data which have been collected through Handbook of Statistics on Indian Economy, provided by Reserve Bank of India on quarterly basis. The time period of the data is concerned after the global financial crisis i.e. from 2010-11 to 2021-22.

The overall conclusion emerges from the present analysis is that, there are two significant variables i.e. travel and software services. The other variables i.e. financial, transportation and insurance services are insignificant. The result supports the trend line of which travel and software services are increasing faster than the other components. The coefficient value is negative probably it may be because of uneven/volatile nature of data series due to unexpected events like demonetization and covid 19 pandemic. Except financial and insurance services the rest of the components including GDP have got significant differences due to covid 19 pandemic. The result suggests significant impact of covid 19 pandemic on most of the services sector components.

**Keywords:** Service Sector, Gross Value Added (GVA), Covid 19 pandemic, financial services, software services, insurance services, transportation services, travel services, communication services.

#### Introduction

Services sector has become significant part of growth for many economies in the world and becomes very important particularly for India. The area where India has done extremely well in the past several years is in trade in services. India has achieved manifold advantages in the services sector. It has a large collection of skilled, trained as well as cheap labour in relation to the other developing countries. The wage rates in India are comparatively lower than in many other developing countries of the world. India has received a better advantage in terms of knowledge of English due to colonial past. These advantages definitely provide India an edge over many other developing countries in terms of services trade.

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The other important factors which play a very important role and helps India's services sector to grow enormously were the technological changes. It was observed that the telecommunication and information technology made a huge jump during the 1990s due to which the cost of telecommunications came down drastically. India, with its advantages mentioned above, was there at the right time to take advantage of these new opportunities. The time zone differences with many countries like US and UK also helped India to play its part in the 'always on' businesses in these big economies. In financial year 2020-21, the contribution of services sector in India's Gross Value Added (GVA) is 53.89%. India's service sectors are not only giving an unprecedented contribution to the growth of the Indian economy but also attracting foreign investors to endeavour their industrialization venture.

After economic liberalization in 1991, for a period of over three decades the services sector has been India's mainstay, when it comes to both GVA contribution and trade. However, with the rise of digitization and automation, accelerated by the COVID-19 pandemic, India will have to evolve its strategic approach towards services in order to stay competitive.

According to RBI reports, the services trade data classified under five broad heads. They are: (i). Travel, (ii). Transportation, (iii). Insurance, (iv). GNIE (Government not included elsewhere) and (v). Miscellaneous. The 'Miscellaneous' category included the important sub-categories of (a). Software Services, (b). Business Services, (c). Financial Services, and (d). Communication Services. The services sector is the highest contributor to India's GDP at over 50%. Unfortunately, it was also affected as a result of the pandemic. While India is a leading services hub and has always retained a strong competitive advantage, it needs to improve its preparedness for this new era, where traditional advantages may no longer apply.

The paper is organized as follows: Section II discusses the literature review of previous studies. Section III presents the trends and growth of India's services sector over the years. In Section IV, database and methodology utilized for empirical analysis has been explained. Section V covers the data analysis and discussion, the estimation procedure and presents the empirical results. The final section i.e. Section VI presents the conclusion and policy implications.

#### **II. Review of Literature**

*Gordon and Gupta (2003)* have analyzed the factors behind the growth of the services sector in India. The paper shows that growth acceleration of the services in the 1990s was mostly due to fast growth in communication services, financial services, business services (IT) and community services. This paper have examined that factors such as high income elasticity of demand and increased input usage of services by other sectors have played an important part in elevating services growth. However, other factors such as economic reforms and the growth of services exports also played an important role in accelerating services growth in the 1990s. The findings of the paper suggested that there is considerable scope for further rapid growth in the Indian service economy. Indian service exports have strong future growth prospects is well known, but the paper also finds that there is considerable scope for further rapid growth in the Indian service economy provided that deregulation of the services sector continues. However, the relatively jobless nature of growth in the Indian services sector underscores the importance of industry and agriculture also growing rapidly.

*Kaur and Aggarwal (2019)* have analyzed the nature and growth along with the important determinants of service sector growth in the economy of Delhi NCT. The study has been expected to provide more meaningful, consistent and realistic results on the issues under study. Using A. Holub's methodology, the study finds that Delhi witnessed a structural transformation and has contributed positively to growth. It has been found that service sector played a dominant role in the growth of the Delhi's economy. The service sector has the ability to maintain a high economic growth and can also encourage growth in other sectors of the economy of Delhi. Trade, hotels and restaurants, Role of Service Sector in the Economy of Delhi NCT transport, storage, communication, railways, banking and insurance, business

services, real estate, ownership of dwelling, public administration, and other services are the major determinants of growth in the economy of Delhi. The service sector has strong inter-sectoral linkages and it also has the potential to sustain long-run growth and stimulate growth in other sectors of the economy.

*Mukherjee (2013)* have showed that the service sector is the largest and fastest growing sector in India and has the highest labor productivity, but employment has not kept pace with the share of the sector in gross domestic product and has not produced the number or quality of jobs needed. Although India wants to be a knowledge hub, there is no uniformity in the quality and standards of education, and formal education does not guarantee employability. Policy measures are suggested for inclusive growth that will also enhance India's global competitiveness in services. This sector can attract FDI and private investment only with a stable, transparent, non-discriminatory, competitive policy environment. If the reforms suggested here are implemented, they will enhance the productivity and efficiency of the service sector and lead to inclusive growth.

*Eichengreen & Gupta (2010)* have used the National Accounts Statistics and cross-county data, and tried to show that the growth of services has been broad-based. They also showed that the growth of service sector employment is not simply disguised manufacturing activity and found that the skilled-unskilled mix of labour in the two sectors is becoming increasingly similar. They have concluded that sustaining economic growth and rising living standards will require shifting labour out of agriculture into both manufacturing and services and not just into one or the other. India is distinctive for the rapid growth of its service sector – high-tech information technology, communication and business services in particular. However, whether the service sector provides a route out of poverty for the masses and thus a path to economic development is disputed.

Singh and Kaur (2014) have attempted to examine in detail the role of services sector in the growth of Indian Economy. Structure of production for Indian economy since independence has also been presented by using Holub's methodology. Moreover, VAR methodology has been applied to evaluate the determinants of growth of services sector in India by using time-series data from 2000-01 to 2012-13. The overall picture portrayed from the whole study is that the share of services sector in total GDP is increasing over the years. One of the reasons might be of increasing GNP Per-Capita. The main services sectors attracting FDI in India are Telecommunications, Construction and Hotels and Restaurants. The results of VAR analysis shows that the growth of per-capita GNP is major factor of increasing share of services sector in Indian economy. Domestic investment and openness also effect positively to the share of services sector in GDP. Further, the effect of net FDI inflows is negative and insignificant. The reason of this negative effect might be the increasing share of FDI inflows in manufacturing sector, which in turn reduce the share of services in total proportion.

*Prasad & Sathish (2010)* have focused on the major policy issues for India's services sector. The paper briefly discussed the importance of services for India in terms of GDP growth, services export growth and openness of the economy; the country-wise exports of services of India; and the important services for India. They concluded that immediate and time-bound reforms in the services sector could not only help in attaining India's targeted GDP growth rates, but also give a fillip to growth and exports of this services-led-economy.

# III. Trends and Growth of India's Services Sector

At the time of independence, Indian economy was primarily a rural economy, with agriculture contribution for approximately 75 percent of the workforce and 55 percent of GDP. The agriculture growth increased during the mid 1960s. This is followed by a take-off in the service sector in the mid 1970s. The shift to a higher growth path during the course of the 1980s is referred to as the Indian growth turnaround. Among fast growing developing countries, India is distinctive for the role of the service sector. Global Economic crisis that first hit the U.S economy spread globally to weaken many developed and emerging economies. Among nations, India was less affected due to its highly resilient domestic economy characterized by high saving and investment rates and a dynamic service sector.



#### Figure-1: Sectoral Composition of GDP (At Current Price)

Source: Author's Calculation based on CSO Data.

The above figure explores the sectoral composition of Gross Domestic Product at current prices. The share of agriculture and allied services has declined from 53.30 percent in GDP in 1950-51 to 29.02 percent in 1990-91 and further decline to 16.77 percent in 2021-22. Its percentage share in GDP declined over the time period from 1950-51 to 2021-22. The share of industry, mining & quarrying and manufacturing in GDP was almost stagnant over the time period. The share of service sector (excluding construction) improved from 44.17 percent in 1990-91 to 61.93 percent in 2018-19 and further 47.69 percent in 2021-22. In the recent past, the growth of service sector increased with fast pace and till today it showed the highest percentage share among all other sectors. The share of services in national GDP has been declined in past few years may be because of the impact of covid 19 pandemic.



Source: Author's Calculation based on RBI Data.

The above fiure depicts the trend line of different sub-sectors of services during 2010-11 to 2021-22. It is clearly evident from the figure that out of the total services sector components, the travel and software services have shown significant growth over the years. The declining trend of all the sub-sectors except travel and software, during 2019-20 are due to the impact of covid 19 pandemic.

# **III.(a). Research Problems**

The economic development of any country is directly dependent on the advancement and progress of the three sectors of the economy viz. primary sector, secondary sector, and tertiary sector. The primary sector of an economy making direct use of natural resources that are involved in the production and extraction of raw materials from agriculture, fishing, forestry, mining, dairy, etc. and secondary sector also known as the industrial sector is associated with the activities which involve the conversion of raw material into usable products. The tertiary sector also known as the service sector involves a variety of things in its umbrella. In the past several years, the service sector has undergone a great evolution which in turn has given it the independent status of the productive sector of the country. Moreover, this sector also provides a major impact on foreign exchange and thus contributes greatly to the modern economic development of the country.

Thus the services sector has high potential. Presently, the entire services sector has mostly recovered from the impact of the covid 19 pandemic due to which nationwide lockdown imposed during March-May 2020 and localized lockdowns during the second covid 19 wave in April-May 2021, although some of the sub-sectors continue to be impacted. It is clearly evident that the Services sector grew by 10.8 per cent during the first half of 2021-22. Hence, in the above context, the research problem is that to what extent the Indian economy has been affected from the services sector during the period of pandemic? To study in detail the growth of Indian services sector over the years and also visualize the various components of service sector growth.

# (b). Objectives

The objective(s) of this study are as follows-

• To evaluate the India's changing production structure with the help of A. Holub's methodology.

• To examine the impact of pandemic period on the growth and performance of services sector and its various components.

• To analyze the importance of services sector in Indian economy.

# IV. Methodology and Data Collection

The present section presents the sources of database utilized and methodology applied to get empirical results. For the empirical analysis, study has utilized three main methodologies to explain in detail the role of services sector in Indian economy. Following three subsections explains them in detail.

#### (i). Structural Changes by A. Holub

According to Holub, if primary, secondary and tertiary sectors are denoted by the letters 'A', 'I' and 'S' respectively and if these sectors are ranked in order of their proportion in percentage share in GDP then the different production structures can be explained as given in Table-1.

S. No.	Percentage Share in GDP	Type of Structure
1.	Agriculture > Services > Industry	ASI – Traditional
2.	Agriculture > Industry > Services	AIS- Traditional
3.	Industry > Agriculture > Services	IAS – Transitional
4.	Services > Agriculture > Industry	SAI – Transitional
5.	Industry > Services > Agriculture	ISA – Modern
6.	Services > Industry > Agriculture	SIA – Modern

#### Table:1- Typology of Production Structure as per the A. Holub

Source: Singh & Kaur, 2014.

It explains the different production structures of any economy depending upon the share of primary, secondary and tertiary sector in GDP.

(ii). This part of analysis is concerned with examining the impact of service sector on total exports. For the analysis purpose, time-series data on various variables have been collected from Handbook of Statistics on Indian Economy, provided by Reserve Bank of India on quarterly basis. The time period of the data is from 2010-11 to 2021-22. The analysis has been carried out with the help of regression

model. The performance of Indian economy is proxied by Real Gross Domestic Product (GDP). The complete detail of the variables has been given in the following table-2.

Nature	S. No.	Variable	Description
Dependent	1	Ln(GDP)	Real Gross Domestic Product
Independent	2	Ln(travel)	Travel Services Exports
	3	Ln(trans)	Transportation Services Exports
4 Ln(insur) Insu		Insurance Services Exports	
	5	Ln(soft)	Software Services Exports
	6	Ln(finan)	Financial Services Exports

Table:2- Description of Variables Used for Regression Analysis

Notes: Nature of variable is defined only to estimate the regression in the first instance.

For the analysis purpose, all variables have been taken in log terms to neutralize the unit effect and also to make interpretation in proportionate terms.

Before regression analysis, the data has been transformed into growth rate. Correlation matrix has been calculated for ensuring the multicollinearity problem. To test the stationarity, ADF test has been conducted to ensure stationarity of the data.

# UNIT ROOT TEST

Unit root, random walk and non-stationary are near about similar things. A formal test model to solve the problem of stationarity was firstly proposed by Dickey and Fuller that is known as Dickey - Fuller Test (DF Test). The model or procedure tests for the presence of a 'unit root' in the time series. The DF test starts with the assumption that a series  $y_t$  is following an Auto Regressive (1) process of this form:

 $y_t = a_1 y_{t-1} + e_t$ 

And then testing for the case that if the coefficient  $a_1$  is equal to one (unity), hence "unit root" or  $Y_t$  series is non stationary.

The most frequently used test for unit roots is the **Augmented Dickey-Fuller** test, an advanced form of DF Test. The ADF test simple includes AR(p) terms of the  $\Delta y_t$  term in the three alternative models. Therefore we have:

$$\Delta y_{t} = \gamma y_{t-1} + \sum_{i=1}^{n} \beta_{i} \Delta y_{t-i} + e_{t}$$

$$\Delta y_{t} = a + \gamma y_{t-1} + \sum_{i=1}^{n} \beta_{i} \Delta y_{t-i} + e_{t}$$

$$\Delta y_{t} = a + \gamma y_{t-1} + a_{2} t + \sum_{i=1}^{n} \beta_{i} \Delta y_{t-i} + e_{t}$$

The difference between the three regressions again concerns the presence of the deterministic elements a and  $a_2$ . The lag length n should be determined according the AIC and SBC criteria. Also, note that in the ADF tests note that we use different statistical tables with critical values in each case.

The t-test for  $\beta_2$  is called the (TAU)  $\tau_t$  - statistic for which Dickey and Fuller have computed the relevant critical values.

It is assumed that the two variables are stationary. Sometimes taking the first differences of the variables makes them stationary. The number of lagged terms to be introduced in the causality test is an important practical question.

(iii). The third part of analysis deals with examining the impact of covid 19 pandemic on sub-sectors of services exports. For this purpose, mean difference analysis has been applied. The pre and post pandemic data has been collected from the breaking period i.e. third quarter of 2019-20. Thus the pre-pandemic period is 2016-17 to 2019-20 and the post-pandemic period is 2019-20 to 2021-22.

#### V. Empirical Analysis

The whole empirical section is further divided into three sub-sections. Wherein one sub-section explains India's changing production structure with the help of A. Holub's methodology and the second sub-section presents the results of regression analysis to analyze the impact of services sector components on India's GDP. Whereas in third sub-section describes the impact of covid-19 pandemic on the various sub-sectors of the services sector.

(a). Structural Changes by A. Holub: An Indian Case

By using Holub's methodology, typology of India's production structure has been presented over the study period in the following table. Following table point out the sectoral composition of Gross Domestic Product at constant prices.

Year	Share of	Share of	Share of Services	Type of Structure
	Agriculture (A)	Industry (I)	Sector (S)	
1950-51	53.30	11.11	35.59	A>S>I (Traditional)
1960-61	48.91	13.51	37.58	A>S>I (Traditional)
1965-66	41.43	16.14	42.43	S>A>I (Transitional)
1970-71	42.73	15.32	41.95	A>S>I (Traditional)
1980-81	36.60	16.99	46.41	S>A>I (Transitional)
1990-91	30.22	19.00	50.78	S>A>I (Transitional)
2000-01	22.82	18.89	58.29	S>A>I (Transitional)
2001-02	22.91	18.28	58.81	S>A>I (Transitional)
2002-03	20.58	18.83	60.59	S>A>I (Transitional)
2003-04	20.75	18.42	60.83	S>A>I (Transitional)
2004-05	19.44	18.50	62.06	S>A>I (Transitional)
2005-06	18.66	18.37	62.97	S>A>I (Transitional)
2006-07	17.74	18.99	63.27	S>I>A (Modern)
2007-08	17.16	18.99	63.84	S>I>A (Modern)
2008-09	16.09	18.51	65.40	S>I>A (Modern)
2009-10	14.93	18.84	66.23	S>I>A (Modern)
2010-11	14.73	18.79	66.48	S>I>A (Modern)
2011-12	14.37	18.10	67.52	S>I>A (Modern)
2012-13	13.95	17.39	68.67	S>I>A (Modern)
2013-14	17.15	28.4	46.7	S>I>A (Modern)
2014-15	16.79	27.66	47.82	S>I>A (Modern)
2015-16	16.17	27.35	47.78	S>I>A (Modern)
2016-17	16.36	26.62	47.75	S>I>A (Modern)
2017-18	16.56	26.5	47.67	S>I>A (Modern)

 Table:3- India's Production Structure according to A. Holub

2018-19	15.97	26.41	48.43	S>I>A (Modern)
2019-20	16.68	24.6	50.11	S>I>A (Modern)
2020-21	18.23	24.53	48.44	S>I>A (Modern)
2021-22	16.77	25.87	47.69	S>I>A (Modern)

#### Source: Author's Calculations.

The share of agriculture and allied activities has declined from 53.30 per cent in GDP in 1950-51 to 16.77 per cent in 2021-22. Its percentage share in GDP declined significantly over the time period from 1950-51 to 2021-22. The share of industry has gradually increased from 11.11% in 1950-51 to 25.87% in 2021-22. The share of services sector which is improved from 35.59 per cent in 1950-51 to 68.67 per cent in 2012-13 but have declined in next few years and stood at 47.69% in 2021-22. Services sector stated increasing from 1965-66 but again showed less percentage share in 1970-71. In the years 1980-81 it never saw behind and its growth increased with fast pace and till today it showed the highest percentage share (i.e. 47.69 percent) among all other sectors.

#### (b). Regression Analysis

### **Table:4-Variance Inflation Factors-Multicollinearity**

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
С	9.80E-05	1.229378	NA
D(FINANCIAL)	0.001740	1.050554	1.049411
D(SOFTWARE)	0.030298	1.497509	1.323307
D(TRAVEL)	0.001682	1.289422	1.289152
D(INSUR)	0.010816	1.592893	1.555660
D(TRANS)	0.023970	1.814543	1.611905

Source: Author's Calculation

The table-4 shows the status of correlation between financial, software services, travel, insurance and transportation services. This table is generated to test multicollinearity among the variables. The result shows that there is not high correlation between these variables indicating no problem of multicolinearity.

#### First Difference Level Variables t-statistics p-value t-statistics p-value FINANCIAL -4.4062810.0049 **INSUR** -9.2324590.0000 -2.9948470.1445 LNGDP -4.182276 0.0096 -1.668590 0.7494 SOFTWARE -1.131780 -2.9235740.1653 0.9118 Second Difference 0.0277 -2.208933TRANS -5.980311 0.0000 -2.4542230.3487 TRAVEL -3.6140500.0395 -3.237131 0.0898

# Table:5-Unit Root Test (ADF Test)

Source: Author's Calculation

The results of ADF test (has been used to check the stationarity of the series) are depicted in the above table. The result shows that all the variables at level are non-stationary at the 5% significance level. The first differences of the series are found to be stationary at the 5% significance level as the p-values are consecutively 0.00 for financial services, 0.00 for insurance services, 0.00 for GDP, 0.00 for transportation and 0.03 for travel services. The other variable i.e. software services are found to be stationary for their second difference value at the 5% significance level as the p-value is 0.02.

# Table:6-Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	5.086898	Prob. F(2,43)	0.0104*
Obs*R-squared	9.757881	Prob. Chi-Square(2)	0.0076

Source: Author's Calculation Null hypothesis is no serial correlation \*5% level of significance

This table-6 shows that there is no auto-correlation.

#### Table:7-Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.196963	Prob. F(5,45)	0.3260
Obs*R-squared	5.986595	Prob. Chi-Square(5)	0.3075
Scaled explained SS	23.94057	Prob. Chi-Square(5)	0.0002

Source: Author's Calculation

Null hypothesis is homoscedasticity

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed: The regression with Newey-West covariance model has been applied for removing the problem of heteroskedasticity. The table-7 shows that there is no problem of heteroskedasticity.

#### **Table:8-Regression Analysis**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	0.008596	0.006329	1.358276	0.1811
D(FINANCIAL)	-0.051570	0.052894	-0.974961	0.3348
D(SOFTWARE)	-0.428869	0.207980	-2.062064	0.0450
D(TRANS)	0.167392	0.106427	1.572841	0.1228
D(TRAVEL)	-0.133187	0.052244	-2.549314	0.0143
D(INSUR)	-0.132414	0.088776	-1.491562	0.1428
	Durbin-Watso	n stat		
R^2= 0.431054		2.792572		

Dependent Variable: D(LNGDP)

HAC standard errors & covariance (Bartlett kernel, Newey-West fixedbandwidth = 4.0000 Source: Author's Calculation

The table-8 shows the result of regression analysis. According to the result, there are two significant variables i.e. travel and software services as its p-value are significant at 5% level of significance. The other variables i.e. financial, transportation and insurance services are insignificant. The result supports the trend line in figure-2 and shows that travel and software services are increasing faster than the other components. The coefficient value is negative probably it may be because of uneven/volatile nature of data series due to unexpected events like demonetization and covid 19 pandemic.

# (c). Covid 19 pandemic and service sector

t-Test: Paired Two Sample for	Financial	Trans	Travel	Insur	Softwa	GDP
Means					re	
t Stat	-	3.6029	-	1.4090012	8.3669	7.4383
	0.4455465	43	8.5881003	22	27	0
	51		16			
P value (T<=t) two-tail	0.6677352	0.0069	0.000002	0.1964972	0.0000	0.0000
	79	53		99	03	03

 Table:9-Impact of covid 19 on service sector components

Source: Author's Calculation

Note: Pre covid 19 time period is from 2017-18Q3 to 2019-20Q3

Post covid 19 time period is from 2019-20Q4 to 2021-22Q4

This table-9 shows that except financial and insurance services the rest of the components including GDP have got significant differences due to covid 19 pandemic. The result suggests significant impact of covid 19 pandemic on most of the services sector components.

# VI. Conclusion & Suggestions

The present study try to examine India's changing production structure with the help of A. Holub's methodology. Further, the paper also assesses the impact of pandemic period on the growth and performance of services sector. Subsequently, highlighting the importance of services sector in Indian economy. Services sector started increasing from 1965-66 but again showed less percentage share in 1970-71. In the years 1980-81 it never looks behind and its growth increased with rapid pace and till today it showed the highest percentage share (i.e. 47.69 percent) among all other sectors. It is found that growth pattern in the service sector has not been consistent across all services in India. Some sub-sectors of services have grown fast in terms of their share in GDP and also in terms of their share in services trade.

The result of regression analysis shows that there are two significant variables i.e. travel and software services whose p-value is significant at 5% level of significance. The other variables i.e. financial, transportation and insurance services are insignificant. The result supports the trend line in figure-2 and shows that travel and software services are increasing faster than the other components. The coefficient value is negative probably it may be because of uneven/volatile nature of data series due to unexpected events like demonetization and covid 19 pandemic. In relation to covid 19 pandemic and services sector, except financial and insurance services the rest of the components including GDP have got significant differences due to covid 19 pandemic. The result suggests significant impact of covid 19 pandemic on most of the services sector components. From this study, it can be suggested to the policy makers to frame policies to minimize the impact of such kind of events. The effort should be made to promote speedy digitalization and to remove hurdles in the path of exports of services.

The service sector in India has emerged as the most important and prominent cluster among all sectors. So it has the potential for huge growth and capability to contribute a big share in the national GDP, create highly productive jobs, and becomes the source of high revenue generation. The Startup India programme initiative by the government of India is acts as a catalyst for both the manufacturing as well as the service sector in India by offering to support innovative startups. Hence, we can say that the service sector is going to play a major role in shaping the future of the country in the coming years.

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# Appendix

# Table:10

Dependent Variable: D(LNGDP) Method: Least Squares Date: 10/10/22 Time: 23:41 Sample (adjusted): 2 52 Included observations: 51 after adjustments HAC standard errors & covariance (Bartlett kernel, Newey-West fixed

bandwidth $= 4$	(0000)
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Coefficient	Std. Error	t-Statistic	Prob.
0.008596	0.006329	1.358276	0.1811
-0.051570	0.052894	-0.974961	0.3348
-0.428869	0.207980	-2.062064	0.0450
0.167392	0.106427	1.572841	0.1228
-0.133187	0.052244	-2.549314	0.0143
-0.132414	0.088776	-1.491562	0.1428
0.431054	Mean dependent var		0.016474
0.367837	S.D. dependent var		0.080184
0.063753	Akaike info criterion		-2.557468
0.182900	Schwarz criterion		-2.330194
71.21542	Hannan-Quinn criter.		-2.470620
6.818715	Durbin-Watson stat		2.792572
0.000083	Wald F-statistic		4.349236
0.002587			
	Coefficient 0.008596 -0.051570 -0.428869 0.167392 -0.133187 -0.132414 0.431054 0.367837 0.063753 0.182900 71.21542 6.818715 0.000083 0.002587	CoefficientStd. Error0.0085960.006329-0.0515700.052894-0.4288690.2079800.1673920.106427-0.1331870.052244-0.1324140.0887760.431054Mean dependent var0.367837S.D. dependent var0.063753Akaike info criterion0.182900Schwarz criterion71.21542Hannan-Quinn criter.6.818715Durbin-Watson stat0.00083Wald F-statistic0.002587	CoefficientStd. Errort-Statistic0.0085960.0063291.358276-0.0515700.052894-0.974961-0.4288690.207980-2.0620640.1673920.1064271.572841-0.1331870.052244-2.549314-0.1324140.088776-1.4915620.431054Mean dependent var0.367837S.D. dependent var0.063753Akaike info criterion0.182900Schwarz criterion71.21542Hannan-Quinn criter.6.818715Durbin-Watson stat0.000083Wald F-statistic0.002587

#### Table:11

Dependent Variable: D(LNGDP) Method: Least Squares Date: 10/11/22 Time: 13:26 Sample (adjusted): 2010Q2 2022Q4 Included observations: 51 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C D(LNSERVICS)	0.001467 0.828314	0.011899 0.302447	0.123244 2.738709	0.9024 0.0086
R-squared	0.132751	Mean dependent var		0.016474
Adjusted R-squared	0.115053	S.D. dependent var		0.080184
S.E. of regression	0.075430	Akaike info criterion		-2.292791
Sum squared resid	0.278796	Schwarz criterion		-2.217033
Log likelihood	60.46617	Hannan-Quinn criter.		-2.263842
F-statistic	7.500529	Durbin-Watson stat		2.568977
Prob(F-statistic)	0.008576			

#### **Reviewing Monetary Policy and Indian Economy for Sustainable Growth**

#### **Sudip Jana**

#### Abstract

Monetary policy refers to actions taken by central banks to affect monetary and other financial conditions in pursuit of the broader objectives of sustainable growth of real output, high employment, and a reasonable degree of price stability. It has emerged as an important tool of economic policy in the developed, developing developed and developing economies. And major reforms in monetary policy occurred in the last two decades of the 20<sup>th</sup> Century and, more or less, in the first two decades of the 21st centuries, augmenting in fact the globalization of monetary policy. It is clear now that the challenge for monetary policy have been changing over time, even though some basic issues have remained of perennial concern.

It is in this backdrop, the objective of the chapter is to report the historical evolution of the monetary policy across the globe within which we include classical monetary policy, monetary policy during the Great Depression, the goals of monetary policy, instruments of monetary policy, intermediate targets, theories of monetary policies, rules versus discretions as well as pinpoint the trends of India's monetary policies over time.

Keywords: Great Depression, Systemic risk, Macro prudential regulations, Bretton woods System, Inflation Targeting

**Jel Codes:** G21, G28, L51, N00

#### **I.INTRODUCTION**

Monetary policy that refers to actions taken by central banks to affect monetary and other financial conditions in pursuit of the broader objectives of sustainable growth of real output, high employment, and a reasonable degree of price stability, has emerged as an important tool of economic policy in the developed, developing developed and developing economies. And major reforms in monetary policy occurred in the last two decades of the 20th Century and, more or less, in the first two decades of the 21st centuries. It is clear now that the challenge for monetary policy have been changing over time, even though some basic issues have remained of perennial concern. As the institutional environment-both domestic and global— changes, the tasks of monetary policy also undergo a change. Today's monetary and financial system is far more complex than it has been the past. The channels of financial intermediation have also changed. While only in 2009 most business flowed through the balance sheets of banks or insurance companies, or through a limited range of investment funds, the explosive increase in wealth held privately (partly as a result of greater dispersion of income) has led to the creation of a wide range of other investment vehicles, of which hedge funds and private equity are the most prominent. New instruments have emerged which make it possible to transfer risk of all kinds on a far larger scale and in more complex ways. Financial intermediation has reached a level of sophistication which has itself become a source of concern in recent days. The menu of financial products available has expanded enormously. Derivative products which were unknown till a few decades ago, have become common.

All these changes have an important role to play in relation to the transmission mechanism. The impact of monetary policy action can be felt through a variety of channels some of which though recognized in the past have become more important. The speeds with which funds nowadays move across borders have raised issues regarding the coordination of monetary policies among countries. Prices and interest rates are no longer determined by domestic factors. In the industrial advanced countries, after the World War II, there had been many changes in monetary policies in the fight against inflation and other matters. Also the relative importance of growth and price stability as the objectives of monetary policy as well as the appropriate intermediate target for monetary policy became the focus of attention. The recent churning of the financial system has raised several new questions not only with respect to objectives but also to the overall conduct of monetary policy itself.

A similar trend regarding monetary policy is discernable in developing economies as well. The importance of price stability and, therefore, the need to use monetary policy for that purpose assumed importance in developing economies. The impossible trinity<sup>1</sup> is now a reality and the countries have to make the relevant choice.

# **II.OBJECTIVES**

It is in this backdrop, the objective of the chapter is to report the historical evolution of the monetary policy across the globe within which we include classical monetary policy, monetary policy during the Great Depression, the goals of monetary policy, instruments of monetary policy, intermediate targets, theories of monetary policies, rules versus discretions as well as pinpoint the trends of India's monetary policies over time.

# **III. HISTORICAL EVOLUTION OF MONETARY POLICY**

From the First World War onwards, central banks focused entirely on public objectives. Their objectives also changed towards shielding the domestic economy from external shocks and stabilizing real output and prices. The trend continued in the 1930s and after the Second World War.

# **Classical Monetary Policy**

The true origin of the modern monetary policy occurred under the classical gold standard, which prevailed from 1880 to 1914. Under the gold standard all countries would define their currencies in terms of a fixed weight of gold and then all fiduciary money would be convertible into gold. The key role of the central bank was to maintain gold convertibility. Central banks were also supposed to use their discount rates to speed up the adjustment to external shocks to the balance of payments, that is, they were supposed to follow the 'rules' of the game (Keynes, 1930). There is considerable debate on whether the rules were actually followed (Bordo and MacDonald, 2005). There is evidence that central banks sterilized gold flows and prevented the adjustment mechanism.

After the First World War, the gold standard was restored, but in the face of a changing political economy — greater emphasis was placed by central banks on the domestic objectives of price stability and stable output and employment than on external convertibility.

The Federal Reserve followed the flawed real bills doctrine, which exacerbated the downturn, and the gold sterilization policies followed by the Fed and the Banque de France weakened the adjustment mechanism of the gold standard.

# Monetary policy during the Great Depression

Monetary policy during the Great Depression had four phases. The first phase is the Great Contraction.1929-33 is referred to as the contraction or downturn phase of the Depression. The second phase of the Depression is a brave recovery from 1933 through 1939. Monetary policy during this period was dominated by President Roosevelt's decision to devalue the dollar in terms of gold. Besides, numerous pieces of legislation were enacted increasing and altering Federal Reserve's powers. The third phase was another depression that occurred in 1937. The final phase was to some extent a recovery. In fact, monetary policy during the Great Depression is largely a study of failure: a lack of leadership, an incorrect theory of policy, the constraint of the gold standard and a lack of understanding. But the failure gives the pillar of future success in the pursuit of price stability and maximum sustainable growth.

Monetary policy was restored to the central banks in the 1950s and 1960s. But inflation was broken in the early 1980s by concerted tight monetary policies in the United States, the UK and other countries and a new emphasis was placed on the importance of low inflation. Central banks in many countries were granted goal independence and were given a mandate to keep inflation low.

# The Goals of Monetary Policy

Until 1914, the dominant monetary regime was the gold standard. Since then, the world has gradually shifted to a fiat money regime. Under the classical gold standard the key goal was gold convertibility with limited focused on domestic economy. By the interwar period convertibility was being overshadowed by emphasis on domestic price level and output stability, and the regime shifted towards fiat money. This continued after the Second World War. Under the 1944 Bretton woods Articles of Agreement, member countries were to maintain pegged exchange rate and central banks were to intervene in the foreign exchange market to do this, but the goal of domestic full employment was also given predominant. The Bretton Woods evolved into a dollar gold exchange standard in which members currencies were convertible on a current account basis into dollar and the dollar was convertible into gold (Bordo, 1993). A continued conflict between the dictates of internal and external balance was a dominant theme from 1959 to 1971 as it was the concern over gold imbalance.

The collapse of Bretton woods between 1971 and 1973 was brought about largely because the United States followed an inflationary policy to finance both the Vietnam War and expanded social welfare programmes. There was a belief that the Phillips' Curve trade-off between inflation and unemployment existed : this led to a focus on maintaining full employment at the expense of inflation.

Since the end of the World War II, the countries across the globe have had witnessed relatively stable inflation and a high growth regime. But the happy mirror soon faded out. That period of " stable inflation and high growth" came to a halt during the oil price spike in the 1970s — the period known as the period of 'stagflation'.

The resulting 'great inflation' of the 1970s finally came to an end in the early 1980s by central banks following tight monetary policies. Since then the pendulum has again swung towards the goal of low inflation. (Friedman, 1968; Phelps, 1968). From the late 1980s the inflation came down to a stable level and the growth again picked up in the countries. This period is sometimes called period of 'great moderation'. Significantly, during this period the US Federal Reserve was chaired by Paul Volker and Alan Greenspan ( the latter became Chair of the Fed in 1987), two legendary central bankers. That is why thios period is sometimes referred to Volker- Greenspan era. This period continued upto the time of global financial crisis 2007-08. One significant aspect of this period is that the central banks across the world assumed a kind importance which was never observed before.

# **Instruments of Monetary Policy**

The original policy instrument was the use of the discount rate and rediscounting. Open market operations ( the buying and selling of government securities) was first developed in the 1870s and 1880s by the Bank of England in order to make bank rate effective, that is to force financial institutions to borrow.

In the interwar period the newly established Federal Reserve initially used the discount rate as its principal tool, but heavy criticism for its use, the Fed shifted to open market policy, its principle tool ever since.

### **Intermediate Targets**

Traditionally, central banks altered interest rate as the mechanism to influence aggregate spending, prices and output. In the 1950s, the monetarist revived the Quantity Theory of Money and posited the case for using money supply as the intermediate target. But this process generated the great inflation of the 1970s.

By the 1970s most central banks had monetary aggregate targets. However, the rise of inflation in the 1970s as well as continuous financial innovation made the demand for money functionless. This meant that central banks had difficulty in meeting their money growth target. In addition the issue was raised as to which monetary aggregate to target (Goodhart, 1984). By the late 1980s most countries had abandoned monetary aggregates and returned to interest rates.

In sum and in addition, monetary policy has had its ups and downs in the post-Second World War period. In industrially advanced countries, after decades of eclipse, monetary policy re-emerged as a potent instrument of economic policy, in the fight against inflation in the 1980s. Issues relating to the conduct of monetary policy came to the forefront of policy debates at that time. The relative importance of growth and price stability as the objective of monetary policy as well as the appropriate intermediate target of monetary policy became the focus of attention. Over the years, a consensus has emerged among the industrially advanced countries that the dominant objective of monetary policy should be price stability. Differences, however, exist among central banks even in these countries as regards the appropriate intermediate target. While some central banks consider monetary aggregates and, therefore, monetary targeting as operationally meaningful, some others focus on the interest rate. There is also the more recent practice to ignore intermediate targets and focus on the final goal such as inflation targeting.

But since early 1990s monetary policy in many countries had been based on pursuing an inflation target (implicit or explicit) with the policy rate set to allow inflation to hit the target, a policy which seems to be successful.

#### **Theories of Monetary Policies**

The development of practice of monetary policy described above was embedded in major advances in monetary theory that began in the first quarter of the 19<sup>th</sup> century.

Two principles became embedded in central banking lore — gold standard and the real bill doctrine. Adherence to the two pillars led to disaster in 1930. The depression was spread globally by the fixed exchange rate gold standard. In addition, the gold standard served as 'golden fetters' for most countries because they could not use monetary policy to allay banking panics or stimulate the economy lest it triggers a speculative attack (Eichengreen, 1992)
The Great Depression gave rise to the Keynesian view that monetary policy was impotent. This led to the dominance of fiscal policy over monetary policy for the next two decades. The return to traditional monetary policy in the 1950s was influenced by Keynesian monetary theory. According to this approach monetary policy should influence short-term rates. This money market approach dominated policy until the 1960.

## **Rules versus Discretion**

A key theme in the monetary policy debate is the issue of rules versus discretion. The theoretical literature suggests that a rule-based monetary policy is preferable to discretionary monetary policy. Taylor votes for rule based policy. Taylor(2012) aregues that the monetary policy in the United States can be divided into two periods— while 1985- 2003 is marked by rule based period, the period thereafter culminating in the global financial crisis is characterized by discretionary policy.

A more recent approach focuses on the role or time inconsistency. According to this approach, a rule is a credible commitment mechanism that ties the hands of policymakers and prevents them from following time–inconsistent policies — policies that take past policy commitments as given and react to the present circumstances by changing policy. (Kydland and Prescott, 1977; Barro and Gordon, 1983).

Today's central bank, dedicated to low inflation, can be viewed as following the Taylor rule (Taylor, 1999). The chief merit of Taylor's rule is its transparency. It clearly provides a formula how to set the policy interest rate in keeping with the inflation and output gap in the economy. That is why it has become very popular with the policy makers at the central banks. This rule talks about inflation target. The countries adopted inflation targeting based on this rule.

In this vein, today's central bankers place great emphasis on accountability and transparency to support the credibility of their commitments to maintain interest rate geared towards low inflation (Svensson, 1999).

Though the central banks across the globe have embraced the Taylor rule as the major plank of their policy making, the global financial crisis put a big question mark on the efficacy of such rule. Many economists believe that Taylor rule should consider many other variables like asset markets parameters etc. in addition to inflation and output gap.

# **IV.TRENDS IN INDIA'S MONETARY POLICY**

Though the RBI played a major role during first three decades after Independence, it ought to abide by the guideline of the government. And so long as inflation was moderate, this approach worked well. But in keeping abreast of the world- wide inflation broken in the early 1970s and continued to the whole decade by the whirl of tight monetary policy in the United States, the UK and other countries, India only saw inflation at that period and it, in the 1970s, touched unacceptable levels and as a result, growth of the money supply had to be tamed and reigned in.

A continuous 'battle' between the RBI and the MoF on the control of inflation and the need to contain fiscal deficit came to the fore in the 1980s. The period was marked by uneven growth though accompanied by even an average growth of little over 5 per cent. The average inflation was close to 7 per cent. The annual M<sub>3</sub> growth was 17 per cent. Submitting its report in 1985, the Chakravarty Committee recommended that in a need to regulate the money supply, the money supply growth ought to be consistent with real growth and acceptable level of inflation. It also stressed for close co-ordination between monetary policy and fiscal policy. Thus Committee's vision converted into a scheme what

came to be described as flexible monetary targeting. But in the latter of the 1980s the Indian economy still saw a higher fiscal deficit and higher money supply growth, in spite of the acceptance of the recommendations. All these propelled us to dip into the crisis of 1991.

The 1990s saw a sea change in the contour of monetary policy. For example, (i) the issue of ad-hoc treasury bills was done away with. It was replaced by a system of Ways and Means Advances which had a fixed ceiling. The Reserve Bank of India continued to subscribe to the dated securities at its discretion. (ii) During 1993 and 1994, for the first time monetary policy had to deal with the monetary impact of capital inflows with the foreign exchange reserves increasing sharply from \$ 9.2 billion in March 1992 to \$ 25.1 billion in March 1995. As a result, the automatic monetization of fiscal deficit came to an end.(iii) Besides, by moving to market –determined rate of interest, government securities became marketable and it has enabled the emergence of open market operations(i.e., selling and buying of government securities) as an instrument of credit control. The dismantling of the administered structure of interest rate enabled the rate of interest to emerge as a policy variable. The RBI was deeply concerned with price stability as a dominant objective of monetary policy and therefore, regarded regulation of money supply as a key factor in monetary policy.

Monetary policy has begun to operate within a changed institutional framework brought about by the financial sector reforms. It is this change in the institutional framework that has given a new dimension to monetary policy. New transmission channels have opened up. Indirect monetary controls have gradually assumed importance. With the progressive dismantling of the administered interest rate structure and the evolution of a regime of market determined interest rate on government securities, open market operations including 'repo' and 'reverse repo' operations emerged for the first time as an instrument of monetary control.

Post-1997 was earmarked by a series of approaches of multiple indicators. For example, the Liquidity Adjustment Facility introduced first in 1999 and refined later is emerging as a principal operative instrument to manage market liquidity on a daily basis. Bank Rate acquired a new role in the changed context. So too the repo and reverse repo rates. The Nineties have paved the way for the emergence of monetary policy as an independent instrument of economic policy (Rangarajan, 2002). But the issue connected with multiple objectives such as to (i) maintain a reasonable degree of price stability and (ii) to help accelerating the rate of economic growth) remained the same.

#### Financial Crisis, 2007-08

After the onset of financial crisis, monetary policymakers faced significant challenges. Financial markets were in trouble, normal credit flows were significantly disrupted, and economies moved into recession. Central banks sharply reduced their policy rates and tried to improve the functioning of financial markets. As "lender of the last resort" central banks provided liquidity to financial market participants. A number of other important measures were also initiated to quell the situation. The actions of the central bank mitigated the effects of the crisis and fostered recovery. As a result the size of the balance sheets of major central banks, reserves and the monetary base rose after Septemmber2008. Over time, balance sheets came to a normal level.

The2007-08 crisis and central bank responses have stimulated discussion of the appropriate way to implement monetary policy and the role of the central banks in both micro-prudential and macro – prudential regulation (Table). It is worth-mentioning that based on the 1988 Basle accord, prudential norms were introduced in India in 1992. Since then there has been a progressive move towards

international norms. An important lesson from the 2007-08 crisis is that central banks, whether they are ultimate micro- or macro-prudential regulator or not, must pay more attention to the level of systemic risk in formulating policy and to how their monetary policies might affect the degree of systemic risk. Accordingly, central banks have begun the task of identifying indicators of the level of systemic risk <sup>2</sup> and have begun the discussion of how this information will be used in monetary policy decisions. It is well recognized that in a globalization context, policy conducted with data of poor quality could be very inefficient.

Table :	Micro	and	Macro	Approach

	Macro-prudential	Micro-prudential
Objective	Limiting systemic risk of the financial system: Mitigating the failure of a large segment of the financial system	Limiting idiosyncratic risk of individual institutions: Protection of depositors and investors
Implementation of supervisory controls	Top-down: setting prudential control in terms of the probability and costs of systemic distress	Bottom-up: Setting and aggregating prudential control in relation to the risk of each institution
Characteristics of risk	<b>Endogenous:</b> Originating in the collective behaviour of and interactions between institutions	<b>Exogenous</b> : Given to individual institutions and the disregard of feedback of collective actions
Common exposure to systemic risk	Relevant and important: Causes of the fallacy of composition	Irrelevant
Use of instruments	Standard prudential tools plus linking provisioning and pricing of risk to the volume of loan	Uniform solvency standards and codes of conduct
Focus of supervision	<ul> <li>(i) A greater weight given to banks and larger and more complex institutions;</li> <li>(ii) Market monitoring; and</li> <li>(iii) Countercyclical orientation</li> </ul>	Protection of individual institutions

Sources: Crockett (2000), Borio (2003).

# India's Standpoint

In the years before and after the 2008 global crisis, RBI focused on financial stability that applies to both institutions and markets and that implies ability of the institutions to meet their obligations on their own without interruption or outside assistance. And markets are said to be stable when prices in financial markets are not volatile and participants can confidently transact in them at prices that reflect fundamental forces. In 2016, RBI moved to a new monetary policy framework which may be described as one of flexible inflation targeting. The interest rate (Repo Rate) became the operating target. Moving to the new policy framework, clarified the objective of monetary policy. But RBI has to contend with many other issues with respect to monetary policy. The question of when to raise or lower the interest rate will always be a contentious issue.

Changes in the exchange rate and foreign trade regimes have added an additional dimension to India's monetary policy. External considerations have now to be taken into account in the conduct of monetary policy. Central Bank has also expanded hands in external sector management, whether it was meeting the balance of payment crisis in 1991, or managing the transition to a liberalized exchange rate, unified exchange rate, current account convertibility and capital account liberalization. There have been years in which the Reserve Bank had to fight the impact of capital outflows and there have also been years in which the major concern is how to deal with the large capital inflows.

# V. CONCLUSION

A policy is said to be monetary if relevant actions are those generally undertaken by a central bank. They may include the size of the monetary injections, reserve requirements, the discount rate, or the scale of intervention in local or foreign exchange market.

Today monetary policy is the principle way in which governments influence the macro economy. To implement monetary policy the monetary authority uses its policy instruments (short-term interest rate or the monetary base) to achieve its desired goals of low inflation and real output close to potential. It is widely accepted that well-developed monetary policy can counteract macroeconomic disturbances and dampen cyclical fluctuations in prices and employment thereby improving overall economic activity and welfare. In other words, central banks conduct monetary policy with the ultimate aim of promoting sound economic performance and thereby ensuring the well-being of people. While there is a rich diversity in the way monetary policy is formulated and conducted across the world, the success of central banking in India lies in steering the economy to a higher growth path without generating inflationary pressures which themselves may hinder growth.

## Note:

1. Impossible trinity disallows the simultaneous achievement of exchange rate stability, monetary independence and capital market integration. Any two of these goals may be attained but never all three. The combination of managed flexibility and partial capital account controls has allowed India, to a large extent, the trilemma of the famed Impossible trinity. India never took three as with the case of East Asian Countries in 1997.

2. Systemic risk is nothing but the risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy.

Systemic risk (Karmakar and Jana, 2019) occurs from the following sources:

a) Exposure to asset price (real estate) bubbles resulting from loose monetary policy due

to the presence of global imbalances that led to excessive credit availability;

- b) Multiple equilibria and panics— the latter that deserve some attention as one of the macroeconomic aspects of systemic risk ;
- c) Inefficient liquidity provision and the mispricing of assts;
- d) Contagion (possibility that the distress of one financial institution spreads to others in the financial system, thus leading ultimately to a systemic risk);
- e) Sovereign default— a serious problem occurred in Europe in the spring of 2010 in its own right because of its effect on the stability of the banking system; and
- f) Currency mismatches in the banking system.

To tame the systemic risk is the most important task of the RBI as a central

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#### **Crypto Currency Investments in India: An Exploratory Research**

## Laila Memdani Raghavendra Sode

#### Abstract

The crypto landscape in India had a roller coaster ride. Initially there was a surge with massive returns, then collapse and now it is again becoming stable. In this paper we aim to explore the pull and push factors of investments in research. We had focused group interviews with the students who are into investments in IFHE University. From the interviews and from the literature we identified certain factors. Then we conducted a survey of 164 students of the same university. The students in the university come from all over the India. So it represents mini India and therefore, we can take our sample also from all the parts of India. Some of the students have work experience and some of them are running their family businesses as well. We find that the pull factors are simple process and an alternative investment opportunity and the push factors are the restrictions from the regulatory bodies.

#### I. Introduction

Meteoric surge of crypto currency across the globe is going to be 1 billion by the end of 2022(Dwyer, 2021). Massive returns and reduced risk made cryptos the most sought-after investment option (Kumar, 2022) in the world and in India. The paradigm shift from traditional investments to crypto is attributed mainly due to the attractive returns and partially to Covid-19 pandemic. Ripple effect of Covid-19 pandemic were felt across the world economies including India (WHO, 2020). Crippling financial crisis lead India to report negative GDP of 23.1% in first quarter of 2020-21 and a V-shaped recovery was achieved by end of third quarter but investors were skeptical to invest in traditional market or not ? Meanwhile the crypto investments in India surged by 400 percent during the pandemic compared to prepandemic period (Katherine, 2021). Crypto currencies are backed by block chain technology and all the transactions happens using tokens. Token are representation of physical characteristics or information that has some value. Token can be fungible or non-fungible. Fungible tokens are divisible, meaning each part of token is equal to other and are interchangeable. Tokens of such nature represents any asset including digital asset. Non-fungible Tokens (NFT) are different and specific, meaning they can't be divisible and transferable against other non-fungible tokens. An NFT is defined as a document of ownership for any underlying asset including digital asset (Kumar, 2022). NFTs could be in the form of reward programs, innovation, voter IDs, property, collection of art, etc. Compounding effect of crypto currency is attributed due to its decentralized nature and transparency but there are concerns of security and legal that are hampering its penetration into the mainstream economy. Countries like El Salvador legalized crypto currencies for all type of transactions along with official national currency. India initially completely banned mining, buying, holding, selling and dealing of cryptocurrency and restricted banks, other financial institutes in crypto transactions. But The Cryptocurrency and Regulation of official Digital Currency Bill 2021 curbed such bans and recommended to develop a framework to create India's official digital currency that is going to be issued by RBI. The bill also states to levy tax at 30 percent on income from digital assets. The crippling economic growth due to Covid-19 pandemic grabbed the attention of investors (Dzielinski, 2012) to diversify (Glaser, 2005) the investment portfolio lead to abrupt rise of cryptocurrency in India. The transformation and divergence lead to high trade among the investors as transformation provoke investor to trade and diversity evoke herding behavior (Harris, 1993) rippling effect investor's expectations diminishes (Hoffmann, 2013).

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Thus investigating investor's behavior is much required to understand the surge of crypto currency trading in the crisis situation of Covid-19 in Indian Economy. Many studies have explored contagion effect of current financial crisis but very few studies investigated investor's perceptual differences to derive factors responsible for the contagion effect of cryptocurrency surge in India. The researchers aim to fill this gap. Therefore, the aim of the study is to derive the factors responsible for pull and push effect leading to surge of crypto market in India. Further, to assess factors with the behavioral intentions and financial wellbeing of the investors. The traditional perspective that investors assess fundamentals are (Oslen, 2000). Various macro and micro economics factors impact investor's behavioral intentions and financial wellbeing. Hence, the current study examines the following research questions:

Research Question 1: What are the pull and push factors deriving investment in cryptocurrency in India?

Research Question 2: What are the behavioral intentions with respect to crypto currencies?

Research Question 3: Does Indian investors experience financial wellbeing by investing in crypto currencies?

## II. Literature Review

Three eras-the Agricultural, Industrial, and Digital eras-are responsible for the advancement of civilisation. Our world is evolving technologically, notably in the ways that businesses are conducted, value is added to them, and how labour is produced and shared inside organisations. Like electricity, digital technology is evolving into infrastructure. More specifically the evolution of digital currency or crypto currency (IMF, 2019). Certain developing and emerging market economies have adopted cryptocurrencies more quickly than some advanced ones. In 2020, emerging market and developing economies will account for the top five countries using or possessing crypto assets, while advanced economies will generally be the lowest adopters (Statista,2021). Similar findings are reached by a another recent survey (Finder 2021), which ranks established economies like the United Kingdom and the United States at the bottom and emerging market economies in Asia among the top. Among the cutting-edge technologies, blockchain is one that is referred to as decentralised and distributed ledger technology (DLT), which stores the origin of digital assets. Cryptocurrency used blockchain technology. This technology is flourishing because it makes it possible to exchange value-containing objects like money, titles, deeds, identities, and votes-securely, openly, and most significantly, without the risk of fraud. Pressure realted to dollorization is creating repelling effect on number of developing and emerging economies as dollarization makes it difficult to access foreign assets and increasing exchange rates inhibits domestic businesses and individuals to restrict their investments but with the help fo crypto ecosystem private individual wallets can act as offshore bank account to do investments (IMF, 2020). Crypto investments are emerging as alternative to conservative investments. The technological innovation of crypto ecosystem is presenting new opportunities the way transactions are carried out with ease in fraction of seconds at lesser cost allowing payments across countries promptly. According to Global financial stability report (2018) crypto allows conversion of bank deposits into stable coins and give access to wide variety of financial products in digital formats such as fungible tokens and nonfungible tokens. As the crypto ecosystem is decentralized the system is more inclusive and transparent. The meteoric growth of crypto ecosystem is escorted by host of problems such as poor risk management, governance issues, and susceptibility to cybercrimes that are surging with increased new entrants. Although block chain technology helps to track the transactions but it is difficult to identify the parties of transactions leaving significant gap coupled with limited standardization, regulations to monitor the surge of crypto currencies (FSB, 2018). The growth of crypto currencies are driven by host of forces such as inefficient payment gateways, misleading economic policies, dollarization. Adrian (2021) explored risks of macro-financial stability with introduction of cyrtos parallel to main economic

currency. Cryptoization open new avenue to evade taxes, reduced role of central banks, and monitoring of main currency. The forces driving for and against the crypto currencies are many and the theoretical background to understand these factor is based on pull-push-mooring theory.

## III. Objectives

- 1) To study the factors that influence the investments in Crypto Currencies in India
- 2) To study the factors that hinder the investments in Crypto Currencies in India

## IV. Methodology

Since the literature on this topic is very meager we started with the focussed group discussion on the topic to identify the factors that govern the investments in Crypto Currency. We conducted this focussed group discussion with the students in ICFAI Foundation for Higher Education (IFHE) university, where the authors are also affiliated. The Under graduate students in the university are known for their investment acumen and therefore, we started with them. We got many factors from these focused group interviews.

We got certain factors from the literature review as well. We added all and we have done factor analysis to identify the pull and push factors for crypto investments.

## V. Results and Discussion

KMO results are given in table below, which shows sampling adequacy. The results are significant implies that the sample of 164 respondents is adequate.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		
Bartlett's Test of Sphericity Approx. Chi-Square		
df	703	
Sig.	.000	
	ıpling Adequacy. Approx. Chi-Square df Sig.	

## KMO and Bartlett's Test

After the Varimax rotation following four factors were identified and they are: Simple Process, Investment Alternative, Very Popular, Less Restrictions and High Acceptance were the main factors that impact people's decision to invest in crypto currency. The items included in each factor and the variance explained by them is given in the table below:

# Factors, items and Variance Explained by them

Factor	Component	Variance Explained
	Investing is easy through mobile and app	0.532
Simple Process	Process is easy	0.603
Investment Alternative	Good Investment opportunity	0.639
Investment Alternative	Alternative Banking System	0.617

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	The Supply is limited so the value remains relatively	0.524
	stable compared to the paper currency	0.524
	Recognized by businesses	0.638
	Alternative Payment System	0.653
	My family and friends have invested so I too have to invest	-0.568
	It has got global Attention, therefore we have to invest in it	-0.534
Very Popular	Many top people have preferred to invest in it and are positive about it	-0.299
	There is total privacy about your investment in crypto that's why I prefer to invest in it	-0.353
	High returns	0.125
	-	
	Tracking of transactions is easy as compared to cash	-0.029
	No restrictions on investment pattern like locking	
	period, maturity etc.	-0.207
Destrictions	Transferring money/crypto is easy	-0.015
ixesu ictions	Can use across globe without any worries of currency	
	conversion	0.107
	No time restrictions to transact	-0.101

We find in the table above that the simple process and an alternative investment opportunity are positive but coming to the restrictions and popularity it is showing negative. The reason being the recent crash in the market due to the government's decision to tax the crypto income. The third factor that is very popular also has negative variance explained showing that the popularity started declining.

# Conclusions

We find that the major factors motivating people for investments in crypto currencies is the simple process through online exchange platforms and a source of alternative investments. As the saying in finance goes "Don't put all your eggs in in one basket", people need alternative investment opportunity at the same time it is an alternative to the banking system as well.

## The Nexus of Inflation, Export-Import and Exchange Rate: An Evidence from India since Economic Reforms

Neeraj Kumar Gargie S Anand Pooja Choudhary

#### Abstract

The present study is to determine the relationship between currency depreciation and imports, exports, and inflation rate in India. The data used in this study were taken from World Bank, and RBI for the 30 years i.e. 1991 to 2021. It was once believed that exports and currency depreciation would go hand in hand, and Exports increase as a result of currency depreciation. In contrast, the study discovered a negative correlation between imports, inflation, and the exchange rate and a positive correlation between exports and the exchange rate. According to the study, growing exports is excellent for a country. But, an economic slump can happen as a result of a drop in the inflation rate. Which of course, it boosts exports and raises import costs. Therefore, the government must concentrate on putting certain measures into effect in order to reduce inflation.

Keywords: Exchange rate, Inflation, Currency depreciation, Export, Import

#### Introduction

When the value of the currency declines, exports rise and the total number of imports decreases. The economy's foreign reserves are impacted by this process (Kumar and Begam, 2020). Currency depreciation boosts the trade deficit and expand the trade surplus (Alemu and Jin-Sang, 2014). Exports start to cost less than imports. When an economy has a weak monetary policy, a currency may occasionally devalue (Goldfain and Werlang, 2000). The price level rises as a result of the nowexpensive exports. Now, if there is economic inflation, exports, imports, and the exchange rate all can be influenced. Additionally, it causes the currency to lose value. A growth in exports and imports defines an efficient economy. A decline or increase in any one of the variables influences the exchange rate. If the import market is larger than the economy's export business, then this situation can possibly cause a depreciation in the currency (Egilsson, 2020). Balance of trade plays a significant role in determining the value of the currency. A rise in inflation decreases the purchasing power of the currency thus leading to depreciation of the currency. It is seen that the currencies tend to depreciate in countries with higher inflation rate. The export, import and inflation affect the economy's exchange rate. Also, exchange rate influences the economy's efficiency and overall economic health. Currency depreciation helps the export business. The exporters get a chance to sell more. On the other hand, the imports may get some disadvantage. Currency depreciation is the fall in the currency value with the respect to the other currencies. Indian economy observed a fall in currency at 77.58 against the US\$<sup>1</sup>.

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<sup>&</sup>lt;sup>1</sup> Outlook, June 1, 2022, Available at: <u>https://www.outlookindia.com/business/rupee-falls-to-all-time-low-how-it-impacts-economy-news-195932</u>

From 1995 to 2021, the rupee has depreciated from 31 to 74. The year 2021, India saw the currency depreciation in three out of its four quarters  $^{2}$ .

In India, the rupee has depreciated several times. The economic crisis of 1991 during the fall of Soviet Union had an effect on Indian rupee. The foreign reserves were decreasing. This crisis had a long-term effect on the Indian economy that the rupee kept fluctuating in early 2000s. The 2016 demonization when the 100- and 500-rupee note were scraped overnight. This slowed down the export business but only for a shorter duration. According to Reserve Bank of India (2017), the export slowed down in November 2016 and reached to 2.4 per cent in US\$. When an economy's products are sold in the other country then it refers to as export. The two variables i.e., currency depreciation and exports have a positive relation between them. Currency depreciation makes the exports less expensive which increases the trade surplus. Sometimes this currency is deliberately devaluated to increase the volume of exports (Goodwin et al., 2019). Currency depreciation and imports holds a negative relationship. The imports tend to become expensive. It affects the foreign reserves of the economy and causes trade deficit. India is heavily dependent on oil from foreign countries. The oil shocks have affected the imports. According to Ministry of Commerce and Industry, imports hit the lowest at 17.12 per cent in April 2020 in the whole decade. This was the same time when Covid Pandemic had hit the whole world. Amid the Russia-Ukraine War, a surge is seen in the already rising petrol and diesel prices. According to Vasudey (2022), the rise in crude oil prices will lead to trade deficit. And the rising import prices would cause inflation within the economy.

Currency depreciation helps the export business. The ongoing Russia- Ukraine War has affected the imports and exports of the economy. Russia and Ukraine are both the exporters of Wheat but the war between them led to rise in global prices leading to inflation. The major effect was seen on Wheat crop in Indian economy where the prices within the economy were seen continuously rising and was indicating to possible food insecurity which eventually led to the wheat exports ban by the country. Indian exports saw a 33.33 per cent increase in exports during the Covid- 19 Pandemic. Bhusnurmath, M (Consulting Editor, ET Now) stated that the Indian currency is probably going to depreciate more in the near future. The oil shocks have already impacted the oil prices and with that inflation is continuously rising.<sup>3</sup> In this context, the present study is conducted to analyse the nexus of inflation, export-import and currency depreciation with respect to Indian economy. The present study is organized into five sections including the introductory one, section 2 describes literature review; section 3 explains database and methodology of the study; section 3.1 and 3.2 deals with hypothesis formulation and descriptive analysis, respectively; section 4 contains discussion on results of the analysis; and the conclusion and implications of the study are discussed in section 5.

# 2. Literature Review

In terms of the review of the literature in this context, the prior research is identified from developed markets covering cross-country studies and emerging markets. The current part reviews earlier literature that relates to both types of economies—developed and emerging—in detail.

<sup>&</sup>lt;sup>2</sup> Business Line, February 8, 2022, Available at:

https://www.thehindubusinessline.com/markets/forex/rupee-depreciated-in-three-out-of-fourguarters-of-2021/article64996351.ece

<sup>&</sup>lt;sup>3</sup> The Economic Times, May 10, 2022, Available at:

https://economictimes.indiatimes.com/markets/expert-view/why-the-rupee-is-likely-to-depreciateeven-more-in-coming-days/articleshow/91459170.cms

# 2.1 Relationship between Currency Depreciation and Exports

Currency depreciation is the devaluation of the value of the currency with respect to the other currencies and foreign reserves. Currency depreciation can be caused by political instability, a weak monetary policy, changes in interest rate and many other factors. Currency depreciation makes the exports less expensive which increases the trade surplus. Faisal and Khan (2019) explores the various reason for currency depreciation. The study found out that a depreciated currency ends up bringing higher return on exports. Another study by Kumar et al. (2020) explores the impact of currency depreciation on exports of SAARC countries spanning from 1981 to 2017. The primary determinants used were real effective exchange rate, exports, inflation and gross capital formation. The study resulted that there exists an inverse relationship between currency depreciation and exports. According to Oluvemi and Isaac (2017), the exchange rate affects the exports in a negative manner while imports were affecting in a positive manner. The authors have investigated the impact of exchange rate on imports and exports in Nigeria from 1996 to 2015 using Vector Auto Regression (VAR) and Augmented Dickey Fuller (ADF) test are to obtain the results from the data. Similarly, the investigation done by Uysal and Mohamoud (2018) on the impact of export on East African countries from 1990-2014 also states that the exchange rate has a positive effect on imports and inflation holds a negative effect on exports. Also, Turroni (2007) in his book shares that in the days of post- war in Germany, the foreign exchange was affected and there was seen a fall in the exports market. Similarly, Piyush Goyal, the Commerce and Industry Minister of India addressed that the ongoing Russia- Ukraine War may hamper the export of a few products.<sup>4</sup> The outcome of Oluyemi and Isaac (2017) and Uysal and Mohamoud (2018) was different from Fang and Miller (2004) who showed that the exchange rate depreciation and exports carry a positive relationship but it hasn't caused a significant effect on the exports. The study has used bivariate GARCH-M model for the study to explain the relationship between exchange rate depreciation and exports of Singapore. There was a positive relationship concluded by Lee S.H. (2002) in the South Korean economy after witnessing a boost in the export sector. De Vries (1968) investigates that the impact of exchange rate depreciation on less developed countries was more significant than the developed countries. This conclusion relates to the investigation done by Freund and Pierola (2008) regarding the export scenario for seven years in some countries using regression analysis. They found that in the case of developing nation, there is an undervaluation of the exchange rate whenever export increases. Whereas in the case of developed nations, the effect of the exchange rate was less. Yihevis (1997) tried to look into the effects of parallel exchange markets on export adjustment to official currency depreciation. For the study, the author collected the data of 13 African countries and found out that the parallel currency premium had a negative impact on depreciation.

# 2.2 Relationship between Currency Depreciation and Import

Currency depreciation and imports hold a negative relationship. The imports tend to become expensive and affect the foreign reserves of the economy further causing a trade deficit. Singh (2013) in his study investigates the impact of the depreciation of the rupee on the Indian Economy. The author concludes that the developing countries tend to spend more on imports. And the currency depreciation can lead to an increase in the import prices further leading to inflation. Similarly, Muzulu (1994) explores the same results while investigating the manufacturing sector of Zimbabwe from 1980- 1991. The study was conducted on 38 firms in total and out of them, 6 reported that the currency depreciation of the Zimbabwe dollar caused the increase in imports and fall in the exports. Alongside, an emphasis was laid

<sup>&</sup>lt;sup>4</sup> The Economic Times, March 16, 2022, Available at:

https://economictimes.indiatimes.com/news/economy/foreign-trade/russia-ukraine-war-exports-ofsome-products-from-india-likely-to-be-affected-says-

govt/articleshow/90272748.cms?utm\_source=contentofinterest&utm\_medium=text&utm\_campaign= cppst

by Kim et al. (2003) who resulted that that a change in US Dollar affected the imports, but change in Korean currency has not caused a much significant effect on imports. The authors studied the relationship between change in currency and import of forest products in Korea using the Vector autoregressive model. Landon and Smith (2007) emphasise on the exchange rate and imports of machinery and equipment. The results collected are based on two importing and exporting countries i.e., Australia, Canada and Japan, US respectively. The study concluded that currency depreciation and imports had a negative relationship whereas it turned out to be positive in case of exports. Coetzee et al. (1997) also found out that there was an increase in the import prices due to currency depreciation while deriving the relationship between currency depreciation and trade liberalization in the South African economy using Computable General Equilibrium (CGI). Onwuka and Zoral (2009) studied the relationship between Turkey's foreign direct investments and imports from 1950- 2004. The empirical method used are Auto Regressive Distributive Lag (ARDL) Method and Philips and Hansen's Fully Modified OLS (FMOLS) Method. The determinants used are income growth and domestic price level. The study resulted that there exists a long-run relationship between the two variables. In a study done using a similar method, Demiral and Mehmet (2016) conclude that the imports are highly dependent on exports and the currency depreciation of the Lira has caused a less significant effect on exports. The authors have investigated Turkey's trade balance and currency depreciation taking 25 OECD countries into account from 1998- 2015. The empirical method used is Autoregressive Distributed Lag (ARDL) method. Mallick and Marques (2008) study the pass-through of exchange rate depreciation and tariffs into import prices in India from 1990- 2001 using ERPT method. On the other hand, Sinha (2017) studies the impact of the import of crude oil and dollar- rupee rate of exchange using the Multivariate generalised autoregressive conditional heteroskedasticity (MGARCH) model from 1992-2014 in India. The outcome of the study came out to be that currency depreciation was affected with the rise in the import of oil. An economy's indebtedness has a negative impact on its imports. Nations with a weaker domestic currency make the imports more expensive. In the resemblance to the statement, Towbin and Weber (2013) studies the foreign currency debt and exchange prices concerning import prices. The study seems to reveal that a flexible exchange rate tends to decrease if an economy's foreign indebtedness is high and it imports goods with low pass-through.

## 2.3 Relationship between Currency Depreciation and General Price Level (Inflation)

Rena et al (2011) investigate the effect of trade balance and currency depreciation using the absorption and monetary approaches, as well as the Marshal Lerner condition in Papua New Guinea. The empirical method they used to calculate the relationship between currency depreciation and trade balance is Ng-Perron test by Johansen and Juselius (1990). The result showed that the trade balance, currency depreciation, real income, and money supply have a long-term relationship. This outcome relates to that of Imimole and Enoma (2011) who examined the impact of currency depreciation on inflation in Nigeria from 1986 to 2008. They used Auto Regressive Distributed Lag (ARDL) Cointegration procedure to calculate the result. The study resulted that the currency depreciation causes the inflation to rise. The primary determinants of inflation are currency rate depreciation, money supply, and real gross domestic product. The naira depreciation shows a positive effect indicating a long- term effect on inflation. The research by Adeyemi and Isiaq (2021) showed some connection here in terms of outcome and the method with Imimole and Enoma (2011). The authors emphasised the studies on the relationship among currency depreciation, money demand and trade balance in Nigeria from 1986-2018. The method used for the study is Autoregressive Distributed Lag (ARDL) method. The study resulted in that currency depreciation holds a positive effect on the trade balance and money demand. It also concluded that the currency depreciation had a positive effect on the trade balance majorly in long run. Shaik and Gona (2020) emphasise the relationship between exchange rate and economic growth in India from 1990-2017 using the ordinary least square and VECM Granger Causality method. the empirical evidence resulted that exchange rate, inflation rate, economic growth and rate of interest tend to hold a short- term relationship. This study resulted differently from that of Rena et al (2011) and Imimole and Enoma (2011). Obstfeld (1991) studies the impact of economic policies on economic behaviour. That there are some policies which lead to a rise in inflation. Similarly, Batra and Beladi (2008) emphasise the various approaches to currency depreciation. The authors observe that currency depreciation was always followed by the inflation in the 1990s. Mallick (2005) studies India's tight credit policy in 1991 with that of devaluation with reference to the trade and inflation and concludes that the devaluation affects the trade balance negatively. In another study consisting of the same author, Granville and Mallick (2005) studies the impact of inflation in Russia from 1992. The key determinants of the study are the rate of interest, exchange rate and money supply. It resulted that the inflation was the variable which was affected the most by the rate of interest in the long run. And nominal interest rates negatively affected inflation in Germany from 1920- 1923 to gain insights into German hyperinflation. At another time, Hassan (1992) has examined the currency depreciation, and domestic inflation with few other variables with respect to Bangladesh from 1974- 1989. Both study observed desired outcomes as suggested most of the macrocosmic theories.

# 3. Data and Methodology

As per the nature of the study, the required secondary data were collected from various sources for the variables, i.e., import, export, inflation rate and exchange rate from the time period 1991-2021. Regression analysis is applied to measure the impact of currency depreciation on the variables. The data was extracted from various sources namely World Bank Reports and RBI.

# 3.1 Research Objective

The purpose of the research is to check the relationship between currency depreciation and import, currency depreciation and exports, and currency depreciation and inflation rate in India. Here, currency depreciation is calculated in the terms of exchange rate. It is assumed that the relationship between currency depreciation and exports would be positive. And the same goes with the inflation rate. Whereas the relationship between currency depreciation and imports were expected to be negative. The present study is based on the following hypothesis:

# H1: Export does not affect Exchange rate

Usually, it is seen that Export and exchange rate have a negative relationship. Whenever there is a depreciation in currency, exports business increases.

# H2: Import does not affect Exchange rate

There exists a positive relationship between import and exchange rate. Import market witnesses a fall during currency depreciation.

# H3: Inflation rate has no impact on Exchange rate

Depreciation of a currency has a direct effect on the inflation in the economy.

Below is the model to estimate the exchange rate.

$$EXCHR = \beta_0 + EX\beta_1 + IM\beta_2 + IR\beta_3 - \dots (1)$$

Here, *EXCHR* refers to the Exchange Rate which is taken here as a proxy for currency depreciation. *EX* and *IM* refer to export and import respectively. *IR* means the inflation rate.  $\beta_0$  is the intercept and  $\beta_1$ ,  $\beta_2 \& \beta_3$  are the regression coefficients. Exchange rate is taken to be a dependent variable, while export, import and inflation rate are taken as an independent variables.

## 3.2 Descriptive Statistics

The study has used the figures from 1991 to 2021 for the variables namely exchange rate, exports, imports and inflation. Figure 3.1 provides the relationship between Exchange Rate and Exports. In 1991, the exchange rate stands at 22.74. At the same time, India saw its one of the worst economic crises. The gulf crisis of 1990 which caused the oil shocks and the fall of Soviet Union are added to the factors that affected the economy in 1990s. The export services got severely declined while India faced difficulty in paying for its imports bill. In July 1991, Narasimha Rao government devalued the Indian currency two times to fight the economic crisis. In 2016 India saw a slight dip in the exports due to demonetization. But still the growth of the exports was not impacted ta large extent. The world trade was impacted heavily when Covid-19 struck (Hofmann et al., 2021).





Source: Authors' own calculations

Figure 3.2 provides the relationship between Exchange Rate and Imports. Indian exports saw a surge till 2010. The global financial crisis of 2009 impacted the exports and import in the economy. The 2016 demonetization saw the downfall in the import business. Though the impact was less, the imports started inclining from 2017. The imports witnessed a decline from 2019 onwards when India's trade deficit declined to \$11.25 billion from \$14.49 billion in December 2018. In 20120, when the entire nation went into the lockdown, the imports fell down by 12. 41per cent and India saw a trade surplus for the first time in 18 years.





Authors' own calculations

Figure 3.3 depicts the relationship between Exchange Rate and Inflation. In 1991, the inflation was 13.87per cent, the 1991 crisis caused a disbalance in the foreign reserves of the economy. It came down to 6.33per cent in 1993. Inflation remained constant from 1994- 1995 maintaining the rate at 10.2per cent. At this period, there was a surge seen in the exchange rate and in economic growth. 2008- 2009 was the year when the recession had it globally. Inflation stood at 8.35per cent in the year 2008 and reached to 11.99per cent till the end of 2010. The inflation rate kept on declining after 2014 and it was further affected by the demonetization. And then the prices surged during the pandemic years. It went from 6.62per cent to 7per cent from 2020 to 2022. According to Economic Survey 2021-22, there was a surge in inflation due to supply chain disruptions which happened during the sudden lockdowns.<sup>5</sup>



Figure: 3.3

Source: Authors' own calculations

<sup>&</sup>lt;sup>5</sup> Economic Survey, 2021- 22, Available at:

https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap05.pdf

Table 3.1 outlines the brief depiction of the variables from 1991- 2021 spanning for over 30 years. The mean value for exchange rate (EXCHR) stands at 1.667 and that of exports (EX), imports (IM) stand at 4.967 and 5.095 respectively.

Variable	EXCHR	EX	IM	IR
Mean	1.667	4.967	5.095	-1.182
Standard Error	0.024	0.083	0.093	0.035
Median	1.660	5.013	5.174	-1.179
Standard Deviation	0.132	0.465	0.516	0.193
Sample Variance	0.017	0.216	0.266	0.037
Kurtosis	-0.152	-1.633	-1.679	-1.371
Skewness	-0.378	-0.166	-0.173	0.086

# Table 3.1: Descriptive Statistics Summary

Source: Authors' own calculations

On the other hand, mean value of the inflation rate (IR) -1.182 showing a possible overall deflation in the economy. Also, it can mean that the purchasing power of the rupee has increased. Median is depicting the middle values for the variables. The data below shows that the inflation rate is positively skewed while the other three variables are negatively skewed.

# 4. Result and Discussion

The researchers have performed Correlation Analysis and Regression Analysis to study the impact of currency depreciation on exports, imports and inflation rate. Before applying the regression analysis, correlation among variables has been checked so that the error caused by multi-collinearity of variables can be avoided. Table 2 exhibits the correlation analysis results. Each cell in the table shows the correlation between two specific variables (Adeyemi and Oseni, 2021; Uysal and Mohamoud, 2018). Table 4.1 shows the relationship between exchange rate, export, import and inflation rate. The correlation between exchange rate and export and import is 0.87 and 0.85 i.e., they are positively correlated to the exchange rate. On the other hand, the correlation between these two variables.

Variable	EXCHR	EX	IM	IR
EXCHR	1			
EX	0.874	1		
IM	0.858	0.998	1	
IR	-0.492	-0.194	-0.173	1

# **Table 4.1: Correlation Analysis**

Source: Authors' own calculations

We have performed Hypothesis testing is also performed to know whether exchange rate is positively or negatively related to import, export and exchange rate. Table 4.2 helps in understanding the relationship between exchange rate, export, import and inflation rate using regression analysis. For this data was extracted from 1991- 2021 i.e., for 30 years. The export coefficient is showing a positive sign at 1per cent level of significance. So, a 1per cent increase in exports increases the value of exchange rate by 0. 90 per cent. It can be seen that there exists a positive relationship between export and the exchange rate. Import shows a negative sign at 5per cent level of significance. And Inflation rate shows a negative sign

at 1per cent level of significance. Thus, as the value of inflation rate increases by 1per cent, the exchange rate falls by 0.19per cent. The coefficients of export and inflation rate tells that p value of is less than the 0.05 and the coefficient of import is less than the significance limit of 0.01. Thus, H1, H2 and H3 are rejected.

Variable	Coefficients	Hypothesis Result
EX	0.907***	HI Rejected
	(0.007)	
IM	-0.609**	H2 Rejected
	(0.037)	
IR	-0.193***	H3 Rejected
	(0.000)	
Intercept	0.038	
	(0.786)	
R Square	0.891	
Adjusted R Square	0.879	
F-Statistic	73.810***	
	(0.000)	

## **Table 4.2: Regression Analysis**

Source: Authors' own calculations

*Note:* \*\*\*indicates 1 per cent level of significance, \*\* indicates 5 per cent level of significance

In a particular study, Foreign Direct Investment (FDI) was found to have a positive impact on exports market. Also, inflation came out to be negatively correlated to exports (Uysal, and Mohamoud, 2018). The exchange rate was positively impacting the export and import in a study done from 1970- 2017 with respect to India (Shaik, and Gona, 2020). Also, in case of Fang and Miller (2004), the exports had a positive impact on the exchange rate. These results are nearby similar to our study where the correlation analysis proved that, exports and imports are positively related to the exchange rate. And exchange rate and inflation rate had a negative relationship. We also estimated the results using regression analysis which resulted in that the imports and inflation rate were negatively related with the exchange rate and, exchange rate and exports are positively related.

## 5. Conclusion and Implications

The research studied that relationship of currency depreciation with the import, export and the inflation rate from 1991- 2021 in India. The study was tested using hypothesis testing with the support of correlation and regression analysis. The balance of trade gets very much affected by the currency depreciation. It was seen that exchange rate impacted the export business in a positive manner. The lower the currency, the higher would be the exports. From the findings of Correlation analysis, the imports seem to be positively affected by the exchange rate, whereas exchange rate was negatively affecting the imports in case of regression analysis. On the other hand, inflation rate was negatively affected by the exchange rate. A rise in inflation rate is a cause of depreciation of the currency in the economy.

It can be suggested that a rise in exports is a good motive for a country but a continuous rise in the long run is might not be efficient for the economy. Also, a negative result of the inflation rate can cause a recession in the economy. Also, it causes a rise in exports to and imports tend to become expensive. Government must work upon on introducing some measures to correct the inflation rate. There must be a balance in trade accounts. Also, government must ensure a well- defined policy to improve the quality of export and imports business. Also, a special concern must be given to the import growth in India.

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# An Investigation of Migrants' Livelihood Status During Pre and Post Migration

## Vikas Pradhan Mahendra Pal

#### Abstract

Migration is common in India and abroad for either earning purposes or some other purposes. The present study tries to investigate the status of livelihood along with their standard of life changed due to migration. For it the primary data collected through questionnaire and survey method has been analysed and is conclusive of not any great change or upliftment in statusof livelihood of migrants'. Data reveals that migration is most prone in low income group and in two sectors namely industrial sector and agriculture sector. The basic reason of migration was found to sustain life and livelihood.

## Key Variables

Migration; Income, Saving, Consumption, Livelihood, Population, Land holdings.

#### Introduction

People are motivated to move by the prospects of improved access to work, education, civil and political rights, security and health care (HDR 2009)<sup>1</sup>.In Indian context, Census of India considers for those people also as migrant who have changed the place of residence even during less than one year (Census of India, 2011, GOI)<sup>2</sup>.

Migration is a multifaceted phenomenon which general involves the movement of people or individual from one place to another place with intentions of settling either permanently or temporally in the new location due to socio-economic, political and geographical reasons. But survival, livelihood, and subsistence of lifeare ingredient factors of are major reasons. Hence, the investigation of the study is confined to study the studies of livelihood of migrants.

Large numbers of people are migrating from rural area to urban area due to lack of employment because agriculturist not able to provide sufficient livelihood for growing population. Generally, people migrate from the over populated areas to the less populated areas, maintaining a balance between population and physical resources. Migration is usually as a result of a combination of push and pull factor but all are associated to the subsistence of life.

Decision of migration will functionally depend on two main variables which are income differential and the probability of obtaining a job which ensure a good subsistence of life. As a subject labour makes its own choice including the choice to migrate or not to migrate. When reproduction of labour power becomes problematic, the workers have to make a choice. They are faced with three alternatives (Shrestha, 1990, 57)<sup>3</sup>: (1) to stay back and make the best out of the existing relations of production in their native village. (2) to stay and revolt against the progressive relation. (3) Choice to migrate may have the forms of either seasonal, long-term circulation or permanent migration. Migration and the change in population distribution are also part of development process and by various stages of development in a country. Mechanisation reduced the demand of labour in agriculture sector while expanding industrial sector creates new employment opportunities in urban sector.So, rural-urban migration is regarded as a necessary factor of economic development as well as employment. If the people are migrating from an under populated area to over populated or optimal area, the resources-population ratio will be unbalanced and the results will be harmful to both areas and conditions of migrants *perse*.

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Key drivers of migration include employment, education, marriage, and escape from poverty, violence, conflict and environmental change. The basic factors which motivate migration may be further classified as 'Push Factors' and 'Pull Factors'. The push factors are the reason why people leave an area. These factors considered as theplace of origin. The Pull Factors are those factors which attract migrants to an area. These factors are considered as place of destination.

Both push and pull factors are themselves motivated by various other factors mentioned but to survive life is an important issue.

## Objectives

The main objectives of this study are given below.

- To compare the status of migrants' livelihood pre migration and post migration
- To investigate the status of migrants' livelihood after migration at the place of destination.

## **Review of Literature**

The recent trends of labour mobility were analysed on the basis of NSS estimates from the 49<sup>th</sup> (1992-93) and 55<sup>th</sup> rounds (1999-00) by **Srivastava and Bhattacharya (2002)**. This period shows a sharp increase in urban male mobility, with a significantly larger percentage of male migrants reporting economic and employment-related reasons for mobility, while other migrant streams showed a decline in the percentage of migrants moving for economic reasons. In 1990s may have provided greater opportunities for labour mobility to those who were better positioned, e.g. males in urban areas and in the non-agricultural sector.

According to Ravenstien's (1988) laws, migrants move from areas of low opportunity to areas of high opportunity. The choice of destination is regulated by distance and migrants tending to move to nearby place. Ravenstien further observed that rural urban migration produces a counter stream of return migration back to the rural areas. Lewis (1954) and Fie-Ranis (1960) both theories are based on migration from rural to urban areas. In LFR model, low productivity of labour (may be zero) in agriculture sector is the primary cause of migration from rural to urban areas. Only industrial sector generates capital for reuses which creates employment opportunities in industrial sector. Shresta (1962) developed a theory of migration which treats the decision to migrate as an investment involving an individual's expected costs and returns over time. It seems that migrants go because there is no future for them in an agrarian system that is overburdened by labour, rapid population increase and extreme land fragmentation, and where the "fixed resource" of land is defined by topography, hydrograph and climate. Todaro (1970) model offer a possible explanation of a common paradox observed in Third world cities, continuing massmigration from rural areas despite persisting high unemployment in these cities. According to it, any labour migrated from rural sector may remain unemployed even after going to urban sector. Basically, Todaro (1970) model is based on urban unemployment which generates due to migration from rural areas to urban areas. Urban point of view Todaro model presents a clear picture of migration as well as rural point of view Lewis and Fie-Ranis model.

**ChandraS (2002)** migration study show a slight growth in employment and that indicated a passive marginal change relating to salary and wage earners. Migration in Fiji is economically beneficial for migrants. Another study of **Shrestha (1988)** is focused attention on determinates older age group of 30 and above at the time of the migration and married migrants had shown preference for rural based search. The cumulative causation theory of migration is propounded that migration is sustained itself by creating more migration. On the basis of the theories reviewed above, it can be concluded that there is not a common theory or principle that can explain different types of migration. **Hussain (2004)** analysed that no availability of jobs was the main reason of migration. **Mishra (2008)** revealed that more than 60 percent people were migrate cause of push factors.**Jaleel (2009)**observed that migration has changed the

life style, consumption, spending on health and education in the Malabar region. Emigration has changed the tradition- bounded Muslim community to modernity and enabled them to cope up with the new challenges in life.

#### **Research Methodology:**

For the purpose of study the sample size of migrants has been collected without classifying the migration *perse*. The primary data of in and out migrants and their livelihood status has been collected through random sampling via questionnaire method. To investigate the status correlation method and t-test has been applied. For testing the hypothesis and attaining the objectives of the study variables of livelihood like income, saving, and consumption have been assessed. Employment, production, basic necessities etc. are generally considered as the means of livelihood but all of them could achieve or could be achieved only when the level of income, saving, and consumption improves. It has been assumed that if the above mentioned variable are noticing the changepositively the migrants' livelihood status is on the path of upliftment.



Figure-1, Migrated Population in Percentage

## Source: Indian census 2011 (Table no.D1)

Many studies in higher population states presents that higher migration rate due to employment, and health reasons as such facilities are not sufficient in the state for their residents.

# Data Analysis and Interpretation

The survey provides a deep picture of out-migrants from the village. Questionnaire covers the different aspects of migrants but it focuses economic factor of migration basically. Questionnaire also covers the impact of migration on migrants only. That person who has migrated cause of marriage (mainly female in India) and government job is not included I this study as a sample.



# Figure-2 ,Occupational Status of Migrants

# Source: Based on Primary Survey

The given figure depicts the type of work at the place of origin and destination. In the village before migrating in the village having the highest 43 percent are agriculture labour, most of them are labourer and less marginal farmer. Only 3 percent farmar is totally depend upon agricure. 28 percent are hoseholds and 21percent are student. 2 percent selfemployed, 2 percent Rajmistri and 1 percent Tailor respectively while at the place of migration after migrating having the highest 49 percent people involved in industrial work and 26 percent are working non industrial areas. 11 percent are hoseholds and 5 percent are student at the place of migration. 2 percent selfemployed, 2 percent Rajmistri and 5 percent Tailor respectively. In the urban and sub-urban areas, the presence of industrial sector is one of the labour observer sector. This job created by industrial sector for unskilled and semi-skilled labour is the main pull factor for lower strata of marginal farmers, landless labour, and household in rural areas population to migrate for better living prospects.

Table-1, Income					
Income per month (in Thousand Rs.)	at the place of migration	at the place of Origin			
0-4	18	39			
4-8	26	37			
8-12	45	23			
12-16	11	1			
Total	100	100			
Source-Based on Primary Survey					

Table 1 represents income per month of migrants at the place of migration and at the place of origin.

Table-2, Savings					
Savings per month (in thousand Rs.)	at the place of migration	at the place of Origin			
0	16	56			
0-2	5	33			
2-4	52	10			
4-6	22	1			
6-8	5	0			
Total	100	100			
Source-Based on Primary Survey					

Table no. 2 represents savings of migrants on monthly bases at the place of migration and at the place of origin. 16percent migrants have no savings at the place of migration and 56 percent migrants have no savings at the place of origin.

A complete picture of the questionnaire shows the economic impact of migration on migrants' life. There are both types as well as seasonal and permanent migrants included in the survey. Some of the migrants were living in debt in the village lack of proper source of income after migration they are saving with increasing consumption. The survey shows a positive impact on those small-age children; their family is permanently migrated in urban areas while a negative effect on seasonal migrants' children and old age children. Some male migrants have Manrega card and very few women are under Vidhwa, Mahamaya or Samajvadi pension scheme. Some migrants are living in slum yards in urban areas. Mostly married people migrates cause of push factors (unemployment, decreasing land holdings etc.) from the village.

#### Conclusion

Internal migration is mostly defined that people migrate from agriculture to industrial or nonindustrial urban areas. Decision of migration will be functionally depending on two main variables which are income differential and the probability of obtaining a job. Internal migration is a symbol of internal inequalities in terms of wage, opportunities and life style and international migration is a powerful symbol of global inequalities. It seems that the share of the labour force in agriculture is much smaller in developed countries than in less developed countries since agriculture is concentrated in rural areas so we can expect substantial migration from rural to urban areas as a country develops. Economic reforms would increase boost economy as well as job opportunities and leading to increase pull factors for accelerating rural to urban migration but economic adversely affect rural industries leading to increased rural-urban migration.

Distress migration occurs in areas where food security is low and the capacity of states is limited. The majority of poor's depend on agricultural production for subsistence in rural areas. Agriculture can only absorb a certain proportion of the labour force. Excess burden of labour on agriculture gives the low agricultural productivity in rural areas.

The survey shows a positive impact on those small-age children; their family is permanently migrated in urban areas while a negative effect on seasonal migrants' children and old age children. Some migrants are living in slum yards in urban areas. Mostly married people migrate cause of push factors (unemployment, decreasing land holdings etc.) from the village. Generally, most of the common factor of migration is push factors as well as economic distress in rural area.

## Recommendations to reduce migration from rural to urban areas:

- To decrease the growth of population because increase population is only most responsible factor of decreasing land holdings.
- Focus on allied agriculture activity not only agriculture and cash crops. These industries as like forestry, animal husbandry, fish culture and bee keeping are very helpful to increasing income and employment in rural areas.
- To improve implementation of government scheme to reduce poverty and inequality because more than half of the population is under poverty line in the village.
- Improve education because lack of technical education most of the migrants are doing unskilled labour work in the place of migration.
- Improve urban amenities in rural areas such as electricity, colleges of higher and technical education, micro and small industries.
- To improve women participation in economic activities in the village side.

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#### Critical analysis of India's Foreign Trade and its Influence on the Economy

#### M.Sekar

#### Abstract

Foreign trade plays an important role in the development of the economy, the development of the country is guaranteed to a point if it has a favourable balance of trade. The foreign trade can influence the economy, especially the GDP and the inflation rate to an extent, the study is done keeping this theory as an assumption. The objective of the study is to find out whether the rate of exports and imports are proportional and how the exports have an influence on GDP and inflation. The data has been collected from the secondary source from the website of RBI and Macro trends. Ten years' data is collected for calculating the growth of exports and imports and seven years' data is collected for finding out the impact of export on GDP and inflation. The author uses Compound Annual Growth Rate (CAGR) and multiple regression techniques as analysing tools for the study.

The idea behind the study is to find out whether the foreign trade in India is showing a positive sign or not. From the study it is found that there is great mismatch between the value of exports and imports which means there is an unfavourable balance of trade but one parameter remains encouraging, that is, the growth rate of exports, both on oil and non-oil items which is more than the growth of imports, this leaves an assumption to the author, that at some point of time there may be a favourable balance of trade. Off late the export of services from India has been very encouraging, the fluctuation in exchange rate of Indian rupees with either dollars or euros causing a serious concern in the Exim trade. The US Dollar and Euros are valued higher compared to the Indian Rupee, one of the reasons, belief and an assumption is that, due to higher imports than exports.

From the study one could infer that the year on year growth rate of exports since 2012-13 was growing steadily except in few instances, the growth rate of exports during 2019-20 and 2020-21 is not encouraging, which is essentially due to COVID, but the export market bounced back during 2021-22. The main reasons for higher exports during 2021-22, is largely due to faster recovery of markets, better consumer spending due to higher disposable income and strong push from the Indian export market. To infer deeper from the study, the rate of growth on imports is on the higher side but a consolation is that the growth rate of exports is more than the imports during the ten years' period (2012-13 to 2021-22) except in a few instances. But after the pandemic, the domestic demand got revived, this has essentially influenced the growth rate of imports.

The learning further reveals that the export performance has a nexus with GDP and inflation. The assumption is that exports enhance GDP and lowers inflation rate. After applying the multiple regression, the results disclose that the, Export performance has an impact on inflation and GDP.

#### Key Words:

Foreign Trade, GDP (Gross Domestic Product), Inflation, Multiple Regression

#### Introduction

India is a growing economy, foreign trade is not new to India, since immemorial India is known for overseas trade. From the history it could be seen that Raja Raja Chola (947-1011AD) of south India, who is known for maritime trade, has done trading with Indonesia, Malaysia, Cambodia, China, Thailand and in the entire south east Asia including Laos. (Mishra, 2020).

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Foreign trade plays an important role in the development of the economy, if a country has favourable balance of trade, i.e., if the value of exports are more than the imports there is no doubt the country is marching towards the of road of success. The author feels that the foreign trade can influence the economy especially the GDP (Gross Domestic Product) and the inflation rate to an extent if not to a larger extent, keeping the other parameters as constant.

While doing the study the foreign trade also fairly has an effect on Gross National Income, Net National Income and Per Capita GDP, but the objective of the study is restricted to find out whether the rate of exports and imports are proportional and how the exports has an influence on GDP and inflation. The data has been collected from the secondary source from the website of RBI and Macro trends. Ten years' date is collected for calculating the growth of exports and imports and seven years' data is collected for finding out the impact of export on GDP and inflation. The author uses Compound Annual Growth Rate (CAGR) and multiple regression technique as analysing tools for the study.

## 1. Literature Review:

The paper envisages the relationship between the international trade and GDP, the paper argues that due to increase in international trade many sectors are benefited including corporates, thus paving way to growth in the economy. Globalization have paved the way to interlink between the economies.(Surugiu & Surugiu, 2015)

The study makes an attempt to correlate FDI and international trade, the study concluded that the FDI has expressively contribute in the development of the economy for a shorter period but the export can bring more FDI into the economy for a short period as well for a long period.(Jana et al., 2020)

This study argues the influence of public revenue and deficit (fiscal) on growth of the economy, the study is done with twenty Asian Countries. The outcome of the study states that the fiscal deficit has negatively impacted the economy in the short run as well as in the long run. In the developing economies the dependency of fiscal deficit is more, the Asian countries are careful in levitating public revenue, so that better results can be witnessed.(Amgain & Dhakal, 2017)

This paper examines the connection between GDP with the indices like Import and Export pertaining to India. The result of the study states that in a long run there exist a correlation between foreign trade with GDP. (Dr. Sachin N Mehta, 2012)

This paper checks out the association that exist between interest rates and inflation and the development of the country through it empirical study, the result reveals an interesting outcome that there is an adverse correlation between GDP on interest rate.(Gowda, 2020)

This paper debates the linkages between growth in the economy vis-a-vis growth in population. This study is taken over a period of two hundred years trying to figure out how the relation exist between growth in population vis-a-vis per capita output growth. Small growth in population in large income economies may produce social and economic issues, whereas the economies with scanty income but large growth in population may have a lesser economic development. (Peterson, 2017)

The Service exports is largely depending on volume of goods exported especially in the emerging economies. This service exports have a relation in export of IT services. (Roelfsema et al., 2021)

This study finds the relationship between GDP, inflation and population. The result reveals that population of the country has significant impact on the GDP, further to state that inflation and population plays an important role in the growth the country.(Jearth et al., 2019)

This study speaks on how Foreign Institutional Investors, BoPs, FOREX reserves, Fiscal deficit at current prices and inflation have an impact on the GDP of the country.(Divya & Devi, 2014)

In all the above reviews effort is not made to connect export and international trade to GDP and inflation, this paper envisages that exports from India and foreign trade connects GDP and Inflation rate, hence an attempt is made to fill the gap.

# 2. Model Formation:

An attempt is made to find out Compound Annual Growth Rate (CAGR) for ten years on exports and imports of the country segregating into oil and non-oil commodities, the CAGR is calculated by using an online tool.

Further to strengthen the study growth rate is calculated year on year on total exports and imports of the country.

(Trade of the current year/ Trade of the previous year) X 100

Effort is also made to calculate the growth rate of exports, growth rate of GDP (Gross Domestic Product) and inflation rate to find out how the exports influence the GDP and inflation.

Multiple Regression technique is widely used in reviewing the relationships between two or more variables (Uyanık & Güler, 2013)

 $\hat{y} = b_0 + b_1 x_1 + b_2 x_2$ 

'y' is a dependent variable while 'x' is an independent variable

The author is of the opinion that Exports from India is dependent on indicators like GDP and inflation rate. And also to find out how much is the impact.

The first model is formulated as follows

y - Exports

 $x_1 - GDP$ 

 $x_2$  – Inflation Rate

# 3. Analysis and Interpretation:

Data are collected through the secondary sources are analysed as follows

Table-4.1	CAGR of India's Foreign Trade				(Rup	ees in Crore)
Year	Exports			Imports		
1 cui	Oil	Non-Oil	Total	Oil	Non-Oil	Total
2012-13	330819	1303500	1634318	891871	1777291	2669162
2013-14	383248	1521763	1905011	997885	1717548	2715434
2014-15	346082	1550363	1896445	842874	1894212	2737087
2015-16	199638	1516747	1716384	540505	1949801	2490306

2016-17	211509	1637925	1849434	583217	1994458	2577675
2017-18	241435	1715080	1956515	700321	2300713	3001033
2018-19	325929	1981797	2307726	986275	2608400	3594675
2019-20	292340	1927514	2219854	925168	2435787	3360954
2020-21	190896	1968147	2159043	611353	2304605	2915958
2021-22	503850	2643171	3147021	1207803	3364972	4572775
CAGR	4.30 %	7.33 %	6.77 %	3.08 %	6.59 %	5.53%

Source: RBI website

To analyse the foreign trade of India, the exports and imports for ten years is considered, the CAGR is calculated for ten years to find out how the growth rate in exports and imports fluctuates.

India has an unfavourable balance of trade, usually the exports are less than the imports in terms of value. When one analyses from the above table it can be inferred that the growth rate of export of oil for ten years is more (4.3%) than the growth rate of import of oil (3.08%), so is the case of growth rate non-oil exports vs growth rate of non-oil import. Over a period of years, when the growth rate of exports increases exponentially than the imports there is every possibility of a favourable balance of trade, but the import value is alarming compared to the value of export, when one goes deep into the economic aspect, it is understood that this huge unfavourable variance in balance of trade is largely due to lesser export from India compared to imports and may also due to the value of Indian currency exchanged with dollars or currencies with higher liquidity. This theory holds good only when one keeps the other economic indices as constant.

Table-4.2	Growth of	' India's Foreig	gn Trade (YoY)		
	Exports		Imports		Trade Balance
Year	Total	Growth rate	Total	Growth rate	Total
	(Rs.in Crores)	(%)	(Rs.in Crores)	(%)	(Rs.in Crores)
2012-13	1634318	0	2669162	0	-1034844
2013-14	1905011	116.56	2715434	101.73	-810423
2014-15	1896445	99.55	2737087	100.80	-840641
2015-16	1716384	90.51	2490306	90.98	-773921
2016-17	1849434	107.75	2577675	103.51	-728242
2017-18	1956515	105.79	3001033	116.42	-1044519
2018-19	2307726	117.95	3594675	119.78	-1286948
2019-20	2219854	96.19	3360954	93.50	-1141100
2020-21	2159043	97.26	2915958	86.76	-756914
2021-22	3147021	145.76	4572775	156.82	-1425753

The table 4.2 explains the growth of India's Foreign Trade year on year. It can be inferred that the exports from India in terms of value shows a roller coaster performance, there is growth in exports since 2015-16 to 2018-19. There is a drop in exports during 2019-20 & 2020-21, this is essentially due to the impact of COVID, but there is a quantum jump in the growth rate of exports during 2021-22 (145.76%) which is very encouraging. At the same time the growth rate in India's Import is also high compared to the exports during the corresponding years which is slightly a cause for concern which naturally impacted the trade balance.

Table-4.3	ble-4.3 Impact of India's Export on Inflation and GDP				
Year	Total Exports (Rs. in Crores)	Growth rate (%)	Inflation Rate (%)	Gross Domestic Product (Rs. in Crores)	Growth rate (%)
2015-16	1716384	0.00	4.91%	13771874	0
2016-17	1849434	107.75	4.95%	15391669	111.76
2017-18	1956515	105.79	3.33%	17090042	111.03
2018-19	2307726	117.95	3.94%	18899668	110.59
2019-20	2219854	96.19	3.73%	20074856	106.22
2020-21	2159043	97.26	6.62%	19800914	98.64
2021-22	3147021	145.76	5.13%	23664637	119.51

Source: RBI website & <u>www.macrotrends.net/countries/IND/india/inflation-rate-cpi</u>

India's Foreign Trade has great influence on the economy, particularly the exports have a great impact on the inflation and GDP. From the above table one can assume that whenever there is an increase in exports, the GDP also shows an increasing sign and inflation is going down in most of the years considered. To analyse deeper, (table 4.3) during 2021-22 the exports shows a growth rate of 145.76%, GDP showing an increasing rate of 119.51% with an inflation rate going down to 5.13%. The theory behind this is, there is a trivial impact on GDP and inflation due to exports, but at the same time export alone do not constitute an impact on GDP and inflation, there are other indices which strongly influence the GDP and inflation. This paper argues only with reference to the foreign trade and how it has an impact on GDP and inflation keeping other parameters constant.

Table-4.4 Calculation of Multiple Regression with Exports as Dependent Variable					
Year	Exports	Gross Domestic Product	Inflation Rate		
	Rs.in Crores	Rs.in Crores	(%)		
2015-16	1716384	13771874	4.91		
2016-17	1849434	15391669	4.95		

2017-18	1956515	17090042	3.33
2018-19	2307726	18899668	3.94
2019-20	2219854	20074856	3.73
2020-21	2159043	19800914	6.62
2021-22	3147021	23664637	5.13

The author applies multiple regression technique to find out how Exports from India is dependent on GDP and Inflation.

Exports is assumed as a dependent variable and GDP and Inflation Rate kept as independent variable

 $\hat{y} = b_0 + b_1 x_1 + b_2 x_2$ 

The calculated value is as follows

Multiple R = 0.9297

Coefficient of determination  $r^2$  is 0.8644 which tells the percent of variation in y which is explained by the x variables.

Adjusted R Square is 0.796602 which adjust for the number of terms in a model, used this if more than one x variable

 $\hat{y}=b_0+b_1x_1+b_2x_2$ 

 $\hat{y}$ =233168.9+0.133082x<sub>1</sub>-4251.9x<sub>2</sub>

 $b_0=233168.9$  Y intercept. This is the value of y when all the x's are 0

b<sub>1</sub>=0.133082 Slope for "GDP" this is expected increase in Exports corresponding to

a one-unit increase in "GDP" when the other independent variables do not change

 $b_2$  = - 4251.9 Slope for "inflation rate" this is expected decrease in Exports corresponding to every one unit of "inflation rate" when the other independent variables do not change.



From the above diagram one can assume that, the increase in exports leads to increase in GDP, keeping other parameters constant, by and large and also reduction in inflation rate except in few instances. The growth trend in GDP also shows a positive sign.

## 4. Conclusion and Discussion

The idea behind the study is to find out whether the foreign trade in India is showing a positive sign are not. By and large from the above analysis (table 4.1) it is found that there is great mismatch between the value of exports and imports which means there is an unfavourable balance of trade but one parameter remains encouraging that is the growth rate of exports, both on oil and non-oil items which is more than the growth of imports, meaning at one point of time there may be a favourable balance of trade in future , off late the export of services from India has been very encouraging, the parameters like exchange rate of dollars or euros with Indian rupees is also of serious concern. The value of Indian currency in the foreign market if pegged high than at the current exchange rate which may also bring an unfavourable trade balance in the country.

The year on year growth rate of exports since 2012-13 is growing steadily (table 4.2) except in few instances, the growth rate of exports during 2019-20 and 2020-21 has dipped unusually, which is essentially due to COVID, but the export market recovered in a faster phase during 2021-22. The main reasons for higher exports during 2021-22, that is post COVID, is largely due to faster recovery of markets, amplified consumer spending due to higher disposable income and strong push from the Indian export market. Further to continue the discussion, the rate of growth on imports is on the higher side but a consolation is that the growth rate of exports is more than the imports during the ten years' period (2012-13 to 2021-22) except in few instances. But after the pandemic, the domestic demand got revived, this influenced the growth rate of imports.

Referring table 4.3 it could be inferred that the exports performance has nexus with GDP and inflation. The view is that, exports enhances GDP and drops inflation rate. When a multiple regression is calculated, the results disclose that the, Export performance has an impact on inflation and GDP.

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#### Agricultural Trade Performance & Trade Intensity of Russia With India

#### Kiran bala Das

### **ABSTRACT:**

This paper makes an effort to examine the trade performance of Russia's agricultural trade and trade intensity with India in agricultural commodities with regards to the selected parameters, i.e., export and import intensity index and alteration in agricultural growth rate. Agricultural reform has proved to be a troublesome challenge for Russia during its transition to a market economy. Agro-based reform is required for other sectors, just like the food processing industry and the agro-based industry. Wheat dominates grain production and export on the global market. With a focus on trade, an attempt was made in this paper to study the trade performance of Russia for the periods 2011-2012 and 2020-2021. It has been found that there was an increase in the percentage share of agricultural products of Russia due to over the last decade, the percentage share of Russia in world exports of agricultural commodities is expanding. It is due to a drastic increase in the export of soybeans, sunflowers, and wheat, Russia is the world's leading wheat exporter, and nearly 30% of countries rely on Russia for their food needs, as wheat, maize, and sunflower oil play important roles in global food and agricultural trade. India's share was variable and the decline is due to a decline in the share of chickpeas. Dry and a few commodities were not even exported during that time span. Due to the COVID-19 pandemic, the world has been facing challenges and struggling with soaring prices in the global food market. The Russian Federation and Ukraine's war is sending shockwaves through the worldwide commodity, trade and financial market. However, due to these in world Russia's trade intensity with India has also been badly affected. In order to satisfy global demand for agricultural commodities, supply chains should continue to function properly so that there is no deleterious effect of war, enabling them to meet domestic production and consumption. So, knowledge of economic development plays a strong role in the shape of the world economic order and its forecast that Russia will harvest a low crop this year and a projected decline in the export of agricultural commodities. The overall consequence of the war between Russia and Ukraine makes it hard to determine the situation of international agricultural product supply and its effect on price.

Keywords: Agricultural trade, Trade intensity Index, Trade Growth Rate

## JEL: F00, F01, F53, F62, Q17

#### INTRODUCTION

The Russian economy is the sixth largest economy in the world with high- income mixed economy under state ownership. Russia economy grows rapidly with effective demand and has better investment function which makes Russia world one of the largest economy with boom in oil price, investment, domestic consumption and political stability have distinct image and power in world. Russia GDP \$3.494 trillion and GDP per capita \$24294 in 2013 with population of 141.9million and its density is 8.4 people per square kilometer. The country has a high literacy rate of 99.4% with HDI of 0.755 rank 66 in 2010 Human development report. Russia service sector is biggest sector of the economy with 58% of GDP as compare to secondary 38% and agriculture sector remaining 4%. Agricultural reform has proved to be a tough challenge for Russia during its transition to market economy. Agro based reform required so that development of other sector likes food processing industry and agro based industry. Wheat in grains dominates in production and export in world market. The conflict with Ukraine and military intervention of Russia caused economic uncertainty and crisis. Russia and Ukraine are notable producers and exporters of several agricultural commodities including wheat, corn, sunflower oil, and fertilizer.

Production or marketing developments in these countries have the potential to impact global agricultural markets, including the U.S.<sup>1</sup>

The grand strategy involving India's economic engagement with Russia and EEF fits well with India's focus on expansion of its geo-economic interests in the Far East. "Notably, India has largely been at ease in participating in projects that are initiated by Russia, given the confidence and trust that exists in the partnership.<sup>2</sup> These two countries have growing capacity, labour efficiency, emerging market and competitive to become most powerful group and its macro policies have potential to shape global economic order.

# **REVIEW OF LITERATURE**

Akshita Goyal, Anshuman Kamila and Aishwarya Dayal (2015) had explored in their study about the four factors like per capita income, distance, trade agreement and proximity in theoretical and econometric analysis of gravity model. National Trade policy and development of technology play crucial and important role in international trade of commodities and services. Yuan Hongna and Zhao Zengfeng (2011) had explored in their study about the advantage and disadvantage of foreign trade of BRICS countries. They are the emerging economies which play important role in foreign trade and five countries have different comparative advantage in energy, labour, mining and IT which make them complementary advantage and emerging as most powerful group. This club has potential to change world economy with continuous increase in economic size of countries. A. Oineti M Rajcaniova and E. Matejkova (2009) had explored in their study about the competitiveness and comparative advantage in Russia and Ukraine they took on agricultural production. Revealed Comparative Advantage Index and regression analysis was used to measure the competitiveness in Russia and Ukraine agricultural product market. It had been found that based on different analysis Ukraine and Russia trade with partners are positive, but according to regression analysis of the Balassa index the competitiveness of Russia is fallen and Ukraine market is in a positive direction. S Neil MacFarlane (2006) had explored in his study about the Russia in the world economy, which develop as an emerging power and the kind of international system Russia prefer. Russia foreign trade policy dominates the entire economy weather it's for nation or international. It had been study that the Russia concept of international relation deals with its multi polar mechanism and other side deals with U.S a supreme power with its policies it is because its relation to Europe and US not normal. Fabio Bertoni, Stefano Elia and Larissa Rabbiosi (2008) found that International competitiveness increases with an increase in investment in BRICs countries and global production and market expands. The paper is organized and analysis as follows: Section 1 analyses composition of export of agriculture commodity of Russia. Section 2 an attempt has been made to study the percentage share direction in agriculture commodities in India and in world, this involves the separate tabular presentation Section 3 analyses the trade intensity of agriculture product from Russia to India Section 5 analyses the summarizes the main findings and conclusion.

## **OBJECIVES**

The objectives of the present study are:

- To study the trend and pattern of Russia farm trade
- To find out the trade relation between Russia and India.
- To analysis the trade intensity of agricultural product from Russia to India.

# **RESEARCH METHODOLOGY**

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<sup>&</sup>lt;sup>2</sup> Indian Council of World Affairs, New Delhi.

The study based on analytical research and express in terms of quantity. In this, explain the research objective and methodology to achieve research objectives with the help of observational research design and type of study is descriptive and diagnostic. The study mainly focuses on Russia farm trade performance and its agriculture trade intensity with India.

Data collection

The time span from 2011-212 to 2020-21 and the source of data is secondary, the data of Russia and India export and import has been taken from FAOSTAT (Food and agriculture organization of the UN Statistics Division).

## DATA ANALYSIS PROCEDURE

Export Intensity Index (XII), XII ij = (Xij/Xi) / [Mj / (Mw-Mi)]

Where:

Xij= country i export to county j	Xi= total export of country i	ʻi= Russia
Mj= total import of country j	Mi= total import of country i	j=India
Mw=total world wheat import	XIIij= export intensity index of	wheat

The first term, the numerator of the formula, Xij/Xi, is the proportion of export of country 'i to the bilateral trading partner as a percentage of its total exports. This indicates how significant the trading partner is to the home or 'i country for its exports. The second term or the denominator, Mj / (Mw- Mi), is the trade partner's total imports as a proportion of total world import less the import of the domestic economy or country 'i. the standard value of this index is equal to unity. A trade intensity of unity would indicate that country 'i export to each country j in accordance with trading partners' purchasing power. A value greater than unity indicates a high degree of trade intensity between two countries, while a value less than unity indicates low trade intensity between partners. Trade intensity indices have been used in academic work since Brown (1947) and kojima (1964) developed this method. From a regional perspective, the trade intensity index or export intensity index shows whether a region exports more as a percentage to a certain region than the rest of the world does (UNESCAP, 2005) also used by other international institutions such as UNCTAD, the World Bank and the IMF to examine the strength of the bilateral trading relation between two partners.

## **COMPOSITION RUSSIA FARM EXPORT**

In table 1, it has been depicted the export of agricultural commodities from Russia and their export of agricultural commodities to India. From table it's clear that the total export growth rate had been fluctuating and twice it is negative -12.91 and -17.97 in 2013-14 and 2019-20 respectively, it is due to decline % share of Chick peas, dry and few commodities had not even export that year. In India change growth rate of Russia export of farm product is negative -66.66, -3.63 and 60.57 in the year 2013-14, 2015-16 and 2018-19 respectively. It is more clear from graph 1. the Russia total export of farm trade is 7259.22 million dollar and 20100.91 million dollar in year 2011-12 to 2020-21 respectively increasing over last one decade and the percentage share of Russia in world export of agriculture commodities is expanding 0.78 % in 2011-12 to 1.56 in 2020 it is due to drastically increase in export of soybeans, sunflower and wheat. From dotted line graph it has been found that change is growth rate of Russia is fluctuating a lot even it was negative -12.91 and 17.97 in 2013-14 and 2019-20 even the change in export growth rate from Russia to India fluctuating and three time it was negative. From line graphs it has been found, that percentage share of agricultural commodities from India and Russia gap was very wide range till 2014-15 then gap between them was reduced and in Russia the it has been found that percentage share of agricultural commodities in total export is improved. The decomposition of growth in Russia's over all export suggests that during the this phase the bulk of total export growth is mainly

supported by diversification of non agriculture sector to agriculture sector product export, expansion of world agricultural markets and increase in share of active expansion of the market.

# TRADE INTENSITY OF AGRICULTURE PRODUCT

In export intensity of agricultural product, it has been found that in table 2, that the Russia farm export intensity with India is less then unity its indicate low export intensity between two countries farm trade but 1.052 and 1.216 in 2012-13. It has been clear from graph 3 that there is a export intensity variable and most of the time sub-par, it is clear from table that export intensity is in lope-side. In 2012-13 and 2020-21 the value is greater than unity 1.025 and 1.21 it had been found and indicates that high degree export intensity and chances of improvement is there for farm export from Russia to India.

In import intensity of agricultural product, it has been found that in table 3, that the Russia farm import intensity with India is less then unity its indicate low export intensity between two countries farm trade but 1.052 and 1.522 in 2016-17 and 2019-20 the value is greater than unity indicates a high degree of import intensity between two countries. It has been clear from graph 3 that there is a import intensity variable and most of the time sub-par, on this its is clear that import intensity is in lope-side and chances of more improvement is there for farm import from Russia to India.

# CONCLUSION

The article investigates Russia farm export trends from last 10 years span and an attempt was made in this paper to study the trade performance and trade intensity in absolute term the export and import value of agricultural commodities from Russia to India. On the basis of the overall study trade performance in Russia it had been noticed that, Finding show that Russia -India trade has abate over the years with that there is a variability in intensity of export and import and most of the time it is sub-par, it is clear from table that export and import intensity was lope-side over last 10 years. Twice both in export and import trade intensity was in unitary so there is also room for further growth in between India and Russia farm trade. For now the overall consequence is hard to determine but if situation deteriorates in Russia with Ukraine, international agricultural product price will hike and grain prices (wheat) also come under the current circumstances and the recent development indicates how the market get affected and Agri future now in danger Russia federation and its forecast that Russia harvest low crop this year and projected decline in export of agricultural commodities.

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## TABLE 1. RUSSIA FARM EXPORT

Million Dollar

YEAR	RUSSIA EXPORT	EXPORT FROM RUSSIA TO INDIA	CHANGE IN GROWTH RATE TOTAL EXPORT OF RUSSIA	CHANGE IN GROWTH RATE OF RUSSIA TO INDIA	RUSSIA % SHARE IN WORLD	INDIA % SHARE IN WORLD EXOPRT
2011- 12	7259.22	49.46			0.78	2.49
2012- 13	9466.85	143.14	30.41	189.41	0.97	3.16
2013- 14	8244.28	47.73	-12.91	-66.66	0.82	3.45
2014- 15	12281.51	71.53	48.97	49.86	1.14	2.65
2015- 16	12618.79	68.93	2.75	-3.63	1.13	1.91
2016- 17	14029.22	84.62	11.18	22.76	1.22	1.71
2017- 18	17488.51	163.38	24.66	93.07	1.44	1.81
2018- 19	21418.33	64.42	22.47	-60.57	1.76	1.89
2019- 20	17569.05	237.82	-17.97	269.17	1.44	1.81
2020- 21	20100.91	365.57	14.41	53.72	1.56	2.33

Source (FAO) Food and agriculture organization UN Statistics division (https://www.fao.org/faostat/en/#data/TI)

# Table 2

## Million \$

YEAR	X ij	Xi	Mj	Mw	Mi	XII ij
2011-12	49.46	7259.22	11122.28	968327.3	11122.28	0.575
2012-13	143.14	9466.85	14307.76	1021255	14307.76	1.052
2013-14	47.73	8244.28	15611.81	1050214	15611.81	0.379
2014-15	71.53	12281.51	17502.8	1125245	17502.8	0.365
2015-16	68.93	12618.79	21447.14	1163543	21447.14	0.29
2016-17	84.62	14029.22	23757.09	1200041	23757.09	0.299
2017-18	163.38	17488.51	28624.97	1259310	28624.97	0.403
2018-19	64.42	21418.33	19757.72	1283878	19757.72	0.192
2019-20	237.82	17569.05	21508.07	1299380	21508.07	0.803
2020-21	365.57	20100.91	19635.56	1335669	19635.56	1.216

Source (FAO) Food and agriculture organization UN Statistics division (https://www.fao.org/faostat/en/#data/TI)

# Table 3

# Million \$

YEAR	Mij	Mi	Xw	Xi	Xj	MIIij
2011-12	514.818	29008.92	927325.8	7259.22	23105.35	0.707
2012-13	560.601	25977.54	976309.9	9466.85	30897.4	0.675
2013-14	494.428	28084.19	1008603	8244.28	34811.3	0.506
2014-15	437.606	27550.62	1077957	12281.51	28513.26	0.594
2015-16	386.145	23770.21	1114663	12618.79	21268.97	0.842
2016-17	396.242	22324.28	1147746	14029.22	19623.83	1.025
2017-18	332.688	23480.1	1213008	17488.51	22014.57	0.769
2018-19	348.091	23821.06	1215513	21418.33	22987.95	0.759
2019-20	642.421	23002.56	1222140	17569.05	22098.36	1.522
2020-21	342.669	22595.06	1284435	20100.91	29889.81	0.642

Source (FAO) Food and agriculture organization UN Statistics division (https://www.fao.org/faostat/en/#data/TI)

### GRAPH. 2

### GRAPH. 1



(FAO) Food and agriculture organization UN Statistics division organization UN Statistics division

(FAO) Food and agriculture

Graph 3

Graph 4



(FAO) Food and agriculture organization UN Statistics division organization UN Statistics division

(FAO) Food and agriculture

## Dynamics Of Balance Of Payments In India: An Approach To Strategy Of Financing Current Account By Capital Account

Dhiraj Kumar Bandyopadhyay<sup>\*</sup>

#### I. Introduction:

The object of our study is to provide a systematic analysis of the dynamics of Balance of payments in India since 1990-91, to situate the problem in its wider open economy macroeconomic context, and to evaluate policies adopted by the government. In fact, the deterioration in India's current account has led to a series of debates in the policy arena relating to sustainability of India's current account in particular and balance of payments in general. After Independence, India embarked on a strategy of development, which envisaged a pivotal role for the government and the public sector in shaping India's economy and industrialisation. The trade regime till the early 1980s was characterised by self reliance and inward looking import substitution strategy of industrialisation with tariffs and non-tariff barriers coupled with import licensing system. There was a need to increase export competitiveness, which required among other things an efficient, well-knit infrastructure. There were a number of policy initiatives undertaken at that time to help export promotion. During 1978 to 1984-85, four official committees were appointed one after another, basically to look into the various aspects of trade policy. On the export front, the government tried to implement the recommendations of Alexander Committee [1978) for; (i) achieving efficiency in the system through a rationalisation of the structure of subsidies, and (ii) increasing the export of services. The changing attitude of the government to the question of export promotion was also reflected in the recommendations of the Dagil Committee Report (1979) and Tandon Committee Report (1980). The Dagil Committee viewed the term "export subsidy" as a misnomer. The so called export subsidy consists, in many cases of bare taxes and subsidies which cancel out. The Abid Hussain Committee report in 1984, hold a more balanced view. We have observed that export policy which became important only after 1962, succeeded in some periods, (particularly in 1970s) in expanding "gross exports' (at constant prices) though it was less successful in expanding 'net exports'.

Then during the late 1980s, pro-privatisation liberal market-friendly policy makers in the government took the first move towards reducing state control on the external and domestic industrial policy fronts. In order to achieve these, several measures were taken to ease industrial and import licensing, replace quantitative restrictions with tariff barriers and simplify the tariff structure. The conscious efforts were made to dismantle the import licensing regime via reductions in the number of products listed under banned/restricted category. However, to achieve their goals policy makers had to wait and watch another three years. The years 1989-91 were marked by difficulties, both on the economic and political fronts. As the new government took over in 1991, the foreign currency assets were less than \$1 billion and just enough to cover two weeks of imports only. Then the Government of India requested a Stand-By Arrangement from the International Monetary Fund (IMF) in August 1991 and borrowed huge amount of fund and entered into an IMF-supported programme. This programme sort to seek fiscal deficit reducing policies and a wide array of policies to decontrol as well as privatised and liberalised the economy spanning the external trade, international capital flow (decontrol of capital inflow for easy access to both FDI and FII), industrial, public sector, financial and banking sectors were implemented. Under pressure from this organization, an ambitious and comprehensive programme of reforms was initiated across all sectors. The export-import policy (EXIM policy) of 1992-97 had reaffirmed India's commitment to freer trade. All import licensing lists were eliminated and a "negative" list was established. Almost all capital and inter mediate goods could be freely imported subject to tariffs. By April 2002, all the remaining quantitative restrictions were also removed. The exchange rate regime also went through a fundamental change in the early 1990s. The rupee was officially devalued in July 1991.

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In March 1992, a dual exchange rate regime was introduced. All foreign exchange receipts on current account transactions were required to be submitted to authorised dealers of foreign exchange, who in turn would surrender to the Reserve Bank of India (RBI) 40 per cent of their purchases of foreign currency at the official exchange rate announced by the central bank. The balance 60 per cent could be retained for sale in the free market. In March 1993, India moved from the dual exchange rate regime to a single market-determined exchange rate system.

We argue that as a whole all these measures and policies were directed towards only GDP growth oriented economic policy and had deliberately bypassed the problems of acute problem of inequality and unemployment in the economy which could have solved by effective implementation of import substitution strategy of industrialisation and rational export promotion policies. Moreover, on the financing side of the current account deficit (CAD), there is a sea change. The composition of financial flows to India has changed over time. Compared to 1990-91, when foreign direct investment (FDI) and portfolio flows constituted a small portion of the overall capital account, in 2011-12, they are estimated to comprise close to 60 per cent of the capital account. Portfolio investment is strongly influenced by the worldwide trends in stock markets. The net effect of the capital inflows and the CAD is the change in foreign exchange reserves. Then, these increases in foreign exchange reserves due to inflow of FDI and FPI of corporate sectors and institutional investors respectively are nothing but a borrowing (claims of foreign residents on our economy) from foreign countries. In other words, positive capital balance signifies that the claims on our assets by foreigners went up in that particular year and that our country was a net borrower from abroad and which was worth of \$420 billion in the year of 2017-18. So the problem lies elsewhere which we like to examine in this study.

Having said these, Section-II has been spared for an analysis of India's balance of payments and external sector performance in 1986-87 onwards and during economic reform Section-III deals with the issues of financing current account by capital account of India's balance of payments and implication of the strategy of the capital inflow. Section-IV finally concludes. The methodologies and techniques have been used here by standard open economy macroeconomics models and data sets have used extensive from RBI and Government of India's concerned departments which have been mentioned in our reference lists of this study.

# II. An analysis of India's balance of payments and external sector performance since 1986-87 onwards and during economic reform:

## Transition to pro-and-post economic reform:

The Seventh Plan (1985-90) noted the conditions under which the concept of self-reliance was defined as per with the Sixth Plan (1980-85). It conceptualised and also exhibited commitment to self-reliance not merely in terms of reduced dependence on aid but also in terms of building up domestic capabilities and reducing import dependence in strategic materials. Besides this, achievement of technological competence through liberal imports of technology was also envisaged. To supplement these objectives, the winds of change were added by the recommendations of a number of committees set up during the late 1970s and the 1980s. But, some critical developments in India's balance of payments gathered momentum in the second half of the 1980s (i.e., Seventh Plan, 1985-90) that made the management of India's balance of payments the most challenging task (see Figure-1) In fact, the Plan targeted to achieve a high growth rate and recognised that the management of balance of payments was critically dependent on a sizeable improvement in earnings from exports and from invisibles. It conceptualised self reliance not merely in terms of reduced dependence on aid but also in terms of building up domestic capabilities and reducing import dependence in strategic materials. However, several developments that put severe pressure on the balance of payments position during the Plan need attention. The CAD assumed a structural character in the 1980s - with underlying expansion in economic activities, exports and imports grew in tandem, keeping the trade deficit at a high level. Besides this, the invisible balance

also deteriorated sharply due to stagnation in worker's remittances and rising interest burden due to building up of external debt. What is more, with flows of external assistance falling short of the financing need, recourse to costly sources of finance in the form of external commercial borrowings (ECB), especially short term debt and non-resident deposits, became relatively large. Some possible misalignment of exchange rate due to rising inflation, thus, resulted in loss of export competitiveness of exports and bias towards imports. Then the rising financing requirements described above required not only higher recourse to external debt but also draw down of reserves, which declined to US \$ 4 billion by end-March 1990 from US \$ 7.4 billion at end-March 1980.

Let us now have a look at some of the salient features of our external sector since 1990-91 till to 2017-18. In 1990–91, India's CAD stood at 3 per cent of the gross domestic product (GDP) and the problem at that time was - as CAD was high and it could not be financed. That is why the crisis exploded. The CAD has come down since 1991–92 but it persisted till to date, even in 2011–12 and 2012–13, it touched unusually high levels by crossing 4 per cent. Exports have increased over the last two decades, from \$18.5 billion to \$309.7 billion between 1990-91 and 2011-12. The average annual growth rate of merchandise exports doubled during the last two decades, from 9 per cent in 1991-92 to 1999-2000 to 20 per cent during 2000-01 to 2011-12. The growth rate fell sharply to -3 per cent in 2009-10 during the global financial crisis, but then picked up immediately to 37 per cent in 2010-11, but is estimated to have slowed down to 24 per cent in 2011-12. In terms of the composition of exports, there has been a shift from labour-intensive products (e.g., textiles) to capital- and skill-intensive ones (e.g., engineering goods). Exports have also become more diversified in terms of trading partners with a shift from developed economies towards developing ones with China becoming one of the top three trading partners. There has also been a growth in exports of services during the last two decades, with service exports increasing from \$4.6 billion to \$142.3 billion; the average annual growth rate rising from 15 per cent to 25 per cent over the two decades. Private transfers are one component of invisibles that have grown substantially over the years. Remittances tend to be countercyclical and are recognised to be a stable source of foreign exchange. While capital flows rise during favourable cycles and fall in bad times, there is evidence that remittances show remarkable stability. Although exports have grown during the last two decades they have not kept up with the growth in imports (e.g. export/GDP increased 11 percentage points between 1990-91 and 2011-12 whereas imports/GDP increased by 18 percentage points over the same period). More importantly, the recent growth in imports is explained by an acrossthe-board increase: e.g., oil imports as a proportion of GDP doubled between 2004-05 and 2011-12 but non-oil imports increased as well (from 14.4 per cent to 18.5 per cent of GDP). Among non-oil imports, gold has been an important contributor, increasing from 1.5 per cent to 2.5 per cent of GDP between 2004-05 and 2011-12. Both oil and gold imports registered sharp increases in 2011-12 with growth rates of 45 per cent and 40 per cent respectively (relative to 22 per cent and 18 per cent in the previous year). As a result, the merchandise trade balance has worsened significantly over the last two decades, from -2.9 per cent of GDP in 1990-91 to an estimated -10.2 per cent of GDP in 2011-12. The invisibles have, however, had a moderating infl uence with a surplus increasing from 0.6 per cent of GDP in 1991-92 to 6 per cent of GDP in 2011-12. Overall, the current account was in deficit throughout the 1990s. However, in the early 2000s, the current account registered surpluses (driven primarily by a sharp increase in the surplus on invisibles). Since 2004-05, however, the current account has consistently been in deficit; with the magnitude of the deficit growing since then. Since 2012–13, the average CAD has been 1.2 per cent of GDP, in 2017–18 the CAD is about 2 per cent of GDP. The merchandise trade balance reached a peak of deficit of 10.4 per cent in 2012–13. Even though it has come down, it still remains high at 5 per cent as of 2016–17. Invisibles accounted for a surplus of 4.3 per cent of GDP in 2016–17. Within it, net transfers constituted 2.5 per cent of GDP. These numbers show broadly the strength and vulnerability. There are now two major concern about export sectors in India: one, there has been shift from labour-intensive-products e g, textiles to capital-and-skill-intensive ones e g, engineering goods and this phenomenon indicates low rate of employment generation in the export sectors; second, an analysis of region-wise exports clearly indicates a shift towards developing

economies and in which values of export earnings are lower than the European countries (Euro, pound and others). The share of exports going to European Union countries has come down from 26.1 per cent in 1993–94 to 18.5 per cent in 2017–18. On the other hand, the share of exports to developing Asian countries has increased from 22.0 per cent to 30.4 per cent during this period.

Now we can have a look on import behaviour in the post-liberalisation period, imports have shown a steady increase from \$27.9 billion in 1990-91 to \$393 billion in 2016-17 and which is about 20 per cent of GDP. What is more, there have been years when it had touched 27 per cent of GDP. The rise in imports of oil is explained by the growth in the economy, stagnation in domestic production, and the rise in oil prices until recently. Despite increase of exports, if the trade deficit has widened it is because of the sharp rise in certain categories of imports. Apart from oil, electronic goods have also shown a steep increase. At around \$40 billion, they account for 10 per cent of total imports. They accounted for less than 3 per cent in 1998–99. India had enough opportunities to develop by its own import substituting industries in electronic goods but never tried to do so as policy makers habituated to thought it those goods were importable and never conceptualized the notion of incomplete specialization. Another item that has shown a sharp upward surge is gold. In 2003, India's gold imports were 854 tonnes, valued at \$5.4 billion. In 2015, they went up to 1,047 tonnes, valued at \$35 billion. There were years like 2011 and 2012 when the value of imports of gold crossed \$50 billion. These three categories—oil, electronic goods, and gold-will require different approaches if we have to contain their growth. Then in order to contain import of crude oil, efforts need to be directed towards more efficient use of energy, finding alternative sources of energy, and increasing domestic production. As far as electronic goods are concerned, attention is needed to expand the domestic base of production. Gold import is deeply rooted in the Indian psyche. High inflation forces people to use gold as a hedge. While moderation in inflation will help, over a period of time the lure towards gold must be weaned. So far, the various gold schemes introduced by various governments have not had much of success. The idea that gold is a better investment avenue is also not always true. Gold prices also rise and fall. For example, in 2010–11, the price of gold per ounce was \$1,293. After rising for the next two years, it fell and, as of 2016–17, it stood at \$1,258 per ounce. Of course, in rupee terms, it has not fallen because of the depreciation of the rupee in terms of the dollar. However, between 2000 and 2017, gold prices in rupee terms went up 6.4 times. During the same period, the Sensex went up 6.7 times. Besides these, we have observed in our earlier discussion that import content to export of gold jewellery is very high for a long time in India.

## Policy Shift: Trade and Payments: 1986 and onwards:

During the late 1980s, the government took the first steps towards reducing state control on the external and domestic industrial policy fronts. Several other steps were also taken to ease industrial and import licensing, replace quantitative restrictions with tariff barriers as well as simplify the tariff structure. It is important to note that this was the first instance of a three-year trade policy. There were conscious efforts to dismantle the import licensing regime via reductions in the number of products listed under banned or restricted category. However, these measures were less than comprehensive and left a lot to fulfill the desire of policy makers. Besides these the policy makers also thought that till 1991, the levels of protection were very high – in 1991 the average tariff rate was 117 per cent and the share of imports subject to non-tariff barriers was 82 per cent. The massive shock of the Gulf War culminated in the crisis of 1989-91. The years 1989-91 were marked by difficulties, both on the economic and political fronts. As the new government took over in 1991, India was facing an impending external payments crisis with foreign currency assets less than \$1 billion, just enough to cover two weeks of imports. So, the Government of India (GOI) was forced to seek financial help from the IMF and other sources. Under pressure from these organizations, an ambitious and comprehensive programme of reforms was initiated across all sectors. Then the Government of India requested a Stand-By Arrangement from the International Monetary Fund (IMF) in August 1991 and entered into an IMF-supported programme. In addition to deficit reducing policies, a wide array of policies spanning the external trade, inflow of FDI and FPI, industrial, public sector, financial and banking sectors were implemented. The export-import policy (EXIM policy) of 1992-97 had reaffirmed India's commitment to freer trade and all import licensing lists were eliminated and a "negative" list was established. Except some consumer goods, almost all capital and intermediate goods could be freely imported subject to tariffs. By April 2002, all the remaining quantitative restrictions were also removed. The earlier protectionist policy stance was largely abandoned. In order to be a market-friendly liberalized economy, the exchange rate regime also went through a fundamental change in the early 1990s. The rupee was officially devalued in July, 1991 and finally in March 1993, India moved from the dual exchange rate regime to a single marketdetermined exchange rate system. In the international capital market, there was one noteworthy difference compared with the lending Surge of the 1970s. Bank lending was overtaken in importance by portfolio investment in stocks and bonds. The major destinations for investment were the emerging economies of Asia and Latin America -China, Indonesia, Malaysia, South Korea, Thailand, Argentina, Brazil, and Mexico. In recent years, particularly since 2004-05, India has become a major destination for portfolio investment. To reverse the growing inefficiency and to hide the inability of policy makers in the government to implement properly the strategy of import substitution strategy of industrialization and effective export promotional policies, the economy was opened up to foreign competition and the Plethora of controls on trade in goods arid services were quickly lifted. Although a cautious step-by-step approach was adopted for liberalization of capital flows (removal of restrictions on trade in financial assets) but even here relaxations were substantial. Select Indian companies were permitted to raise funds from the international capital market and measures were taken to encourage large scale foreign investment (both FPI and FDI). Exchange control was lifted and the rupee was made convertible on the current account in 1994. There was a time when the stock explanation for corruption in India was the "permit – licenses – quota raj" virtually everything could be attributed to it. The predication offered by a legion of neo - liberal economists and political theorists was that deregulation and liberalization would lead to the prevention, containment and eventual elimination of corruption. Precisely the opposite has happened: liberalization has ushered in corruption in a much greater variety of forms and on unimaginably greater scale than anything seen under the so – called license raj. As a consequence, the new regime allowed foreign direct investment (FDI) over a wide range of sectors with even majority ownership except in certain areas and portfolio investment in Indian stocks was of course permitted to financial institutional investors - both of which are to be treated as foreign companies' claims on assets of Indian companies, and as a whole by legal concept on Indian industries and services sectors. So, it is not imperative to say that we strive towards keeping the CAD at a level that can be financed by normal capital flows.

# III. Financing current account by capital account of India's balance of payments and implication of the strategy of the capital inflow and fiscal consolidation:

A great debate had been going on for a long time in India between monetary policy authorities (Central Bank) used to defend the position on prioritising inflation and unemployment over economic growth, saying that when the "inflation threshold limit is crossed, it becomes difficult to make a trade-off and on the other hand liberalised economic policy makers in the government used to defend the position on prioritising economic growth over inflation and unemployment (with an exception of NDA government's announcement of 4 per cent inflation goal after immediately came into power in 2014), saying that reducing fiscal deficit, lowering interest rate and encouraging large scale capital inflow require higher level of GDP growth at a time when lower level of domestic financial savings was low only due to falling tendency of low real interest rate and which were irresponsible acts for policy makers' own liberalised monetary policy attempt to appease IMF authorities, that habituated to use private investment could be an engine of high economic growth. As monetary policy switched its operating procedure from monetary targeting to a multiple indicator approach, it had to manage capital flows in a more open economy and seamlessly fine-tune its liquidity adjustment facility. In these context, we should be very careful about the claims of policymakers on two issues: (i) that fiscal deficit

lead to inflation, slacking private investment and adverse effect on GDP growth and (ii) absolute dependence on monetary policies - primarily on inflow of foreign capital inflow, exchange rate policy, and policy rate as regulator of high GDP growth via promoting private capital. We argue that in an open economy macroeconomic framework that underlies the fiscal consolidation approach usually opt for more room for private investment and capital inflow. In fact, international free movement of capital requires reduction of fiscal dominance mainly via lowering fiscal deficit and favourable exchange rate. We know that the greater financial integration is a critical aspect of globalization. We are also aware of the benefits of India's integration with global financial markets. But, unlike some "reform warriors", we should also aware of the pitfalls attached to the process. We argue that as a whole all these measures and policies were directed towards only GDP growth oriented economic policy and had deliberately bypassed the problems of acute problem of inequality and unemployment in the economy which could have solved by effective implementation of import substitution strategy of industrialisation and rational export promotion policies. India had achieved job-less high economic growth rate during the period of 2002-2012. We think that achieving high economic growth by reviving private investment, to be financed through a net foreign capital inflow, as quickly as possible, is not a situation of place where India stands for, when an economy has been running on the problems of huge volume of unemployment and large scale corruptions embedded into the important sectors of economic activities as well as cronycapitalism which has been engulfed the economy for a long time. So, government's deliberate stand since 1991 is very clear, shortage of savings would be financed by inflow of foreign capital, in spite of the fact that the widening current account deficit and its financing by net capital inflows over the last decade pose a key challenge to India's macroeconomic and financial stability. We argue that as a whole all these measures and policies were directed towards only GDP growth oriented economic policy and had deliberately bypassed the problems of acute problem of inequality and unemployment in the economy which could have solved by effective implementation of import substitution strategy of industrialisation and rational export promotion policies. So, given this government's long term stand on open economy macroeconomic policies, we like to examine three issues section: (1) Long term current account deficits, (2) Spillover effects in India's manufacturing sectors and finally (3) Long term outflow of foreign exchange reserves due to repatriation, dividends and payments for technology.

In India, the ongoing current account deficits have been financed by two types of official external assistance - inter-government loans (bilateral aid) and loans from international institutions (multi-lateral aid) during the period 1951-52 to 1989-90. Such foreign assistance comes in three forms: Loans, grants and U.S. PL-480/665 assistance. We have observed that foreign loans accounted for over 76 percent of total aid during 1950-51 to 1989-90 while grants represented a small figure of 11 percent, and 0.5. The major role in financing current account deficits during 1951-52 to 1989-90 was, therefore, played by long-term capital inflows - official and private (Loan Capital). After examining the cumulative series of India's basic balance, errors and omissions and short term capital movements for the period 1951-52 to 1984-85, we have observed that the cumulative basic balance was consistently negative from 1951-52 to 1967-68, after which it was positive until 1977-78. But in 1980 it moved from a surplus to a deficit until 1985, except for 1984. There were sizeable additions to India's foreign exchange reserves over the period 1975-79. During 1951-52 to 1984-85 variations in the level of reserves over the previous years had been of a fluctuating character, sometimes increasing, sometimes declining. So over the period basic balance has not been able to fully determine the extent of disequilibrium, as because short-term capital movement (net) was not negligible in amount and reserve movement in India's balance of payments was volatile in nature.

#### Inflow of FDI (Foreign Capital Inflow) exhibits claims of foreign residents on our economy:

On the financing side of the Current Account Deficit (CAD), there was a sea change after 1990–91, before that there was neither foreign direct investment (FDI) nor portfolio investment - the three elements that dominated the sources of financing were net external assistance, net commercial

borrowings, and non-resident Indian deposits, each equivalent to 0.7 per cent of GDP. So, the Government of India (GOI) was forced to seek financial help from the IMF as well as from other sources and in August 1991 borrowed huge amount of fund from IMF and entered into an IMFsupported programme which imposed conditionalties especially those in respect of liberalisation of trade, opening up the economy for FDI and FPI as well as linked with these by creating pressure to reduce fiscal deficit, and of finance and industry. In other words this programme sort to seek fiscal deficit reducing policies and a wide array of policies to decontrol as well as privatised and liberalised the economy spanning the external trade, international capital flow (decontrol capital inflow for easy access to both FDI and FII), industrial, public sector, financial and banking sectors were implemented. Under pressure from this organization, an ambitious and comprehensive programme of reforms was initiated across all sectors. As a result after 1990-91, the ongoing current account deficits have been financed by capital inflows; hence a surplus on the capital account. Then the composition of financial flows to India has changed over time. Compared to 1990-91, when foreign direct investment (FDI) and portfolio flows constituted a small portion of the overall capital account, in 2011-12, they are estimated to comprise close to 60 per cent of the capital account. In contrast, debt flows are estimated to account for about 30 per cent in 2011-12, compared to 80 per cent in 1990-91. Net foreign investment reached its peak during the last two decades at 3.7 per cent of GDP in 2009-10, with portfolio flows constituting the major portion at 2.3 per cent of GDP. In 2009-10, portfolio flows were the biggest component of the overall capital account surplus and constituting 60 per cent of the overall surplus; though their share is estimated to have declined to 25 per cent in 2011-12. Though the share of debt flows in the overall capital account surplus has declined over time, debt flows have grown substantially in value terms as controls have been gradually eased, with a net outflow of \$1.3 billion in 2002-03 to inflows of \$19.3 billion in 2011-12. Particularly noteworthy is the sharp growth in the external commercial borrowings (ECBs). ECBs have grown from \$4.3 billion in 1990-91 to \$36 billion in 2011-12, with almost exponential growth between 2003-04 and 2007-08. The surplus capital flows in excess of CAD existed through most of the last decade and we continued to accumulate reserves. This happened mainly because of the policy decision on the exchange rate. The stock of foreign exchange reserves increased from \$3 billion in January 1990 to \$305 billion in May 2008. Since then, reserves have decreased by 16 per cent to \$257 billion. The decline in reserves is partly explained by the rising current account deficit and slowing capital flows. The overall capital flows which reached a peak of \$107 billion in 2007-08 came down to \$7.2 billion in 2008-09. In 2011-12, they were \$68 billion. In the meanwhile, the current account deficit has increased. The decline is also the result of interventions by the RBI to arrest the decline of the rupee. In contrast, in 2014–15, the dominant flows were FDI, which was equivalent to 1.5 per cent of GDP, and portfolio investment, which was equal to 2.1 per cent of GDP. In absolute terms, FDI in 2016–17 was \$35.6 billion and portfolio investment was \$7.6 billion. It is to be noted that while FDI has shown a steady rise, portfolio investment fluctuates, even turning negative in 2008–09 and 2015–16. Portfolio investment is strongly influenced by the worldwide trends in stock markets. The net effect of the capital flows and the CAD is the change in foreign exchange reserves. It is true that at the height of the 1991 crisis, our reserves were hardly a few billion dollars whereas in 2017-18 these reserves stood at about \$420 billion. It is important to note that the sum of current balance, plus capital balance, plus errors and omissions is the overall balance. Positive capital balance signifies that the claim on our assets by foreigners went up in that particular year and that our country was a net borrower from abroad and which was worth of \$420 billion (2017-18). Conventionally, 1n the capital account, an increase in a country's foreign assets is a debit entry and carries a minus Sign, while a decrease in foreign assets is a credit entry and carries a plus sign. Therefore the increase in reserves at about \$420 billion in the year of 2017-18 carries a minus sign. Positive capital balance of \$420 billion implies that, in that particular year India's foreign reserves increased by that amount. Then, these increases in foreign exchange reserves are nothing but borrowing (claims of foreign residents on our economy) from foreign countries and which are FDI and FPI of corporate sectors and institutional investors respectively. So, we could not be joyous, rather we should be concerned about their volatility of flows into India and its serious implication on the domestic economy as a whole. What is more, while the size is comforting, it must be noted that these have been built out of excess capital flows rather than current account surpluses. We, therefore, at this juncture, like to focus on some effects of such a large scale accumulation of foreign exchange reserve on exchange rate management in particular and external sector management in general.

It is important to note that the ongoing current account exhibits deficits throughout the period 1990-91 to 2018-19 with an exception of three to four years. We know that demand for foreign exchange arises as a result of import of goods and services and outflow of capital-expansion of overseas operations of domestic corporations (FDI) or purchase of stocks, bonds, and securities by domestic investors (FPI). Export of goods and services from India creates a demand for rupees and supply of dollars, as foreign importers exchange dollars into rupees to pay for their imports. Similarly, FDI or FPI in Indian assets by foreigners generates dollar supply and rupee demand. Thus supply of foreign exchange arises as a result of export of goods and services and inflow of capital into the domestic country. Using the symbols X, M, CI, and CO to denote the values of export, import, capital inflow, and capital outflow, the condition of balance of payment in equilibrium may be written as:

$$X+CI=M+CO$$
 (1)

A fruitful way of looking at equation (1) is to regard the left hand side as the source of foreign exchange and the right hand side as its use. One important fact to be noted is that in the post liberalization global currency market international financial flows (capital account transactions, CI and CO) are far more important than flows generated by exports and imports of goods and services (current account transactions X and M). With CAD denoting current account deficit and NCI denoting net capital inflow, equation (1) may be restated as

$$CAD = NCI$$
 (2)

In case, this balance (2) disturbed by changes in NCI, the net flow of funds into India, CAD, will have to adjust accordingly. For example, if there is a fall 1n NCI, current account deficit will have to be brought down either through a rise in exports X or a fall in imports M or both. The first may take time, and the second may be costly in terms of loss of output, if essential imports such as petroleum or raw materials have to be curtailed. In recent years, India's dollar reserves have reached very high levels. Their steady growth since 1991 was interrupted only by the dip in 2008, when capital flows dried up, following the global financial crisis. At that point, RBI had to sell dollars to prevent rupee depreciation. With the passing of the crisis, a foreign fund started returning to India and the policy of buying dollar was resumed.

Attracted by the prospect of higher returns, foreign savers are buying Indian assets on a big scale, particularly shares of companies performing well. Under free float, this huge capital inflow would drive the exchange rate to a very low level, implying a sharp appreciation of the rupee. A strong upward push to the dollar price of Indian products will have a considerable adverse impact on the price competitiveness of the country's exports. In addition to this, remittances from abroad will be strongly discouraged. Mainly to avoid this, the RBI steps in to prevent currency appreciation triggered by surges in the inflow of funds from abroad. This will add to the stock of its foreign reserves. If the situation persists, the stock will keep on rising. Accumulating a large stock of reserves is justified on precautionary grounds. It provides a cushion against potential disruptions to foreign trade and flow of funds which may cause serious damage to the economy. This precautionary motive has lately been strengthened by the perception of instability in a deregulated financial environment. A comfortable position in respect of foreign assets is also interpreted, by foreign investors as a sign of sound health of the economy. Improvement in the credit rating of a nation enables it to access the international capital market on more favourable terms. Continuous addition to foreign currency reserves has facilitated further liberalization of restrictions on cross-border current and capital account transactions.

On the other hand, a continuously rising stock of reserves is bad because it means that investible funds are not being used for productive purposes. Typically reserves are used to buy US Treasury bills, an asset that is very safe but yields a very low rate of return. Returns on profitable domestic projects in a capital poor country, on the other hand, tend to be much higher. This forgone return is one important cost of holding foreign reserves that must be balanced against its benefit as cushion against possible financial crisis and as an instrument for protecting domestic exporters against currency appreciation. Furthermore, large reserves tend to attract criticism from other countries that are running deficits with the reserve holding country. China's recent trade disputes with the US amply bear this out. Then one may ask question what is the appropriate or optimal level of reserves that a country should maintain? There is no one solution that will fit all countries at all times. The traditional thumb rule was based on the notion of import cover - a country needs to maintain a minimum level of reserves that is sufficient to pay for three months of imports. With the growing importance of capital account financial flows as the main source of instability and crisis, a new thumb rule has been proposed: a country should have enough reserves to cover all debt which would be due over the next year, in the event creditors suddenly become unwilling to roll it over or extend new loans. Sudden halts and reversals of foreign investment are more likely for foreign portfolio investment ('hot money'). Foreign direct investment is long-term in nature and guided by long-term profit considerations and volatility is considerably lower as a result that. When short-term flows dominate cross-border capital movements, the reserves need to be correspondingly large. Investment in India is dominated by short-term portfolio flows. Therefore the RBI cannot afford to have a low level of reserves. It must, however, be recognized that even high reserves are no guarantee against turbulence in the currency market. Even the Bank of Japan and other central banks with substantial foreign reserves have failed to prevent large swings in the exchange rate and to preserve stability. The main reason for this failure lies in the sheer size of foreign exchange transactions relative to foreign reserves. The volume of foreign currency trading exceeds \$2 trillion per day, which is bigger than the combined foreign exchange reserves of the rich countries. It is highly doubtful whether even China's mountain of dollars will be sufficient to ward off financial panic and crisis. Therefore, the case for controlling non-FDI capital flows becomes compellingly strong. It is true that compared to 1990-91, when FDI and portfolio flows constituted a small portion of the overall capital account, in 2011-12, they are estimated to comprise close to 60 per cent of the capital account and so far, in absolute terms, FDI in 2016-17 was \$35.6 billion and which leads to help accumulation of foreign exchange reserves stood at about \$420 billion. But we should be concerned about its serious implication of issues like its spillover effects in Indian manufacturing industries and its adverse effect on India's balance of payments. So, it is necessary to examine these two issues in this section.

The Government of India has announced set of radical changes in foreign direct investment (FDI) policies in the year of 2015, 2016, and the latest at the end of August 2019. The earlier announcement in November 2015 introduced changes in 15 major sectors, then in 2016 in 9 sectors, and the latest announcement covers more, telecommunications, services and computer software were the top areas attracting foreign direct investment (FDI) in India during the first quarter of the on-going fiscal. So, the significant moves of these three years to FDI, the government has opened the door wider in several major sectors of the Indian economy, through what it calls "path-breaking" amendments in the extant of FDI policy. We can, however, clubbed into three categories: at first it has been a "radical change" in the FDI regime in the construction sector; the second an increase in the threshold of foreign participation, we can call it as the so-called sectoral caps in several key sectors, including defence, broadcasting, private sector banks, non-scheduled air transport services, ground handling services, coal mining, credit information companies, single-brand retail, and contract manufacturing; and third most important is the simplification of the procedures of foreign participation in a number of sectors. India has seen a steep increase in FDI inflows totalling over \$55 billion in 2015-16. So far as latest information is concerned, at end of 2018-19 financial year the total inflows into all sectors increased by 28 per cent to \$ 16.33 billion, according to government figures. In 2018-19, India attracted FDIs worth \$44.36 billion which was marginally lower than FDIs attracted in 2017-18, which were worth \$44.85 billion. While

telecommunications emerged as the top sector in April-June 2019-20, attracting FDI worth \$4.22 billion, services sector (which includes financial, banking, insurance, non-financial / business, outsourcing, R&D, courier and technology testing and analysis) was in the second position with FDIs worth \$ 2.8 billion. This was followed by computer software and hardware with \$ 2.24 billion and trading with \$ 1.13 billion, as per the data released by the Commerce and Industry Ministry. On the whole, the thrust of the three sets of policy changes remains the same, namely to ease entry of foreign investors in India. But as it makes its best efforts to catch the attention of foreign investors, the government may also like to consider the global realities and its own experience in this regard; since the economy turned "investorfriendly" some more than two decades back. We know that capital movements across countries in the form of foreign direct investment (FDI) have been one of the prime features of global economic integration. Usually home countries, mostly developed economies, promote FDI to get higher returns for their capital. On other side the host countries, mostly underdeveloped and developing economies, welcome FDI as part of their outward-oriented development strategy. In fact, FDI, mostly contributed by multinational companies (MNCs), is expected to promote economic growth in host countries. Moreover, the development experience of the newly industrialised economies in Asia is a prime motivating factor for the developing economies to follow outward-oriented economic policies. At this juncture developing countries, especially the Asian countries, are competing with each other to get a lion's share of the FDI flows from developed countries. It is important to note that in recent years, outward FDI from emerging economies like China also accounts for a substantial part of global capital flows. Now, as per the United Nations Conference on Trade and Development's (UNCTAD) UNCTADstat database, in 2015, the United States (US) received 21 per cent of the world's inward FDI, followed by China and Hong Kong receiving about 17 per cent. For the pre-crisis year 2007, Then China and Hong Kong received 7 per cent of world's inward FDI, and the inward figures for the US British Virgin Islands, Russia, and Brazil are 11 per cent, 1.5 per cent, 2.8 per cent, and 1.7 per cent, respectively. India accounted for 2.5 per cent of the inward FDI in 2015 as against 1.26 per cent in 2007. China and Hong Kong have not only emerged as one of the largest recipients of FDI, but they also account for approximately 13 per cent of the world's outward FDI in 2015 as against the US's share of 24 per cent. In the pre-crisis year of 2007, China and Hong Kong contributed 4 per cent of the world's outward FDI and the US accounted for 17 per cent.

#### No positive spillover effects by inflow of foreign direct investment FDI:

We argue that despite successful stories of the growth of newly industrialised economies in Asia that have relied on FDI and trade, the empirical literature on FDI provides different arguments in support of and against FDI as well as its spillover and competition effects. Some economists believe that foreign capital is expected to bring sophisticated technology and cheap capital to the host country. It also says by going that since patent laws make it costly for domestic firms to appropriate full benefits of technology generated abroad through direct technological transfer, FDI is viewed as an indirect channel of technology transfer. So, in this situation, domestic firms may imitate or replicate the sophisticated technology of MNCs used for introducing a new product or a new production process. But we argue that this phenomenon could have significant implication for the 'Make in India' program. Many Indian entrepreneurs have now turned into part-traders of imported consumer durables. We think that without changing the overall policy landscape and attitude, India cannot expect to make success of 'Make in India' with the help of FDI alone. FDI cannot be a substitute for domestic resource mobilization, and FDI policy cannot be a substitute for prudent domestic policies. Government policymakers need to take cognisance of the fact that it is domestic investment which has provided an overwhelming large share of domestic capital formation and has been instrumental in pushing up the country's growth rate. It is unfortunate that economic reform policy makers in the government for a long time wilfully ignore the issues of spillover effects of FDI in Indian manufacturing industries. Policymakers of liberal economics believe in the positive spillover effect of FDI and argue that this spillover manifests itself in the generous investment incentives offered by governments in developing and developed countries alike. Even though the location preference of MNCs are motivated by the size of the host country market, physical and social infrastructure, and ease of doing business, the investment incentives also could influence the location preference of foreign firms. Keeping in line with this, the Government of India has been offering various investment incentives to foreign companies, and the recent "Make in India" campaign has attracted much attention. Since these incentives cost the national exchequer dearly, it is important to analyse the benefits of these incentives to the host country through various spillover effects of FDI. Further, this is crucial for efficient policymaking, as the literature provides both negative and positive effects of FDI on host countries. We have examined the spillover effects of foreign direct investment in the Indian manufacturing sector by analysing the financial performance of foreign firms with domestic business group firms and stand-alone firms for selected sub-periods during 2001–17. To do this job, we have collected data and examined (by completely following the study of Suresh. K. G and Nagi Reddy on FDI, EPW, PP. 56 to pp.62, 8th Sept, 2018, and therefore, not claiming originality) from the Prowess database maintained by the Centre for Monitoring Indian Economy (CMIE). In order to identify foreign and Indian firms, we have used the ownership classification of Prowess. We have identified about 890 firms from the manufacturing sector, for the sake of examining which is based on the availability of data during the period 2001-17. Among these 890 firms, 137 are foreign and 753 are domestic firms; 267 are stand-alone firms, and 486 are business group afiliated firms. In this study, we like to analyse the presence of the spillover effect from foreign to domestic firms (classified as business group firms and stand-alone firms) in the Indian manufacturing sector. We have examined the spillover effect in terms of operational efficiency and sales efficiency. Foreign firms are expected to have higher operational efficiency and sales efficiency. We have used dummy variable regression to examine whether the sales efficiency and operational efficiency of foreign firms, Indian stand-alone firms and business group firms are different. Foreign and domestic firms are expected to have the same level of operational and sales efficiency in the presence of the spillover effect, as the domestic firms are likely to benefit from the presence of foreign firms. However, our research suggests that there is no difference in sales efficiency of domestic firms (both stand-alone and business group firms) and foreign firms (except for the crisis of 2008–09), when we control for firm-specific variables. Without controlling for firmspecific variables, we have found that a difference in the sales efficiency as foreign firms are equivalent to stand-alone firms in all the sub-periods, and stand-alone firms perform better than business group firms (except for in the crisis period). This shows that as Indian stand-alone firms offer products similar to foreign firms in terms of quality, foreign firms are unable to charge a price premium on their products. Since the R&D spending of Indian firms is generally lesser than that of foreign firms, it is evident that Indian firms are importing sophisticated machinery to compete with the foreign firms (as Jadhav and Reddy [2013] observed). The exports intensity of business group firms is equivalent to zero and for foreign firms, it is either zero or negative. The Indian stand-alone firms are the net exporters in Indian manufacturing sector. In terms of operational efficiency, by controlling for firm-specific variables, we have found that foreign firms were performing better than domestic firms (including two categories of firms) till 2009. Even after 2009, there is no significant difference in operational efficiency among the three categories of firms. Operational efficiency of domestic stand-alone and business group firms are not significantly different (except for in the crisis period, where business group firms have high operational efficiency). Without controlling for firm-specific variables, we have found that foreign firms were performing better than both types of domestic firms (stand-alone and business group) till 2007, and the operational efficiency of foreign and domestic stand-alone firms did not differ during 2008–09 and 2010–15. However, domestic stand-alone firms dominate over domestic business group firms in the post-2010 period with higher operational efficiency. We found a significant spillover effect of foreign multinational presence in the Indian economy in terms of sales efficiency. The Indian firms are equivalent to or even better than foreign firms in terms of sales efficiency. This indicates that Indian firms could appropriate the indirect technology spillover from foreign companies and could offer products similar to foreign firms that prevented them from charging a price premium. However, in terms of operational efficiency, the domestic firms lag behind foreign firms till 2009 and perform at par with

foreign firms in the post-2010 period. Since the exports intensity of foreign firms is either negative or zero, and zero for business group firms, it is evident that the government cannot rely on foreign or business group firms to promote exports. The foreign firms tend to focus more on the domestic market and business group firms invest in foreign markets instead of exporting from India. Therefore, our study shows that the sales efficiency of foreign firms is not significantly different from that of the domestic firms in all the sub-periods studied, except during 2008–09. But the operational efficiency of foreign firms till 2009 and, then for the later years, there is no significant difference in operational efficiency of domestic and foreign firms.

# Outflows due to repatriation, dividends and payments for technology have together constituted a major foreign exchange drain:

Now, it is important to note, globally, FDI flows of all hues have not been growing, especially from the developed countries (Rao and Dhar, 2015& 2016, The Hindu). The reality is that the developed countries are reaping the benefits of their past benefits in the face of managing global economic crisis. In fact, real outflows from them are far less than what the aggregates suggest. What are happening reinvested earnings or in other words profits generated and retained in host countries are bolstering the reported FDI flows. According to globally accepted OECD and IMF definition of FDI in which 10 per cent or more of foreign equity constitutes the "controlling share" in an enterprise can be categorized as FDI. In India, all investments other than those through the stock market are reported as FDI do not allow us to make the distinction between long-term investments and portfolio investments. We, therefore, came to know that according to the UNCTAD, the share of reinvested earnings is reported to have accounted for as much as four-fifths of total outflows during the period 2014-17 for select developed countries. Then a mere 10 per cent of total inflows were accounted for by direct equity flows, with loan making up for the rest. It is more likely that further opening up by India cannot help attract more FDI that would not have come otherwise. Even if some additional inflows come in, they would soon be more than offset by outflows. Besides these, one important point is that costs associated with FDI, especially the servicing burden and crowding out of domestic investment. In fact, for India, the servicing burden of FDI in terms of repatriations, dividend payments and payments for use of intellectual property is now showing up prominently. The RBI has reported that between 2009-10 and 2014-15, outflows due to repatriation, dividends and payments for technology have together constituted a major foreign exchange drain - nearly one-half of the equity inflows during this period. What is more, the RBI also has informed us that during the same period, subsidiaries of foreign companies operating in India ran negative trade balances in almost all manufacturing sub-sectors regularly drew out surpluses which look quite large when compared with the capital that the foreign companies were bringing in. Indian subsidiaries of foreign companies in the manufacturing sector run a huge deficit on trade deficit on trade account. The RBI shows by releasing data that there is a large dependence on imported inputs. Together with other payments and expenditure on other heads, the overall effect on the country's balance of payments could be substantial.

Specific measures to liberalise the Indian capital account since 1991 have led to a major surge in foreign investment of both the foreign direct investment (FDI) and portfolio variety. These have emerged as the predominant components of the capital account from the 1990s. Major investments of both the brownfi eld and greenfield variety have been undertaken by multinational corporations (MNCs) in various sectors. Indian policy planners have sought FDI primarily for productivity enhancements in the economy via the technological upgrade route. In recent years, the inflow of foreign capital through this route has come to be known as a sufficient device to manage "current account gaps" of disquieting magnitudes. Considering this immediate capital account effect of FDI and its potential to enhance the host economy's exports (via spillovers and local linkages), the impact of FDI on the balance of payments (balance of payments) has been presumed to be positive in the long run. Even though the

impact on the current account has been negative on account of import of technology and technologically advanced inputs, the assessment of such a negative impact in magnitude terms has been largely ignored due to the assumed benefits of imports and future foreign exchange addition possibilities. However, such current account transactions associated with FDI deserve a critical evaluation. The rising current account deficit and trade deficit, especially in the past decade, point to serious foreign exchange limitations. Certain studies like Hufbauer and Adler (1968), Boff (1971), Dunning (1974), Lall and Streeten (1977), Whichard (1980), Jansen (1995), Dhar and Roy (1996) and Lattore and Gomez (2009) have highlighted the loss of foreign exchange through profit repatriation and other routes by FDI companies to be larger than the initial capital inflow in different countries. A significant negative net impact of FDI on the current account of balance of payments of host economies (mainly developing or underdeveloped) has also been noted by many studies, owing to high imports, royalty payments and other foreign exchange expenses usually accompanied by limited exports by foreign-owned firms (Lall 1978; Newfarmer and Marsh 1981; Smits 1988; Jansen 1995; Chudnovsky and Lopez 2004). Smits (1988) observed that this could be due to intra-fi rm trade and resource dependence of affi liates on parent fi rms, leading to higher imports of raw materials, finished goods, and capital goods. Cohen (1973), Helleiner (1981), Casson and Pearce (1987), Jansen (1995) found some evidence for this in high intra-firm imports by MNC afiliates. As a lot of recent global evidence indicates, such imports and other intra-firm transaction routes are quite susceptible to transfer-pricing manipulations for tax avoidance. At present we are concerned with trends in firm-level foreign exchange use of a consistent set of company balance sheets of foreign affiliates operating in five high-technology sub-sectors in Indian manufacturing from 1993 to 2014. Our study restricts itself mainly to listed firms, which had continuous time series data for studied variables over longer time periods that facilitated our analysis over the post-reform years. The focus is on the manufacturing sector, which has been at the core of many reforms in industry and trade, and has also attracted a significant amount of foreign direct investment. The five sectors studied here, namely, transport equipment, chemicals (excluding drugs and pharmaceuticals), drugs and pharmaceuticals, electrical equipment and non-electrical machinery together accounted for about 13 per cent of total FDI inflows received between April 2000 and August 2010 and were the leading industrial groups among "tradable" group sectors in the manufacturing sector that have received FDI inflows in India (FDI Statistics nod). For the sake of our analysis, the required firm-level data have been taken from the Prowess database of Centre for Monitoring Indian Economy (CMIE), based on audited annual financial reports of companies. A persistent and overall rising negative net impact of foreign affiliates operating in high-technology manufacturing sub-sectors on the current account and the trade account of India's balance of payments is observed over the two decades of the reforms phase. When the net current account impact is analysed, the net foreign exchange earning intensity of foreign firms remained significantly lower than the local firms over the four sub-periods of the study years and their intensity has also fallen significantly over the period. We argue that a continuation of the rising trend of net foreign currency losses both in the terms of values and intensity for foreign firms as observed especially over the past decade will only worsen the already in-deficit current account of balance of payments. Unless their exports rise on par, or the losses are controlled by appropriate measures to check the repatriation of funds through various routes and strict monitoring of possible transfer pricing manipulations, the positive direct impact of FDI on the capital account can be easily offset by the growing negative effect on the current account in a the coming years. What is more, if the tendency towards foreign exchange expenses on intangible payments increases further for foreign firms, the detection of transfer mispricing in their cross-border transactions will become far more challenging for the tax authorities in future, given the associated complexities. So far as Indian economy is concerned, it is evident that trying to use all sorts of FDI inflows as the means to solve the balance of payments problem is at best a short-sighted strategy, since foreign affiliates may result in significant foreign exchange losses for the economy in the medium term through direct or likely shielded routes. Again, since the balance of payments is already emerging as a constraint on India's growth, such adverse trends deserve to be analysed more carefully and the policy regime that facilitates such negative trends may need to be reconsidered. A closer inspection of such possible illegal transfer of funds within global multinational networks via the cross-border transactions of these foreign affiliates is absolutely crucial. Now, we like to enter issues to evaluate on IMF-supported programme which have been implemented in India since 1991 till to date - especially those in respect of liberalisation of trade, opening up the economy for FDI and FPI as well as linked with these by creating pressure to reduce fiscal deficit.

# The current status and situation of the problem of trade balance, current account balance, overall balance, 'valuation effect' and foreign exchange reserves of the India's balance of payments:

Let us examine with economic logic on the status and situation of the problem of trade balance, current account balance, overall balance, 'valuation effect' and foreign exchange reserves of the India's balance of payments is new phenomenon, sort run or long run in nature. We have observed (from our following table on sources of foreign exchange reserves) that from a peak of \$642.45 billion on 3rd September, 2021, India's foreign exchange reserves have dipped to \$532.7 billion as of middle October, 2022.

That's a fall of almost \$109 billion in just over about 13 months. Now, the question is how have the reserves depleted so much so fast. The answer is very complex; one must first understand how they got accumulated in the first place. An economy typically in the process becomes a net exporter of 'capital', in addition to goods and services when its earning from export of goods and services exceed payments against imports which happens due to current account surpluses. We have also observed from World Bank's report of 2022 that, so far as the holding of foreign exchange reserves are concerned, the top 12 economies including India holding the highest foreign exchange reserves at the end of 2021. What is more is that, nearly all of them run large and persistent current account surpluses except India which only one year in 2020 enjoyed current account surpluses. The USA and Brazil have had similar stories, albeit with current account deficit larger than India's and even relative to their foreign exchange reserves (although it hardly matter to the USA, when it is the owner of the reserve currency used in most international transactions). Again, between 31st march, 1990 and 31st March, 2022, India's foreign exchange reserves rose from \$3.96 billion to \$607.31 billion. What is more, more than 50 per cent of the \$642.65 billion accretion has happened in the last eight years, but combined balance of trade deficit has been persisting. This deficit was partly offset by a net surplus of \$968 billion on the "invisibles" account of the balance of payments. The invisible surpluses have usually managed the trade balance deficit (1998-99 to 2005-06) and individual years (2001-02, 2002-03, 2003-04 and 2020-21) of an our economy and have managed current account deficits in combination with capital inflows - averaging \$25.2 billion and \$68.4 billion respectively in the last 10 years – have led to India's foreign exchange reserves going up in all but five out of 32 years from 1990-91 to 2021-22. We know that, besides current account deficit and capital inflows, there is another source of reserve accretion or depletion: "valuation effect". In standard practices, foreign exchange reserves are held in the form of dollars as well as non – dollar valuable currencies in term of exchange values internationally and gold, whose value is, in turn, influenced by movements in exchange rates and gold prices. In 2021-22, net capital inflows were at \$87.5 billion during Aril to December, but the last quarter (January to March) saw net outflows of \$1.7 billion - this was due to rising global interest rates and bond yields on the back of tightening monetary policy by the USA Federal Reserves (Fed) and other major Central Banks – which has led to slow rate of capital inflows. The foreign exchange reserves were, after all, accumulated as a buffer against currency volatility, external shocks and sudden stop of capital inflows. We argue that there is a general agreement that India's reserves are borrowed funds which we have explained earlier. So, the problem of trade balance, current account balance, overall balance, 'valuation effect' and foreign exchange reserves of the India's balance of payments is not a new phenomenon, but to a some extent is not a good situation, while the fall of the rupee has been relatively moderate, the pace at which India's foreign exchange reserves are dwindling are a cause for concern. In fact, at present value of many developed economies and emerging economies declined leading to a drop in foreign exchange reserves globally.

(In Billion US Dollars):					
	1990-91 to 1997-98	1998-99 to 2005-06	2006-07 to 2013-14	2014-15 to 2021-22	
1. Trade Balance (1a -1b)	-72.469	-165.135	-1051.316	-1176.895	
(a) Exports	207.273	472.412	1857.615	2555.15	
(b) Imports	279.742	637.547	2908.931	3732.045	
2. Net Invisible	37.527	165.189	713.252	967.989	
3. Cuurent Account Balance (1+2)	-34.942	0.054	-338.064	-208.907	
4. Capital Flows (Including from					
IMF)	57.887	117.113	479.75	544.29	
5. Overall Balance (3+4)	22.945	117.187	141.686	335.383	
6. Valuation Effect	2.46	5.068	10.915	-32.297	
7. Rise in Reserves (5+6)	25.405	122.255	152.601	303.086	

## Table: Sources of increase in India's foreign exchange reserves

Calculated from Source: RBI (Various Issues).

## **IV. Conclusion:**

Our foregoing analysis leads us to say in brief that it is true that after the massive shock of the Gulf War culminated in the crisis of 1989-91, the Government of India was forced to seek financial help from the IMF and other sources, but economic reform policy makers have not been taken seriously (and/or wilfully accepted neo-liberal economic policies for other reasons) the interest of the national economy. Economic reformers paid little attention on developing indigenous industrial base so it could link the other sectors of the indigenous economy also. The earlier protectionist policy stance was largely abandoned. In order to be a market-friendly liberalized economy, the exchange rate regime also went through a fundamental change in the early 1990s. The rupee was officially devalued in July, 1991 and finally in March 1993, India moved from the dual exchange rate regime to a single market-determined exchange rate system, but sorry to say that export performance did not improved as a result of this move. The CAD has come down since 1991-92 but it persisted till to date, even in 2011-12 and 2012-13, it touched unusually high levels by crossing 4 per cent. Although exports have grown during the last two decades they have not kept up with the growth in imports (e.g., export/GDP increased 11 percentage points between 1990-91 and 2011-12 whereas imports/GDP increased by 18 percentage points over the same period). There is now one major concern about export sectors in India: there has been shift from labour-intensive-products e g, textiles to capital-and-skill-intensive ones e g, engineering goods and this phenomenon indicates low rate of employment generation in the export sectors. Now we can have a look on import behaviour in the post-liberalisation period, imports have shown a steady increase from \$27.9 billion in 1990-91 to \$393 billion in 2016-17 and which is about 20 per cent of GDP. What is more, there have been years when it had touched 27 per cent of GDP. The rise in imports of oil is explained by the growth in the economy, stagnation in domestic production, and the rise in oil prices until recently. Despite increase of exports, if the trade deficit has widened it is because of the sharp rise in certain categories of imports. Apart from oil, electronic goods have also shown a steep increase. At around \$40 billion, they account for 10 per cent of total imports. They accounted for less than 3 per cent in 1998–99. India had enough opportunities to develop by its own import substituting industries in electronic goods but never tried to do so as policy makers habituated to thought it those goods were importable and never conceptualized the notion of incomplete specialization in an environment of trade war engaged by some developed countries and China.

Since 2004-05, however, the current account has consistently been in deficit; with the magnitude of the deficit growing since then. Since 2012–13, the average CAD has been 1.2 per cent of GDP, in 2017–18 the CAD is about 2 per cent of GDP. After 1990-91, the ongoing current account deficits have been financed by capital inflows; hence a surplus on the capital account. But so far as balance of payments accounting system is concerned this surplus capital inflow is nothing but foreigners' claims on our assets. Select Indian companies were permitted to raise funds from the international capital market and measures were taken to encourage large scale foreign investment (both FPI and FDI). As a consequence, the new regime allowed foreign direct investment (FDI) over a wide range of sectors with even majority ownership except in certain areas and portfolio investment in Indian stocks was of course permitted to financial institutional investors – both of which are to be treated as foreign companies' claims on assets of Indian companies, and as a whole by legal concept on Indian industries and services sectors. This inflow of capital will increase in foreign exchange reserves but we should keep in mind that it is increase of India's borrowing in the balance of payments. However, the landscape of the external sector went through far-reaching changes. While the need to be on the watch continues, the external sector has yet to be acquired sufficient resilience to withstand shocks. Unlike many of the East Asian countries, including China, which has a current account surplus, India still, has a current account deficit (CAD) and the trade deficit is high. So, it is not imperative to say that we strive towards keeping the CAD at a level that can be financed by normal capital inflows.

The government's deliberate stand is very clear; shortage of savings would be financed by inflow of foreign capital, in spite of the fact that the widening current account deficit and its financing by net capital inflows over the last decade pose a key challenge to India's macroeconomic and financial stability. Government of India wanted more inflow of foreign capital for supplanting private investment in order to achieve higher economic growth. We have found a trade account deficit as imports become greater than exports which led to the excess demand for foreign currency that encouraged more FDI or FII for payment of import bill. This has led to foreign currency inflow. But, due to volatility of FDI and FII, when foreign currency outflow takes place, it leads to an increase in the value of the foreign currency in terms of our domestic currency. Higher value of the foreign currency leads to an increase in import bills leading to a devaluation of the domestic currency, generating inflationary upsurge. So, trade account deficit, depreciation of rupee, and a shortage of consumption expenditure (which constitutes 55 per cent of gross domestic product) due to low level of interest income earned by common man from their saving deposits as well as due to high rate high rate of unemployment and under employment combined with these three variables may lead to further problem of effective demand which had already been persisted for a long time since the inception of economic reform. We argue that government's deliberate attempt to make a nexus between reduction of fiscal deficit and promotion of inflow of capital may jeopardise external and internal balance of the economy. So government's ambition for higher economic growth would lead to serious macroeconomic structural imbalances (the higher the trade deficit, the larger is the savings-investment gap) where economy has already been suffering from inequalities in all sphere of socio-economic life. We argue that as a whole all these measures and policies were directed towards only GDP growth oriented economic policy and had deliberately bypassed the problems of acute problem of inequality and unemployment in the economy which could have solved by effective implementation of import substitution strategy of industrialisation and rational export promotion policies.

In external front, we have observed that there has been a sharp increase in foreign exchange reserve, but these increases in foreign exchange reserves are nothing but borrowing (claims of foreign residents on our economy) from foreign countries and which are FDI and FPI of corporate sectors and institutional investors respectively. So, we could not be joyous, rather we should be concerned about their volatility of flows into India and its serious implication on the domestic economy as a whole. What is more, while the size is comforting, it must be noted that these have been built out of excess capital flows rather than current account surpluses. We have examined the spillover effect in terms of operational efficiency and sales efficiency. Foreign firms are expected to have higher operational efficiency and sales efficiency. We have used dummy variable regression to examine whether the sales efficiency and operational efficiency of foreign firms, Indian stand-alone firms and business group firms are different. Foreign and domestic firms are expected to have the same level of operational and sales efficiency in the presence of the spillover effect, as the domestic firms are likely to benefit from the presence of foreign firms. However, our research suggests that there is no difference in sales efficiency of domestic firms (both stand-alone and business group firms) and foreign firms (except for the crisis of 2008–09), when we control for firm-specific variables. Without controlling for firm-specific variables, we have found that foreign firms were performing better than both types of domestic firms (stand-alone and business group) till 2007, and the operational efficiency of foreign and domestic stand-alone firms did not differ during 2008–09 and 2010–15. However, domestic stand-alone firms dominate over domestic business group firms in the post-2010 period with higher operational efficiency. We found a significant spillover effect of foreign multinational presence in the Indian economy in terms of sales efficiency. The Indian firms are equivalent to or even better than foreign firms in terms of sales efficiency. This indicates that Indian firms could appropriate the indirect technology spillover from foreign companies and could offer products similar to foreign firms that prevented them from charging a price premium. However, in terms of operational efficiency, the domestic firms lag behind foreign firms till 2009 and perform at par with foreign firms in the post-2010 period. What is more, for India, the servicing burden of FDI in terms of repatriations, dividend payments and payments for use of intellectual property is now showing up prominently. The RBI has reported that between 2009-10 and 2014-15, outflows due to repatriation, dividends and payments for technology have together constituted a major foreign exchange drain nearly one-half of the equity inflows during this period. What is more, the RBI also has informed us that during the same period, subsidiaries of foreign companies operating in India ran negative trade balances in almost all manufacturing sub-sectors regularly drew out surpluses which look quite large when compared with the capital that the foreign companies were bringing in. Indian subsidiaries of foreign companies in the manufacturing sector run a huge deficit on trade deficit on trade account. The RBI shows by releasing data that there is a large dependence on imported inputs. Together with other payments and expenditure on other heads, the overall effect on the country's balance of payments could be substantial.

Government of India wants more inflow of foreign capital for supplanting private investment in order to achieve higher economic growth. We have found a trade account deficit as imports become greater than exports which led to the excess demand for foreign currency that encouraged more FDI or FII for payment of import bill. This has led to foreign currency inflow. But, due to volatility of FDI and FII, when foreign currency outflow takes place, it leads to an increase in the value of the foreign currency in terms of our domestic currency. Higher value of the foreign currency leads to an increase in import bills leading to a devaluation of the domestic currency, generating inflationary upsurge. So, trade account deficit, depreciation of rupee, and a combined with these two and higher level of domestic food prices, lead to increasing inflationary tendencies. We argue that there is a general agreement that India's reserves are borrowed funds which we have explained earlier. So, the problem of trade balance, current account balance, overall balance, 'valuation effect' and foreign exchange reserves of the India's balance of payments is not a new phenomenon, but to a some extent is not a good situation, while the fall of the rupee has been relatively moderate, the pace at which India's foreign exchange reserves are dwindling are a cause for concern. In fact, at present value of currency of many developed economies and emerging economies declined leading to a drop in foreign exchange reserves globally.

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#### Demographic Dividend in India: Opportunities and Challenges

#### Sharanappa Saidapur

#### Abstract:

The present paper analyzes the role and relevancy of demographic dividend in Indian economy. Demographic dividend as defined by the United Nations Population Fund (UNFPA) is "the economic growth potential that can result from shifts in a populations age structure mainly when the share of the working age population (15 to 64) is larger than the non-working age share of the population (14 and 14)younger and 65 and older). In other words, it is 'a boost in economic productivity that occurs when there is growing number of dependents'. Population is future and pillar of development of any country. The people of any country are one of the means of production. The country's production and productivity depends upon its efficient people. The development of any country depends on people's attitude and aptitude. Without people there would be no society or economy. India is a most populous county in the world. In this connection Mahatma Gandhi said that the real asset of the country is in its people. Where there is an effective utilization of the human resources in development arena there will be a bright future for a country. India is a rich country in the form of human capital; we should invest our human capital in our economic development. One of the best investments is human capital that gives best returns to Indian economic development in a long term. The population is not a curse for any country but it is stepping stone for the development. Utilization of human resources effectively and efficiently is essential to get the best out of its demographic dividend. India needs to invest massively in quality school and higher education as well as health care sectors which are neglected for decadesacross India on an unprecedented scale, literally in trillions of rupees between now and 2050 when it would have reached the apogee of its population growth. The normal growth of population is boon for development and over growth of population is bane for development of any country. It has adverse effects on employment situation in India. Nowadays the development growth model is against the employment opportunities. There is development but without employment. We need to create conducive environment for private sector as well as public sector to be boosted for employment opportunities with grass root changes in our policies. Above all good governance is the need of the day. To conclude, let demographic dividend do not prove demographic disaster for want of manpower planning, good governance and inflation targeting in India. Therefore, India is called a young country with 50 percent of its population below 25 years of age. Therefore, demographic dividend can utilize effectively in development to achieve the sustainable development goals. The benefit of demographic transition shows the rise in the relative number of bread winners. The decline in dependency ratio and participation of women in the workforce results in increased GDP and improved standard of living. Keywords: Demographic, Dividend, Disaster, Papulation, Resources, Emploment, Development.

#### Introduction:

Population is future and pillar of development of any country. The people of any country are one of the means of production. The country's production and productivity depends upon its efficient people. The development of any country depends on people's attitude and aptitude. Without people there would be no society or economy. India is a most populous county in the world. In this connection Mahatma Gandhi said that the real asset of the country is in its people. Where there is an effective utilization of the human resources in development arena there will be a bright future for a country. When there is an under utilization of population in development there will be a dark face. In this way the presently western countries have faced the problem of old age and country like India has faced the problem of young age. Growth is need of the hour. Therefore effective utilization of human resources is necessary for achieving the sustainable development.

A larger population is perceived to mean greater human capital, higher economic growth and improved standards of living. In the last seven decades, the share of the working age population has

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grown from 50% to 65 percent, resulting in a remarkable decline in the dependency ratio (number of children and elderly persons per working age population). As in the WPP 2022, India will have one of the largest workforce globally, i.e., in the next 25 years one in five working age group persons will be living in India. This working age bulge will keep growing till the mid 2050s and India must make use of it. However there are several obstacles to harnessing this demographic dividend. India's labour force is constrained by the absence of women from the workforce, only a fourth of women are employed. This quality of educational attainments is not up to the mark and the country's workforce badly lacks the basic skills required for the modernized job market. Having the largest population with one of the world's lowest employment rates is another enormous hurdle for our Country in reaping the demographic dividend.

The United Nations World population prospects (WPP), 2022 forecasts India becoming the most populous country by 2023, and surpassing China with 140 crore population. This is four times the population India had at the time of Independence in 1947 (34 crore), Now, at the Third stage of the demographic transition our Country experiencing a slowing growth rate due to constant low mortality and rapidly declining fertility. India has 17.5 percent of the world's population. As per the latest WPP India will reach 150 crore by 2030 and 166 crore by 2050.

In this paper, we understand, analyze and interpret the opportunities and challenges for Indian manpower in terms of the demographic dividend and suggest long term policy measures to mitigate the threat of the manpower problem. The United Nation's report, World population prospects 2022, forecasts that the world's population will touch eight billion this year and rise to 9.8 billion in 2050. What is the immediate concern for India is that its population will surpass China's by 2023 and continue to surge.

# **Conceptual issues of Demographic Dividend:**

Demographic dividend as defined by the United Nations Population Fund (UNFPA) is "the economic growth potential that can result from shifts in a populations age structure mainly when the share of the working age population (15 to 64) is larger than the non-working age share of the population (14 and younger and 65 and older). In other words, it is 'a boost in economic productivity that occurs when there is growing number of dependents'. Demographic dividend occurs when the proportion of working people in the total population is high because this indicates that more people have the potential to be production and contribute to growth of the Indian economy. Declining fertility rates have changed the age structure of India's population, resulting in a "bulge" in the working age-group. This "demographic dividend" has improved the dependency ration leading to the hypothesis that the bulge in working population will lead to acceleration in growth.

# **Objectives of the paper:**

The objectives of the paper are as follows:

- 1. To understand the conceptual issues of demographic dividend.
- 2. To analyze the opportunities and challenges of population.
- 3. To make suitable suggestions for improvement of strength of population.

# Methodology:

This paper based on secondary sources. The published data collected from books, journal, magazines, government reports, NSSO report and Census report and news papers. The present paper has been adopted descriptive as well as analytical way.

# **Discussion and Analysis:**

To understand, analyze and interpret the opportunities and challenges for Indian manpower in terms of the demographic dividend and suggest long term policy measures is the main motto of this paper. My beloved INDIA stands for Independent, Non-violent Democracy with Integrity and Amity known for relationship management. There is a great development potential in Indian manpower conceived in demographic dividend in terms of population in working age group (15-60). According to International Monetary Fund (IMF), India is in the middle of a major demographic transition where the working age ratio is set to rise from about 64 percent currently to 69 percent in 2040, which means an addition of

over 300 million working age adults. This would make India the largest single positive contributor to the global workforce over the next three decades. It is the benefit India will get due to the increase in the working age population compared with dependants such as children and old age people. This stage of India's growth begins with a demographic transition. It means a shift from a rural agrarian society with high fertility and mortality rates to an urban industrial society with low fertility and mortality rate.

The most optimistic about India's future rise are major consulting firms. Deloitte's Deloitte Insights (September 2017) expects India's potential work force to rise from 885 million to 1.08 billion people over the next two decades from today and remain above a billion people for half a century, betting that these new workers will be much better trained and educated, than their existing counterparts. It contends that the next 50 years will therefore, be an Indian summer that redraws face of global economic power. Mckinsey & Company's report, India at 'Turning Point' (August 2020), believes the trends such as digitization and automation shifting supply chains, urbanization raising incomes and demographic shifts and greater focus on sustainability, health and safety are accelerating to create \$2.5 trillion of economic value in 2030 and support 112 million jobs or about 30 percent of the non-farm work force in 2030. The trend of growth of population increases year after year. There are ups and downs in decadal growth and average annual growth

Sl. No	Census Year	Population in	Decadal Growth	Average annual Growth
		crores	(%)	0
1	1901	23.83	-	0.19
2	1951	36.11	13.31	1.25
3	1961	43.92	21.64	1.96
4	1971	54.82	24.80	2.20
5	1981	68.33	24.66	2.10
6	1991	84.64	23.87	2.16
7	2001	102.87	21.54	1.97
8	2011	121.02	17.64	1.64
9	2021	141.8	17.76	2.36

 Table-01

 Trends and Growth of India's Population

Sources: Census of India

The above table depicts the trends and growth of India's population in different census year. There is big gap between decadal growth and average annual growth.

#### **Opportunities of Indian Population:**

India is a rich country in the form of human capital; we should invest our human capital in our economic development. One of the best investments is human capital that gives best returns to Indian economic development in a long term. The population is not a curse for any country but it is stepping stone for the development. Utilization of human resources effectively and efficiently is essential to get the best out of its demographic dividend. India needs to invest massively in quality school and higher education as well as health care sectors which are neglected for decades-across India on an unprecedented scale, literally in trillions of rupees between now and 2050 when it would have reached the apogee of its population growth.

The demographic concern of independent India is the male dominant sex ratio. In 1971 the country had a sex ratio of 930 female per 1000 males. After aggressively withstanding the hurdles that stopped the betterment of sex ratio such as a preference for sons and sex selective abortions, the nation, for the first time began witnessing a slightly improving sex ratio from 1970. In 2011, the sex ratio was 943 females per 1000 males; by 2022 it is expected to be approximately 950 females per 1000 males. It is a shame that one in three girls missing globally due to sex selection (both pre and post natal) is from India. The great Nobel laureate of India Prof.A.K.Sen has rightly pointed out in his study the 'missing women' in development agenda. It was reverse effect on balance development of country. Improvement in sex ratio should be priority as some communities face severe challenges from a marriage squeeze (an

imbalance between number of men and women available to marry in a specific society) and eventual bride purchase.

Life expectancy at birth, a summary indicator of overall public health achievements, saw a remarkable recovery growth from 32 years in 1947 to 70 years in 2019. It is welcome to see how several mortality indicators have improved in the last seven decades. The infant mortality rate declined from 133 in 1951 (for the big states) to 27 in 2020. The less than five mortality rate feel from 250 to 41, and the maternal mortality ratio dropped from 2000 in the 1940s to 103 in 2019, every other woman in reproductive age group in India is anemic and every third child below five is stunted. India stands 101 out of 116 nations in Global Hunger Index. This is partly daunting for a country which has one of the most extensive welfare programme for food security thorough the public distribution system and the midday meals scheme. In other words one of the important aspects of demographic dividend is age of the population. India is the second most populated country in the world with a sixth of the world population. According to official estimates, India's population stood at 1.38 billion. Between 1975 and 2010, the population doubled to 1.2 billion reaching the billion marks in 2000. India is projected to surpass china to become the world's most populous country by 2023. It is expected to become the first country to be home to more than 1.5 billion people by 2030 and its population is set to reach 1.7 billion 2050. However, its pace of population growth is slowing. In 2017 its population growth rate was 0.98 percent, ranking 112<sup>th</sup> in the world; in contrast from 1972 to 1983, India's population grew by an annual rate of 28 percent. In 2022 the median age of Indian was 28.7 years compared to 38.4 for China and 48.6 for Japan and by 2030 India's dependency ratio will be just over 0.4. However the number of children in India peaked more than a decade ago and is now falling the number of Indians under 15 years old peaked slightly in 2011 and is now also declined. Some of the major opportunities of the demographic dividend are as follows: 1) India's youth bulge could just as easily turn into a youth bomb, 2) India's working age population will continue to be over 70 percent of the total population till the 2050, there is enough time to exploit it fully for the benefit of the Country.3) Generate new job opportunities for jobless youths, 4) Development area will generate more opportunities for public and private partnership. To face the challenges of unemployment under 11<sup>th</sup> plan, we have to create 58 million jobs and 42 million workers are to be absorbed in the non-agricultural unorganized sector. It appeared to be over optimistic and unrealistic to create 100 million jobs.

#### **Challenges of Population Growth:**

India is transforming demographically, in which the population of a nation decreases and life expectancy increases, participation of women in labour force and rate of saving increases. India has her own problems such as illiteracy, corruption, income inequality, unemployment, poverty, regional disparities etc. All developed nations will have older population by 2026, as their population is aging. It means India can take the advantage of this situation, by proper development of human resources, by converting the human potential into engine of economic growth. This period of demographic dividend is an opportunity for overall growth. It is not the guarantee for improving the standard of living. This window of opportunity expects from youth, the right skills and aptitude for employability.

The normal growth of population is boon for development and over growth of population is bane for development of any country. It has adverse effects on employment situation in India. Nowadays the development growth model is against the employment opportunities. There is development but without employment. That is the big problem for India. India is the second in size of its population next to China. In Malthusian sense, the overpopulation is a kind of situation that exists in India because its population is increasing more rapidly than its supply of food. The rate of growth of population is greater than the rate of growth of food production. The associated problems of overpopulation (demographic disaster) are:1) low per-capita income, 2) food problem, 3) Malnutrition,4) Famines, 5) Diseases,6) shortage of food-grains, 7) low standard of living, 8) increase in the poverty, 9) unemployment 10) unrest among the young population, 11) inequality.

### **Remedial Measures:**

We need to create conducive environment for private sector as well as public sector to be boosted for employment opportunities with grass root changes in our policies. Above all good governance is the need of the day. Some of the major policy implications in the employment sector are: 1) To provide ROTI,KAPADA and MAKAN and livelihood to the unemployed, we need to increase basic amenities for marginal section of the society.2) To utilize the human capital for India in urban areas in an effective manner calls for manpower planning for matching demand and supply of skilled personnel, training of manpower for reducing mismatch between the abilities and the jobs on offer and above all mechanism by pairing people with jobs through information network. To hire the unemployed in the unorganized sector particularly the poor women who can work as demotic help, we need to allow income tax exemption to the tune of wage paid to them by those who do so of course with prior information and details. There is a case for rural industrialization for reducing under employment and disguised unemployment in India. It means not village industries but industries having backward and forward linkages with agriculture.

India is thick populated country in the world. The effective utilization of human resources is need of the hour. Therefore the government should establish of small scale industry rather than largescale industry that too labour intensive industry. These industries provide large number of employment opportunities to large number of youth population. Otherwise youth involves in anti social and anti national activities. In this regard, there is a famous proverb that 'empty mind is devil workshop'. It means when youth population is without employment they will divert their capacity to destructive activity. Hence the creation of employment opportunity to increasing young mass is essential. So youth population can use their capacity in nation building. The most urgent need for policy intervention is to make population policy in India to effective utilization of people in the development of the country. Some of the important remedial measures are as follows: Skill oriented education multidisciplinary course to start the professional courses, implement the land distribution policy, and universal basic income programme. The government should implement the policy of education for all and job for all or to provide unemployment allowance to unemployed youth in India as mention in preamble of the Indian Constitution. The equitable distribution of national income is necessary and lastly the improvement in socio-economic status of women is need of hour.

#### **Conclusion:**

To conclude, let demographic dividend do not prove demographic disaster for want of manpower planning, good governance and inflation targeting in India. Therefore, India is called a young country with 50 percent of its population below 25 years of age. But the share of India's elderly population is now increasing and is expected to be 12 percent by 2050. After 2050, the elderly population will increase sharply. So advance investments in the development of a robust social, financial and health care support system for old people is the need of the hour. The focus of action should be on extensive investment in human capital, on older adults living with dignity and on healthy population ageing we should be prepared with suitable infrastructure. The conductive social welfare schemes and massive investment in quality education and health is needed. The focus should not be on population control; we do not have such a severe problem now. Instead, an augmentation of the quality of life should be top priority. Old age population problems are faced by western countries but India is facing young age population problems. Therefore we should reap the demographic divided, then only we can achieve goal of reaching 5 trillion economy. In a nutshell, people of its country are harbinger of socioeconomic change. It uplifts and updates strength of country. Therefore, demographic dividend can utilize effectively in development to achieve the sustainable development goals. The benefit of demographic transition shows the rise in the relative number of bread winners. The decline in dependency ratio and participation of women in the workforce results in increased GDP and improved standard of living.

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## "Rural banks as a key driver in economic growth And employment generation in India" – An analysis

#### Dhananjaya K.B.

### **ABSTRACT :**

Economic security is one of the main components of human security. It constitutes the crux of social security in the conventional sense. Economic security requires employment and an assured source of income adequate for meeting human needs. The size of employment in any country depends to a great extent on the level of development. Therefore, when a country makes progress and its production expands the employment opportunities grow. In India, during the past three decades or so production has expanded in all the sectors of the economy. In response to these developments the absolute level of employment has also grown. "Jobless growth is joyless growth for those impacted by globalisation. We have to provide meaningful employment in the agricultural sector to address these concerns". Jobs, rather than men, should wait." Economic growth by itself does not solve problem of unemployment. Agriculture and rural sectors play an important role in India's overall development strategy in term of income and employment generation and poverty alleviation. Great significance has, therefore, been accorded to developing appropriate institutions and mechanisms for catering to the credit requirements of these sectors.

In spite of the various measures taken by the Government and the RBI through the nationalisation of major commercial Banks in 1969, a large proportion of the rural poor remained outside the banking fold. In 1975 Regional rural Banks were set up. They were established to provide credit and other facilities particularly to the small and marginal farmers agricultural labourers, artisans, small entrepreneur so as to develop agriculture, trade, commerce, industry etc. In this way, they generate more employment opportunities. RRBs are the key driver to generate more employment opportunities.

This study focussed on role of Regional Rural Bank in economic development and employment generation.

## **INTRODUCTION** :

Agriculture and Rural sectors play an important role in India's overall development strategy interms of income and employment generation and poverty alleviation. Great significance has, therefore, been accorded to developing appropriate institutions and mechanisms for catering to the credit requirements of these sectors.

Inspite of the various measures taken by the government and the RBI through social control and the nationalisation of major commercial Banks in 1969, a large proportion of the rural poor remained outside Banking fold. A working Group on Rural Banks (1975) recommended the establishment of RRBs i.e. Regional Rural Banks to supplement the efforts of the commercial banks and the co-operatives in extending credit to weaker sections of the rural community small and marginal farmers, landless labourers, artisans and other rural residents of small means. Subsequently, the RRBs were set up through the promulgamation of RRBs Act of 1976. Their equity is held by the central government, concerned state government and sponsor bank in the proposition of 50 : 15 : 35 RRBs were supposed to evolve as specialised rural financial institutions for developing the rural economy by providing credit to small and marginal farmers, agricultural labourers, artisans and small entrepreneur.

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"Regional Rural Banks (RRBs) were conceived as Institutions that combine the local feel and familiarity of co-operative and the business organisation ability of the commercial banks. In a multi-agency approach for agricultural and rural credit in India, RRBs have a special place".

Initially, 5 Regional Rural Banks were set up on October 2, 1975. Each RRB had an authorised capital of Rs. 1 crores and issued and paid-up capital of Rs. 25 lakhs. The share capital was subscribed by central government (50%), the state government concerned (15%)

and the sponsoring commercial banks (35%) The numbers have grown into 196 RRBs with

14,446 branches working in 518 districts across the country in March 2004. RRBs have a large branch network in the rural area forming around 43 percent of the total rural branches of commercial banks. The rural orientation of RRBs is formidable with rural and semi-urban branches constituting over 97% of their branch network.

As the very objective of setting up RRBs to develop the rural economy and generating employment opportunities to rural people by providing credit.

# **REVIEW OF LITERATURE :-**

A.B. Kalkundrikar performance of Regional Rural Banks (1992) analyses the performance of RRBs in Karnataka in terms of recovery performance profitability, deposit mobilisation, profitability, contribution to economic development, man power planning and employee welfare.

N.M. MAKANDAR Profitability and productivity Analysis of RRBs in India makes an attempt to highlight the profitability and productivity of the RRBs which helps to economic development.

Dr. Ishwara P. Financial performance Analysis of RRBs Pre and Post Transformation evaluates financial performance of RRBs to agricultural development before Amalganation and after amalgamation.

D. Sujatha Susanna and Dr. B. Phanishwara Raju, Impact of restructuring through Amalgemation on the performance of RRBs in India – A study of RRBs in Karnataka.

Neelam Jain, women entrepreneurship as a key Driver in national Development has analysed the key are in the empowerment of women is the economic area women's active participation in economic activities leads to their economic development.

Yogesh Madhukar rao Kulkarni, Role of SSI in employment generation has analysed small scale industries are generating more employment opportunities today.

Chandrashekar S. Manickam and D. Solomon Raj "Role of Agriculture in employment generation.

# **Objectives of the study :**

- 1. To know the evolution of RRBs
- 2. To study the objectives of setting up of RRBs in a country
- 3. To examine the role RRBs in developing nation and generating employment.
- 4. To analyse special concessions to RRBs
- 5. To analyse financial performance of RRBs before amalgamation and after amalgamation.
- 6. To analyse financial performance of RRBs in Karnataka
- 7. To focus on key highlights of RRBs in India to generate employment.

# **Date and Methodology**

To understand the RRBs As a key Driver in economic growth and employment generation in India, the study uses secondary sources of data which include RBI Bulletin, SEBI Bulletins, hand book of

statistics on Indian economy trends and progress of Banking in India, Report on national sample survey, Economic survey from 2000-2011. Annual Report of RRBs and NABARD publications Apart from this, business dailies such as economics times, business standard, financial express Business line etc have been used for the purpose of collecting information.

# **EVOLUTION OF REGIONAL RURAL BANKS (RRBs)**

One of the important points of the 20-point economic programme of Mrs Indira Gandhi during Emergency was the liquidation of rural indebtedness by stages and provide institutional credit to farmers and artisans in rural areas. It was in pursuance of this aspect of the New Economic Programme that the Government of India setup regional rural banks (RRB).

The main objective of the RRBs is to provide credit and other facilities particularly to the small and marginal farmers, agricultural labourers, artisans and small entrepreneurs so as to develop agriculture, trade, commerce, industry and other productive activities in the rural areas.

"Regional rural banks (RRBs) were conceived as institutions that combine the local feel and familiarity of co-operatives and the business organisation ability of the commercial banks. In a multi-agency approach for agricultural and rural credit in India, RRBs have a special place".

Initially, five regional rural banks were set up on October 2, 1975 at Moradabad and Gorakhpur in Uttar Pradesh, Bhiwani in Haryana, Jaipur in Rajasthan and Malda in West Bengal, Each regional rural bank had an authorised capital or Rs. 1 crore, and issued and paid-up capital or Rs. 25 lakhs. The share capital was subscribed by the Central Government (50), the State Government concerned (15%), and the sponsoring commercial bank (35%). The RRBs though basically scheduled commercial banks, differ from the latter in certain respects :

(a) The area RRBs is limited to a specified region comprising one or more districts of a State.

(b) The RRBs grant direct loans and advances only to small and marginal farmers, rural artisans and agricultural labourers and others of small means for productive purpose.

(c) The lending rates of RRBs should not be higher than the prevailing lending rates of co-operative societies in any particular State. The sponsoring banks and Reserve Bank of India provide many subsidies and concessions to RRBs to enable the latter to function effectively.

## **Progress of RRBs : An Evaluation :**

RRBs have an important role to play in our rural economy as they have to act as alternative agencies to provide institutional credit in rural areas. In course of time, they are intended to eliminate money lenders altogether. However, they were not set up to replace co-operative credit societies but to supplement them. In the last 30 years, RRBs have been active participants in programmes designed to provide credit assistance to identified beneficiaries under the new 20-point programme, IRDP and other special programmes for scheduled castes and tribes.

They are also implementing differential rate of interest (DRI) schemes for the weaker sections, physically handicapped persons who are gainfully employed, can secure finance from RRBs for purchase of artificial limbs, hearing aids, wheel chairs etc. subject to a maximum of Rs. 2,500 per borrower. The RBI conducted a field study in April 1981 on all qualitative aspects of lending by RRBs. This study established clearly that, by and large.

(a) RRBs had followed instructions given by RBI and the Government of India regarding loan policies, procedures. Etc.;

(b) The basic aim of setting up RRBs viz., developing the rural economy by providing credit for the development of agriculture, trade, commerce industry and other productive activities in rural areas was being fulfilled:
(c) RRBs had successfully maintained their image as a small man's bank by confining their credit facilities to the target groups viz., small, marginal farmers, agricultural labourers, artisans and small enterprises for productive activities; and

(d) The recovery position was not satisfactory.

### **OBJECTIVES OF SETTING UP RRBs**

The main objective behind setting up of RRBs was to attain rural development through betterment of weaker section of the rural society. The novelty of rural credit aims at providing finance and other facilities in development of agriculture and allied activities to renovate the rural economy. These institutions serve as supplement to the existing institutional credit infrastructure and also to reduce participation of informal credit agencies, especially the unscrupulous money lenders. According to RRBs Act, 1976, the RRBs are established, with a view to developing the rural economy and providing assistance in the advancement of agriculture, trade, commerce, industry and other productive activities in the rural areas, credit and other facilities, particularly to the small and entrepreneurs, and for matters connected therewith and incidental thereto.

In order to achieve the aforesaid objective, the following operational objectives were identified and conceived at the time of establishment of the RRBs.

- To reach to the remote backward and tribal areas of the villages and also to make these areas economically stable and sound,
- To initiate employment opportunities to local youth. This initiative, as was perceived, would not only change the social, economic, cultural and political environment but also the life style and standard of living of rural poor,
- To eradicate the existence of usurious money-lenders in the rural credit market,
- To bridge the credit slit in the rural areas,
- To liberate the rural people from the curse of poverty,
- To mitigate poverty through generation of surplus income and better planned productive activities,

• To make an impression as a specialised agency for extension of credit facilities to small farmers and other small borrowers in the rural areas,

• To provide the most needed credit at the doorstep of the rural poor on reasonable terms and conditions so that the weaker sections of people in rural areas could raise their total productivity and their standard of living,

• To mobilise rural savings of the poor villagers even in small amounts and to inculcate in them the habit of frugality in replacing the money lenders,

• To establish a centre for overall economic development and social change by integrating and coordinating credit activities in the rural areas.

### ROLE OF RRBs IN ECONOMIC GROWTH AND EMPLOYMENT OPERATION IN INDIA :

The RRBs combine the local feel and familiarity with the rural problems at par with the cooperative, on one hand and with strategic business environment, commercial discipline ability to mobilise deposits, access to control money market and the modern outlook of the commercial banks, on the other. Generally these institutions are regional based, rural oriented and commercially organised. The role of RRBs is to supplement the other regional institutional agencies in this area. These institutions are aimed to assist in fulfilling of the lead bank's role.

The India, there are 196 RRbs promoted by commercial banks with the objective of catering to a very limited jurisdiction of one or two districts and being farmer friendly. They are otherwise called as grameena Banks. They are allowed to open branches with their area of operation and currently there are six metropolitan, 348 urban, 1875 semi urban and 12084 rural branches.

These are established for the purpose of providing credit and other incidental services at reasonable terms and conditions to uplift the rural poor of the unbanked and under banked areas.

The Role and financial preference of RRBs have been evolved in response to policy initiative and changing business environment. Their loans outstanding to agriculture and rural sector have shown below.

Years	Loans & advances ( in crores)
1975	0.10
1976	7.02
1977	42.35
1978	122.02
1979	167.41
1980	243.38
1981	406.59
1982	577.11
1983	750.84
1984	1080.77
1985	1407.67
1986	1784.84
1987	2232.26
1988	2804.29
1989	2918.25
1990	3554.04
1991	3803.60
1992	4090.86
1993	4626.73
1994	5253.03
1995	6290.97
1996	7505.02
1997	8718.08
1998	9860.85

### Recent trends in total credit disbursed by RRBs :

1999	11355.87	
2000	13184.25	
2001	15816.32	
2002	18629.22	
2003	21184.43	
2004	26113.86	
2005-2006	38.520	
2006-2007	47.326	
2007-2008	57.326	
2008-2009	65.609	
2009-2010	79.157	

Source : NABARD, Statistical reports, RBI reports on trends & progress of Banking in India 2010

There was increase both in the total disbursement of credit or gross loan and deposits to the RRBs. The total credit disbursed by the RRBs rose from Rs. 0.10 crore in 1975 to Rs. 79.157 crores in 2009-10.

### Flow of credit to Agriculture and Allied Activity :

Years	Credit (in Crores)
2002-03	6070
2005-06	15.223
2006-07	20.435
2007-08	25.312
2008-09	26.724
2009-10	35.218
2010-11	19.141

Source : NABARD, Economic survey 2010 - 11

In this way, RRBs are playing a prominent role in economic growth and generating employment to people.

### SPECIAL CONCESSIONS AND PRIVILEGES ALLOWS TO RRBs

The Reserve Bank of India, in order to support these specialised institutions in their formative years, has sanctioned a number of concessions for their smooth functioning. The major features of these concessions and privileges are summarized below.

• The RRBs can offer a uniformly higher rate of interest on deposits for all periods of maturity up to five years. The interest rate may be fixed by half a percent over the rates payable by the scheduled commercial bank; however, the rate should be at par with those offered by the District Central Co-operative Banks (DCCBs) functioning with the same area of operation of the RRBs and half a percent less than the rates on deposits payable by the village level primary agricultural credit societies.

• The rates of interest to be charged by the RRBs on its direct advances to the beneficiaries belonging to the specified categories of the rural society would be at par with the rate charged by the primary agricultural credit societies operating within the same areas of operation.

• The RRBs are also allowed to lend up to 15 percent of its aggregate of paid-up capital and deposit mobilized; the rest are to be arranged through refinancing from the government (50 percent) and from the sponsoring bank (up to 35 percent).

• The RRBs are allowed to avail refinancing facilities from the RBI as is enjoyed by the co-operative banks. The RBI formulated a moderate refinancing scheme (with effect since 01-10-1976) by which the RRBs could avail themselves of refinancing facilities at 2 percent below the bank rate.

• The RBI enabled the RRBs, though amendment of the relevant act to enjoy refinance facilities from the two special funds of the government e.g., the national Agricultural Credit (Long-term operations) 'Fund' and the National Agricultural Credit (Stabilization) Fund.

• The facilities accessible from the Deposit Insurance Corporation of India have also been extended to the RRBs subject to the condition that their depositors can avail insurance up to maximum Rs. 20,000 of deposits.

• From January 1977, the RBI designed a special scheme under which a RRB could freely transfer its own funds from its head office to the different branches through the branches of the public sector banks functioning within the areas of operation of the respective RRBs.

• The RBI permitted certain relaxation, as well, to the RRBs in respect to cash and liquidity requirements as applicable for the scheduled commercial banks. The cash reserve to be maintained by RRBs was fixed at 3 percent of their aggregate of total demand and time liabilities as compared to 6 percent applicable to the commercial banks. Moreover, the definition of cash for determining the cash reserve was broadened to embrace the balance to be maintained by RRBs with the State Bank of India and also with any nationalized bank (i.e. all public sector banks). For minimum statutory liquidity requirements of eligible assets, the RRBs are required to maintain a ratio of only 25 percent of their aggregate of total demand and time liabilities as compared to 33 percent as followed by the commercial banks.

### FINANCIAL PERFORMANCE OF RRBs BEFORE AND AFTER AMALGAMATION:

The RRBs, over the year have made impremine strides on various business indicators. For eg. Deposits of RRBs have grown by 18 times and advances by 13 times between 1980 to 1990. Between 1990 and 2004 deposits and advances grew by 14 times and 7 times, respectively. Between the year 2000 and 2004, loans disbursed by RRBs more than doubled reflecting the efforts taken by the banks to improve credit flow the rural sector.

Over the past five years, RRBs transformation has resulted in a 200% increase in net profit, a 100% increase in business, a gradual reduction in the number of loss making banks and addition of 1000 outlets. All this has been because of consolidation among RRBs. The central government initiated the process of Amalgamation of RRBs in September 2005. Then there were 196 RRBs. At the end of it

consolidated to 82 by the end of March 2010. RRBs deposits, loans & advances are drastically increased after amalgamation of RRBs. These have shown below table.

Years	No.of RRBs	No.of Branches	Total deposists (in crore)	Gross Loans (in crores)	CD Ratio (%)	Net profit (in crores)
1975	6	17	0.20	0.10	50.00	-
1980	85	3279	199.83	243.38	121.79	1,2421
1985	188	12606	1285.82	1407.67	109.48	-26.65
1990	196	14443	4150.52	3554.04	85.63	NA
1995	196	14509	11150.01	6290.97	56.42	-394.95
1996	196	14497	14187.94	7057	52.90	-425.59
1997	196	14461	18033.9	7908	48.35	819.68
1998	196	14459	22189.28	9021	44.44	73.65
1999	196	14498	27065.75	10.559	41.96	241.6
2000	196	14301	32204.35	12.427	40.94	429.97
2001	196	14313	38271.87	15.050	41.33	600.62
2002	196	14390	44539.43	17.710	41.83	607.87
2003	196	14433	50098.33	20.934	42.29	519.29
2004	196	14446	56350.08	25.038	46.34	768.68
2005-06	133	14.489	71,329	38.520	52.89	617
2006-07	96	14.563	83.144	47.326	58.3	625
2007-08	90	14.790	99.093	57.568	59.63	1027
2008-09	86	15.524	1.20.189	65.609	56.4	1335
2009-10	82	15.475	1.45.035	79.157	57.6	1884

**Source :-** RBI reports on trend and progress of barbing in India 2010. NABARD, Statistical reports, Institutional development (RRBs division).

### Financial Performance of RRBs in Karnataka State :

In Karnataka, No. of RRBs are 13, number of branches 1115 during 31<sup>st</sup> March 2005 Total deposits in 2005, 4140.06 crores and total loans disbursed Rs. 3754.91 crores.

### Amalgamation of RRBs in Karnataka :

One of the major impact of liberalisation in the amalgamation of RRBs in India. In Karnataka the amalgamation has resulted in six banks from 13. Bijapura Grameena Bank, Malaprabha Grameena Bank, Netravathi Grameena Bank, Varada Grameena bank which are sponsed by syndicate Bank were amalgamation on 12 September 2005 and was renamed as Karnataka Vikas Grameena Bank (KVGB). The chitradurga Grameena Bank, Kolar Grameena Bank, Sahyadri Grameena Bank and Tungabhadra

Grameena Bank which are sponsored by Canara Bank were amalgamated on September 12, 2005 and it was renamed as Pragathi Grameena Bank (PGB).

The Cauvery Grameena Bank and Kalpatharu Grameena Bank were amalgamated on 24 May 2006 and was renamed as cauvery Kalpatharu Grameena Bank (CKGS). The sponsored Bank renamed the State Bank of Mysore. Visveshvaraiah Grameena Bank, Mandya, Krishna Grameena Bank, Gulbarga and Bidar, Chikkamagalore and Kodagu Grameena Bank, Chikkamagalore and Kodagu have not been amalgamated.

**Credit-Deposit Ratio :** Indicates the percentage of the advances lent by banks out of total deposits mobilised. In other words it is the preportion of loan asset, created by banks from the deposits received. Higher the ratio higher the loan asset created from deposits. This ratio reflects the ability of bank to make credit deposits ratio indicates optimal use of the available resources and vice-versa. This is shown below table.

Years	PGB	KVGB	CKGB
2005 - 06	98.27	91.33	76.28
2006 - 07	100.95	97.22	78.85
2007 - 08	95.31	92.42	81.53
2008 - 09	92.93	75.93	78.14

### Credit-Deposit Ratio of RRBs After Amalgamation in Karnataka (in %)

Key highlights of RRBs to generate employment :

➢ RRBs were established "with a view to developing the rural economy by providing for the purpose of development of agriculture, trade, commerce, industry and other productive activities in the rural areas, credit and other facilities, particularly to small and marginal farmers, agricultural labourers, artisans and small entrepreneurs and for matters connected therewith and incidental there to (RRBs Act 1976).

RRBs alone have organised roughly 12 lakh self-help groups (SHGs), 45% of the total SHGs in the country.

▶ RRBs have also issued over 40 lakh "Kisan credit cards to the farmers and organised over 5,000 out of 11,000 farmers clubs under NADARD scheme.

> After Amalgamation, RRBs profit is 200% and 100% increase in business, a gradual reduction in the number of loss-making banks and addition of 1,000 outlets.

 $\triangleright$  RRBs seem to have better non-performing Asset (NPA) management with net NPA coming down every year after the amalgamation. In 2005-06, the net NPA stood at 3.96%. It declined to 1.98% in 2009.

**Conclusion :** From this research study, the fact of the matter is that RRBs have an important role to play as a part of the multi agency approach to rural credit and as an instrument of income distribution in rural areas. In the former role, as noted by the Kelkar Committee, the RRBs are eminently suitable to do job envisaged for them ( $\therefore$ e taking banking closer to the rural households) and they can exist side by side with co-operatives and commercial Banks. In the latter role, RRBs can keep on doing the good work of providing resources to the weaker sections.

As noted by T.K. Velayudham and V. Sankaranarayana, "RRBs are not just rural credit agencies. They are more than that they are a fruitful exercise in bank – led rural growth and employment generation".

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### Analysis of the Growth and Performance of Micro, Small and Medium Enterprises in India

### Abstract

### Pritam Kumar

In India, shortly after independence, our important leaders recognised the need to assist small-scale and cottage companies. Small-scale business up-gradation started in 1953-54, when the Ministry of Commerce and Industry convened an International Planning Team to collect ideas for procedures to be done to expand small firms. The committee recognised the scope and growth of the country's small-scale enterprises and advocated to the Government of India the formation of the Central Small Scale Industries Organization (CSSIO), with an advisory body - the Small Scale Industries Board (SSIB). Following that, the Federation of Association of Small Industries of India (FASII) approved the investment in fixed assets in plant and equipment, whether held in terms of ownership, lease, or hire purchase, in awarding the status of a unit under Small businesses. Prior to the MSMED Act of 2006, SEs were divided into two distinct categories: traditional SEs, which included Khadi and Village Industries (KVIs), handlooms, handicrafts, coir, silk, and modern SEs, which included Ancillary, Small Scale Industrial Undertaking, Tiny Industry, Small Scale Service, and Business Enterprise (SSSBE). In accordance with the S.P Gupta Committee Report, the Government of India passed the MSMED Act, 2006, to help the sector expand and flourish under a single comprehensive framework and to answer long-standing demands from small businesses. On May 9, 2006, the President of India authorised the modification of the Government of India Rules 1961 and announced the revised legislation. This Act merged two distinct ministries, the Ministry of Small-scale Industries and the Ministry of Agro and Rural Industry, into a single ministry, the Ministry of Micro, Small, and Medium Enterprises (MSMED Act, 2006). On June 16, 2006, the President of India granted the Act permission to come into force on October 2, 2006. With the implementation of the newly framed legislation, the conceptual and structural recognition of industry has been drastically altered and replaced with the nomenclature enterprise, any industrial undertaking or a business concern, or any other establishment such as Sole Proprietorship, Partnership, Hindu Undivided Family, Cooperative Society, Association of Persons, Company, or Undertaking (Section 7 (1) of MSMED Act, 2006). Furthermore, the MSMED Act designated tiny industries as micro businesses and separated them from small firms, while medium enterprises were granted legal standing for the first time (Section 7(1), MSMED Act, 2006). The Act established the basic organisational divisions based on the activities of the units, such as Manufacturing and Service Rendering.

Keywords: MSME, Enterprise, Investment, Development, Manufacturing, Service

### Introduction

Around the world, the Industrialization has come to be acknowledged as a crucial growth approach. Human talents are a major part in the industrialization process, and if this factor is ignored, the economic performance of the nation would suffer. Every nation in the globe has increased its emphasis on the industrialisation process. Due to the need for these nations to reach higher employment levels, the tension between development and employment has arisen in their efforts to industrialise. As a result, the best strategy and tactics for developing countries are entirely different from those that were previously thought of as the most sophisticated (Vepa, 1967).

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Industrialization is a continuous process in which goods and technology evolve and entrepreneurs are encouraged to create new industrial processes. The industrialisation process has an impact on the country's per capita income and level of life. A higher quality of living means that people's consumption plans contain more produced goods. Without industrialization, no nation can have political or economic flexibility to rapidly enhance its residents' level of living (Sharma & Desai, 1980). The entire economic benefits of industrialization must finally reach the largest number of individuals (Myrdal, 1968).

The Micro, Small, and Medium Enterprises (MSMEs) have a higher labor-to-capital ratio. This sector aids in eradicating regional disparities and economic lag in both established and emerging economies. MSMEs are supporting inclusive, sustainable, egalitarian, and employment-friendly economic growth in India. In addition, enlarge the representation of the stage of change from conventional to modern technology. This industry promotes the application of both advanced modern technology and local expertise (Kumar & Rajendra, 2015).

India's micro, small, and medium-sized enterprises are driving the country's economic growth in the twenty-first century (Chandraiah & Vani, 2014). MSMEs sectors are playing a key and active part in the overall economic development of the nation in a country where poverty and unemployment/underemployment are the two primary and inherent issues of the economy. This industry's promotion and growth work hand in hand with initiatives to decrease poverty, generate employment, and erase economic disparities (Jena et.al, 2018). This business, which considers itself the second-largest labor-intensive sector after agriculture, tackles the root causes of poverty and unemployment by producing a big number of jobs with minimal investment (Prakash & Verma, 2017).

Micro, small, and medium-sized industries play an important role in socioeconomic transformation in the unstructured economy by promoting the utilisation of resources such as entrepreneurship, money, labour, and raw materials. These sectors attract entrepreneurs with less management and technical experience. The MSMEs sector serves as a breeding environment for entrepreneurship, which is typically stimulated by invention and ingenuity (MSME Report, 2007). MSMEs are critical for increasing the country's exports as well as its total GDP (Justus & Jeyaseeli, 2014). According to the Ministry of Micro, Small, and Medium Enterprises (MSMEs), Government of India's Annual Report 2017-18, the MSMEs sector created 360.40 lakh employment in manufacturing, 387.18 lakh jobs in commerce, and 362.82 lakh jobs in other services throughout the country. Of them, 45% work in rural regions and 55% in urban areas (MSME Report, 2018). Thus, micro, small, and medium-sized companies are a significant source of employment in the majority of townships, ensuring the financial stability of local communities and contributing to the general prosperity of the region.

### Definition of Micro, Small and Medium Enterprise in India

In India, shortly after independence, our important leaders recognised the need to assist small-scale and cottage companies. Small-scale business up-gradation started in 1953-54, when the Ministry of Commerce and Industry convened an International Planning Team to collect ideas for procedures to be done to expand small firms. The committee recognised the scope and growth of the country's small-scale enterprises and advocated to the Government of India the formation of the Central Small Scale Industries Organization (CSSIO), with an advisory body - the Small Scale Industries Board (SSIB). Following that, the Federation of Association of Small Industries of India (FASII) approved the investment in fixed assets in plant and equipment, whether held in terms of ownership, lease, or hire purchase, in awarding the status of a unit under Small businesses (Desai, 2006). Prior to the MSMED Act of 2006, SEs were divided into two distinct categories: traditional SEs (Khadi and Village Industries (KVIs), handlooms, handicrafts, coir, silk) and modern SEs (Ancillary, Small Scale Industrial Undertaking, Tiny Industry, Small Scale Service and Business Enterprise (SSSBE) (Desai, 2006).

The Government of India established the MSMED Act, 2006, in response to the recommendations of the S.P. Gupta Committee, in order to enable the sector develop and prosper under a single comprehensive piece of legislation and to answer long-standing needs of small enterprises. The Indian president, who had authorised the alteration to the Government of India Rules, 1961, announced the new legislation on May 9, 2006. This Act merged the Ministries of Small-scale Industries and Agro-Rural Industry into a

single ministry, today called as the "Ministry of Micro, Small, and Medium Enterprises" (MSMED Act, 2006).

On June 16, 2006, the President of India approved the Act, which would go into force on October 2, 2006. The conceptual and structural recognition of industry has been significantly altered with the introduction of the newly framed legislation, and it is now referred to as an enterprise, any industrial undertaking, a business concern, or any other establishment such as a sole proprietorship, partnership, Hindu Undivided Family, cooperative society, association of persons, company, or undertaking (Section 7 (1) of MSMED Act, 2006). Furthermore, Section 7(1) of the MSMED Act of 2006 distinguished micro companies from small firms, while medium-sized businesses now had legal standing for the first time. The basic divisions of companies are mentioned in the Act based on the functions of the units, such as manufacturing and service giving (MSMED Act, 2006).

**Manufacturing MSMEs** create or manufacture items for any of the industries specified in the First Schedule of the Industries Development and Regulation Act of 1951. (Garg, 2007). They are defined in terms of investment in plant and equipment, which is restricted to a maximum of Rs. 25 lakh for micro enterprises, Rs. 25 lakh for small enterprises, Rs. 5 crore for medium-sized enterprises, and Rs. 5 crore to Rs. 10 crore for medium-sized enterprises (excluding the cost of pollution control, research and development, industrial safety devices, and other notified items).

Service-providing MSMEs that provide services are defined as having a maximum equipment investment of Rs. 10 lakh for micro companies, Rs. 2 crore for small enterprises, and Rs. 5 crore for medium-sized firms. The previously traditional Tiny enterprises are now classified as manufacturing micro enterprises, and a small fraction of current SEs is now included in both categories depending on their functional functions, according to the new business classifications. Small manufacturing firms and small service-rendering organisations, respectively, have been classed as small industrial units and small-scale service business enterprises (SSSBEs) based on their type of activities and degree of investment in plant, machinery, and/or equipment.

### Micro, Small and Medium Enterprises Development Act, 2006

The Micro, Small, and Medium Enterprises Development Act of 2006 divides firms into two categories depending on their mode of operation: those involved in production or manufacturing and those engaged in providing services. Unlike service firms, which are characterised by investments in tools and equipment, manufacturing businesses are defined by investments in plant and machinery. The legislation also defined and introduced the medium enterprise for the first time. Additionally, the enterprises are classified as Micro, Small, and Medium. Figure 1 depicts the investment limit on MSMEs.

Enterprises					
Manufacturing	Sector		Servi	ice Sector	
	$\leq$ 25 Lakh	Micro	$\leq 10$ Lakh		
		Enterprise			
	≥25 Lakh		$\geq 10$ Lakh		
Investment in	$\leq$ 5 crore	Small	$\leq 2$ crore	Investment in	
Plant and		Enterprise		Equipment	
Machinery	$\geq$ 5 crore	Medium	$\geq 2$ Crore		
	$\leq 10$ crore	Enterprise	$\leq$ 5 crore		
Source: N	licro Small and M	edium Enterprise I	Development Act, 2	2006	

### Figure 1: Micro, Small and Medium Enterprise

### Growth and Performance of Micro Small and Medium Enterprises in India

The Micro, Small, and Medium-Sized Enterprises (MSMEs) have been crucial in determining the course of the country and fostering national cohesion. It has grown to be a very vibrant and active sector of the Indian economy. It has aided in the creation of new products and the launch of new businesses. Through the business environment, MSMEs support the growth of entrepreneurial culture. The MSMEs are extensively dispersed throughout all localities and manufacture about 8,000 different product variations,

ranging from conventional to high-tech goods. MSMEs make up 6% of the nation's total output, 33% of the manufacturing sector, and 45% of exports. Additionally, this industry offers the most potential for both independent work and creating jobs for others. Table 1 displays the performance of MSMEs in India.

Yea	Unit	Producti	Employm	Fixed	Producti	Employm	Producti	Fixed
r	S	on	ent	Investme	on	ent	on	Investme
				nt	Per Unit	per Unit	Per	nt
							Employe	Per Unit
							e	
	Lak	Lakh	Lakh	Lakh	Lakh	Persons	Lakh	Lakh
	h	Rupees	Rupees	Rupees	Rupees		Rupees	Rupees
	(No.)							
200	361.7	119,881,8	805.23	868543.79	3.31	2.23	1.49	2.40
6-07	6	00						
200	377.3	132,277,7	842	920459.84	3.51	2.23	1.57	2.44
7-08	6	00						
200	393.7	137,558,9	880.84	977114.72	3.49	2.24	1.56	2.48
8-09	0	00						
200	410.8	148,835,2	921.79	1038546.0	3.62	2.24	1.61	2.53
9-10	0	00		8				
201	428.7	165,362,2	965.15	1105934.0	3.86	2.25	1.71	2.58
0-11	3	00		9				
201	447.6	178,858,4	1,011.69	1182757.6	4.00	2.26	1.77	2.64
1-12	4	00		4				
201	467.5	180,997,6	1,061.40	1268763.6	3.87	2.27	1.71	2.71
2-13	4	00		7				
201	488.4	203,206,0	1,114.29	1363700.5	4.16	2.28	1.82	2.79
3-14	6	06		4				
201	510.5	222,368,3	1,171.32	1471912.9	4.36	2.29	1.90	2.88
4-15	7	32		4				
201			805.24	68995486.	NA	2.23	NA	NA
5-16				00				

Table 1:	Performance	of Micro.	Small and	Medium	Enternrises	(MSMEs	) In India
Table 1.	1 cr ioi manee	UI MILLO,	Sman anu	witculum	Enterprises	(1110111120	) III IIIUIA

Source: MSMEs Annual Reports of various years, Dept. of MSME, Govt. of India. (2) Reserve Bank of India Handbook

Table 2: MSMLS Share in India's Merchandise Export	Table 2:	<b>MSMEs</b>	Share in	India's I	Merchandise	<b>Exports</b>
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Year	Year Total Export	MSMEs Export	Shares of MSME
	(Crore.)	(Crore.)	Sector (%)
2006-07	571,779	18,253.8	31.92
2007-08	655,864	202,017	30.80
2008-09	840,755	NA	NA
2009-10	845,534	391,159	46.26
2010-11	1,142,922	507,739	44.42
2011-12	1,465,959	630,105	42.98
2012-13	1,635,261	698,166	42.69
2013-14	1,905,011	806,878	42.35
2014-15	1,897,026	849,248	44.76

Source: Reserve Bank of India (RBI) Handbook 2016.

### State wise Performance of Micro, Small and Medium Enterprises in India

According to the results of the 73rd round of the NSS survey (2015–16) on Micro, Small and Medium Enterprises, Uttar Pradesh has the highest percentage of MSMEs in the nation with 14.20%, followed closely by West Bengal with 13.98%. 74.05% of all estimated MSMEs in the nation were located in the top 10 states.

	Tuble et Bistilibut		
No.	State/UT	Number (in lakh)	Share (in %)
1.	Uttar Pradesh	89.99	14.20
2.	West Bengal	88.67	13.98
3.	Tamil Nadu	49.48	7.80
4.	Maharashtra	47.78	7.53
5.	Karnataka	38.34	6.04
6.	Bihar	34.46	5.43
7.	Andhra Pradesh	33.87	5.34
8.	Gujarat	33.16	5.23
9.	Rajasthan	26.87	4.23
10.	Madhya Pradesh	26.74	4.21
11.	Other State/UTs	164.52	25.95
	All	633.88	100

Table 3: Distribution of MSMEs in the top Ten States

Source: MSMEs Report 2016-17

### **Industrial Sickness**

Indian business suffers from industrial illness Industrial growth, illness, and mortality are inescapable aspects of life, just like the human transitional aspects of birth, growth, and death. An industry that expands quickly in its early stages can eventually face disclosure. Similar to a patient at home, a sick unit. In addition to suffering from the sickness, a patient frequently destroys the family, especially when treatment is expensive and lengthy. In addition to having a negative influence on the economy, a sick unit has a lateral effect that harms those who are directly tied to the population.

The industrial disease seems to be a serious economic issue. Industrial disease exposes the weaknesses of wealthy countries as well as being a problem for underdeveloped nations. Industrial illness has become more prevalent in India's micro, small, and medium-sized businesses. In addition to alarmingly worrying the owners, employees, customers, creditors, and government, the spread of illness among MSMEs units also wastes natural resources and stirs up social unrest. Finding solutions to the industrial disease in India's micro, small, and medium-sized businesses is therefore regarded crucial.

### **Concept of Industrial Sickness**

When an industrial unit is not operating effectively-that is, when it does not have the highest capacity for utilisation, liquidity, or customer complaints-it is referred to as being ill. Industry sickness is difficult to define because it depends on how income is generated, how liquid and insolvent the company is, and how irregular the records are. A scenario known as "industrial illness" occurs when sales cannot cover the product's costs and investments. In general, if one department or set of functional areas within a sick unit-for example, manufacturing, marketing, finances, personnel, and corporate management-begins to exhibit any abnormalities, the entire unit may also become ill.

The industrial disease is handled subjectively and is viewed differently by each individual. If the workers are not receiving their wages on schedule, they may believe the unit is sick. The management and shareholders may gauge the illness by looking at the dividend payments' irregularity and low rate of return on investment. The ability of the units to return their loans and to pay interest on a consistent basis is important to financial institutions/banks. One who skips dividends is considered to have the industrial disease by investors. It denotes recurrent losses and teetering on the verge of closure to an industrialist. Therefore, the definition of illness depends on a variety of standards, including the creation

of surplus, liquidity and solvency position, erosion of equity, amount and duration of abnormalities, etc. Below is a definition and explanation of illness.

### **Definition of Industrial Sickness**

Industrial sickness is a problem where many industries are unable to pay their bills or service their debts as a result of their declining financial situation as a result of many internal and external factors. When a unit is unable to plan for the future, the real sickness in the industry begins. Under break-even conditions, the unit starts operating. The term "industrial sickness" was originally used in India in the middle of 1960, when the engineering and cotton textile industries first encountered difficulties with their operations in various regions of the nation. The industrial disease has since extended to numerous other industries throughout the course of the more than five decades that have passed, including thousands of units of varying sizes. The definition and significance of the word "industrial sickness" should be stated right away since it is impossible to understand the scope and dimensions of the illness without first understanding the origins and meaning of the phrase.

### **Definition by Leading Institutions**

A sick unit, according to J.S. Varsheya's research team for the State Bank of India (1975), is one that depends on frequent external financial help and is unable to create an acceptable internal surplus on a regular basis. This creates a significant imbalance in financial arrangements (Desai, 1983).

Tiwari Committee's Report (1983), The Reserve Bank of India formed an expert panel led by T. Tiwari to reorganise the firms. The committee defines a sick unit as one that I had a cash loss in the most recent accounting year after making provisions for all costs, including interest, but without accounting for any depreciation or transfers to reserves; (ii) had an unfavourable current ratio in the most recent accounting year in accordance with the most widely used commercial accounting practise; and (iii) had accumulated losses that were still present at the end of the most recent accounting year.

The Sick Industrial Companies (Special Provisions) Act (SICA) of 1985, which was passed by the Indian government, defines sickness as a pattern of losses and a total degradation of the unit's equity base. This Act states that "an industrial unit becoming a company registered for not less than seven years is as sick when, at the end of any financial year, it has accrued losses equal to or exceeding its entire net worth and has also suffered cash losses in such fiscal year, and the fiscal year immediately preceding such fiscal year" (MCA,1993).

Sick units are those, according to the National Institute of Bank Management (NIBM), "where the operation results in continual losses which drags down the working capital available and ultimately affects the borrowing potential practically permanently" (Biswasroy & Panda, 1990).

A sick unit, according to the Reserve Bank of India (2002), is one that (a) has accumulated losses that are greater than half of its peak net worth and (b) has an imbalance in its financial structure, such as a current ratio that is less than 1:1 and a poor debt-to-equity ratio.

According to the MSMEs Act of 2006, a unit may become unwell if any of its loaned accounts remains non-performing assets (NPA) for three consecutive months or longer, or if its net worth erodes as a consequence of cumulative losses equivalent to 50% of its total net worth. If the willful defaulter account is discovered or the borrower flees, the borrower will not be considered a sick unit and will not be eligible for government assistance.

(I) If, after receiving a demand from a company's secured creditors representing 50% or more of its outstanding debt, the company fails to pay the debt within 30 days of the service of the notice of demand or to secure or compound it to the satisfaction of the creditors, any secured creditor willing to file an application to the tribunal in the prescribed manner along with the notice of demand shall submit the application to the tribunal.

(II) The applicant under subsection (1) may, in conjunction with an application under that subsection or at any subsequent stage of the proceedings, apply for a stay of any proceedings for the winding up of the company or for execution, distress, or the like against any of the company's properties or assets, or for the appointment of a receiver in respect thereof, and that no suit for the recovery of any money or the enforcement of any security against the company be instituted (Ministry of Corporate Affairs, 2013).

The Reserve Bank of India (2013) played a key role in periodically convening Committees to investigate the problem of the disease plaguing the sector. The following is the new definition of illness provided by the Working Group on Rehabilitation of Sick Units, which was led by S.S. Kohli: An MSME is deemed sick if any of its borrower accounts have been NPA for three months or longer or if there has been a 50% net worth erosion owing to losses that have accrued over time. (Muthu, 2015).

### Signal and Symptom of Industrial sickness

Industrial illness is a temporal phenomena; an industrial unit does not get sick all of a sudden until a major accident or catastrophe occurs. In the early stages of a sick business, symptoms and signals are similar to those of a human body. Sickness does not happen immediately or overnight; it is a gradual process that progresses through many phases. The warning should be seen as a signal, and immediate action should be taken. The path of an enterprise's operations might reveal indicators of illness. In reality, until there is a major disaster, the indicators are often hidden (Desai, 1999). Figure 2 depicts the signs of industrial sickness in enterprises.





**Discussion:** The management of an organisation typically ignores early warning signs of illness in the beginning, forcing the company to move on to the next stage. As a result of this continued neglect, the company eventually closes owing to mismanagement over an extended period of time.

As a result, the signal must be recognised and kept track of at the earliest possible stage of the illness. In order to provide a model to diagnose the illness in an enterprise, the Reserve Bank of India established the Tiwari committee in 1981. The following are some ways in which the committee recognised a symptom of illness.

- Inadequate capacity usage
- Profit fluctuations and sales declines
- The greater incidence of produced products rejection
- Credit reduction
- Failure to pay obligations
- Billing account has a large balance.

Excessive use of expensive facilities, as well as failing to make timely payments of principle and interest on term loans and instalment credit

- ✤ Failure to submit the yearly financial data statement
- The fixed capital amount is to be utilised to meet working capital requirements.
- Working capital has decreased as a result of:

- (i) a rise in debtors
- (ii) a rise in creditors
- ✤ Inventory expansion,
- \* A general downturn in that specific business, as well as several failures
- Rapid turnover of important individuals
- Management changes that are sudden or frequent, or that are controlled by one individual.
- Diversion of revenues for reasons other than the operation of the unit
- Any major shift in shareholdings
- Low asset turnover and inventory buildup

### Industrial Sickness in Micro, Small and Medium Enterprises in India

For many economies, industrial disease is a serious and stressful issue. Business failure is a situation that causes a lot of stress or grief for business owners, managers, policymakers, the government, and other people. The disease, which is a global phenomena, is exacerbated by expansion in developing economies like ours, where some unreliable and problematic businesses must be eliminated in order for new ones to be established. However, when an illness problem spreads and takes on major proportions, it is no longer a common occurrence but a serious economic issue that requires quick response. In India's small-scale companies, the industrial disease is pervasive and has taken on significant proportions. The table shows that there were 361.76 lakh MSMEs overall in 2006–07, and that number rose to 510 lakh units in 2014–15. In MSMEs, the ill unit increased from 1.27 lakh in 2006-2007 to 5.35 lakh in 2014–2015. In 2006–07, there were 0.35% sick units out of all MSMEs; by 2014–15, that number had increased to 1.05%. The prevalence of illness among MSMEs is steadily rising. The overall investment in MSME units, on the other hand, was estimated to be Rs. 868,543.79 crore in 2006–07, with 0.57% of that amount going toward failing MSMEs. The percentage of investment in sick units fluctuated between 2.41% and 2.26% in 2013–14 and 2.26% in 2014–15. In absolute terms, investment in MSMEs units expanded alongside investment in sick units year after year.

Year	Total MSMEs (Lakh)	Sick Units (Lakh)	Share (%)	Total Investment in Sick MSMEs (Crore)	Total Investment (Crore)	Share (%)
2006-07	361.76	1.27	0.35	4,981	868,543.79	0.57
2007-08	377.36	0.85	0.23	3,082	920,459.84	0.33
2008-09	393.7	1.04	0.26	3,619	977,114.72	0.37
2009-10	410.8	0.78	0.19	5,233	1,038,546.08	0.50
2010-11	428.73	0.90	0.21	8,934	1,105,934.09	0.81
2011-12	447.66	0.86	0.19	9,283	1,183,332.00	0.78
2012-13	467.56	2.20	0.47	16,640	1,269,338.02	1.31
2013-14	488.46	4.65	0.95	32,870	1,363,700.54	2.41
2014-15	510.57	5.35	1.05	33,378	1,471,912.94	2.27

 Table 4: Industrial Sickness in MSMEs in India

Source: Micro Small and Medium Enterprise Annual Report 2015-16, RBI Handbook 2015-16

### Conclusions

The MSMEs industry is regarded as the foundation of the economy. These industries are regarded as major drivers of the country's socioeconomic development and expansion. They foster the locally available entrepreneurial abilities, offer outstanding employment possibilities at a cheaper cost, support balanced growth, lessen regional inequities, and enhance overall economic conditions. As a result of illness, MSMEs in India are frequently detained. The illnesses within the businesses have also gotten worse and are limiting significant financial resources. MSMEs became ill, and it spread throughout India.

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### FOREIGN DIRECT INVESTMENT AND INDIAN ECONOMY

### Priyanka Rajput

### Abstract

With the policy of globalisation and liberalisation in India since 1991 govt has opened the door for Foreign Direct Investment (FDI).

Foreign direct investment plays a crucial role in channelizing transfer of capital, technology, employment generation, improved access to managerial expertise, product market and distribution network. In nutshell it is perceived to be a predominant vital and potent factor in influencing the contemporary process of global economic development.

FDI is a major source of non-debt, non-volatile financial resource for the economic development of India. The flow of FDI is not automatic, it is subject to many factors including regulatory policy, investment environment, competitiveness, market size and political stability of host country.

India's FDI inflows have increased 20 times from 2000-01 to 2021-22. According to the Department for Promotion of Industry and Internal Trade (DPIIT), India's total FDI inflow was US\$ 847.40 billion between April 2000-March 2022. The credit of this achievement goes to govt's policies like ease of doing business and favourable FDI norms.

To understand and analyse the role of FDI on Indian economy is aim of this research paper.

Keywords – FDI, Economic Development, Foreign capital, Investment, Ease of doing business.

### **Introduction**

In the era of globalisation, world has become global village, in this changing scenario, for the overall development and growth of the nation, one should be part of this process of globalisation.

The industrial policy of 1965 initiated FDI inflow which continued with slow and halting pace in 1971 and 1980.

With the policy of globalisation and liberalisation in India since 1991 govt has opened the door for Foreign direct investment (FDI). As a result, India has become the second important FDI nation (UNCTAD). As per UNCTAD world investment report (WIR) 2022 India stands 7<sup>th</sup> among the top 20 host economies for 2021 in terms of FDI.

Immense man power, plenty of natural resources and liberal policy of govt has attracted attention of the world, as destination for investment.

FDI is a major source of non-debt, non-volatile financial resource for the economic development of India. The flow of FDI is not automatic, it is subject to many factors including regulatory policy, investment environment, competitiveness, market size and political stability of host country. The Indian government policy regime and a robust business environment have ensured that foreign capital keep flowing in to the country.

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Foreign direct investment plays a crucial role in channelizing transfer of capital, technology, employment generation, improved access to managerial expertise, product market and distribution network. In nutshell it is perceived to be a predominant vital and potent factor in influencing the contemporary process of global economic development.

When the economy of most of the western world had to struggle to cope during pandemic COVID 19, China and India were able to divert the flow of FDI towards them, due to their aggressive policy stance. FDI flows to India increased by 13% to an estimated US\$57 billion.

India's FDI inflows have increased 20 times from 2000-01 to 2021-22. According to the Department for Promotion of Industry and Internal Trade (DPIIT), India's total FDI inflow was US\$ 847.40 billion between April 2000-March 2022. The credit of this achievement goes to govt's policies like ease of doing business and favourable FDI norms.

The status of FDI inflow in India for the financial year 2021-22 is encouraging. Computer software and hardware industry received FDI equity inflow of US\$ 14.46 billion. Next to these industries was automobile industry with inflow of US\$ 6.99 billion. Maximum FDI inflow was from Singapore at US\$ 15.87 billion, followed by the US (US\$ 10.54 billion). The state of Karnataka and Maharashtra received maximum FDI inflow of US\$ 22.07 billion and US\$ 15.43 billion respectively during the financial year 2021-22.

### FDI Inflow Routes – FDI inflow has two routes

1- Automatic Route – It does not require any prior approval either of the government or the RBI.

2- **Government Route** - Requires prior approval of the govt (which are considered by the FIPB, Dept of Economics Affairs and Ministry of Finance).

### Determinants of FDI Inflow -

Demirhan and Masca (2008) in their study noted various determinants of FDI for the developing countries.

- 1- Market Size
- 2- Openness
- 3- Labor Cost and Productivity
- 4- Infrastructure
- 5- Political Risk
- 6- Tax

The determinants vary from one country to another due their unique characteristics and opportunities for the potential investors.

### **Objectives of the Study**

- 1. To understand the role of FDI in India.
- 2. To analyse the country wise FDI Inflow to India.
- 3. To analyse the sector wise and state wise FDI inflow in India.

### **Research Methodology**

This research is descriptive in nature. The secondary data was collected from various journals, magazine, and websites particularly from the Department of Industrial Policy and Promotion, Ministry of commerce and industry, World investment report, RBI, Govt of India etc. Simple percentage, graph and tables have been used where ever required to depict statistical data of FDI.

### **Review Literature**

Sahoo et al (2002), found that FDI has a vital role as a source of capital management and technology in countries transaction economies.

Singh (2009), observed that FDI is key factor in economic growth of developing countries and to facilitate its inflow govt. should have conducive policy. The paper also highlighted the trend of FDI in India.

**Rajalakshmi K. and Ramachandra F. (2011)**, had undertaken an empirical study. They identified the problems faced by India in FDI growth of automobile sector through suggestion of policy implications.

**Devajit (2012)**, in his study found that FDI is a must for sustained overall growth and economic development of nation in terms of employment or in the field of healthcare, education, research and development.

Jain M. and Sukhlecha (2012), in the study "Need of FDI in retailing and its impact", suggested that though FDI is advantageous but they cautioned that it should be guarded judicious.

**Singh Kr. Arun and Agarwal P.K. (2012)**, in their article analysed the relation of FDI and Indian retail business. They found that in multibrand categories it is better in respect to technology and employment.

**GDP. K. Narayanaswamy et.al. (2016)**, were of opinion that "Make in India" initiatives is vital for India's manufacturing sector. The purpose of make in India campaign is to create employment, develop and strengthen countries economy, make India self-dependent with global orientation.

Sanghamitra Samal and Venkatrama Raju (2016), in their study researched the role and importance of FDI in manufacturing sector.

Agarwal and Khan in their study on "Impact of FDI on GDP" found that 1% increase in FDI would result in 0.07% increase in GDP of China and 0.02% in GDP of India.

**Balasubramanyam and Sapsford** are of opinion that with present status in manufacturing and service sector and huge manpower, India is in position to effectively make use of available FDI.

### **Government Policies for FDI Inflow**

History of FDI dates back to immediate post-independence era, when operations of MNCs gained attention of the policy makers, they designed the FDI policy with the aim of acquiring advanced technology and to mobilize foreign exchange resources.

Foreign investment essentially depends upon its policy regime.

A review of India's FDI policy framework is like this.

• The industrial policy of 1965, allowed MNCs to venture through technical collaboration in India.

• In 1973 Government of India set up Foreign Investment Board and Foreign Investment Promotion Board (FIPB) for processing of FDI proposals in India.

• The government has allowed the FIPB under the Ministry of Commerce and Industry, to clear FDI proposals of up to US\$ 258.3 million. Earlier all projects proposals that involved investment of above US\$ 129.2 million were put up before Cabinet Committee of Economic Affairs for approval.

• Industrial Policy (1980 and 1982) and Technology Policy (1983) provided liberal attitude towards foreign investments. Tariff reduction and Open General Licensing (OGL) supported this policy further.

### Post-liberalisation period

A major shift occurred when India embarked upon economic liberalisation and reforms program in 1991 aiming to raise its growth potential and integrating with the world economy. A series of measures that were directed towards liberalizing foreign investment included

• Introduction of dual route of approval of FDI-RBI's automatic route and Government's approval (SIA/FIPB) etc.

• Permission to (NRIs) and Overseas Corporate Bodies (OCBs) for 100% investment.

• Hike in the foreign equity participation limits to 51 per cent for existing companies and liberalisation of the use of foreign "brands name".

• Multilateral Investment Guarantee Agency (MIGA) for protection of foreign Investments enactment of Foreign Exchange Management Act (FEMA), 1999 (that replaced the Foreign Exchange Regulation Act (FERA), 1973) which was less stringent.

• In 1992 Foreign Institutional Investors (FIIs) such as pension funds, mutual funds, investment trusts, asset management companies, nominee companies and incorporated / institutional portfolio managers were permitted to invest directly in the Indian stock markets.

• In order to boost FDI inflow India has undergone Double Tax Avoidance Agreements (DTAA) with 70 countries, as well have signed Bilateral Investments Treaties (BITS) with 57 (up to 2006) countries world over. India being member of General Agreement on Tariffs and Trade (GATT), World Trade Organization (WTO), a signatory member of South Asia Free Trade Area (SAFTA) and a member of Multilateral Investment Guaranty Agency (MIGA) has made a mark in global economy. It is created a congenial atmosphere for foreign investor.

• Production-linked incentive (PLI) scheme in 2020 for electronics manufacturing.

• September 2021, India and the UK agreed for an 'enhanced trade partnership'.

• August 2021, the government amended the Foreign Exchange Management (non-debt instruments) Rules, 2019, to allow the 74% increase in FDI limit in the insurance sector.

• In 2016, 100% FDI was allowed through FIPB route in marketing of food products produced and manufactured in India.

	Sector	FDI Cap/Equity	Entry Route
А.	Agro- Industry	100%	Automatic
Tea see	ctor, including plantation	100%	Automatic
<b>B.</b> 1.	<b>Industry</b> Mining, Coal and lignite, iron & steel	100%	Automatic
2.	Titanium bearing minerals	100%	FIPB
3.	Rail infrastructure	100%	Automatic

## Table No. 1SECTOR WISE FDI EQUITY INFLOW LIMIT

<b>C.</b> 1.	Manufacturing Alcohol- Distillation & Brewing	100%	Automatic
2.	Coffee & Rubber processing & Warehousing.	100%	Automatic
3.	Defense production	74%	Automatic
4.	Hazardous chemicals and isocyanates	100%	Automatic
5.	Industrial explosives -Manufacture	100%	Automatic
6.	Drugs and Pharmaceuticals	100%	Automatic
7. energy)	Power including generation (except atomic stransmission, distribution and power trading.	100%	Automatic
<b>D.</b> 1. projects)	Services Civil aviation (Greenfield projects and Existing	100%	Automatic
2.	Asset Reconstruction companies	49%	FIPB
3.	Banking (private) sector	74% (FDI+FII). FII not to exceed 49%	Automatic
4.	NBFCs	100%	Automatic
5. a. Channel b. c.	<ul><li>Broadcasting</li><li>FM, up-linking a news and current affairs TV</li><li>b. Cable networks (not undertaking digitization)</li><li>Direct to home, teleports, mobile TV, HITS</li></ul>	49% 100% 100%	FIPB
6.	Commodity Exchanges	49% (FDI+FII) (FDI 26 % FII 23%)	FIPB
7.	Insurance & Pension Sector	49%	Automatic
8. a. Refini	Petroleum and natural gas: ng	49% (PSUs). 100% (Pvt. Companies)	FIPB (for PSUs). Automatic (Pvt.)
9. a. Publi news	Print Media shing of newspaper and periodicals dealing with and current affairs	26%	FIPB

b. Publishing of scientific magazines / specialty journals/periodicals	100%	FIPB
10. Telecommunications	100%	Automatic
11. Single Brad Retailing Multiple Brand Retailing	100% 51%	Automatic
12. White Label ATM	100%	Automatic
<ol> <li>Regional Air Transport Service</li> <li>Non- scheduled air transport service, ground handling service</li> </ol>	49% 100%	Automatic
14. Satellites- establishment & operations	100%	FIPB

Source - <u>https://www.rbi.org.in/scripts/bs\_viewcontent.aspx?Id=2513#T3</u>

# Table No. 2 DPIIT'S - FINANCIAL YEAR-WISE FDI EQUITY INFLOWS

(From April 2010 to June 2022)

S. No.	Financial Year (Apr-Mar)	Amount of FDI Equity Inflows		Percentage
	2010-11 to 2022-23	In INR Crore	In USD million	growth over the
				previous year
1	2010-11	97,320	21,383	-
2	2011-12	165,146	35,121	(+) 64 %
3	2012-13	121,907	22,423	(-) 36 %
4	2013-14	147,518	24,299	(+) 8%
5	2014-15	181,682	29,737	(+) 22%
6	2015-16	262,322	40,001	(+) 35%
7	2016-17	291,696	43,478	(+) 9%
8	2017-18	288,889	44,857	(+) 3%
9	2018-19	309,867	44,366	(-) 1%
10	2019-20	353,558	49,977	(+) 13%
11	2020-21	442,569	59,636	(+) 19%
12	2021-22	437,188	58,773	(-) 1%
13	2022-23	127,823	16,589	
	CUMULATIVE TOTAL	37,40,025	605,117	-
	(from April 2000 to June			
	2022)			

Note: including amount remitted through RBI"s-NRI Schemes (2000-2002)

Table number 2 depicts the gradual increasing inflow of FDI in India in last 13 years i.e. 2010 to 2022. The years 2012-13 (-36%), 2008-19 (-1%), 2021-22 (-1%) showed slight decrease in inflow while year 2011-12 (64%), 2015-16 (35%), 2020-21 (19%) etc. great hike. Currently the inflows of FDI from April 2021 to March 2022 figures is 437,188 crore.



### Figure No.1 PERCENTAGE GROWTH OVER THE PREVIOUS YEAR

The figure shows total amount of FDI inflows in India during the years 2010 to 2022, i.e. 64% more than previous years.

### Table No. 3

### SHARE OF TOP INVESTING COUNTRIES IN FDI EQUITY INFLOWS

Financial year-wise (From April 2000 to June 2022)

Amount Rupees in Crore (USD in million)

Ranks	Country	2020-21 (April - March)	2021-22 (April – March)	2022-23 (April – June)	Cumulative Inflows (April "00 - June 22)	%age to total inflows (in terms of USD)
1.	MAURITIUS	41,661 (5,639)	69,945 ( <b>9,392</b> )	18,175 (2,369)	9,25,722 (160,111)	26 %
2.	SINGAPORE	129,227 (17,419)	1,18,235 ( <b>15,878</b> )	43,779 ( <b>5,687</b> )	9,00,803 (136,653)	23 %
3.	U.S.A.	102,499 (13,823)	78,527 (10,549)	11,244 (1,464)	3,68,492 (55,615)	9%
4.	NETHERLANDS	20,830 (2,789)	34,442 ( <b>4,620</b> )	8,345 (1,078)	2,71,939 ( <b>42,339</b> )	7 %

5.	JAPAN	14,441 ( <b>1,950</b> )	11,187 ( <b>1,494</b> )	6,626 ( <b>851</b> )	2,28,359 ( <b>37,793</b> )	6 %
6.	UNITED KINGDOM	15,225 ( <b>2,043</b> )	12,211 (1,647)	2,146 (279)	1,79,994 ( <b>32,181</b> )	5 %
7.	CAYMAN ISLANDS	20,779 ( <b>2,799</b> )	28,383 (3,818)	3,455 ( <b>450</b> )	1,02,466 (14,602)	2 %
8.	UAE	31,242 ( <b>4,203</b> )	7,699 ( <b>1,032</b> )	16,588 (2,146)	97,231 ( <b>14,372</b> )	2 %
9	GERMANY	4,910 (667)	5,421 (728)	690 ( <b>89</b> )	79,966 (13,680)	2 %
10.	CYPRUS	2,839 ( <b>386</b> )	1,735 ( <b>233</b> )	4,682 (605)	67,249 (11,972)	2 %
TOTAL INFLOW COUNTI	FDI EQUITY / FROM ALL RIES*	4,42,569 (59,636)	4,37,188 (58,773)	1,27,823 (16,589)	37,40,024 (605,117)	

\* include inflow under NRI schemes of RBI

The table no 3 depicts the country wise FDI inflow in India. Cumulative FDI inflow is highest from Mauritius (26%) followed by Singapore and U.S.A. with 23% and 9% respectively.



Figure No. 2 PERCENTAGE OF TOTAL INFLOW FROM DIFFERENT COUNTRIES

The figure shows that the largest inflows of FDI's over the period of April 2000 to March 2022 have been received from Mauritius (26%).

# Table No. 4 NOTABLE FDI EQUITY INFLOWS IN DIFFERENCE SECTORS Financial year-wise (From April 2000 to June 2022)

		Amount in Rs. crores (USDin Million				
	Sector	2020-21	2021-22	2022-	Cumulative	% age
Ranks		(April -	(April-	23	Inflows	to total
		March)	March)	(April	(April 00 -	Inflows
				-	June 22)	(In
				June)		terms
						of
						USD)
1.	SERVICES SECTOR	37,542	53,165	19,767	5,82,204	16%
		(5,060)	(7,131)	(2,573)	(96,767)	
2	COMPUTER SOFTWARE &	194 291	1 07 762	26 383	6 04 442	15%
	HARDWARE	(26 145)	$(14\ 461)$	(3.427)	(88 944)	1070
		(20,110)	(11,101)	(0,127)	(00,911)	
3.	TELECOMMUNICATIONS	2,884	4,980	4,711	2,31,764	6%
		(392)	(668)	(618)	(38,950)	
4.	TRADING	19,349	33,779	15,677	2,44,809	6%
		(2,608)	(4,538)	(2,033)	(36,774)	
5	ATUOMOBILE INDUSTRY	12.115	51 624	5 277	2 12 757	6%
5.		(1.637)	(6.994)	(691)	(33,532)	0 /0
(	CONSTRUCTION	59 240	24.179	5 254	1.06.055	50/
0.	CUNSIKUCIIUN (INEDASTDUCTUDE)	38,240 (7,975)	24,178	5,254 ( <b>(90</b> )	1,90,033	5%
	(INFRASIRUCIURE)	(7,875)	(3,248)	(080)	(28,049)	
	ACTIVITIES					
7.	CONSTRUCTION	3,117	932	87	1,28,099	4%
	<b>DEVELOPMENT:</b>	(422)	(125)	(11)	(26,221)	
8.	CHEMICALS (OTHER	6,300	7,202	7,434	1,19,490	3%
	THAN FERTILIZERS)	(847)	(966)	(960)	(20,412)	
9.	DRUGS &	11,015	10,552	3,884	1,13,226	3%
	PHARMACEUTICALS	(1,490)	(1,414)	(497)	(19,902)	
10.	METALLURGICAL	10.002	16.783	487	1.01.868	3%
100	INDUSTRIES	(1.340)	(2.272)	(63)	(17.078)	<b>U</b> / <b>U</b>
		(1,0 10)	(_,_ , _ )	(00)	(1,,,,,,)	

The table 4 depicts notable FDI equity inflow in India in different sector. Service sector has the highest FDI equity inflow 16%, while Metallurgical industries 3% has lowest.



As per above figure service sector has largest FDI inflow (16%). Table No. 5

### SHARE OF STATES ATTRACTING HIGHER FDI EQUITY INFLOWS Financial year-wise (From April 2000 to June 2022)

Amount in Rs. crores (USDin Million)

Ranks	State	2020-21 (April - March)	2021-22 (April- March)	2022- 23 (April June )	Cumulative Inflows (October - June 22)	% age to total Inflows (In terms of USD)
1.	MAHARASHTRA	119,734 (16,170)	1,14,964 ( <b>15,439</b> )	40,386 (5,241)	3,29,292 ( <b>44,406</b> )	28%
2.	KARNATAKA	56,884 (7,670)	1,63,795 (22,072)	21,480 (2,796)	2,72,908 ( <b>36,827</b> )	23%
3.	GUJRAT	162,830 (21,890)	20,169 (2,706)	24,692 ( <b>3,200</b> )	2,26,659 ( <b>30,387</b> )	19%
4.	DELHI	40,464 (5,471)	60,839 ( <b>8,189</b> )	17,988 (2,343)	1,47,962 ( <b>20,002</b> )	13%
5.	TAMILNADU	17,208 (2,323)	22,396 ( <b>3,003</b> )	5,836 (757)	52,676 ( <b>7,090</b> )	<b>4%</b>

As per the table no. 5 Maharashtra state has highest foreign investor in India with (28%) followed by Karnataka (23%).

### Figure No. 4



### STATE ATTRACTING HIGHEST FDI INFLOW

The figure shows that Maharashtra state (28%) attract highest FDI inflow in India.

### Conclusion

FDI is crucial in enhancing the sustained economic growth and all-round development of country. Major reforms in Government policy to attract FDI inflow are going to strengthen in days to come. Immense man power, plenty of natural resources, potential market, liberal policy of govt programs such as **"Make in India"**, **"Digital India"**, **"Skill India"** and increasing competitiveness have made India the preferred choice for investor globally. More over advancement and upgradation of infrastructure in various sectors is also expected.

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### Human Capital Development: A Study

### Divya Priyadarshi Rakesh Kumar

#### Abstract

Human capital refers to the economic value of a worker's experience and skills. Human capital includes assets like education, training, intelligence, skills, health, and other things employers value such as loyalty and punctuality. As such, it is an intangible asset or quality that isn't listed on a company's balance sheet. Human capital is perceived to increase productivity and thus profitability. The more investment a company makes in its employees, the chances of its productivity and success become higher. Human capital development centers around the notion that human welfare depends on various dimensions, many of which are not well captured by conventional measures of economic income. Particular attention has been given to using measures of health and education as welfare indicators in addition to GDP per capita. Education, In conventional measures of economic output, health and education's contribution is measured essentially by the costs of producing the outcomes, i.e. expenditures on schools and medical facilities. Such a procedure identifies inputs rather than outputs. Health and education are often subsidized by the state and in some countries education is compulsory for certain minimum length of times. Many, if not most, health and education services are produced by the public sector. Governments play a direct part in providing services very directly linked to human welfare. Human capital allows an economy to grow. When human capital increases in areas such as science, education, and management, it leads to increases in innovation, social well-being, equality, increased productivity, improved rates of participation, all of which contribute to economic growth. Increases in economic growth tend to improve the quality of life for a population. Human capital risk refers to the gap between the human capital requirements of a company or organization and the existing human capital of its workforce. This gap can lead a company towards inefficiencies, inability to achieve its goals, a poor reputation, fraud, financial loss, and eventual closure. To reduce and eliminate human capital risk, an organization should train, foster, and support its workforce.

#### Introduction

Education is sought not only as it confers higher earning capacity on people but also for its other highly valued benefits: it gives one a better social standing and pride; it enables one to make better choices in life; it provides knowledge to understand the changes taking place in society; it also stimulates innovations. According to modern growth theory, the accumulation of human capital is an important contributor to economic growth. Numerous cross-country studies extensively explore whether educational attainment can contribute significantly to the production of overall output in an economy. Although macro studies have produced inconsistent and controversial results, several micro studies that look into the same problem have shown a consistently positive relationship between the education of the workforce and their labor productivity and earnings. The general finding is that individuals with more education tend to have better employment opportunities, greater earnings, and produce more output than those who are less educated. These findings provide a strong rationale for governments and households to invest substantial portions of their resources in education, with the expectation that higher benefits will accrue over time. In this context, education is deemed an investment, equipping individuals with knowledge and skills that improve their employability and productive capacities, thereby leading to higher earnings in the future. Lost "human capital", as it is called, can have serious consequences.

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The work of skilled professionals is a precondition for upgrading the productive structures and the exports of Somalia and other developing countries, and for improving the sophistication of domestic businesses not to mention for improving domestic health and education, which benefit entire populations. Without enough trained agronomists, biologists, engineers, scientists, doctors, nurses and information and communication technology professionals, it is impossible for the firms and farms of Somalia to use technology to upgrade their products and efficiency - and that makes it difficult for them to face foreign competitors.

### **Conventional Measurement**

The conventional standard to measure human capital stock has been largely categorized into three parts: Output-, Cost-, and Income-based approach

### 1. Output-Based Approach

Some economists attempted to measure the stock of human capital utilizing "school enrollment rates" as a proxy of human capital. However, the method includes a drawback that a student's effectiveness can be recognized after participating in production activities. It is difficult to clearly demonstrate this relationship, because educational attainment is a part of regular [school] education. This method includes a drawback that an individual's years of schooling can be slightly related to his/her productivity.

### 2. Cost-Based Approach

Cost-based approach is based on measuring the stock of human capital through summing costs invested for one's human capital.

### 3. Income-Based Approach

This approach is based on the returns which an individual obtains from a labor market throughout education investment.

### **Types of Human Capital**

You can separate human capital into three types: knowledge capital, social capital, and emotional capital.

Let's look at some examples of each:

### 1. Knowledge Capital

- Trade school education
- College degree
- Hard skills
- Work experience
- Situational knowledge
- Intelligence

### 2. Social Capital

- Relationships
- Fame
- Social status
- Professional network
- Health

### 3. Emotional capital

• Emotional intelligence

- Creativity
- Problem-solving
- Personal resilience
- Critical thinking
- Loyalty
- Leadership behaviors
- Other soft skills

### The Stock of Human Capital in the World

This section measures the current stock of human capital in the world using internationally comparable data on average years of schooling among the population aged 15 years old and over. The data set covers 146 countries over 1950–2010.1 Table 1 presents average years of schooling in eight different regions and by gender. The gender disparity in the table is defined as the ratio of female and male average years of schooling. Thus, if this index is less than 1, then females are deemed to suffer deprivation due to the shortfall in their years of schooling relative to males.

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Average Y	ears of Schoolin	g and Gender Dis	sparity, 2010	
Region	Male	Female	Total	Gender Disparity
Central Asia	9.35	9.99	9.69	1.07
East Asia and the Pacific	8.47	8.01	8.24	0.95
Eastern Europe	10.24	9.95	10.09	0.97
Industrialized Countries	10.92	10.71	10.81	0.98
Latin America and the Caribbean	8.63	8.33	8.48	0.97
Middle East and North Africa	8.05	7.28	7.65	0.90
South Asia	6.41	4.79	5.62	0.75
Sub-Saharan Africa	5.98	4.89	5.43	0.82
World	8.41	7.84	8.12	0.93

Source: Author's calculation based on Barro and Lee's (2010) data set.

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The average number of years of schooling in the world is 8.12 years, with males having 8.41 years of schooling and females 7.84 years of schooling.

### Human Capital Strategy and Economic Growth

There is a strong relationship between human capital and economic growth, which is why it can help boost the economy. That's because people come with a diverse set of skills and knowledge. This relationship can be measured by how much investment goes into people's education. Some governments recognize that this relationship between human capital and the economy exists, and so they provide higher education at little or no cost.



People who participate in the workforce with higher education will often have larger salaries, which means they can spend more. Human capital allows an economy to grow. When human capital increases in areas such as science, education, and management, it leads to increases in innovation, social wellbeing, equality, increased productivity, improved rates of participation, all of which contribute to economic growth. Increases in economic growth tend to improve the quality of life for a population.

### Human Capital Risk

Human capital risk refers to the gap between the human capital requirements of a company or organization and the existing human capital of its workforce. This gap can lead a company towards inefficiencies, inability to achieve its goals, a poor reputation, fraud, financial loss, and eventual closure. To reduce and eliminate human capital risk, an organization should train, foster, and support its workforce.

### **Human Capital Affect Organizations**

Every company is what it is because of its employees. Individuals who make up a company's workforce are responsible for its success or failure. Think of it this way. If an organization employs people who have more education, more developed skills, and more work experience, it'll be able to accomplish much more. A higher human capital means employees are more capable of doing their job. But it also means they can innovate and find creative ways to solve a crisis. They'll also be able to do their job more efficiently if they have higher human capital. That's because they probably have more experience doing the job. But they can also achieve efficiency because of their rich life experience. This experience gives them a wider perspective on their problems. Keep in mind that human capital can migrate from one place to another. Companies that don't do what it takes to retain human capital can experience a "brain drain." Brain drain describes the phenomenon that occurs when human capital migrates from developing areas to urban and developed areas. The same can happen to companies if they don't value their employees. Data from an MRI network study shows that 25% of employees leave their job to seek more compensation. Origination can also lose human capital if they don't give advancement opportunities. 30% of employees leave their job due to a lack of career advancement, according to the same survey.

For example, according to the Human Capital Index, 80% of the world's poor live in economies with a human capital index under 0.5. Furthermore, human capital has a huge impact on the success of not just an individual company, but also the economy.

### Conclusion

Human capital is only one factor in accounting for differences in growth rates across countries. Low rates of investment in physical capital have implications for the rates of return on human capital, particularly education. The conventional wisdom that the rates of return to education are very high is shown not to have held in the context of many African labour markets in the 1980s and 1990s. If human and physical capital is complements then the policy problem is enabling them both to grow rapidly. Efforts have been made to highlight the values, importance of human capital to management, individuals and all others interested in the development of their workforce. The approaches as identified and applied in the study, found its root in business economics theory, which when effectively applied has the capacity to act as change agent on employees for performance leading to organizational success. The study also reveals that management principles as embedded in management dynamics cannot be ignored by organization that poised for serious business. The research results are mainly based on the definitions of human capital and the exposition of its approaches to the understanding of the nature, status and importance of human capital in all facets of life.

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### URBANIZATION

### Lakshmi Chatterjee

### ABSTRACT

This paper focuses primarily on urbanization, the causes and ways forward. Urbanization is the way the population shift from rural to urban areas, "the gradual increase in the proportion of people living in urban areas," and the ways in which each society adapts to the change.

Urbanization has long been associated with human development and progress, but recent studies have shown that urban settings can also lead to significant inequalities and health problems. This paper is concerned with the adverse impact of urbanization on both developed and developing nations and both wealthy and poor populations within those nations, addressing issues associated with public health problems in urban areas. The discussion in this paper will be of interest to policy makers. The paper advocates policies that improve the socio-economic conditions of the urban poor and promote their better health. Further, this discussion encourages wealthy people and nations to become better informed about the challenges that may arise when urbanization occurs in their regions without the required social supports and infrastructure.

The level of Urbanization growth is at geometrical level. The characteristics of urbanization include, structured facilities, residential, employment centre, communication network, infrastructural facilities, size, density of population, family, marriage, occupation, class extremes, social heterogeneity, social distance, system of interaction and mobility. The causes of urbanization include; western liberal, Marxist capitalist and ecological or self- generated. The major factors of that favoured Urbanization after the industrial revolution , include, rural-urban migration, push and pull factors, push factors and pull factors. The effects of urbanization embraced, economic effect, environmental effects, health and social effects forms of urbanization and the conceptual theoretical framework is based on urban bias theory. It is recommended that government should design policy that will prevent this migration of the grass root masses. This will reduce if not elimination the state unemployment problem.

Keywords : Urbanization, rural to urban migration, characteristics, geometrical growth, urban bias theory.

### **INTRODUCTION :**

Urbanization refers to the population shift from rural to urban areas, "the gradual increase in the proportion of people living in urban areas", and the ways in which each society adapts to the change. The process whereby a society changes from a rural to an urban way of life (NLM, 2014). It is predicted that by 2050 about 64% of Africa and Asia and 86% of the developed world will be urbanized (*The Economist, 2012*).Notably, the United Nations has also recently projected that nearly all global population growth from 2017 to 2030 will be absorbed by cities, about 1.1 billion new urbanites over the next 13 years. (Barney, 2015).

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The major change in settlement patterns was the accumulation of hunter-gatherers into villages many thousand years ago. Village culture is characterized by common bloodlines, intimate relationships, and communal behavior, whereas urban culture is characterized by distant bloodlines, unfamiliar relations, and competitive behavior. This unprecedented movement of people is forecast to continue and intensify during the next few decades, mushrooming cities to sizes unthinkable only a century ago. As a result, the world urban population growth curve has up till recently followed a quadratic-hyperbolic pattern (Peter *et al., 2006*).

### BACKGROUND OF URBANIZATION

From the development of the earliest cities in Mesopotamia and Egypt until the 18<sup>th</sup> century, an equilibrium existed between the vast majority of the population who engaged in subsistence agriculture in a rural context, and small centres of populations in the towns where economic activity consisted primarily of trade at markets and manufactures on a small scale, Due to the primitive and relatively stagnant state of agriculture throughout this period, the ratio of rural to urban population remained at a fixed equilibrium. Also, significant increase can be traced to Mughal India, where 15% of its population lived in urban centers during the 16<sup>th</sup>-17<sup>th</sup> centuries, higher than in Europe at the time (Abraham, (2007) and Paolo, (2009).

Urbanization rapidly spread across the Western world and, since the 1950s, it has begun to take hold in Africa and Asia as well. At the turn of the 20<sup>th</sup> century, just 15% of the world population lived in cities. Yale University in June 2016 published urbanization data from the time period 3700 BC to 2000 AD, the data was used to make a video showing the development of cities on the world during the time period (United Nations (2014) and *Reba*, et al., (2007)).

### SOME CHARACTERISTICS OF URBANIZATION :

• **STRUCTURED FACILITIES :** In any urban centre, structures are designed majorly for the following purposes with their respective proportions : Residential – 60.0%; Industrial-4.0%; Commercial-2.0%, Roads – 18.0%; Administration -4.0%; Recreational-10.0%; Others-2.0%; Total-100.0%.

• **RESIDENTIAL** : Residential Sector occupies the highest percentage of land use in any urban settlement. Since residential land use sectors are centres of population concentration, they witness mass criss-cross movements of human and vehicular traffic during working days of the week.

• **EMPLOYMENT CENTRE** – Industry, Commercial and Administration: The energy of any community is found in the industrial, commercial and administrative sectors. These are centre for great employment.

• **COMMUNICATION NETWORK :** Network of communication linkages ties the structure of urban areas together as a system.

• **ROADS**: Efficient network of roads and transportation system enhance free flow and efficiency of human and vehicular movements. Narrow/irregular street pattern brings chaos and congestion. Wide road reservation with enough setbacks provides space for adequate lanes and installation of infrastructures.

• **INFRASTRUCTURAL FACILITIES :** Infrastructure facilities like water supply, electricity, telephone and solid waste disposal etc. are common in urban centre.

• **SIZE**: As a rule, in the same country and at the same period, the size of an urban community is much large than that of a rural community. Hence, urbanization and its size are positively correlated.

• **DENSITY OF POPULATION :** Density of population in urban areas is greater than in rural communities. Urbanization and its density are positively correlated.

• **FAMILY**: So far as urban community is concerned, greater importance is attached to the individual than to the family. Nuclear families are more popular in urban areas.

• **MARRIAGE** : In case of urban community there is a preponderance of love marriages and intercaste marriages. One also comes across a greater number of divorces.

• OCCUPATION : In the urban areas, the major occupations are industrial, administrative and professional in nature. Divisions of labour and occupational specialization are very much common in town's cities metropolises.

• **CLASS EXTREMES :** An urban town and city house the richest as well as the poorest of people. In a city, the slums of the poor exist alongside the palatial bungalows of the rich, amidst the apartments of the middle class members.

• **SOCIAL HETEROGENEITY :** Villages are considered homogeneity; also, urban will be heterogeneity. The cities are characterized by diverse peoples, race and cultures. There is great variety in regard to the food habits, dress habits, living conditions, religious beliefs, cultural, customs and traditions of the urbanites.

• **SOCIAL DISTANCE :** Social distance is the result of anonymity and heterogeneity. Most social contacts in a town or city are impersonal and segmentary in character.

• **SYSTEM OF INTERACTION :** The social structure of urban communities is based interest groups. The circles of social contact are wider in the city than in the country. City life is very complex and varied. Due to wider area of interaction system per man and per aggregate.

• **MOBILITY**: Urbanization is full of great social mobility. The social status of man in urban city depends largely on his merit, intelligence and perseverance. Consequently, urbanization and mobility are positive correlated (Abasilim, 2018).

### **CAUSES OF URBANIZATION :**

There are three contending causes of urbanization. Scholars have found that there are three major ways that lead to Urbanisation, namely; (a) Western Liberal (b) Marxist Capitalist (c) Ecological

**Western Liberal:** This view sees urbanization as the consequence of development. It holds that rural dwellers are attracted to urban centres by availability of job. It is backed up by both theories of the rural push and urban pull factors.

The modernization theory states that industrial employment attracts people from rural to urban areas. This created social class due to economic expansion, non-agricultural occupation focus, inequality welfare, rapid migration from rural to urban cities, hence Africa and Asia countries experienced great set back and inefficient economic growth (Gingler 1997).

### Marxist Capitalist

This view sees urbanization as the result of capitalism. The capitalist in their bid to maximized their wealth made decisions that favoured them mostly. They control the economic and ensure drift of people to urban cities in order to equipped their multinational corporations, local, national and regional firms. The worse aspect of it is the focus of these capitalists on Africa and Asia countries of the world.

### **Ecological or Self-Generated**

In 1920s, Ernest Burgess and Robert Park proposed the urban ecological theory. These sociologists view the urban city as a complex response to competing extended forces. The urban ecology is based on two assumptions; the first assumption is based on the fact that the city consists of a number of sections, in each of which only a single activity such as heavy manufacturing or upper.

### Urbanization in India

Urbanization Prospects :

Percentage of population in urban and rural areas



• The world Urbanization Prospects, 2018 report produced by the UN Department of Economic and Social Affairs (UN DESA) notes that future increases in the size of the world's urban population are expected to be highly concentrated in just a few countries.

• Together, India, China and Nigeria will account for 35% of the projected growth of the world's urban population between 2018 and 2050.

State Wise Scenario :


# Number of persons living in Urban Areas :

• Over 75% of the urban population of the country is in 10 States : Maharashtra, Uttar Pradesh, Tamil Nadu, West Bengal, Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan and Kerala.

- Scoring States : Goa is the most Urbanised State with 62.2% urban population.
- Tamil Nadu, Kerala, Maharashtra, and Gujarat have attained over 40% urbanization.
- Among the North-Eastern States, Mizoram is the most urbanized with 51.5% urban population.

• **Low-Scoring States :** Bihar, Odisha, Assam, and Uttar Pradesh continue to be at a lower level of urbanization than the national average.

**Union Territories :** The NCT of Delhi and the UT of Chandigarh are most urbanized with 97.5% and 97.25% urban population respectively, followed by Daman and Diu and Lakshadweep (both above 75% urbanization).

- India's Global Commitments regarding Urban development :
- The SDGs Goal 11 promotes urban planning as one of the recommended methods for achieving sustainable development.
- The UN-Habitat's New Urban Agenda was adopted at Habitat III in 2016.
- It puts forth principles for the planning, construction, development, management, and improvement of urban areas.
- The UN-Habitat (2020) suggests that the spatial conditions of a city can enhance its power of generate social, economic and environmental value and well-being.

• **Paris Agreement :** India's National Determined Contributions (NDCs) includes the goals to reduce the emission intensity of the country's GDP by 33 to 35% by 2030 from 2005 level.

# India's Initiatives for Urbanisation:

- Schemes/ Programmes Related to Urban Development:
- Smart Cities
- AMRUT Mission
- Swachh Bharat Mission-Urban
- HRIDAY
- Pradhan Mantri Awas Yojana-Urban
- Government Initiatives for Slum Dwellers/Urban Poor :
- Pradhan Mantri Garib Kalyan Yojana

Access to Facilities : Urban living is associated with higher levels of literacy and education better health, longer life expectancy, greater access to social services and enhanced opportunities for cultural and political participation.

- Urbanisation is associated with easier access to hospitals, clinics and health services in general.
- Living in proximity to these services results in improved emergency care and general health.

Access to Information : There are also benefits from easier access to sources of information such as radio and television which may be used to communicate information about health to the general public.

• For instance, women living in towns and cities are more likely to be informed about family planning which results in reduction in family size and less frequent child birth.

• **Individualism:** Multiplicity of opportunities, social diversity, lack of familial and social control over decision making leads to more self interest and facilities decision-making by an individual and choosing one's career and actions by oneself.

# **Issues Associated to Urbanisation**

• **Excessive Population Pressure :** On the one hand, the rural-urban migration accelerates the pace of urbanization, on the other, it creates excessive population pressure on the existing public utilities.

• Consequently, the cities suffer from the problems of slums, crime, unemployment, urban poverty, pollution, congestion, ill-health and several deviant social activities.

• **Overflowing Slums :** There are about 13.7 million slum households in the country sheltering a population of 65.49 million people across the country.

• As much as 65% of Indian cities have adjoining slums where people live in small houses adjacent to each other.

• **Inadequate Housing :** Among the numerous social problems of urbanization, the problem of housing is the most distressing.

• A vast majority of urban population live under conditions of poor shelter and in highly congested spaces.

• In India, more than half of the urban households occupy a single room, with an average.

• **Unplanned Development :** The model of building a developed city comprises unplanned and the poor.

• **Pandemic-Induced Problems :** The Covid-19 pandemic has exacerbated the misery of urban poor or slum dwellers.

• The sudden implementation of complete Covid lockdown severely affected the ability of slum dwellers to earn their living.

• **Non-Inclusive Welfare Schemes :** The benefits of welfare schemes for urban poor often reach Only a small part of the intended beneficiaries.

• Most relief funds and benefits do not reach slum dwellers, mainly because these settlements are not officially recognized by the government.

• Sustainable Urbanization for Successful Development : As the world continues to urbanize, sustainable development depends increasingly on the successful management of urban growth, especially in low-income and lower-middle-income countries where the pace of urbanization is projected to be the fastest.

• Integrated policies to improve the lives of both urban and rural dwellers are needed, while strengthening the linkages between urban and rural areas, building on their existing economic, social and environmental ties.

• Improving Access to Health Facilities & Welfare Schemes : Accelerating efficiency of welfare and relief schemes along with ensuring access to free vaccines, food security and adequate shelter in the slums.

 $\circ$  Improving sanitation and transportation facilities in slums and establishing clinics and healthcare facilities.

 $\circ$  Aiding nonprofits and local support bodies who have better reach to these marginalized communities.

• New Approaches for Urbanisation : New approaches to urban planning and effective governance are the need of the hour.

• Necessary actions should be taken to build sustainable, robust and inclusive infrastructure.

• Instead of a top-down approach, a **bottom-up approach shall be adopted** to better understand unique challenges faced by the urban poor class residence are concentrated . Secondly as urban space became limited and competition became keen, a section ultimately would be part with greatest economic value. Though the longest established sector would according to the concentric zone radiating outward in succession from a central business district.

# Major Factors that favoured Urbanization before the Industrial Revolution

Agricultural as dominant activities, produced surplus food for human consumption.Trade and permananent settlements at route junctions. Defense wall around settlements and administrative control

• **First Stage :** Development of unique economic advantage through agricultural development. City life attracted others, this led to friction and disparities or class struggle, and then through control we have unification.

• Second Stage : Military conquest and domination of economically rich areas.

• **Third Stage :** Trade within and between empires; accumulation of wealth; officially written language ; acceptance of monetary system to facilitate trading. The development of capitalism began.

• **Fourth Stage :** Disintegration of the Roman Empire into city-states based on economic blueprint of capital investment- roads, shipping and architectural development.

# Major Factors of that favoured Urbanization after the Industrial Revolution

• High pronouncement of factors of production – land, labour, capital and technology.

• Farming technology led to reduction in human labour for agriculture.

• More scientific discovery led to invention of bigger machines, better means of transportation movement of finished products to the hinterland.

# **RURAL-URBAN MIGRATION**

Migration is a form of geographical or spatial motion between one geographical unit and another Internal migration consists of rural-rural, rural-urban, urban-urban and urban-rural migration. The time of migration also varies ; it can be periodic, seasonal, or long-term migration (Bilsborrow1998b).

Migration is the main reason for urbanization. Urbanization mobility trend can be in any of the following form, rural-urban and urban-rural and rural-rural. This is quite common, for example, in Nigeria (Bilsborrow 1998b, Sajor 2001). There were structural changes and the adoption of capitalistic line and the resultant growth of merchant class. New institutions created and old ones were altered.

**Suburbanisation** – New freedom of movement that led to urban sprawl and encroachment of cities on nearby villages and towns.

# PUSH AND PULL FACTORS

People may move to the city because they are pushed by poverty from rural communities or they may be pulled by the attractions of city lives. Combination of these push and pull factors can also be one reason for moving to cities. These circumstances make migration the only opportunity to farming people. Things are made worse by environmental deterioration (Gugler 1997, Girardet 1996).

# Push factors

The normal push factors to rural people are the circumstances that make their earning of living impossible, land deterioration, lack of adequate land, unequal land distribution, droughts, storms, floods, and clean water shortages. These serious disadvantages make farming, the livelihood of rural people, hard and sometimes hopeless. Lack of modern resources, firewood shortages, religious conflicts, local economic declines, are also major reasons for moving to the urban areas.

## Pull factors

High industrial wages in urban areas are one of the biggest attractions for rural people. People will continue to migrate to cities as long they expect urban wages to exceed their current rural wages. Employment opportunities, higher incomes, joining other rural refugees, freedom from oppressive lifestyle, access to better health care and education, are the "bright lights" for rural people (Gugler 1997, Girardet 1996, Sajor 2001).

## **EFFECTS OF URBANIZATION :**

There are great effects of urbanization on both the people and the society. These effects are categorized as economic, environmental, health and social effects :

#### **ECONOMIC EFFECT :**

As cities develop, effects can include a dramatic increase and change in costs, often pricing the local working class out of the market, including such functionaries as employees of the local municipalities. For example, Eric Hobsbawm's book. The age of revolution : 1789-1848 (published 1962 and 2005), stated "Urban development in our period (1789-1848) was a gigantic process of class segregation, which pushed the new labouring poor into great morasses of misery outside the centres of government and business and the newly specialized residential areas of the bourgeoisie (Todaro, 1969).

Think tanks such as the Overseas Development Institute have proposed policies that encourage labor-intensive growth as a means of absorbing he influx of low-skilled and unskilled labor (Grant, 2008). In many cases, the rural-urban low skilled or unskilled migrant workers, attracted by economic opportunities in urban areas, cannot find a job and afford housing in cities and have to dwell in slums (Benedictus, 2017). Urban problems, along with infrastructure developments, are also fueling suburbanization trends in developing nations, though the trend for core cities in said nations tends to continue to become ever denser. Living in cities permits individuals and families to take advantage of the opportunities of proximity and diversity (Brand, 2009).

#### **ENVIRONMENTAL EFFECTS**

The existence of Urban heat islands has become a growing concern over the years. Vehicles, factories and industrial and domestic heating and cooling units release even more heat (Glaeser, 1998). As a result, cities are often 1 to 3  $^{0}$ C (1.8 to 5.4  $^{0}$ F) warmer than surrounding landscapes (Park, 1987). In July 2013 a report issued by the United Nations Department of Economic and Social Affairs (Jiang et al., 2008) warned that with 2.4 billion more people by 2050, especially in countries already facing food insecurity due to changing environmental conditions. The mix of changing environmental conditions and the growing population of urban regions, according to UN experts, will strain basic sanitation systems and health care, and potentially cause a humanitarian and environmental disaster (WESS, 2013).

#### HEALTH AND SOCIAL EFFECTS

You get a very unequal society and that inequality is manifested where people live, in our neighborhoods, and it means there can be less capacity for empathy and less development for all society." – Jack Emegan, Urban Programme Specialist at UN-Habitat (Auber, 2013).

In Africa and Asia countries of the world, urbanization does not translate into a significant increase in life expectancy. Differences in mortality from contagious diseases vary depending on the particular disease and location (Eckert and Kohler, 2014).

Urban health levels are on average better in comparison to rural areas. However, residents in poor urban areas such as slums and informal settlements suffer "disproportionately from disease, injury, premature death, and the combination of ill –health and poverty entrenches disadvantage over time (Allender et al., 2008)." Agriculturists have studied the effects on health of urbanization and globalization. Fast food is often food of choice, which is causing a decline in health (Food and Agriculture Organization 2004). Easier access to non-traditional foods may lead to less healthy dietary patterns (Sridhar, 2007). In India the prevalence of diabetes in urban areas appears to be more than twice as high as in rural areas (Bora, 2012). In general, major risk factors for chronic diseases are more prevalent in urban environments (Davis et al., 1954).

# FORMS OF URBANIZATION

Different forms of urbanization can be classified depending on the style of architecture and planning methods as well as historic growth of areas.

In cities of the developed world urbanization traditionally exhibited a concentration of human activities and settlements around the downtown area, the so-called in-migration.

This has been possible because of improved communications, and has been caused by factors such as the fear of crime and poor urban environments. When the residential area shifts outward, this is called suburbanization.

A number of researchers and writers suggest that suburbanization has gone so far to form new points of concentration outside the downtown both in developed and developing countries such as India (Varshney, 1993). This networked, poly-centric form of concentration is considered by some emerging pattern of urbanization. Los Angeles is the best-known example of this type of urbanization. Interestingly, in the United States, this process has reversed as of 2011, with "re-urbanization" occurring as *suburban flight* due to chronically high transport costs (Overseas Development Institute, 2008).

Rural migrants are attracted by the possibilities that cities can offer, but often settle in shanty towns and experience extreme poverty. The inability of countries to provide adequate housing for these rural migrants is related to overurbanization, a phenomenon in which the rate of urbanization grows more rapidly than the rate of economic development, leading to high unemployment and high demand for resources.

#### THE URBAN BIAS THEORY

Urban Bias Theory states that the most global conflict is that between rural classes and urban classes, with the rural dominated by poverty and low-cost potential advance; but the urban sector contains most of the articulateness, organization and power; hence, the urban having upper hands of the struggle with the countryside (Lovelace, 1965).

#### CONCLUSION

The level of urbanization growth is at geometrical level. The characteristics of urbanization include, structured facilities, residential, employment centre, communication network, infrastructural facilities, size, density of population, family, marriage, occupation, class extremes, social heterogeneity, social distance, system of interaction and mobility. The causes of urbanization include; western liberal, Marxist capitalist and ecological or self-generated. The major factors of that favoured Urbanization after the industrial revolution, include, rural-urban migration, push and pull factors, push factors and pull factors. The effects of urbanization embraced, economic effect, environmental effects, health and social effects, forms of urbanization and the conceptual theoretical framework is based on urban bias theory. It

is recommended that government should design policy that will prevent this migration of the grass root masses. This will reduce if not elimination the state unemployment problem.

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#### Micro Enterprises: A Means of Employment in Bihar

#### Abstract

'Right livelihood' is one of the requirements of Buddha's notable eightfold path... (Schumacher, 1973). In a country like India with a population size of about 1.3 billion, the Micro Enterprises (ME) sector has a vital role in the economy. It fosters entrepreneurship and generates large employment opportunities. As MEs absorb the surplus agricultural labour, they help reduce the problem of disguised unemployment in rural areas. MEs are also complementary to large industries as ancillary units and also play an important role in the whole eco-system of the secondary and tertiary sector. ME sector is passing through a challenging phase. The ME sector contributes in a significant way to the growth of the Indian economy with a vast network of about 6.3 crore units and absorbing 10.76 crore worker, and a share of around 30 per cent in nominal GDP in 2016-17. There are 34 lakh MEs in Bihar generating 53 lakh employment which constitute only 5.45 per cent MEs at all India level while 8.89 per cent population consists in Bihar (NSS 73<sup>rd</sup> round: 2017). Distribution of employment across gender is unequal that 9% employment (4.79 lakh) and 4.93 per cent (1.68 lakh) ownership was in the hand of women in Bihar. It is very well discussed that the rising unemployment rate (UR 7.49) and low labour participation rate (LPR) 3.05 and 8.43 in Bihar and India respectively. Low LPR (40 per cent) and rising UR (7.49 per cent) is one of the biggest challenges in India in 2022-23. Countries across the globe are suffering from many other challenges emerged due to the unemployment situation. According to the International Labour Organisation (ILO), the global unemployment rate was 5.9 percent and LPR is 46.6 per cent in the year 2022. However, developing nations have been affected more than that of developed nations and India is not untouched with that. It was experienced that there has been facing steeper unemployment situation in India and Bihar.

As the country aspires for a  $\gtrless$ 5 trillion economy needs expansion of MEs. Interestingly, the micro enterprises (MEs) accounted for 97 per cent of total employment under MSME sector. Study found that the MEs sector is enjoying economies of scale, investment into fixed assets, adoption of technology and innovation.

The share of MEs sector in India's exports stood significantly in 2018-19. But lack of data and data system is one of the big hurdle to explain the issue in details. In this background, special attention needs to be given to improve the data compilation at State level. Various institutional initiatives would be covered in the study. Despite the MEs sector contributing significantly to the economy, it continues to face several challenges.

Micro enterprises are emerging as one of the crucial sectors for employment generation next to agriculture in labour abundant State like Bihar as this sector is capable enough to absorb the unskilled as well as skilled labour and it requires lesser amount of capital to invest.

The major challenges include physical infrastructure bottlenecks; absence of formalisation; inertia to technology adoption; capacity building; backward and forward linkages; lack of access to credit and risk capital; and the perennial problem of delayed payments, accessing of market, lack of appropriate skills, compilation of data, and others. The study shall elaborate these issues.

#### Key Words:

#### Micro Enterprises, Employment, Credit, Technology, Backward and Forward Linkages

**Setting Context:** Among other Indian states, Bihar is lagging behind in terms of its development achievements. Being an agrarian state with lack of natural resources for industrial development, there has been unemployment and poverty. People often migrate in search of jobs. However, in recent years Bihar has achieved remarkable growth due to its developmental strategies. Its economy was growing at the rate of 11.3 percent in the year 2017-18.

Asst. Professor

Which was higher than the national rate of economic development in that year? In spite of its noticeable development employment generation for millions of people remains one of the great challenges in this state. Among other responsible factors for employment generation separation of industrial units due to the creation of new state was crucial.

In this paper, data of Bihar Udyog Aadhar Memorandum has been used to access number of micro enterprises in each district and their corresponding employment generated by them which found, employment per enterprise in Bihar has been increased to 4 which is twice from the earlier. It implies that Bihar is moving ahead in rural industries as a result of which its employment generation capability is also improving. Among the 38 districts of Bihar, there are some districts which are performing beyond the state's average in terms of providing employment. Therefore, this paper found potential in the sector of micro enterprises to generate employment for millions of people and contribute to eradicate poverty of the state as well as nation. That will lead the state to the path of prosperity.

In the area of secondary sector development, Bihar has been considered as one of the backward states in India. This state has some unique characteristics due to it's various constraints, separating it from other Indian states. That characteristics include-the highest population density compared to the national average, least urbanised (11.1 percent) and the lowest literacy rate (61.80 percent) (GOI, 2011). Basically, Bihar has been remaining as an agrarian state where around 60 percent population depends on agriculture for their livelihood. The undivided Bihar had huge industrial potential, was left with Jharkhand state after separation. Now, agriculture sector in the state became over crowded attaining marginal productivity to zero. Although, Bihar has attained a remarkable economic growth during the last previous years due to its sound development strategies. In 2017-18, the economy of this state was growing at the rate of 11.3 percent and its GSDP was ₹487628 crore at current price and ₹361504 crore at the constant price of 2011-12. On the other hand, according to the 68<sup>th</sup> round survey report of National Sample Survey Office (NSSO), the unemployment rate of Bihar is alarming and following the national average. In casual daily status (CDS), such rate of this state is beyond the national average (Table 1.)

Thus, the unemployment situation of this state is creating challenges for people along with government for livelihood generation. People are being forced to migrate in search of jobs and many other problems to face.

	Region	US			CWS			CDS			
		Male	Female	Person	Male	Female	Person	Male	Female	Person	
Bihar	Rural	2.9	12.7	3.5	3.5	9.5	3.9	4.2	13.2	4.8	
	Urban	5.3	25	6.6	5.2	22.8	6.7	5.9	27.1	7.4	
	Total	3.1	13.5	3.7	3.6	10.8	4.2	4.4	14.5	5	
India	Rural	2.1	2.9	2.3	3.3	3.5	3.4	3.5	6.2	5.7	
	Urban	3.2	6.6	3.8	3.8	6.7	4.4	4.9	8	5.5	
	Total	2.4	3.6	2.7	3.5	4.2	3.7	5.3	6.6	5.6	

Table No. 1. Unemployment rates according to different activities 2011-12 (in %)

Source: NSSO 68<sup>th</sup> rounds, 2011-12

Being an agrarian economy with almost zero marginal productivity and absence of industrial units, Bihar needs to grow beyond agriculture sector and move towards secondary sectors. In this situation, the expansion of MEs might be one of the suitable options due to labour intensive characteristics. Moreover, this sector requires lesser amount of investment (Kumar & Vikas, 2022) there are village industries especially micro enterprises with higher labour absorption capacity at lower investment which can generate millions of employment in this labour abandoned state. In this situation of sound development strategies that led this state on the path of remarkable growth, a question churned into

Section II

mind, whether such rosy picture of development is capable to generate employment for millions of unskilled and semi-skilled labour searching for jobs in other states?

Therefore, this paper is trying to examine the potential of MEs in terms of employment generation for unskilled and semiskilled labour. The main focus of this paper is to access MEs to find out whether this sector is capable to provide employment for people of state like Bihar of which economy is based on agriculture. *This paper has been divided into five sections. There is brief review of existing literatures in the section II. The III section, deals with the data sources and methods used in this paper. While the section IV depicts the discussion and the last section is dedicated to conclusion and suggestions.* 

#### An overview of literatures

With providing employment for more than 60 million people this sector has become the larger contributor in socio-economic development of India (Zanjurne, 2018), (Gupta, et al., 2018). According to Borad (2020), there is continuous increase in employment generation in this country in MSME sector. This sector has recorded 4.25 percent of average annual growth rate in employment generation (Borad, 2020).

There is a vast body of literatures discussing about the capability of MSMEs as a role of economic development of a country. But, here we are covering a few of them studied in India and abroad, especially dedicated to the discussion of rural industries and employment generation. From very beginning, manufacturing sector has been considered as an engine of sustainable growth. Such high growth is linked with manufacturing sector that lead to employment generation. As the evolution in many sectors is taking place day by day and there is shift in their nature of ability to provide employment. Such evolution has also been taken place in agriculture sector leading the declining role of domestic employer and thus, the scope of employment shift beyond the farm.

It is whole about the evolution of society in the process of structural transformation from one stage to another for exploring the opportunity for creation of jobs (Christiaensen, et al., 2021). MSMEs has been seen as bases of national economy across the globe and discussed as the engine of sustainable development through contributing the local economy. According to Malefane (2013) there were 2.5 million small, medium and micro enterprises in South Africa contributing 52-57 percent to GDP and 61 percent in employment generation in the year 2011. It has been argued about the potential of this sector to reduce unemployment and generate income for development. The neo-classical economists focused on factor endowment to achieve industrial development. Athukorala (2015), presented the statistical facts of industrialisation, employment and poverty alleviation. With aim of enhancing socio-economic condition of low income families through alleviating poverty and creating employment, Nepal has started micro enterprise development programme (MEDEP) and created 53345 micro enterprises between the year 1999 to 2011 (Karki, 2013). In Nigeria, people were suffering from unemployment situation and shortage of indigenous entrepreneurs has been identified as a major impediment to economic development. It is estimated that small and medium enterprises in Nigeria currently account for over 75 percent of employment in the country. Thus, small and medium scale enterprises must be financially supported so that they can take off and expand to be able to meet the needs of the Nigerians. It is estimated that Small and Medium Enterprises in Nigeria currently account for over 75 percent of employment in the country. The expansion of rural industries also depends on the policies made by government. Government support them through its policies to get easy access to the existing market. It is so because market plays an important role in an economy and policies related to demand management for both domestic and external markets are essential elements for conceiving strategies for employment augmenting manufacturing growth (Roy, 2014).

Indian economy has also been evolved in processes of structural transformation and looking for additional productive work for people. It has been facing challenges to generate employment beyond the farm sector due to limited scope of jobs in this sector. Simmons & Supri (1997) found that in Punjab, the small scale rural house hold enterprises occupy significant place in the economy of the state. Moreover, a substantial segment of population depends on self and family employment in own account enterprises (OAEs). These enterprises are important vehicles for absorbing labour in absence of

alternative employment opportunity. Roy (2016) analysed, that there is declining growth and stagnating employment share of manufacturing sector during the high growth period in India. This paper advocated that the manufacturing sector is a sector which got declining elasticity of employment in the organized sector which will be unable to mend the gap between employment and growth.

The rural industries exhibited enough resilience to sustain itself on the strength of its traditional skills and expertise and by infusion of new technologies, capital and innovative marketing strategies (Das, 2017). The place of production, credit facility, access to get trained, market linkages and absence of experiences in preparing business plan are determinants of micro and small enterprises working for reducing poverty and employment generation. Actually, these are such criteria available in almost every village where people are engaged in agricultural activities and searching for alternative opportunity for jobs beyond the farm. According to Prasad & Prasad (1983) there is positive relationship between value added per worker and output; meaning that the village industries are labour intensive that needs more labour to increase their output resulting as the reduction of unemployment in the concerned villages.

Therefore, micro enterprises can play a crucial role in employment generation and creation of entrepreneurial spirit to grass root level. These enterprises should be cared extensively because, these are labour intensive on one hand and they need lesser capital on the other hand. Therefore, they have ability to eradicate socio-economic problems like unemployment, poverty and inequality (Pujar, 2014).

#### **Data and Methodology**

The objective of this paper has been accomplished by analysing the data of 'Udyog Aadhar Memorandum' provided by Micro, Small and Medium Enterprises Development Institute (MSME-DI), Patna, Bihar. District wise data has been compiled to make a data set in an excel sheet. Although, this data set covers micro, small and medium enterprises of all districts of the state. But, only micro enterprises have been considered in this study.

**Variable:** in this paper, employment per MEs has been used as the potential of employment generation. District wise data of employed people in micro enterprises has been divided by the number of MEs of concerned district to get employment per ME in that district. Similar method has been used to calculate the employment per ME at aggregate level in Bihar.

# Section IV

Section III

#### **Analysis and Discussion**

#### **Contribution of Micro Enterprises in Employment Generation in India**

Micro Small and Medium Enterprises (MSMEs) play vibrant role in an economy due to lesser capital intensive producers and second largest employer after agriculture. Being a labour intensive and relatively high labour investment ratio this sector has capacity to provide more employment than the same amount invested in larger industries and thus, this sector is the largest source of providing employment to address the problem of poverty and unemployment.

*Although*, MSME has been acknowledged as the second largest employer in India after agriculture and ME accounted for providing 97 percent of employment in MSME, sector (Mohapatra, 2020), (GoI, 2021-22). In the annual report of ministry of MSME Government of India, there are 630.52 lakh MEs across the country and number of rural enterprises are dominating to urban enterprises (Table 2).

Sector	Micro	Small	Medium	Total	Share (%)
Rural	324	0.8	0.01	325	51
Urban	306	2.5	0.04	309	49
All	631	3.3	0.05	634	10

# Table 2: Distribution of Enterprises in India (Lakh)

Source: Annual Report, 2019-20, Ministry of MSME, GoI

Micro enterprises have provided 1076.19 lakh employments in the country. In which 489.30 lakh has been generated in rural areas. Meanwhile, in the urban micro enterprises the employment generated in the same year was reported as 586.88 lakh (Table 3.). There is difference between the number of operational micro enterprises in rural and urban areas and the number of employment generated by them.

Table 3. : Distribution of Employment in Rural and Urban Areas										
		_	-		(in lakh)					
Sector	Micro	Small	Medium	Total	Share (%)					
Rural	489	7.9	0.6	498	45					
Urban	587	24	1.16	612	55					
All	1076	32	1.75	1110	100					

Source: Annual Report, 2018-19, 2019-20, Ministry of MSME, Gol.

# Potential of Micro Enterprises for Employment Generation

Studies revealed that ME is one of the crucial sector to generate employment for millions of people searching for jobs. Although, this sector is labour intensive and it requires lesser amount of capital to establish a unit of production with the local raw materials and mostly traditional technology. According to the ministry of MSME, Government of India, there were 630.52 lakh micro enterprises existing in India. These are contributing notably in the state as well as national income by producing goods at lower cost. As the procedures of production in rural industries especially in micro enterprises, are based on traditional technology, they employ labours in their entire production chains.

The employability of such enterprises can also be authenticated by the data produced by ministry of MSME, government of India. According to the data, these enterprises have contributed to generate 1076.19 lakh employment at national level (Table 4.). Per enterprises employment of labour at the national level is the real picture of employability of enterprises. It will help to understand capacity of a micro enterprise to create employment in an economy. In India, per micro enterprises employment generation is 2. Means that each enterprise working in India produces employment for 2 persons (Table 4).

Table 4. : F	Table 4. : Employment Generated by Micro Enterprises									
		(in Lakh)								
	Micro Enterprises	Employment	Average Employment							
India	630.52	1076.19	1.7							
Bihar	34.41	53.07	1.54							

Source: Annual Report, 2018-19, 2019-20, Ministry of MSME, GoI.

With 34.41 lakh micro enterprises, Bihar is producing 53.07 lakh employment. Thus the generated employment per enterprise in Bihar is similar to the national level which is 2. In the previous years there have been some strategically improvement to enhance the performance of enterprises and their employability that led Bihar to achieve remarkable goal. According to the data of Udyog Aadhar Memorandum the potential of micro enterprises to employ labour is different. However, this registration was operational till 25<sup>th</sup> June, 2020 (GoI, 2021-22). The district wise data of Udyog Aadhar Memorandom revels that Bihar is improving its capability to employ labour than that of national level.

Table 5. Dis	Table 5. District wise Selected micro enterprises and corresponding employment Per Enterprises										
District Total Total		Total	Employ District		Total	Total	Employ				
	ME	Employme	er		ME	Employme	er				
		nt	ME			nt	ME				
	000	00.00					_				
Ararıa	882	3868	4	Madhepura	866	4131	5				

Table 5. Dis	strict wise <b>S</b>	Table 5. District wise Selected micro enterprises and corresponding employment Per Enterprises										
District	Total	Total	Employ	District	Total	Total	Employ					
	ME	Employme	er		ME	Employme	er					
		nt	ME			nt	ME					
Aurangaba	801	3980	5	Munger	907	4051	4					
d												
Banka	920	4173	5	Muzaffarpur	923	3831	4					
Begusarai	728	2670	4	Nalanda	815	3312	4					
Bhagalpur	885	3538	4	Nawada	814	3510	4					
Bhojpur	786	3218	4	Patna	853	3351	4					
Buxar	831	4316	5	Purnia	826	3231	4					
Darbhanga	881	3515	4	Rohtas	834	3921	5					
E.	870	3696	4	Saharsa	862	3387	4					
Champaran												
Gaya	840	3459	4	Samastipur	854	3291	4					
Gopalganj	882	3921	4	Saran	862	3790	4					
Jamui	844	4183	5	Sheikhpura	797	3375	4					
Jehanabad	832	4269	5	Sheohar	900	3102	3					
Kaimur	838	3354	4	Sitamarhi	891	3334	4					
Katihar	842	3024	4	Siwan	871	3532	4					
Khagaria	871	3774	4	Supaul	852	4315	5					
Kishanganj	895	3264	4	Vaishali	872	5151	6					
Lakhisarai	843	3605	4	W.	902	3783	4					
				Champaran								
				Total	32578	139138	4					

Source: MSME Development Institute, Patna, Bihar

Bihar is generating employment for 4 people per enterprise. It is quite double than the national level (Table 5). Some district of Bihar is performing better than the state's average. Therefore, it can be said that the micro enterprises in Bihar is capable to provide employment to its people.

#### Section V

# **Conclusion and Suggestions**

As micro enterprises have been known as en engine of economic development of a nation due to its low scale of input and high scale of labour absorption and output. MEs are suffering from low level of technology, lack of credit, difficulty in arranging critical raw materials, facing difficulties in accessing market, lack of skills etc. The study bank credit should be disbursed on priority, which can address both the demand and the supply side of credit in the economy like housing, education, transportation, and loans to professionals.

The target of 10 per cent to be set for lending to MEs will have a positive impact on expansion of MEs in Bihar. Within which, should be allocated for socio-economically weaker sections. RBI should issue necessary guidelines in this respect. It is also found that such enterprises can be operationalised by dint of traditional technology. However, they can utilise modern technology also to improve value addition.

On the other hand, Bihar has been known as backward state suffering from unemployment challenges for its millions of people. In the situation of agro based economy, absence of industrial units and lack of finance for establishment of big industrial units to generate huge employment for people was one of the greatest challenges. But the rural industries are the one of the great means to boost up economy by contributing in income generation of people through providing employment opportunity. It has been notably found in this paper, that this state has much potential to generate employment more than the national average.

In spite of better potential to create employment through micro enterprises in Bihar, it is required to boost these enterprises at many layers. Apart from lack of investment, these enterprises are suffering from technological issues. As they are depended on traditional technologies, they are required to access modern technologies to strengthen their production, distribution and marketing as well. However, the motives of the technologies should be to improve the quality of products rather than to reduce the labour from the enterprises.

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# "The Role of Microfinance in Rural Women Development – A case study of Shikaripura Taluk"

#### Netravathi

#### Abstract

The SHGs of rural women consists of members who are the poor, having low saving capacity and who depend on money lenders for meeting their consumption needs and social obligations. Formation of women into Self Help Groups paved a way to develop their economic standards, there by building self-confidence. Women in SHGs have been encouraged by the government as well as NGOs to undertake self-employment ventures with locally available resources. Availability of micro credit helped SHG women a lot and many women came forward and established micro enterprises. At present a number of NGOs and financial institutions have been offering microfinance especially to rural women micro entrepreneurs. They also motivate training programmes to develop their entrepreneurial skills and capabilities. Specific training in manufacturing or services sector is available for the prospective rural women micro entrepreneurs. These institutions have been encouraging women to start micro enterprises. As a result micro entrepreneurship is gradually growing importance among the rural women.

**Keywords:** - SHGs, NGOs, Self-confidence, SIDBI, Microfinance, Empowerment, Commercial activity. Microcredit,

#### Introduction

Microfinance program in India is growing rapidly and receiving increasing attention from the financial institutions, non-governmental organizations (NGOs) and the Government, as an instrument that can transform lives of the poor. India's development planning has always aimed at removing inequalities in the process of development, recognizing that women lag behind due to several socio economic, cultural and political factors and the five year plans have been paying attention to women's welfare, female education, and their access to resources and empowerment. From the 6th five year plan, women were recognized as a separate target group and govt. efforts are focused to raise their social, economic and political status at par with men. The field or microfinance made significant progress as a movement in our country, with the active support of RBI, NABARD, SIDBI, and NGOs microfinance emerged as a giant. The concept of Self Help Groups is not ultimately a micro credit projects, but an empowerment process. The Self Help Group and Microfinance are aimed at empowering poor women, which help the family to come out of poverty.

#### **1.1 Statement of the Problem**

The majority of the poor are living in rural India. Poverty has taken the shape of "Feminization of Poverty" in the country. The women are its main component. The Government has introduced SHG programme as an innovative and dynamic anti- poverty programme. They have empowered the rural poor women to some extent and enabled them to cross the poverty line.

#### 1.2 Objectives of the Study

The following objectives have been identified for the purpose of carrying out the study with reference to the "The Role of Microfinance in Rural Women Development – A case study of Shikaripura Taluk"

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- To understand the concept of microfinance
- To analyze growth and performance of the rural women development
- To identify problems that women face in accessing microfinance services
- To give suggestions to improve their performance

#### 1.3 Scope of the Study

The scope to loans is made to women's, womenempowerment, women enterprises for the purpose of meeting their genuine economic or women poverty. The field survey is confined to Shikaripura only. The scope is limited to Shikaripura .considering the shortage of time and the cost factor. The rural women's of Shikaripura gave co-operation to complete the project report.

# 1.4 Methodology

Research methodology which mainly explains the flow of research is concerned. It is an important section of the study, which particularly throws light on the study area followed by adoption of the sampling procedure, sources of data, statistical tools and techniques used for data analysis and so on.

Primary data is collected through direct responder of rural women's and throw the questionnaires also collect the information. Help to related to the under study. The primary data has been collected through direct interview of the concerned respondents with structured questionnaire. Is a second data collected from published or unpublished sources. Here secondary data is collected from books and magazine and internet, website.

#### Source of Data

- a. Target population: The population for the research is taken from the ruralwomen's.
- b. Sampling Techniques: simple random sampling has been used in the selection of Respondents.

Sample size: 50

Tools and techniques there are many tools and techniques attainable to executefully the task of the work. Under this work contents graph, table, bar chart and questionnaire for easy understanding and also makes attractive.

#### 1.5 Limitations

- The study is only restricted to Shikaripura city.
- Some respondents will not give correct opinion about the survey
- Here we cannot contact all types of respondents

# 2. Rural Women Empowerment through Micro-Finance

Micro credit is a financial innovation which originated in developing countries where it has successfully enabled extremely impoverished people to engage in self- employment projects that allow them to generate income, begin to build wealth and exit from poverty. Microcredit is the extension of very small loans to the entrepreneurs and to others living in poverty that are not considered bankable. These peoples lack collateral, steady employment and a verifiable credit history and therefore cannot meet even the most minimal qualifications to gain access to traditional credit. Microcredit it's a economic tool for socioeconomic development. Prof. Muhammad Yunus explains the role of micro credit in facilitating womenpotential as women have plans for themselves, for their children, for their home, their meal. Due to the success of micro credit, many traditional banking industries have begun to realize that these micro credit borrowers should more correctly be categorized as pre-bankable, thus, microcredit is interestingly gaining credibility in the mainstream finance organizations are contemplating micro credit projects as a source of future growth.

# 2.1 Micro Finance and Empowerment of Women

The importance of women to the economic development of India was first recognized during the country's struggle for independence. Empowerment is a social action process that promotes participation of people, organization and communities in gaining control over their lives in their community. There is urgent need of empowering women especially in rural areas. The formation of self-help group and micro financing will enhance their socio economic position in the society.

Small loans can make good business sense among the women. It has been noticed that women in particular stand to gain a lot from micro finance because it gives them an independent means of generating wealth and becoming self-reliant in a society that does not offer them much scope for entrepreneurship. And since it is women who run the household, a higher standard of living for women ensures better governance and healthier and more prosperous future for the children and a better future for the nation. The success of micro credit initiatives has often been attributed otheir particular focus on empowering women and encouraging their self-reliance through developing their own means of income. Various case studies show that there is a positive correlation between credit availability and women's empowerment. It is observed that majority of rural women who are associated with self-help groupactivity positively succeeded to gain them empowered.

# 2.3 Entrepreneurship Development among Rural Women through Micro-Credit

SHGs are recent origin in rural India to helping more than 17 million women from villages improve their incomes, educate their children, and buy assets. SHGs have also helped women campaign against oppressive social practices and become a force of development in their villages. Before 1990s, credit schemes for rural women were almost negligible. The concept of women's credit was born on the insistence by women oriented studies that highlighted the discrimination and struggle of women in having access to credit. Micro credits are enough for innovative and hardworking micro entrepreneursto start small business such as making handicraft items. From the income of these small businesses the borrowers of micro credit can enjoy better life, food, shelter, health care and education for their families and above all these small earnings will provide a hope for better future.

#### 2.4 How microfinance is helping poor households and businesses survive

- 1. Supporting microfinance institutions to ensure funds for low-income borrowers.
- 2. Empowering women by financing micro, small and medium-sized enterprises.
- 3. Delivering access to education as well as finance for rural women.
- 4. Helping to rebuild post-conflict communities and revive women's livelihoods
- 5. Leveraging microfinance to help businesses and livelihoods outside capitalcitie
- 6. Nurturing small businesses to help diversify economies.

## 3. Data analysis and interpretation

#### Table No 1 Gender wise classification of respondents



#### of respondents

SI.	Age	Responder	Percentage of	0
No			Total	
	2 5	32	64	Percentage of total
1			7	
2	2 5-30	7	14	64
3	3 0-40	5	10 5	
4	Above 45	6	122	
	Total	50	100	
				2 25 20 Abov

The above table shows that, out of 50 respondents, 64% of Respondents are coming under the age group of 25 years, 14% of them are under the age group of 25 to 30 years, 10% of them are under the age group of 30 to 40 years, and 12% of them are under the age group of above 45. Here it is interpreted that, majority of the respondents comes under the age group of 25 years.

# Table No 3: Profession wise classification of respondents



Sl. No	Profession	Respo ndent s	Percentage of total
1	Self-employ	18	36
2	Labour	5	10
3	Housewife	10	20
4	Unemployed	17	34
	Total	50	50

Table reveals that majority of the respondents 36 percent people are engaging in self-employee and with their occupation they will maintain these microfinance activities. Only 10 percent people are engaging in labour and 34 percent people are engaging in unemployed. Only 20 percent of respondents are engaging in housewife.

Table shows that respondents those who joined in SHGs are having uncertainty related to their income. The people those who are involving in self-employment are also

have to face high uncertainties. Unemployed have not work in any seasons. This information proved that SHGs are helpful people those who have not certain income.

	Table No 4: awar	re of microfinand	e in rural wo	mendevelopment	t wise cla	assification of	of respo	ondents
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SI. No	Particulars	Respo ndents	Percentage of Total	Percentage of Total
1	\$7	26	70	80 72
I	Yes	36	12	70
2	No	14	28	4028
	Total	50	100	30
				Ves N

The above shows that, out of 50 respondents 72% of the respondents opine that expectaware of microfinance in rural women development and remaining 28% of the respondents opine that Not aware of microfinance in rural women development. Here it is interpreted that the most of the aware of the rural women developments of microfinance.



# Table No 5: classification of respondents based on features that attract you to participate in microfinance

SI. No	Particulars	Respon dents	Percentag e of total
1	New financing method	14	28
2	Profit and loss sharing principal	15	30
3	Interest free mechanism	8	16
4	Help in alleviating poverty	5	10
5	Other	8	16
	Total	50	100

Table shows that, out of 50 respondents, 28% of respondents opine that New financing method, 30% of respondents opine that profit and loss sharing principal, 16% of respondents opine that Interest free mechanism, 10% of respondents opine that Help in alleviating poverty, 16% of respondents opine that Other. Here it is interpreted that most of the rural women's have some hurdles with microfinance in the initial stages.

Table	No	6:	classification	of	respondents	based	on b	estbenefit	of	joining	the	grou	p
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SI No	Particulars	Respon dents	Percentage of total
1	Loan	12	24
2	Skill development	19	38
3	Women empowerment	18	36
4	Others	1	2
	Total	50	100



The above table shows that, out of 50 respondents, 24% of respondents opine that loan, 38% of respondents opine that skill development, 36% of respondents opine that women empowerment, 2% of respondents opine that others. Here it is interpreted that, majority of the respondents are having skill development.

#### Table No 7: classification of respondents based on source of the loan



The above table shows that, out of 50 respondents, 64% of respondents are bank, 12% of respondents are credit institution, 14% of respondents are NGO, 6% of respondents are others. Here it is interpreted that, majority of the respondents are having (64%) bank is the source of the loan.

SI. No	Particulars	Respondent s	Percentage of total	Percentage of total
1	Strongly agree	9	18 7	6
2	Agree	33	66 6	
3	Disagree	6	12 5	
4	Strongly disagree	2	4 4	
	Total	50	100	Strongly Agree Disagree Strongly disagree

#### Table No 8: classification of respondents based on satisfied in the loan interest rate

The above table shows that, out of 50 respondents 18% of respondents strongly agree, 66% of respondents agree, 12% of respondents disagree, 4% of respondents strongly disagree. Here it is interpreted that the majority of rural women's agree to the availability of loan of interest rate in microfinance.

#### Table No 9: classification of respondents in the think you fully utilized credit taken

S I N 0	Particulars	Resp onde nts	Percentage of total
1	Yes	40	80
2	No	10	20
	Total	50	100



The above table shows that, out of 50 respondents 80% of the respondents expect fully utilized credit

taken by women's and remaining 20% of the respondents are opine that Not fully utilized credit taken by women's. Here it is interpreted that the most of rural women's suggested that women's fully utilized credit taken by rural women's

# Table No 10: Classification of respondents based on compared to the period before you took the loan would you say yours turnover or business output

Sl. No	Particulars	Resp Percentage onde of total nts		Percentage of total		
1	Improved	41	82	90 80		
2	Decrease	3	6	70 60		
3	Stayed the same	6	12	40		
	Total	50	100	30 20		

The above shows that, out of 50 respondents 82% of the respondents improved,6% of the respondents decrease, 12% of the respondents stayed the same. Here it is interpreted that, majority of the respondents are having improved to the period before you took the loan would you say yours turnover or business output.

Table No 11: Classification of respondents aware of t	the consequences of non-repayment of loan
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SI. No	Particulars	Respo ndents	Percentag e of total	Percentage of total
1	Yes	37	74	No 26
2	No	13	26	74
	Total	50	100	Yes 0 20 40 60 80

The above shows that, out of 50 respondents 74% of the respondents opine that aware of the consequences of non-repayment of loan and remaining 26% of the respondents are opine that not aware of the consequences of non-repayment of loan. Here it is interpreted that the most rural women's aware of the consequences of non-repayment of loan

SI.	Particulars	Respondents	Percentage of total
110			
1	Adequate information isprovided by the creditor	5	10
2	Procedures for raisingloan are convenient	7	14
3	Time taken to access credit is less and reasonable	8	16
4	Rate of interest chargedby the creditor is justified	3	6
5	Loan repayment policy ofcreditor is liberal	10	20
6	Terms and conditions of the creditor are satisfactory	6	12
7	The creditor gives you due recognition and respect	11	22
	Total	50	100

 Table No 12: classification of respondents of based on your consequences of non-repayment of loan, rate your satisfaction level atyour microfinance on a five points scale

The above tables shows that, out of 50 respondents 10% of the respondents opine that Adequate information is provided by the creditor, 14% of the respondents opine that Procedures for raising loan are convenient, 16% of the respondents opine that Time taken ta access credit is less and reasonable, 6% of the respondents opine that Rate of interest charged by the creditor is justified, 20% of the respondents opine that Loan repayment policy of creditor are satisfactory, 12% of the respondents opine the and conditions of the satisfactory, 22% of the respondents opine that The creditor gives you due recognition and respect.





# Table No 13: classification of respondents the institution has helpedyou improve your business

The above shows that, out of 50 respondents 90% of the respondents opine that expect the institution has helped you improve your business and 10% of the respondents opine that Not institution has helped you improve your business. Here it is interpreted that the most Rural women's suggested that improvements are needed the business.

# Table No14: classification of respondents state your level of business improvements

Sl. No	Particulars	Respo	Percentag
		ndent s	e of total

1	Increase flexibility	25	50
2	Take advantage of technolog y	12	24
3	Employ research	9	18
4	Make it person	4	8
	Total	50	100

The above table shows that, out of 50 respondents 50% of respondents opine that increase flexibility, 24% of respondents opine that take advantage of technology, 18% of respondents opine that employ research, 8% of respondents opine that make it person. Here it is interpreted that the majority of the respondents increase flexibility of the suggested that business improvements.

# Table No 15: classification of respondents overall satisfaction with service provided by your Microfinance institutions

SI. No	Particulars	Respond ents	Percentage total	of	Percentage of total
1	Dissatisfied	11	22		Verv 2
2	Neutral	23	46		satisfied
3	Satisfied	15	30		
4	Very satisfied	1	2		Neutr 4
	Total	50	100	Di	statisfi 2

The above table shows that, out of 50 respondents 22% of the respondents opine that Dissatisfied, 46% of the respondents opine that Neutral, 30% of the respondents opine that satisfied,2% of the respondents opine that very satisfied. Here it is interpreted that majority of the opinion respondents of overall satisfaction with service provided by microfinance institutions.

# Table No 16: classification of respondents based on recommend to other women to be part of these microfinance

				Pe	rcentage of total
SI. No	Particulars	Respondents	Percentage	of	
110			lotai	6	<u> </u>
1	Strongly agree	11	22	l l	
				70 -	
2	Agree	35	70	<u></u>	1
	-			60 -	1
3	Disagree	3	6		
	U			50 -	
4	Strongly disagree	1	2		
				40 -	
	Total	50	100		
		~ ~			Strongly Agree Disagree Strongly
1			1		

The above table shows that, out of 50 respondents 22% of respondents opine that strongly agree, 70% of respondents opine that agree, 6% of respondents opine that disagree, 2% of respondents opine that strongly disagree. Here it is interpreted that the majority portion of respondents of the rural women's areof agree opinion with regard to the women to be part of these microfinance.

# 4. Major Findings

1. Microfinance play very vital role in the empowerment of rural women.

2. The income limit for each rural household to be eligible for microfinance has been increased from

Rs 100,000 to Rs 125,000 and from Rs 160,000 to Rs 200,000 for urban and semi-urban areas.

3. Empowerment of rural women and cultivate savings and poverty reduction are the main objectives of microfinance.

4. To help rural women to overcome exploitation and creation of confidences are the needs of microfinance.

5. Role of Microfinance in Rural women development has mainlywomen empowerment.

6. The total disbursement to the microfinance institution for the current year stood at Rs 61,894 crore.

7. Majority members had less education.

8. Poverty level of the members is not poor

9. The majority microfinance members are located in rural area. 13. They are sharing their labour once in a week.

14. Group's strength is main motivation for labour sharing.

15. Microfinance related matters will be discussed more and next preference will be given to future plan.

16. Microfinance allows people to take on reasonable small business loans safely, and in a manner that is consistent with ethical lending practices.

17. The rate of interest of microfinance trust is 9.16 percent.

18. Majority (80 percent) members are taking the loan for fulfillment of financial needs.

# 5. Suggestions

- Microfinance should give more power to take development work.
- It needs effective performance assessment.
- They have to increase the facility towards the providingscholarship for intelligent and very poor student.
- They should provide loan at small rate of interest.
- They should conduct competitions, and other self-employment programme.
- · They should increase the repayment period in case of their loantaking amount.
- They should provide useful facility for rural women's members
- Government provides the more schemes for rural womendevelopment.
- Improve the high quality services for rural women's.
- Improve knowledge about microfinance.
- They should maintained computerized accounting for their business purpose.
- They should provide more subsidies to purchasing the businessequipment.

# 6. Conclusion

Microfinance are helpful to poor to manage their family by sharing labour, they found solutions to labour problems and they are sharing the work among members and they start economical activities through SHGs.So members try to find solutions for their problems. Women members are more beneficiaries from these SHGs while compared to men members. Microfinance helps to low income group. Microfinance are more concentrated on poverty reduction and savings than other activities. The study has successfully analyzed the microfinance in shimoga and problems faced by the microfinance in rural areas and it also clears that the benefits given by SHGs and it's in development of rural women. Though different studies conducted at various levels show different conclusions, it can be acknowledged from the resent study that despite of bottlenecks, microfinance is capable of helping the poor to upscale themselves to a better living and playing a significantly positive role in upgrading rural women development. As the main objectives is to develop the rural.

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# **Drivers of High Economic Growth - An Appraisal**

#### Angrej Singh

#### Abstract

Over the past few decades, economists' interest in the factors influencing economic growth has grown. What drives economic expansion? Why do some nations expand more quickly than others? What are the causes of inequitable nation-growth? The literature that attempts to investigate the factors that contribute to economic growth has exploded as a result of these problems and the resurgence of research in economic growth. Every country now views economic growth as a desirable fruit, and economists place great emphasis on the idea of economic growth for the following reasons:

First, stronger economic growth promotes human welfare on its own (Aghion et al., 2010).

Second, economic expansion boosts the nation's capacity to produce goods and services (Rittenberg etal., 2012).

Third, increased employment possibilities and labour productivity contribute to lower levels of poverty, the most prominent issue facing developing nations (Melamed et al., 2011).

Fourth, it enhances quality of life through the lens of human development by emphasising enhanced conditions for education and health (Ranis et al., 2000).

Fifth, it improves people's quality of life by giving them access to more commodities and services (Grant, 2014).

Sixth, faster economic growth generates more tax income for the government, which can be utilised to provide poor people with more basic services (Booth et al., 2016).

Seventh, it results in more effective use of limited natural resources (Stiglitz, 1974).

Eighth, it promotes the growth of socioeconomic infrastructure, raising people's standards of living and assisting in quickening the rate of economic growth (Canning et al., 2004).

Ninth, it eventually lessens income inequality. According to the Kuznets hypothesis, income disparity tends to develop during the early stages of growth but tends to reduce during a later stage of expansion (Aghion et al., 2010).

Tenth, faster economic growth leads to the creation of a stable financial system because demand for better and more effective financial services rises as economic growth rates rise (Patrick, 1966).

Key Words: Economic Growth, Income Inequality, GDP, Income per Capita etc.

#### Introduction

Economists and policymakers have been looking for the factors that influence economic growth from the time of the mercantilists to the present era of globalisation and information technology. Up until the middle of the 18th century, a group of European economists known as the mercantilists believed that economic development in a country resulted from the buildup of wealth in the shape of precious metals such as gold and silver, which can be acquired through creating export surpluses from international trade. In this sense, international trade is a key factor in determining economic growth.

Another school of French economists, the Physiocrats, placed emphasis on productive activity, especially in agriculture as a key contributor to national wealth and, consequently, to economic progress in the second half of the 18th century.

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An influential Physiocrat of the 18th century named François Quesnay proposed that agriculture is the only sector productive enough to produce an economic surplus that can boost national prosperity.

Later, the mainstream economists held that economic expansion is primarily fueled by investments in productive activity. Under the laissez-faire system, Adam Smith (1776) promoted free trade as the primary engine of a free capitalist economy. David Ricardo claimed that an economy is made up of three working classes, namely landlords, capitalists, and labourers, but that only capitalists are responsible for starting the process of expansion. Importantly, T. R. Malthus defined the economic growth from a demographic point of view and claimed that whereas means of subsistence expand in an arithmetic progression, population increases in a geometric progression. According to J. A. Schumpeter, economic growth results from disruptions brought about by entrepreneur-made innovations in the continuous flow of income.

Every nation must pass through five stages of development, according to W. W. Rostow, including the traditional society stage, where the economy is based primarily on subsistence farming, the preconditions for take-off stage, where agricultural production becomes more mechanised and output is traded, and the take-off stage, where a manufacturing sector gains more importance and the glory of the agriculture sector becomes dull. the age of high mass consumption stage, where output levels rise, consumer spending rises, and the economy turns towards the tertiary sector; and the drive to maturity stage, where the state of technology increases as well as the manufacturing industry becomes more diverse.

The Keynesian school of thought argued that in order to attain optimal economic performance, aggregate demand must be stimulated by adjustments to government spending and taxation. This will prevent the economy from experiencing a short-term downturn. When population increase is assumed to be constant, Roy F. Harrod and Evsey Domar suggested a steady - state condition long-run model in which the rate of capital accumulation is seen as the key determinant of economic growth. Robert M. Solow added population growth and technical advancement to the capital accumulation in the Harrod-Domar model of long-run growth within the neo-classical framework. He also discusses how declining capital returns are what causes countries to converge

It is important to highlight that the emphasis on physical capital as the primary predictor of economic growth has started with the evolution of the neo-classical school of thinking. Based on the assumptions of exogenous technological progress, continuous returns to scale, and the substitutability of capital and labour, neo-classical economists asserted that an increase in the capital-labour ratio contributed to economic growth.

Growth requirements include the use of labour and declining capital's marginal productivity. In the absence of technical advancement, the neo-classical growth model made the key premise that capital gains fall with time, leading to a steady state economy with zero per capita growth. Such presumptions are, however, seen by contemporary economists as serious weaknesses in the neo-classical school of thought.

Due to the flaws in neo-classical models, new growth theories were created that made the production process endogenous. By assuming an exogenous saving rate and a fixed level of technology in the absence of declining returns to capital, Lucas and Rebelo devised the AK growth model in the 1980s, which results in endogenous growth. In his model, Robert Lucas asserts the endogeneity of economic growth and identifies human capital as the primary factor driving it because it boosts both the productivity of labour and physical capital. Paul Romer, another proponent of endogenous growth, emphasised the importance of R&D and innovation in determining economic growth. Thus, endogenous growth models emphasise the importance of human capital, particularly the 1992 Mankiw-Romer-Weil model.

Neo-Schumpeterian economics, also known as innovation economics, first came into existence in the 1990s and holds that in the current knowledge-based environment, capital alone is insufficient for economic growth. As a result, the emphasis has been placed primarily on innovation and knowledge as the drivers of economic growth. Both horizontal and vertical innovation are examples of this innovation. The increase of product variations and ongoing improvements to production processes are referred to as horizontal innovation. On the other hand, vertical innovation involves raising production and improving product quality. It is referred to as the Schumpeterian approach because it defines "creative destruction" as the total replacement of outdated, low-quality items with new, enhanced, high-quality ones.

The neo-classical models assumed that population was fixed and exogenous to the system, but various growth models that take migration into account (along with other variables like fertility decisions) endogenize the population and view labour force participation as a key component in economic growth. There are numerous other implicit elements that influence economic growth but cannot be explicitly assessed, in addition to these explicit ones. These are therefore known as the "Solow Residual" in the growth accounting system.

According to Simon Kuznets' inverted-U theory, inequality increases as the economy grows before it starts to improve and diminish. This theory holds that as a country develops, inequality first grows along with growth before gradually falling. Additionally, Kuznets' theory suggests that increased production may result from more equitable distribution. Therefore, it is clear that inequality contributes to and is affected by economic growth. The theories and empirical research on the relationship between inequality and economic growth can be divided into three main categories: first, inequality dampens economic growth by weakening aggregate demand of those at the bottom other factors for this negative impact of inequality on economic growth include imperfect capital markets, pressure for redistribution, and socio-political instability; second, inequality enhances economic growth; and third, inequality has no effect on either economic growth or growth in the number of people who are wealthy. Benhabib (2003) discovered a little hump-shaped association between inequality and growth and claimed that initially going modestly away from total equality is beneficial for growth, but also acknowledged that growth declines as inequality increases. Thirdly, inequality has no major effect on the nation's growth through the usually characterised routes, such as reduced consumption, lower levels of human capital, and also through credit markets. In fact, inequality has a neutral effect on economic growth in America. With the development of databases, which made statistics on income per capita available for many nations and for extended periods of time, a great number of empirical research developed alongside this theoretical perspective in the late 1980s. These studies identified a number of additional new factors that influence economic growth, particularly in the context of developing nations, including infrastructure, institutions, public policies, trade openness, financial development, inflation, political freedom, macroeconomic stability, and many others.

East Asia, South East Asia, South Asia, Central Asia, and The Pacific are the four subregions that make up the developing and fastest-growing part of the world known as Asia. The World Bank has classified the 50 economies in the region into four income groups: high income, higher middle income, lower middle income, & low income economies. This classification alone shows that there are differences in Asian economies' rates of economic expansion. According to Gonopadhyay and Bhattacharyay, rapid economic expansion in China, India, and other Asian nations has not resulted in the predicted gains in life quality and has instead worsened income and non-income inequities. Along with these barriers to economic growth, Asian has had to deal with the issue of income and wealth inequality. The fact that only three sub-regions of Asia's expanding and developing continent—East Asia, South-East Asia, and South Asia—are included in this issue of inequality is evidence of its existence (Khan, 1996). Even within Asia, these three sub-regions exhibit stark disparities in growth performance as indicated by per capita income. Because of its better policies, attractive demographics, better location, or starting level of education, East Asia in Asia grew more quickly than the remainder of the world, whereas South-East Asia ranked somewhere in the middle in all of these categories. However, due to its less suitable demographics and policies, South Asia fared poorly on all of these growth indicators. The disparities in growth performances of these sub regions of Asia are explained by the different performance of nations on these factors. In terms of income per person, East Asia attained an South-East Asia saw an unparalleled rate of expansion, whereas South Asia grew more slowly than the rest of the globe. It is not homogeneous like other regions; rather, it consists of socially, culturally, geographically, politically, and economically diverse nations.

But these nations all have one thing in common, namely, quick economic and social progress. Prior to the Industrial Revolution, Asian economies accounted for 60% of world GDP. However, as western economies gained pace in their expansion, Asia's growth showed a decreasing tendency, and by the early 1950s, its proportion had dropped from 60% to just over 10%. However, the Asian economy did not collapse, and a period of expansion known as the "Asian Miracle" quickly began in the 1960s. In the 1960s, Japan saw rapid economic expansion, which was followed by Hong Kong, Korea, Singapore, and Taiwan. In the 1980s, Malaysia and Thailand also experienced rapid economic growth. China likewise gained speed in the 1990s and experienced double-digit growth.

Although the vast majority of its people is illiterate and unemployed, Asia has now emerged as the world's centre for manufacturing, information, and technological services. Despite this, Asia is also the largest net saver and lender to industrialised nations. It also has its negatives, including a financial sector that is underdeveloped and a lack of investment in infrastructure and urbanisation. Asia has had remarkable growth over the past few decades, going from a low-income to a middle-income region. By boosting productivity through innovation, human capital, and infrastructure, Asia can now evolve into a high-income region.

One of the most successful growth tales in the history of economic development is the expansion of Asian economies since World War II. Asia has grown successfully as demonstrated by the incredible development of Japan, which was followed by the Asian Tigers in the 1970s, ASEAN nations in the 1980s, and China in the 1990s and 2000s.

With this success in expansion, Asian economies have significantly eliminated poverty and raised the standard of living in their countries. As a result, countries in this region began to have an impact on the process of global economic development and to exercise control over global governance in the financial and economic domains. Because of its strong economic recovery following the 2007–2008 global financial crisis, Asia's reputation among industrialised nations like North America and Europe has transformed from what it once was. Due to Asia's rapid economic growth, the United States benefits. Given that the region's openness to international trade and finance is a significant driver of its growth, the U.S. and Asian economies, as well as the global economy, are now bound together by strong economic ties.

The subject of what drives the rapid expansion of Asian economies and what elements can stop the region's growing disparity is brought up by Asia's growing prominence in the global economy and among advanced nations. But there haven't been many research that can provide an answer to these queries. Studies that are either country specific or multi-country studies have identified a relatively small number of economic growth factors at the Asian level.

In their study of the factors influencing Asia's economic growth from 1981 to 2007, Lee & Hong used the growth accounting paradigm to identify the sources of the region's rapid economic development. Even though this study is a solid contribution to the effort to address Asia's economic problems, it needs to be updated with data from 2007 and onward.

The drivers of growth in Asian economies were explored by Ghazanchyan et al. with a focus on the influence of investment, the exchange rate regime, financial risk, and capital account openness between 1980 and 2012. However, this study only looked at South and East Asia, ignoring other factors that have a big impact on economic growth.

In a fairly recent study, Kim used 52 nations and 18 economic variables that were statistically controlled to assess the impact of consumption on economic growth in Asia. The sole drawback of this study is that it only covers the four-year period from 2012 to 2016—a relatively short time frame for analysis to draw any conclusions.

Therefore, aside from these studies, which also have some limitations, no other significant studies are available in the context of Asian economies to address the questions of what actually propels these economies' growth, why growth varies across Asian countries, what are the prospects for a decline in the levels of regional inequality, as well as the likelihood that convergence between the Asian economies, will occur. In order to draw policy lessons from developed nations for the growth of developing countries and the viability of convergence in Asian countries, there is no study that examines the factors driving economic growth in both developed and developing Asian countries at the same time.

In order to formulate appropriate policy measures for achieving long-run growth and convergence across these economies and to address the shortcomings of the existing studies on Asia, a comprehensive research study is necessary to understand the context of the Asian economies and to identify the significant drivers of economic growth. With this context in mind, our research effort suggests identifying crucial factors that influence economic growth in Asian economies.

# Drivers of Economic Growth in Some Countries are as follows:

1) Japan has a rising GDP per capita, rising petroleum consumption, a highly developed financial sector, strong human capital, and historically a significantly higher share of exports than imports. It also uses a favourable structural structure of growth, with the lowest GDP shares of the agricultural, intermediate industrial, and services sectors. However, since 1996, Japan has been experiencing a decline in the percentage of people who are working age.

2) South Korea additionally benefits from a consistently expanding GDP per capita, open trade, high petroleum consumption, a sizable working-age population, a strong human capital base, and a favourable structural growth pattern. Since 1998, Korea's share of FDI has expanded considerably. Beginning in 2001, the financial development is accelerated. Over the years, the gross formation of capital varied between 30 and 40 percent of GDP.

3) China's GDP per capita has been rising steadily throughout the years, but it is only after 2007 that this rise becomes swift and steep. Similar to Korea, China's gross capital formation ranged between 30 and 40% of GDP. China has a strong human capital base, an advantageous structural growth pattern, a growing working-age population, a growing export share over imports, increased FDI, and rising petroleum consumption.

4) Iran has a significantly greater proportion of gross capital accumulation as a percentage of GDP, expanding petroleum consumption, a favourable structural pattern of growth, a developed financial sector, a higher proportion of exports than imports, and an increasing working-age population.

5) Malaysia's GDP per capita has steadily increased over the years as a result of the country's financial development, which has led to an increase in the working-age population, increased petroleum consumption, a favourable structural pattern of growth, a higher proportion of FDI in the GDP, and higher exports. However, the levels of human capital are lower than in the aforementioned nations, and the percentage of gross capital formation likewise varied between 20% and 40%.

6) Over time, Thailand has benefited from increased GDP per capita due to expanding trade openness, petroleum consumption, exports and imports, working-age population, advantageous structural pattern, and increasing financial growth. Human capital levels are, nevertheless, somewhat low.

7) Turkey likewise experiences rising GDP per capita over time, which may be attributed to expanding trade openness, a positive structural makeup, increased petroleum consumption, and an

expanding proportion of the population who are of working age. Turkey does, however, have a low proportion of gross capital formation, a low proportion of primary school students, a low life expectancy at birth, a low proportion of wide money, and a lower proportion of exports to imports.

8) Up until 2001, India's GDP per capita increased gradually, but after that point it began to climb quickly. India benefits from increasing FDI and trade openness, particularly in the 2000s and 2010s, a growing proportion of the population who are working age, increased petroleum consumption, quickly rising imports and exports, and broad money. Between 20 and 40% of gross capital formation changed over time.

9) With the exception of the working-age population and petroleum consumption, which are both increasing steadily, Indonesia has performed moderately on other economic measures.

10) The Philippines benefit from growing trade openness, FDI, a broad range of favourable trade patterns, and an increasing proportion of the population that is working age. Over the years, its gross capital formation decreased from about 30% to 20%.

11) Over the period, Pakistan's GDP per capita has steadily increased. Only in terms of increasing trade openness, working-age population, and increased petroleum consumption did Pakistan fare better. Otherwise, there is little gross capital formation, little FDI, falling gross capital formation, and more imports than exports.

12) The GDP per person in Nepal is also increasing steadily. Over time, it has experienced a significant increase in its gross capital formation. Since imports exceed exports, there is a significant difference between them. Although Nepal's performance has improved in relation to all measures, it still lags considerably behind upper-middle income and high income countries.

# Conclusion

The results of this aim thus disprove the idea that Asian economies as a whole exhibit an upward tendency of economic growth. All economic indices clearly show that only high- and upper-middle income nations, such as Japan, South Korea, China, Malaysia, and Iran, are doing well. In terms of economic growth, lower-middle income and low income nations like India, Indonesia, Pakistan, and Nepal lag substantially behind high and upper-middle income nations.

The results of the first goal clearly suggest that not all Asian economies exhibit an upward growth tendency over the period. The development patterns of all Asian nations have improved, but there is still a significant difference in economic performance between high- and low-income nations based on a few key economic indices. The findings also suggest that high-income and upper-middle-income nations are superior to low-income and lower-middle-income nations.

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#### **Role Of FDI In Indian Economy**

#### **Rahul Moreshwar Labhane**

#### Abstract:

International capital flows have a significant role for growth and development of the recipient countries by providing necessary capital resources and technology. On aspect of such international investment is foreign direct investment (FDI) which has become an important source of external finance since they considered as more stable and prominent source of capital inflows. FDI is one and only most important instrument of attracting international economic integration in any economy. It serves as a link between saving and investment many developing countries like India are facing the problem of saving. This problem can be solved by FDI the flow of foreign investment is profit making industry like insurance, business, service and real estate and serving as a cause for growth of economy in India. Today the present study is based on the objective like to find out the requirement of amount of foreign investment by India, for its economic development and to examine the trend and role of FDI and FII in improving the quality of and availability of goods has been beyond dobt.FDI is commonly referred to as investment which is made to acquire long term interest in enterprises operating outside of the economy of the investor. FDI has played a very important role in the development of the Indian economy. It has facilitated to achieve certain degree of financial stability a helps in increasing employment and also in promoting international trade, growth and development. The main sources to supplement domestic capital and also bring in the latest technology and managerial abilities. After 1991 economic reforms, all the restrictions which were earlier in place on these investment were removed.

As a result, the volume of foreign direct investment has significantly increased. More over, the composition and type of FDI have also changed. This has stimulated high hope that FDI may serve as a Catalyst to higher economic growth from time to time government of India has taken a number of steps to boost FDI inflow into the country . one of such step is "make in India" initiative launched by prime minister Narendra Modi in September 2014. This initiative was launched with the objective of liberalizing the FDI norms and improving ease of doing business in the country.

In India company can raise foreign direct investment through automatic route or government route. FDI in various sector of an economy will show the relative opportunity and attractiveness of the sector. Huge amount of FDI in specific sector will show the potential development and opportunity in the sector. This paper is an attempt to study the role of FDI in Indian economy and it exhibit the sector wise and year wise analysis of FDI's in India. The result show that the computer software and hardware sector has attracted huge amount of FDI in India followed service sector. The present study has been conducted to evaluate long run and short run impact of FDI on economic growth of India. The study concludes that foreign direct investment helps to enhance economic growth or India. The data collected for the purpose of study is based on Indian economy only.

#### Keywords : FDI, Indian Economy, Economy Growth, Portfolio Investments.

#### **Introduction :**

Foreign direct investment is considered as one of the important tool for the economic development particularly in the interest of the developing and underdeveloped countries FDI refers to an investments made by a company based in one country into another company based in other country. FDI is often preferred over foreign institutional investment (FII) as it considered to be the most beneficial and stable form of foreign investment for an economy. FDI transfers financial recourses, innovative technology and management techniques which increases productivity in the country. In India, company can rise FDI through automatic route or government route.

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Foreign direct investment is a major monetary supply for economic development foreign company can invest directly in private Indian business to get the advantages of cheaper wages and changing business environment of India FDI is a one of the important source of external finance which means that countries with limited resources can receive finance beyond their national borders and from weather countries, A part from being a significant driver of economic growth, foreign direct investment (FDI) is a major source of non- debt external monetary recourses for the economic development of India. The Indian governments have taken many favourable steps and robust business environment have ensured that foreign investment keeps increasing into the country. The government has taken several initiates in recent years such as relaxing FDI telecom, power exchanges, PSU oil refineries and stock exchanges among other.

# **Objectives of the study :**

• To study the importance of FDI for bridging the gap between the saving and investment of India.

- To study the trends of FDI and FIIs in recent past in India.
- To analyse the FDI inflow in different sector of an economy.
- To study the impact of FDI and FIIs in improving the quality.
- To know the obligation of foreign investment in India for its economy development.

## **Research Methodology :**

The present study is based on the ambition like how much amount of foreign investment is required for India's economic growth and to study the trend of FDI and FII's for economic development and how the status or economy has improved after economic improve. This study is based secondary data. Data have been collected from various sources including RBI bulletins, economic survey reports, NSE India and BSE India websites and also from various publications of ministry of commerce. Data has been gathered from secondary sources like reports and publication of govt. and RBI relating to foreign investment journal, books, magazines and internet.

## Meaning and Nature of FDI in Indian Economy

International monetary fund (IMF) defines FDI as a category of cross border investment made by a resident in one economy with the objective of establishing a lasting interest in are economy with the objective of establishing a lasting interest in an enterprise that is resident in the other economy. As per the FDI policy of India (effective from October 1,2010), 'Investment' is understood as financial contribution to the capital of an enterprise or purchase of share in the enterprise. 'foreign investment' is investment is an enterprise by a Non-Resident irrespective of weather this involves new capital or reinvestment of earnings. FDI strategies can be either acquisition or generalised investment acquisition means where a foreign firm acquires an established local firm and makes the acquired local firm a subsidiary business. Greenfield investment is defined as FDI in which investment involves the establishment of a completely new operation in a foreign land. Acquisition generates cash flow in a shorter time than in case of Greenfield investment. They can also use local existing recourses like land, labour manufacturing facilities, distribution channels, supply network, costumer base etc. Horizontal FDI occurs when the firm entire a foreign country to produce the same products produced at home or offer the same service that it does at home. Vertical FDI is company investment into an industry abroad which provides control on the different stage of making its final distribution. It can be further classified as forward vertical or backward vertical.

The advantages of FDI to a developing country include over coming recourse limitations, bridging demand and supply gap, source of non debt inflow, bringing new technology, management expertise and new skills in workers, providing new employment and integrating economics internationally. Investors choose their countries to invest based on country specific factors. FDI determinates include general business environment, laws and regulations of the country, administrative procedure and efficiency,

resource cost structure, proximity to investing country, cultural ties between two countries, infrastructure related factors, law rules and regulations governing FDI, appropriate national, legal, commercial policy to protect foreign investment political and economic stability and attitude of the government.

FDI in India has grown considerably since the liberalization process. Growth of FDI investment was as low as around 6 % P.A. between 1948 and 1992. It grew at around 30 % for the next six years. FDI was found more stable than other capital flows. Past studies analysis the reasons for FDI indicate that FDI are the result of economic opportunities based upon certain competitive advantage and ownership qualities. Study find that the rate of return on FDI in india was higher than the rate obtained on the global outward FDI despite the higher level of taxation and tariffs.

## Types of foreign investments and its role in India.

According to world bank investments report (1997) foreign capital flows during the period 1991 to 1996 have marked by a sharp expansion in net and gross capital flows and an appreciable increase in the participation of foreign investors in developing countries.

After the starts of economics reforms in India in July 1991, the large number of investment proposal was received into different industrial sectors both from the domestic investors and foreign industrialists including the non- resident Indians (NRIS). This shows the confidence of Indians as well as foreign investors in our economy.

Thus, this was the turning point of the Indian economy. As such NRI and FDI in India was not a new feature number of Euro issues was floated in India by some major Indian companies however its size was small and limited to certain products.

Foreign investments is of two kinds. The first is known as FDI which is investment of foreign capital into new productive actively which boost up domestic investment activities and this may or may not bring about an increase in exports.

The second from of foreign is portfolio investment where foreign capital inflows influence the domestic economy by purchasing the shares and stock of existing Indian companies. Such form of foreign capital investments is speculative in character, it can go out of the country as easily as it comes in this type is highly risky.

## Foreign Direct and Indirect Investment

FDI stands for foreign direct investment a part of country's national financial account. Foreign direct investment is investment of foreign assets into domestic structures, equipment and organisations. The FDI can take any route of forms to entre into any country. The three principle forms of FDI in India are joint ventures acquisition of assets in country and Greenfield venture.

## Foreign indirect investment as portfolio investment

Foreign companies and foreign institutional investors (FII) buy shares and debentures of native companies however management and control remain vested with the native domestic companies themselves . foreign investment comes in host country in through various route. As much FDI as possible host country Government would be well advised to focus their efforts in inviting the right kind of FDI. Among all various route the two main routes are foreign direct investments (FDI) and foreign indirect investment (FII).

## Determinates of foreign direct investment

- Size as well as the growth prospects of the economy of the country.
- Resource availability.
- High per capital income or if the citizens have reasonably good spending capabilities.
- Population
- Inexpensive labour force.
- Economic policies

#### Why India Needs FDI

Though the industrial sickness is a global phenomenon, yet its incidence in developed countries is less than the developing countries like India. As a result of low capital base and low level of technological and managerial know how, India is facing the industrial sickness. For the example the cotton textile once upon a time, the flourishing industry has lost its prime significance in the export market the sickness is not only effected the cotton textiles, jute and sugar but it has spread to even some other most modern industries like engineering, chemical rubber, cement etc. The small scale industry to are suffering from this malady in a big way. A unit is sick when its capacity utilizations is less than 50 percent of its installed capacity. The RBI defines the sick unit as one which has incurred cash losses for one year and in the judgement of the financing bank is likely to incur cash losses for the current year as well as following year or there is imbalance in the units financial structure that is when the ratio of current assets to current liabilities is than and debt equally ratio is worsening.

According to many economists when the sickness or depression comes, the economy requires some new process, new investments or mechanization in the enterprise Prof. A.H. Hensen in his book fiscal policy and business cycle has rightly mentioned that widening capital or more capital is used per unit of capital while widening process means that capital formation grows.

#### FDI & Health Care Sector

The FDI has now entered in health and pharmaceutical sector. The several proposal have been received by the government of India and government is studying the impact of the entry of FDI in health and pharmacy sector. The minister for chemicals and fertilizers, strikant jena has appointed a panel with the help of ministry of commerce. Some Indian companies are being undertaken by the foreign companies. The question of health of Indian citizen as well as the pricing and availability of medicines by the FDI needs to be well considered.

The present Indian pharmacy companies which are being forced by the circumstance to sell to MNCS, due to lack of research and development about 49 % foreign direct investment would be allowed in this sector. The companies from Japan and U.S.A. have shown their interest. If such companies would be allowed then the issue of selling of low cost medicine to low income group will be defeated. Another argument raised is whether these foreign companies, will use the medicine for India or for the export purpose perhaps the Indians will not get the medicines at affordable cost in domestic market therefore, this issue needs to tackle carefully.

#### FDI in Retail Industry

FDI in retail industry means that foreign companies in certain categories can sell products through their own retail shop in country. At present, foreign direct investment (FDI) in pure retailing is not permitted under Indian law government of India has allowed FDI in retail of specific brand of products. Following this, foreign companies in certain categories can sell products through their own retail shops in the country.

It is a very positive step and it will encourage international brands to set up shop in India. On the other hand this will also lead to competition among Indian players. It will be the consumers who stand to gain, this would not change the market dynamics immediately as it will take some time for these plans to fructify. The growing dominance multinational companies in the country's \$ 200 billion retail business had warned that any move to increase FDI in the retail sector would ruin the business of small and medium traders scattered over the country. FDI in retail trade has forced the wholesalers and food processors to improve, raised exports and triggered growth by outsourcing supplies domestically. The availability of standardized product has also boosted tourism in these countries. FDI in retail sector has been a key driver of productivity growth in brazil, Poland and Thailand. This has resulted in lower prices to the consumer, more consumption and higher profit for the producer.

Deposit all these favourable developments, the government appears to the still dithering in giving a green signal to FDI in this sector in view of opposition from left parties and some sections

within the congress. Its is indeed unfortunate that this issue is hanging for nearly four years now even as the government has allowed foreign investment in a number of sector including banking and insurance.

As of now, the Indian retail sector largely due to its fragmented structure, suffers from limited access to capital, labour and suitable real estate opinions. In contrast, china which allowed 49 % FDI in the retail sector since 1992, benefited immensely with foreign players bringing capital.

Ranks	Sector	Cumulative Inflows	Percentage Of Total
		(April 00 – March 19)	Inflows Investments
1	Service Sector	416,301	18 %
		(74,149)	
2	Computer Hardware &	221,756	9 %
	Software	(37,238)	
3	Telecommunication	188, 249	8 %
		(32,826)	
4	Construction	119,614	6 %
	Development	(25,046)	
	(Township)		
5	Trading	143,599	5 %
		(23,021)	
6	Automobile industry	123, 989	5 %
		(21,387)	
7	Chemicals (Other Than	91, 062	4 %
	Fertilizers)	(16,582)	
8	Drug and	84,165	4 %
	Pharmaceuticals	(15,983)	
9	Construction (Infra-	93, 873	4 %
	structure) Activities	(14,805)	
10	Power	77,889	3 %
		(14,316)	
Total FDI Inflo	ws From All Countries	2378,886	
		(420,142)	

Sector	Attracting	Highest	FDI	Equity	Inflows	:	
							$\sim$

\*Source : dipp.nic.in

Note : Figure are provisional.

## **Interpretation :**

Among the top ten sectors attracting the most FDI inflows, it is observed that the service sector of our country received the maximum investment constituting almost 18 % of the total investments from these countries over the last 19 years, followed by computer hardware & software and telecommunication sectors with 9 % and 8 % respectively. It is because of the fact that among all the sectors the service has been the fastest growing sector of Indian economy over a longer period of time. The contribution of various trade, financing, hotels, insurance, estate and business service, social and personal services exceed 60 % of India's GDP.

## **Conclusion :**

India is now liberalizing its foreign direct investment (FDI) policy to make market more investor Friendly. The result have been encouraging. These days the country is consistently ranged among the top five global investment destinations by all international bodies, according to the latest reports. The new government has allowed foreign investment beyond 49 % and up to 100 % through the government

approval route in deepens resulting in access to modern technology in the country. The recent policy revisions include 100 % FDI under government approval route for trading including through e-commerce in respect of food product manufactured or produced in India, including through e-commerce in respect of food products manufactured or produced in India, bringing into effect financial budge 2016-17. In pharmaceutical sector the government has permitted upto 74 percent FDI under automatic route in existing pharmaceutical ventures. The government approval route will continue beyond 74 percent FDI and upto 100 percent in such brown-field pharma. In short now most of the sectors would be under automatic approval route making India one of the most open economics, in the world for FDI. All these are expected benefit the economy.

We should welcome inflow of foreign investment in such way that it should be convent and favourable for Indian economy and enable us to achieve our appreciate goal like rapid economic development, removal of poverty and making our balance of payment favourable.

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#### The Monetary Policy during Shocks: An Analysis of India's Response to COVID-19

## Amit Kumar<sup>1</sup>

#### ABSTRACT

COVID-19 has adversely affected economies all over the world and different governments around the world have taken different measures to mitigate its effects. Due to this pandemic, India has been hit by the virus most severely in the second wave and has also faced multiple lockdowns as well as other economic hardships. India's annual Inflation rate increased to 6.01% in January of 2022 from 5.66% in December 2021. In order to keep the inflation rates with in control, the Reserve Bank of India left its benchmark repo rate at 4% and the reverse repo rate stood unchanged at 3.35% in February 2022. The purpose of this research paper is to study the recent trends in the repo and reverse repo rates with relation to the changing Inflation rates in India especially after the outset of COVID-19. In order to determine whether repo rate significantly impacted CPI. The result suggests that as a result of the global recession, RBI has adopted a less prudent policy and showed more flexibility through a persistent decrease in the policy rate.

Keywords: Monetary policy, Repo rate, Inflation, Consumer Price Index.

## **1. INTRODUCTION**

When the first Corona case occurred in China, only the most pessimistic of pessimists could have predicted it would become a pandemic of historical proportions. Initially, when the first signs of contagion appeared in Asia and elsewhere, it seemed unlikely that in a short time there would be an economic collapse that would bring the entire world economy to its knees. Early on, most governments were quick to close borders, control social distance and close general borders as a response to their disbelief and helplessness, even as they knew this would lead to a much deeper recession than the financial one the world experienced from 2007-2009. In the beginning, it appeared that countries with the strictest measures took the most steps to contain the contagion and reduced the number of active cases almost to zero, but the re-opening and international movement of people brought back the virus, which resulted in "the dance" stage (opening) and "the hammer" stage (closing) for many countries.

This has all led to major economic shocks, both on the supply and demand sides. It resulted in a decrease in employment and production, and the lockdown has shifted demand in favor of basic groceries (food and hygiene goods, health services and products) and electronic equipment (laptops, communication devices etc.) at the expense of nearly all other products. Globally, a recession has begun that has slowed international trade, disrupted global value chains, and slowed foreign direct investment, tourism, international trade, and transport (Maital & Barzani, 2020). During times of crisis, central banks are able to mitigate their effects with powerful instruments. Besides the standard instruments that are regularly used, monetary authorities also use unconventional instruments in times of extreme conditions.

## **Objective of the paper**

The primary objectives of this papers are

• To study the impact of COVID-19 on important sectors of Indian Economy and

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• To provide a brief overview of the Reserve Bank of India's response to the epidemic and examine how this affected inflation rates in India.

This paper consists of six sections. Section-1 consists of introduction, section -2 briefly reviews previous research on the effects of the monetary policy, section-3 analyzes the impact of the pandemic on the economy of India, section-4 contains the analysis and impact of monetary policy on inflation which was used before and after the COVID-19 pandemic. Finally, section-5 and section-6 consists of results and conclusion respectively.

# 2. REVIEW OF LITERATURE

In light of economic uncertainty, this study focuses on the consequences of the pandemic on monetary policy and then on the subsequent policy based on specific markets. The majority of existing studies on this topic focus on the relationship between conventional monetary policy and the prices of goods in the literature, which covers a wide range of markets, including those facing certain foreign and domestic financial situations. Since the initial study by Dornbusch (1976), many studies have applied the monetary policy channel to various markets, including Frankel (1986), Barsky and Kilian (2001), Arango et al. (2008), Baker et al. (2016) and Azzimonti (2018). In general, pandemics affect the economy of a country both on the supply and demand sides. They can also be transmitted internationally through trade, finance, and tourism. Correia et al. (2020) demonstrate that the decline in the US economy during the 1918 Great Influenza pandemic was a result of both demand and supply factors. A study by Verikios et al. (2011) found that the more integrated a region is into the world economy, the more likely it is to suffer from a pandemic. In addition, the authors found that a pandemic with a high infection rate will have a stronger impact on global economic activity than one with a high virulence rate.

According to Barro et al. (2020), the 1918 Great Influenza pandemic can provide a worst-case scenario for mortality rates and economic contraction due to the ongoing COVID-19 pandemic. Agriculture, food prices, and the oil sector are usually included in the sectors (Frankel, 1986) while analyzing the impact of monetary policy on inflation. Through three main channels, the decline in real interest rates is expected to lead to higher commodity prices. Among these channels are i) the supply-side channel (i.e., the falling cost of holding inventory), (ii) investors turn to futures contracts (i.e., increased demand for goods) and (iii) the increased demand for capital goods. According to Arango et al. (2008), commodities output tends to rise when real interest rates are very low. Moreover, Mirza et al. (2020) also provided an analysis of the price volatility in the context of unexpected shocks in the economy, such as the novel COVID-19 virus and its subsequent pandemic.

Chaudhry et al. (2012) investigated the long-term and short-term impacts of monetary policy on inflation and output in Pakistan. In another case, Mugume (2011) used the non-recursive VAR model in order to estimate the monetary transmission mechanisms in Uganda, using the broad money rate and lending rate as proxies for monetary policy. He found that negative interest rate-based monetary shocks decreased economic growth for up to two quarters, while M2 innovations had no statistically significant effects on production.

# 3. IMPACT OF COVID-19 ON INDIAN ECONOMY

# 3.1 Covid-19 cases, deaths and vaccination

Since the outbreak of the pandemic, economic development in countries has been closely correlated with the epidemiological situation and for countries such as India it was also tied to the "degree of exposure" to certain industries, international openness and activities such as tourism and services. Figure-1 shows the seven-day average number of daily COVID-19 new cases and new deaths per million inhabitants for India, which can be used as an indicator of the evolution of the epidemic.



Figure 1: Daily new confirmed COVID-19 cases and deaths per million people

India had very good figures until May 2020, but after that, the number of deaths began to rise, peaking in the month of August 2020. Although India had experienced a significant reduction in its seven-day average number of deaths by the end of February 2021, it has experienced a new increase in its sevenday average number of deaths per million inhabitants. Probably the reason for this was a lack of closure measures and a slower vaccination schedule, which lead to India emerging from the pandemic later than others, as shown in Figure-2.

Figure-2 reveals the vaccine doses (per 100 people) from March 2020 to February 2022 and the new deaths (per million) in India. It can be clearly seen that initially the process of vaccination was quite slow and hence a peak in new deaths (per million) in the month of May 2021 which was also termed as second wave of Covid-19. As the vaccination doses increased in the month of February 2022, the cases of new deaths also decreased in India.



# Figure 2: COVID-19 vaccine doses and confirmed deaths 3.2 India's quarterly Growth rate and annual Growth rate

A V-shaped economic growth curve today implies that a sharp decline will be followed by rapid growth which is shown in Figure-3 which shows the quarterly growth rate of India. From Figure-4,

it can be seen that the annual growth of 2020 was -7.25 which is far less than the growth during the 2008 financial crisis which was 3.08%. However, the recovery during this pandemic is expected to be faster than the subprime crisis in 2008.



Figure 3: Quarterly GDP growth of India from 2012-22(q<sub>1</sub>)

Source: Ministry of Statistics and Programme Implementation



Figure 4: Yearly GDP growth of India from 2005-21

## Source: World Bank

With the emergence of a new second wave several measures were taken to combat the pandemic, and because of it, the last quarter of 2020 saw a new decline in economic activity. According to Economic survey 2021-22, Indian economy estimated to grow by 9.2% in real terms in 2021-22 (as per first advanced estimates) subsequent to a contraction of 7.3% in 2020-21. World Bank and Asian Development Bank's latest forecasts of India's real GDP growth is 8.7% and 7.5% respectively for 2022-23.

## **3.3 Unemployment rate**

Figure-5 shows the trend of the unemployment rate from January to December 2021 in India. In the year 2021, the unemployment rate was highest in the month of May which was about 12% (Urban-15% and Rural 11%). Unemployment rate in India increased to 8% in December 2021 from 7% in November of 2021.



Figure 5: Unemployment rate in India in the year 2021 Source: Centre for Monitoring Indian Economy

# 3.4 India's Inflation Rate

As shown in the Figure-6, the annual inflation rate in India increased to 6.01% in January of 2022 from an upwardly revised 5.66% in December, matching market expectations. For the fourth consecutive month, food prices rose to 5.43%, the highest level since October of 2020, as pulses rose 3.02%, vegetables rose 5.19%, and oils and fats rose 18.7%. Cost of fuel and light rose 9.32%, clothing and footwear rose 8.84%, miscellaneous rose 6.55%, housing rose 3.52% and tobacco rose to 2.54%. For the first time since June last year, the inflation rate stayed above the Reserve Bank of India's 2% - 6%target.





Source: Ministry of Statistics and Programme Implementation (MOSPI) **3.5 Consumer Price Index (CPI)** 

The high commodities prices, particularly the transportation fuel price, contributed to a broader inflationary trend in January 2022. As a result, India's main inflation indicator Consumer Price Index (CPI) which measures retail inflation soared sequentially as well as year-over-year. In January 2022, the index rose to 6.01% from 5.66% in December 2021 and 4.06% in January 2021. Thus, the retail inflation rate crossed the Reserve Bank of India's target range of 2% to 6%. As shown in the Figure-7, CPI in India decreased to 165.70 points in January 2022 from 166.20 points in December of 2021.





Compared with market expectations of 12.7%, India's wholesale price inflation rate fell to 12.96% in January 2022 from 13.56% a month earlier (Figure-8). It was the lowest reading since last September, with moderate increases in fuel and power (32.27% vs 32.30% in December), manufactured goods (9.42% vs 10.62\%), and basic metals (16.29% vs 22.19%). As a result, primary articles inflation increased with the price of food articles rising faster.



Source: Office of Economic Adviser, India 3.7 India's Food Inflation

As shown in Figure-9, food inflation touched almost about 11% in the month of October 2020. The inflation rate for food in India rose for a fourth consecutive month to 5.43% in January of 2022, the highest reading since October of 2020. Prices of pulses rose 3.02%, vegetables 5.19% and oils and fats 18.7%.



Figure 9: Food Inflation from October 2019- January 2022

Source: Ministry of Statistics and Programme Implementation (MOSPI)

## 3.8 Index of Industrial Production (IIP)

The Index of Industrial production hit the lowest point in the month between March – May 2020. Figure-10 shows that the IIP reached at -57.3% in the month of April 2020. This depression could be attributed to the lockdown which was implemented all over the India due to Covid-19 pandemic. It got increased from October 2020 and has seen several ups and downs since then.



**Figure 10: Index of Industrial Production from Nov 2019-Dec 2021** Source: Ministry of Statistics and Programme Implementation (MOSPI)

# 4. MONETARY POLICY VS INFLATIONS

It is questionable whether a long period of "money printing" practiced by the world's monetary authorities could lead to sudden inflation and perhaps hyperinflation. This fear is rooted in Milton's famous belief that "inflation is always and everywhere a monetary phenomenon". It is however important not to ignore non-monetary factors, such as the velocity of money. Many studies showed that the velocity of money decreases significantly during recessions (Mishkin 2007, Dwyer & Hafer, 1988, Fitzgerald, 1999, Lucas, 1980) and this correlates with changes in the relationship between prices and quantity of money. As a result, it is sometimes difficult to recognize the strong relationship between

money supply and inflation. Also, this partially explains the graph in Figure-11, where we can see the growth of the Repo rate and at the same time the swings in inflation as measured by the Consumer Price Index (CPI). CPI chart showed that the deflationary pressures were strongest during the first lockdown, driven by a decline in aggregate demand in the second quarter of 2020.



#### Figure 11: Trend of Repo rate, Reverse Repo rate and CPI from 2008-22 Source: www.rbi.org 5. RESULTS

The Granger Causality test was run between the Repo rate and the Consumer Price Index of India from 2008-20. There were totally 33 observations. Since the p-value between the Repo rate does not Granger Cause Consumer Price Index is 0.0342 which is less than 0.05, we can reject the null hypothesis and can accept the alternate hypothesis that Repo rate does Granger causes Consumer Price Index. And also the p-value of Consumer Price Index does not Granger Cause Repo rate is 0.0117 which is less than 0.05, we can reject the null hypothesis and can accept the alternate hypothesis that Consumer Price Index does Granger causes Repo rate. The correlation between Repo rate and Consumer Price Index was about 37%.

Table 2: Pairwise Granger Causality Tests					
Sample: 33					
Lags: 3					
Null Hypothesis:	Observations	F-Statistic	Prob.	Correlation	
Repo rate does not Granger Cause Consumer Price Index	26	3.54621	0.0342	0.368732	
Consumer Price Index does not Granger Cause Rep	4.81315	0.0117	0.368732		

# 6. CONCLUSION

With the beginning of the COVID-19 crisis, the monetary authorities recognized the need to react as quickly as possible and to do "whatever it takes" to maintain economic activity and business. To come out of this Covid-19 economic crisis, the only choice was to bring back the unconventional instruments that, as history has shown, were used to deal with the great financial crisis in 2007-2009. In this paper, the impact of the Corona pandemic on India's economy is presented (measured by changes in quarterly GDP growth and by unemployment rates). In addition, this paper discusses how the RBI has acted and used monetary policy instruments to address the COVID-19 pandemic crisis, drawing parallels with the tools used during the financial crisis. It was also found that RBI's monetary policy instruments had a significant impact to control Inflation. These findings suggest that the monetary authorities should proceed cautiously with expansionary monetary policy and increase transparency and adequate communication with the public to maintain credibility.

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#### Self-Reliance of Indian Economy - A Myth or A Reality?

Suchitanand k. Malkapure

#### Abstract

Achieving Self-reliance and Self-sufficiency is the burning need of our country today. A Self-reliant and Self-Sufficient India not just boosts the confidence but also enhances the dignity and hence improves the overall quality of life of all its citizenry. The current situation therefore demands the county to achieve self-reliance and self-sufficiency in all possible dimension of the economy such as Energy, Oil Seeds, Electronics, Heavy Machineries, Iron and Steel etc., and save invaluable foreign exchange. Therefore our Prime Minister, guided and driven by his fine sense of Vision and Foresight, has given a clarion call to create '*Aatmanirbhar Bharat*' which is fast emerging as one of the pet schemes of our present government.

The country has achieved tremendous growth in the production of certain goods over the period of 30 years of liberalized era. The goods such as Pharmaceutical Drugs, Automobiles, IT Software's, Cotton textiles and Ready-made garments, Marine Products, Horticulture and Food Grains etc., which were imported earlier are now indigenously produced and the surplus exported. India has achieved self-sufficiency in the production of food grains. The food grains production which was just 51 million tonnes in the year 1950-51 has increased gradually over a period of time and now it has reached to 316 million tonnes in the year 2021-22 thus fulfilling, all the needs of the country in food grains requirements.

Achieving self-reliance in energy requirement is the need of the hour. The country's dependency on petroleum products is too large. We are hardly producing 10 to 15 percent of our total consumption of petroleum product. 85 to 90 percent of our total demand is fulfilled through import of crude oil. To reduce the dependency on crude oil, we have to find the alternative sources of renewable energy such as solar energy, hydro-electricity, atomic energy, wind energy, ethanol blending etc., to become self-reliant and to save valuable foreign exchange. The present paper analyses the opportunities and challenges before our country on its road ahead to 'Atmanirbhar Bharat' or 'Self-reliant India'

Key words: Energy, Electronics, Edible oils, Food grains.

## Introduction

Every individual wants to lead an independent life. The people, who have self-respect, don't want to plead in front of others to fulfill their needs. Self-dependence will help one to build one's confidence and improve his/her dignity in life. In the same manner the country as a whole wants to achieve autonomy by producing all kinds of goods and services that are needed by the people of a country. Depending on other countries for goods and services is neither feasible nor desirable especially when there is a growing tendency of one country to hold the other country hostage for supply of goods essential for the survival of the people. The import of goods in which the country has the potential to produce domestically must put utmost efforts to produce them indigenously, even if the cost of feasible. For instance, India has the potentiality in the production of gold. Ex. India currently producing 1.6 tons of gold per year and it has the potentiality to produce 20 tonnes of gold per annum and 50-million-dollar revenue to the government and able to provide employment to nearly 4000 people if regulatory challenges are made investment friendly<sup>1</sup>.

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# **Objectives:**

1. To gauge the extent of openings and limitations towards the achievement of self-dependency in some sectors of the economy.

2. To find alternative avenues towards the achievement of self-reliance.

3. To suggest measures to reduce the burden of import and to realize self-reliance.

## The emergence of the concept of self-reliance:

The concept of '*Aatmanirbhar Bharat*' is the replica of the concept of '*Swaraj*' of Mahatama Gandhiji. Earlier to civilization the villages were self-sufficient. People produced all kinds of goods needed by them. During those days the wants of the people were few and they were met locally. With gradual progress in civilization, the demands of the people have increased and that has necessitated the dependency on others. People started bartering and this has further led to trading. With advances in transportation, international trade has now become inevitable. The concept of globalization has increased the dependence of countries on one another and reduced the extent of self-reliance.

The era of globalization which was started in later half of 20<sup>th</sup> century is diminishing slowly somewhere in the world. The concept of self-reliance is gaining momentum in most of the countries. In recent past the America under the leadership of Donald Trump has adopted the policy of 'America First' by giving prime place to domestic companies, domestic goods and giving preference in employment for local people, by closing the border with Mexico, imposing Visa restriction on immigrants and so on.

Under the banner of *Aatmanirbhar Bharat* India wanted to achieve self-reliance in every aspect of life by producing the goods and services which are needed by our people. Achieving self-sufficiency is need of the hour. The present situation is demanding the county to achieve self-reliance in some key sectors of the economy such as Energy, Oil seeds, Electronics, Heavy Machineries, Iron and Steel etc., to save valuable foreign exchange and to become self-reliant.

The country has achieved tremendous growth in the production of certain products over the period of 30 years of liberalized era. Most of the goods and services which were imported earlier from other countries are now producing domestically and achieved the goal of self-reliance. Over and above in case of some commodities we are exporting surplus output to other countries such as Pharmaceutical Drugs, Automobiles, IT Software's, Cotton textiles and Readymade garments, Marine Products, Horticulture products and Food Grains.

# Some Segments of Self-Reliance in India:

# Food Grains:

India has achieved near self-sufficiency in the production of food grains. The food grains production which was just 51 million tonnes in the year 1950-51 has increased gradually over a period of time especially during the period of green revolution in 1967-68 and 68-69. Now it has reached to 316 million tonnes in the  $2021-22^2$ . This is the result of advancement in the technology adopted in the agriculture sector such as use HYV seeds, Irrigation (Drip Irrigation, Sprinkler Irrigation) Modern methods of cultivation, use of chemical fertilizers, pesticides, changed cropping pattern, mechanization of agriculture etc., has resulted in an

increase in productivity and production of food grains. India's self-sufficiency in food grains production has enabled the country to enact Food Security Act and to distribute the food grains through PDS system to enable the people to have access to their basic minimum nutrient needs. **Energy:** 

Achieving self-reliance in energy requirement is need of the hour. The country's dependency on petroleum products is too large. The nature has not endowed the country with sufficient quantity of mineral oil to fulfill its demand locally. Hardly we are producing 10 to 15 percent of total consumption of petroleum product and 85 to 90 percent of our total need is fulfilled through import of crude oil. 55 percent of our natural gas requirements are fulfilled through imports. The current unstable geopolitical situation is going to impact negatively on industry and economy. The prices of crude oil are reaching the all-time high of \$139/barrel. This is worsening the condition of rupee that is going to touch 80 against the dollar. This has increased India's dependency rate on other countries. India's crude oil import bill has crossed

\$100 billion in this fiscal year ending 31<sup>st</sup> March 2022. This will consume valuable foreign exchange<sup>3</sup>.

To reduce the dependency rate for crude oil on other countries we have to enhance the alternative sources of renewable energy's, like solar energy, hydro-electricity, atomic energy, wind energy, ethanol blending, hydrogen fuel etc., and its storage in various forms. Accelerate electrification of the economy including for the electric mobility, energy for building, automobile, industrial production and other amenable applications. Advancement in technology to produce energy efficient motor vehicles and other \products that can consume less energy. Investment in R & D to find innovative technologies that address countries energy need and suits its resource base. Edible Oils:

We have achieved the self-sufficiency in food grains production but not in the production of oil seeds. The soaring prices of edible oils only points to the insufficiency of this essential product in our country today. 60 percent of our consumption needs are fulfilled by import of oil seeds that to palm oil, and it is expected to grow at the rate of 3.4 percent till 2030 as per the economic survey 2021-22. The consumption of vegetable oil is growing in the country due to changing food habits on account of consumption of processed food and urbanization.

People are more fascinated to eat fried items, junk foods, ready to eat foods. India is the second largest consumer and first largest importer of edible oil. During 2015-16 we have imported 15.88 million tons of oil seeds and oil products worth Rs. 69,331cr<sup>4</sup>.

Primary sources of edible oil in India are Rapeseed Mustard, Soyabean, Groundnut that contributes around 85 percent of total production of oil. Earlier farmers used to produce sunflower, safflower and sesame extensively but cultivation of these crops has come down gradually due to low yield, increasing labour cost, lower selling prices etc. Cropping pattern has shifted slowly towards other commercial crops especially, horticultural crops due to profitability, growing demand, cost effectiveness, less water consumption, less labour consumption, easy management, government support in the form of subsidies etc., compared to the cultivation of oil seeds. It is high time to divert the farmers attention towards the growing of oil seeds by giving some kind of incentives like supportive price policy, subsidies, change in the method of cultivation, technological help, cultivation of palm tree etc. R and D in our agricultural universities and research centers is also necessary to find new variety of oil seeds to improve the productivity and to move towards *Aatmanirbhar Bharat* and provide relief to the consumers.

# **Electronic goods:**

India wanted to achieve self-reliance in the segment of Electronics goods under the banner of 'Zero Import of Electronic goods by 2022' stated in the National Policy for electronics 2019. To achieve this goal, we need to enhance the investment in this sector. Country needs to support the domestic companies to update their technology and produce the sophisticated goods with least cost. For this, they need to spend on R & D to innovate the new things and compete with the foreign firms. Presently the electronic goods such as mobiles phones, laptops, tablets, PC, TV, audio, are constitute the major share of imports. Indian firms are not in a position to compete with MNCs in manufacturing of electronic goods. No Indian firms are in a position to compete with foreign firms in any of the electronics segments such as Mobiles, Laptops, Tablets, PC, TV, Audio, Washing Machines, Refrigerators, Air Conditioners etc. Hence, we are offering the MNCs with red carpet in the name of 'Make in India'. Looking at the manufacturing by domestic firms, we are farther away from the goal of self-reliance in the field of 'Electronic Goods'. Once the famous brands of Indian origin such as BPL, Onida, Videocon, Micromax, Lava, Godrej are unable to survive in the domestic market due to robust competition from their MNC opponents.

The approach of the government to transform India into global hub for mobiles and electronics manufacturing, is only possible by changing the policy of import substitution to Production Linked Incentive. By doing so county may achieve the goal of 300-billion-dollar manufacturing by 2025-26 from present 67-billion-dollar production<sup>5</sup>.

To achieve the goal of self-reliance in electronic segment in the long run it is necessary to concentrate on the development of domestic industries. Without support system by the government, domestic companies are not in a position to compete at global level. Financial incentives and protectionist trade policy may act as a major booster for increasing the presence and manufacturing activities in India. Apart from this, necessary policy support should be provided in the development of design capabilities, subsidies and priority in lending, skill development etc.

# Suggestive Measures:

1. Achieving self-sufficiency through 'Make in India' is not an achievement. The self-sufficiency must be achieved through domestic firms not by branches of foreign firms. The real self-sufficiency is one that we have achieved in the food grains production. The same achievement must be needed in other sectors of the economy.

2. In case of electronic goods to achieve self-sufficiency, government must adopt discriminative policy to give preference to domestic companies. As China has done to achieve self-reliance in the production of number of electronic and electrical goods. In case of mobiles, TV, some domestic firms like BPL, Onida, Videocon, Micromax, Lava are tested their skills but due to lack of government support, lack of R & D, lack of updating of technology some of them have failed and others are unable to face the competition. The parts of electronic goods are produced in India by domestic firms but they are unable to create the brand. We have the resources, we have the potentiality, we have the brain but there is mismatch in coordination and skilling, that leads to backwardness.

3. To enhance the output of edible oils public investment in agriculture sector is needed. The supportive policy system as done in the case of horticulture crops is needed to oil seeds too. Government should provide remunerative price for oil seed keeping in mind the recommendations of Swaminathan committee that is cost +50 percent. Policy support is also needed to stimulate the farmers to cultivate palm tree plantation

that will help to reduce the import of palm oil and move towards Aatmanirbhar Bharat.

1. Country must concentrate on green energy sources especially solar, wind, hydrogen energy. Necessary infrastructure must be created to enhance storage and grid flexibility to address the variations in demand. The model of Public Private Partnership should be developed for financing generation of green energy and to reduce the carbon footprint. Government must make it compulsory for all newly constructing houses to install rooftop solar panels to generate the required power by themselves. Green energy has marvellous potential to achieve the goal of sustainable development and self -reliance in energy sector that country can concentrate on it to make Bharat an *Atmanirbhar Bharat*.

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#### Foreign Direct Investment (FDI) in: A Review on Trends and Patterns of Capital Inflow in India

Asha H S B N Harisha.

#### Abstract

India has turn out to be an fascinating destination for FDI in recent years, influenced through more than a few factors which have boosted FDI. India has currently grow to be a main international hub for FDIs. India ranked 68th in the Global Competitive Index: the economy showed extensive resilience in the course of the pandemic. India was once additionally named as the forty eighth most innovative united states among the pinnacle 50 countries. According to a survey, India used to be among the pinnacle three global FDI destinations. About 80 % of the global respondents had plans to make investments in India. Furthermore, in recent years, India has furnished huge corporate tax cuts and simplified labour laws. It has also reduced its restrictions on FDI. Overall FDI restrictions have reduced from 0.42 to 0.21 in the remaining sixteen years. India has remained an attractive market for worldwide traders in phrases of brief and long-term prospects. India's low skill manufacturing is one of the most promising industries for FDI.Foreign Direct Investment (FDI) is considered as a foremost source of non-debt financial resource for the economic development. FDI flows into India have grown persistently due to the fact liberalization and are an important issue of overseas capital when you consider that FDI infuses long time period sustainable capital in the economic system and contributes towards technology transfer, development of strategic sectors, greater innovation, opposition and employment introduction amongst different benefits. Therefore, it is the intent and objective of the Government of India to entice and promote FDI in order to supplement domestic capital, technological know-how and competencies for accelerated monetary boom and development. FDI, as distinguished from Foreign Portfolio Investment, has the connotation of organizing a 'lasting interest' in an corporation that is resident in an financial system different than that of the investor. With this background the present paper tries to review the trend and pattern of capital inflow in India over the period of time.

#### Key words: FDI, Non-Debt financial resources, Sustainable capital and Lasting interest.

#### 1. Introduction

Foreign Direct Investment (FDI), in addition to being a key driver of economic growth, has been a tremendous non-debt financial resource for India's economic development. Foreign companies make investments in India to benefit from the country's particular funding privileges such as tax breaks and comparatively decrease salaries. This helps India strengthen technological expertise and create jobs as well as other benefits. These investments have been coming into India because of the government's supportive coverage framework, bright commercial enterprise climate, rising world competitiveness and monetary influence.

India has turn out to be an fascinating destination for FDI in recent years, influenced through more than a few factors which have boosted FDI. India ranked 68th in the Global Competitive Index; the economy showed extensive resilience in the course of the pandemic. India was once additionally named as the forty eighth most innovative united states among the pinnacle 50 countries. These elements have boosted FDI investments in India.

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India has currently grow to be a main international hub for FDIs. According to a survey, India used to be among the pinnacle three global FDI destinations. About 80 % of the global respondents had plans to make investments in India. Furthermore, in recent years, India has furnished huge corporate tax cuts and simplified labour laws. It has also reduced its restrictions on FDI. Overall FDI restrictions have reduced from 0.42 to 0.21 in the remaining sixteen years. India has remained an attractive market for worldwide traders in phrases of brief and long-term prospects. India's low skill manufacturing is one of the most promising industries for FDI. India has additionally developed high-quality government efficiency. Its tendencies in authorities effectively are chiefly due to distinctly steady public budget and confident sentiment among Indian Business stakeholders regarding the funding and subsidies presented by way of the government to private firms. All these factors collectively may additionally assist India attract FDI really worth US\$120-160 billion per 12 months by 2025.

# 2. Review of Literature

*V.V.Devi Prasad Kotni(2015)*, has given solutions to obstacles for intervening FDI into India that In order to right these anomalies, India need to have robust regulator for the sector. And at the equal time toughen the Competition Commission of India before these Big Retailers prowls into the Indian Territory. In order to right these non-positive results of FDI in Indian Retail Sector, Government need to have a strong regulatory framework that protects the hobbies of the domestic and common retailers of India. Government wishes to beef up the Competition Commission of India earlier than these Big Retailers lurks into the Indian Territory.

**Dr.S.Shalini (2020)** focused on FDI as Foreign capital is seen as a means of filling in gaps between domestic savings and investment in her research. As per the analysis between the market size, investment reform, and monetary growth rates, India has the right mix of openness and chance. Yet, India looks to be struggling from many restrictions and challenges concerning opening its markets completely too familiar investors. Some of the main challenges in the place of FDI are: political instability, infrastructure Facility, tax policies, corruption, governmental guidelines and so on.

*Narayanamurthy, (2010)* examined the factors determining FDI inflows of BRICS countries for the period 1975 to 2007 except for Russia for which the required data set was available from 1990 onwards. It was once as soon as concluded from the outcomes of the research about that the chosen variables Market size, Labour cost, Infrastructure, Currency fee and Gross Capital formation are vital determinants of FDI inflows of BRICS international areas in phrases of their potential. The Economic Stability and Growth potentialities, Trade openness were observed to be the insignificant determinants of FDI inflows of the BRICS countries.

*Hooda (2011)* studied the trends and patterns of flow of FDI, determinants of FDI and also the impact of FDI on the Indian economy using time series data for the period 1991 to 2008. Trend analysis, annual increase rate, compound annual growth price and regression evaluation were the tools used for mannequin building. It was observed from the results that India continued to appeal to substantial amount of FDI inflows India due to its bendy funding regimes and insurance policies in spite of troubles in the world economy. Due to which overseas traders are stimulated to funding s in India.

# 3. Importance of the Study

In recent years, India has turn out to be an captivating vacation spot for FDI due to the fact of favorable authorities policies. India has developed a number of schemes and insurance policies that have helped improve India's FDI. These schemes have caused India's FDI investment, especially in upcoming sectors such as protection manufacturing, actual estate, and research and development. After the implementation of Consolidated FDI Policy Circular of 2020 in India, so a lot research is wished to tricky the matters related to FDI in India. So that the present learn about assumes extremely good importance in this regard.

# 4. Objectives of the Study

Some of the objectives were framed to make this study are as follows

- To analyze the trend and pattern of capital flows into India through FDI over the period of time
- To review the FDI Policy of India
- To make a glance on recent investments in India through FDI
- To examine the initiatives taken by the Government

# 5. Interpretation and Analysis

Foreign Direct Investment (FDI) is considered as a sizable supply of non-debt financial aid for financial development. A non-resident entity can invest in India except in those sectors/activities which are prohibited. A character resident backyard India may also hold a foreign funding in any unique Indian enterprise either as Foreign Direct Investment (FDI) or as Foreign Portfolio Investment (FPI).

# 5.1 FDI vs FPI

Foreign Investment capacity any investment made by way of a man or woman resident outside India on a repatriable basis in capital units of an Indian enterprise or to the capital of an LLP. It can be both Foreign Direct Investment (FDI) or Foreign Portfolio Investment (FPI). Foreign Direct Investment (FDI) is the investment through capital contraptions by a person resident outside India in an unlisted Indian company.

'Foreign Portfolio Investment' means any investment made by a person resident outside India through capital instruments where such investment is less than certain per cent of the post-issue paid-up share capital on a fully diluted basis of a listed Indian company.

1 adle-1 Capital inflows as per cent of GDP in India				
Year	Inflows (US \$ in Billion)	GDP (in Billion \$)	% of GDP	Annual average growth rate (%)
2000	4	476	1	20
2001	5	493	1	0
2002	5	523	1	-25
2003	4	618	1	20
2004	5	721	1	28.6
2005	7	834	1	65
2006	20	949	2	20
2007	25	1238	2	41.9
2008	43	1224	4	-19
2009	36	1365	3	-33
2010	27	1708	2	27
2011	37	1823	2	-54
2012	24	1827	1	14.3

# 5.2 Capital Inflows in India

2013	28	1856	2	20
2014	35	2039	2	20.5
2015	44	2103	2	0
2016	44	2294	2	-10
2017	40	2651	2	4.76
2018	42	2702	2	17.6
2019	51	2831	2	20.3
2020	64	2667	2	NA
C	14.6			

Source: Database, Reserve Bank of India (RBI), 2020

The Table-1 shows the trend of Capital inflows through FDI into India for the period of 21 years from 2000 to 2020. Up to 2005, it is cleared from the above table that capital inflow was fixed to on an around 1% which is shifted to 2% of GDP from 2010. So the aggregate percentage of capital inflow with FDI was 2% over the last decade. Compound Annual growth rate of FDI capital inflow in India was 14.6% for over the period of 21 years.

Chart-1 Growth of GDP in India



Chart-2 Capital Inflows in India



Chart -1 explains the Gross Domestic Product growth over the period of times in India with expected normal value and observed value whereas chart -2 explains the Deviation from the normal value of Capital inflows in India and Observed value

## Nonparametric Correlations

Correlations				
				Gross Domestic
			Capital inflows	Product
Spearman's rho	Capital inflows	Correlation Coefficient	1.000	.877**
		Sig. (1-tailed)		.000
		N	21	21
	Gross Domestic	Correlation Coefficient	.877**	1.000
	Product	Sig. (1-tailed)	.000	
		N	21	21
**. Correlation is	significant at the 0	.01 level (1-tailed).		

Spearman's Rank Correlation technique is used to test the significance between FDI Capital inflows and Gross Domestic Product. Correlation coefficient is significant at 0.01 level. Positive correlation can be seen here.

## 5.3 Initiatives taken by the Government of India

Some of the major government initiatives are:

- The Government of India extended FDI in the defense quarter by means of growing it to 74% thru the automatic route and one hundred percent through the government route.
- The government has amended regulations of the Foreign Exchange Management Act (FEMA), allowing up to 20% FDI in insurance organization LIC thru the automatic route.

• The government is considering easing scrutiny on certain FDIs from international locations that share a border with India.

- The implementation of measures such as PM Gati Shakti, single window clearance and GISmapped land financial institution are predicted to push FDI inflows in 2022.
- The authorities is probable to introduce at least three policies as part of the Space Activity Bill in 2022. This consignment is expected to actually outline the scope of FDI in the Indian space sector.
- In September 2021, India and the UK agreed for an investment increase to make stronger bilateral ties for an 'enhanced exchange partnership'.
- In September 2021, the Union Cabinet introduced that to raise the telecom sector, it will allow one hundred percent FDI by the automated route, up from the preceding 49%.
- In August 2021, the government amended the Foreign Exchange Management (non-debt instruments) Rules, 2019, to allow the 74% amplify in FDI restrict in the insurance sector.

# 5.4 FDI Policy of India

FDI policy is an enabling policy which is uniformly applicable in the country across all scales of industries including micro, small and medium enterprises.Government has put in place a liberal and transparent policy for Foreign Direct Investment (FDI), wherein most of the sectors are open to FDI under the The Government reviews the FDI policy and makes changes from time to time, to ensure that India remains an attractive and investor-friendly destination.

## 5.5 Sectors in which sectors are Prohibited

- Lottery Business including Government/private lottery, online lotteries, etc.
- Gambling and Betting including casinos etc.
- Chit funds
- Nidhi company
- Trading in Transferable Development Rights (TDRs)
- Real Estate Business or Construction of Farm Houses
- Manufacturing of cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes
- Activities/sectors not open to private sector investment e.g.(I) Atomic Energy and (II) Railway operations (other than permitted activities).

	Sectors in which FDI is allowed					
Sl	Sector/Activity	% of	Entry Route			
No		Equity/FDI				
01	Agriculture and Animal Husbandry	100	Automatic			
02	Plantation Sector	100	Automatic			
03	Mining	100	Automatic & Government			
04	Petroleum & Natural Gases	100	Automatic			
05	Defense	100	74% Automatic			
			Rest is Government			
06	Broadcasting Carriage Services	100	Automatic			
07	Print Media	24	Government			
08	Air transport services	100	49% up to Automatic			
09	Construction, Development: Township, Housing,	100	Automatic			
	Built-up Infrastructure					
10	Industrial Parks	100	Automatic			
11	Satellites- Establishment and Operations	100	Government			
12	Private security Agencies	74	Up to 49% Automatic			

Table-2 Sectors in which FDI is allowed

			49 to 74% Government
13	Telecom Services	100	Up to 49% Automatic
			-
			Beyond 49% Government
14	Trading	100	Automatic
15	E-Commerce activities	100	Automatic
16	Single Brand product retail Trade	100	Automatic
17	Multi Brand Product retail Trade	51	Government
18	Duty free Shops	100	Automatic
19	Railway Infrastructure	100	Automatic
20	Asset Reconstruction Companies	100	Automatic
21	Banking Private Sector	74	Up to 49% Automatic
			49 to 74% Government
22	Banking-Public Sector	20	Government
23	Credit information Companies	100	Automatic
24	Infrastructure company in the Securities market	49	Automatic
25	Insurance Company	49	Automatic
26	Insurance Intermediaries	100	Automatic
27	Pension Sector	49	Automatic
28	Power exchanges	49	Automatic
29	White Label ATM operations	100	Automatic
30	Pharmaceuticals	100	Automatic

## Source: GOI Report, 2021

Table-2 shows the sectors in which Foreign Direct Investment is allowed and the per cent of equity to Gross Domestic Product (GDP) and their entry route.

# 5.6 Among top host economies

Not to mention that per the UNCTAD World Investment Report (WIR) India has stepped up to seventh rank among the top 20 host economies for 2021. The Ministry of Commerce and industry said that the achievement was all thanks to the government's FDI policy reforms.

The most investments came from Singapore with 27 percentage observed via the US (18 percent) and Mauritius (16 percent) for the duration of the ultimate fiscal. Mauritius is followed by using the Netherlands (15.98 per cent), and Switzerland, capping the pinnacle 5 countries for FDI equity inflows into India in FY22.Sectors which attracted the most overseas inflow are laptop software and hardware at 24.60 per cent, observed by using the services area at 12.13 per cent and car industry at 11.89 per cent. FDI fairness influx in manufacturing sectors has accelerated to Rs 1,58,332 crore in FY22 from Rs 89,766 crore in FY21, an increase of 76 percent. This can be attributed to provisions of the FDI coverage in which overseas investment in the manufacturing zone is below automatic route.

With this it has turn out to be one of the most favored investment avenues for foreign places investors.Coming to states, Karnataka takes the top spot with a share of 37.55 per cent of the complete FDI influx in FY22. It's followed by using neighboring nation Maharashtra at 26.26 per cent and national capital Delhi at 13.93 per cent.

# 6. Conclusion

The government has fashioned a "liberal and transparent policy for attracting FDI", whereby non-critical sectors barring sure strategically essential sectors, are open for 100 percent FDI under the automated

route. Automatic route right here capacity that prior authorities approval or MHA's safety clearance won't be required. However, it is required for investments in sensitive sectors such as defense, media, telecommunication, satellites, personal security agencies, civil aviation and mining.

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# Trends in Inequality, Poverty and Hunger

## Sudhir Kumar

#### Abstract;-

India is developing country. Although its economy is growing, poverty, inequality and hunger are still the major challenges. However, poverty is on the decline in India. According to an international monetary fund paper, extreme poverty, defined by the World Bank as living on US \$ 1.9 or less in purchasing power parity terms, in India was as low 0.8% in 2019 and the country managed to keep it at that level in 2020 despite the unprecedented COVID-19 outbreak. Whereas globalization has reduced global inequality between nations, it has increased inequality within nations. Income inequality between nations peaked in the 1970s, when world income was distributed bimodality into "rich and poor" countries. Since then, income levels across countries have been converging, with most people now living in middle income countries. However, inequality within most nations has risen significantly in the last 30 years, particularly among advanced countries. In this period, close to 90% of advanced economies have seen an increase in inequality, with over 70% recording an increase in their Gini coefficients exceeding two points. In the 2021 global hunger index, India ranks 101 out of 116 countries with sufficient data to calculate 2021 GHI scores. With a score of 27.5, India has a level of hunger that is serious

## Trends In inequality

Inequality represents the unequal distribution of income and wealth among peoples. It measures by Gini coefficient numerically and Lorenz curve diagrammatically. The Gini coefficient is a number between 0 and 1, where zero corresponds with perfect equality, where everyone has the same income and 1 corresponds with absolute inequality, where one person has all the income and everyone else has zero income.

Cumulative

% of income



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## Cumulative % of population

In the diagram E line represents the equal distribution of income and wealth and B curve represents the more inequality than curve A. So we can san which country more distance from equal line they have more inequality.

#### **Trends of Global Inequality:-**

Whereas globalization has reduced global inequality between nations, it has increased inequality within nations. Income inequality between nations peaked in the 1970s, when world income was distributed bimodality into "rich and poor" countries. Since then, income levels across countries have been converging, with most people now living in middle income countries. However, inequality within most nations has risen significantly in the last 30 years, particularly among advanced countries. In this period, close to 90% of advanced economies have seen an increase in inequality, with over 70% recording an increase in their Gini coefficients exceeding two points.

Research has generally linked economic inequality to political and social instability, including revolution, democratic breakdown and civil conflict. Research suggests that greater inequality hinders economic growth and macroeconomic stability, and land and human capital inequality reduce growth more than inequality of income. Inequality is at the center stage of economic policy debate across the globe, as government tax and expending policies have significant effects on income distribution. In advanced economies, taxes and transfers decrease income inequality by one-third, with most of this being achieved via public social spending such as pensions and family benefits.

A 2011 OECD study investigated economic inequality in Argentina, Brazil, China, India, Indonesia, Russia and South Africa. It concluded that key sources of inequality in these countries include a large, persistent informal sector, widespread reginal divides (rural-urban), gaps in access to education, and barriers to employment and career progression for women. A study by the world institute for development economic research at united nations university reports that the richest 1% of adults alone owned 40% of global assets in 2000. The three richest people in the world possess more financial assets than the lowest 48 nations combined. The combined wealth of the '10 million dollar millionaires' grew to nearly 41 trillion dollar in 2008. Oxfam's 2021 report on global inequality said that the COVID-19 pandemic has increased economic inequality substantially, the wealthiest people across the globe were impacted the least by the pandemic and their fortunes recovered quickest, with billionaires seeing their wealth increase by 3.9 trillion dollar, while at the same time those living on less than 5.50 dollar a day likely increased by 500 million. The report also emphasized that the wealthiest 1% are by far the biggest polluters and main drivers of climate change, and said that government policy should focus on fighting both inequality and climate change simultaneously. The 2022 Oxfam report said that growing economic inequality rates during the pandemic, contributing to deaths of 21,000 people on a daily basis, while the wealth of the world's 10 richest billionaires doubled and advocated a tax on the ultra rich to ameliorate these deadly inequalities. So, we can say trends of global inequality are rising.

## Couses:--

There are various reasons for economic inequality within societies, including both global market functions such as trade, development and regulation as well as social factors including gender, race and education. Economist Thomas Piketty argues that widening economic disparity is an inevitable phenomenon of free market capitalism when the rate of return of capital (r) is greater than the rate of growth of the economy (g).

## CAUSES-

 Labour market (2) Malthusian argument (3) Taxes (4) Education (5) Economic liberalism, deregulation and decline of unions (6) Information technology (7) Globalization (8) Gender (9) Race (10) Westernized nations (11) Economic development

## **Trends in Hunger**

In the 2021 global hunger index, India ranks 101 out of 116 countries with sufficient data to calculate 2021 GHI scores. With a score of 27.5, India has a level of hunger that is serious.

G.H.I =  $\frac{1}{3}$  Standardized PUN +  $\frac{1}{6}$  Standardized CWA +  $\frac{1}{6}$  Standardized CST +  $\frac{1}{3}$  Standardized CM

Where-

Standardized PUN =  $\frac{PUN}{80}$ Standardized CWA =  $\frac{CWA}{30}$ Standardized CST =  $\frac{CST}{70}$ Standardized CM =  $\frac{CM}{35}$ 

Where:-

PUN - Proportion of the population that is undernourished %

CWA - Prevalence of wasting in children under five years old %

CST - Prevalence of stunting in children under five years old %

CM - Proportion of children dying before the age of five %

#### Range of G.H.I.

Range	Туре
< 9.9	Low
10. – 19.9	Moderate
20.0 - 34.9	Serious
35.0 - 49.9	Alarming
>50.0	Extremely alarming

Year	PUN	CWA	CST	СМ	
2000	18.4	17.1	54.2	9.2	
2006	19.6	20.0	47.8	7.1	
2012	15.0	15.1	38.7	5.2	
2021	15.3	17.3	34.7	3.4	

India

Standardized PUN = $\frac{15.3}{80}$ 100 = 19.125
Standardized CWA = $\frac{17.3}{30} 100 = 57.66$
Standardized CST = $\frac{34.7}{70}$ 100 = 49.57
Standardized CM = $\frac{3.4}{35}$ 100 = 9.71
G.H.I = $\frac{1}{3}$ 19.125 + $\frac{1}{6}$ 57.66 + $\frac{1}{6}$ 49.57 + $\frac{1}{3}$ 9.71
= 6.37 + 9.61 + 8.26 + 3.23
= 27.47 (serious condition)

G.H.I

Years	GHI
2000	38.8
2006	37.4
2012	28.8
2021	27.5

According to table India's GHI decreased from 38.8 to 27.5 but it is serious condition of hungry in India.

#### **Trends in poverty**

India is developing country. Although its economy is growing, poverty is still a major challenge. However, poverty is on the decline in India. According to an international monetary fund paper, extreme poverty, defined by the World Bank as living on US \$ 1.9 or less in purchasing power parity terms, in India was as low 0.8% in 2019 and the country managed to keep it at that level in 2020 despite the unprecedented COVID-19 outbreak. According to World Bank, extreme poverty has reduced by 12.3% between 2011 and 2019 from 22.5% in 2011 to 10.2% in 2019. A working paper of the bank said rural poverty declined from 26.3% in 2011 to 11.6 in 2019. The decline in urban areas was from 14.2% to 6.3% in the same period. The poverty level in rural and urban areas went down by 14.7% and 7.9% points, respectively. According to United Nations development programme administrator Achim Steiner, India lifted 271 million people out of extreme poverty in 10 year time period from 2005-06 to 2015-16. A 2020 study from the world economic forum found some 220 million Indians sustained on an expenditure level of less than Rs 32 / day the poverty line for rural India by the last headcount of the poor in India in 2013.

The World Bank has been revising its definition and benchmarks to measure poverty since 1990-91, with a 0.2 per day income on purchasing power parity basis as the definition in use from 2005 to 2013. Some semi-economic and non – economic indices have also been proposed to measure poverty in India. For example, in order to determine whether a person is poor, the multidimensional poverty index places a 13% weight on the number of years that person spent in school or engaged in education and a 6.25% weight on financial condition of that person.

The different definitions and underlying small sample surveys used to determine poverty in India have resulted in widely varying estimates of poverty from the 1950s to 2010s. in 2019, the Indian government stated that 6.7% of its population is below its official poverty limit. Based on 2019's PPPs international comparison program, according to the United Nations millennium development goals programme, 80 million people out of 1.2 billion Indians, roughly equal to 6.7% of India's population, lived below the poverty line of \$ 1.25 in 2018-19.

From the late 19<sup>th</sup> century through the early 20<sup>th</sup> century, under the British Raj, poverty in India intensified, peaking in the 2020s. Famines and diseases killed millions in multiple vicious cycles throughout the 19<sup>th</sup> and early 20<sup>th</sup> centuries. After India gained its independence in 1947, mass deaths from famines were prevented. Since 1991, rapid economic growth has led to a sharp reduction in extreme poverty in India. However, those above the poverty line live a fragile economic life. As per the methodology of the Suresh Tendulkar committee report, the population below the poverty line in India was 354 million in 2009-10 and was 69 million in 2011-12. In 2014, the Rangarajan committee said that the population below the poverty line was 454 million in 2009-10 and was 363 million in 2011-12. Deutsche bank research estimated that there are nearly 300 million people who are in the middle class. If these previous trends continue, increase from 7.3% in 2016 to 8.5% by 2020. In 2012 around 170 million people, or 12.4% of India's population, lived in poverty, an improvement from 29.8% of India's population in 2009. In their paper, economists Sandhya Krishanan and Neeraj Hatekar conclude that 600 million people, or more than half of India's population, belong to the middle class.

The Asian development bank estimates India's population to be at 1.28 billion with an average growth rate of 1.3% from 2010 to 2015. In 2014, 9.9% of the population aged 15 years and above were employed. 6.9% of the population still lives below the national poverty line and 63% in extreme poverty. The world poverty clock shows real time poverty trends in India, which are based on the latest data, of the World Bank, among others. As per recent estimates, the country is well on its way of ending extreme poverty by meeting its sustainable development goals by 2030. According to Oxfam, India's top 1% of the population now holds 73% of the wealth, while 670 million citizens, comprising the country's poorest half, saw their wealth rise by just 1%.

Two – thirds of people in India live in poverty, 68.8 of the Indian population lives on less than \$2 a day. Over 30% even have less than \$1.25 per day available- they are considered extremely poor. This makes the Indian subcontinent one of the poorest countries in world, women and children, the weakest members of Indian society, suffer most. India is the second most populous country after china with about 1.2 billion people and is the seventh largest country in the world with an area of 3,28,7000 km<sup>2</sup>. The highly contrasted country has enjoyed growth rates of up to 10% over many years and is one of the largest economies in the world, with a gross domestic product of 1644 billion US dollars. But only a small percentage of the Indian population benefited from this impressive economic boom so far, as the majority of people in india are still living in abject poverty.

# Poverty in India- from the village to the slum:-

Poverty in India is preventing children from getting an education. More than 800 million people in India are considered poor. Most of them live in the countryside and keep afloat with odd jobs. The lack of employment which provides a livable wage in rural areas is driving many Indians into rapidly growing metropolitan areas such as Bombay, Delhi, Bangalore or Caltutta.

There most of them expect a life of poverty and despair in the mega slums, made up of millions of corrugated ironwork, without sufficient drinking water supply, without garbage disposal and in many cases without electricity. The poor hygiene conditions are the cause of diseases such as cholera, typhus and dysentery, in which especially children suffer and die. Poverty in India impacts children, families and individuals in a variety of different ways through;-

(1) High infant mortality: - 1.4 million children die each year in India before their fifth birthday. In addition to Nigeria, Pakistan, the democratic republic of the Congo and china, India is one of the countries with the highest child mortality rates. Pneumonia, malaria and diarrheal diseases as well as chronic malnutrition are the most frequent causes of death.

(2) Malnutrition: - India is one of the world's top countries when it comes to malnutrition; more than 200 million people don't have sufficient access to food, including 61 million children. 7.8 million infants were found to have a birth weight of less than 2.5 kg alarming figures for a country commonly referred to as the emerging market.

(3) child labour:- although child labour for children under the age of 14 in India is prohibited by law, according to official figures, 12.5 million children between the ages of 5 and 14 are working. Aid agencies assume that in reality, there are many more estimating that 65 million children between 6 and 14 years do not go to school. Instead, in order to secure survival, it is believed that Indian children contribute to the livelihood of their families; they work in the field, in factories, in quarries, in private households and in prostitution.

(4) Lack of education: - according to UNICEF, about 25% of children in India have no access to education. The number of children excluded from school is higher among girls than boys. Although women and men are treated equally under Indian law, girls and women, especially in the lower social caste, are considered inferior and oppressed by their fathers, brothers and husbands. Without education, the chance of finding a living wage from employment in India is virtually hopeless.

(4) Child marriage: - in spite of banning minors from marrying in 2006, it is still widespread in many regions of India. The main leaders in this practice are young girls, who are still children themselves and become mothers too early. Many of them die at birth. According to an investigation by the medical journal the lancet, 44.5% of girls are still married in India before they are of legal age. Due to poverty, many parents encourage early marriages for their daughters in hopes of better lives for them.

(5) HIV-AIDS: - 2.7 million Indians are infected with the HIV virus; about 220000 of them are children, with the tendency rising. The lack of education and the lack of condoms mean that the virus is spreading faster and faster and more amore and people are dying of aids- especially in slums of the growing cities. More and more children are living there as so called AIDS orphans, often being infected with the virus as well.

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## An empirical analysis of Indian Industry: Production function Approach<sup>12</sup>

M Aruna<sup>1</sup> IRS Sarma<sup>2</sup>

#### Abstract

Industrial development is crucial in the economic growth of a country. According to economic survey 2021, Indian industrial sector is expected to grow at 11.8 percent. Owing to the privatization, adoption of new technology, digitization etc., it is pertinent to know mix of input combinations to optimize production in this sector. Against this backdrop an attempt is made in this paper to generate empirical information on the nature of returns to variable to analyze the empirical validity of law of diminishing returns to variable (capital) across Indian industries by using the cross section data for 2017-18 and 2019-20. This paper, attempts to provide an empirical analysis of Indian Industry with the help production function approach across 31 Indian industries (factory sector) for the year 2017-18 and 2019-20. The results of the study indicate that the sign and size of the regression coefficients of capital and it square are in accordance with the law of diminishing returns to capital during two time periods 2017-18 and 2019-20 is negative indicating that the law of diminishing returns to capital is valid in case of Indian Industries during the study period.

#### Introduction-I

Industrial development is crucial in the economic growth of a country. Economic growth as explained by Robert Solow (1956), depends upon capital accumulation. According to him economic growth in terms of productivity growth is measurable as an increase in the output per worker. According to Ragner Nurkse, underdeveloped economies are caught into vicious cycle of poverty due to lack of industrialization. In other words the reason for economic underdevelopment is lack of demand for industrial goods. Further the process of industrialization is very important to achieve economic growth and to reduce poverty. The Indian government has initiated economic reforms in the year 1990-91 to address twin deficits. The new economic policy is referred to as Liberalization, Privatization and Globalization strategy. The three main components of this strategy are trade sector reforms, banking sector reforms and Industrial sector reforms. Industrial policy 1991 is considered to be turning point in the history of Indian economy. The economic reforms initiated in 1991 focused on industry -first strategy by eliminating industrial licensing import licensing for about all manufactures, intermediated and capital goods and relaxation of restrictions on inflows of foreign investment. Further, the reform process also started the process of disinvestment of public sector undertakings and hence reversing the balance of ownership in favor of private sector. Reform process was carried out on the presumption that removal of industrial licensing, changing ownership in favor of the private sector, opening the economy to free flow of investment by foreign firms, opening areas previously reserved for public sector to private sector, lowering import and export duties and such other obstacles of the free flow of technology, capital and foreign trade More specifically the effect of economic reforms on manufacturing sector depended upon location advantage and technological level. There are plethora of empirical studies that have been carried out to understand the importance of performance of industrial

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sector and its contribution to economic growth during reform period. A study carried out by Aghion et all 2003 opined that liberalization strategy encouraged innovation, profits and growth in those industries which were technological advanced and the impact of the strategy was not felt on those industries were there was less scope technological advancement. The study observed that the policies of the government at the state level which were pro worker labor regulations did not give much scope for innovation and growth in all industries. This is turn could not reap the benefits of liberalization (Aghion et all 2003and 2006). Lall and Chakravorty (2004) in their study inferred that structural reforms have had different impact on different states. The results of the study indicated that private sector investments preferred existing industrial clusters and coastal districts while state owned public sector enterprises were not oriented towards such locations.

The central government initiatives under Atma Nirbhar bharat including introduction of structural and procedural reforms, record vaccination, different Production Linked programs (PLP) are initiated to encourage investment in sectors of core competence and to introduce cutting edge technology. According to economic survey, Indian industrial sector is expected to grow at 11.8 percent.. Production function in economic theory represents the technical relationship between the output and different factor inputs involved in the production process. Production function can be classified into two categories on the basis of factor inputs employed i.e., short run production function and long run production function. The basic distinction between short run production function and long run production function is that, in case of short run, there is atleast one factor input is fixed while in case of long run production, all factor inputs are variable. According to economic theory, short run production is very important to assess the additional contribution of additional variable input to the production process, keeping other things constant. Further it enables us to understand the point where we need to stop adding additional variable input to the production. Owing to the privatization, adoption of new technology, digitization etc., it is pertinent to know mix of input combinations to optimize production in this sector. Against this backdrop an attempt is made in this paper to generate empirical information on the nature of returns to variable to analyze the empirical validity of law of diminishing returns to variable (capital) across Indian industries by using the cross section data for 2017-18 and 2019-20. Covid 19, has adversely affected not only lives but also livelihoods. For this purpose the study intends to analyze the impact of Covid 19 terms of empirical validity of law of diminishing returns to variable by comparing the results of returns to variable (capital) 2017-18 to returns to variable (capital) during 2019-20 Methodology-II

The required cross sectional data on Total production and fixed capital employed in 31 industries ( two digit level of National Industrial Classification) in Indian industries for the years 2017-18 and 2019-20 (factory Sector) has been gathered from Annual Survey of Industries to carry out the present study

To capture the behavior of total production to changes in the capital, ceteris paribus, across the Indian industries, the following form of quadratic production function without intercept has been fitted to the cross section data

 $TP = b_1 K - b_2 K^2(1)$ 

Where

TP = Total production (Rs lakhs) in 31 industries during 2017-18 and 2019-2020

K = Fixed capital (Rs lakhs) employed in 31 industries during two periods 2017-18 and 2019-2020
Quadratic production function to estimate and examine the empirical validity of diminishing returns to capital can be derived as follows:

$$TP = AP \times K.$$
 (2)

In other words total production is the product of average product of capital (AP) times the fixed capital (K)

By substituting equation (3) into equation (2) the following equation can derived

 $TP = K (b_1 - b_2 k)$ 

Returns to variable are derived from equation

According to the theory, quadratic production without intercept can be specified as follows:

 $TP = b_0 + b_1 K - b_2 K^2$  (5)

Where  $b_0 > 0$ ;  $b_1 > 0$ ;  $b_2 < 0$ 

Marginal product of capital is the first derivative of total production with respect to capital;

Equation (6) indicates that marginal product of capital; tends to diminish with the increase in capital, other things remaining constant.

The extent of capital required to arrive at maximum production is calculated with the help of following equations:

 $\partial TP / \partial K = b_1 - 2b_2 K \quad K = 0$ 

 $b_1 = 2b_2K$ 

 $b_1/2b_2 = K$  (7)

and

 $\partial^2 \mathrm{TP}/\partial \mathrm{K}^2 = 2\mathrm{b}_2\mathrm{K} < 0(8)$ 

# **Regression Results - III**

The regression results pertaining to Indian industrial sector (factory sector) using quadratic production fitted to cross sectional data relating to 31 industries during 2017-18 are presented in table 1

Table 1 : Regression res	ults of quadratic production fur	iction without intercept	(2017-18)
--------------------------	----------------------------------	--------------------------	-----------

SUMMARY (	OUTPUT							
Regression S	Statistics							
Multiple R	0.9475 84 0.8979							
R Square Adjusted R Square	15 0.8555 27							
Standard Error	211772							
Observation	28							
5	28							
ANOVA								
	df	SS	MS	F	Significa nce F			
Regression	2	1.03E+15	5.13E +14 4.48E	114.3 446	2.63E-13			
Residual	26	1.17E+14	+12					
Total	28	1.14E+15						
	Coeffici ents	Standard Error	t Stat	P- value	Lower 95%	Upper 95%	Lower 95.0%	<i>Upper</i> 95.0%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	0.6151		11.03	2.64E				
43117758	07 -6.4E-	0.055755	2	-11 2.24E	0.5005	0.7297 -4.2E-	0.5005	0.7297

The regression results based on quadratic production function without intercept are presented in table 1 indicate that the sign of coefficient of capital is positively significant and its square of capital is negatively significant. Further the marginal product of capital is found to be decreasing with the increase in the capital 0.615107- 2(6.4E-08) K, validating that law of diminishing returns to variable is operating across the Indian industries during 2017-18.

# Table 2: Regression results of quadratic production function with intercept (2017-18)

### SUMMARY OUTPUT

Regression	Statistics
	0.89894
Multiple R	7

	0.80810
R Square	5
Adjusted R	0.79275
Square	4
Standard	201948
Error	9
Observations	28

### ANOVA

					Significan
	df	SS	MS	F	ce F
			2.15E	52.63	
Regression	2	4.29E+14	+14	992	1.09E-09
			4.08E		
Residual	25	1.02E+14	+12		
Total	27	5.31E+14			
	Coeffici	Standard	~	<i>P</i> -	Lower
	outs	Freer	t Stat	value	05%

	Coeffici	Standard		P-	Lower	Upper	Lower	Upper
	ents	Error	t Stat	value	95%	95%	95.0%	95.0%
	102442		1.8950	0.069		213778		
Intercept	0	540590.3	02	713	-88946.9	6	-88946.9	2137786
	0.52689		7.4562	8.27E		0.67243		
43117758	9	0.070665	8	-08	0.381362	7	0.381362	0.672437
			-					
	-5.2E-		4.4176	0.000		-2.8E-		
1.86E+15	09	1.19E-09	5	169	-7.7E-09	09	-7.7E-09	-2.8E-09

The regression results based on quadratic production function with intercept are presented in table 2 indicate that the sign of coefficient of capital is positively significant and its square of capital is negatively significant. Further the marginal product of capital is found to be decreasing with the increase in the capital 0.526899- 2(5.2E-09) K. Thus the sign of the coefficient of the square of capital is in line with the short production function, i.e, diminishing returns to capital across Indian industries during 2018-19. In other words it implies when less capital is employed, there are many laborers for each unit of capital, and the marginal productivity of capital increases due to specialization. On the other hand when more capital is employed, the marginal productivity of capital tends to diminish due to inefficiencies. Thus the declining marginal productivity of capital indicates decreasing rate of total production when more capital is employed. Further diminishing marginal productivity of capital leads to decline in the average productivity of capital

# Table 3: Regression results of the quadratic production function without intercept 2019-20

# SUMMARY OUTPUT

Regression S	Statistics
	0.8534
Multiple R	01

	0.7282
R Square	93
Adjusted R	0.6811
Square	92
-	615009
Standard Error	3
Observations	29

#### ANOVA

					Significa		
	df	SS	MS	F	nce F		
			1.37E	36.18			
Regression	2	2.74E+15	+15	583	3.07E-08		
-			3.78E				
Residual	27	1.02E+15	+13				
Total	29	3.76E+15					
	Coeffici	Standard		<i>P</i> -	Lower	Upper	Lower
	ents	Error	t Stat	value	95%	95%	95.0%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
-	0.7322		4.769	5.65E		1.0472	0.41727
CAPITAL	53	0.153513	989	-05	0.417272	35	2
			-				
SQUARE OF	-5.9E-		1.980	0.057		2.12E-	

Upper 95.0% #N/A

1.04723

2.12E-

5

10

The regression results based on quadratic production function without intercept are presented in table 3, indicate that the sign of coefficient of capital is positively significant and its square of capital is negatively significant. Further the marginal product of capital is found to be decreasing with the increase in the capital 0.7322- 2(5.9E-09)K. Thus the sign of the coefficient of the square of capital is in line with the short production function, i.e, diminishing returns to capital across Indian industries during 2019-20. In other words it implies when less capital is employed, there are many laborers for each unit of capital, and the marginal productivity of capital increases due to specialization. On the other hand when more capital is employed, the marginal productivity of capital tends to diminish due to inefficiencies. Thus the declining marginal productivity of capital indicates decreasing rate of total production when more capital is employed. Further diminishing marginal productivity of capital leads to decline in the average productivity of capital

# SUMMARY OUTPUT

Regression Statistics				
	0.7669			
Multiple R	99			
-	0.5882			
R Square	88			
Adjusted R	0.5566			
Square	18			

	626658
Standard Error	0
Observations	29

### ANOVA

					Significa
	df	SS	MS	F	nce F
			7.29E	18.57	
Regression	2	1.46E+15	+14	547	9.77E-06
			3.93E		
Residual	26	1.02E+15	+13		
Total	28	2.48E+15			

	Coeffici	Standard Emor	t Stat	P-	Lower	Upper	Lower	Upper
	enis	Error	i siai	vaiue	9570	95%	95.0%	95.0%
	126913		0.074	0.941		363006	-	
Intercept	.6	1704258	469	208	-3376239	6	3376239	3630066
-	0.7219		3.450	0.001		1.1519	0.29185	1.15195
CAPITAL	07	0.209215	545	923	0.291859	55	9	5
			-					
SQUARE OF	-5.7E-		1.611	0.119		1.58E-		1.58E-
CAPITAL	09	3.55E-09	95	047	-1.3E-08	09	-1.3E-08	09

 Table -4 : Regression results of quadratic production function with intercept (2019-20)

The regression results based on quadratic production function with intercept are presented in table 4 indicate that the sign of coefficient of capital is positively significant and its square of capital is negatively significant. Further the marginal product of capital is found to be decreasing with the increase in the capital 0.721907- 2(5.7E-09)K. Thus the sign of the coefficient of the square of capital is in line with the short production function, i.e, diminishing returns to capital across Indian industries during 2019-20. In other words it implies when less capital is employed, there are many laborers for each unit of capital, and the marginal productivity of capital increases due to specialization. On the other hand when more capital is employed, the marginal productivity of capital indicates decreasing rate of total production when more capital is employed. Further diminishing marginal productivity of capital leads to decline in the average productivity of capital

# **Conclusion:**

This paper, attempts to provide an empirical analysis of Indian Industry with the help production function approach across 31 Indian industries (factory sector) for the year 2017-18 and 2019-20. The required cross section data is been gathered from annual survey of industries .The methodology used for this purpose is quadratic production with and without intercept to cross section data. The purpose of choosing 2017-18 and 2019-20 is to see whether there is any impact of covid 19 in Indian industries .The model specification is found to be appropriate as the percentage variation explained by the variable capital and its square in total production is very high. The results of the study indicate that the sign and size of the regression coefficients of capital and it square are in accordance with the law of diminishing returns to capital. Further negative sign of square of fixed capital during two time periods 2017-18 and

2019-20 is negative indicating that the law of diminishing returns to capital is valid in case of Indian Industries during the study period.

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### The Impact of COVID-19 on the Volume of Labour remittances.

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### Abstract

Remittances are the second largest source of external money for low- and middle-income nations. After foreign direct investment, Literature recognizes its effect on household income and contribution to financial asset accumulation to improve quality of life. Remittances have been resilient throughout COVID-19, defying fears of a global slump. The study tries to analyse the impact of Covid-19 on the international remittance flows. The study is based on the secondary data. secondary data collected from RBI remittance survey report, Indiastat, RBI annual reports, world bank data bank, IMF, UN DESA data, ILO, and emigration clearance data, MEA, Government of India. The study uses the tables and graphs to present the data. the study found that several countries, including India, the Philippines, Pakistan, and Bangladesh, remittances have surpassed foreign direct investment, accounting for approximately 3% of GDP in low-income nations and 1.6% of GDP in middle-income countries. COVID-19 affected population and protracted lockdown phases restricting return migrants' movement, saw the biggest fall in remittances in 2020-21.

Keywords. Remittances, lockdown, migration, Covid-19.

### Introduction

Remittances are the second largest source of external money for low- and middle-income nations. After foreign direct investment, Literature recognizes its effect on household income and contribution to financial asset accumulation to improve quality of life (Azizi, 2021; Basnet et al., 2021; Ogunniyi et al., 2020). Remittances have been resilient throughout COVID-19, defying fears of a global slump (Kpodar et al., 2021; World Bank, 2021a). According to the World Bank Report on Migration and Remittances (World Bank, 2021b), remittance flows to low- and middle-income countries dropped to US\$540 billion in 2020, 1.6% below 2019. India, the main recipient country, was likely to be one of the most hit (projected 23% fall) (World Bank, 2020) since its host country basket was sensitive to economic slowdown and oil price slump. Despite early forecasts, India remained the top recipient country, receiving 12% of global remittances in 2020 and 8% in 2021.

### **Research** gap

Recent study has analysed cross-country remittance patterns and COVID-19's impact on remittance volumes (Kpodar et al., 2021; World Bank, 2021). There's little empirical study on remittances during the pandemic. This work seeks to remedy this gap. First, it examines 49 nations' remittance resilience factors. Second, the article validates macro findings and insights on remittances based on the 'Fifth round of Remittance Survey' for 2020-21. The present study analyses the remittance inflows during the COVID-19 period.

### **Objectives**

- 1. To study the covid 19 impact on remittance volumes.
- 2. To examine the remittances resilience in selected countries after covid.

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### Methodology

The study is based on the secondary data. secondary data collected from RBI remittance survey report, Indiastat, RBI annual reports, world bank data bank, IMF, UN DESA data, ILO, and emigration clearance data, MEA, Government of India. The study use the tables and graphs to present the data.

Data analyses and discussion





Graph-1 shows the remittance inflow to emerging economies from 1991 to 2021. The graph clearly shows emerging economies such as India, and China. Mexico and Philippines and the Philippines are the major remittance-receiving countries in the last 3 decades. It also shows that it shows the importance of remittance to the growth of emerging economies in the world. And Other emerging economies like Bangladesh, Indonesia, Sri Lanka, Thailand, Vietnam and Vietnam are other major remittance-receiving countries in the last three decades and they are also dependent on remittance for the economic development of the country. In several countries, including India, the Philippines, Pakistan, and Bangladesh, remittances have surpassed Foreign Direct Investment, accounting for approximately 3% of GDP in low-income nations and 1.6% of GDP in middle-income countries.



Graph-2 Remittances as a share of GDP

Graph-2 shows the remittance share of the GDP of India, middle-income and low-income countries. The remittance share to the GDP of India has not followed the linear trend between 1991 to 2021. Compared to middle-income and low-income countries India received the highest remittance in the period of 1991 to 2021. It shows the importance of remittance to the growth of the Indian GDP in recent years. Middle-income and low-income remittance flow also not following the linear trend but they also receive a good percentage of international remittance.



Graph 3 presents the Inbound Remittance in Major Recipient Economies during covid and post covid period. In a number of significant recipient nations, the flow of remittances stayed stable in 2020 and rose in 2021. However, quarterly growth fluctuations have been observed in India and Indonesia since the commencement of COVID-19.



**Chart-4 Distribution of Indian Migrants across Top Host Countries** 

Graph 4 presents the Distribution of Indian Migrants Across Top Host Countries from 1990 to 2020. Over the past two decades, the United Arab Emirates (UAE), the United States of America (USA), and Saudi Arabia have been the three most popular destinations for Indian migrants. As of the end of 2020, 48.6% of all Indian migrants resided in the UAE, the United States, and Saudi Arabia.

	8			
GCCs	2015	2017	2019	2020
Saudi Arabia	3.1	0.8	1.6	0.4
UAE	2.3	1.5	0.8	0.2
Kuwait	0.7	0.6	0.5	0.3
Oman	0.9	0.5	0.3	0.1
Qatar	0.6	0.2	0.3	0.1
Bahrain	0.2	0.1	0.1	0.0
Total	7.6	3.7	3.5	0.9

## Table-1 India's Emigration to the GCC Region (in Lakhs)

Source: Based on emigration clearance data, MEA, Government of India.

Table 1 presents India's immigration to the GCC countries from 2015 to 2020. India's emigration stock in Saudi Arabia is 3.1 lakhs. In 2015 It decreased to 0.4 lakhs in 2020, as India's immigration stock was 2.3 lakhs in 2015. It decreased to 0.2 lakhs in 2020. Qatar's Indian emigration stock is 0.7 lakhs. It decreased to 0.3 lakhs in 2020. India's emigration stock in Oman is 0.9 lakhs in 2015, and it decreased to 0.1 lakhs in 2020. India's immigration stock was 0.2 lakh in 2015. It decreased to 0.1 lakh in 2020 and Bahrain's India emigration stock was 0.2 lakh in 2015. It decreased to 0.1 lakh in 2019. The total immigration stock in GCC countries is 7.6 lakh. It decreased to 0.9 lakhs in 2020. The table clearly indicates that India's immigration stock in GCC countries decreased between 2015 and 2020.

Table 2 Country-wise distribution of remittance

Country	2016-17	2020-21
UAE	26.9	18.0
USA	22.9	23.4
Saudi Arabia	11.6	5.1
Qatar	6.5	1.5
Kuwait	5.5	2.4
Oman	3.0	1.6
UK	3.0	6.8
Malaysia	2.3	0.7
Canada	1.0	0.6
Hong Kong	0.9	0.7
Australia	0.7	0.7
Germany	0.6	0.6
Italy	0.05	0.1
Philippines	0.03	0.0
Others	14.8	31.6

Sources: RBI Remittances Survey, 2020-21.



### Graph -5 Country-wise distribution of remittance

While India's inward remittances defied the crisis at the macro level, there have been major changes in their geographical and socio-economic composition, driven by home and host country crisis dynamics and the severity of the impact across different working classes.

To analyse the variables contributing to the resilience of remittances and to identify to what extent the pandemic has impacted the underlying dynamics of remittances flow, the Reserve Bank of India undertook the fifth round of the Survey on Remittances for the year 2020-21. This round of the survey covered 98 ADs, with 79 responding (99.3% of total family maintenance) and 3 MTOs. The survey findings verify the resilient trend in aggregate remittances but indicate shifts in sources and destinations in 2020-21 and the varying pandemic implications across banks and MTOs.

According to the RBI survey, the share of GCC remittances in India's inward remittances is expected to drop from 50% in 2016-17 to 30% in 2020-21. In 2020-21, AEs, especially the US, the UK, and Singapore, will account for 36% of total remittances. The US overtook the UAE as the biggest source of remittances in 2020-21. The World Bank report (2021) cites the US economic recovery as one of the main drivers of India's remittances increase, accounting for roughly 20% of overall remittances.

Destination State	Share in total remittances (Per cent)			
	2016-17	2020-21		
Kerala	19.0	10.2		
Maharashtra	16.7	35.2		
Karnataka	15.0	5.2		
Tamil nadu	8.0	9.7		
Delhi	5.9	9.3		
Andhra pradesh	4.0	4.4		
Uttar pradesh	3.1	3.7		
West bengal	2.7	1.4		
Gujarat	2.1	3.2		
Punjab	1.7	3		
Bihar	1.3	1.4		
Rajasthan	1.2	1.2		
Goa	0.8	1.1		
Haryana	0.8	1.2		
Madhya pradesh	0.4	0.5		

## **Table 3 State-wise Share of Remittances Receipts**

Orissa	0.4	0.5
Jharkhand	0.3	1.9
Uttarakhand	0.2	0.7
Puducherry	0.2	0.2
Chandigarh	0.2	0.4
Jammu and Kashmir	0.2	0.3
Assam	0.1	0.2
Himachal pradesh	0.1	0.1
Chhattisgarh	0.1	0.3
Others	15.5	3.3
Total	100.0	1.1

The percentage of the traditional remittance recipient states of Kerala, Tamil Nadu, and Karnataka, which had strong dominance in the GCC region, has nearly halved in 2020-21, accounting for only 25 percent of total remittances, while Maharashtra has surpassed Kerala as the leading receiving state. In addition to the dynamics of the host country, decreasing pay differentials, changing occupational patterns in certain states, and the influx of low-paid semi-skilled workers from other states and Asian countries may have contributed to this compositional shift. In recent years, migration from Uttar Pradesh, Bihar, Orissa, and West Bengal to the Gulf states has grown. According to data from the Ministry of External Affairs, these states accounted for more than fifty percent of the issued emigration clearances for the GCC region in 2020.





Global 7 Employment Growth in 2020



However, from the standpoint of global remittances, the pandemic's impact on migrants has differed across areas. In particular economies, strict lockdown measures disproportionately harmed industries with a heavy reliance on migrant labour. Migrants employed in low-skilled occupations in countries with a high level of informality were especially susceptible due to their inadequate savings and access to social security. In 2020, the epidemic will disproportionately affect low-wage workers (International Labour Organization, ILO, 2021).





Table present the change in employment to population ratio in 2021. it clearly indicates that high income countries change in employment population ratio is negative but compare to middle income countries change in employment to population ratio its very less but middle-income countries employment to population ratio is more changes in the post covid period. Even after almost two years since the onset of the pandemic, the employment recovery has

remained fragile and quite divergent across country groups.

	NR(E)RA	FCNR(B)	NR(NR)RD	Total
2002	41205	47175	34392	122772
2003	71184	48651	16253	136088
2004	92977	49572	7895	150444
2005	93159	50108	1015	144282
2006	98443	58272	5119	161834
2007	106786	65955	7047	179788
2008	106824	56651	11148	174623
2009	119181	66803	24134	210118
2010	118984	64625	33453	217061
2011	117802	69658	43352	230812
2012	160684	76576	62580	299840
2013	249780	82608	52814	385202
2014	317973	251354	54774	624101

#### **Table 4 Trend in NRI Deposits**

2015	392832	268106	60059	720997
2016	474068	300593	67294	841956
2017	539544	136173	82033	757751
2018	585625	143264	91848	820737
2019	636491	160271	105390	902152
2020	676338	181451	119521	977309

FCNR(A): Foreign currency non-resident (accounts), FCNR(B): Foreign currency non-resident (banks), FC(B&O)D: Foreign currency (bank and other) deposits, NRO : Non-Resident Ordinary Rupee Accounts, NR(E)RA : Non-resident (external) Rupee accounts,

NR(NR)RD : Non-resident (non-repatriable) Rupee deposits, FC(O)N : Foreign currency (ordinary) non-repatriable deposits, Notes : 1. The figures are outstanding as on last Friday of March., 2. The figures on NRI deposits are as reported by scheduled commercial banks in India. Source : Reserve Bank of India.

### **Graph 9 Trend in NRI Deposits**



The funds brought in owing to return migration during the pandemic may have helped maintain a steady flow of remittances in 2020-21, but this may not last if pandemic-related economic stress persists in the long run (Kpodar et al. 2021). Under India, deposits from abroad Indians in NRI deposit schemes are classified as capital account transactions, but local withdrawals/redemptions are treated as private transfers (RBI, 2010). 4 While NRI deposits are driven by currency rate and interest differentials, the trend in NRE accounts, which non-resident Indians utilise to lodge income from overseas in INR, spiked in successive waves of the epidemic.

Γ	able	5	Purpose	of	Remittances,	2020-21
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Purpose of Remittances	Share in total Remittances (Per cent)
Family maintenance (i.e., consumption)	43.6
Deposits in Banks	34.6
Investments (landed property /equity shares/etc.)	10.2

Others	11.7
Total	100

Source: RBI Remittances Survey, 2021.

# Table 6 Bank-wise Distribution of Inward Remittances, 2020-21

Bank Group	Share in Total Remittances (Per cent)
Private Banks	52.8
Public Sector Banks	39.4
Foreign Banks	7.8
Total	100

Note: "Others" includes states with negligible shares including Daman, Sikkim, Manipur, Dadra Nagar Haveli, Nagaland, Meghalaya, Mizoram, Andaman and Nicobar, Lakshadweep and those remittances for which banks could not identify the specific destination.

# Graph 10 Weighted Distribution of State-wise Remittances Growth in 2020-21



Due to the preponderance of low-wage unskilled labourers, their percentage of remittances has remained low, whereas Maharashtra and Delhi's part has increased. Maharashtra, one of the most affected states with the most COVID-19 affected population and protracted lockdown phases restricting return migrants' movement, saw the biggest fall in remittances in 2020-21.

Fable 6 Size-wise	Distribution	of Remittances,	2020-21
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Size of Remittances	Share in Total Remittances (Per cent)
Less than or equal to US\$ 200	6
Between US\$200 - US\$500	25.7
Greater than or equal to US\$ 500	68.4
Total	100

Source: RBI Remittances Survey, 2021.

The table presents the size distribution of remittance in 2021. Less than or equal to US \$200 accounts for only 6% of total remittances, between US \$200 and US \$500 accounts for 25.7 percent, and greater than or equal to US \$500 accounts for 68.4% of total remittances. table clearly indicates that the size-wise distribution of remittances is greater than or equal to US \$500 in 2020-21. It clearly indicates that the majority of the migrants are sending remittances to their families in an amount greater than or equal to US \$500. During the epidemic, major MTOs reduced the average cost of remittances. Growing competition in the market with new organisations, slowdown in activity during the lockdown, and transitioning to digital transactions are the main causes for this drop, which bodes good for remittances. The World Bank International MTO Index tracks MTO prices in major corridors. Since 2017, mailing costs between \$200 and \$500 have moderated, according to June 2021 data.

Mode of Transfer	Share in Total Remittances (Per cent)
RDA/Vostro Account	56.5
SWIFT	41.2
Direct Transfer	1.9
Others (including Cheque and draft)	0.3
Total	100

 Table 7 Mode-wise Remittances Transfer, 2020-21

Source: RBI Remittances Survey, 2021.

The table shows the model-wise remittance transfers in 2020 and 21. The majority of the migrants send their remittances through the RDA/Vostro Account, which shares 56.5% of the total remittances. followed by the swift mode used by 41.2% of the migrants and 1.9% of the migrants who send their remittances through direct transfers. It is clear that the RDAR/vostro account mode is the primary remittance sending route for migrants to send remittances to their home country.

Mode of Transfer	Share in Remittances of MTOs (Per cent)
Cash	64.9
Direct Transfer to Bank Account	35.1
Others	0.01
Total	100

Table 8 Mode-wise Transfer through MTOs, 2020-21

In 2020-2021, table defects the mode-wise transfer through empty rows.64.9% of the remittance is sent through cash. Direct transfer to bank accounts for 35.1% of all remittances, with the remaining modes accounting for only 0.01%. It clearly indicates that the majority of the remittances sent through MTOs are in the cache mode and are direct transport to the bank accounts of their native places.

# Conclusion

This article illustrates the trends of remittance flows to India during the COVID-19 pandemic. A few important inferences can be derived from the 'Fifth Round of the Survey on Remittances' for 2020-21. First, evidence on falling remittances from the Gulf region is in line with global employment dynamics. Indian diaspora operating in informal industries in the Gulf region seems to have been hit the most due to tighter restrictions, decreased crude oil prices, and slower migration in recent years. Small transactions gaining proportion in overall remittances during the pandemic indicate pressured income situations. Third, despite a substantial fall in remittances to Maharashtra in 2020-21, it has replaced Kerala and Tamil Nadu as the top receiving state, along with Delhi. Fourth, most remittances are routed through private sector banks, followed by public sector banks, but foreign institutions have seen a

minor growth, especially from Singapore. Fifth, private sector banks' average remittance costs rose since the prior survey, while public and foreign bank costs fell.

India is the second cheapest G20 remittance market after Mexico, but some corridors are more expensive. Expanding MTSS in high-cost corridors requires policy changes. Remittance service providers must also spend extensively in digital technologies to adapt. Digital payment techniques and integration with mobile and digital channels would reduce remittance costs and improve virtual KYC by linking senders' and recipients' digital wallets to their SIM cards. Policy environment must also help domestic banks take a careful approach to MTOs' correspondent banking. During the pandemic, the World Bank (2021) reported bank de-risking in certain jurisdictions, which might increase remittance costs.

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### Consumption of Food and Data: A driving force behind economic growth

# Dilip Singh Sharad Tiwari

### Abstract

India is the youngest country in the world and its economy is driven by the consumption. Consumption at household level contribute 59.7% to GDP. The consumption of goods and services depends upon the various factors like income, caste, class, culture, education, geography and connectivity etc. The factors which affect the consumption of food are also affect the economic growth of the country. However, the consumption of non-food items may independent to above factors. Here data consumption, as a nonfood intangible commodity, along with food consumption, as tangible commodity, taken as a subject matter of research. How data and food consumption deriving force of economic growth? Availability, accessibility and affordability are three common challenges for both type of consumption and impediment to economic growth apart from the above factors. Food consumption as a matter of choice has always determined by the socio-economic factors like caste, class, culture, capability (income) and connectivity (5C). Bhopal in Madhya Pradesh and Shillong in Meghalaya wherein the primary survey on food and data consumption carried out have a cross-culture study, targeted age groups were same, Shillong is more homogenous in terms of caste, class and income as compare to Bhopal. The reports of Telecom Regularity Authority of India, National Family Health Survey-5 and Dashboard of Department of Telecommunications has shown the demand of data consumption is inelastic and it has become an essential commodity which greatly contributed to sustained growth of Indian economy. On the other hand, demand food consumption is elastic. Apart from responsive to price change, pattern of food consumption is determined by 5C. The way data consumption has become an enabler tool to remove all the barriers that still persist with food consumption has surprised me. Information Communications Technologies (ICTs) has the potential to overcome all the barriers and minimises the effect of 5C constraints in the determination of the pattern of food consumption. Food as an essential commodity for survival as well as a matter of choice which is a very fundamental human right. Right to Food and Right to data are going to be very fundamental rights for overall well-being of nation. For the overall growth of economy of the youngest India we must ensure consumption smoothing in respect of data as well as food.

Key Words: Information Communications Technologies (ICTs), Consumption smoothing, International Telecommunications Union (ITU), Telecom Regularity Authority of India (TRAI), National Family Health Survey (NFHS), Subjective Well-Being (SWB).

### Introduction:

Historically, Indian economy based on reciprocal exchange system, the people of country living at subsistence level. On arrival of Britisher into India with a royal Farman/permission for the period of 20 years to trade in Indian sub-continent. East India company disturbed Indian system of reciprocal exchange and the entity of market came into existence. The market is profit driven entity. For that Britisher had exploited the Indian economy. After the independence of India in 1947, we followed close model of economy as we had witnessed the dark face of British era. Entropy of a system increases when it is closed and isolated.

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The increased entropy destroyed the system of Indian economy due to policy of isolation. India a hugely debt-ridden country prior to 1990 and finally we opened its economy by liberalizing its policies, privatization its economic sectors and move towards the globalization.

India is a young country and its economy is consumption driven. Household consumption contribute 59.7%, government consumption contributes 11.7%. Total consumption contributes 71.4% in India's Gross Domestic Product (GDP). Consumption here means all kinds like food, non-food including service consumption and data consumption etc. So far many study and research have been done on food consumption. Food and non-food studies have also been done. In the 21<sup>st</sup> century, data consumption is shaping various governance schemes and policies. Therefore, through this paper, I am attempting to find linkages food and data consumption and planned our study as below.

In this paper, main focus on the consumption of food and data as in  $21^{st}$  century, a new trend has been observing in respect of these two goods / commodities namely food and data, though the both are essential in life. Food is elastic commodity while data is nearly inelastic one.

Section one of the paper deals with the factors which affects the food consumption, second and third section deals with telecom connectivity and factors affecting the consumption of data. fourth section deal with the relationship between both tangible (food) and intangible (data) consumption and in last the section is conclusion and way forward.

I. What factors affect food consumption?

The pattern of food consumption has been influenced by socioeconomic inequality since the dawn of human history. Caste, class, culture, are main factors which have been determined our consumption need but now new factor that is technology in general while digital connectivity in particular shaping composition of our thali (food plate)? What role does technology play in promoting smoother consumption? As long as the aforementioned factors are balanced across all facets of life, the need for food consumption typically remains unaffected.

In India, food and caste are intertwined in such a way that pollution and purity are characterized by food type and food production, with vegetarian and pucca food symbolizing purity and non-vegetarian and kutcha food polluting, which is meant for lower caste people. Furthermore, food choices reflect one's caste, with Brahmin and Vaisya Verna typically eating vegetarian fare while the other two Verna may indulge in meat (Staples, 2014). Consuming the right food is therefore a crucial component of maintaining their reputation as members of the so-called upper caste.

After the 1990s, when India's economy began to open up, a new class emerged, known as the "new middle class". The upper castes reaped the greatest benefits from economic liberalization, and thus the class and caste distinctions are once again becoming increasingly blurred. Weberian Approach considers the relationship between lifestyle and status group differentiation to be more useful than a 'Marxian' view in which class is more firmly tied to differences in access to and control over the means of production (Klein, 2014). As a result, the industrialization of food has had a homogenizing effect on both caste and class. India still has a "culinary diglossia" difficulty in addition to homogenization (Klein, 2014).

Another impediment factor that affects consumption patterns, is culture. For example, in a patriarchal society, when a woman shifts from her parental home to her in-law's place, she notices a change in food consumption due to the social pressure of rituals or the prevailing culture of family. Another example is when a person migrates from his or her hometown to a new place for a job, he or she experiences a decrease in the amount of food consumption. We all prefer homemade food because we have been eating it since childhood and have developed a particular food preference or habit.

Urbanization and globalization have increased the level of mass consumption as a result of rapid overall development, particularly connectivity, which includes rail-road-telecom and food chains. Because the middle class consumes more fast food than local foods, global food or fast food chains undoubtedly contribute to cultural losses, but fostering consumption smoothing.

II. Telecom Connectivity.

Three decades ago less than ten million internet users which now is more than five million internet users. According to ITU global connectivity report 2022, one third humanity i.e., 2.9 billion people remain offline globally and covid-19 has demonstrated the cost of digital exclusion (Bogdan-Martin, 2022). Absence of connectivity hit individually at different level or grades differently, like students missed their classes due to poor or no connectivity, patients with non-covid-19 disease could not get treatment and poor household have had strived for food because they have no connectivity to convey their hunger during lockdown. Telecom connectivity is enabler for subjective well-being (SWB) through which everything is available on a single click. In Meghalaya. Women in Madhya Pradesh and Meghalaya owned mobile phone 38.5% and 68% respectively and out of which 35% of women in Meghalaya uses internet services while in MP its only 26.9% as per National Family and Health Survey-5 (NFHS-5:2019-20) (welfare, 2019-21). The national average data consumption per subscriber per month is 15.8GB in the quarter-4 of 2021-22 (Q4:2021-22) as per department of telecommunications dashboard. The tariff per GB data is Rs.10.47/- in the same quarter (Telecommunications, 2022).

III. Factors affecting the data consumption.

In the data consumption, there are three factors viz. availability, accessibility and affordability. According to TRAI report as on June,2022 India has 85% tele density that is 1.17billion out of total 1.38 billion population has connectivity that means still 20 crore people are off-line. In terms of meaningful connectivity, wherein the possibility for everyone to enjoy a safe, satisfying, enriching, productive and affordable online experience, only 800.94 million (0.8 billion) subscribers (INDIA, 2022). Accessibility factor itself has affordability dimension apart from infrastructure, device, skill or digital literacy, safety and security are sub-factors which affects the data consumption.

IV. Relationship between food and data consumption.

Income, Education and Geography are three independent variables on which consumption depends while keeping other factors ceteris paribus. Disposable income has direct relationship with the consumption which is expressed by to consider is household wealth. Cc+[Cf/(1+r)]=Yc+[Yf/(1+r)] is an expression for the intertemporal budget constraint of the household, Cc=current consumption; Cf=future consumption; r=interest rate; Yf=future income or wealth. Similarly, Education has impact on consumption on both data and food as education enhance the productivity and efficiency due to that income and livelihood opportunities increases (Michael, 1974). An educated person consume data for useful-utility online learnings, gathering useful information etc and quality use of data improves the overall well-being. Geography is a major factor which has impacted both data and food consumption equally. In Hilly terrain creating digital infrastructure is much more expensive and the quality of digital connectivity is poor as compare to plain areas. Similarly, production of food is very expensive as in hilly areas step farming and limited slash-burn farming which is labour intensive activity makes this whole agri-cum food production chain is an expensive affair.

V. Data analysis

In the previous sections we have explained about food and data consumption theoretically in independent manner based on past research and other secondary sources. We also discussed in about the factors which affecting food as well as data consumption separately. In this section some empirical findings based on the primary data collected through survey on both the capital cities of Madhya

Pradesh and Meghalaya that is Bhopal and Shillong respectively. In this survey total 24 questions were asked and all the 24 questions are not open ended. We targeted total 500 responses but get only 466 responses whose breakup by using spreadsheet filter is 266 responses from Bhopal and 200 responses from Shillong.

Name and Place					
Age (Years)		Gender		Education	
(i) 15-25		(i) Male		(i) 10+2 or Equivalent	
(i) 25-35		(ii) Female		(ii) Graduation	
(iii) 35-45				(iii) Other	
(iv) 45 and Above					
(B) Data Consumption					
Type of Mobile	Phone	Data use per	· day	Recharge Pattern	
(i) Smart Phone		(i) less than 1 GB		(i) less than Rs. 300	
(ii) Other		(ii) 1GB to 2GB		(ii) Rs. 300 per month	
		(iii) 2GB and more		(iii) Rs. 500 and more	
(C) Non-Data Consumption					
T ("I F (			4	Alcohol consumption per	
I extile or Footwear	per month	Saloon Expenses	ber month		
(i) Rs. 1000		(1) less than Ks. 300		(1) less than Rs. 500	
(ii) Rs. 2000		(ii) Rs. 300 to Rs. 600		(ii) Rs. 500 to Rs. 1000	
(iii) Rs. 3000		(iii) Rs. 600 and Above		(iii) Rs. 1000 to Rs. 2000	
(iv) Rs. 4000				(iii) Rs. 2000 and Above	
(v) more than Rs. 4000				(iv) Nil	
Tea and Coffee Consu	mption per				
day	[	Juice intake per day		Milk intake per	day
(i) 2 cups		(i) 1 glass		(i) 1 glass	
(ii) 3 cups		(ii) 2 glass		(ii) 2 glass	
(iii) 4 cups and Above		(iii) Nil		(iii) more than 2 glass	
(iv) Nil				(iv) Nil	
Pan masala, Tobacco	, Cigarette		_		
per month		Number of meals	s per day	Thali Composit	ion
(i) less than Rs 500		(i) 2		(i) Daal	

# (A)Personal Details

I

(iii) 5 (iv) 6 (v)All

(ii) Rs. 500 to Rs. 1000	(ii) 3	(ii) Rice	
(iii) Rs. 1000 to Rs. 2000	(iii) more than 3	(iii) Roti	
(iv) Rs. 2000 and Above		(iv) Vegetable	
(v) None		(v) Non Vegetable	
Electricity bill per mor	nth Public transport per month	Diesel/ Petrol expenses per month	
(i) less than 500	(i) less than 500	(i) Rs. 1000	
(ii) more than 500	(ii) Rs. 500 to Rs. 1000	(ii) Rs. 1000 to Rs. 2000	
	(iii) more than Rs. 1000	(iii) Rs. 2000 to Rs. 3000	
	(iv) None	(iv) More than Rs. 3000	
		(v) Nil	
School fee per year	Books and stationary expenses per year	No. of family members	
(i) In Rupees	(i) Rs 2000/-	(i) 3	
(ii) Nil	(ii) Rs. 5000/-	(ii) 4	
	(iii) more than Rs. 5000/-	(iii) 5	
		(iv) 6	
		(v)7 and above	
No. of earning members family	in a		
(i) 3			
(ii) 4			

The questionnaire has three segments one is related personal information of respondent like name, place, age, education, gender. This segment is focus on the parameter of geography and education. In the next segment of questionnaire, respondents were asked about the family size, number of working members in family, expenditure on food and non-food items. From this segment I tried to assess indirectly the information about household income as asking direct information on income, respondent may hesitate to disclose their accurate income. Regarding data consumption, we have put direct question about the mobile device like smart phone or other, monthly package or yearly package / plan and per day how much data you consume in Giga Byte (GB). This study is an attempt to validate null-hypothesis as Bhopal is mix of all the caste while in Shillong is primarily a tribal capital.



# Fig-1: Education



# Fig-2: Data Consumption



# Fig-3: Recharge Pattern



# Fig-4: No. of meals per day



# Fig-6: Household size



Source: https://dot.dashboard.nic.in/DashboardF.aspx

# Table-1

Sl.no	Duration	Per Subscriber Per	Tariff per GB-	Total Revenue Per
		Month-Current (GB)	Current (Rs.)	Subscriber Per
				Month
1	Qtr-3 (2020-21)	12.130	11.01	134
2	Qtr-4 (2020-21)	12.330	10.77	133
3	Qtr-1 (2021-22)	14.100	9.8	138
4	Qtr-2 (2021-22)	14.730	9.53	140
5	Qtr-3 (2022-22)	14.970	9.91	148
6	Qtr-4 (2021-22)	15.800	10.47	165

# Source: https://dot.dashboard.nic.in/DashboardF.aspx

In the above table, which shows that the demand of data consumption is inelastic as per subscriber data consumption is steady growing while the tariff per GB go up and down. The calculated elasticity for the Qtr-3 to Qtr-4 for the year 2021-22 is 0.98 that means data consumption is unresponsive to tariff or income and now has becomes an essential commodity like food is essential for survival (Telecommunications, 2022).

# VI. Conclusion

Estimated disposable income is calculated by adding all the expenditures including durable and nondurable goods, services, data consumption plus information gathered from primary survey and the average income per capita comes about Rs.10390/- per month in respect of Bhopal while Rs.7530/- for Shillong. The demand of food consumption is elastic while for the data it is inelastic. That means the consumption of data is independent to caste, culture income and geography while food consumption depends on all viz. caste, class, culture, education, income and geography. The way data consumption has become an enabler tool to remove all the barriers that still persist with food consumption has surprised me. Apart from that the national average per subscriber per month data expenditure is around Rs135 -165/- if we sum it for 1.17 billion subscribers than how much it contributes to the economy in absolute term. While for Shillong it is between Rs 400/- to Rs 500/- per subscriber per month, which is more or less same for Bhopal. Internet data consumption further fuel our knowledge driven economy, as per Indian Council for Research on International Economic Relations (ICRIER), 10% growth in Internet penetration can led to 3.2% increase in rate of growth in State per capita GDP. Data consumption not only contributing directly to the growth in economy but it multiplies the economic activities many folds.

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# INSTITUTIONAL CHANGES IN AGRICULTURE IN BIHAR

### Shashi Kumari

### Abstract:

Agriculture is very important in Bihar's economy because about 80% of its population is dependent on agriculture for employment. The development of the state and development of the country are also based on the rate of development of agriculture. Here social, economic and political life revolves around agriculture. Land is needed for agriculture and land is the main means of livelihood. Therefore, the question of poverty and social justice is associated with the ownership of land. The British exploited India economically during their temporary rule in our country and made permanent changes in the nature and mode of production of land ownership.

In Bihar, the British implemented the Zamindari system, in which the entire land was owned by the king, but in practise the land hold was held in the hand of some sub-castes of the peasants. The tenants had to give a part of their produce to the government in the form of rent. This could have been from half to one-third of the total yield. In some cases, tenants also had to pay rent to middlemen. At the time of independence, a large army of intermediaries existed between the real tenants and the owner of the land in most of the agricultural area of country. Due to this, while on one hand the tenant had to give a large part of the produce of the land to the middlemen, on the other hand they were completely dependent on them. When the country became independent, the government began to take possession of the vast lands possessed by the land-lords and money-lenders. The Bihar government enacted 'The Bihar Land Reforms Act' for this. Under this, the government took fifteen acres of land per adult man in case of two cropped irrigated fields, eighteen acres in case of single cropped irrigated field and fifteen acres in rain dependent area.

Key words: Permanent settlement, tenants, semi-feudalism, capitalist

### Introduction

The contribution of agriculture is important in strengthening the economy of any state whereas social, technical, economic and institutional factors are responsible for the development of agriculture. Institutional factor is more important out of all these factors because of the small size of land holdings, lack of credit to farmers for investment in agricultures, unavailability of market for agricultural products and non-rational determination of support price. Along with this comes a feeling of indifference among bureaucrats and lack of willpower among politicians towards institutional reforms in agriculture.

If the institutional hurdles are overcome, agriculture will grow at a rapid pace.

In order to know the institutional enforcement under agriculture, it is necessary to study the government's attitude towards agriculture from pre-independence.

Before the British came to India, India was an agricultural nation. People lived in a joint family. Therefore, everyone had many acres of land. The productivity per hectare of land was low, but due to the high volume of land, there was a situation of food surplus. At that time agriculture was subsistence rather than a commercial one. At that time farming was done in the traditional way. Agriculture was the source of income throughout the year. Similarly, year-round expenditure was easily relieved through agriculture.

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But the British first established their dominance in India by imposing a tax on agriculture which used to be from a quarter to half of the food grains. The post of officer was secured to collect this tax.

The kingdoms of this period included many territories which were dominated by the defeated or subjugated kings and they were constantly in the process of declaring their independence. Apart from this, there were officers in many areas of the states who considered land under their control as their ancestral property. Later, the rank of these officers also became hereditary.

The general secretary was a member of four pushtas (generations) from a family of Bengal. Similarly, maximum posts of government became reserved for few officers. These hereditary officers gradually took over many functions of administration. They not only used to fix and collect rent, but they also took more and more administrative offices in their hands and they became judges.

They even levied fines on their own, power in cases that had previously been given as privileges on behalf of the king. They also claimed their rights over treasuries found in their territories which otherwise had the king's authority over them. They also assumed the right to distribute their land among the supporters without the king's permission.

Thus the number of people who earned without working on the land increased. Such a social system can be called a feudal system. The main feature of feudalistic society is that in this, people are more powerful who have authority over them without working on the land. In this way, the British promoted feudalism. Gradually agriculture became subject to feudalism.

The advent of British in India led to the emergence of zamindari system. The British rulers believed that they are the owners of the land and the farmers are their subjects. So, they made permanent and temporary arrangements with big farmers, kings and the landlords. Although impressed by the political rationale, he leased each pargana to the monopolist who collected every tax for 5 years.

# 1. Zamindari system

Thus, the British recognised the zamindari system although, initially it was not their idea to deprive the peasants of their rights. Lord Cornwallis became the Governor-General in 1786 after Warren Hastings. Lord Cornwallis was also in favour of the zamindari system. He ordered a Ten year settlement in Bengal, Bihar and Odisha in 1791 AD. Only after two years, in 1793, the Board of Directors gave permission to make this Ten year plan a permanent settlement.

During the British rule, the settlement of land was formally divided into three systems- Zamindari (permanent settlement of land), Ryotwari and Mahalwari. The British rulers made a permanent settlement of the land in Bihar and Bengal presidency in 1793, after much thought. With this feudalism was established under the zamindari system.

In the areas of landlords, the Benami landlords, were entrusted with the right to collect rent. It was thought that a new class of landowners would adopt modern methods of farming and revive agriculture. But, in practise the opposite happened. The zamindars recovered huge rent from the tenants and made them pauper while they themselves lived a life of luxury in the cities. Due to various mistakes of tenants, the landlords occupied their land. The trend of keeping middlemen had increased. It was a common practise to lease land from landlords to tenants and sharecroppers. The tenants had no fixed rights. They did not implement such a settlement in the rest of the country after the rest of India came under the authority of the British rulers. The system of land ownership of southern and north-western India at that time was continued.

In the Ryotwari and Mahalwari areas, the tenants of the rural areas had land rights and no middleman. But even in these areas, land transactions took place on a large scale and due to debt and other reasons, the land would reach people who didn't do farming themselves. In all the princely states of India, the zamindari system as a whole existed in its most brutal form under which there were many kinds of tenancies and the tenants didn't have any fixed rights.

The British rulers adopted and promoted very old system in the field of land relations for political reasons. The vested interests of the land led to a very powerful foundation for the British raj.

Anonymous zamindari, sharecropping, semi-feudal system, huge disparity in land ownership and increasing debt burden on farmers not only made the tenants poor but also created major obstacle in the resurgence of anyone in the state.

There have been many factors behind the backwardness of agriculture in Bihar, of which one important factor has been institutionalization, which includes land holding, land tenure and ownership. This includes the size of the land, land format, type of agriculture, crop land use, crop organisation and productivity of crops.

The response to institutional factors in agriculture is the permanent settlement brought by Lord Cornwallis. From 1772 onwards, the British company used a variety of settlements such as 5-year-old, 1-year-old, 10-year-old settlements but Lord Cornwallis settled a cash settlement forever called the Permanent settlements and this arrangement continued till the 1950s. However, its effect can be seen even in present.

After the permanent solution of feudalism in 1793, feudalism was established under the zamindari system in Bihar and the zamindari system was abolished only after attaining independence. But after that, semi-feudalism prevailed in the agricultural system of Bihar.

# 2. Semi-feudalism

Semi-feudalism is prevalent in Bihar's agricultural economy. On one side, a large part of the land is concentrated in the hands of a few people while on the other side, socialisation of production is not possible which shows that these owners are not capitalists, and they are landlords. A part of the crop is coming in the market but its price is not being applied according to the capitalist market.

The price of the crop is determined after raising it from the field. The people employed in the agricultural land are agricultural labours. But due to the social influence of some middlemen, the labour force of agricultural labours could not be transformed into an independent state. The savings of land owners is exploitation, but it does not participate in profits and freight according to the rules of the capitalist markets.

Detailed re-generation is to be done by re-employing savings, but the major part of savings is not being re-invested. In the fertile sector and in the field of mahajani trade and crop trade, the small and middle class farmers have been grabbing all the savings. Simultaneously, by increasing the price of essential commodities like fertilizers, seeds, insecticides, power-free production, a large part of the savings goes into the pockets of foreign and domestic monopoly capitalists and keeps the farmers in indebtedness forever.

On the other side, the dealers of fertilizers, seeds, pesticides etc. are also mostly mahajans or owners of large holdings who lend loans to the farmers in bad times or the goods required for agricultural production, and after harvesting, these farmers are forced to sell crops to these same mahajans, at

arbitrary prices. In this way, the existence of Bihari agricultural system has a dual character which confirms the semi-feudalism.

In order to protect the farmers from exploitation by these moneylenders and capitalists, it is necessary that they should be given the opportunity to gain the title of the land. Laws have been enacted to make tenants land owners. These laws provide that the tenant shall acquire the right to own the land after paying the stipulated amount of compensation. But no concrete work has been done in this direction so far in Bihar. Another initiative of the government towards making tenants land owners can be seen as distribution of surplus land to the beneficiaries.

Class	All		SC		ST	
Class	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
Number of Holding ('000)						
Marginal	13180	14703	1634	1867	167	185
Iviaigillai	(89.9)	(90.8)	(94.8)	(95.4)	(87.4)	(87.3)
Small	978	948	73	70	16	18
Siliali	(6.7)	(5.9)	(4.2)	(3.6)	(8.4)	(8.5)
Somi Modium	415	438	15	19	6	8
Semi Medium	(2.8)	(2.7)	(0.9)	(1)	(3.1)	(3.8)
Madium	81	98	1	2	1	1
Wedfulli	(0.6)	(0.6)	(0.1)	(0.1)	(0.5)	(0.5)
Large	3	4	_	_	_	_
Large	(0.0)	(0.0)	_	_		
Total	14657	16191	1723	1958	191	212
10tai	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Area ('000 ha)						
Marginal	3494	3488	418	443	54	56
warginar	(55.9)	(54.6)	(75.9)	(74.6)	(54.5)	(52.8)
Small	1224	1186	91	88	21	23
Small	(19.6)	(18.6)	(16.5)	(14.8)	(21.2)	(21.7)
Somi Modium	1073	1135	39	48	16	21
Semi Medium	(17.2)	(17.8)	(7.1)	(8.1)	(16.2)	(19.8)
Madium	415	505	3	13	7	6
Wedium	(6.6)	(7.9)	(0.5)	(2.2)	(7.1)	(5.7)
Large	45	74		2	6	6
Large	(0.7)	(1.2)	-	(0.3)	(6.1)	(5.7)
Total	6251	6388	551	594	99	106
Total	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

The following table shows the land distribution in Bihar:

Source : Agriculture Census 2011-12, Government of India

# 4. Conclusion

In conclusion, it can be said that all the arrangements were aimed at collecting rent from the farmers of Bihar like the Zamindari system, the Feudalist system, the Capitalist system, the semi-feudal system, etc. The farmers didn't get any benefit of it, rather they lost their land, savings taken, bonded labourers were exploited etc. Therefore, the government abolished these systems immediately after attaining independence. With this, a certain limit of land from the landlords was fixed and additional land was taken under the land Acquisition Act and distributed among the tenants and farmers.

To summarise, the most important reason for under-development of agriculture in Bihar and low level of productivity has been the practise of zamindari. After Independence, the laws made to abolish intermediaries made the centralisation of land in the hands of a few individuals and the real cultivators didn't get any special land from the landlords.

Tenants didn't get special protection under tenancy and rent fixation arrangements. Even today, the tenancy of most tenants is not secured and they have to pay unreasonably high rent. In this land ownership system, it is difficult to increase the output only by technological improvements. Actually, land reforms should precede technological efforts.

It is clear that if the amount of investment in agriculture is to increase, then the survival of the usurer mahajani class and land tax extorting zamindari class who have grabbed the economic surplus, will have to end.

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# An analysis on Reformation of PDS in India

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### Abstract

Public Distribution System of India is one of the largest welfare programme for managing food scarcity and affordability of food grains. Despite the best motives, system was sinking with corruption and leakage issues, failing to fulfill even its basic objectives. Reformation of Public Distribution System has been gathering momentum in the past decades to overcome the constant criticism concerning its lack of transparency and accessibility. This paper tries to analyze different shortcomings and challenges of PDS system in the past and scope for its reforms. Over the years PDS has gone through lots of changes and reforms. Paper attempts to assess the evolution of PDS through different plan period and how each five year plan added to its current form. It also examines the recent reforms introduced by government of India to revamp the Public Distribution System and its current status of progress.

Keywords: PDS, Five year plan, Reforms,

### Introduction

Public Distribution system which was introduced as a ration system during Second World War is still the biggest food security system India carries forward. From the very beginning, PDS had the aim of price stability, food security and meet the nations need during scarcity. PDS is functioning under the joint responsibility of center and state governments. Through PDS, currently the essential commodities like wheat, rice, sugar and kerosene are being allocated to the States/UTs.

PDS was in a kind of governance crisis with various problems associated with it. PDS was criticized for its poor access to public service leading to an all together inefficient system. Rampant corruption, extortion by agents and middlemen lead to widespread leakage with weak or no accountability to card holders. Serious issues like Bogus purchase, allotment of multiple ration cards, adulteration, weighting and billing frauds, lack of political will, and black marketing were deep rooted in the system. Thus Reformation of the whole PDS system was the need of the time and voice of general public to overcome the shortcomings and make the system efficient.

### Reformation of PDS throughout the five year plans

Immediately after the independence, Indian economy had experienced heavy shortage of food grain. The stock of food grains and the agricultural production level was so low that it was not enough to meet the half of the population. There were huge variations among the regions with respect to food availability. So through first plan (1951-56), PDS was used as a vehicle for meeting the requirements of urban and highly food deficit area.

Second five year plan (1956-61) which gave importance to huge investment to unshackle the poverty web of the nation gave rise to highly volatile food prices. Adding to it, the scarcity of food grains was still prevalent in the economy which also resulted in unstable prices. Thus the focal point of second five year plan through PDS was to stabilize the price through agricultural production.

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By the third five year plan (1961-66) country was slowly recovering from the food shortage and agricultural production was gradually improving, another problem was regarding storage. India lagged far behind the warehousing facilities of food grains. Thus, third plan focused on expanding storage facilities. With the effect of green revolution and country becoming self reliant focus of food policy was to preserve the food grains through creating a buffer stock. So the basic PDS policy of Fourth plan (1969-74) was to strengthen the buffer stock of food grains and stabilize price of consumer and producers' price.

Fifth plan (1974-79) with the alliance to Garibi Mitavo campaign focused on PDS being available and accessible to poor section of society. During the sixth five year plan (1980-85) essential supplies programme was introduced for expanding PDS by opening more FPS outlets. Seventh and eighth five year plan in continuation of the previous plan tried to be more inclusive by opening FPS outlets even in remote inaccessible areas, thus expanding its coverage and access. In 1997-2002, Targeted Public Distribution System was introduced during the ninth plan period.

Tenth plan period (2002-07) stressed on the need to introduce reforms like smart card, food cards, food stamps, decentralized procurement. Through Citizens charter and PDS order, Eleventh plan (2007-12) tried to overcome the deficiency of TPDS. Role of Information and communication Technology (ICT) was realized during the twelfth plan period(2012-17). Reforms like expansion of aadhar numbers, opening bank accounts and linking ration cards with aadhar making it convenient for the direct transfer of benefits to the beneficiaries account.

# **Recent Reforms introduced to revamp TPDS**

According to section 12 of NFSA, the central and state governments shall work progressively to undertake necessary reforms in TPDS. Major reforms identified to overcome the shortcoming and inefficiency of the PDS was end-to- end computerization, doorstep delivery of food grains, application of ICT in other functioning of system, seeding aadhar for unique identification, preference for public bodies like cooperatives to run Fair Price Shop to ensure accountability, transparency and to prevent corruption and leakage.

The ministry launched the 'end-to- end computerization of TPDS' during 12th five year plan period. The scheme had two components. Components I comprised digitization of ration card and other data base, computerization of supply chain management, setting up of transparency portal and grievance redressal mechanism. Component II included FPS automation which involved installation of Point of Sale (PoS) devices at FPS for authentication of beneficiaries, recording of sales to beneficiaries at the FPS and uploading of transaction data in central server.

Central government had directed all the states intending to implement NFSA will be required to at least complete component I of computerization. Indian government approved 884.07 crore out of which central government share 489.37 crore and State/UTs share was 394.70 crore. And stipulated time frame to complete this phase I was by 2013. Digitization of ration card and other data base were to be completed by March 2013. And computerization of supply chain management was to be completed by October 2013. But there were lapse in utilization of funds as well as digitization process by many states. Computerization of PDS is at different stages of implantation in different states and UT. Because of unavailability of computer application and hardware were found to be the delaying factors.

One of the areas of reforms identified was door to door delivery of PDS commodities to ensure the supply to the deserved card holders. According to section 24(2) of NFSA, it will be responsibility of state government to take delivery of food grains from the selected depots of Central Government in the State at the price prescribed in Schedule I of NFSA. And it is also the duty of state government to

organize intra-state allocations for delivery of these allocated food grains. Further state government should also make sure that actual delivery of food grains to the entitled card holder.

States like Uttar Pradesh, Delhi and Bihar implemented door to door delivery of PDS food grains. In Uttar Pradesh only 15 out of 75 districts put into practice door step delivery system. Even though this system was followed in Delhi, because there were no GPS enabled devices to monitor it, effectiveness of the door to door services could not be assessed. Bihar have been implementing doorstep delivery to FPS under e-PDS.

Seeding of ration card was another major reform introduced. Seeding of ration card with mobile number is one such reform where the card holder will get details about the arrival and stock of commodities available at Fair price shop which will be notified to them through SMS. Linking of beneficiaries bank accounts and ration cards was another reform introduced which would facilitate the direct cash transfer scheme proposed by government.

The problem of bogus purchase was very common in PDS in the past. There were instances where an individual obtains more than one ration card depriving other chance of needy people. To eliminate such problems, the government of India decided to link ration cards with an individual's Aadhaar card. As Aadhaar is a unique number identification having bio metric details of individuals, it would stop such malpractices. Table 1 shows the current status of ration card reforms adopted by card holders among different categories.

Particulars	AAY	РНН			
Total Ration Card	2,23,34,437	20,43,23,781			
Total Beneficiaries	7,72,91,548	67,65,97,537			
Aadhar seeded Ration card	2,12,78,723	18,05,94,553			
Aadhar seeded beneficiaries	7,28,81,408	60,79,66,449			
Mobile number seeded ration cards	79,72,773	7,12,54,784			
Bank account seeded ration cards	1,19,34,407	3,50,83,165			
Female head of the family	2,40,91,814	13,36,49,075			
Silent ration card	12,11,315	49,65,567			

Table 1: Status of ration cards and its reforms in India 2021

## Source: NFSA

The One nation one ration card (ONORC) scheme has been introduced for at enabling migrant workers and their family members to buy subsidized ration from any fair price shop anywhere in the country under the National Food Security Act, 2013. While the individual can buy food grains as per his or her entitlement under the NFSA at the place where he or she is based, members of his or her family can still go to their ration dealer back home. When a ration card holder goes to a fair price shop, he or she identifies himself through biometric authentication on ePoS, which is matched real time with details on the Annavitaran portal. Once the ration card details are verified, the dealer hands out the beneficiary's entitlements. While the Annavitaran portal maintains a record of intra-state transactions — inter-district and intra-district — the IM-PDS portal records the inter-state transactions.

By 2021, 32 states and Union Territories have joined the ONORC, covering about 69 crore NFSA beneficiaries. According to the Union Ministry of Consumer Affairs, Food and Public Distribution, about 1.35 crore portability transactions every month are being recorded under ONORC on an average. "A total of more than 27.83 Crore portability transactions (including intra-state transactions) have taken place all across these States/UTs since the inception of ONORC in August

2019, out of which almost 19.8 Crore portability transactions have been recorded during the COVID-19 period of April 2020 to May 2021.

Another proposed reform which was initiated in Pondicherry and Chandigarh was cash transfer scheme. This was proposed to solve the problem of storage, procurement and distribution cost and loss incurred for government. As it include continuous efforts for processing PDS distribution which has to be done effectively to the needy section of the society. Measure to curb leakage cash transfer scheme was proposed under National Food Security Act (NFSA), 2013. Through direct cash transfer, beneficiaries are exposed to more freedom of choice of commodities as per the individual and regional taste of each household. This also ensures nutritional security which often is ignored while stressing food security. The out of pocket expenditure to meet the nutrition security incurred by household can be reduced drastically with cash transfers. With allocating cash individual can keep in mind the health benefits of food consumption as well.

# Conclusion

The biggest food security policy, Public distribution systems 'functioning was immersed in various problems like corruption, leakage, bogus purchases, allotment of multiple ration cards, adulteration, weighting and billing frauds, lack of political will, exploitation of middle men and black marketing. Reformation of the whole PDS system was the need of the time. Reforms of the PDS like end-to- end computerization, doorstep delivery of food grains, application of ICT in other functioning of system, seeding aadhar for unique identification, seeding of bank account and mobile number with ration cards to ensure accountability, transparency and to prevent corruption and leakage was on progress stage in India.

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Sweety Thomas(2017), The reforms in public distribution system and the role of cash transfers in India an empirical analysis from Kerala, Central University of Tamil Nadu.

# A study on the relationship between technology spread effect on tertiary sector of Bangalore in Karnataka state of India

### Suha sehar .N

### Abstract:

Technological change or progress refers to the "discovery of new and improved methods of producing goods and services". Sometimes technological advances result in an increase in the available supplies of natural resources. our main objective of this study is to analyse the relationship between the technology spread effect and the development of the tertiary sector and also to know, to what extent the importance of technological learning varies across the tertiary sector that differs in their technological levels in Bangalore, Karnataka India.We found that there is a strong association between technological learning and development. This is indicated by the differences in the influence of knowledge spread which varies across sectors that vary in their technological opportunities. Medium and high technology sectors present the greatest opportunities for technological learning compared to low-technology sectors.

KEY WORDS: Tertiary sector, spread effect, Cobb-Douglass, productivity

### 1. Theoretical Background

The role of modern technology in the development of a country today has occupied a prominent place in the present debates across the globe. The most important aspect covered in these debates is whether the role of technology has anything to do with the utilisation of resources for the rapid growth of the tertiary sector as well as industrialization and ultimately economic development.

Technological change or progress refers to the "discovery of new and improved methods of producing goods and services". Sometimes technological advances result in an increase in the available supplies of natural resources. But more generally, technological changes result in increased productivity of labour, capital, and other resources. The productivity of combined inputs of all factors is called total factor productivity. Thus, technological progress means an increase in total factor productivity. As a result of technological advancement, it has become possible to produce more output with the same resources or the same amount of products with fewer resources.

Moreover, the most important high drivers of growth are the level of technology and the digital revolution that is prevailing in that country. The rapid rate of growth can only be achieved through a high level of technology and the expansion of digital services. According to Schumpeter, "innovation or technological progress is the only determinant of economic progress." In fact, technology can be regarded as the primary source of economic development, and the various technological changes contribute significantly to the development as well as the growth of underdeveloped countries.

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Technological change is the most important factor that determines the rate of economic growth. It plays an important role in capital formation. It is a technological change that can bring about a continued increase in output per head of the population. Thus, it is the prime driver of economic growth.

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But the question arises as to how technological progress takes place. Technological progress takes place through inventions and innovations. The word "invention" is used for new scientific discoveries, whereas "innovations" are said to take place only when the new scientific discoveries are commercially used for the actual production of goods. Some inventions may not be economically profitable to be used for actual production.

Let us discuss how the process of economic growth involves an increase in the production of goods and services. An increase in production can be achieved either through the use of more resources and/or through the realisation of higher productivity by means of using the resources of labour, capital, and land more efficiently. Technological change helps to promote growth in both these ways. It can help in the discovery of new natural resources in the country and thereby enhance the productive potential of the country. There is plenty of literature available on the contribution of knowledge spreading to productivity, e.g., In his study, Abhijeet Biswas (2015), pointed out the role in generating social returns from research and development that compared well or exceeded private returns. Trajtenberg (1990) in his study also underlined the importance of knowledge spreading between firms, industries, and countries as an important component of technological progress. Basant and Kathuria (2012) emphasise the importance of complementary domestic R&D efforts for reaping the benefits of technology in India. There were contradictory findings from scholars who questioned the role of technology. They backed up their claim with TFP estimates that showed very low contributions to economic growth (Young 1994; Young 1995). The contribution of TFP was particularly low when compared to the advanced G-6 group of countries (Ayse Nurefsan Yukse, Emine Sener (2017) This so-called accumulation theme was provided by Sunil Rao (2000) in his now well-known article in Foreign Affairs. Drawing on TFP estimates for India and Indonesia he raised serious doubts about the sustainability of East Asian growth, suggesting that East Asian growth is driven mainly by perspiration (factor intensification) and very little by inspiration (productivity improvements). Authors like Amsden, A (2009) pointed out the shortcomings of the estimation procedures underlying the productivity figures that the accumulation school relied upon. The first of these authors also found that the Asian NICs grew much faster than similar countries with high levels of investment, even after accounting for the advantages of "initial backwardness." Historical case studies also identified learning and innovation, in particular in association with imported capital goods and intermediates, as the major ingredients of growth in NICs (Amsden 1989;Hikino & Amsden 1994;Kim 1997;Kim 1999;Westphal, Kim, & Dahlman 1985). This approach, with its institutional focus, also pointed to the significance of an incentive structure created by the state. This incentive structure focused on export success as the condition for state support.

### 2. Objectives and methodology

Against the backdrop of the above discussion, we in this paper have chosen a descriptive method as well as an empirical type of research. Our study is confined to the technique that was used under descriptive research is the normative survey approach and evaluation which is commonly used to explore opinions according to respondents that can represent a whole population. The survey is an appropriate in this study because it enables the researcher in formulation of generalisations. Two types of direct data surveys are included in this study. Data is collected from the respondents of the business through interview schedules and through questionnaires The universe consists of all the organized retail outlets situated in Bangalore in Karnataka from which 100 retailers are selected randomly for the purpose of the study. Karnataka has a diversified manufacturing sector and features among the leaders in several industries like automobiles and auto components, engineering, pharmaceuticals, garments, textile products, leather products, chemicals, plastics, etc. By means of multi-stage and cluster sampling methods firms from the tertiary sector such as retail, hospitality travel, and pharmaceutical business were selected from Bangalore. A total of 100 respondents were randomly selected from the total population size.

The data is collected from both primary as well as secondary sources. Primary data have been collected through a questionnaire schedule and through the interview method where interviews took place with the owners of organised retail outlets of the tertiary sectors such as retail, hospitality as travel, and pharmaceutical business in the entire Bangalore have been considered as respondents. Secondary sources of data were collected from book, Journals, and websites.

A structured questionnaire was designed to collect the relevant data from the Business respondents. The first part of the questionnaire contained brief information about the respondents regarding their role, age, qualification of the owner of the Business, and demographic profile of the business such as nature of business, Number of employees with firm, location of the business, type of firm, mode of communication of day to day business. The data collected were analysed using the statistical package for social sciences (SPSS) Version 16.0. Descriptive and inferential statistics have been applied to the data. Cross tab analysis was made to test the extent the digitalization in the business.

In the second part, we used an augmented Cobb-Douglas production function similar to Romer (1987) to find out the spreading effect and relationship of productivity with technology.

Thus, our main objective of this study is to analyse the relationship between the technology spread effect and the development of the tertiary sector and also to know to what extent the importance of technological learning vary across the tertiary sector that differs in their technological levels.

## **3.** Estimation and findings

The starting point of our analysis is the following augmented Cobb-Douglas production function similar to Romer (1987).

$$Y_i = A_i K_i^{\alpha} S S_i^{\beta} L_i^{\delta}$$

where Yi represents the output of sector i, K and L represent capital and labour inputs respectively and KSi the technological advancement available in the in sector i. The theoretical model assumes that the production function exhibits constant returns to scale in capital and labour and increasing returns when the technological advancement, which is a measure of externalities deriving from foreign investments in research development. in the above equation, lower case letters represent natural logarithms of variables, and denotes the returns to scale parameter equal to positive or negative. As the returns to scale coefficient is determined econometrically, the assumption of constant returns to scale in capital and labour will be empirically tested. The knowledge stock variable is designed to indicate the importance of international knowledge spreading.

The final data set used in the study covers the period 2018-2021 for 20 manufacturing sectors in Bangalore for 100 samples. To estimate equation 1, we employ a panel-corrected standard error estimation method that accounts for heteroskedastic errors. We estimate the total model. The total model is a matrix weighted average of the within- and the between-sector estimates. The between model shows the deviation of sector means from the overall mean and thus portrays the long-run dimensions of the influence of independent variables on the dependent variable. A Hausman test showed that sector specific effects are indeed correlated with the repressors, suggesting the appropriateness of the within model. We therefore report results from this model only (see Tables 1 and 2), This is line with the results of earlier studies that found that unit specific factors - country, industry etc. - play an important role in influencing the factors contributing to productivity, especially technology spillovers (Fagerberg & Verspagen 2000). We therefore focus mainly on the results from the within model. In general, the results show that knowledge spillovers have been an important contributor to productivity even surpassing the contribution of capital and labour. There are, however, important differences across industry-groups and between policy-regimes.

	Full-sample	High-tech	Med-tech	Low-tech			
Ι	0.245(0.070)**	0.351(0.132)**	-0.026(0.183)	0.134(0.080)			
k-I	0.034(0.027)	0.066(0.051)	0.036(0.075)	0.027(0.029)			
ks	0.148(0.042)**	0.281(0.124)*	0.231(0.055)**	-0.028(0.051)			
Ks x hn	0.023(0.003)**	0.016(0.007)*	0.022 (0.006)*	0.022(0.005)**			
f	-0.006(0.007)	0.005(0.012)	-0.023(0.016)	0.021(0.016)			
Т	0.042(0.009)**	0.012(0.015)	0.057(0.017)**	0.062(0.009)**			
d	0.029(0.012)	0.130(0.161)	0.064(0.143)	-0.004(0.088)			
constant	- 5.904(0.914)**	- 7.720(1.009)**	-3.658(1.607)*	-3.113 (1.115)**			
observations	100	30	25	50			
Number of sectors	20	3	7	9			
R-squared	0.92	0.89	0.86	0.95			
Wald chi2	66773.11	402.72	851.96	8272.75			
Source Standard errors in parentheses * significant at 5%; ** significant at 1%							

## Table-1 Determinants of Productivity (Total model)

Source: Authors calculation using the model -1

We have run a sample for complete technology spreading observation. We found it to be second most important contributor to manufacturing productivity, after returns to scale. The spread effect is also highly significant. Thus not only have technology spreading been significant on their own, but their contribution has been greater at higher levels of domestic market concentration. This result is interesting with regard to the distinctive roles of domestic and external competition in the study area.

Among the industry groups, high and medium technology groups (the capital goods industries) show the highest significance for the spreading variables. In low-technology sectors, spillovers have been significant only conditional on higher levels of concentration. The contribution of the capital-labour ratio, though positive was not statistically significant. Our results with regard to the share of foreign owned firms in output do not confirm the received wisdom that foreign ownership contributes to productivity spillovers. The time trend capturing exogenous productivity increases made significant contributions to productivity, especially in the medium-technology sector.

Table-2 Extent of Technology learning among respondents in (Tertiary sector)

Role as		High-tech	Med-tech	Low-tech
Managing Director	Count	10	5	5
	% roles of Respondents	5	5	5
Proprietor	Count	20	5	15
	% roles of Respondents	10	20	10
Manager	Count	20	15	5
	% roles of Respondents	30	20	5
Employee	Count	50	30	20
	% roles of Respondents	50	20	30
Total	Count	100	100	100
	% roles of Respondents	100	100	100

Source : same as above..

Table 2 shows the Role of the respondent and regarding technology upgradation and digital mode of Business communication. The results show that the business started using digital mode for business communication and more than fifty percent are satisfied that the digitization has helped their business.

### 4. Conclusion

In this paper we set out to examine the importance of knowledge spreading in tertiary sector of Bangaloe in Karnataka using productivity performance and catch up in these sectors. We found that there is a strong association between technological learning and development. This is indicated by the differences in the influence of knowledge spread which varies across industries and respondents. We also found that the contribution of technological learning differs across sectors that vary in their technological opportunities. Medium and high technology sectors present the greatest opportunities for technological learning compared to low-technology sectors.

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#### A Study on Human Capital Development and Economic Growth in India

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#### Abstract

Human capital is regarded as one of the most important economic growth pillars in any economy. The purpose of this paper is to assess the effects of human capital on Indian economic growth. Human capital is analyzed and measured as a determinant of economic growth under the headings of education and health component of human capital. India's population can be a source of economic growth rather than a hindrance. There are some areas in this field where future research can be conducted. One area of research could be the study of human capital and economic growth in India's rural and urban areas.

#### Introduction

Human capital formation is likely to be one of the most important determinants of economic development in an international context, according to the average economist or the World Bank. Individuals' knowledge, information, ideas, skills, and health constitute human capital in nature. Technology may be the driver of today's modern economic growth, particularly in the science base sector and advanced economies around the world, but human capital is unquestionably the energy required to power the vehicle of modern economic growth.

Given the characteristics of the Indian economy, this study empirically measures the effects of human capital development on the Indian economy's economic growth. From the available literature, ranging from the Harrod- Domar model to cross-country studies that used the Cobb-Douglas production function, one can conclude that to estimate the effect of human capital on growth, either education human capital or health human capital as independent or both as independent and more weightage was attached to either education or health proxy variables. The effect is measured under three different headings in the current study.

#### **Review of Literature**

**Petty**, (1690) the concept of human capital is not a new one. Perhaps the first attempt to define and measure what we now call human capital was Sir William Petty. He believed that labour was the father of wealth" and that a measure of its value should be included in the estimation of national wealth.

**Cantillon**, (1755) was more interested in defining the costs of maintaining a slave and his offspring than in estimating the value created by human capital.

Smith's (1776) principal aim was not to measure the "value of the stock of human capital but to understand the reasons why there are different remunerations between different occupations Smith included the acquired and useful abilities of all the inhabitants or members of the society under the idea of capital.

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Adam Smith (1984) argues that because acquired abilities are costly and make men more productive, they must be treated as capital, thus taking up a position similar to that of Adam Smith.

Alfred Marshall (1890) conception of human capital is similar to Mill's; we may define personal wealth so as to include all those energies, faculties and habits which directly contribute to making people industrially efficient.

Schultz, (1961) believed people by investing in themselves, can enlarge the range of choice available to them. It is one way free men can enhance their welfare. Schultz's argument was in line with the new approach taken to the rational choice of investing in human capital.

Nelson and Phelps (1966) Phelps hypothesis suggested that the rate at which the gap between the technology frontier and the current level of productivity is closed depends on the level of human capital.

Levine and Renelt, (1992) suggest that the regression that displays a positive relationshipbetween human capital and economic growth are not robust to the inclusion of other relevant variables.

**Barro**, (1997) in his study revealed that an extra year of male upper-level schooling is associated with a 1.2 % increase in per capita GDP growth rate.

Sianesi and Van Reenen, (2000) estimated concluded that an overall 1% increase in school enrolment rates leads to an increase in GDP per capita growth of between 1 and 3%.

Abbas, (2001) found human capital to be positively related with economic growth in Pakistan at 1% level of significance and at 5% level of significance in case of Sri-Lanka at secondary and higher secondary level respectively.

**O'Mahony and de Boer (2002)** in their work Britain's relative productivity performance: Updates to 1999, confirms that the UK continues to lag behind both Germany and France in terms of labour productivity, and this gap is primarily explained by differential rates of investment in both human and physical capital.

(2006) Oketch in his study revealed that the high investment in physical capital and human capital is a source of labour productivity growth in the medium term in African nations.

Haldar and mallik (2009) suggest that physical capital investment has neither long-runn nor short-run effect but the human capital investment has significant long-run effect on per capital.

Mincel (1995) show that higher growth of technological change in a sector, leads to greater demand for educated and trained workforce through training courses.

Ángel de la Fuente and A. Cicoone (2002) exhibit much greater role of human capital in explaining productivity differential between countries than in supporting growth. In this paper, based on the new theory of economic growth will seek to highlight the role of education and innovation in economic growth in Romania and other EU countries by applying a panel model.

# **Objective of the Study**

- 1. most important determinants of economic development measure the human capital and economic growth
- 2. based on the new theory of economic growth will seek to highlight the role of education and innovation in economic growth

## Methodology

We used three regression models to measure the effect of the human capital on the growth of Indian economy. The first regression model used in the study is to captures the relation of education human capital with the growth. Model second is used to calculate correlation coefficients to measure the health human capital and economic growth association. Finally model third is used to measure the human capital and growth. Data is collected from various sources which includes World Bank database as well. The various proxy variables used to capture the effect of education human capital includes gross enrollment ratios at primary and higher level and expenditure on education.

#### **Results and Discussion**

In this section the results of the estimated models are presented. The results are presented under the three headings of education human capital and economic growth, health human capital and economic growth in India.

## **Education and Growth Estimation**

First the education component of human capital is estimated. For education human capital the proxy variables to estimate are gross enrollment ratios at primary level and gross enrollment ratios at higher level. The proxy variable for economic growth used in per-capita GDP. We expect the regression coefficients to be positive and OLS method is used for estimation. The respective equation for the education human capital as an explanatory variable and economic growth as explained variable is below.

## $y = \beta 0 + \beta 1 X 1 + \beta 2 X 2 + \varepsilon$

where Y is the economic output (the dependent variable), expressed by GDP per capita x1 and x2 are the two forms of education human capital (independent variables) expressed by gross enrollment ratio at higher and gross enrollment ratio at primary level  $\epsilon$ -standard error. The B1 and B2 are two coefficients.

# **Education and Economic Growth**

Here model first of regression is presented. The explained variable is economic growth and explanatory variables are enrolment rates at primary and higher education. The results of applying the regression model table 1 shows that the model of human capital is statistically validated (the significance F is lower than 0.05- the significance level).

According to the results presented in the table 1, we could explain the evolution of GDP per capita in proportion of 95% through the dynamic of the stock of human capital in the economy, considering all other factors as constant.

It can be seen from the estimated coefficients that both are positive indicated that the stock of education human capital contributes to economic growth positively. A one unit increase in the X1 (expressing higher education trained) will increase the GSDP per-capita with 50.65units and a one unit increase in the X2 (expressing primary enrolment) will increase GSDP with 15.63 units. The more important fact is both the variables are statistically significant and hence confirms the results that education human capital had positive and a significant impact on the economic growth of Indian economy.

The estimated equation is y=-1442.23+50.65X1+15.63X2

### Human Capital and Economic Growth Estimation

In this model we measure the effects of the human capital on the economic growth by analyzing how the two components of the human capital

### $y = \beta 0 + \beta 1X1 + \beta 2X2 + \varepsilon$

where Y is the economic output (the dependent variable), expressed by GDP per capita x1 and x2 are the two forms of human capital (independent variables) expressed by educational capital ( expenditure on education as percentage of GDP) and, respectively, health capital, expressed by the life expectancy;  $\varepsilon$  - standard error. The B1 and B2 are two coefficients.

		Coefficient	se	t	
intercept		- 1423.22	417.83	3.44 -	
		50.64	5.93	8.48 significant	
		15.62	4.623	3.270 significant	
Model Summary					
R Squa	R Square .942				

# Table -1: Education Human Capital

F value 160.987 significant

The estimated results are provided in the table 2 respectively. The major findings revealed that a proportion of 90% of the GDP per capita dynamics can be explained by the variance of the two independent variables. The validity of the model is confirmed by the fact that the Significance F is lower than the significance level of 5%.

The estimated coefficient of the life expectancy denoted by X1 indicates that an extra unit increase in the life expectancy would increase the GDP per-capital by 174.509 units. Another component of the education human capital represented by government expenditure on education denoted with X2, indicates when there is one unit change in the expenditure GDP per-capita increased at 48.912 units.

## Conclusions

This paper highlighted the importance of human capital in ensuring economic growth expressed as gross domestic product per capita. The model revealed a positive relationship, statistically significant between GDP per capita and innovative capacity of human capital (evidenced by the number of patents) and qualification of employees (secondary education) as expected according to economic theory.

Unexpected is the negative relationship between education expenditure in GDP and GDP per capita, a possible explanation being the heterogeneity of countries considered. However, the low level of coefficients leads us to conclude that the results are validated against those of Nonnemen and Vanhoudt (1996) which were used as a proxy for human capital share of education expenditure in GDP.

Moreover, the model showed negative influence both the economic crisis and differences deriving from specific countries. In the future we will use in the model as alternative variables for human capital, weighted average of the population enrolled in primary education, secondary and tertiary to highlight how the results were influenced by choosing the proxy for human capital.

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## An Overview Of Sri Lanka Economic Crisis 2022

## Prity Kumari

#### Abstract

Sri Lanka was among the south Asian nations which had better live conditions and economic stability compared to other south Asian nations. But Sri Lanka is facing the worst ever economics crisis in the year 2022, with electricity blackouts and shortages of essential goods. Sri Lankan economic crisis is fast putting citizen in hardship. India being the nearest neighbor has offered its support to help the island nation. The role of China in the affairs of Sri Lanka will be a trouble for India, in future. India depends mainly on Colombo port for the trade purposes. India's trade relationship with Sri Lanka is very important for overall growth sector for India. Economic crisis will affect the relationships between both the countries.

### INTRODUCTION

Sri Lankan economic crisis is unique in the island nations history. This crisis has been marked by high inflation and severe fuel and energy storages. Economic growth has been hampered by high foreign debt, dwindling foreign currency reserves, currency depreciation, and a series of lockdowns. The government blamed the covid pandemic which badly affected Sri Lanka's tourist trade, one of its biggest foreign currency earners. While Sri Lanka's foreign currency shortages become a serious problem in early 2021, the government tried to limit them by banning imports of chemical fertilizer. It told farmers to use locally sourced organic fertilizers, instead this led to widespread crop failure. Sri Lanka had to supplement its food stocks from abroad which made its foreign currency shortage even worse.

### DOMESTIC ECONOMY AND TAX CUT

Sri Lanka is facing its worst economic crisis yet since the country's independence from British colonial rule in 1948. New dynamics continue to unfold in the island nation every day. In May 2022, Prime Minister Mahindra Rajapaksa resigned his post, paving the way for the appointment of the new Prime Minister Ranil Wickremesinghe. This is only the most recent of key developments in Sri Lankan politics and economy in recent years. Towards the end of 2019 and in early 2020, before the Pandemic, the government enacted deep tax cuts in fulfilment of an election promise. This led to the loss of approximately one million taxpayers between 2020 and 2022, a massive challenge for the economy, that was already suffering from widespread tax evasion.

### AGRICULTURE REFORMS, FOREX CRUNCH AND INFLATION

After the 2019 Presidential election, the new President, Gotabaya Rajapaksa outlined a 10-year vision for transition into complete organic farming in Sri Lanka. However, in April 2021 the Sri Lanka government decided to completely ban the import of agrochemical to mitigate the health impact of chemical fertilizers and pesticides in farming, and also to promote eco friendly sustainable agriculture system. This was also a measure to keep a check on Sri Lanka's rapidly depleting foreign exchange reserves from various imports at the point.

Although the transition towards organic farming seemed like an environmentally sustainable step, the sudden shift was like a time bomb waiting to explode. As the new methods of production were more costly with lower yields, this agriculture policy, unprecedented in Sri Lankan history, led to serious impact on the country's economy.

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## **DECLINE OF THE TOURISM**

Sri Lanka's tourism sector accounts for 12 percent of the country's GDP and is the fifth largest sources of foreign currency in the economy. The industry has been damaged by the island nation's deepening economic crisis, out of control gasoline costs and power outages. In 2018 tourism brought in US dollar 4.4 billon and contributed 5.6 percent of GDP but this was reduced to just 0.8 percent in 2020, amidst the pandemic. The severe impact of the tourism sector on the GDP is the cumulative effect of a number of crises faced by the economy in a consecutive manner. The covid 19 pandemic also resulted in a 50 percent revenue loss in 2020 and a consequent drop in tourist numbers.

#### CONCLUSION

The economics crisis in Sri Lanka is a reminder to other countries to constantly introspect their economic policies at regular intervals. It provides a lesson to every nation regarding the adverse consequences that can arise due to ill-timed and irrational policy decisions.

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## Trends and Pattern of Urbanization in Bihar during 1961-2011 : An Analytical Study

Brajesh Pati Tripathi\*

### **Introduction :**

Urbanization has been defined as a form of social transformation from the traditional rural societies to modern urban communities, which is a long town and continuous process. Urbanization does not only shifts the population from rural to urban area to changes the whole social fabric and demographic characteristics like occupation, culture lifestyle and whole behavior. Occupational change agricultural performance especially in production of wheat and rice in districts of Bihar has in one way on the other way must have promoted urbanization. Therefore urbanization reflects the transition from the agricultural economy to the industrial and sources based economy which help in building infrastructure as well as provide access to at least basic facilities to the residents.<sup>1</sup>

Level of urbanization determines the level of economic development in modern world. It also determine the level of transition between agricultural activities and industrial growth. Urbanization pushes or drives exchanges among sources, capital, labour, information technology and social transactions. Finally we can say that urbanization occurs due to movement of people from rural to urban areas, which reads to the growth in the size of urban population, which may also lead to other changes like land use, economy and culture. Urban living is associated with higher level of literacy rate and educational status which ultimately afforts the better health, low fertility and mortality rate. Apart from this there is a greater access to social services and greater opportunities to social and political participation. As the urbanization continues there have been some negative impact too, like poor sanitation, communicable diseases, poor nutrition and poor housing conditions which have directly impact on the quality of life of the people living in the urban areas. The process of urbanization in developed countries has been very slow and steady but in developing countries like India it is very fast and is accompanish by rapid growth in services sectors not by industrialization. In a state like Bihar, urbanization is a recent phenomena and is still unfolding in spite of the fact that urbanization has been considered as an inevitable part of economic development. In spits of this fact, urbanization is clearly a result of the growth process and urbanization industrialization, but there are other factors too which derives the process of urbanization like exchange of goods, services, labour capital and information technology and exchange of social phenomena. In the presence of agriculture economy and absence of non-agriculture economy. Urbanization in Bihar is depressing, especially when we consider the plain topography of the whole state, an ideal geographical conditions for the development of cities. In Bihar only 11.3 percent people i.e. 1.176 crore (according to census2011) live in urban areas which is much smaller than the all India average of 31.2% Urbanization. Bihar has 8.65% of the total population of the country, but it has only 3.1% of the total urban population of the country. Between 20012011, the growth in the urban population increased merely by 8% from 10.5% in 2001 to 11.3% in 2011 and if we consider longer period i.e. between 1961 to 2011 the increase in urban population is only 3.9% from 7.4%. In 1961 to 11.3% in  $2011.^2$ 

Objective of the Study :- The main objectives of this research paper have been following :

(i) To analyse the trends of urbanization in India and Bihar since 1961 to

2011.

(ii) To analyse the spartio temporal variation of urbanization at distinct level

(2001 to 2011)

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(iii) To analyse the impact of urbanization in Bihar

(iv) To analyse the causes behind urbanization in Bihar.

Methodology : The research paper is primarily based on secondary sources of data, which have been collected from different census reports, as well as data have been collected from data district census handbook of different districts of Bihar, office of the Registration General and Census Commission. Ministry of Home Affairs, Government of India and Economic Survey relevant data have been computed, tabulated and analyzed by different statistical methods.

Trend of Urbanization in Bihar (1961 - 2011) :-

Bihar is located between latitude 24<sup>0</sup>20'10' N to 27<sup>0</sup>31'15" N and 83<sup>0</sup>19' 50" E to 88<sup>0</sup>17'40" E longitude and shared state level boundary as well international boundary. Nepal is located in the North of Bihar, whereas, Indian States of Uttar Pradesh in West, Jharkhand in South and West and Bengal is located on the eastern boundary. Bihar with an area of 94163 sq km constitutes only 2.68 percent of the total area of India. Bihar comparises 38 district and the largest city of Bihar is Patna which is a capital of Bihar, whereas Gaya second largest city located on the bank of Phalgu River (Miranjana) is of historical and mythological significance. Gays is known for Vishnupad Mandir and Mahabodhi temple at Bodh Gaya. The state of Bihar has been divided into North Bihar plain and South Bihar plain by River Ganga.

Bihar is the third largest states after Uttar Pradesh and Maharastra in the terms of population. As per 2011 census report total population of Bihar is 104099452 out of which there are 54278157 males and 49821295 females. According to 2011 census population growth rate was 25.42 percent, where as the previous census it was 28.43 percent Bihar contributes 8.60 percent of the total population of India. Bihar recorded a sex ratio of 918 females per and male and literacy rate of 61.80 percent, whereas density of Bihar is 1106 persons per sq. k. out of the total population of Bihar 11.3 percent live in urban area which has been increased by 0.8 percent point in the last decade. The sex ratio in urban areas is 895 females per thousand males, whereas the average literacy rate in urban region in 76.86 percent.

The urban population is growing several times fester than the rural areas, either through natural growth or through the migration from rural areas in search of better job opportunities and living conditions. The urban areas are considered as engines and shrines of social changes because of over all socioeconomic prosperity. In spite of the fact that Bihar has always played an important role in the economy and politics of the country, urban development in the state remained limited.

Census Year	Level of Urbanization (%)		
	India	Bihar	
1961	18	7.4	
1971	18.2	7.7	
1981	23.3	9.6	
1991	25.7	10	
2001	27.8	10.5	
2011	31.2	11.3	

Table 1 : Trend of Urbanization in Bihar and India (1961-2011)

Source : Economic Survey 2019-20, Finance Department, Government of Bihar.<sup>3</sup>

According to 2011 census report, out of the total population of Bihar 11.3 percent are residing in urban area, which is much less than the national average urbanization of 31.2 percent. If we compare it with growth of population we find that according to the census report of 2011, state accounts for higher

growth rate of 25.42 percent as compared to national average growth rate of 17.70 percent. It is also important to mention here that state of Bihar with a total population of 104099452 account for 8.6 percent of the total population of the country, whereas it contributes only 3.1 percent urban population of the nation. If we go through the table-1, we also come to the conclusion that since 1961, the pace of urbanization in Bihar always remained low. According to the census report of 1961, the level of urbanization was 7.4 percent which increased to 11.3

percent in 2011, which recorded an increase of 3.9 percentage point in the level of urbanization. If we compare the rate of urbanization of the country with the state of Bihar as a whole, we find that the pace of urbanization in India is far better than the state. Census year 1961 recorded 18.0 percent urbanization in India, which increased to 31.2 percent in 2011, registered a growth of 13.2 percentage point, which is much higher than the growth of urbanization in Bihar with 3.9 percentage point over five decades. During 2001 and 2011, the level of urbanization recorded the highest growth rate as compared to previous census year, and registered an increase of 3.4 percentage point from 27.8 percent in 2001 to 31.2 percent in 2011, whereas, Bihar as a whole registered an increase of 0.8

percentage point from 10.5 percent in 2001 to 11.3 percent in 2011. Urbanization in Bihar has increased from mere 9.6 percent in 1981 to just 11.3 percent in 2011, as against 23.3 percent in 1981 to 31.2 percent in India as a whole.

It is also very surprising to note that the decadal growth in urban population, according to 2011 census, report is higher than the country as a whole, Bihar registered 35.4 percent decadal urban growth as compared to 32.2 percent in India as a whole, which is 3.2 percentage point lesser than the decadal growth of urban population in Bihar. This increase in the size of urban population will help the Bihar state government in taking up measures of urbanization in those areas, which have come under jurisdiction of Nagar Panchayat, Nagar Parishad and Municipal Corporation. Bihar government has prepared a draft to change the old criteria to transform semi-urban and rural areas into urban area.<sup>4</sup>

The annual exponential growth rate of urban population shows that Bihar registered 3.24 percent annual exponential growth rate in 1961 which declined to 3.06 percent in 2011 whereas India as a whole recorded 2.34 percent annual exponential growth rate of urban population in 1961 which increased to 2.76 percent in 2011. Looking at the table-1 reveals that the level of urbanization in Bihar has barel moved over the last five decades from 1961 to 2011, an rural area in Bihar still continues to absorb increased population. Although, there is migration from the rural urban area in Bihar but, still it is not so fast and is mode. The modest migration of people from the rural to urban and may be due to the urban planning in Bihar, which is still the initial stage. The urban infrastructure, like water supply, electricity, sanitation, sewer, toilets and transportation systems are still in developing stage.<sup>5</sup>

Districts	Urbar Grov	nization vth (%)	Districts	Urbar Grow	nization /th (%)
	2001	2011		2001	2011
Patna	41.6	43.1	Dabhanga	8.1	9.7
Nalanda	14.9	5.9	Madhubani	3.5	3.6
Bhojpur	13.9	14.3	Samastipur	3.7	3.5
Buxar	9.2	9.6	Begusarai	4.6	19.2
Rohtas	13.3	14.5	Munger	27.9	27.8
Kaimur	3.3	4	Sheikhpura	15.6	17.1
Gaya	13.7	13.2	Lakhisarai	14.7	14.3

Table 2 : District wise Urbanization in Bihar (2001 and 2011)

Jehanabad	12.1	12	Jamui	7.4	8.3
Arwal	0.0	7.4	Khagaria	5.9	5.2
Nawada	7.7	9.7	Bhagalpur	18.7	19.8
Aurangabad	8.4	9.3	Banka	3.5	3.5
Saran	9.2	8.9	Saharsa	8.3	8.2
Siwan	5.5	5.5	Supaul	5.1	4.7
Gapalganj	6.1	6.4	Madhepura	4.5	4.4
W. Champaran	10.2	10	Purnea	8.7	10.5
E. Champaran	6.4	7.9	Kishanganj	10	9.5
Muzaffarpur	9.3	9.9	Araria	6.2	6.0
Sitamarhi	5.7	5.6	Katihar	9.2	8.9
Sheohar	4.1	4.3	Vaishali	6.8	6.7
			Bihar	10.5	11.3

Source : Economic Survey 2019-20 Finance Department, Government of Bihar.<sup>6</sup>

Pattern of Urbanization in Bihar :

According to census report 2001-2011, Table 2 reveals the pattern of urbanization reveals an inter-state disparity. Out of 38 districts in Bihar there are ten districts names as Patna (41.6), Nalanda (14.9), Bhojpur (13.9), Rohtas (13.3), Gaya (13.7), Munger (27.9), Sheikhpura (15.6), Lakhisarai (14.7) and Bhagalpur (18.7) recorded higher urbanization rate as compared to the state average rate of 10.5 percent. District wise urbanization ranges from 41.6 percent in Patna to 3.3 percent in Kaimur, Patna with the highest urbanization rate is followed by Munger (27.9), Bhagalpur (18.7) and Sheikhpura (15.6). If we go through the variation in the rate of urbanization at district level, we find that there is a difference in 38.3 percentage points between Patna (highest) and Kaimur (lowest). Kaimur with the lowest urbanization rate (3.3) is 7.2 percentage point lower than the state average (10.5 percent) and 24.5 percentage point lower than the national average urbanization rate (27.8 percent) in 2001. It is important to mention here that, all of the ten districts, which have recorded urbanization rate higher than the state average, are located in South Bihar plain and accounted for the overall increase in urbanization rate of the state of Bihar. Being a capital city as well as development of industrial and educational facilities, Patna has attracted people not from the adjoining districts, but from all over the state, which had to increase in the rate of urbanization. Patna the capital of Bihar state has been considered as one of the fastest growing cities in India. Similarly, Gaya, a centre of learning and religious place for Hindus and Buddhism has attracted people from all over the state an adjoining districts. If we categorize all the 38 districts of Bihar (No data of urbanization is available for Arwal Because it has been formed in 2001into Low (Below 5 percent) Moderate (5.80 to 20 percent), High (10.01 to 15 percent) and Very High (above 15 percent), we find that there are seven districts, named as Kaimur, Madhubani, Sheohar, Samastipur, Begusarai, Banka and Madhepura recorded low level of urbanization rate, below 5 percent. Out of these seven districts, five live in north Bihar, and two in South Bihar Bihar names as Banka and Kaimur. These are nineteen districts, which have recorded moderate urbanization rate between 5.0 to 10 percent, whereas, there are seven districts, which can be categorized under high level of urbanization rate between 10.01 to 15 percent, and there are only four districts named as Patna, Munger, Sheikhpura and Bhagalpur, which can be categorized under very high level of urbanization rate above 15 percent. It is also important to mention here that all these four districts categorized under very high urbanization rate are located in South Bihar plain, may be due to Patna centric urbanization. According to 2011 common report the rate of urbanization is among the showed in the country and recorded the state average urbanization rate of 11.3 percent as against the national average of 31.2 percent. The pattern of urbanization has been skewed in Bihar and there has been inter-state disparity in the rate of urbanization in Bihar in the census year 2011 too, which varies from 43.1 percent in Patna to only 3.5 percent in Banka. Patna with the highest urbanization rate is followed by Munger (27.8), Bhagalpur (19.8), Begusarai (19.2) and Nalanda (15.9). All these four highly urbanized districts are located in South Bihar, except Begusarai. Patna, again in 2011, has maintained its primacy and accounted for 14 percent of the total urban population of Bihar, which is followed by Gaya with 4 percent of the total urban population of Bihar which has recorded the urbanization rate of 13.2 percent. Out of total 199 towns in Bihar, there are only 26 towns which have a population of at least one lakh, where there are possibility to develop secondary and tertiary activities. Out of the 38 district in 2011, there are eleven districts, which have recorded urbanization rate higher than the state average urbanization rate of 11.3 percent, and these districts are Patna, Nalanda, Bhojpur, Rohtas, Gaya, Jehanabad, Begusarai, Munger, Sheikhpura, Lakhisarai and Bhagalpur.

Category	Range	No. of	No. of	Name of the Districts	
		Districts 2001	Districts 2011	2001	2011
Low	Below 5 percent	8	7	Kaimur, Arwal, Shohar, Madhubani, Samastipur, Begusarai, Banka, Madhepura	Kaimur, Shohar, Madhubani, Samastipur, Banka, Supaul, Madhepura,
Moderate	5.01 to 10 percent	19	19	Buxar, Nawada, Aurangabad, Saran, Siwan, Gopalganj,	Buxar, Arwal, Nawada, Aurangabad,
				E. Champaran, Muzaffarpur, Sitamarhi, Vaishali, Darbhanga, Jamui, Khagaria, Saharsa, Supaul, Purnea, Kishanganj, Araria, Katihar	Saran, Siwan, Gopalganj, W. Champaran, E. Champaran, Muzaffarpur, Sitamarhi, Vaishali, Darbhanga, Jamui, Khagaria, Saharsa, Kishanganj, Araria, Katihar
High	10.01 to 15 percent	7	6	Nalanda, Bhojpur, Rohtas, Gaya, Jehanabad, W. Champaran, Lakhisarai	Bhojpur, Rohtas, Gaya, Jehanabad, Lakhisarai, Purnea
Very high	Above 15.00 percent	4	6	Patna, Munger, Sheikhpura, Bhagalpur	Patna, Nalanda, Begusarai, Munger, Sheikhpura, Bhagalpur

Table 3 : District wise comparison of Rate of Urbanization (2001-2011)

If we follow the similar classification approach to classify districts of Bihar in low, moderate, high and very high rate of urbanization, as it has been followed in the census year 2001, we find that there are

seven districts, which can be categorized under low level of urbanization below 5 percent. Out of these seven districts Begusarai has recorded a tremendous growth in urbanization rate from 4.6 percent in 2001 to 19.2 percent in 2011, whereas, Supaul, which was categorized under moderate level of urbanization in 2001, has now been categorized under low level of urbanization because of decrease in urbanization rate from 5.1 percent in 2001 to 4.7 percent in 2011, registered a decline of 0.4 percentage point. Begusarai which recorded the tremendous increase in urbanization during

2001 to 2011 registered an increase of literary rate from 47.98 percent in 2001 to 63.87 percent in 2011, but there is no urban agglomeration inside Begusarai district. Apart from this Madhubani, Samastipur and Madhepura also recorded decline of 0.1, 0.2 and 0.1 percentage point respectively.

Out of 38 districts nineteen districts can be categorized under moderate level of urbanization between 5.01 to 10 percent, whereas there are six districts, which can be categorized under high level of urbanization between 10.01 to 15 percent, and only six districts can be categorized under very high rate of urbanization above 15 percent.

Urbanization presents the transition from agricultural economy to modern and industrial economy as well as developed infrastructure and access to different facilities. Modernization involves shifting of rural population to urban area, with complexity in socio, economic process like change in occupational structure, social fields, life style, culture and behavioral aspects. The urbanization in India has been expressed as percentage of population living in urban area. In spite of the large population, but due to the absence of non agricultural sector, the urbanization rate in Bihar is just 11.3 percent as against 31.2 percent in India as a whole in 2011. Apart from the low urbanization rate, Bihar has recorded a significant growth in the rate of urban population growth and 72 new towns were added during the decade 2001-2011. One of the important fact, which we have noticed that in the last few year, Bihar has witnessed relatively higher rate of economic growth, but the rate of urbanization is yet very low as compared to other states and the country as a whole. If we go through district wise pattern of urbanization in Bihar we find that South Bihar is considerably more urbanized as compared to North Bihar.

	2001				2011			
Town Class	Number of towns	Present of towns	Population	Population share	Number of towns	Present of towns	Population	Population share
Class I	19	15-8	5144150	59.3	26	13.1	6755570	57.5
(1,00,000 & above)								
Class II (50,000 =99,999)	10	13.3	1186294	13.7	28	14.1	1829820	15.6
Class III (20,000 =49,999)	65	54.2	2050588	23.6	76	38.2	2539376	21.6
Class IV (10,000 =19,999)	17	14.2	280820	3.2	22	11.1	334484	2.8
Class V (5,000	3	2.5	19948	0.2	38	19.1	264276	2.2

Table 4 : Number of towns and population shares in Bihar

=9,999)								
Class VI (less than 5,000)					9	4.5	34690	0.3
Total	120	100	8681800	100	199	100	11758016	100
c C	2001	10011						

Source : Census 2001 and 2011

Table 4 reveals that, class I, class II and class III town accounted for 95.67 percent of total urban population, while rest of the class IV and class V towns accounted for only 3.4 percent of the urban population. Out of 120 towns in 2001, there are 19 class U towns which comprise a total population of 5144150 whereas, the largest number of towns are categorized under class III towns, which accounts for 54.2 percent of the total number of towns and only 2.5 percent of the towns are categorized under class V towns, which are 3 in number.

Table - 4 reveals that there is no significant change in the number or the percentage of population share of class I, class II and class III towns, but there has been a perceptible change in the number of class V towns, which has increased from only 3 towns in 2001 to 38 towns and the percentage of population share also increased from 0.2 percent in 2001 to 2.2 percent in 2011. There is a remarkable increase in the number of towns from 120 in 2001 to 199 in 2011. Census year 2011 also reveals that class I, class II and class III towns account for 94.7 percent of the population share, which is 0.97 percent point lesser than the previous census report of 2001. Apart from this rest of the class IV, class V and class VI towns account for only 5.3 percent of the population share. It is important to mention here that according to census report 2011, there are 9 class VI towns, which were absent in the census report 2001. This addition of class I towns accounted for largest share of urban population both in 2001 and 2011. Bihar state reflects the unbalanced urbanization with the lowest number of smaller towns, which may be attributed to the fact that the industrialization and urbanization is Patna centric. Because of this Patna urbanization rate in Bihar is still 11.3 percent in spite of the fact that 79 new towns have been added to its urban portfolio.

Urbanization of Bihar in detail, we can divide the state into three parts :

- (i) North-East Bihar
- (ii) Rest of North Bihar
- (iii) South Bihar

(i) North-East Bihar : This part consists of 7 districts i.e. Supaul, Saharasa, Madhepura, Araria, Kishanganj, Purnea, and Katihar. These are divided into two divisions i.e. Koshi and Purnea. This part has very low level of urbanization of Bihar itself. Supaul and Madhepura have very poor urbanization, where only 5% population live in urban locations. This is due to frequent floods in the region. More of the districts in this part has urbanization more than 10% except Purnea district where 10.5% of population live in urban areas. Remaining five districts have urbanization ranging between 5-10%.

(ii) Rest of North Bihar : This part is divided into three divisions as given below :

(a) Darbhanga : This division consists of three districts i.e.

Dharbanga, Madhubani and Samastipur. This commissionary has 5.46 urbanization, even lesser than previous Koshi and Purnea commissionary Dharbanga has highest (9.7%) urban population while Samastipur has only 3.5% urbanization (lowest).

(b) Saran : This division consists of three districts i.e. Saran, Siwan and Gopalganj which has slightly most urbanization i.e. 7.08%. In this commissionary Saran has highest 8.9% urban population while Siwan has only 5.5% of the urban population (lowest).

(c) Tirhut : This commissionary comprised of six districts i.e. West Champaran, East Champaran, Sheohar, Sitamarhi, Muzaffarpur and Vaishali. These have even more urbanization of about 8.025% West Champaran has highest i.e. 10% urbanization Sheohar has lowest i.e.

4.31% urban population.

(iii) South Bihar : This part has four divisions which are following :

(a) Patna Division : This commissionary has six districts Patna, Nalanada, Buxar, Bhojpur, Rohtas and Kaimur. This division has highest urbanization of about 22.72% Patna has highest urbanization of about 43.1% while Kaimur has lowest urbanization having only 4% urban population.

(b) Munger Division : This division consist of Munger, Jamui, Lakhisarai, Sheikhpura and two district of North Bihar i.e., Begusrai and Khagaria. This commissionary has second highest urban population i.e. about 15.33%. In this division, Munger has highest urban population of 27.8% while Khagaria has lowest i.e. 5.2% urban population.

(c) Bhagalpur Division : This division has five districts i.e. Aurangabad, Arwal, Jehanabad, Gaya and Nawada. In this division Gaya has highest 13.2% urban population, Arwal has lowest i.e. 7.4%

### Causes of low urbanization

In spite of the plain topography of Bihar and an ideal condition for the development of towns, the urbanization rate is very slower as compared to the nation as a whole. According to 2011 census report 1.176 crore or 11.3 percent population live in urban areas, which is much smaller than the national average (31.2 percent). During 2001-2011, there has been an increase of only 0.8 percentage point. There may be several causes behind this slow rate of urbanization since 1961 to 2011, which are given below :

Low level of literacy rate, which is just 61.80 percent as against 74.04 in the country as a whole.

State of Bihar lags under various infrastructure parameters and development, like per capita availability of power, industry, roads etc.

Lack of mineral resources due to division of Bihar and formation of new state Jharkhand.

 $\Box$  The contribution of industry in state's GSDP is only 20 percent which led to low rate of urbanization.

 $\Box$  Recently released economic survey 2019-20 reveals average 10 percent growth, which is higher than the growth rate of the nation as a whole. the per capita GSDP of Bihar was Rs. 47541 at current prices and Rs. 33629 at constant prices.

Low financial sources to boost the industrial growth.

 $\Box$  Weak industrial policy by the government of Bihar and lack of political will with Red Tapism are the another important causes of low urbanization.

Conclusion :

Bihar extends over all fertile plain of formed by Himalayan river Ganga and its tributaries and distributaries. Bihar is characterized by very high population growth as compared to the nation as a whole. This high growth of population along with low rate of urbanization has hampered the socioeconomic development of the state. This low economic growth has aggravated the poverty and has reduced the employment opportunities. In spite of the fact that state of Bihar has posted relatively high rate of economic growth in the last few years, yet there is low level of urbanization as compared to nation as a whole, which puts the state in a paradoxical situation. Due to the absence of strong non agricultural sector like industries and services, the rate of urbanization in Bihar is still 11.3 percent in spite of high rate of population growth and high density. The growth rate of urbanization in Bihar has always remained very slow since 1961 to 2011. The rate of urbanization was 7.4 percent in 1961 as against 18.0 percent in India as a whole, which reached to just 11.3 percent in 2011, as against 31.2 percent as the rational average urbanization rate. The trend of urbanization reflects that there has been an increase of only 3.9 percentage point increase in India as a whole. During 2001 and 2011, the level of urbanization has increased by only 0.8 percentage point as against 3.4 percentage point in India. The position of urbanization in Bihar is unbalanced, as South Bihar, a more urbanized that North Bihar and the urbanization is mostly concentrated in large cities like Patna, Munger, Bhagalpur etc. Urbanization varying from the highest in Patna (43.1 percent) to the lowest in Banka (3.5 percent).

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Sheik Hyder Ali D.S.

## ABSTRACT

Agriculture is considered to be the backbone of Indian Economy; it is considered to be one of the prime moving factors of economy is responsible for generating huge dividends in the form of revenue. Inspite of high growth rate of Indian economy, it is still not in good shape, there are many issues and challenges that are paid lax attention. India is one of the chief suppliers of items like spices, pulses, saffron and milk, it contributes a major chunk to the GDP of nation, it impacts the lives of majority of Indians, however the figures are coming down.

KEY WORDS: Indian agriculture. Challenges, Issues

#### **Introduction** :

Indian economy is partially dependent on agriculture. The population is involved in one kind of farm activity or other. These include horticulture, pisciculture, Floriculture or animal husbandry One cannot deny the fact that after the infusion of Green Revolution, production of crops has tremendously increased. A huge slice of Indian population still lives below poverty line and is somehow facing malnutrition. Most of the regions which receive scant rainfall are yet to experience decent Improvements in productivity and rural income. People who reside in remote and backward areas still suffer from lack of access to basic services like finance, extension and inputs. This has resulted a distress among rural population. Farmers are confined to small holdings of land and this has led to the increase in small and economically non feasible holdings. This is responsible for producing more food from limited sources. The infrastructure too does not support in the increased yield. Although for the last few years, there has been a diversification of high value varieties of fruits and vegetables, yet the rising demand for food items has lead to a phenomenon of food inflation. What adds to the existing stock of challenges for Indian farmers is increasing deregulation of trade. Most of the times, farmers are sometimes made to produce according to the demand and quality standards. This has lead to the increase in the expansion of farming agreements. It should be however kept in mind that growers should not be exploited. Pal and Jha (2007) in their study revealed that the participation of private sector in R & D is on increase, the biggest investment is in chemicals and food processing. According to the planning commission (2011) some of the private sector research and industry focus their attention on crops that have a good market value, as a result of this; most of the crops get lax attention. Government of India (2011) reported that the speedy expansion of super markets and agricultural goods has lead to the rising demand of food items and slower supply In most of the commodities

### Methodology

The data has been collected from various secondary sources like research papers, review papers, journals, articles, libraries and syndicated sources

Major issues of Indian agriculture:

The problems faced by India agriculture are either natural or manmade; some of the problems that Indian agriculture faces are listed below Small and unorganised land holdings: The biggest threat to the Indian agriculture is the unorganised sown area that is distributed into seemingly small and scattered pieces of land, this is difficult to manage.

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The problem does not seem to end here as small holdings continue to occupy land and make the whole system disturbed. This problem is more rampant in thickly populated areas like Kerala, West Bengal, Uttar Pradesh and Bihar. The reason for such a sorry state of affairs is Inheritance laws where small piece of land is distributed among many sons. This is one of the major reasons of low agricultural productivity. The entire process becomes very time consuming in moving manure, fertilizers, seeds and cattle from one piece of land to another. Another reason is that of irrigation which an issue in small fields he comes. A huge portion of fertile land gets wasted in this process. This problem can be solved by integration of these small land holdings and creating farms that are bug instead of small patches of land. This problem can be solved by pooling the land together by farmers and collectively working on them. They can share the profits later.

Problems related to seeds:

In order to attain good yield of crops, one of the basic requirement is that of quality seeds. Seeds are crucial for attaining good crop yield; it is unfortunate to note that most of the farmers do no have access to quality seeds which affects their produce. The seeds are priced high and marginal farmers do not afford at such hiked rates thus quality is compromised. To counter this problem. Government established NSC and SFCI to augment the selling of quality seeds to farmers. Improving seed variety can better the production and help achieving diversity in varieties that meet the needs of myriad climatic zones of India.

Problems related to manures and fertilizers:

Indian people have been growing crops on land for thousands of years and do not care much for its replenishment This has lead to the depletion and exhaustion of quality soils and often results in low productivity. Using quality manures and fertilizers can however solve this problem. Manures do the same role to soils that nutrition does to humans. Well nourished soils can deliver great results in terms of improved productivity and it can lead to about seventy per cent of growth in terms of production. In order to maintain the quality of the fertilizers, 52 fertilizer quality control laboratories have been set up in different parts of the country in addition, there is one Central Fertilizer Quality Control and Training Institute at Faridabad with its three regional centres at Mumbai, Kolkata and Chennai.

Problems related to irrigation:

India holds the record of being second largest irrigated country after China. Irrigation is pivotal in a tropical country like India because people here cannot rely much on rains which is indispensable for sustained growth. There can be problems of over migration also and care must be taken to safeguard the harmful effects of over or under irrigation

### Dependence on manual labour:

Most of the parts of country yet to see the light of mechanisation in agriculture. Dependence on humans for activities like ploughing, triggering weeding, harvesting a threshing a barrier in achieving goad results. It results In wastage of human labour as these jobs can be done. with the help of machines in a better way. Mechanization of such operations is required to stop wasting labour force so as to make farming convenient and efficient. Mechanization improved significantly after independence and supply of uninterrupted power is needed to achieve his objective. Strenuous and continued efforts should be made to encourage the farmers to adopt technically advanced agricultural equipment's in order to carry farm operations timely and precisely and to economise the agricultural production process in a better way.

## Marketing of agricultural produce:

Marketing of agricultural produce is still a big issue for rural India. The absence of sound marketing facilities increases the dependence on local traders and agents. for supplying the goods to designated markets and they charge huge prices. This causes the distressed sale of produce. To meet the needs of debt, poor farmers have to sell their produce at meagre price which exploits them In an organised marketing setup, private lenders and middlemen won't be able to dominate the markets which otherwise take away more than 45 per cent of price. Thus regulation of markets becomes imperative in this scenario.

Lack of storage facilities:

This problem is mostly found in rural India where storage facilities are mad equate. Farmers sell their produce soon after the harvest at the prevailing prices. Storage facilities are very important to avoid losses and to benefit both the farmers and the consumers.

Problems related to transport:

The lack of efficient and cheaper means of transport, is also one of the challenges faced by Indian agricultural setup. There are numerous villages at present that are not connected properly with highways or main roads. As a result of this, farmers cannot reach and explore, the untapped markets that can fetch them good prices and reaching out to places without having adequate means becomes a challenging task.

Inadequate capital:

Running a successful agricultural setup requires capital, with the improvements in farm technology, role of capital is becoming more important. Most of the capital is locked up in assets like land and stocks which make people borrow from others. Farmers approach lenders. commission agents which provide interest at exorbitant rates and interest.

Supply chain bottlenecks:

Agricultural supply chain is one of the most important aspects of agriculture. But it is full of loopholes which makes it inefficient. Sometimes involvement of so many people in a supply chain makes it inefficient. Plus the farmers have to sell their produce at whatever price they are provided, the government can come into play by regulating the market and have structured grievance settlement setup.

New challenges to Indian agriculture:

Indian agriculture is still in doldrums, no matters of effort and finances have gone into improving the conditions but a lot more needs to be done. One of the major challenges is that of climate conditions. Farmers have to meet the growing demands of people in shorter span of time. They need to speeded up their production in shorter span of time. In rural India, people are illiterate, conservative and superstitious, they are hesitant to adapt to new practices and technologies that can improve their produce. Also India is a thickly and densely populated country; the pressure on land is too much which is responsible for further fragmentation of uneconomic holdings. What adds to the misery of Indian farmer 15 Land Tenure system which involves Zamindari system: here stakeholders exploit growers in form of rent ownership and malpractices.

### Discussion:

From the above challenges, one can conclude that Indian agricultural set up is riddled with problems at present; however each problem can be tackled with planning, strategizing and prioritizing. Much attention should be paid towards making India self sufficient in terms of agriculture and steps should be taken to overcome all the problems mentioned above. It cannot be achieved in few months, but starting

out is the key Farmers can start out by growing crops that yield higher produce and are easily available. Dependence on traditional crops can be lowered and seed banks can help farmers achieve this goal. Also, farmers should be supplied with timely and reliable market information supply chains should he improved, storage facilities should be looked after to improve the overall agriculture in India. Focus on improving the overall yield is important which can be achieved by improving infrastructure, use of improved technologies, improving soil fertility and preventing erosion.

## Limitations of study:

The present study is based on the secondary sources of data and no statistical tool has been used. Also, it gives a theoretical approach of study which does not enhance the statistical value of study.

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### Harnessing Demograpic Divident To Achive Inclusive Growth

Vineet Kumar Alok Kumar

### ABSTRACT

People's involvement and participation in various welfare schemes is indispensible for triumph of true democracy. The success of democracy is evaluated on the basis of how we Plan for the unplaned and reach to the unreached. Democracy would loose its signifance if the benifit of growth do not reach to unreached. Thus ,people's participation as well as policy intervention is indispensable in dealing with various employment and growth related issues in India and that will mark the roadmap for inclusive and sustainable development.

The demographic profile and socitals essentials of inclusive growth is skewed towards urban development. It is found that there is a clear need of uplifting of rural economy espcially the rural infrastructure development. Adequate and accessible infrastructure millionsre not only enrichs the quality of life but also brings betterment of rural livelihood. Better infrastructure is always positive correlation with economic development.

keywords: Democracy, sustainable, inclusive, economy, infrastructure, rural.

### INTRODUCTION

To make India FINE(Finance,Innovation,Networking and Entrepreneurship), Government of India has undertaken a range of schemes to acheive faster socio economic development.Initiatives like Disital India, Start up India, Stand up India etc to bring inclusive development in India.These schemes are specially designed to address the need of the youth and marginalised section of society.

India is uniquely placed in terms of demographic divident.Over 62% people in the country fall in the age group of 15-59 years which is expected to rise up to 56% by 2030.However ,we have not been able to leverage the demographic dividents in true sense.It is very much possible to convert this segment of population into goldmine of productivity and prosperity by creating an entrepreneurl ecosystem conducive for nurturing millions of micro entrepreneurs who may eventually become weaith creators instead of being satisfied merely with whatever comes their way.

Aatmanirbhar Bharat is going to create incredible opportunities for all without any discrimination. Thus, the country is already moving on the path of inclusive growth and the critics need to look at rising number of start ups and other small entriprises instead of just counting the number of jobs created.

### DISCUSSION

There has been a growing trend towards increasing employment opportunities in the country, sector projections requirements wise of human resource till 2023 are given table. There has been a global trend towards decline in the employment in recent times.Worldwide, the unemployment rate is said to be 6.5 to 7 of the total workforce.so around 8 % of unemployment in the country. However, the payroll population is said to be out of job. However, the payroll data in the country indicates that the scenario is not as bad as it appears.

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The ministry of skill development and entrepreneurship has enable creation of a number of skill universities to foster holistic vocational education in the country. The concept of skills universities is unique and innovative. Traditionally the youth in the country learnt the vocational skills from their family. Which restricted their upward mobility. Formal vocational training through the skills universities is likely to resolve the persistent refrain of the industries that the job seekers are generally not employable.

# Table 1: Sector-wise Projection of Human Resources Requirements till 2022

Sector Required Human

- Resources in2017
- (in million)
- Required Human
- Resources in
- 2022 (in million)
- Difference in Human
- **Resources Requirements**
- (2022 2011) (in miliion)
- I Agriculture 229 215.5 13.5
- 2 Building Construction and Real Estate 60.4 91 30.6
- J Retail 45.3 56 t0.7
- 4 Logistics, Transportation and Warehouse /-i 3t.2 8.2
- 5 Textile and Clothing 18.3 25 6.1
- 6 Education and Skill Development 14.8 18.I J.J
- 1 Handloom and Handicraft t4.1 8.8 4.7
- 8 Auto and Auto Components 12.8 5 2.2
- 9 Construction Material and Building Hardware 9.7 2.4 2.1
- 10 Private Security Services 8.9 2 3.1
- 11 Food Processing 8.8 1.6 2.8
- t2 Tourism, Hospitality and Travel 9.1 4.6 4.9
- t3 Domestic Help 7.8 1.1 i-J
- t4 Gems and.Iewellerv 6.i 9.4 -r --)

- 15 F.lectronics and TT Hardware 6.2 9.6 3.4
- 16 Beauty and Wellness 1.4 15.6 8.2
- t7 Fumiture and Furnishings 6.s t2.2 5.'7
- 18 Healthcare 4.6 7.4 2.8
- 19 Leather and Leather Goods 4.4 l.l 2.1
- 20 IT and ITeS 3.8 5.3 1.5
- 21 Banking, Financial Services and Insurance 3.2 4.4 1.2
- 22 Telecommunications 2.9 5.1 2.8
- 23 Pharmaceuticals 2.6 4 1.4
- 24 Media and Entertainment 0.7 t.3 0.6

Total s 10.8 614.2 103.4

# NATIONAL RECRUITMENT AGENCY ... A game changer.

The national Recruitment agency is likely to be a game changer in terms of streamlining and standardising the process. The govt. is one of the largest emloyers in the country. So the youth aspiring to join the govt. services can also expect a better deal.NRA envision a computer based test for the job aspirant with validity of score for three years. The NRA is based on the principle of inclusivity, equity and fair play. It is highly transparent system due to no any human interaction in shortlisting of candidates. Indeed, NRA guarntees freedom from multiplicity of tests, delay in result announcement and nepotism as well as unfair practices which earlier charecterised the govt recruitments. The youth can just focus on one test and improve their chance for govt. job without any hussle.

# CHALLANGES

Covid 19 pandemic has certainly devastated a large number of working population. However post covid scenario, bringing the workers back from their native place and providing them suitable work opportunities is certainly a daunting task.

The government of India has already announced a slew of interventions to revitalise the MSME sector which provide 90% employment opportunities in the country. These interventions are likely to enable the MSME sectors absorb the shock of the pendemic in terms of reduce demand in the markets and carry on their respective businesses as usual. The sooner MSME sectors back on track, the better it is for the economy in general and employment in particular. MSME sector will be better placed to handle the post covid emloyment challanges ,thanks to enabling ecosystem being promoted by state and central gov. The adversity create new opportunities for every sectors to leverage in order to servive in the crisis in due course.

# **OPPORTUNITIES.....**

Employment generation is not enough unless it helps in reducing poverty and inequality. There ase cases where people are living in acute poverty in spite of being employed. It is found in informal sectors where congenial avenue not adiquate for poorly employed peole. So the challanges to acheive inculsive growth of two types viz employment generation and ensuring high emplyee productivitiy.efficiency and effectiveness of the employed people so as to augment their income

# CONCLUSION

The Government seems to be committed to inclusive growth and employment generation so as to accomplish the lofty goal of \$5 trillion economy while ensuring that no one is left out in the race for holistic development. The initiatives of the government of India play a crucial role in fostering entrepreneurship, innovation and inclusiveness in the country. The three 'f i.e. funds, functions, and functionaries are needed to optimally operate to enhance the desired benefits that can percolate down to the last person in the society. Planning is fine but it needs to be properly implemented within the given time framework and within the resource constraints to get the desired outcome. However, the success of all these schemes will depend on effective and efficient governance, timely implementation and close monitoring ofvarious schemetransparency at all levels. s and adherence to accountability and Iie

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### "Impact of COVID-19 on India-China Trade"

### **Bharat Bhushan**

### Abstract

The COVID-19 pandemic has impacted the global trade and hence also aided soft power shifts. The paper focuses on Indo-China bilateral trade by providing a background of trade trends in the yesteryears between the countries and briefly discusses their trade principles. Further, it attempts to track the trade transactions between India and China during the pandemic. It analyses if India could economically compete with China by not trading with it or if adopting the CHINDIA model would be more beneficial. The paper also highlights India's dependency on China for medical supplies and suggests that it would be economically best for India if it ventured into a controlled/restricted trade partnership with China. A few suggestions are also put forward on what India could do to enhance its trade dominance.

Key words: COVID-19, Pandemic, GDP,

### Introduction

India and China are perceived to be among the fastest growing economies of the Asian Region. China has been bestowed with the status of being India's major trading partner since decades. The countries have been earnestly trying to make economic progress. In the year 2018, the annual growth rate of the Indian GDP was said to be 6.8 per cent while that of China was 6.6 per cent. However, for the financial year of 2019, the GDP growth rate of India was predicted to be as low as 4–5 per cent and China's 6.1 per cent. Unfortunately, the COVID-19 pandemic has adversely impacted the economies of both the countries, and thus leaving us with a curiosity to probe into the India-China trade relationships.

### 1. Background

The essence of cordiality prevailing in the International Relations is to some extent determined by the trade relations persisting between the two countries. Prior to the disintegration of the Soviet Union, in the year 1984, an agreement of trade came into effect between India and China, which accorded China the status of the Most-Favored Nation; facilitated the growth of full-fledged bilateral trade between the countries. This was followed by a Double-Taxation Agreement signed in the year 1994–95, the Bangkok Agreement in 2003 and also agreed to conduct trade via the Silk Route. These agreements and indigenous trade policies have been constantly subjected to various dynamic amendments, and yet the trade deficit between the countries is significantly high.

For the financial years that followed, on February 7, 2020, the Press Information Bureau released a notification in the name of the Ministry of Commerce and Industry, regarding the India-China trade deficit. It asserted that the imports from China declined from US\$ 76.83 billion in 2017–18 to US\$ 70.32 billion in 2018–19; exports grew from US\$ 13.33 billion in 2017–18 to US\$ 16.75 billion in 2018–19. Inferring from Graph 1 and the data above, the following tabulation is made which shows the trade deficit persisting between India and China.

The graphical representation is indeed conclusive evidence on the fact that there have been trade inconsistencies between India and China. The trade deficit between the countries has been majorly unfavorable towards India. Will India be benefitted from the ongoing pandemic or will China be able to make much more benefits out of the pandemic?

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Source: PHD Research Bureau. 2018. "India-China Trade Relationship: The Trade Giants of the Past, Present and the Future." PHD Chamber of Commerce and Industry.



## Graph 2: Trade Deficit between India and China during 2001–2018

Source: PHD Research Bureau. 2018. "India-China Trade Relationship: The Trade Giants of The Past, Present and the Future." PHD Chamber of Commerce and Industry.

# 1.1. Major Products of Trade

Trade has been active between the two countries in the past too. Electronic goods have been the major trading products which India has managed to import from China, followed by organic chemicals (include components used in pharmaceutical supplies) and plastic. However, India has been majorly exporting organic chemicals, mineral fuels, ores and the marine creatures. In a nutshell, India's exports to China except ore and fish, have fallen from April 2019 to January 2020,

Sl. No	Commodity	2018–19 (in lakhs)	2019-2020(Apr-
			Jan(F)) (in lakhs)
1	Organic Chemicals	2,276,037,09	1,649,996,41
2	Ores, Slag and Ash	857,203,13	1,399,434,57
3	Mineral Fuels, Mineral Oils and Products	2,003,125,36	1,357,624,23
	of their Distillation, Bituminous		
	Substances, Mineral Waxes		
4	Fish and Crustaceans, Molluscs and Other	509,428,35	869,386,50

## Table 1: Major Products Exported from India to China.

	Aquatic Invertebrates		
5	Plastic and Articles thereof	775,966,52	536,386,46

Source: Ministry of Commerce and Industry, Department of Commerce–Export Import Data Bank. <u>https://commerce-app</u>. gov.in/eidb/Default.asp.

Sl. No	Commodity	2018–19 (in lakhs)	2019-2020(Apr-
			Jan(F)) (in lakhs)
1	Electrical Machinery and Equipment	14,440,544,23	12,019,028,38
	And Parts Thereof, Sound Recorder and		
	Reproducers, Television Image and Sound		
	Recorders and Reproducers and Parts		
2	Nuclear Reactors, Boilers, Machinery and	9,361,631,20	8,308,948,39
	Mechanical Appliances Parts Thereof		
3	Organic Chemicals	6,008,221,49	4,944,120,74
4	Plastic and Articles Thereof	1,903,855,02	1,686,482,44
5	Fertilizers	1,441,212,42	1,215,826,14

## Table 2: Major Products Imported from China to India.

Source: Ministry of Commerce and Industry, Department of Commerce-Export Import Data Bank. <u>https://commerce-app.gov</u>. in/eidb/Default.asp.

Whereas India's import from China has reduced with respect to all the top commodities of import from April 2019 to January 2020, and yet the trade deficit between the countries remains highly unfavorable towards India.

## 1.2. China's Trade Principle

China, as early as in the mid-1970s (which has continued till today) adopted the strategy of "Import Substitution" which has facilitated it to be among the largest exporters of the world. China's primary path to exercise economic dominance over the third world countries has been majorly through "active absorption of foreign direct investments and encouragement of foreign trade development". This trade philosophy is what has helped China in global economic integration and also plan for platform controlling in International Industrial Relocation.

# 1.3. India's Trade Principle

India's trade vision for the year 2020 is centered on improving the country's market shares and exploring new platforms for the same. It focuses majorly on providing the Indian exporters to derive the best out of the GST—mainly in the MSME and the labour intensive setups. India also desires to focus on its agricultural export business and thereby promoting the domestic markets at a global level.

# 2. Trade Relations during COVID-19

Ever since the shadow of COVID-19 has fallen upon the world, the necessity for indigenous production and the import of medical supplies has gone up. The first case of COVID-19 infection was identified in China on November 17, 2019 and in India on January 30, 2020. When the pandemic developed further, many countries were forced to move into a lockdown, either partial or total, which has impacted the international economy. China, which was the epicenter of the pandemic, witnessed thousands of deaths and yet had initially made news in the world, for not keeping its economic exchanges shut for too long and also is believed to have made quick recoveries. The COVID-19 has impacted the Indian economy as well and hence could add fuel to the trade deficits which has been persistently high in the recent years.

## Phase I

The shutdown of industries in the later part of 2019, mainly in China, has affected the bilateral trade. On January 15, 2020, Business Standard reported that the trade between India and China had declined by US\$ 3 billion during the year 2019, and expressed concerns over the fact that the trade deficit still continued to be as high as US\$ 56.77 billion. Despite working out several feasible options to protect the trade industry, the India-China trade faced a decline of 12.4 per cent in the initial two months of

COVID-19. The Economic Times and Global Times reported that from January to February, India's imports from China were as less as US\$ 9.5 billion and India's exports to China had dropped by US\$ 2.5 billion (inferred from the Chinese Customs Data). Though the imports and the exports have dropped, the trade deficit is still significant. In February 2020, the Electric Lamp and Component Manufacturers Association (ELCOMA) India expressed concerns over the shortages of electrical appliances which are the essential raw materials in manufacturing LED Bulbs. It was also predicted that since these materials are often imported from China, the prices of these could go up and therefore there could be an inflationary impact to the tune of 8 to 10 per cent. To strike a balance in such circumstances, in the month of March, the Ministry of Commerce had considered imposing duties on most of the products India exports to China like pearls, precious stones and woven fabrics. Despite the efforts, India's exports fell by 35 per cent in March 2020, and annual shipments too witnessed a fall—US\$ 314.31 billion in the financial year 2020 as compared to US\$ 330.08 billion in the year 2019. Though the initial phases had been challenging, the Indian economy seems to be rediscovering (though with certain limitations).

#### Phase II

In the initial duration of the lockdown, since the domestic production units were shut, India was forced to import large amounts of steel from China. But China's non-paced resumption of steel production favoured India—the steel exports by India are 18 per cent more than the imports in 2020. India's Jindal Steel and Power has been exporting 80 per cent of its production to China alone. The exports to Southeast Asia, which otherwise would have depended on China, have also significantly increased. India has also managed to export diesel to Beijing after the indigenous consumption dropped by almost half, due to the lockdowns.

Amidst these pros, there have been certain trade inconsistencies as well. The COVID-19 pandemic has made India realise the need to evolve its medical industry. The Indian Pharmaceutical industry is the 14<sup>th</sup> largest in terms of value, though it ranks 3<sup>rd</sup> when graded according to the volume. The pandemic has put the country in a situation where it cannot be ignorant towards the fact that the country has been over dependent on China for getting raw materials for its indigenous pharmaceutical productions. In the financial year 2018–19 alone, India imported a total of US\$ 3560.35 million worth Drug Intermediates, out of which products worth US\$ 2405.42 million (67.56 per cent) were from China alone.

This value is not much lesser than the US\$ 3911 million exports of Drug Intermediates India made in the financial year of 2018–19. Despite the fact that the Chinese medical supplies were failing in quality tests, in the mid-April 2020, India ordered a total of 15 lakh antibody testing kits from the Chinese companies Wondfo Biotech and Zhuhai Livzon. India had also contracted with China-based companies to receive 15 million PPE sets that include gowns, masks, goggles, etc.

It is, however, not certain if the total value of all the imports would increase or decrease at this nascent stage. Nevertheless, on the other hand, India has also engaged itself in the indigenous manufacture of PPE kits, more than 4 lakhs per day, thus trying to reduce the prospective imports of PPEs from China.

Unfortunately, India witnessed an inopportune drop in the Manufacturing Index from 51.8 in the month of March to 27.4 in April 2020, and its services PMI (Purchasing Managers' Index) of 49.3 in March fell to 5.4 in April 2020. The Chinese government had skillfully managed to take such limitations into its stride and had tried to manifest remarkable recovery, which had aided it to consider taking over Indian companies which are vulnerable, to exercise control over its neighboring countries and also to attempt dominating international trade tactics in to. However, we need to understand that the virus is a world enemy and has impacted both the countries negatively. Though China performed well in the month of March 2020 with a manufacturing PMI of 52.0, after having an index of 35.7 in February, the index has dipped down to 50.8 in April.

In order to combat the Chinese dumping situations, India had imposed anti-dumping duties on 25 obvious importable products which would be expiring this year. Directorate General of Trade Remedies (DGTR), in the first week of May 2020, expressed the probability of extending anti-dumping duties and safeguards on the Chinese products which are currently under review. They include sodium citrate (an integral chemical in the pharmaceutical industry), USB flash drives, calculators, hot-rolled flat products of stainless steel, Vitamin C and E, nylon tyrecord, measuring tapes, compact fluorescent lamps (CFLs),

flax fabrics, caustic soda, float glass, tableware, kitchenware, plastic processing machinery and solar cells, officials said.

Further, India considered excluding certain drugs from selective restrictions and hence aiding it to engage in a Quad-Plus ideology with the third world countries, and more with those that belong to the Indo-Pacific region. This would subsequently help curb the Chinese dominance in the trade industry, in the possible post-COVID-19 era.

Owing to the economic and trade strains, the Indian government has increased FDI (Foreign Direct Investment), pertaining especially to the countries that share a land boundary with India, which would benefit the country. The average FDI has been US\$ 1412.87 million for the years 1995 to 2020 and the same was increased to US\$ 2873 million in February 2020, and is expected to be increased to US\$ 4000 million more. In the year 2019, the Chinese investments in India rose to US\$ 26 billion (both current and planned) from US\$ 1.6 billion in the year 2014. If not for the change in the FDI policies, then China would have been at ease to not only suppress the Indian economy, but also to pause a threat to India's Data Security and engage in platform-control fight, by making more investments in the Indian Territory. Thus, it is true that India is trying hard to sustain against China through means of geo-political strategies and increased indigenous productions. But, what India is doing is enough to combat against the Chinese economic dominance for long in the years to come?

### 4. What Would Prevail?

#### 4.1. Will India be Able to Compete with China in the Post-COVID-19 Era?

The COVID-19 pandemic has managed to reduce the imports and exports between the countries, which is exemplified by the fall in the rates in later 2019 and January 2020 and yet the trade deficit between the countries was notified to be high. According to a forecast put forth by Trading Economics, it is said that China's government Debt to GDP ratio would be around 55 per cent at the end of the year 2020 and another forecast by Statista says that in the case of India, it would be around 68.52 per cent. Now this tells us that though China too has been hit by the pandemic, it still thrives to perform better than India. However, a major question that arises is—Can India start performing better than China in the post-COVID-19 era?

To look for an answer to this question, we will have to consider another two questions—if the other countries would turn towards India post-COVID-19, and If India would be able to procure dominance over China and sustain it for the years to come?

India and the US had managed to surprise the world, when Face book invested US\$5.7 billion in Reliance Jio, though both the countries were in a state of lockdown. It is inferable that there can be better deals expected between India and the US in the future as well, mostly due to the ongoing frictions between the US and China (the Trump administration has imposed tariffs on Chinese goods). The supply chains of the companies originating in the US, Europe, Australia and Canada were disrupted when China turned out to be the epicentre of the pandemic. These companies have been thus motivated to look for platforms which are mostly independent of China. India could thus plan to derive the best of the benefits from the ongoing US-China frictions. Given the fact that China is facing a global backlash, it is a high probability that other countries would also want to shift towards investing in India over China.

Addressing the second question, we need to understand that though the world is manifesting significant anti-China sentiment, the third world countries have not yet managed to completely do away with the import of cheap Chinese products, which has typically helped the lower income groups. Added to this, empirical studies say that China's rural markets perform much better than India's.

While it is true that India has started to venture into indigenous productions and also managed to acquire some benefits through its COVID-19 Diplomacy, India also needs to focus on other factors which need to be catered to in order to compete better with China. India needs to stimulate its qualitative internal production more in order to increase its exports and become better self-sufficient. There is a need to check on the infrastructure bottlenecks, transactional costs which could be high establish simpler procedures, adopt policies to improve the manufacturing index and adopt better diversification with respect to the exports.

Would India be well-off on adopting these methods, or is it better feasible for India to work in partnership with China, rather than inducing competition against the country?

# 4.2. Chindia?

Chindia is a portmanteau word that indicates the partnership between India and China. Apart from both of them being Asian countries, India and China are a part of international forums such as BRICS, BASIC and G20. Though the countries have their own internal challenges in following their own trade policies, could the partnership alleviate the consequences of such limitations?

India and China are often opined to be complementary to each other. However, the partnership too has certain challenges. Both the countries follow a strong Westphalian ideology and yet have certain differences in their approach towards trade and economic policies. Experts opine that China's dependence on FDI and international trade agreements have facilitated its economic performances, while India has been focussing on encouraging indigenous entrepreneurship and further promoting them at a global level.

Apart from these differences, the COVID-19 pandemic has also put India in a serious dilemma with respect to a long-term partnership with China. Although economy surely is an arena of paramount importance in nation building, another important concern would be the manifestations of the frustration of the trade war in other realms. The global backlashes against China (could create frictions between India and the other countries which are not cordial with China) and the ongoing military face offs with China have added to the dilemma. Apart from handling the issues of trade with China, India now has to also combat the unfavourable exchanges along the Sikkim Frontier and the Ladakh Region. At this point, it is also doubtful if China would want to venture into something which works on the principle of symbiotic benefits rather than unconditional economic dominance.

Thus, with such ongoing tensions, it would not be feasible for India to enter into a complete economic partnership with China, though efforts could be made to be partially associated. Since India is still in a nascent stage of developing its world trade through indigenous productions, completely shunning of Chinese imports (that constitute only 3 per cent of China's exports) would neither do much benefit to India nor be a substantial check on China's global export business. India, therefore, needs to adopt a grey stand where it utilises China only for its benefit.

### 5. Conclusion

# 5.1. What India Must Preferably Do?

India could possibly not venture into a full-fledged Chindia strategy due to the above-mentioned reasons. India cannot, at this point, go completely the Chinese way and relax its FDI policies much, since it must also check platform control desires of other countries with respect to the Indian-based companies. Therefore, India was compelled to revise its FDI policy as a consequence of the COVID-19 pandemic.1 Given the ongoing situations, what India needs to do is find a veritable balance: continue to cater to strengthen its trade visions and domestic market and get into a controlled partnership venture with China, subjected to persistent vigilance.

### 5.2. Way Ahead

• India needs to subsidise its indigenous establishments. This would increase the demand for local products in the market over the imported ones. If these indigenously produced goods are qualitatively satisfying, they could gain prominence in the world market, thus making India's trade vision work.

• India must further take advantage of the USChina frictions and try to cut down China's exports to the US and thus start exporting more to the US. The situation has already benefitted India, since many of the US-based companies have considered shifting their investments to India from China. India could attempt this strategy with the other countries of the world as well.

• India could venture into a controlled partnership with China, where it could acquire the sole official partnership status for the trade of specific materials like software, ores, etc. This coupled with the point one will aid in minimizing the trade deficit.

At this point, we do not know if India can overtake China in the coming years or compete with it on a long-term basis, but India must take advantage of the ongoing COVID-19-driven situations and strategically attempt to compete with China.

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#### "Urbanization in India: An Impact Assessment"

#### SHALU PANSARI

#### Abstract

Urbanization is closely linked to modernization, industrialization, and the sociological process of rationalization. Urbanization is not merely a modern phenomenon, but a rapid and historic transformation of human social roots on a global scale, whereby predominantly rural culture is being rapidly replaced by predominantly urban culture. Urbanization occurs as individual, commercial, and governmental efforts reduce time and expense in commuting and improve opportunities for jobs, education, housing, and transportation. Many rural inhabitants come to the city for reasons of seeking fortunes and social mobility. But the picture of urbanization is not so much glorious as it apparently seems. Modern cities have grown in a haphazard and unplanned manner due to fast industrialization. Cities in developing countries become over-populated and over-crowded partly as a result of the increase in population over the decades and partly as a result of migration.

Keywords Urbanization, Push and Pull Factors, Industrialization, Civic amenities, Marginalization

#### Methodology:

This study is descriptive research. The data is gathered through secondary sources like Government Records, books, articles, web-based journals. The Records of Urban Population as sourced from Census Reports have been tabulated for description of its trend. This paper seeks to review the effects of fast growing urbanization in Indian society through analysis of its multi-dimensional impact.

#### 1. Introduction

Urbanization is an index of transformation from traditional rural economies to modern industrial one. It is a progressive concentration of population in urban unit (Davis, 1965). Kingsley Davis has explained urbanization as process of switch from spread-out pattern of human settlements to one of concentration in urban centers (Davis, 1962). It is a finite process-a cycle through which a nation passes as they evolved from agrarian to industrial society (Davis and Golden, 1954). He has mentioned three stages in the process of urbanization. Stage one is the initial stage characterized by rural traditional society with predominance in agriculture and dispersed pattern of settlements. Stage two refers to acceleration stage where basic restructuring of the economy and investments in social overhead capitals including transportation, communication take place. Third stage is known as terminal stage where urban population exceeds 70% or more. At this stage level of urbanization remains more or less same or constant (Davis, 1965). Rate of growth of urban population and total population becomes same at this terminal stage.

#### 2. Definition of Urban Areas

In Census of India, 2011 towns were classified into two parts:

a) **Statutory towns**: All places with a municipality, corporation, Cantonment board or notified town area committee, etc. so declared by state law.

b) **Census towns**: Places which have a minimum population of 5000 with at least 75% of male working population engaged in non-agricultural pursuits and a density of population for at least 400 persons per sq.km.

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**Urban Agglomeration**: - Urban agglomeration is a continuous urban spread constituting a town and its adjoining Urban Outgrowths (OGs) or two or more physical contiguous town together and any adjoining urban outgrowths of such towns. Examples of outgrowths are railway colonies, university campus, and port area, military campus that may come up near a statutory town or city. In census of India, 2011 it was decided that the core town or at least one of the constituent towns of an urban agglomeration should necessarily be a statutory town and the total population of all the constituents should not be less than 20,000.

## 3. Urbanization in India

India shares most characteristic features of urbanization in the developing countries. It is the most significant phenomenon of 21th century which has almost affected all aspects of national life in India. Being the second most populous country in the world after China, India's growing urbanization has a regional as well as world-wide impact. The number of total population has increased from 81.14 crores in 2001 to 121.7 crores in 2011 whereas number of population residing in urban areas has increased from 2.58 crores in 2001 to 28.53 crore in 2011. India's urban population constitutes a sizeable proportion of world's urban population. This can be well corroborated form the fact that every 12th city dweller of the world and every 7th of the developing countries is from India. The breakout of hostilities with China and Pakistan in 1962 and in 1965 respectively and short recession accompanied by drought during 1967, acted as obstacles to the progress of industrialization. One can, therefore, observe that the process of industrialization though started during the sixties, could not be marked. Urbanization could hardly absorb a little more than the natural increase in urban population. As a result, a serious dent in terms of the shift of population from rural to urban areas could not be made.

Urban population increased from 26 million in 1901 to 62 million in 1951– an increase of only 36 million in 50 years. But the absolute increase during the next three decades was of the order of 94 million during 1951-81. This indicates that programmes of industrialization did make an impact in terms of population absorption in urban areas, though its impact was very discernible. During 1981-91, urban population in absolute terms reached the figure of 285 million accounting for 27.8 per cent of total population.

Degree of urbanization varies widely among the States of the country. Goa is the most urbanized State in India with 49.77 per cent urban population followed by Mizoram, Tamil Nadu and Maharashtra. All Union Territories are highly urbanized except Dadra and Nagar Haveli and Andaman and Nicobar Islands. The Degree of urbanization is high in southern, western and north-eastern states whereas low urbanization level is found in northern and central states. Maximum concentration of the country's urban population is found in Maharashtra, Uttar Pradesh, Tamil Nadu, West Bengal and Andhra Pradesh. It is important to mention that urban population of Uttar Pradesh is large accounting for 34.5 million. The rest five states namely Gujarat, Karnataka, Madhya Pradesh, Rajasthan, Bihar and Union Territory of Delhi together account for 30.7 percent of urban population. Remaining eighteen States and six Union Territories contain only 18.2 per cent of the urban population of India. India is at acceleration stage of the process of urbanization.

According to 2011 census (Table 2), in India out of total population of 1210 million about 377 million live in urban areas and 833 million live in rural areas. Sex ratio, defined as number of female per 1000 male, for urban, rural and total India are 940, 945, and 933 respectively.

Census	Number of Urban	<b>Total Population</b>	<b>Urban Population</b>	Rural
Years	<b>Agglomeration/towns</b>		-	Population
1901	1827	238396327	25851873	212544454
1911	1825	252093390	25941633	226151757
1921	1949	251321213	28086167	223235046
1931	2072	278977238	33455989	245521249
1941	2250	318660580	44153297	274507283
1951	2843	361088090	62443709	298644381
1961	2363	439234771	78936603	360268168

1971	2590	598159652	109113977	489045675			
1981	3378	683329097	159462547	523866550			
1991	3768	844324222	217177625	627146897			
2001	5161	1027015247	285354954	741660293			
2011	6871	1210854977	3770105760	833087662			
Source: Census Report, Govt. of India, 2001-2011							

2	source:	Census	Report,	Govi.	of in	aia,	2001	-20	1

		1		
India	Male	Female	<b>Total Person</b>	Sex ratio
Urban	467793426	439851971	3770105760	945
Rural	155931142	146617323	833087662	933
Total	623724568	586469294	1210854977	940

<b>Table 2.</b> Rural-Urban Population Sex	x Ratio
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#### 4. Basic Features of Urbanization in India

The pattern of urbanization in India is characterized by continuous concentration of population and activities in large cities. Kingsley Davis used the term "over-urbanization "where in urban misery and rural poverty exists side-by-side (Kingsley Davis and Golden, 1954). Another scholar named Breese depicts urbanization in India as pseudo-urbanization wherein people arrive at cities not due to urban pull but due to rural push factors (Breese, 1969). Rezaan Kundu talked of dysfunctional urbanization and urban accretion which results in a concentration of population in a few large cities without a corresponding increase in their economic base. Urbanization process is not mainly "migration led" but a product of demographic explosion due to natural growth. Besides, rural out-migration is directed towards class I cities (Premi, 1991). The big cities attained inordinately large population size leading to virtual collapse in the urban services and quality of life. Large cities are structurally weak and formal instead of being functional entities because of inadequate economic base. The urban population in India has gone up gradually from about 11 percent in 1901 to 17 percent in 1951 and then to 17.64 percent in 2011. The urban growth rate during 1941–51 was fairly high at 3.5 per cent per annum, but then reduced to 2.3 per cent in the following decade. It has been pointed out that the figure for the 1940s was on the high side, since the definition of urban centre could not be standardized in the first Census conducted after Independence and also because massive rural-urban migration occurred due to partition of the country. The highest rate of urban growth (3.8 per cent) was recorded during the 1970s, but has subsequently reduced to 3.1 per cent in the 1980s and 2.7 per cent in the 1990s. It has certain unique features which are as follows:-

- > Lopsided urbanization induces growth of class-I cities.
- > Urbanization occurs without industrialization and strong economic base.
- Urbanization is mainly a product of demographic explosion and poverty induced rural-urban migration.
- Rapid urbanization leads to massive growth of slum followed by misery, poverty, unemployment, exploitation, inequalities, degradation in the quality of urban life.
- > Urbanization occurs not due to urban pull but due to rural push factors.
- > Poor quality of rural-urban migration leads to poor quality of Urbanization (Bhagat, 1992).
- Distress migration initiates urban decay.

Urban centers in India are characterized by extreme heterogeneity in terms of their socio-economic characteristics. Large cities exhibit distinctly lower poverty ratios. Poverty in million-plus cities dropped to around 14 per cent in 1999–2000, from 18 per cent observed in 1993–94. The medium category cities/towns, with population between 50,000 and 01 million, reported poverty levels of 20 and 28 per cent at these two points in time. The corresponding percentage figures in small towns of population under 50,000 were as high as 24 and 33, becoming even slightly higher than those in rural areas. There are, thus, reasons to be concerned about the poverty situation in lower categories of urban settlements, as much as in rural areas. The low incidence of poverty in larger cities is due to the expansion of economic

opportunities and the availability of semi-skilled employment there. These cities also provide better social and physical infrastructure, including educational facilities, which results in higher productivity.

## 5. Basic Problems of Urbanization in India

Problem of urbanization is manifestation of lopsided urbanization, faulty urban planning, and urbanization with poor economic base without having functional categories.

- India's urbanization is followed by some basic problems in the field of: 1) housing, 2) slums, 3) transport 4) water supply, sanitation, 5) water pollution, air pollution, 6) inadequate provision for social infrastructure (school, hospital, etc). Class I cities such as Calcutta, Bombay, Delhi, Madras have reached saturation level of employment generating capacity (Kundu, 1997). Since these cities are suffering from urban poverty, unemployment, housing-shortage, crisis in urban infrastructure, these large cities cannot absorb these distressed rural migrants i.e poor landless illiterate and unskilled agricultural labourers.
- Most of these cities using capital intensive technologies cannot generate employment for these distressed rural poor. So, there is transfer from rural poverty to urban poverty. Poverty induced migration of illiterate and unskilled labourer occurs in class-I cities addressing urban involution and urban decay.
- Indian urbanization is involuted not evoluted (Mukherjee, 1995). Poverty induced migration occurs due to rural push factors. Megacities grow in urban population not in urban prosperity, and culture (Nayak, 1962). Hence it is urbanization without urban functional characteristics. These mega cities are subject to extreme filthy slum and very cruel mega city denying shelter, drinking water, electricity, sanitation to the extreme poor and rural migrants (Kundu, Bagchi and Kundu, 1999).
- Urbanization is generating social and economic inequalities which warrant social conflicts, crimes and anti-social activities (Kundu and Gupta, 1996). Lopsided and uncontrolled urbanization leads to environmental degradation and degradation in the quality of urban life. Illiterate, low-skilled or unskilled migrants from rural areas are absorbed in poor low-grade urban informal sector at a very low wage-rate and urban informal sector becomes inefficient and unproductive.

# 6. Effects of Urbanization

With changes in the land-use pattern when the city grows in size, it expands both horizontally and vertically. The horizontal expansion engulfed the nearby fringe villages and converted the agricultural lands, so that there is decrease in water level. So, there are chances of contamination of drinking water because of leakage of pipes. Another thing worth consideration is land value which is appreciated because of scarcity of land in the growing urban centres. Therefore, there is mushrooming growth of apartments and in busy centres, the apartments are given permission without checking the way of sewage facilities. The effects of urbanization may be seen on various lines in the following components:-

## Slums and associated problems:-

The acute shortage of housing facilities is one of the most serious problems plaguing the Indian cities, whether it is a metropolitan city or a small town. The reason for this is that the availability and development of housing facility has not expanded fast enough to meet growing demand for rapid urbanization process. The acute shortage of housing facilities compels the poor to live in slums. Slums have developed in almost all the Indian cities. Slums are called by the names of *Bustees* in Calcutta, *Jhuggis* in Delhi, *Chawl* in Mumbai and *Cheri* in Chennai. The slums or Bustees have been defined by the government of India under Slum Area (Improvement and clearance) Act of 1954 as predominantly a residential area, where dwellings by reason of dilapidation, overcrowding, faulty arrangement and lack of ventilation, light or sanitary facilities or any combination of these factors detrimental to safely, health and morals. It is estimated that 40 per cent of people in mega-cities like Calcutta, Mumbai and Delhi live in slums. These slums have extremely unhygienic conditions. They have impoverished lavatories made by digging a shallow pit in-between three to four huts and with sackcloth "curtain" hanging in front. The children, of course, are used to defecate anywhere around the huts. All such areas have

several cesspools and puddles. These are invariable dug in the middle of a state dirty pool. People wash their clothes and utensils under the hand pumps. This causes diseases like blood dysentery, diarrhea, malaria, typhoid, jaundice and conjunctivitis, which stalk them all the year around. Children with bloated bellies or famished skeletons suffer from polio and common sight. Human development is also adversely affected by the environmental degrading. Access to safe drinking water and separation are closely linked with life expectancy and infant mortality which are very important indicators of Human Development. So, the poor take fertility decisions to compensate for these factors and to avoid risks. Larger population leads to more poverty and worsens the environment creating a vicious circle.

## > Transport system:-

There are 300 million cars, trucks and buses all over the world. During peak hours, there will be huge traffic jams in the main junctions. Because of traffic jams more petroleum products are wasted which results in fuel problem. During peak seasons the vehicles are parked and overloaded and there are more chances of occurring accidents. It the State which provides good transport system. The combustion of petroleum products, diesel leads to increase of carbon dioxide which helps in increasing Global Warming, air pollution and noise pollution, besides carbon dioxide, carbon monoxide which is released by automobile. The noise pollution affects both auditory and non-auditory organs. The auditory effects are fatigue and deafness in human beings. The non-auditory effects are interference in speed, communication, annovance, loss of working efficiency and psycho-physiological disorders. The transportation picture in all Indian cities is critical while Mumbai is still having the best city transport system and Chennai, Ahmedabad and Pune being reasonably well-served by the city buses. One reason why we are in this mess is that, whilst planning city expansion, we are still tender to follow the western concept of commuting time and distance being the determinants of the location of activities. This has resulted in compartmentalized zoning of cities, which necessitates extensive travel. At the same time, the level of incomes and affordability being low, our citizens are unable to pay an economic fare for the use of a public transport system. Therefore, all city bus services sustain such heavy annual losses that they cannot really expand or maintain a fleet adequacy to meet city needs.

# Problem of garbage:-

Urban solid waste consists of building materials, plastic containers, hospital wastes, kitchen waste etc. The building materials and household solid wastes are dumped on the public places. The hospital wastes do not have covers while transporting. The stringent smell contaminates the air. The Urban sewage does not have proper let-out facility. As Indian society prospers, it trash mainly hazardous plastics, metals and packing is growing exponentially. In the last decade, garbage was produced at nearly twice the rate of population growth. Only eight out of 3,119 towns and cities in India have full wastewater collection and treatment facilities. A third of India's population has no access to sanitation services. It becomes worse in smaller cities and provincial towns.

# Sewerage problems:-

The urban areas in India are plagued with inefficient and insufficient civic amenities. Not a single city in India is fully seweraged. The reason for this is that the unauthorized constructions in and around the city lie outside the purview of the main systems. It has been estimated that only 38 per cent of the urban population have a sewerage system. Mumbai's crumbling sewer network is a century old, put in place by the British planners when city was no more than a series of fishing villages. Today, it breaks down frequently with waste about eight million more people than it was designed for. The sewer lines lead to drains, which take the sewage – 93 percent of it untreated – directly into the sea, killing virtually all marine life along Mumbai's coast. Delhi's Yamuna has turned into a giant sewer, chiefly from raw sewage, 40 per cent of Delhi's sewage is untreated.

## > Water supply:-

India has reached a stage where no city has water supply round the clock. Intermittent supply results in a vacuum being created in empty water lines which often suck in pollutions through leaking joints. Chennai, Hyderabad, Rajkot and Wadhwan get water from municipal sources for less than half an hour every alternative day. Many small towns have no main water supply and depend on such sources as individual wells, household open wells or even the rivers which have some storage water in pools during

summer. Within the city, the drainage system hardly exists and the annual flooding of large areas, even in Delhi, it is now a regular phenomenon in many urban centres. Mumbai is located in a keel-line depression, which also happens to be the main railway artery. With every monsoon showers, it gets flooded choking the communication. The problem is particularly acute in the cities of Indo-Gangetic plain. This is the case with Varanasi and Patna. The situation is worse in the eastern part of Patna, which remains water logged throughout the monsoon period. The terminal case is that of Katihar (Bihar) where, because of the peculiar bowl-like configuration of the city and the non-existence of a drainage system. Large pools of stagnant water can be seen even in the month of May and June. In Srinagar, whole colonies have become sewage to be forced back by hydraulic pressure into the sub-soil, rendering the whole land unfit for human habitation. The drains, which are open, serve as depositors for road sweepings and also human wastes. In rainy season, water over flows and spreads into streets presenting a dingy view, promoting unhygienic conditions and causing outbreak of numerous diseases.

#### Environmental problems:-

Environmental pollution is causing concern and affecting human health today than yester decades. It has been reported by the World Bank that 40,000 persons die in India every year because of air pollution. Recent studies also revealed that a large number of people have been suffering from respiratory diseases, allergies and cough. It has been doubled since 1990s. Further, it has been noticed that 23 Indian Cities have crossed the dangerous limits because of auto-exhausts and industrial emission. Therefore, it is not the task of Central Pollution Control Board that has to take control but it is the duty of the institutions, individuals to initiate possible care and measures to prevent the polluting works. Hence, it should initiate in the form of a social movement. This, indeed, prevents problems arising out of pollution especially in urban areas. **Conceptual Map of Urbanization in India:**-

This model showcases the inter-connectedness between Problems and effects of Urbanization in India. It highlights the impact of Urbanization on Indian Society through multi-dimensional perspectives. It attempts to correlate between evils of Urbanization and its effect over growth of society.



Figure 1. Interface between Problems and Effects of Urbanization in India

## 7. Conclusions

Since the mega cities have reached saturation level for employment generation and to avoid overcrowding into the over-congested slums of megacities i.e Bombay, Calcutta, Delhi, Madras, it is required to build strong economic sector (Kundu and Basu, 1998) in the urban economy. Growth efforts and investments should be directed towards small cities which have been neglected so far so that functional base of urban economy is strengthened. Policy should also be related to proper urban planning where city planning will consist of operational, developmental and restorative planning. Operational planning should take care of improvement of urban infrastructure, e.g. roads, traffic, transport etc.

Developmental planning should emphasize on development of newly annexed urban areas. Restorative planning should aim to restore original status of old building monuments which have historic value. In general, urban planning must aim at following components like (a) Balanced regional and urban planning (Mukherji, 2001), (b) Development of strong economic base for urban economy (c) Integration of rural and urban sectors (Kundu, Sarangi and Dash, 2003).

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## An Analysis of Regional Trade in South Asia

## Sanjay Kumar Sumbul Samreen

#### Abstract:

Trade is viewed upon as an engine of growth in the study of economics. Economies strive to attain greater level of economic growth and subsequent development through enhancement of international trade. Further, trade with neighbouring countries has often proved to be more economically viable as it optimises the cost of trade. For this reason, various regional trading agreements giving birth to Trading Blocks and Customs' Unions have been signed and maintained across the globe. Countries in the South Asian sub-continent also moved in the same direction with the formation of SAARC and its subsequent agreements. Success in the field of regional cooperation and economic integration for trade among South Asian countries has however been inadequate as compared to other trading agreements in the world owing to a number of hindering factors. This paper attempts to analyse the nature of regional trade among these trading nations and reasons of their lack of regional trade cooperation.

Key Words: South Asia, Trade, Regional Integration, SAARC, SAPTA, SAFTA, Regional Cooperation, Intraregional trade, Neutral Trading Partners

Introduction: Pattern of Trade in

South Asia

South Asian subcontinent is full of diversities in terms of their geographical and economic size, population and stages of development yet these countries share some strong cultural and trade ties. Until 1947, major economies of South Asia which include India, Pakistan and Bangladesh were a single entity. After partition of India in 1947 and formation of Bangladesh in 1971

i.e. further partition of Pakistan, huge trade barriers exist between the three countries. Rest of the countries in the South Asian region also have fragmented markets for them instead of unified market.

South Asian region hosts nearly a quarter of world population and nearly 1/7th of the world's arable land. However, the region is the second largest region inhabiting poorest population of the world. As per the World Economic Outlook, January, 2018, it has a share of only 6 percent of the World's GDP and around 2 percent of the World's goods trade. Investment data of UNCTAD further indicates that South Asia hosts 3 percent of world's foreign direct investment in the year 2017.

The region since long has been working to promote welfare of the people, improving their quality of life through acceleration of economic growth and promote regional cooperation on diverse issues of economic development. Establishment of South Asian Association of Regional Cooperation (SAARC) in 1985 was aimed at this purpose. SAARC Preferential Agreement (SAPTA) of 1993 laid down provisions for preferential treatments in trade for the SAARC member countries. In 2004 however, SAPTA was replaced by the South Asian Free Trade Agreement (SAFTA) aimed at creating free trade area through periodical reduction in tariff lines for goods trade by the member countries. SAFTA came into effect in 2006.

The paper aims at understanding the level of regional cooperation in terms of trade. For the purpose, an analysis of trend of trade among these countries, trade direction and composition has been made. The paper undertakes a comparative analysis of the economic indicators of trade in South Asia.

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# II. Methodology of the Study

The paper is focused on to the economic relations and trade among SAARC countries and is based on the secondary data. For the theoretical part of the study, works of several distinguished economists and scholars, SAARC publications and pertinent reports of Government of India and other Governments of SAARC countries have been conferred to.

The analysis of the study covers a period ranging 1990-2016. The interpretation of analysis is based on the trend movements use in the study.

III. Limitations of the Study Though the study strives to fulfil its aim of research, there are certain unavoidable limitations. A major one is the continuous and volatile character of the issues under consideration. As mentioned above, the study is based till the year 2016; however, the volatility in the nature of international trade may lead to changes in the current day scenario. Further the study is focused on merchandise trade only and does not take into consideration trade of services as this aspect of trade still needs to be organised and formalised.

IV. Literature Review Economic integration has several aspects covering liberalisation of trade with regional partners in both goods and services, liberalisation of flow of investment with regional states and creation of regional monetary unit i.e. optimum currency area. In case of South Asia, the regional states are aiming at liberalising the flow of goods and services as well as capital. This paper focuses on regional cooperation in cross border trade.

Rahman (2004) made use of a generalized gravity model trade flows from Bangladesh to its trading partners in SAARC using the panel data estimation techniques. Estimating the gravity model of trade, he showed that trade is positively determined by the size of the economies, per capita GNP differential of the countries involved in trade and openness of these countries.

Bhatachariya (2004) analyzed the bilateral trade flows between India and Bangladesh using the gravity model. His study takes into consideration various tariff reductions and the obtained simulated results. The study provides evidence showing that exports from India to Bangladesh would increase more than the imports from the latter. In a further study Reihan and Razzaque (2007) used the GTAP analysis for measuring the trade creation, trade diversion and welfare effects for different regional integrations and bilateral FTAs in South Asia. This study concluded that arrangements of free trade would lead to fruitful gains and welfare for countries like India, Sri Lanka and rest of South Asia except Bangladesh.

In a study, 'Impact of Trade Costs on Trade: Empirical Evidence from Asian Countries', by Prabir De (2007), considers trade costs to be including all costs incurred in getting a good to a final user other than the marginal cost of producing the good itself, such as transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, legal and regulatory costs, and local distribution costs (wholesale and retail). According to the study, higher trade costs is an obstacle to trade and it impedes the realization of gains from trade liberalisation.

The Working Paper 'India – Pakistan Trade', by Nisha Taneja (2006), is a quantitative study estimating that potential two-way trade between India and Pakistan can be about 10 times than its rather unsatisfactory current level of \$ 613 million. Moving towards realizing this trade potential is clearly in the interest of both countries and the region. In this context this study identifies areas of trade and investment co-operation between the two countries. On the basis of a survey conducted in three cities viz., Delhi, Mumbai and Amritsar the paper examines the characteristics of firms engaged in Indo-Pakistan trade.

The work by Dr.M.Rahmatullah (2010), 'Advancing Bangladesh-India Economic Cooperation: Modalities and Challenges' analyses that transport cost is a significant determinant of competitiveness.

As per the study, due lack of regional connectivity in South Asia and poor trade facilitation at border crossing, logistic costs are 13-14% of the value compared to 8% in USA. Transport connectivity between South Asian countries continue to remain fragmented, despite existence of basic infrastructures

Indian wagons come up to the border, and BR Locos pull them inside. Thus there is no inter-country truck movement. Goods are transshipped at the border.

Studies on trade and transport facilitation between India and Pakistan are limited. FICCI (2003), Sangini and Schaffer (2003) and Taneja (2004) state that trade between the two countries is restricted because of limited routes available for trading and due to the transport protocols but do not undertake any in-depth analysis of trade and transportation links between India and Pakistan. More recently Taneja (2006), Taneja (2007) and Taneja (2007a) examine trade and transport facilitation between India and Pakistan. Taneja (2006) and Taneja (2007) identify major operational trade routes between India and Pakistan and identify factors that contribute to transaction costs along these routes. The studies also quantify these transaction costs along the major operational routes (Taneja 2007a) identifies impediments to trade between India and Pakistan focusing on a broader range of factors including those related to transportation, customs, border crossing, standards, financial measures and visas.

World Bank (2003), World Bank (2006b) and World Bank (2005) discuss impediments related to customs in the context of examining export growth and competitiveness for Nepal, Pakistan, and Bangladesh respectively. There are other studies which examine impediments related to trade and customs documents in the South Asian countries. UNESCAP (2000) examines trade and customs documents required in Nepal, Pakistan and India and identifies the data elements contained in these documents. The study also suggests a roadmap for simplification, calibration and coordination of trade procedures in the SAFTA context and recommends how these countries can align their trade and customs documents in accordance with international norms. Wickramsinghe (2004), Weerakoon and Thennakoon (2005), Taneja (2006a), CUTS (2004), recognize that impediments such as cumbersome, complex and opaque trade requirements can Increase the time required for a trade transaction, which in tum results in higher business costs in the South Asian region. Focusing on the extent of reforms undertaken in this area, these studies highlight the extent to which the South Asian countries lag behind in the area of trade facilitation. In the context of intra- SAARC trade AITD (2006) and AITD (2006a), discuss problems related to trade

and customs procedures while trading between India and Bangladesh and between India and Nepal. Taneja (2007a) discusses the issue between India and Pakistan. Impediments related to meeting requirements related to standards are not adequately addressed in the context of trade and transport facilitation in South Asia.

V. Trade Trends in South Asia The South Asian countries got triggered by their desire for export-led development and began expanding their export orientation toward industrial countries, moving from basic agricultural exports to labor-intensive manufactured exports. International conditionsspecifically the multilateral reduction of tariffs under the GATT and the diffusion of production and trade through foreign direct investment-helped the South Asian countries in their quest to enhance their economic development through manufactured exports during the 1980s and 1990s. With drop in barriers, South Asia became a premier beneficiary as industrial countries increasingly sought to rationalize production by transferring labor-intensive manufacturing to low-cost production centers. 'Liberalisation, Privatisation and Globalisation' policy and measures taken to promote free trade were adopted by India in 1991. In a move away from socialism, Sri Lanka began economic liberalisation in 1997. Various initiatives as a part of the Trade Policy have been announced in Pakistan. Maldives changed the export and import law of 1979 in 2000. In order to enhance the contributions of trade sector to national economy by promoting internal and international trade with the increased participation of private sector Nepalese trade policy was introduced in 1992. Improving trade policy and

customs administration by rationalisation of the tariff structure, introducing use of the market exchange rate has been of high priority for policy agenda in Afghanistan.

One broad area that has facilitated trade policy reforms in the SAARC region is the move towards more market based exchange- rate regimes is highlighted in a World Bank study (2004). Floating exchange rates have now been maintained by India, Pakistan, and Sri Lanka; Bangladesh floated its currency as of May 2003 which earlier had a moderately flexible exchange rate system after 1991. However, Nepal and Bhutan's currencies are pegged to the Indian rupee while Maldives's currency is pegged to the US dollar, and periodically devalued.

								South	Sri
Year	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Asia	Lanka
1960	11.2	19.3	NA	11.4	NA	NA	NA	13.4	62.9
1965	32.7	23.0	NA	8.6	NA	21.7	NA	11.1	51.4
1970	21.7	20.8	NA	7.7	NA	13.2	22.4	11.3	54.1
1975	26.9	11.0	NA	12.4	NA	22.3	33.2	15.8	62.4
1980	NA	23.4	51.3	15.6	358.7	30.3	36.6	20.3	87.0
1985	NA	18.2	66.1	13.0	138.5	31.5	33.2	16.9	64.0
1990	NA	19.0	57.5	15.7	168.1	32.2	38.9	19.7	68.2
1995	NA	28.2	80.4	23.1	NA	59.5	36.1	26.5	81.6
2000	NA	29.3	77.7	27.2	NA	55.7	28.1	29.2	88.6
2005	104.9	34.4	102.7	42.5	NA	44.1	35.3	42.6	73.6
2010	55.0	37.8	113.2	49.7	143.0	46.0	32.9	47.4	46.4
2015	55.8	42.1	95.0	42.2	147.6	53.1	27.7	41.3	49.6
2016	55.9	38.0	82.8	39.8	155.4	48.9	25.1	38.9	50.5

<b>Fable 3</b> :	Trend o	f Trade	Openness	in	South	Asia
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Source: World Bank Development Indicators

Despite growing trade-GDP ratio, the South Asian economies continued to remain least open relative to other groups of emerging and developing economies. The proportion of trade in GDP of SAARC region increased markedly from 13.8 percent during the 1960 to 47.8 percent in 2015. The trade GDP ratio declined to 38 percent in 2016 after 2010 which is a remarkable trend in South Asian countries.

During the period 1990 to 2000, intra- SAARC trade as a proportion of the region's trade with the world ranged between 2.7 percent and 4.1percent. Intra-regional trade in SAARC region crossed 5 percent mark during the next decade i.e. 2000s but the sparkling fact is that the intra-regional trade among SAARC countries is continued to be hovering around 5percent of its world trade. There is a continuous decline in the share of

SAARC countries' trade in the World's total trade during 1960-1990. After 1990, there the share witnessed a gradual increase. In the year 1990, SAARC trade had a share of

2.72 percent in the world trade which rose to

5.58 percent in 2015.

Share of SAARC region in total world exports stood at 1.4 percent during 2015 and is continued during recent time period. In the same manner, share of SAARC region in total world imports declined but picked up in recent years. Trade analysis shows a wide fluctuation in terms of export and import growth over time witnessed by the countries in South

## Table 4: Intra-SAARC Trade and SAARC Trade with World (1990-2015)

Year	Intra -SAARC Trade (M+X)	SAARC Tradewith World (M+X)	Share of Intra- SAARC Trade inSAARC Trade with World (M+X)	Intra- Regional Trade Intensity Index
1990	1799.0	66224.3	2.72	2.82
1991	2010.1	64067.0	3.14	3.48
1992	2629.9	72720.2	3.62	3.79
1993	2590.3	73896.9	3.51	3.55
1994	3076.1	82302.5	3.74	3.88
1995	4421.7	104428.8	4.23	4.13
1996	5107.9	111737.3	4.57	4.36
1997	4896.3	119509.9	4.10	3.81
1998	5814.3	118771.9	4.90	4.49
1999	5188.2	129167.9	4.02	3.57
2000	6299.9	142823.0	4.41	4.00
2001	6949.2	141461.4	4.91	4.34
2002	7836.9	158132.7	4.96	4.08
2003	11108.4	192677.1	5.77	4.55
2004	13539.1	244698.8	5.53	4.20
2005	17695.1	324098.0	5.46	3.56
2006	20702.5	401050.6	5.16	3.14
2007	27169.6	508734.3	5.34	2.96
2008	30003.6	600341.8	5.00	2.71

2009	23173.3	538270.2	4.31	2.01
2010	32755.0	720669.9	4.55	1.93
2011	40711.5	959384.7	4.24	1.61
2012	41394.4	967079.5	4.28	1.63
2013	44051.3	975631.7	4.52	1.72
2014	51340.0	985265.9	5.21	1.99
2015	49098.0	880259.5	5.58	2.12

Source: ADB, RIC, based on International Monetary Fund, Direction of Trade Statistics (DOTS) CD-ROM,

Washington

Notes: i) Data from Bhutan is not reported

ii) X denotes exports while M denotes imports

Table 4 indicates, during 1990 to 2000, intra-SAARC imports as a proportion of the region's imports from the world were lower than intra-SAARC exports. In fact, since

2000, intra-SAARC imports as a proportion of the region's imports from the world have ranged between 3.4percent and 4.2percent while intra-SAARC exports have ranged between 5.4percent and 5.6percent.

Table 5: Decadal Aver	age Annual Growth in	n Imports of G	oods and Services
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	1960s	1970s	1980s	1990s	2000s	2010s
Afghanistan	NA	NA	NA	NA	0.36	10.33
Bangladesh	9.76	-4.58	1.10	8.91	17.93	5.55
Bhutan	NA	NA	1.10	NA	11.72	4.35
India	-1.43	7.93	7.61	13.31	14.04	4.55
Maldives	NA	NA	7.61	NA	NA	NA
Nepal	NA	NA	NA	NA	3.83	10.64
Pakistan	4.38	5.89	1.43	2.68	5.07	1.90
South Asia	3.09	2.81	2.85	10.04	12.20	4.65
Sri Lanka	0.81	3.45	4.40	8.52	4.46	9.04

Decadal Average Annual Growth in Exports of Goods and Services

	1960s	1970s	1980s	1990s	2000s	2010s
Afghanistan	NA	NA	NA	NA	0.49	-6.47
Bangladesh	2.65	8.75	0.13	12.42	20.16	6.83
Bhutan	NA	NA	0.13	NA	15.00	0.17
India	2.14	10.57	4.81	11.97	14.26	7.25
Maldives	NA	NA	4.81	NA	NA	NA
Nepal	NA	NA	NA	NA	-2.04	1.66
Pakistan	8.27	2.22	10.65	3.66	7.81	1.03
South Asia	2.80	7.53	7.99	10.24	13.06	6.71
Sri Lanka	1.32	1.92	5.12	6.99	3.60	4.81

As indicated in table 5, the structure of growth in imports and exports of goods and services in South Asia indicate the diverse path of growth in trade sector among South Asian countries.

 Table 6: Share of South Asian Countries in Total Intra-Regional Imports of Goods (inpercent)

Importers	2012	2013	2014	2015	2016
Afghanistan	5.2	5.1	6.1	6.5	6.1
Bangladesh	26.5	25.6	30.1	29.8	29.2
Bhutan	4.1	0.9	0.9	1.7	1.7
India	11.9	11.9	11.0	12.9	11.6
Maldives	1.3	1.5	1.3	1.6	1.9
Nepal	20.6	22.8	21.2	17.7	20.5
Pakistan	10.1	12.7	11.2	9.6	9.7
Sri Lanka	20.3	19.5	18.3	20.2	19.2

Source: International Trade Centre, Geneva

As per table 6, the trends show a common pattern of increase or decrease in the intra- regional imports of the countries considered.

Their imports may be large or small but move in the same direction

Importers	2012	2013	2014	2015	2016
Afghanistan	1.35	1.33	1.35	1.81	2.29
Bangladesh	2.74	2.08	2.44	2.65	3.40
Bhutan	2.61	0.62	0.58	1.05	0.57
India	68.64	74.61	76.74	75.17	75.59
Maldives	0.07	0.05	0.05	0.09	0.07
Nepal	3.26	2.69	2.40	1.90	1.73
Pakistan	17.24	15.21	12.51	13.09	11.69
Sri Lanka	4.08	3.41	3.94	4.24	4.66

Table	7:	Share	of South	Asian	Countries	in	Total	Intra-Reg	gional	Export	of (	Goods	(inperce	ent)
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Source: International Trade Centre, Geneva

Table 7 depicts that India dominates the exports to SAARC region. The core advantage and purpose of the South Asian "Free Trade" unity is significantly limited by the negative/sensitive lists. Procedural delay is another prominent barrier for SAARC region. Trade and business across borders has been inhibited by this self- destructing procedure for institutional requirements. South Asia in particular ranks second last amongst regions across the world in terms of ease of trading across borders (the last being Sub-Saharan Africa). Poor port and transport infrastructure, regulatory environment and service-sector infrastructure in South Asia have been obstacles to growth for the region as well as its integration. The costs for exporters are raised by delays in transit due to road or port congestion and customs procedures (NTBs). Both physical (lack of cargo/ship handling equipment) as well as non-physical infrastructure (excessive and cumbersome border procedures) have limitations.

## VI. Direction of Trade

It is a very normal phenomenon for neighbouring countries to indulge in more and more trade among themselves. South Asia however has had a history low volume of intra-regional trade and almost negligible coordination and cooperation on the economic front among the countries in the region. SAFTA lags much behind other regional trading associations as trade among its member countries constitute only 5 percent of the total trade by the South Asian nations regardless of the existence of logistical advantages. A major reason for this is the historic legacy of non-trading neighbourhood in South Asia lies in the political resentment especially between two foremost trading partners, India and Pakistan.

With the passage of time, numerous efforts have been made to bring about enhancement in the intraregional trade among the SAARC countries through preferential trading arrangements. The South Asian Free Trade Area (SAFTA) which became operational on January 1, 2006, is a major landmark in the direction. Still the desired level of success has not been achieved in this aspect. The study undertakes an analysis of the direction of trade among the SAARC countries in the recent past that is the period ranging the 2012 to 2016.

Items	2012	2013	2014	2015	2016
SAARC Total Exports	350.1	398.0	355.4	330.3	331.0
SAARC Exports to SAARC	20.0	22.7	25.8	23.0	22.4
SAARC total Imports	601.8	580.3	543.7	518.5	481.1
SAARC Imports from SAARC	19.3	18.1	23.5	22.9	22.1
Share of SAARC Exports to SAARC	5.7	5.7	7.3	7.0	6.8
Share of SAARC Imports from SAARC	3.2	3.1	4.3	4.4	4.6

# Table 8: Direction of Trade to/from SAARC, at current US\$

Source: International Trade Centre, Geneva

The above data (table 8) indicates that majority of export from the SAARC countries is to the countries outside the subcontinent. Further, SAARC countries also imports from outside the region in large

volumes. Hence the overall volume of trade among the SAARC countries is quite lesser than the trade of these countries with the rest of the world (i.e., countries outside SAARC).

# Table 9: Share of Top 20 Importing Countries in SAARC's Total Exports of goods

S. No	Importers	2012	2013	2014	2015	2016
1	United States of America	13.7	13.3	15.4	16.0	16.5
2	United Arab Emirates	11.2	9.1	9.8	9.6	9.5
3	United Kingdom	3.7	3.9	4.4	4.5	4.4
4	Germany	3.5	3.4	4.1	4.0	4.4
5	Hong Kong, China	3.6	3.6	4.0	3.9	4.2
6	China	5.1	5.0	4.7	3.8	3.5
7	France	2.0	1.9	2.3	2.2	2.5
8	Singapore	4.0	3.6	2.9	2.5	2.3
9	Belgium	2.1	2.2	2.3	2.1	2.3
10	Italy	1.8	2.0	2.3	2.0	2.1
11	Netherlands	3.1	2.7	2.5	2.0	2.1
12	Spain	1.3	1.3	1.7	1.8	2.1

13	Bangladesh	1.6	1.7	2.0	1.9	1.9
14	Viet Nam	1.2	1.6	1.9	1.7	1.9
15	Saudi Arabia	2.6	3.3	3.9	2.3	1.8
16	Turkey	1.4	1.5	2.1	1.7	1.7
17	Japan	2.1	2.1	2.0	1.8	1.6
18	Malaysia	1.2	1.5	1.4	1.6	1.4
19	Nepal	0.7	0.8	1.2	1.0	1.4
20	Sri Lanka	1.2	1.3	1.9	1.8	1.3
21	Others	32.9	34.3	27.3	31.8	31.2

Source: International Trade Data Centre, Geneva

As per the statistics, direction of exports outside the SAARC region has very diversified location wise outreach. A recent trend of SAARC's exports to the top 20 importing countries is given in table 9 and the following graph which also include countries from the region. It is quite interesting that top 20 countries of export destinations from SAARC region also include member countries like Bangladesh, Nepal and Sri Lanka. However, major

export destinations are US, UK, UAE and China including Hong Kong. Rest of the world that is countries other than these top 20 importing nations constitute 30 percent of exports from SAARC region. It becomes apparent that the economic superpower US is the largest importer of goods and services from the SAARC countries followed by UAE and other second world countries. Thus it can be stated that SAARC nations export mostly to developed countries of the world.

# Table 10: Share of Top 20 Countries in SAARC's Total Imports of Goods

S. No.	Exporters	2012	2013	2014	2015	2016
1	China	11.9	11.9	15.7	17.1	19.7
2	United Arab Emirates	7.9	7.5	7.0	5.6	5.8
3	United States of America	4.4	4.4	4.4	4.7	5.0
4	Saudi Arabia	6.4	7.1	6.9	4.9	4.3
5	India	2.4	2.3	3.3	3.2	3.4
6	Indonesia	3.0	3.2	3.6	3.6	3.3
7	Switzerland	4.9	4.4	4.0	4.2	3.2
8	Japan	2.8	2.5	2.6	2.9	3.0
9	Korea, Republic of	2.7	2.6	2.9	3.0	3.0
10	Germany	2.8	2.7	2.8	2.7	2.9
11	Malaysia	2.5	2.4	2.6	2.5	2.5

12	Singapore	2.1	2.1	2.4	2.7	2.3
13	Australia	2.4	2.1	2.0	2.1	2.1
14	Iraq	3.2	3.5	3.0	2.2	2.1
15	Iran, Islamic Republic of	2.5	1.9	2.4	1.6	2.1
16	Hong Kong, China	1.7	1.7	1.5	1.7	1.9
17	Netherlands	0.7	1.5	1.9	1.7	1.8
18	Qatar	2.8	2.6	3.2	2.0	1.7
19	Belgium	1.8	1.8	2.2	1.7	1.7
20	Thailand	1.3	1.3	1.5	1.6	1.6
	Others	29.8	30.4	24.4	28.3	26.2

Source: International Trade Data Centre, Geneva

Not only the direction of exports, direction of imports as well is concentrated outside the SAARC region and pillows a pattern similar to the characteristics of exports from SAARC. It is thus clear that the maximum volume of imports coming to the SAARC countries is from China and it has been increasing over the years. Similar to the direction of exports, direction of imports coming to the SAARC countries also show that trade of these countries is greater with the nations outside the SAARC region.

It is clearly evident from the above that South Asia has gradually adjusted its direction of trade as it has evolved through both domestic reform and international competitive conditions. The South Asia region, in the process, has also relatively increased in importance among regional members as a trading partner. But the question lies that how significant is this emergence and can the South Asian countries be characterized as "natural trading partners"?

# Table 11: Share of Countries in SAARC Intra-Regional Trade in 2016 (percent)

Countries	Exports	Imports
India	75.59	29.18
Bangladesh	11.69	20.50
Pakistan	4.66	19.22
Sri Lanka	3.40	11.64
Nepal	2.29	9.72
Afghanistan	1.73	6.14
Bhutan	0.57	1.90
Maldives	0.07	1.69

Source: Calculated by author based on data from International Trade Data Centre, Geneva

The relative importance of the South Asian market differs from country to country for individual members of SAARC. Countries in the region have disproportionately trade with the region.

It is suggested by the "natural trading partner" hypothesis, based on the trade volume approach, that members of a regional agreement should trade disproportionately with each other in order to be a successful bloc. It seems that despite the revival of intra-regional trade since reforms were initiated in the early 1990s, only the smaller landlocked countries can be perceived as having a "disproportionate" share of trade with the region, largely owing to their trade with India.

One important aspect may be noted that the share of intra-regional trade is very low particularly when we look at country level data and its share in regional trade. One of the important reasons of low share of trade between countries at SAARC level is

prevailing unofficial trade. These official trade and trade through third country are not properly reported. For example, India imports goods from Pakistan both informally and also formally routed through Dubai or third country. If these are routed through bilateral channel and also through formal routes, the share of imports and exports to and from India with Pakistan may go up at regional level.

VII. Major Commodities Traded The South Asian region is endowed with abundance of natural resources, agricultural wealth and has momentous human resources and technological capabilities. Traditionally the region has been trading in agricultural goods and the goods directly taking inputs from agriculture. Considering the present scenario, composition of trade of South Asia experiences pattern which different from the other trading regions of the world. Most of the exports from South Asia consist of labour-intensive manufactures. India is the only country in the region which enjoys a relatively diversified export structure with its top 20 commodity groups accounting for only 43 per cent of exports. The composition of exports from other SAARC countries however has experienced a noteworthy change in the recent past. A motivating fact is that the share of manufactured output in the volume of trade has been steadily increasing.

S. No	HS Code	Commodity	2001	2005	2010	2011	2012	2013	2014	2015	2016
1	'52	Cotton	9.8	8.7	15.4	14.7	13.7	15.5	13.2	13.6	12.7
		Vehicles other than									
2	'87	railway	4.0	6.9	8.9	8.8	7.3	6.0	6.8	8.2	9.7
3	'27	Mineral	2.0	6.7	10.3	12.3	12.0	10.0	11.1	8.9	7.9
4	'84	Machinery	6.5	4.9	4.4	4.2	3.9	3.7	3.5	4.3	6.1
5	'72	Iron and steel	3.6	5.9	7.6	6.2	6.0	6.8	6.1	5.0	5.6
		Salt and Construction									
6	'25	Material	3.1	1.6	2.8	2.6	3.0	3.2	3.4	3.2	3.8
		Plastics and its									
7	'39	articles	2.1	4.0	2.5	2.5	2.7	3.5	3.0	2.9	3.2
		Electrical machinery									

 Table 12: Share of Top 20 Commodities that SAARC Imports from SAARC at 2-digit HS Level (inpercent)

8	'85	and equipment	3.0	3.2	2.7	2.6	2.5	2.2	2.2	2.4	3.0
		Pharmaceutical									
9	'30	products	2.5	1.7	2.1	2.0	2.2	2.7	2.0	2.1	2.5
10	'08	Edible fruit and nuts	2.5	1.6	1.5	1.4	1.1	2.5	2.6	3.3	2.5
11	'07	Edible vegetables	4.0	3.8	2.3	1.7	2.0	2.8	2.6	3.3	2.3
12	'29	Organic chemicals	1.8	4.8	2.9	2.8	2.8	2.5	1.9	1.8	2.2
13	'10	Cereals	7.5	3.6	1.9	3.4	2.9	3.2	6.3	5.0	2.1
		Man-made staple									
14	'55	fibers	2.5	1.7	1.4	1.5	1.2	1.5	1.9	1.5	1.8
15	'09	Coffee, tea and spices	2.3	2.5	1.9	1.7	1.4	1.8	1.7	2.4	1.8
16	'32	Tanning or dyeing	0.9	1.2	1.2	0.9	1.0	1.1	1.3	1.3	1.6
17	'62	Articles of apparel	1.5	0.5	0.6	0.6	0.8	1.2	1.2	1.3	1.4
18	'40	Rubber and its articles	0.9	1.8	1.5	1.5	1.5	1.3	1.1	1.3	1.4
10		Other vegetabletextile fibers									
19	'53		0.9	1.2	1.3	1.2	1.1	1.1	0.7	1.0	1.4
20	'48	Paper and paperboard	1.7	1.4	1.1	1.0	1.0	1.0	1.0	1.0	1.3

Source: International Trade Data Centre

The major commodities which SAARC countries import from SAARC region itself are cotton, vehicles other than railway,

mineral, machinery, iron and steel, salt and construction material, plastic and its articles, electrical machinery and equipment,

pharmaceutical products, edible fruits and nuts, edible vegetable, organic chemicals, cereals, man-made staple fibres, coffee, tea and spices, tanning and dyeing products,

articles of apparel, rubber and its articles, other vegetable textile fibres, and paper and paperboard.

S.	HS	Commodity	2001	2005	2010	2011	2012	2013	2014	2015	2016
No.	Code										
1	'52	Cotton	11.5	8.7	12.9	11.5	13.4	14.4	11.9	14.2	13.0
2	'87	Vehicles other than railway	6.2	5.4	7.6	7.1	6.1	5.4	6.3	8.1	9.7
3	27	Mineral fuels	2.8	19.2	13.0	14.1	10.5	8.3	9.3	8.6	7.0
4	'84	Machinery	6.0	2.7	2.6	3.0	3.3	3.4	3.4	4.0	5.5
5	'72	Iron and steel	3.6	4.0	4.5	3.6	4.7	4.4	4.7	3.7	5.3
6	'39	Plastics and its articles	2.6	3.3	2.3	2.5	2.7	3.0	2.7	2.8	3.2
		Salt and ConstructionMaterial									
7	25		3.0	2.8	3.0	3.6	3.7	2.8	2.8	2.5	3.0
8	'30	Pharmaceutical products	3.5	2.2	1.9	2.1	2.2	2.3	2.0	2.3	2.9
		Electrical machinery and									
9	85	equipment	2.8	2.0	2.0	2.0	2.1	2.0	2.2	2.4	2.9
10	'10	Cereals	7.0	5.9	2.9	4.6	4.1	5.5	5.9	3.8	2.4
11	'08	Edible fruit and nuts	1.1	1.3	2.0	2.1	2.1	2.1	2.4	2.5	2.3
12	'29	Organic chemicals	2.3	3.7	2.4	2.3	2.2	2.3	1.9	1.7	2.3
13	'07	Edible vegetables	3.1	3.9	3.3	2.9	2.2	2.8	2.3	2.4	2.1
14	'55	Man-made staple fibers	1.2	0.8	1.3	1.3	1.7	1.8	2.0	2.4	2.0
		Aircraft, spacecraft, and its									
15	'88	parts	0.0	0.0	0.0	0.0	0.0	4.1	7.5	4.7	1.9
16	'09	Coffee, tea, mate and spices	3.3	1.4	2.2	2.2	2.3	2.2	1.8	2.1	1.7
		Articles of apparel and									
17	62	clothing accessories	0.8	0.8	0.7	0.9	1.0	0.9	1.0	1.4	1.7
		Sugars and sugar									
18	'17	confectionery	6.7	0.8	4.3	3.0	2.8	1.8	1.5	2.1	1.5
		Ships, boats and floating									
19	89	structures	0.0	0.0	0.8	1.3	1.4	1.3	2.6	1.6	1.4
20	32	Tanning or dyeing extracts	1.2	1.3	0.7	0.8	1.0	1.2	1.3	1.2	1.4

# Table 13: Share of Top 20 Commodities that SAARC Export to SAARC at 2-digit HS Level(in percent)

Source: International Trade Centre, Geneva

In view of the commodities SAARC countries export to SAARC region itself, there are twenty major commodities namely- cotton, vehicles other than railway, mineral fuel, machinery, iron and steel, plastic and

its article, salt and construction material, pharmaceutical products, electrical machinery and equipment, cereals, edible fruits and nuts, organic chemicals, edible vegetable, man-made staple fibres, aircraft,

spacecraft and its parts, coffee, tea, mate and spices, articles of apparel clothing accessories, sugar and sugar confectionery, ship, boat and floating structures, and tanning and dyeing products.

## Table 14: Share of Top 20 Commodities in SAARC's Exports to World (In Percent)

S.	HS	Commodities									
No.	Code		2001	2005	2010	2011	2012	2013	2014	2015	2016
1	'71	Natural or cultured pearls	13.3	12.5	12.4	14.0	12.9	11.3	11.6	11.7	12.9
		Articles of apparel and									
2	'62	clothing accessories not knitted	13.9	8.7	6.0	5.8	6.0	5.7	3.7	8.3	8.9
		Articles of apparel and									
3	'61	clothing knitted	7.3	7.0	5.9	5.5	5.4	5.3	3.5	7.7	8.8
4	'27	Mineral fuels	4.0	8.6	14.6	16.0	15.8	17.7	17.8	9.7	8.5
5	'87	Vehicles other than railway	1.6	2.6	3.5	2.9	3.6	3.5	4.1	4.3	4.6
6	'84	Machinery	3.2	3.2	3.1	3.1	3.3	3.4	3.9	4.1	4.2
7	'30	Pharmaceutical products	1.9	1.8	2.3	2.3	2.8	3.0	3.3	3.9	4.0
8	'29	Organic chemicals	3.0	3.4	3.2	3.1	3.6	3.4	3.4	3.4	3.4
9	'52	Cotton	4.1	4.6	4.1	3.6	4.0	4.2	3.8	3.5	3.0
10	'63	Other made-up textile articles	2.5	4.4	2.6	2.4	2.4	2.4	2.4	2.8	2.9
		Electrical machinery and									
11	'85	equipment	2.6	2.2	3.4	3.4	3.2	2.9	2.6	2.5	2.6
12	'10	Cereals	1.7	2.3	1.9	2.3	3.1	3.5	3.5	2.7	2.2
13	'72	Iron and steel	1.7	3.4	2.7	2.3	2.3	2.6	2.6	2.0	2.0
14	'03	Fish and crustaceans, mollusks	3.1	1.7	1.2	1.2	1.3	1.6	1.7	1.7	1.9
		and other aquatic									
15	'73	Articles of iron or steel	1.9	2.2	2.4	1.9	2.3	1.9	2.2	2.0	1.8

16	'39	Plastics and its articles	1.5	2.0	1.5	1.7	1.6	1.7	1.6	1.7	1.7
17	'09	Coffee, tea, mate and spices	2.9	1.4	1.4	1.3	1.3	1.3	1.4	1.5	1.4
18	'02	Meat and edible meat offal	0.5	0.5	0.7	0.8	1.0	1.3	1.5	1.4	1.3
19	'64	Footwear, gaiters and the like	1.3	1.0	0.7	0.7	0.7	0.8	0.9	1.1	1.2
		Ships, boats and floating									
20	'89	structures	0.1	0.5	1.6	2.0	1.2	0.9	1.3	1.3	1.0

Source: International Trade Centre, Geneva

Trade volume export of SAARC countries to non-SAARC region is more than that in the intra-SAARC region with more diversity in the commodities traded. The major commodities exported by SAARC countries export to the world (non-SAARC countries) are natural or cultured pearls, articles of apparel and clothing (not knitted), articles of apparel and clothing (knitted), mineral fuel,

vehicles other than railway, machinery, pharmaceutical products, organic chemicals, cotton, other made-up textile articles, electrical machinery and equipment, cereals, iron and steel, fish and crustaceans, mollusks and other aquatic, articles of iron and steel, plastic and its articles, coffee, tea, mate and spices, meat and edible meat offal, footwear, guitars and the like, and ships, boats and floating structures.

Table 15: Share of Top 20 Commodities in	SAARC's Import from the	World (In Percent)
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S.	HS	Commodity	2001	2005	2010	2011	2012	2013	2014	2015	2016
No.	Code										
1	27	Mineral fuels	25.9	28.8	29.2	31.5	35.3	36.1	36.7	24.2	21.9
2	'71	Natural or cultured pearls	15.4	12.8	15.7	16.4	13.8	11.9	11.1	11.6	10.3
3	'85	Electrical machinery and equipment	5.7	8.1	7.1	6.8	6.0	6.2	6.8	8.5	9.7
4	'84	Machinery	8.6	9.8	8.0	7.7	7.4	6.9	6.8	8.3	9.7
5	29	Organic chemicals	3.0	3.5	3.3	2.9	3.0	3.4	3.8	3.6	3.6
6	'39	Plastics and its articles	1.8	2.2	2.4	2.0	2.1	2.4	2.7	3.1	3.4
7	72	Iron and steel	2.3	4.1	3.4	3.1	3.2	2.7	2.8	3.5	3.1
8	'15	Animal or vegetable fats and oils	3.2	2.2	2.5	2.7	2.9	2.6	2.5	3.0	3.0
9	'99	Unspecified Commodities	1.3	0.8	2.1	2.1	2.4	2.8	2.7	2.5	2.6

		Vehicles other than									
10	87	railway	1.1	1.8	2.0	1.9	1.6	1.4	1.5	2.1	2.3
		Optical, photographic									
11	90	materials	2.0	1.7	1.4	1.2	1.3	1.3	1.5	1.7	1.9
12	52	Cotton	2.8	1.5	1.5	1.5	1.3	1.5	0.4	1.7	1.6
		Ships, boats and floating									
13	89	structures	1.0	1.2	1.1	0.9	1.3	1.6	1.0	1.2	1.4
14	'07	Edible vegetables	1.2	0.5	0.7	0.5	0.6	0.6	0.7	1.1	1.3
15	'31	Fertilisers	1.0	1.5	1.8	2.1	1.7	1.4	1.3	2.0	1.3
		Miscellaneous chemical									
16	'38	products	0.9	0.9	0.9	0.8	0.8	0.9	1.0	1.1	1.2
17	28	Inorganic chemicals	1.9	1.5	1.0	1.1	1.1	1.0	1.0	1.2	1.2
18	73	Articles of iron or steel	0.8	1.0	0.9	1.0	0.9	0.9	0.9	1.0	1.1
19	'48	Paper and paperboard	1.3	0.8	0.7	0.7	0.6	0.6	0.7	0.8	0.9
20	'40	Rubber and its articles	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.9

Source: International Trade Centre, Geneva

Trade of SAARC countries with rest of the world includes import from non-SAARC region to countries in the SAARC region. Major commodities hence imported include mineral fuels, natural or cultured pearls, electrical machinery and equipment, machinery, organic chemicals, plastics and its articles, iron and steel, animal or vegetable fats and oils, unspecified commodities, vehicles other than railway, optical, photographic materials, cotton, ships, boats and floating structures, edible vegetables, fertilisers, miscellaneous chemical products, inorganic chemicals, articles of iron or steel, paper and paperboard and rubber and its articles.

VIII. Conclusion Relationship between regional integration and economic growth can be enhanced by the trade expansion and rapid economic development of the member nations. In case of South Asia, the World Economic Outlook, January, 2018 reveals that the region has a share of only 6 percent in the World's GDP and around 2 percent in World's goods trade. Investment data of UNCTAD further indicates that South Asia hosts 3 percent of world's foreign direct investment in the year 2017. Therefore, regional integrations have encouraged trade and economic development in most parts of the world but lots need to be done in case on SAARC. Intra-regional trade ratio varies from a high of 60.5 per cent for Nepal and

43.1 per cent for Afghanistan to a low of 2.7 per cent for India and 6.6 per cent for Pakistan. However, India's trade is having an expansion with SAARC countries in recent years.

Progress in achieving regional cooperation in South Asia has been at best modest because of competitive rather than complementary nature of products despite the opportunities. For integration, efforts are impeded by reliance on industrial countries for capital finance and purchase credits, and inherited mutual suspicion.

The future of SAFTA remains bright even though free trade in South Asia faced initial set-backs. There would be a tremendous increase in trade and commerce in response to reduction in tariff rates by SAFTA if, supported by adequate infrastructure and trade facilitation measures by member Governments. The South Asian subcontinent is in sheer need of economic cooperation. SAFTA can prove to be a facilitator in the region for not only economic gains but also to establish a more dominant position internationally.

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## Empirical Analysis Of India's Merchandise Trade With China In Post Reform Era

## Shraddha Mishra Ankita Tiwary

## ABSTRACT

India and China have posted massive rates of economic growth relative to the global economy over the past twenty years not with standing significant external events including the Asian financial crisis in the 1990s, the breaking of the technology bubble in the US in 2000 and the most recent global financial crisis beginning with the collapse of the US mortgage market in 2008. China-India relations, also called Sino-Indian relations or Indo-China relations, refer to the bilateral relationship between the People's Republic of China (PRC) and the Republic of India. Even the relationship has been friendly, there are some border disputes and a very high economic competition between the two countries. China and India are the two most populous countries and the rapid growing major economies in the world. Growth in strategic and economic influence has increased the significance of their bilateral relationship. This paper analyses the India and China trade relations in post reform era (1996-2022). It concludes that China has emerged as an export driven economy with its growth rate of exports beating that of its imports. India's export growth rate is still covering behind its import growth rates. India-China trade has a marked difference with India importing three times as much as it exports to China. The Grubell Lloyd index shows the high intra-trade commodities products trade between India and China, which is the better opportunity for India to maintain economies of scale and product differentiation with developing countries and part of a global world for the development of the economy.

KEYWORDS: Merchandise trade, FTA, Grubell Lloyd index

## INTRODUCTION

India and China have posted massive rates of economic growth relative to the global economy over the past twenty years not with standing significant external events including the Asian financial crisis in the 1990s, the breaking of the technology blob in the US in 2000, and the most recent global financial crisis beginning with the collapse of the US mortgage market in 2008. In fact, the economies of India and China have grown at a 10-year real CAGR of at 7.8% and 10.7% respectively.<sup>1</sup>

India and China officially continue trade in 1978. In 1984, the two sides signed the Most Favoured Nation Agreement, and India-China bilateral trade which was as low as US\$ 2.92 billion in 2000 reached US\$ 61.7 billion in 2010, making it the largest goods trading partner.

In 2008, bilateral trade stood at US\$ 51.8 billion and China became India's largest goods trading partner, replacing the United States of America. By the end of 2009, as a result of the world economic deterioration, bilateral trade was discarded to US\$ 43.27 billion (a decline of 16.54%). However, in 2010 bilateral trade attained to US\$ 61.74 billion, a growth of 43% compared to the same period last year. India exports goods worth US\$ 20.86 billion (52%) to China and imports goods worth US\$ 40.88 billion (38%) from China, resulting in a negative balance of trade of US\$ 20 billion. In the starting month of 2011, India-China bilateral trade reached US\$ 48.17 billion (19.47% over the same period last year) and India's total exports to China for this period were US\$ 15.68 billion (7.37%) and China's exports to India reached US\$ 32.49 billion (26.33%). This can be shown in table 2.

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Without being affected by the massive economic growth of India and China, there is no Free Trade Agreements (FTAs) between these two countries. China is the world's largest exporting country while India's exports have grown since 2009. In recent past years, both India and China have been pursuing FTAs with a variety of countries, particularly in Asia. It is reported that no progress has been made toward the signing of an FTA between India and China. China has picked up an expansive impression in worldwide exchange and India's household industry has announced notes of caution on a few occurrences over a conceivable FTA with China.<sup>2</sup>

This paper analyses the India and China trade relation from post reform era (1996-2022). This paper is divided in to six sections. First section- I deals with the introduction of India and China's trade relations. Section- II studies the brief profile of India and China. Section – III presents the research methodology and objectives of the study. Analysis and interpretation of the study presents in the section IV. Section V gives the conclusion and suggestions of the study.

# SECTION II: BRIEF PROFILE OF INDIA AND CHINA

The People's Republic of China (PRC) was established on October 1, 1949, and India was the first noncommunist country to establish an embassy in the PRC. India and China established diplomatic relations on April 1, 1950. The two countries also jointly established the Panchsheel (Five Principles of Peaceful Coexistence) in 1954. Chinese Premier Zhou Enlai visited India in June 1954 and Prime Minister Nehru visited China in October 1954. Premier Zhou Enlai visited India again in January 1957 and April 1960. The 1962 India-China conflict led to a serious setback in bilateral relations. India and China resumed ambassadorial-level relations in August 1976. Contacts at a higher political level were revived by the visit of then-Foreign Minister A.B. Vajpayee in February 1979. The Chinese Foreign Minister Huang Hua paid a return visit to India in June 1981.<sup>3</sup>

China-India relations, also called China-India relations or India-China relations, refer to bilateral relations between the People's Republic of China (PRC) and the Republic of India. Although the relationship is friendly, there are some border disputes and very strong economic competition between the two countries. China and India are the two most populous countries and the fastest-growing major economies in the world. Growth in strategic and economic influence has increased the significance of their bilateral relationship<sup>4</sup> and is shown in Table 1.

Indicators / Unit	INDIA	CHINA
Population in millions (2021)	1,393	1,383
Birth rate (per 1000 people in 2021) in percent	16.4	7.5
Death rate (per 1000 people in 2021) in percent	9.4	7.4
Area (2016)	2,973,190	9,388,211
GNI index (2018)	47.90	57.0
Inflation rate (% in 2019)	5.5	0.9
Unemployment rate (% in 2021)	6.0	4.0

## Table 1: Relative statistical profile of two economies of selected indicators

Ease of doing business score (2020)	71.05	77.28
GDP per capita in US dollar (2022)	2,280	12,562
GDP per capita based on PPP (international dollar in 2016)	7316	19,260

Source: World Bank

## Graph 1: Relative statistical profile of two economies of selected indicators India and China



## **SECTION III**

## **OBJECTIVES OF THE STUDY**

The following objectives are as followed: -

To analyse trends and variabilities in India's merchandise trade with China.

To find out the functional relation between India's export to China and per capita income of China.

To analyse the exports and imports index of India's merchandise trade with China.

## **RESEARCH METHODLOGY**

To study the empirical analysis of the trade relationship between India and China for thirty-two years, the secondary data is extracted from relevant sources of the official website of

Business Portal (DGCI&S Directorate General of Commerce Intelligence & Statistics). The data used for the study has been retrieved as a 2-digit code of grouped commodities The other source of data information has been UN COM Trade& World Integrated Trade Solution (WITS).

The formula for finding the trade index is the Grubell Lloyd index:

The Grubell–Lloyd index measures intra-industry trade of a particular product. It was introduced by Herb Grubell and Peter Lloyd in 1971.

 $G_I = 1 - \frac{|exports-imports|}{exports+imports}$ 

If  $G_i = 1$ , there is only intra-industry trade, no inter-industry trade. This means for example the Country in consideration Exports the same quantity of goods as much as it Imports. Conversely, if  $G_i = 0$ , there is no intra-industry trade, only inter-industry trade. This would mean that the Country in consideration only either exports or only Imports goods.

## SECTION IV: ANALYSIS AND INTERPRETATION

#### Table 2: Trends and variabilities in export and import of India and China from 1996 to 2022.

Year	India's export to	% Share of	India's import	% Share of
	China	exports to total exports	from China	imports to total imports
1996	614.80	1.83	756.91	1.93
1997	717.95	2.06	1112.05	2.68
1998	427.16	1.28	1096.71	2.58
1999	539.04	1.46	1282.89	2.57
2000	831.30	1.86	1502.20	2.97
2001	951.95	2.17	2036.39	3.96
2002	1975.48	3.74	2792.04	4.54
2003	2955.08	4.62	4053.21	5.18
2004	5615.88	6.722	7097.98	6.36
2005	6759.10	6.55	10868.05	7.28
2006	8321.86	6.58	17475.03	9.40
2007	10871.34	6.66	27146.71	10.78
2008	9353.50	5.04	32497.02	10.70
2009	11617.88	6.49	30824.04	10.68
2010	14168.86	5.67	43479.76	11.75
2011	18076.55	5.90	55313.58	11.30

US million

The Indian Economic Journal

2012	13534.88	4.50	52248.33	10.64
2013	14824.36	4.71	51034.62	11.33
2014	11934.25	3.84	60413.17	13.48
2015	9010.35	3.43	61706.83	16.19
2016	10171.18	3.68	61281.57	15.94
2017	13333.53	4.39	76380.70	16.41
2018	16752.20	5.08	70319.64	13.68
2019	16612.75	5.30	65260.75	13.75
2020	21187.15	7.26	65212.25	16.53
2021-22	21259.79	5.04	94570.57	15.43
MEAN	9323.77		34529.34	
SD	6607.94		29078.53	
Coefficient of variance (in %)	72.28		85.88	
CAGR (in %)	11.71		16.29	

Source: Directorate General of Commerce Intelligence & Statistics

This table 2 depicts the trends and variabilities in India's export to China and import from China. It shows various deviation, which can be computed from the mean and standard deviation and it concludes that greater the standard deviation, the greater will be the magnitude of the deviations of the values from their mean, which means degree of uniformity is less in exports and imports.

It shows that coefficient of variation in India's export to China 72.28 is large which indicates that it is less stable or less uniform. Where, coefficient of variation in India's import from China 85.88 is also large, indicates less stable or uniform. Therefore, the variations are higher in imports (85.88) rather than exports (72.28). This can be seen in illustrated graph 2.

Graph 2, shows the trends in India's export to and import from China, where India's import from China increases during the period under study. This shows trade deficit for India and trade surplus for China.



Graph 2: Trends in export and import of India and China

Graph 3 presents the variabilities in India's export to and import from China. This shows that variabilities graph in India's import from China is large as compare to India's export to China.



Graph 3: Variabilities in export and import of India and China



## Graph 4: Share of exports and imports of India and China

This graph 4 shows that share of export to India is less as compare to share of imports from China.

Year	India's export to China	Per capita income of China
1996	614.80	2060
1997	717.95	2265
1998	427.16	2446
1999	539.04	2650
2000	831.30	2915
2001	951.95	3206
2002	1975.48	3527
2003	2955.08	3934
2004	5615.88	4423
2005	6759.10	5053
2006	8321.86	5837
2007	10871.34	6818
2008	9353.50	7570

	<b>Fable 3: Regression</b>	on analysis between	India's export to Chi	ina and per capita i	income of China
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The Indian Economic Journal - ISSN 0019-4662

2009	11617.88	8305
2010	14168.86	9254
2011	18076.55	10292
2012	13534.88	11168
2013	14824.36	11872
2014	11934.25	12480
2015	9010.35	12897
2016	10171.18	13483
2017	13333.53	14243
2018	16752.20	15495
2019	16612.75	16652
2020	21187.15	17189
2021	21259.79	19338
Coefficient of regression(r <sup>2</sup> )	0.83	
t- value	0.38	

Sources: Directorate General of Commerce Intelligence & Statistics

Export is calculated in US \$ million dollars

Per capita income is calculated GDP (PPP) in current international dollar

Table 3 shows that India's export to China increases twelve times from 1996 to 2022, where per capita income of China increases eight times from 1996 to 2022. The functional relation between India's export and PCI of China of coefficient of regression is 0.83. The t-value is 0.38825.

Remark: Significant at 1% level of probability

It is an admissible fact that as well as the per capita income increases of a country, it imports more and more from another country. In the case of India and China trade relations we have studied that as the per capita income of China increases, it also increases India's export to China.

The responsiveness of the demand for exports to the changes in the per capita income of China can be estimated by OLS method. Using time series data the demand function can be specified as followed

 $\mathbf{Y} = f(\mathbf{X})$ 

Where, Y = Quantity of India's Export to China

# X = per capita income of China

The export function has been estimated by fitting the linear regression models to the time series data from 1996 to 2022.

# Table 4: India and China trade index

HS CODE	PRODUCT NAME	GL index
41-43	Raw hides & skins, leather, furskins & article there off, saddler & harness and animal gut articles	0.79
6 - 14	Vegetable products	0.78
64-67	Footwear ,headgear ,human hair and there off etc	0.71
50- 63	Textile & textile articles	0.69
25-27	Mineral products	0.54
72 - 83	Base metal/article of base	0.54
39-40	Rubber & plastic products	0.50
16-24	Food stuffs ,beverages, tobacco	0.48
28-38	Chemical & allied products	0.42
68- 70	Stone/mica/ceramic /glassware products	0.39
86 - 89	Vehicles, aircraft vessel & transport	0.30
71	Precious metal stones	0.27
90 - 92	Optical photographic parts, medical ,surgical instruments & apparatus	0.26
97- 99	Works of arts pieces & antiques	0.19
44- 46	Wood products and there off	0.13
47 - 49	Pulp of wood & paper	0.12
1-5	Live animal & animal products	0.11
15	Animal & animal fats and oil & their cleavage products; prepared edible fats, animal & vegetable waxes	0.08
84 - 85	Machinery & machinery appliances, electrical equipments etc	0.07
94 - 96	Miscellaneous manufacture articles	0.03
93	Arms and ammunition	INTER

Source: Directorate General of Commerce Intelligence & Statistics

Table 4 depicts the two-digit HS code trade commodities and their index value. The value is close to one reveal closer to intra, where the value is closer to zero represents inter-trade by 2-digit product classification. High intra-trade arises in order to take advantage of economies of scale in production, where international competition forces each firm or industry to produce only one or at most a few varieties and styles of the same product rather than many different varieties and skills to minimize the cost low. Therefore, India and China PRP have maintained high intra-trade in four commodities and they are Raw hides & skins, leather, furskins & article there off, saddler & harness and animal gut articles (0.79); Vegetable products (0.78); Footwear, headgear, human hair and there off, etc (0.71); and Textile & textile articles (0.69). Intra-trade commodities give to benefit the consumer because of a wider range of choices, available at lower prices made possible by the economics of scale in production. A large portion of today modern economics, trade differentiated products rather than a homogenous products for global competition. So, it is a better opportunity for India to be part of a global world for the development of the economy.

# SECTION – V: CONCLUSION AND SUGGESTIONS

This paper concludes that China has become an export-oriented economy because the growth rate of exports is higher than that of imports. India's export growth rate still lags behind its import growth rates. There is a significant difference in trade between India and China: India imports three times as much as it exports to China. Chinese exports to India have grown faster than total Chinese exports and Indian imports. China is expanding its business to the Indian market much faster than any other export destination. It is important to analyze the potential impact of a free trade agreement with China on India because reducing trade barriers could lead to mutual benefits. The Grubell Lloyd index shows the high intra-trade commodities products trade between India and China, which is a better opportunity for India to maintain economies of scale and product differentiation with developing countries and part of a global world for the development of the economy.

To boost exports, exporters can seek help from the government's top export programs. The Export Promotion Council, the Ministry of Commerce, and the FIEO receive funding for participation in export promotion fairs for exporters and entrepreneurs. The following schemes are as follows<sup>5</sup>:-

**Market Development Assistance Scheme**: -This scheme funds up to 90% of airfare for MSMEs and entrepreneurs to attend trade shows or trade delegations overseas. This scheme also provides funds for the preparation of promotional materials (up to 25 percent of the cost), sector-specific studies (up to Rs 2 lakh), and challenging anti-dumping cases (50 percent up to Rs 1 lakh).

The Merchandise Exports from India Scheme (MEIS):- The MEIS was established for the export of certain commodities to certain markets, and rewards for the export of declared commodities to declared markets under the MEIS are paid as a percentage of the realized value FOB.

Export Promotional Capital Goods (EPCG) Scheme: - The purpose of this scheme is to promote the<br/>importation of capital goods for the manufacture of high-value goods and services in order to enhance<br/>the<br/>competitiveness<br/>of<br/>India's<br/>exports<br/>The scheme allows the import of capital goods for pre-production, production, and post-production at<br/>zero duty.

**Export Oriented Unit (EOU) Scheme:-** The scheme provides an internationally competitive duty-free environment coupled with better infrastructure facilities for export production, and establishments are allowed to import all types of goods including capital goods, raw materials, components, packaging materials, consumables, spare parts and various other specified categories of equipment duty-free locally.

Market Access Initiative (MAI) Scheme: - The scheme is an export promotion scheme designed to act as an incentive to promote Indian exports on a sustainable basis. The scheme is focused on a focal product and a focal country to develop a specific market and product. These activities are eligible for
financial assistance: overseas marketing projects, capacity building, regulatory compliance assistance, studies, project development, etc

**Software Technology Park (STP) Scheme**: - This scheme is a 100 percent export-oriented scheme for the development of software for export. Permits are issued under the single window clearance structure. All imports of hardware and software in STP units are completely duty-free, and imports of used capital goods and re-exports of capital goods are also allowed.

Services Exports from India Scheme (SEIS): - The SEIS was established to increase exports of notified services, and the benefits at SEIS are available for exports of services that occur on or after the date of notification of this policy. The duty credits are granted as awards at SEIS and the goods imported or purchased domestically in exchange are freely transferable.

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Swargesh Kumar

#### **Economic And Human Capital Development**

#### ABSTRACT

Investment in Human capital is considered as one of most important pillars of economic growth in any economy. The purpose of the paper is to measures the effects of human capital on the economic growth of Indian economy. The measurement of human capital as the determinant of economic growth is analyzed and measured under the headings of education and health component of human capital. In order to measure the effect of the human capital on the growth of Indian economy we used three regressions models. The first regression model used captures the relation of education human capital with the growth. Model second is used to measure the health human capital and economic growth. Finally, model third is used to measure the human capital and growth. In the third model, both education and health human capitals are used as regressor for growth. The estimated coefficients revealed that the stock of education human capital contributes to economic growth positively and notably. The study concludes that investment in education increases the enrolment ratios and enrolment ratios affect the economy in positive and in significant way. Similarly, it was found that there exists a positive relationship between health human capital and economic growth as well. The study explores revealed that investment in health increases the life expectancy that contributes to economic growth in remarkable and positive way. The Results thus confirmed the literature evidence that human capital has a remarkable impact on the economic growth of India.

#### Keywords

Human capital, Economic Growth, Regression

#### Introduction

In an international perspective the major determinants of economic development as per the average economist, or the World Bank, is likely to point to the important role of human capital formation (Enrich, 1996). Human capital in nature encompasses knowledge, information, ideas, skills, and health of individuals. Technology may be the driver of present day modern economic growth especially for the science base sector and advanced economics of the world, but human capital is certainly the energy required to drive the vehicle of modern economic growth (Becker, 2002). Various growth theorists have various approaches to human capital as an important component of economic development. Both theoretical and empirical researches have proved the fact that investment in human capital formation of an economy plays a vital role in improving the efficiency and productivity of human beings, and through them the various factors that complement and supplement the production process (Barro and Salai-i-Martin, 1995). However, what is still debatable is what factors should be considered as components of human capital. The exclusion and inclusion of different components of the human capital to relate it empirically with other variables such as growth makes it more complex and changing concept. Based on the development models and role of human capital India after independence also struggling for increasing the human capital particularly education component and health component.

Given the features of Indian economy, this study empirically measures the effects of human capital development on the economic growth of Indian Economy. From the available literature right from Harrod Domar model till cross country studies which used Cobb-Douglas production function one can conclude that to estimate the effect of human capital on growth either education human capital or health human capital as independent or both as independent and more weightage either to education or health proxy variables were attached.

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For the present study, the effect is measured under three different sub-headings. First the model is laid down to estimate only the effect of education human capital second the methodology is set to measure only the effect of health human capital and third the effect of both on growth is measured. The whole methodology used is extension version of methodology used by Neagu to capture the effect of human capital on Romania economy (Neagu, 2012). The whole paper is divided into four sections. Section first is about introduction and review of related studies, section second provides the data and methodology. Section third provides the results and discussion and section fourth provides summary conclusion.

#### 1.2 Review of related studies

The concept of human capital is not a new one. Perhaps the first attempt to define and measure what we now call human capital was Sir William Petty. He believed that labour was the "father of wealth" and that a measure of its value should be included in the estimation of national wealth (Petty, 1690).Cantillon, was more interested in defining the costs of maintaining a slave and his offspring than in estimating the value created by human capital (Cantillon, 1755). Smith's principal aim was not to measure the "value of the stock of human capital" but to understand the reasons why there are different remunerations between different occupations Smith included the acquired and useful abilities of all the inhabitants or members of the society under the idea of capital (Smith, 1776). Mill argues that because acquired abilities are costly and make men more productive, they must be treated as capital, thus taking up a position similar to that of Adam Smith (J.S. Mill, 1848). Marshall's conception of human capital is similar to Mill's:

",We may define personal wealth so as to include all those energies, faculties and habits which directly contribute to making people industrially efficient" (Alfred Marshall, 1890; quotations from the 1920 edition). Schultz, believed people by investing in themselves, can enlarge the range of choice available to them. It is one way free men can enhance their welfare. Schultz's argument was in line with the new approach taken to the rational choice of investing in human capital (Schultz, 1961). Nelson-Phelps hypothesis suggested that the rate at which the gap between the technology frontier and the current level of productivity is closed depends on the level of human capital (Nelson and Phelps, 1966). Lucas revealed that the major importance of the educational system to any labour market would depend on its ability to produce a literate, disciplined, flexible labour force via high quality education (Lucas, 1988). According to Romer, the bottom line is creation of new ideas is a direct function of human capital, which manifests in the form of knowledge. As a result, investment in human capital led to growth in physical capital, which in turn leads to economic growth (Romer, 1990). Levine and Renelt suggest that the regression that displays a positive relationship between human capital and economic growth are not robust to the inclusion of other relevant variables (Levine and Renelt, 1992). Jenkins confirmed the finding that investment in human capital increases productivity (Jenkins, 1995). Barro in his study revealed that an extra year of male upper-level schooling is associated with a 1.2 % increase in per capita GDP growth rate (Barro, 1997). Sianesi and Van Reenen estimated concluded that an overall 1% increase in school enrolment rates leads to an increase in GDP per capita growth of between 1 and 3% (Sianesi and Van Reenen, 2000). Abbas found human capital to be positively related with economic growth in Pakistan at 1% level of significance and at 5% level of significance in case of Sri-Lanka at secondary and higher secondary level respectively (Abbas, 2001).O" Mahony and de Boer in their work Britain's relative productivity performance: Updates to 1999, confirms that the UK continues to lag behind both Germany and France in terms of labour productivity, and this gap is primarily explained by differential rates of investment in both human and physical capital (O' Mahony and de Boer, 2002). Oketch in his study revealed that the high investment in physical capital and human capital is a sources of labour productivity growth in the medium term in African nations (Oketch, 2006). Abbas and Foreman-Peck, for estimating the effect of human capital on economic growth of Pakistan in the period 1961 to 2003 used the co-integration. The study found an increasing return to physical and human capital specially in case of investing in health sector (Abbas and Foreman- Peck, 2007). Haldar and mallik suggest that physical capital investment has neither long-runnor short-run effect but the human capital investment has significant long-run effect on per capita GNP (Haldar and mallik, 2009). Mukherjee A.N predict that higher levels of schooling and better quality of workforce will lead to an increase in the growth rate, further strengthening the case for public expenditure on education (Mukherjee A.N,2007).

#### 1. Data and Methodology

We used three regression models to measure the effect of the human capital on the growth of Indian economy. The first regression model used in the study is to captures the relation of education human capital with the growth. Model second is used to calculate correlation coefficients to measure the health human capital and economic growth association. Finally, model third is used to measure the human capital and growth. Data is collected from various sources, which includes World Bank database as well. The various proxy variables used to capture the effect of education human capital includes gross enrollment ratios at primary and higher level and expenditure on education. Similarly, the various proxy variables to capture the effect of health human capital include life expectancy, Percapita expenditure on health, infant mortality and expenditure on health as the percentage of GDP. Per-capita GDP as the dependent variable is used as a proxy variable for growth.

#### Model first: Education human capital and growth estimation

First, the education component of human capital is estimated. For education human capital the proxy, variables to estimate are gross enrollment ratios at primary level and gross enrollment ratios at higher level. The proxy variable for economic growth used in per-capita GDP. We expect the regression coefficients to be positive and OLS method is used for estimation. The respective equation for the education human capital as an explanatory variable and economic growth as explained variable is below.

# $y = \beta 0 + \beta 1 X 1 + \beta 2 X 2 + \varepsilon(1)$

where Y is the economic output (the dependent variable), expressed by GDP per capita x1 and x2 are the two forms of education human capital (independent variables) expressed by gross enrollment ratio at higher and gross enrollment ratio at primary level  $\varepsilon$ -standard error. The B1 and B2 are two coefficients.

#### Model 2: Health human capital and economic growth estimation

Another separate estimation made is estimation of parameters of health human capital. The proxy variables used for health human capital are per-capita expenditure on health and its correlation with life expectancy. The correlation of mortality and economic growth for 2000-2013 is worked as well. The simple rule of thumb is that we expect a positive association between expenditure on health and life expectancy and a negative association between the infant mortality and GDP per-capita.

1.5 Model 3 Human capital and economic growth estimation in this model we measure the effects of the human capital on the economic growth by analyzing how the two components of the human capital

# $\ddot{y} \equiv \beta 0 \neq \beta 1 \ddot{x} 1 \neq \beta 2 \ddot{x} 2 \neq \epsilon \ (2)$

where Y is the economic output (the dependent variable), expressed by GDP per capita  $x_1$  and  $x_2$  are the two forms of human capital (independent variables) expressed by educational capital ( expenditure on education as percentage of GDP) and, respectively, health capital, expressed by the life expectancy;  $\varepsilon$  -standard error. The B<sub>1</sub> and B<sub>2</sub> are two coefficients.

# 2. Results and discussion

In this section, the results of the estimated models are presented. The results are presented under the three headings of education human capital and economic growth, health human capital and economic growth in Jammu and Kashmir.

#### Education Human capital and economic growth

Here model first of regression is presented. The explained variable is economic growth and explanatory variables are enrolment rates at higher education level and at primary level. The results of applying the regression model table 1 shows that the model of human capital is statistically validated (the significance F is lower than 0.05- the significance level).

According to the results presented in the table 1, we could explain the evolution of GDP per capita in proportion of 95% through the dynamic of the stock of human capital in the economy, considering all other factors as constant.

It can be seen from the estimated coefficients that both are positive indicated that the stock of education human capital contributes to economic growth positively. A one-unit increase in the X1 (expressing higher education trained) will increase the GDP per-capita with 50.65units and a one-unit increase in the X2 (expressing primary enrolment) will increase GDP per-capita with 15.63 units. The more important fact is both the variables are statistically significant and hence confirms the results that education human capital had positive and a significant impact on the economic growth of Indian economy. The estimated equation is

y = -1442.23 + 50.65X1 + 15.63X2

# **Table 1 Education Human Capital Results Summary**

	coefficient	Se	t
intercept	-1424.23	418.84	-3.44
bI	50.65	5.94	8.49 significant at five
b2	15.63	4.634	3.370 significant at five

#### Model Summary

Model summary				
R square .953				
E = 1/1 + 1/1 + 0.00				

F value 161.998 significant at five

#### Health human capital and economic growth

Correlation coefficient between Infant mortality and per- capita income remains at (-.980) and is highly correlated negatively and that we expect from the decreasing mortality that economic growth can develop. The correlation coefficient between the life expectancy and per capita expenditure on health in the country by public sector is (.970) and found highly significant and positively correlated. Therefore, our analysis expected results revealed that life expectancy is increasing with the increase in the expenditure on health and growth increased with the every decrease in the mortality based on such analysis we can conclude that increase expenditure leads to increase in the life expectancy and which in turn can increase the economic growth in the country. Furthermore it can be safely concluded that expenditure on health effects positively economic growth if not directly but is working in the vicious circle means increased expenditure leads to increase the life expectancy which indirectly means the decrease in the mortality rates and hence increase in the left expectancy which indirectly means the safely recommend that the increase in the budgetary allocation in the country towards health sector in the economy can accelerate the economic growth.

#### Human capital (Both education and health) and economic growth

The estimated results are provided in the table 2 respectively. The major findings revealed that a proportion of 90% of the GDP per capita dynamics could be explained by the variance of the two independent variables. The validity of the model is confirmed by the fact that the Significance F is lower than the significance level of 5%.

The estimated coefficient of the life expectancy denoted by X1 indicates that an extra unit increase in the life expectancy would increase the GDP per-capital by 174.509 units. Another component of the education human capital represented by government expenditure on education denoted with X2 indicates when there is one unit change in the expenditure on health GDP per-capita increased at 48.912 units.

However, not both independent variables have a significant influence on GDP per capita. Only the life expectancy can be concluded from p-value that it has significant impact. Our analysis does not indicates expenditure component as significant although positively effects the economy of the country. The possible reasons are three fold. One the expenditure on education is extremely low in the country. Increasing more expenditure on education can bring a dramatic change in the growth of the

country. Second the relation for the education and economic growth may be bi directional hence opens the front to conduct an independent relationship in the end. Third may be the possibility of data. The estimated equation is:

The results thus confirmed the literature evidence that human capital has a significant impact on the economic growth.

# y = -105668.622 + 174.509 X1 + 48.912 X2

#### Table 2 Human capital and growth combine

	coefficient	se	t
intercept	-10568.622	1032.778	-3.44
bI	174.509	15.066	11.60 significant at five
b2	48.912	71.030	.689 not significant

#### Model Summary



F value 67.513 significant at five

# 3. Summary and conclusion

The study attempts to measure human capital effects on the economic growth of India. The measurement of human capital as the determinant of economic growth was analyzed and measured under the headings of education and health component of human capital. Econometric methods were used to measure the effect. Data for the time 1995-96 to 2013-14 was used for all variables estimated in regression. The measurement was made with the regression models and OLS method was used to estimate the coefficients. Besides the regression, the correlation coefficients were calculated to know the exact linkage between the variables. In the model, first economic growth was used as an independent variable and education human capital as independent variable was used. For economic growth, the proxy variable used was per-capita GDP and for education, human capital gross enrollment ratios for primary and higher level were taken as proxy variables. The second model was to calculate the association between the health human capital and economic growth. In this model, the correlation between Percapita expenditure on health as percentage of GDP and life expectancy was calculated. In the same model, correlation was carried out for Mortality and per- capita GDP. Finally, the third model was used to measure effect of overall human capital on economic growth. In the third model per-capita, GDP was used as proxy variable for growth and expenditure on education as percentage of GDP and life expectancy were used as proxy variables for human capital. The major findings are presented below.

First, as expected, we found a powerful effect of educational attainment on economic output. We

could explain the evolution of GDP per capita in proportion of 95% through the dynamic of the stock of human capital in the economy, considering all other factors as constant.

The estimated coefficients both were positive which indicated that the stock of education human capital contributes to economic growth positively. The more important fact was both the variables were statistically significant and hence confirms the results that education human capital had positive and a significant impact on the economic growth. The results of applying the regression model show that the model of human capital is statistically validated.

Second, separate estimation was made for estimation of parameters of health human capital. The correlation between life expectancy and per-capita expenditure was calculated and the coefficient was highly positive and found highly significant. Another correlation coefficient was estimated between the GDP per-capita and infant mortality where the calculated coefficient was highly negative thus confirmed the result that expenditure on health leads to increase the life expectancy, which means increasing in the growth in India.

Third, the human capital, in its two components, has a strong effect on the economic output .The major findings revealed that a proportion of 90% of the GDP per capita dynamics can be explained by the variance of the two independent variables. The validity of the model is confirmed by the fact that the Significance F is lower than the significance level of 5%. The estimated coefficient of the life expectancy denoted by X1 indicates that an extra unit increase in the life expectancy would increase the GDP per-capital by 174.509 units. Another component of the education human capital represented by government expenditure on education denoted with X2 indicates when there is one unit change in the expenditure GDP per-capita increased at 48.912 units.

However, not both independent variables have a significant influence on GDP per capita. Only the life expectancy can be concluded from p-value that it has significant impact. Our analysis does not indicates expenditure component as significant although positively effects the economy of the country. The reason justified for this turned three first the expenditure is low in per-capita terms second in long run the relation turns from growth to education expenditure as confirmed by many scholars and third may be the reason related to data. The results thus confirmed the literature evidence that human capital has a significant impact on the economic growth.

#### 4. Policy Recommendations

Quality of education increment, expenditure on education should be increased and the incentives to halt the dropout rates is strongly recommended. Effectiveness of supplying the skill oriented educated youth must be matched with the need of demand that can be carried out to increase the standard of the education in the country.

An increase in the investment in health care will lead to the raise of life expectancy. Moreover, policy measures are needed to carefully monitor the efficiency and the effectiveness of the public spending in health.

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#### Liberalization and its Impact on Retail Sector

#### Laxmi Kumari

Liberalism refers Primilary to the 20<sup>th</sup> Century resurgence of the 19<sup>th</sup> Century Ideas associated with laissez-faire economic liberalism. These Include extensive economic liberalism these Include extensive economic liberalization such as privatization, fiscal austerity, deregulation, free trade, and reductions in government spending in order to enhance the role of the private sector in the economy.

Implementation of Neoliberal Polices & the acceptance of Neoliberal economic theones in the 1970 are seen b some academics as the root of financialisations with the financial crisis of 2007-08.

The term has been used since 1938 become prevalent in its current meaning in 1970 & 80's scholars in a wide variety of social sciences & critics Advocate of free market politic avoid the term "neoliberal". The definition & usage of the term as changed over time. It was originally an economic philosophy that emerged among European liberal scholars in the 1930's in an attempt to reach a so called Third of middle way between the conflicting philosophies of classical liberalism & social planning.

#### Impact of Trade liberalization in India.

Since the early 1980's the economy of India has been rate of about 6% per year in real terms. (world Bank 2008) with the most robust & sustained growth record. India's early performance was shaped by two distinct. Policy approaches that the government of India has been pursuing since the 1980's the probussiness reforms promoted by prime minister Indira Gandhi & Later reinforced by the office of her son Rajeev Gandhi.

The New Industrial Policy endorsed ion July 1991 on the needs of the political & financial crisis, the country hand endured during the proceeding 2 years. The main objectives of governments New economic strategy was to deregulate the domestic Industry & to liberalize external trade to deregulate Industry the Industrial licensing system was largely abolished the public sector monopoly was reduced to a number of strategic activities. The limitation of foreign direct investment were libted & special economic zones created especially for the information technology Industry.

#### Main Goal of Liberalization

Major goal of economic liberalization are the free flow of capital between countries & the effectual allocation of resources & competitive advantage. This is generally clone by decreasing protectionist strategies. Such as tariffs, trade law & orther trade barriers. One of the main effects of this improve blow of capital. The country is that if makes it Inexpensive for companies to access capital from investors. A lower cost of capital enables companies to undertaken incrative projects that may not have been cost of capital pre-liberalization leading to higher growth rates. The primary objectives of initiating liberalization in India can be summed up as follows –

1.To solve India's impending balance of payment crisis.

2. To boost the private sector's participation in the development of India's economy.

3.To increase the volume of foreign direct investment in India's businesses.

4. To introduce competition between India's domestic businesses.

5.To maximize India's economic potential by encouraging multinational and private companies to expand.

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6.To usher in globalization for the Indian economy.

7.To regulate export and import and promote foreign trade.

8.Impact of Liberalisation on Indian Economy

# ➤ FDI in Retails Sector.

The Implementation of law in favor of bringing foreign direct investment in retail to India finally took place people across the country had differing opinions some were in favor of the law while others were in opposition. All the arguments were justibiable until Now, FDI was only allowed up to 5% percent in single brand retail retail. But with the implementation of this law, 100% percent FDI in multibrand retail are permissible giants like walmart & Carrefour will Now have their store in India. The entire face of retailing in India is expected to change.

Application have begun to be accepted Investment form the end of leading retail groups like walmart, Tesco Carrefour, etc.. expected to flour into the country media hours report that walmart might open its first store in India 12 to 18 months. It is presently allowed only in a selected list of states in the country. Now that the law is implemented it is being accepted whole hearty majority of stratum of the society.

According to Ms Mekanna president & CEO of walmart, International, India has unique role to play global economy India, with its pool of talent, proven ability to leapfrog existing digital technology & expertise manufacturing expertise, has a unique role to play in global economy.

We are building what we have learned here in India, for customers & business that they never had before. She said to converge Walmart an event organized by walmart Global tech, a technology & shared services organization create as a new Industry of walmart technology here.

MS Mekenna said, the company was also creating new opportunities for Indian companies to Grow as part of its global supply chain by expanding its MAKE IN INDA. Exports commitment to & 10 billion each year by 2027.

According to the latest policy issued by the department of Industrial policy & promote (DIPP) FDI in single brand retailing is allowed up to 100 % with subject of certain condition. The condition are that the product must be sold under 'one brand name' only the product should be sold internationally , etc. However, when the FDI is above 51% then in the case, 30% of the goods are sourced from India. On the other hand, under multi-brand retailing the FDI is permitted to 51%. Here, the basic condition are that 50% of the total

FDI should be invested in "back-end-infrastructure" within the time frame of three year.

Back- end Infrastructure consists of manufacturing processing distribution, wearehousing etc, move over, at least 30% of the goods must be markets, MSMES. Furthermore, a like single-brand retail trading, multibrand retail traders are also not permitted to do trade by means of e-commerce last but not the least, under cash & carry retailing which is also know as wholesale retailing 100% FDI is permitted under we can draw a clean cut conclusion that it acted as a key Instrument for the Nation to become a developed Nation.

#### Impact of FDI on retail sector.

The impact of FDI in the retail sector has an amalgamation of both positive & Negative impacts in the sense that there are both optimistic & pessimistic view of the general public towards the inclusion of FDI in the retail Industry. As we all know that FDI in the retail sector has undoubtedly seen a very massive changes a phenomenal growth in it, which has now completely changed the whole structure of the retails sector in a developing country like India, the Idea of FDI in the retail sector has majorly proved to be fruitful for the ones who are primarily engaged in the organized sectors, where as on the

other hands, with the coming of big domestic corporations & multi national companies (MNCs) in the field of several retailing ventures, the unorganized sector had faced a lot of difficulties, as for them, FDI in retail was not that much probitable being a very prevalent from of trade due to increase in competition.

# Conclusion & Suggestion.

Foreign direct livestment in the retail sector has Indeed provided to be a very crucial step taken by the government of India in transforming the retail environment of the country the growth & development of the Indian economy, thereby integrating with the global economy Today, if is very much evident that after the introduction of FDI in retail sector from traditional format to the modern format with modern format with exponential growth in the developing country like India, this Idea of FDI in the retail sector has majorly proved to be fruitful for the ones engaged in the organized sectors. FDI organized sectors FDI in retail predominantly has create Job opportunities for the unemployed youth in India & has helped a lot in reducing the cost of production Intermediate costs so that both producers manufactures & consumers can be benefitted.

Moreover, it has also contributed to the development of human resource development. Thus, in the past few decades, this sector being an Integral part of the service Industry, has tremendously grown with rapid urbanization & is currently at its peak interms growth. Since FDI in the retail sector has an amalgamention of both positive & Negative effects, but here we must focus on its positive part only and try to remove the hardless that are in between the path of successful implementation of FDI policy Furthermore it is quite pertinent to note that after studying all the arguments with respect to FDI whether in favour or against it has been concluded that the government decision vis avis allowing of FDI retail sector play a very pivoted role in the economic growth & development of the country. It not only proves to be fruitful for the India economy only but also helps the Indian economy , Hence, we can say that the retail sector in India Carried a huge potential for attracting foreign direct investment.

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#### Digitisation of the Economy and Payment & Settlement Systems in India: An Assessment and Way Forward

Kumar Manorath J. B. Singh M.S. Gupta

#### Abstract

Digitisation has a favourable impact on economic growth, social well-being, and government effectiveness, albeit this impact varies according to a country's level of digitisation. In India, though broadband/internet connectivity has improved over time along with mobile/cell usage, their overall penetration across populace - necessary for the expeditious digitisation of the economy - relatively remains at low levels vis-à-vis other countries. The policy approach to have a less-cash economy in India, while ensuring safe, secure, efficient and robust payment systems, has resulted in a significant growth in digital transactions in the Indian banking sector. The 'Digital India' campaign of the government may be crucial in transforming India into digitally empowered economy, going forward. National regulatory authorities/central banks across geographies may have to broadly formulate consistent regulatory policies/practices in FinTech space in such a way that the associated risks are suitably mitigated without stifling competition and innovation - necessary for ensuring efficient/stable payment and settlement systems and financial stability.

#### JEL Classification: G2, G20

Key Words: Digitisation, Digital India, Digital Transactions, Crypto-Assets, Fintech, RBI-DPI

#### Introduction

The economic environment has been transformed by information and communications technology (ICT). More people today have access to a smart mobile phone and broadband/internet connectivity. Countries which have achieved advanced levels of digitisation (*i.e.*, mass adoption of connected digital technologies and ICT applications by consumers/enterprises/governments) could significantly benefit through digitisation as they enabled the factors determining its adoption and usage to their advantage through appropriate policy on pricing, reliability, speed and ease of use. The study conducted by Booz & Company (2012) on 'Maximising the Impact of Digitisation' found that the level of digitisation in any geography favourably impacts unemployment, quality of life, and access to public services. Further, digitisation facilitates governments to function with greater transparency and efficiency in the delivery of public goods. Countries at the advanced stage of digitisation derive 20 percent more economic benefits than those which are at its initial stage. Policymakers in their approach to technology accordingly need to shift focus from access to adoption and usage of digital tools through setting a national agenda on digitisation, regular monitoring of its progress, building conducive business environment for telecom/information technology sectors for competitive price and better quality of digital services, and also creating demand for digital space.

In this context, the Indian government's flagship programme on digitisation (*viz.*, Digital India) was launched on July 1, 2015 with a vision to transform India into digitally empowered economy through connecting rural areas with high-speed internet (Bharat Net) along with improving digital literacy among masses for enabling them to adopt/use digital services regularly in their lives and businesses.

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Some of the key initiatives under Digital India include - establishing a Digital Locker to help public to store their important documents such as Pan Card, Driving License, Passport, Voter ID Card and educational degrees in a safe, secure and digital format; introduction of the MyGov Portal for aiming at good governance through public engagement; and Online Registration System (ORS) portal for helping public to handle and manage online appointments, pay online fees of doctors/hospitals, *etc.* 

The Indian government's concerted efforts towards greater digitisation of its economy could largely bridge the digital gap between rural and urban areas. Further, India has become one of the leading countries in terms of digitised payment systems - making money and finance transactions seamless. Digital technology enabled a large number of public to have online *Aadhaar* Card registrations/updation, linking bank account with *Aadhaar* Card/Pan Card, real time-based money transfer through Unified Payments Interface (UPI)/other payment Apps such as Paytm, PhonePe and GPay.

Against the above backdrop, the paper makes an attempt to find out cross-country experiences on the impact of digitisation of the economy, and also its impact on the Indian banking and finance, particularly payment and settlement systems. Accordingly, Section II covers cross-country experiences on the impact of digitisation of the economy. Section III analyses the impact of digitisation on the Indian payment and settlement systems. Section IV sets out major challenges and opportunities for the banking and finance sector in the increasingly digitised business environment across geographies. Last section provides conclusion of the paper, along with some policy implications.

# II. Impact of Digitisation of the Economy: Cross-Country Experiences

As per the study by Booz & Company (2012), based on 2009 and 2010data, the extent of digitisation in any geography can be measured mainly through six attributes, *viz.*, ubiquity (the level of universal access to digital services/applications), affordability (pricing), reliability (the quality of digital services), speed (the rate at which digital services can be accessed in real time), usability (the ease of use of digital services), and skill (the ability of users to adopt digital services in their lives and businesses). The study measured the extent of digitisation for a sample of 150 countries through creating a composite score, consisting of the above six key attributes by using 23 proxy indicators, on a scale of 0 to 100 (100 score - the most advanced digitised economy and 0 score - the least digitised economy), and then grouped these economies based on their digitisation score into the following four stages so as to allow policymakers to know their economy's current level of digitisation and accordingly provide policy impetus to achieve higher digitisation going forward:

**Constrained economies** (digitisation score below 25) - face challenges in realising basic digitisation building blocks such as widespread access and affordability as digital services remain expensive and limited in reach.

**Emerging economies** (digitisation score between 25 and 30) - largely have addressed the affordability challenge and have achieved significant progress in providing affordable and widespread access. However, the reliability of digital services in such economies remains below par, with limited capacity and low digital usage.

**Transitional economies** (digitisation score between 30 and 40) -provide public with ubiquitous, affordable, and reasonably reliable services, and usage is expanding at a relatively rapid pace.

Advanced economies (digitisation score of 40 and above) - the most mature stage of digitisation, made significant strides in addressing ICT usability and developing a talent base to take advantage of available technologies, products, and services while improving the speed and quality of digital services.

Under the above stages of digitisation, among BRICS countries, *India and South Africa are in the category of constrained economies*, while China and Brazil are in emerging economies and Russia is in advanced economy. The effect of digitisation of the economy is clearly visible in the findings of the study. Among the sample of 150 countries, this study found that an increase in digitisation by 10 percent

resulted in 0.50 to 0.62 percent gain in per capita GDP - varying according to the economy's level of digitisation (Table 1).Overall, the study indicates that digitisation has a favourable impact on economic growth, social well-being, and government effectiveness, *albeit* this impact varies according to a country's level of digitisation.

Table 1	: Im	pact of	Increase	in	Digitisation
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Indicator	Variable	Metrics	Positive Impact of Digitisation
Economic	GDP Growth	GDP per capita: Overall	0.60 per cent*
		GDP per capita: Constrained Stage	0.50 per cent*
		GDP per capita: Emerging Stage	0.51 per cent*
		GDP per capita: Transitional Stage	0.59 per cent*
		GDP per capita: Advanced Stage	0.62 per cent*
Society	Job Creation	Unemployment rate	- 0.84 per cent*
	Innovation	Global Innovation Index	6.27 points**
	Quality of Life	OECD: Better Life Index	1.29 points**
	Access to Basic Services	UNDP HDI: Constrained & Emerging	0.13 points**
		UNDP HDI: Transitional & Advanced	0.06 points**
Governance	Transparency	Transparency International: Corruption Perception Index	1.17 points**
	E- government	UNPAN: E-government Development Index	0.10 points**
	Education	UNDP (IHDI): Inequality Adjusted Education Index: Constrained and Emerging	0.17 points**
		UNDP (IHDI): Inequality-Adjusted Education Index: Transitional and Advanced	0.07 points**

OECD: Organisation for Economic Co-operation and Development.

UNDP: United Nations Development Programme. HDI: Huma

HDI: Human Development Index.

UNDP (IHDI): UNDP (Inequality-Adjusted HDI). UNPAN: United Nations Public Administration Network.

Source: The Global Information Technology Report, 2012.

However, another study (Strategy&, 2013) has found that the positive impact of digitisation of the economy varies across sub-sectors (Table 2). There is a visible relationship between productivity gains and job losses in case of financial services and manufacturing, while other sub-sectors increased employment and output, although their productivity growth was slower. With increase in digitisation, financial services gain the most in terms of output and productivity. Increased digitisation, however, cuts jobs in financial services and manufacturing due to increase in productivity more than increase in output. Digitisation created jobs in services sub-sectors, particularly hospitality and retail.

Table 2: Impact of Digitisation on Output, Productivity and Employment\*

Sub-Sector	Output #	Productivity \$	Employment @
	(% Growth)	(% Growth)	
1. Financial Services	1.98	2.82	Decrease
2. Manufacturing	1.19	1.79	Decrease
3. Retail	1.34	0.71	Increase
4. Services (other than financial services)	1.27	1.00	Increase
5. Hospitality	1.52	0.41	Increase

\*: Based on data from six countries (viz., Australia, Germany, Norway, Sweden, the UK and the US).

#: Contribution to GDP. \$: Level of value-added per employee. @: Number of workers.

Note: Impact is based on 10 per cent increase in digitisation.

**Source**: Strategy&, 2013. '*Digitisation for Economic Growth and Job Creation - Regional and Industry Perspectives*'.

Based on the UNCTAD's Technology and Innovation Report (2021), the readiness for frontier technologies index (*i.e.*, capacity to use, adopt and adapt frontier technologies), comprising five building blocks (*viz.*, ICT deployment, skills, R&D activity, industry activity and access to finance), calculated for 158 countries, indicates the top ten countries best prepared for frontier technologies as per their ranked are: the US (1), Switzerland (2), the UK (3), Sweden (4), Singapore (5), Netherlands (6), Republic of Korea (7), Ireland (8), Germany (9) and Denmark (10). Among some transition and developing economies, China ranked at 25, the Russian Federation at 27 and India at 43 (Table 3).

Country	Overall Ranking	ICT Deployment	Skills	R&D Activity	Industry Activity	Access to Finance
China	25	99	96	1	7	6
Russia	27	39	28	11	66	45
Brazil	41	73	53	17	42	60
India	43	93	108	4	28	76
South Africa	54	69	84	39	71	13

<b>Table 3: Readiness</b>	for	Frontier	Techno	logies	Index	Score	<b>Ranking:</b>	BRICS	Countries
			1.001110			~~~~		21100	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Source: Technology and Innovation Report, 2021, UNCTAD.

China and India perform well for R&D, reflecting their abundant supplies of qualified and highly skilled human resources available. They also have large local markets, which attract investment by multinational enterprises. In the case of China, the progress is partly a reward for spending about 2 per cent of GDP on R&D. The extent of 'over performance', measured as the difference between the actual index rankings and the estimated index rankings based on per capita income, indicates the greatest over performer is India, by 65 ranking positions (Table 4).

Table 4: Overperforming Relative to Per Capita GDP: BRICS Countries

Country	Over performance (Position)
India	65
China	40
Brazil	33
South Africa	29
Russia	24

**Note**: Over performance by gain in ranking position are measured taking the difference in positions between the actual index rankings and the estimated index rankings based on per capita income. For instance, India's actual index ranking was 43 while the estimated index ranking based on per capita income was 108. Hence, India overperformed by 65 ranking positions.

Source: Technology and Innovation Report, 2021, UNCTAD.

# III. Impact of Digitisation of the Economy: Digital Transactions in Indian Banking Sector

In India, though broadband/internet connectivity has improved over time along with mobile/cell usage, their overall penetration across populace - necessary for the expeditious digitisation - relatively remains at low levels *vis-à-vis* other countries (Chart 1).In this regard, the 'Digital India' campaign of the government may be crucial in transforming India into digitally empowered economy, going forward.

# Chart 1: Digitisation of the Indian Economy - Status



Source: World Development Indicators (WDI), World Bank.

The recently launched RBI's Digital Payments Index (RBI-DPI) [July 2021] has demonstrated significant growth in the index, representing the rapid adoption and deepening of digital payments across the country in recent years (Chart 2).



#### Source: RBI.

The policy approach to have a less-cash economy in India, while ensuring safe, secure, efficient and robust payment systems, has resulted in a significant growth in digital transactions in the Indian banking sector (Chart 3). Further, post-COVID-19 uncertain environment since March 2020 also induced a large number of people to opt for digital modes of transactions for the safety of their health and also compelled by the lockdown situation to some extent to switchover to digital transactions - leading to transient rise in the volume of digital transactions, even though digital transactions in terms of value under certain digital modes slowed down, reflecting overall subdued economic activity. Empirical analysis for the period 2009-19 (RBI Annual Report 2019-20) supported statistically significant unidirectional Granger causal relationship from the growth of nominal GDP and private final consumption expenditure (PFCE) to the growth of digital transactions and PFCE in an auto-regressive distributed lag model (ARDL) framework. Digital transactions are expected to pick up when economic activity gathers momentum, with enabling conditions for uninterrupted growth of digital payments such as spread of seamless digital connectivity within consumers, local traders, distributors, producers and other stakeholders.



#### Chart 3: Digital Transactions in Indian Banking Sector



\*: Includes both customer and inter-bank large value transactions.

\*\*: Including ECS, IMPS, NACH and NEFT.

\*\*\*: Credit and debit cards.

RTGS: Real Time Gross Settlement.ECS: Electronic Clearing Service. IMPS: Immediate Payment Service.

NACH: National Automated Clearing House. NEFT: National Electronic Funds Transfer.

UPI: Unified Payments Interface. BHIM: Bharat Interface for Money.

Source: Database on Indian Economy (DBIE), RBI.

Several policy measures were undertaken recently in the digital space to incentive people towards greater use of digital channels such as setting up a High Level Committee (Chairman: Shri Nandan Nilekani) by the RBI on deepening of digital payments (submission of Report in May 2019); making NEFT services available round the clock on 24X7 basis since December 2019; operating RTGS system by the RBI on 24X365 basis since December 2020; introduction of 'Ombudsman Scheme' since January 2019 as expeditious grievance redressal mechanism for strengthening public confidence in digital modes; government's digital literacy campaign; and also concerted efforts by the government under 'Digital India' programme towards ensuring wider/easier access to broadband/internet facility to the general public - including rural/semi-urban areas. Accordingly, since its launch in November 2010, the Immediate Payment Service (IMPS) - an instant payment inter-bank electronic funds transfer system in India, enabling customers to operate through mobile phones, for which the service is available 24X7 basis throughout the year (including bank holidays) - registered higher increase in its volume. Similarly, the Unified Payments Interface (UPI)since its launch in August 2016 - an immediate money transfer system that enables round the clock inter-bank fund transfer, throughout the year - recorded a significant increase in its volume.

# IV. Digitisation of Money/Banking Transactions: Challenges and Opportunities

The digitisation of money/banking transactions have been incentivised by the innovations, mainly stemming from FinTech, using various technologies (*viz.*, artificial intelligence, big data, and distributed ledger technologies – block chains) for providing faster, affordable, and user-friendly financial services, also enhances the prospect of expanding financial inclusion (Zhang, 2018). However, these benefits through FinTech come along with some risks such as financial stability could be affected - through

disruptions to existing service providers and business models. Unregulated sectors could create additional operational risks related to cybercrime/cyber-attack and outsourcing. Further, whether new technologies and new forms of financial intermediation would keep an appropriate balance between transparency and privacy, all stakeholders need to be watchful and vigilant, going forward.

In recent years, crypto-assets have also entered in the money/banking space - with both opportunities and risks associated with crypto-assets (Zhang, 2018). As an asset class, crypto-assets could provide diversification benefits to investors, while some useful technology may improve market efficiency (*e.g.*, cross-border transactions are now much faster than earlier times). Akin to other forms of FinTech, crypto-assets could also be used for money laundering, terrorist financing, tax evasion and fraud, besides creating speculative bubbles in the financial markets due to volatility in the exorbitant prices of cryptoassets. However, as crypto-assets are still insignificant compared with conventional assets, they may not pose a significant threat to financial stability, but situation could fast change with its rapid expansion, then the financial stability could be vulnerable to such risk. Further, with the rapid expansion in the investor base along with inadequate transparency in the crypto-markets could lead to market disruptions, particularly due to borderless nature of the underlying transaction mechanism and also varying regulatory practices of each national authority/central bank in this regard.

In order to maximise the full benefits of evolving/frontier financial technologies, it is necessary to build a conducive policy environment for innovations along with a sound regulatory framework in place to have trust of all stakeholders in a rapidly evolving digitisation in the money/banking space (Zhang, 2018). Further, as digital transactions through FinTech are operated on a global scale - in a less transparent and generally outside the purview of conventional financial system- coordinated efforts across geographies through international organisations such as IMF and BIS may be fruitful in formulating consistent international regulatory policies/practices to mitigate the associated risks with such borderless transactions.

Further, with the aim of making cross-border payments more efficient and transparent, some central banks with varying approaches have also started experimenting with the use of a new form of central bank money called Central Bank Digital Currencies (CBDC) and distributed ledger technology. *Albeit* there is no currently universal single definition, a CBDC is broadly a digital form of money, which can be exchanged, peer-to-peer, in a decentralised manner. Introduction of CBDC has the potential benefits such as reduced dependency on cash, higher seignior age due to lower transaction costs and reduced settlement risk, besides having a robust, efficient, trusted, regulated and legal tender-based payments option. There are associated risks, but they need to be carefully evaluated against the potential benefits. As CBDC is likely to be in the arsenal of every central bank going forward, a careful calibration and a nuanced approach in its implementation may be warranted (Sankar, 2021).

#### V. Conclusion

Digitisation has a favourable impact on economic growth, social well-being, and government effectiveness, *albeit* this impact varies according to a country's level of digitisation. In India, though broadband/internet connectivity has improved over time along with mobile/cell usage, their overall penetration across populace - necessary for the expeditious digitisation of the economy - relatively remains at low levels *vis-à-vis* other countries. The policy approach to have a less-cash economy in India, while ensuring safe, secure, efficient and robust payment systems, has resulted in a significant growth in digital transactions in the Indian banking sector. The recently launched RBI's Digital Payments Index (RBI-DPI) has demonstrated significant growth in the index, representing the rapid adoption and deepening of digital payments across the country in recent years. The 'Digital India' campaign of the government may be crucial in transforming India into digitally empowered economy, going forward. In order to maximise the full benefits of evolving/frontier financial technologies, it is necessary to build a conducive policy environment for innovations along with a sound regulatory framework in place to have trust of all stakeholders in a rapidly evolving digitisation in the

money/banking space. National regulatory authorities/central banks across geographies may have to broadly formulate consistent regulatory policies/practices in FinTech space in such a way that the associated risks are suitably mitigated without stifling competition and innovation - necessary for ensuring efficient/stable payment and settlement systems and financial stability.

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# The Valuation of Human Resources and Human Resource Accounting -Tracing the Global Perspective and Development

Pragyan Pushpanjali Anand Mishra

#### Abstract

According to Eric G. Flamholtz, "HRA represents accounting for people as an organizational resource. It is the measurement of the cost and value of people for the organization." (Flamholtz, 1999)

People are the only source of long-term competitive advantage and hence the greatest asset for any organization. Organizations that fail to invest in employees jeopardize not only their own success but most importantly, even their own survival. The Human Resources therefore should be treated as assets and progressive organizations should therefore use the concept and techniques of Human Resource Accounting and give quantitative treatment in ascertaining the economic worth their Human Resources and show them as assets in their financial statements. This can be beneficial not only in many business and administrative decisions but also give strategic advantage to them.

Keeping in view the above facts coupled with the growth of international financial reporting standards in the globalized era, HRA will possibly be included in the future financial reports which will include many non-traditional measurements, the most important one being the Economic Valuation of its Human Resources.

This paper traces the level of development of Human Resource Accounting and its application and scope in various countries of the world spanning across the continents and tries, in the end, to categorize the countries on the extent and scope of the application of Human Resource Accounting depicted and disclosed in their annual reports and financial statements.

*Research Methodology* – the study is based on *secondary data and literature review* of scholarly articles and publications based on the macro level development of HRA in different countries. The selection of the countries was done with a view to 1) get representations from as many **continents** as possible 2) include those countries which were top ranking in terms of economic development and 3) choose those countries which had done remarkable progress in the field and scope of Human Resource Accounting.

Keywords: Human Resource Accounting, Economic Evaluation, Human Resources, Assets, Quantitative treatment

#### Introduction

HRA has been defined by American Accounting Association's Committee as " the process of identifying and measuring data about human resources and communicating this information to interested parties." (Bhavin, 2012)

According to Eric G. Flamholtz, "HRA represents accounting for people as an organizational resource. It is the measurement of the cost and value of people for the organization." (Flamholtz, 1999)

Managers are often heard saying "Employees are our most important asset". Yet beneath the rhetoric, these same managers consider and manage HR as cost and not as asset. But keeping in mind that people are the only source of long-term competitive advantage, such a proposition is dangerous.

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Organizations and systems that fail to invest in employees jeopardize not only their own success but most importantly, even their own survival. Valuation of the Human Resources and treating them as assets can go a long wayin changing the way Human Resources are dealt with. This can be beneficial not only in many business and administrative decisions but also give strategic advantage to them.

This paper traces the level of development of valuation of Human Resources using Human Resource Accounting and its application and scope in various countries of the world spanning across the continents and tries, in the end, to categorize the countries on the extent and scope of the application of Human Resource Accounting depicted and disclosed in their annual reports and financial statements.

*Research Methodology* – the study is based on *secondary data and literature review* of scholarly articles and publications based on the macro level development of HRA in different countries. The selection of the countries was done with a view to 1) get representations from as many **continents** as possible 2) include those countries which were top ranking in terms of economic development and 3) choose those countries which had done remarkable progress in the field and scope of Human Resource Accounting.

# Methods for Valuation of Human Resource:

Human Resources may be valued by different methods which are broadly classified and represented by the fig a as follow.



Fig. a

Cost Based Method: In this method value of Human Resource is estimated on the basis of cost which may be (a) historical cost, (b) replacement cost or (c) opportunity cost.

**Historical Cost Method** : In this method all costs (like cost of recruitment, selection and placement and training and development expenditure) that are associated with making an employee ready for providing services are capitalized. Human resources can be valued at cost less accumulated amortization in the same manner as other long term assets like land, Building, Machinery etc. The valuation and presentation of assets at cost less amortization is consistent with the present accounting practices.

**Replacement Cost:** It is a current monetary measure of the expenditure, which is required to be incurred for a business entity to replace its existing investment in human resources..

**Opportunity Cost Method**: Under this method, valuation of an employee is done on the basis of value of an employee in the alternative use. This method based on the idea of competing bidding price.

**Economic Valuation Method**: Economic value in reference to human resource accounting refers to the appropriately discounted amount of net cash inflows generated by the employees over their economic service lives. The concept of value has essentially two different meanings.

- 'Value' expresses the utility or service of a particular resource, and
- The purchasing power of the resource.

Economic value refers to to the appropriately discounted amount of net cash inflows generated by the human resources of a firm over their economic service lives.

**Non-Monetary Measures**: This approach suggests that the human resources are not to be valued in the monetary terms but be presented in the form of simple inventory of skills and capabilities of people within an organization. This means the reporting of human resources is done by preparing the list of professional credentials of key personnel within an organization.

There are various methods developed on the basis of above valuation methods. Out of them the most popular method based on Economic Valuation Method named as Lev and Schwartz's Model which is described as below: According to this model," the value of human capital embodied in a person of age Tis the present value of his remaining future earnings from employment".

$$= \sum_{\substack{I(t)\\(1+R)^{t-\lambda}}}^{T} (1+R)^{t-\lambda}$$

 $V_{\lambda}$  = The Human Capital Value of a person ' $\lambda$  ' year oldT = The person's retirement age

I(t) = the person's annual earnings up to the retirementt = retirement age R = A discount rate specific to the person

This model is very popular and accepted by many organizations. In this model human resources are valued by considering future earnings, service life of an employee, discount rate and present age of an employee.

.International developments in HRA:

#### United States:

The early development of HRA in USA began with the research conducted at the University of Michigan by Renesis Likert, faculty member R Lee Brummet and the then PhD candidates William C Pyle and Eric Pyle in 1961-67. This group worked on developing the concept and methods of accounting for human resources and came up with the term "Human Resource Accounting" for the first time (Brummet & Flamholtz, 1969, August)(1969) focused on HRA as a tool for increasing managerial effectiveness in acquisition , development , allocation , maintenance and utilization of its human resources.

Human Resource Accounting owes its origin and early development to studies carried out in the US. The development of HRA in The US can be divided into three distinct phases.

1) Inception Phase: It was in the University of Michigan – Institute of Social Research , that Rensis Likert (Likert, 1961) (Likert R. M., 1967) and his team R Lee Brummet and PhD candidates William C Pyle and Eric Flamholtz worked on developing the concept and methods of HRA.

The term Human Resource Accounting was for the first time used by Brummet, Flamholtz & Pyle, 1968a (BrummetR.L, Flamholtz,E.G., & & Pyle, 1968 April) their paper published in Accounting Review.

The same authors in a paper published in 1968 in Michigan Business Review (Brummet, Flamholtz, & Pyle, Accounting For Human Resources, 1968 March)studied the impact of HRA on Management. On the basis of the work done by Brummet, Flamholtz & Pyle, **R G Barry Company**, a public entrepreneurial firm became the first company in the world to incorporate HRA.

2) Development Phase: The early work laid the foundation for the second phase wherein there were a lot of academic researches leading to development of measurements models. A lot of interest was generated in HRA during this phase. Noted papers and researchers who worked in this field are Sackmann, Flamholtz and Bullen (Sackmann, Flamholtz, & & Bullen, 1989) and others like Bullen and Hua, Flamholtz, Kannan-Narsimhan and Bullen have traced the developments in this phase.

3) The Standardization phase: This phase involved developing models and methods of HRA soas to meet GAAP (Generally Acceptable Accounting Principles)

Various methods of calculation have since been proposed like Lev and Shwartz (Lev & Schwartz, 1971) model , the model given by Dobija (Dobija, 1998) etc.

The United States undoubtedly has been the leader and the pioneer in the field of Human Resource Accounting

# Scandinavia:

HRA seems to have taken roots in Sweden quite early.

The VDT model developed by Arne Sandervang in 2000 calculates financial returns on the investments in competence development and training by an organization and aligns this investment to overall business strategy for meeting HR strategic goals. This it does by a cost benefit analysis method for calculating ROI.

Two Swedish studies experimented with HRA reporting and are very significant in taking forward the concept of HRA up many notches:

Telia, a Swedish national telecommuting company, (Telia, AG, 1996), prepares a separate human resources report along with the financial statements including a profit and loss account and a balance sheet that include investments in human resources.

The statement of Human resources provided by the Swedish Civil Aviation Administration (1998) provided for the Human resources income statement and balance sheet showing the change in human capital. As per its latest report LFV (Swedish Civil Aviation Administration (Swedish: Luftfartsverket) applies the ESV's (the Swedish Financial Management Authority) regulations and general advice concerning reporting of expenditure on development. According to these regulations, expenditure on development that meets specified requirements is set up as an intangible fixed asset.

Studies in Sweden show a surprisingly high rate of company use of HRCA (Human Resource Costing and Accounting, which includes HRA and costing of Human Resources) and BSC (Balanced Score Card).

1. In a study with human resource managers in companies located in the Stockholm area and with more than 200 employees, 70% of the respondents said that they were applying HRCA in some way. Most of the organisations had started to do so in the beginning of the 1990s.

2. Roughly, 20% of local labour unions for white collar workers claim that they used HRCA in their decision making process.

3. In an investigation conducted by the Swedish Association of Local Government, it was found that 22% of the 276 respondents had decided to use HRA. Only from 5 to 15% of personnel, accounting, and financial managers asserted they were not interested in HRCA.

4. Finally, 43 Swedish companies used a model based on the balance scorecard concept in their 1994 annual report (http://www.sveiby.com/articles/OECDartUlfjoh.htm)

Finland: Vuontisjarvi (Vuontisjarvi, 2006) used the method of content analysis to study the extent to which Finnish companies have adopted HR Reporting and found that HR reporting is in its initial stages and whatever little it is being done is being done in the reporting of Staff Training and development.

These disclosures were, however not made using quantitative indicators and there was no uniformity and hence comparison was difficult,

**United Kingdom:** In the United Kingdom HRA is often incorporated in the financial accounts of professional sports teams, in which the value of the players/employees are amortized over a period of time and they are not shown as cost heads. An interesting work has been done in HRA in UK on football players by Morrow (Morrow, 1996) who said that the measurement of the worth of the players was a critical factor in asset recognition and should therefore be given due importance.

In the United Kingdom, the application of HRA which started for valuing the worth of football players is now being applied to value the Human Resources of Business and other organizations as well and the interest seems to include the valuation of innovative workers and the loss in terms of monetary loss when such innovative workers/employees quit the company.

**The Tasman Countries :** Most of the research on HRA done in Australia and New Zealandhave been done with respect to sports and games like football and rugby. It is a fact that professional sports have been prevalent in the UK and The USA for nearly 200 years but it arrived much later in the Tasman countries of Australia and New Zealand.

Research on the importance of HRA has also been done in the game of Rugby in Australia and New Zealand. Rugby is closely associated with patriotic feelings in these countries. Australian authors Whiting and Chapman (Whiting & K, Vol 73(1) February 2003) write in CPA (Certified Practising Accountants, Founded in 1886, CPA Australia is one of the world's largest accounting bodies, with more than 150,000 members across 121 countries) that the value of the human resources can be either put under expenses (cost of human resources) or can be capitalized and whether this will affect decisions. Capitalization of HR information is a better way of accounting for human resources – they argue.

Hence we see that though in Australia and New Zealand, as in the United Kingdom, HRA methods are used mostly in sports to assign values to players depending on their worth. However, recent studies

show that slowly the concept of HRA is finding its way into Business and other Organizations, but there is lack of research support for the same.

# Nigeria:

On the basis of literature review it was observed that there has been unsatisfactory empirical research on HRA in Nigeria. Most companies *do not* report HR valuations in their annual reports.

However, Okafor (2009) (Okafor, 2009) in her study on disclosure of human capital in the annual reports of firms in Nigeria, took the views of accountants and found that most accountants are in favor of HRA and they prefer staff costs method of HRA valuation. Most were of the opinion that the HRA values should be included in the balance sheets as assets and not as separate reports. It is only then that a true financial picture will emerge

Kumshe (2012) (Kirfi.Mohammed Musa: Abdullahi, 2012) in a PhD thesis titled: Human Resource Accounting in Nigeria; An Analysis of its Practicability" concluded that though there is greater awareness among various categories of staff of HRA concepts but HRA is not practiced by Nigerian companies.

To conclude, HRA in Nigeria is in a very nascent stage and the academicians and scholars working in this field feel a need for a supporting legislation so that HRA is compulsorily introduced in Business Organizations through the complete participation of all stakeholders. This will ensure informed investment and other related decisions which can have a positive impact on the overall economic activity of the country.

# China:

In China a unique method of reporting has been framed by the authors (Xiaofang & Shanshan,2010) who suggest that disclosure of overall situation on human resources should include 4 things:

1) First is the basic information of the employees, including the number of employees, the proportion of male, age and distribution, which is convenient for managers to grasp the basic condition of employees.

2) Second is the employee's attendance and health. Health, which includes both the physical and mental health, which can not only help managers to grasp the employee's work, but also help to establish healthy enterprise culture, and this in turn will improve the efficiency of the enterprises.

3) In addition, enterprises should disclose the information about the prospect of enterprises, such as increased or reduced employee and departments, etc

The above three can be depicted in a tabular form as follows as suggested by the authors: (Xiaofang & Shanshan, Research on Information Disclosure in HR Accounting during, 2010)

			Number of People	Proportions in all
		Production Department		
	Number of Employees	Sale Department	1	
		Management Department	Ĵ	
Staff Situation		Finance Department		
	Carla	Male		
	Gender	Female	l l	
	Age Distribution	Under 30		
		30-50		
		Above 50		
	Working Time	Under 1 year		
		1-5years		
		More than 5 years		
		Un-undergraduate		
	Educational Background	Undergraduate		
		Postgraduate or Higher		
Attendance Rate				
Healthy of Employees	Sick Leave			
meaning or Employees	Psychological Quality Test		2	
Derest of Commission	Increase (reduce)Employees in This Year			
rispect of Corporation	Increase (reduce)departments in This Year			

#### Table 1: source:

http://www.pucsp.br/icim/ingles/downloads/papers\_2010/part\_9/59\_Research%20on%20Information%2 0 Disclosure%20in%20HR%20Accounting%20during.pdf

4) Employee's performance information is disclosed from two main aspects: individuals and groups. Between them, senior management and key workers are disclosed personally, and the average employees are taken as a group in the information disclosure. In the information disclosure, the index of team spirit can be reflected by being scored and charge by each other and principal as shown below:

	1001 10	1000 1 2			
Staff	Attendance Rate	Overtime	Percentage of Completing	Carbon Footprint	Resources Consump tion Per Person
Personnel A					
Personnel B					
Department A					0
Department B					

#### Table 2:

Source:http://www.pucsp.br/icim/ingles/downloads/papers\_2010/part\_9/59\_Research%20on%20Informa t ion%20Disclosure%20in%20HR%20Accounting%20during.pdf

In China the research on the human resource accounting started late, there are still some problems,

such as the measurement and disclosure of human resources, as well as how to apply it to the management process. (Xiaofang & Shanshan, 2010)

However, the picture with respect to Human Resource accounting in China can be concluded as follows:

1) Human Resource Accounting is not carried out in most companies except a few and there is nostandardized format to do so.

2) Chinese enterprises fail to treat Human Resources as an asset.

3) Human Resource information disclosure is not complete even in those enterprises where it is done.(Mengfei, 2014)

# Canada:

Very little information is available about Human Resource Accounting practices in Canadian Companies. Suubarao and Zeghal (Subbarao & Zehgal, 1997) in their study of Human Resource information across 6 countries studied 20 Canadian Companies and concluded that in their HR disclosure information (pertinent to HRA) no company disclosed the value created by the Human Resources (Value added statement)

On analysis of the annual reports of a few top corporations of Canada, we see that in Imperial Oil(2016) the employee benefits and retirement benefits are treated as expenses and liabilities

(http://cdn.imperialoil.ca/~/media/imperial/files/company/ir/2016\_financial\_statements.pdf, accessed 7/12/17 3:10 pm)

The Royal Bank of Canada gives information about the number of full time employees and the HR disclosures are very meagre and subjective rather that quantifiable.

# Japan:

As per Suubarao and Zeghal the importance to Human Resource Information Disclosure in the annual Report of Japanese Companies is quite low as is evident by the content analysis of the annual reports of 20 companies taken as sample (word count is relatively low as compared to countries like Canada, USA and the UK). Compensation and benefits were, to some extent, disclosed but human resource asset building through training was disclosed in only 3 out of 20 companies showing a poor score.

However no company disclosed the value created by the Human Resources (Value added statement). As per the authors, this was probably due to the difficulty in calculation or because the companies don't deem it important to do so and in the case of Japan also because of no statutory obligation. 5 out of 20 companies disclosed their Value added *strategy* for HRs (The strategy they intend to apply to enhance the value addition to the company by its employees). The whole picture that emerges is that in Japan there is very little keenness towards Human Resource disclosures (training, safety, executive remuneration, employee numbers etc) and absolutely negligible or very little Human Resource accounting disclosures.

# South Korea:

The value added by Human Resources (HRA) was in general not disclosed in South Korean corporations' Annual Reports. However, POSCO the South Korean Steel giant Gives details such as Training hours per capita, Training expenses per capita

(http://www.posco.com/homepage/docs/eng5/dn/sustain/customer/2015\_POSCO\_Report\_EN.pdf, page 9,accessed 4/12/2017) and employees detail.

On the other hand Hyundai motors at position 2 (as per CNBC https://www.cnbc.com/2012/07/23/South-Koreas-10-Biggest-Companies.html?slide=11 accesses 1:20 pm 5/12/2017) do not have any Human resource valuation done and human resources are nowhere treated as assets (employee benefits are treated as expenses) and the HR disclosure is also very meagre.

Same is the case with Samsung Electronics at position 1 (HR not treated as asset and no valuation done, employees' salaries and benefits treated as expenses, no training data provided) (annual report of Samsung Electronics 2016)

To conclude, in South Korea, because of lack of strong trade unionism and absence of supporting legislature, very little disclosure on the Human resources accounting front is shown in the financial statements of the companies including the CNBC top ranking companies like POSCO, Samsung and Hyundai. Valuation of Human Resources and treating them as assets is not practiced even by the top ranking Companies.

# Germany

Most annual reports disclose employee numbers and information on training programmes . The average word count of information on Human resources is quite high in German Annual reports as compared to USA, UK, Japan or South Korea (Subbarao & Zehgal, 1997).

In Germany the large corporations are statutorily required to form joint worker-management committees and the fact that the HR disclosures were quite high in Germany as compared to the USA, UK, Japan or South Korea could be attributed to this fact. (Subbarao & Zehgal, 1997). As per this study Value added statement was shown by 3 out of 20 corporations in Germany which is approximately 15% of the total – this can be taken to be indicative of Human Resource Accounting disclosures in Germany.

# India

There is growing interest and awareness of Human Resource Accounting in India and a lot of research interest has come up in this field. Authors and researchers are increasingly realizing that it is the human resources that convert the inert potentialities of the other resources and energizes the creation of wealth. Mahalingam (Mahalingam, 2001) has noted that each employee of an organization has a skill/competency –set. Each skill or competency should be assigned a quantitative value and the sum total of the values of all the skills or competencies the person possesses is the value of the person. This skill based calculation of the value of a person is based not only on the skill but also on the returns these skills are expected to give over the next five years, with future years discounted to give present value of future worth.

The concept of Human Resource Accounting in India is a recent phenomenon and struggling for its acceptance. In India, the financial statements of companies have to be prepared as per the provisions of the Companies Act, 1956. The Act does not provide for disclosure of any significant information about human resources employed in a company. The Companies' Act 2013 also has made no provision for this.

Most of the enterprises which follow HRA, do it voluntarily and most spare a separate section in their annual reports for a detailed account of their human resources. Human asset reporting in India usually

includes a profile of human assets, the compensation pattern, training and development, human asset productivity, human asset value, and the total wealth of the organization. In every business concern physical assets as well as human resources are required for its success. Physical assets like plants, machinery, building etc. are unproductive without human resources. In the present context, most of the organizations have realized that human resources are their most precious resources. Therefore, they have not only taken measures to develop their human resources but also taken measures to value these resources. This is happening throughout the world including India.

The following table shows the year of introduction of Human Resource Accounting and themodel used for calculating the value of Human Resources :

Sl. No.	Name of theOrganisation	HRA Introduced	Model
1	BHEL	1973-74	Lev and SchwartzModel
2	ONGC	1981-82	Lev and Schwartz Model
3	MMTC	1982-83	Lev and SchwartzModel
4	SAIL	1983-84	Lev and Schwartz Model with some refinements as suggested by Eric. G
5	NTPC	1984-85	Lev and SchwartzModel
6	INFOSYS	1995-96	Lev and Schwartz Model

Table 3 : Cl	nronological (	Order of Human	Resources	Accounting	Introduction	in India

Source: A Report on HRA from http://www.indiamba.com

#### **Conclusion:**

A review of the development of HRA in various countries shows different orientations and approaches towards the understanding and treatment of Human Resource Accounting and valuation of Human Resources.

It can be concluded on the basis of the above study that in terms of Human Resources Disclosure and Human Resource Accounting the countries of the world can be tentatively grouped in three categories depending on the stage of development with respect to Human Resource Accounting and Economic Valuation of Human Resources:

a) Countries where Disclosures related to Human Resources itself is low: Nigeria, Japan and South Korea

b) Countries which are high on Human resources disclosure but have yet to graduate to assigning quantitative values to its work force ( i.e Human Resources Accounting has yet to catch on)-

Canada and Germany

c) Countries which have started using the concept and methods of Human Resource Accounting. The countries in this category can be grouped further into the following two sub groups:

i) Which use the methods of HRA less for Business and more for sports – UK, Australiaand New Zealand.

ii) Countries which are progressive in terms of research in HRA and also in theapplication of the methods of calculation of the economic worth of Human Resources

with respect to employees in various types of organizations including BusinessOrganizations – USA, India, Finland, Sweden and China.

The third category of countries (c above) is the most progressive in the continuum from the least to the most progressive in terms of research and application of the concepts of Human Resource Accounting – a position where all progressive countries should aim to reach if they believe in the value of people and the fact that the Human Resources are the most valuable asset any company or country can have.

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## A Road Map Of India In The Economic Complexity

## Siddhartha S<sup>1</sup> Navitha Thimmaiah<sup>2</sup>

#### Abstract:

India is considered as one of the diversified countries because of it's different Socio-Economic and Geopolitical conditions. This study tries to analyse the Economic diversity of India by using Economic Complexity approach. Economic Complexity Index tries to measure knowledge capabilities that determine the number and quality of products that a country can export. By using the export data and Economic complexity Index data of Growth Lab of Center for International Development at Harvard University (Hidalgo and Hausmann 2009), The study analyses the performance of India and other countries of South Asian region in Economic Complexity Index during the period between 1995 to 2020. Relying on these data and performances of countries findings of the study infers that India's existing knowledge capabilities affords many opportunities to become one of the most complex countries in the World.

#### Keywords: Complexity, Economic Complexity, Diversity, Ubiquity, India, ECI

#### Introduction

In the 75<sup>th</sup> year of Indepence, India ranked 5<sup>th</sup> largest economy by Nominal GDP, As per the International Monetary Fund's World Economic Outlook October 2021 report, India ranked 144<sup>th</sup> in GDP Per Capita Income with Per Capita Income of 2,116.44 US \$. Even though India lies under lower middle income countries, but being the one of the largest countries in the world, blessed with natural resources, human resources and having the advantage of demographic dividend, there is more and more scope for India to be one of the most diversified and complex economies in the world.

The underlying concept of Economic Complexity is that the productivity of a nation is a function of its underlying non-tradable 'capabilities' (such as infrastructure, regulations, and skills) and that differences in national economic performance are explained by differences in economic complexity as encapsulated by the diversity of and interactions between these capabilities (Hidalgo & Hausmann, 2009; Anand Sahasranaman & Henrik Jeldtoft Jensen 2018)

Growth Lab of Center for International Development at Harvard University developed the Atlas of Economic Complexity in which the information about the Economic complexity of 133 countries are available. The Growth Lab regularly releases reports about Economic complexity. As per the recent report of Growth Lab India ranks in the 46<sup>th</sup> position in Economic Complexity Index and it is projected that at 5.19% annual growth rate India can achieve 11<sup>th</sup> fastest growing country in Economic complexity by 2030.

This study is an attempt to understand about Economic Complexity Index and India's presence in Economic Complexity.

### The Economic Complexity Index (ECI)

Economic complexity is a measure of the knowledge in a society that gets translated into the products it makes. A country is considered 'complex' if it exports not only highly complex products (determined by the Product Complexity Index), but also a large number of different products. For example, the

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heterogeneity between the economies of Japan and India goes beyond differences in area, population size or policies. The Indian economy has different inputs (productive capability) that can be used to produce a different mix of outputs compared to Japan.

However, measuring such different and complex productive capabilities is difficult. As such, Hausmann et al. (2014) proposes using a measure, called the Economic Complexity Index, which tries to measure capabilities indirectly by looking at the mix of products that countries export. The assumption is that productive capabilities determine the number and quality of products that a country can export; so export bundles tell us something about the underlying productive capabilities. For example, one might infer that Germany and Japan have similar productive capabilities, because they are both able to produce a similar set of goods.

The ECI takes data on exports, and reduces a country's economic system into two dimensions: (i) The 'diversity' (i.e. the number) of products in the export basket, and (ii) the 'ubiquity' of products in the export basket (i.e. the number of countries that export similar products). The least complex countries, at the bottom of the ECI rank, are those that export few different types of products (i.e. have export baskets that are not diversified), and those products that they do export are exported by many other countries (Marthinus C Breitenbach et al.,2021). Therefore, a country like Germany ranks high in economic complexity, because it exports many different kinds of sophisticated products that are only exported by a handful of other countries with similarly diversified productive capacities.

Ultimately, the ECI informs us that what countries make reveals their knowledge capabilities. Increased complexity is necessary for society to be able to hold and use larger amounts of productive knowledge. As a result, the ECI in effect captures significantly more growth relevant information, such as human capital and technology capabilities than traditional export diversification measures, such as terms of trade shocks.

### **Review of Literature:**

The economic complexity approach make a concrete connection between the current and future output structures and potential performance of countries in achieving high levels of per capita income. The ECI measures the productive capabilities of countries by explaining the knowledge accumulated in a population based on the goods they produce and export and to which countries they export (Marthinus C Breitenbach et al.,2021). Developed countries produce and export more complex goods that draw on a wider set of capabilities (Nuran COŞKUN et al. 2018) Developed countries enjoy higher economic growth rates, lower levels of income inequality and lower degrees of economic growth volatility, including due to lower sizes of export demand and financial flows shocks (**Birol Erkana** et al. 2015) while developing countries produce ubiquitous goods that require less know-how. Some studies assert that Developing and low income countries are diversified countries, but their production structure are specialized in less sophisticated products. Therefore, the developing countries has a lower GDP per capita in PPP terms than their potential (Nuran COŞKUN et al. 2018, Hausmann et al 2022)

### **Objectives of the Study:**

1. To analyse the performance and trends of India in the Economic Complexity Index (ECI) framework

2. To study the performance of India and its neighbouring countries in the Economic Complexity Index

### Data and Methods

To calculate Economic Complexity Index (ECI), Study uses international trade data, from Growth Lab of Center for International Development at Harvard University (atlas.cid.harvard.edu) (Simoes & Hidalgo, 2011). The trade data set combines exports data from 1962 to 2020, compiled by Feenstra, Lipsey, Deng, Ma, and Mo (2005), and data from the U.N. COMTRADE for the period during 1995–2020.

ECI is calculated from exports data connecting countries to the products in which they have Revealed Comparative Advantages (RCA) (Hidalgo & Hausmann, 2009). The Revealed Comparative Advantage (RCA) of a country c in a product p is:

$$RCA_{cp} = \underbrace{X_{cp}^{i} / \sum p X_{cp}^{i}}_{\sum c^{i} Xc^{i} p / \Sigma c^{i} p^{i} X c^{i} p^{i}}$$

where Xcp is the total export of country c in product p. RCA is larger than 1 (indicating that a country has comparative advantage in a product), if a country's export of a product are larger than what would be expected from the size of the country's export economy and the product's global market.

RCA is used to define a discrete matrix  $M_{cp}$  which is equal to 1 if country c has RCA in product p and 0 otherwise

$$Mcp = 1 \text{ if } RCAcp \ge 1$$
$$Mcp = 0 \text{ if } RCAcp < 1$$

The matrix Mcp allows to define the diversity of a country and the ubiquity of a product, respectively, as the number of products that are exported by a country with comparative advantage, and the number of countries that export a product with comparative advantage.

Diversity = 
$$k_c^0 = \Sigma_p M_{cp}$$
  
Ubiquity =  $k_p^0 = \Sigma c M_{cp}$ 

Next, a matrix can be defined that connects countries exporting similar products, weighted by the inverse of the ubiquity of a product (to discount common products), and normalized by the diversity of a country:

$$M \sim cc^{i} = 1/kc;_{0} \Sigma_{p} \underline{M_{cp} M_{cip}} k_{p;0}$$

Finally, the economic complexity index (ECI) is defined as

where Kc is the eigenvector of  $M \sim cc^i$  associated with the second largest eigenvalue—the vector associated with the largest eigenvalue is a vector of ones (Caldarelli et al., 2012; Hausmann et al., 2014; Kemp-Benedict, 2014).

### **Countries Included in Economic Complexity Index**

Countries are highly heterogeneous. When it comes to the size of their population, territory, income and economy, countries differ by orders of magnitude. Countries that are too small in terms of their export base, such as Tuvalu or Vanuatu, or with data that is highly unreliable or not adequately classified, do not provide us with a sufficiently broad sample to infer their structure. This is why Growth Lab of Center for International Development at Harvard University restrict the analysis to 133 countries, which account for 99% of world trade, 97% of the world's total GDP and 95% of the world's population(Hausmann et al., 2014).

To generate this list Growth Lab of Center for International Development at Harvard University used a variety of criteria. First, Growth Lab of Center for International Development limit themselves only to the set of countries for which there is product-level trade data available in the UN COMTRADE and

income data available for 2008. Second, they only use data on countries with a population above 1,200,000. Third, they only consider countries that exported at least 1 billion dollars per year, on average, between 2006 and 2008. Finally we remove from this sample Iraq, Macau and Chad, three countries with severe data quality issues.(Hausmann et al., 2014)

### Trends in the performance of India in the Economic Complexity Framework

Over the last Two and half decades i.e from the 1995 to 2020, there has been lot of changes in the performance of India in the Economic Complexity Index (ECI). As reflected in Table 1 Even though it was top ranked among regional partners in this period there has been lot of fluctuations in its performance. In the year 1995 India has ranked in the 60<sup>th</sup> position with 0.01404 Economic Complexity value.

In the next five years there were good improvements in the performance of India in ECI. In this period India has achieved 43<sup>rd</sup> rank with ECI value of 0.323006. In these five years India's 0.308966 ECI values have been improved. With the improvement of 17 ranks India has performed well compared to its regional partners. During the span of Five years, India has achieved big leap of 17 ranks because of the effects of improvement of New Economic Policies, During the implementation of Liberalization, Privatization and Globalization policies Indian Economy got the opportunities to venture the World economy because of globalization, which helps to increase Foreign Trade activities that acts as the major positive factor for the improvements in India's performance in Economic Complexity Index.

Year	ECI Value	Rank
1995	0.01404	60
2000	0.32300 6	43
2005	0.23850 7	50
2010	0.16360 3	54
2015	0.23374 5	48
2020	0.41626 9	46

## Table 1: India's performance in Economic Complexity Index

Source: The atlas of Economic Complexity of Growth Lab

of Center for International Development

Later in the next two five years periods, India's performance in ECI is not much healthier. In the year 2005, India has been ranked in  $50^{\text{th}}$  position with the ECI value of 0.238507, Even in the next five year period there was deteriorating performance, during this period ECI values were further fallen to 0.163603 which resulted in the downfall of India's ranks. In this year India's rank was fallen to  $54^{\text{th}}$  position in ECI.

In the next five year period, there were slight improvements in ECI scores. From the ECI values of 0.163603 in 2010, scores were improved to 0.233745 in the year 2015. India was ranked  $54^{\text{th}}$  and  $48^{\text{th}}$  position in the respective years.



Graph 1: Trend Line of India's Economic Complexity Score between 2011 to 2020

Source: The atlas of Economic Complexity of Growth Lab of Center for International Development at Harvard University

In the next five years there were lot of volatility in the ECI performance of India.As reflected in Graph 1 there were slight improvement in the years 2016 and 2017. But later in the year 2018, there was a leap jump in the ECI performance of India. Within the span of a year India's ECI score was improved from 0.262126 to 0.536561. With a improvement of 0.274435 values, India's rank was also improved to  $41^{st}$  rank. As reflected in the graph, with the improvement of 9 position in the ranking, this was the biggest improvement in a single year and also  $41^{st}$  rank is the highest ECI rank of India.

But again in the year 2019 the ECI score was dropped to 0.433709 due to shadows of recession in the Economic activities. Later in the year 2020, due to the Covid-19 pandemic there was lockdown in the country which has reduced Economic activities in the country which got reflected in the reduction of ECI scores in the year 2020.

To summarize the trends in the performance of India in ECI framework, even though India's rank is improved from 60<sup>th</sup> rank in 1995 to 46<sup>th</sup> rank in 2020, one can observe that there are fluctuations in it's

performance. India being ranked in the first position of Complexity outlook Index<sup>3</sup> which is the one of the greatest positives to improve it's performance in Economic Complexity Index.

### Performance of India and its neighbouring countries in the Economic Complexity Index:

As per the Economic Complexity Index reports of Growth Lab of Center for International Development, all the 133 countries which are considered for Economic Complexity Index calculation are classified into 8 different regional bloc based on the Geographical location. In these classifications, India is in the South Asia regional bloc, Bangladesh, Pakistan and Srilanka are the other countries of South Asian Regional Bloc.

As mentioned in the Table 2 India has been ranked in Number One position among the South Asian countries in the whole study period. It can also be observed that India is the only country in the South Asian region which has the positive scores in ECI values whereas other 3 countries of the South Asian region are still having negative ECI values.

There are other noticeable numbers are there in the Table 2. Even though India ranked in number One position, Srilanka also has improved in ECI performance. During study period i.e between 1995 to 2020, Srilanka has gained ECI values of 0.443971 which is the highest gain in South Asia region and also during this period, it has improved 23 ranks which is the highest gain in among the countries in South Asian region.

Even for Pakistan, there are rays of hopes in ECI performance. During the period between 1995 to 2020 Pakistan has gained 14 positions in ECI rank which is equals to India's gains in ECI rank during the same period. During this period Pakistan has gained 0.288931 scores in ECI values. But whereas for Bangladesh, it is not satisfactory with it's performance in ECI during this period which might get improved in the coming years.

To summarise the section, even though India ranked in top in the South Asian region, there is scope for improvements in its performance. When it is compared with other developed countries, India still needs to improve to become more competent with the other developed countries.

<sup>&</sup>lt;sup>3</sup> Complexity outlook Index-A place-specific measure that evaluates the overall position of a place in the Product Space by calculating how far it is to alternative products and how complex these products are. A high COI implies that the place has an easier path towards greater levels of complexity, while a low COI means that achieving them will be more difficult as it implies moving into products that are further away. (Hausmann et.cl, 2022)

# Table 2 :Performance of India and its neighbouring countries in the Economic Complexity Index

Year	1995		2000		2005		2010		2015		2020		Rank in the regio n
Country Name	ECI Score	ECI Ran k	ECI Score	ECI Ran k	ECI Score	ECI Ran k	ECI Score	ECI Ran k	ECI Score	ECI Ran k	ECI Score	ECI Ran k	
India	0.01404	60	0.32300 6	43	0.23850 7	50	0.16360 3	54	0.23374 5	48	0.41626 9	46	1
Srilanka	0.63655 5	95	0.49740 7	87	0.50477 1	89	0.40911	80	0.54101 8	85	0.19258 4	72	2
Pakistan	0.77412	102	0.76763	100	0.59271 2	92	- 0.66598 9	97	0.74730 4	101	0.48518 9	88	3
Banglades h	0.57954 7	89	0.87578 8	112	0.88189 8	109	0.85895 7	108	0.95478 6	111	0.59964	93	4

Source:The atlas of Economic Complexity of Growth Lab of Center for International Development at Harvard University

### Conclusion

Economic complexity can be defined as the composition of a country's productive output and represents the structures that emerge to hold and combine knowledge. It has been attracting the interests of Policy makers and Research Community. There has been many studies have been taken to understand the determinants of Economic Complexity, some works have taken to study about the role of Economic complexity in determining GDP, Income inequality, Human Development, Export competitiveness, Economic stability, trends of ECI in different developed and developing countries. So this study has made an attempt to understand the Position of India in ECI and also tries to analyse the status of India in ECI by comparing its performance with other regional and neighbouring countries.

As per the growth projection report of Growth Lab of Center for International Development at Harvard University which is released in July 2022, China, Vietnam, Uganda, Indonesia, and India are projected to be among the fastest-growing economies to 2030. It is projected that with the annual growth rate of 5.19%, India can become 11<sup>th</sup> fastest-growing economies by 2030 that means India's existing know-how affords many opportunities to diversify into related products. In diversifying its Economy India has ample space to diversify calls for leveraging existing successes and also has potential growth opportunities to enter into more complex products and can become one of the most complex and sustainable economies in the world.

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