

# IMPACT OF SECTORIAL GROWTH ON GDP

**\*\* Dr. Nandan Velankar**

**\*Deeksha Sharma \*Rashmi Trivedi \*ShaliniSingh**

\* Assistant professor, Prestige Institute of Management, Gwalior

\*\* Student, Prestige Institute of Management, Gwalior

## ABSTRACT

*The study examines the relationship between sectorial growth and GDP of India. The study involved different sectors of economy. The data were subjected to statistical analysis. The cause and effect relationship was checked by regression model using PASW-18. Since, normality of residuals was checked in order to avoid spurious regression. The Shapiro-wilk test was used for normality testing. The result of the study revealed that Industrial sector and service sector have significant impact on GDP of India.*

**Key Words: Agriculture sector, Industrial sector, Agriculture and allied sector, Service sector, GDP**

## INTRODUCTION

The gross domestic product (GDP) is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period; you can think of it as the size of the economy. Usually, GDP is expressed as a comparison to the previous quarter or year. For example, if the year-to-year GDP is up 3%, this is thought to mean that the economy has grown by 3% over the last year. Measuring GDP is complicated (which is why we leave it to the economists), but at its most basic, the calculation can be done in one of two ways: either by adding up what everyone earned in a year (income approach), or by adding up what everyone spent (expenditure method). Logically, both measures should arrive at roughly the same total.

The income approach, which is sometimes referred to as GDP is calculated by adding up total compensation to employees, gross profits for incorporated and non-incorporated firms, and taxes less any subsidies. The expenditure method is the more common approach and is calculated by adding total consumption, investment, government spending and net exports.

### **Service Sector**

An industry made up of companies that primarily earn revenue through providing intangible products and services. Service industry companies are involved in retail, transport, distribution, food services, as well as other service-dominated businesses. It also called service sector, tertiary sector of industry.

### **Agricultural and allied sector**

The under-developed countries have low level of per capita income. Further, the share of secondary and tertiary sector in developed countries is greater than the share of the agricultural sector and allied sector.

There is a negative correlation between the rise in national income and the percentage share of agricultural sector and allied sector. As a economy progresses and there is a rise in the per capita income , it has been observed that the share of agriculture and allied sector in the national income

declines. The percentage contribution of national income of tertiary sector also changes when economic growth takes place.

### **Industrial sector**

Industrialization has a major role to play in the economic development of the under-developed countries . thus, industrialization is the only effective solution to overcome the twin problem of over-population and low per capita income.

The net value of output per man is higher in industry than in agriculture. In addition, the industrial sector possesses a relatively high marginal propensity to save i.e. creation of surplus.

### **Agriculture sector**

Agriculture Sector of Indian Economy is one of the most significant part of India. Agriculture is the only means of living for almost two-thirds of the employed class in India. As being stated by the economic data of financial year 2006-07, agriculture has acquired 18 percent of India's GDP. The agriculture sector of India has occupied almost 43 percent of India's geographical area. Agriculture is still the only largest contributor to India's GDP even after a decline in the same in the agriculture share of India. Agriculture also plays a significant role in the growth of socio-economic sector in India.

### **Gross domestic product (GDP)**

GDP is a monetary measure of the market value of all final goods and services produced in a period (quarterly or yearly). Nominal GDP estimates are commonly used to determine the economic performance of a whole country or region, and to make international comparisons. Nominal GDP per capita does not, however, reflect differences in the cost of living and the inflation rates of the countries; therefore using a basis of GDP at purchasing power parity (PPP) is arguably more useful when comparing differences in living standards between nations.

### **REVIEW OF LITERATURE**

Dasgupta, (2005) studied the role of manufacturing and service sector growth towards economic development in the light of a number of new phenomena: a faster growth of services than of manufacturing in many developing countries; the emergence of 'de-industrialization' in several developing countries, at low levels of per capita income; jobless growth in the formal sector, even in fast-growing countries such as India; and a large expansion of the informal sector in developing countries. Although they examined the phenomena in the specific context of the Indian economy, the analysis had a much wider application and implications, both for economic policy and for theories of growth and structural change.

## Impact of Sectorial Growth on GDP

Basu et.al.(2015) investigated the impact of liberalization on the dynamics of the FDI and GDP relationship. A long-run co-integrating relationship was found between FDI and GDP after allowing for heterogeneous country effects. The co-integrating vectors revealed bidirectional causality between GDP and FDI for more open economies. For relatively closed economies, long-run causality appeared unidirectional and runs from GDP to FDI, implying that growth and FDI were not mutually reinforcing under restrictive trade and investment regimes

Srinivasan (2010)said that India's dynamic services sector has grown rapidly in the last decade with almost 72.4 per cent of the growth in India's GDP in 2014-15 coming from this sector. Unlike other developing economies, the Indian growth story has been led by services-sector growth which is now in double digits

P.K. et.al.(2010)Services in India are emerging as a prominent sector in terms of contribution to national Foreign Direct Investment, Domestic Investment and Economic Growth in China: A Time Series Analysis. *The World Economy*, 31(10),1292–1309and states' incomes, trade flows, FDI inflows, and employment.

.Joshi and seema 2008 ,service sector will be able to contribute to inclusive growth by enhancing investment, creating employment and human capital, and developing infrastructure. It is important for a developing country like India with a large, young population to generate quality employment and to move up the value chain. India needs private investments in key infrastructure services such as transport, energy, and telecommunications.

Ninan et.al.(2010) It 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 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.

Giri (2007) said that productivity or labour productivity gives an estimate of the average economic value generated by an average worker. Labour productivity levels in a way determine the quality of employment. High levels of labour productivity by themselves do not ensure high wage levels and better conditions of work. However, high levels of labour productivity are one of the necessary conditions to achieve high wage levels and better conditions of work.

Barry et.al.(2010) said that high productivity sectors are likely to provide better quality employment. It can be also said, with a few caveats that high productivity employment is also likely to be more sustainable and stable. Productivity difference across different service activities also has implications for equity.

Chenery (1961) & Kasper (1978) found the secular view as the resources reallocate because the change in income and taste of society, as the income increased the primary goods demand fall so that the percentage of spending of income fall on primary products. However the secondary and tertiary sector developed in this stage at the cost of primary sector. In fact after reaching primary sector into its minimum, growth in tertiary sector occurs at the cost of secondary sector for the reason of high growth in income. The structural change in Bacon-Eltis appeared for the reason that rapid growth of public sector and the resources are shifted from services sector because government biasness toward services. Simultaneously government spending refused to be paid by public in terms of high taxes. Therefore the government spending is paid by consumption of national saving, reduction in investment and net

exports. Consequently, manufacturing sector set under pressure because of high demand of wage through trade union

Fuchs et.al.(1980) was designed the relevant macro-variables that include share of services in GDP (SER) as explained variable, and explanatory variables such that, population size, external as well as internal factors. It is anticipated total population would positively connect. The control variables are further divided into two sets; external factors and domestic factors. The external factors contain external total debt (TD), foreign direct investment (FDI) and the trade liberalization (TL) measured by import plus export divided by GDP. Further second set of control variable comprises aggregate consumption (LC) ratio to GDP, gross f GDP growth rate (GDPR). The study has taken log of all proposed variables to remove the problem of heteroskacidy. Although in literature the effect of debt to the GDP is negative on services growth, foreign direct investment and trade liberalization has positive impact on services growth. In case of domestic factors which comprise household and government consumption, gross fixed capital formation, labor p .

Colin and clark said civilization progresses human desires increase leading to the evolution of education activities. The expansion of both health and education sectors have made the advancement of service sector. The service sector can be ganged by its contribution to different aspect of the economy. In the decade period between 2000-01 and 2010-15. Was highly increased in compare 1950-51 to 2000-01. This period service sector and other services have been increased.

Clark et.al.(2011) The Indian economy has contributed to the services sector of about 55.2 per cent share in G.D.P its growing by 10 per cent annually, contributing to the total employment, a high share in foreign direct investment and one-third of total exports and recording very fast at 27.4 per cent in export growth of the first half of 2010-11. While latest available data has been taken from the national and international sources. Some services, such as infrastructure include the roads, railways, civil aviation, financial services and social services. The social services including the health and education play a major role in enhancing the contribution of service sector to its Indian economy. In India the contribution of service sector to the Indian G.D.P ( Gross Domestic Product) is classified in three heads. In the first head Trade, Hotles, Transport and Communication. In the second head Financing, Insurance, Real estate and Business services. In third head Other services along with Public Administration and defense and Health and Education sectors have been incorporated articipation, growth rate and literacy rate has positive effect in literature.

Jansen(2006) The service sector makes an important contribution to gross domestic product (GDP) in most countries, providing jobs, inputs and public services for the economy. Trade in services can improve economic performance and provide a range of traditional and new export opportunities. However, services liberalisation also carries risks, and appropriate regulation and other complementary policies help to ensure that liberalisation delivers the expected benefits. We have reviewed the literature on these issues for six service sectors (tourism, financial services, energy services, information and communications technology and Mode IV).

Jenkins et.al.(2000) said the services to development makes a direct significant contribution to GDP and job creation, and provides crucial inputs for the rest of the economy, thus having a significant effect on the overall investment climate, which is an essential determinant of growth and development. Some service sectors, such as the health, education, water and sanitation sectors, are also directly relevant to achieving social development objectives.

Kumar (2007) The Services sector accounts over one half of India's GDP. The examination of the Services sector at a reasonably disaggregated level is necessary because the services sector (tertiary sector) is very highly heterogeneous in nature than the primary and the secondary sectors. Further technological advance, the process of globalisation and increased reliance of outsourcing have led to

**Impact of Sectorial Growth on GDP**

rapid changes in the economic structures of many economies including India. And these changes have resulted in the relatively higher levels of growth of the services sector.

Layton et.al.(1989) This study attempts to understand the growth and structure of the services sector in India through the analysis of the sub- sectors within the services sector at a level of disaggregation that has so far not been adequately analysed in the literature. It identifies sub- sectors within services that have contributed mainly to GDP growth. It also identifies sub- sectors that have contributed mainly to employment growth. The quality of employment in the services sector is examined through the analysis of the productivity contributed mainly to GDP growth. It also identifies sub- sectors that have contributed mainly to employment growth.

**OBJECTIVES OF THE STUDY**

- To check the impact of sectorial growth on economic growth (GDP).
- To open new avenues for further researches.

**RESEARCH AND METHODOLOGY**

The study is causal in nature. It is aimed to find out the impact of sectorial growth on GDP. The study is done to analyze the relationship in Indian context. For the same various indicators have been considered to define the Sectorial growth specifically Industrial sector, Agriculture sector, service sector, Agriculture and allied sector were taken . The data have taken for the last 21 years (1995-96 to 2015-16). Non probability purposive sampling technique was used for selecting the sample.

**RESULT AND DISCUSSION**

**Multiple Regression test -**

**H<sub>0</sub>** - There is no significant impact of sectorial growth on GDP.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.973 <sup>a</sup>	.947	.934	.49893	1.902

a. Predictors: (Constants),SG, AAG, IG, AG

b. Dependent Variable: GDP

In above model summary table the R, R<sup>2</sup>, adjusted R<sup>2</sup> and the standard error of the estimate are found which are used to determine how well a regression model fits the data. The R column represents the value of “R”(the multiple correlation coefficient).Here, R can be considered to be one measure of the quality of prediction of the dependent variable(GDP).A value of **0.973** indicates a good level of prediction. The value of D-W statistics (1.902) is close to ideal value (2) which reveals there is no auto co-relation among the variables. The “R Square” column represents the R<sup>2</sup> value (coefficient of determination) which is the proportion of variance in the dependent variable GDP, which is explained by the independent variables (IG, AG, AAG and SG ).In above table we have adjusted R<sup>2</sup> value of **0.934** that are independent variability of our dependent variable GDP.

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.455	4	17.864	<b>71.763</b>	<b>.000<sup>a</sup></b>
	Residual	3.983	16	.249		
	Total	75.438	20			

a. Predictors: (Constants), SG, AAG, IG, AG

b. Dependent Variable: GDP

The F ratio in the Anova table test whether the overall Anova table is good fit for the data .The table shows that independent variables (SG, AAG, AG and IG) statistically significantly predict the dependent variable (GDP). The value of **F** statistics is **71.763 with probability value (.000)** means our independent variables SG, AAG, IG, AG are jointly explaining our dependent variable GDP because

the P value (**.000**) is less than standard value (**0.05**) which is desirable. Hence, **H<sub>0</sub>** is rejected. As a result we can say that, “there is a significant impact of sectorial growth on GDP

### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
	1	(Constant)	.099			
	IG	.288	.044	.510	6.551	<b>.000</b>
	AAG	.116	.142	.243	.817	<b>.426</b>
	AG	.107	.124	.257	.866	<b>.399</b>
	SG	.480	.072	.442	6.687	<b>.000</b>

a. Dependent Variable : GDP

The **t** statistics of our independent variable AAG (agriculture and allied sector growth) and AG (agriculture growth) is not explaining our dependent variable GDP because the **p value, 0.426 and 0.399 > .05** (standard value) but, our other independent variable IG(industrial growth) and SG(service sector growth) is explaining our dependent variable (GDP) because the **p value, 0.000 < .05** (standard value).

### Regression Equation

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e$$

Here,

y = dependent variable (GDP)

**Impact of Sectorial Growth on GDP**

a= the "y intercept"

b<sub>1</sub>= the change in y for each 1 increment change in x<sub>1</sub>(IG).

b<sub>2</sub>=the change in y for each 1 increment change in x<sub>2</sub>(AAG).

b<sub>3</sub>=the change in y for each 1 increment change in x<sub>3</sub>(AG).

b<sub>4</sub>=the change in y for each 1 increment change in x<sub>4</sub>(SG).

X<sub>1</sub>=An X score on first independent variable (IG) for which we tried to predict a value of y.

X<sub>2</sub>=An X score on second independent variable (AAG) for which we tried to predict a value of y.

X<sub>3</sub>=An X score on third independent variable (AG) for which we tried to predict a value of y.

X<sub>4</sub>=An X score on fourth independent variable (SG) for which we tried to predict a value of y.

E =error

**a +(.288)x<sub>1</sub>+ (.116)x<sub>2</sub>+ (.107) x<sub>3</sub> + (.480) x<sub>4</sub> + e**

**Tests of Normality**

**H<sub>0</sub> : Residuals are normally distributed**

<b>Shapiro-wilk</b>		
<b>Statistics</b>	<b>Df</b>	<b>Sig.</b>
.915	21	.069

The significant value of residuals normality is (.069) more than the standard value 0.05 , thus Ho is not rejected . so, residuals are normally distributed refers the validity of regression model.

**LIMITATION AND SUGGESTION**

The purpose study is an attempt to analyze the impact of Industrial sector, Agriculture sector, Agriculture and allied sector And Service sector on GDP of India. It is suggested that some parameters may be considered to analyze the overall economic growth of the country and growth of different sectors.

This study is based on specifically in Indian context. It may be carried on comparative analysis between different sectors.

This study is focused on cause and effect relationship only so it is suggested that co-relation can be checked individually between the (Industrial sector and GDP), (Agriculture sector and GDP), (Agriculture and allied sector and GDP), and (Service sector and GDP).

**CONCLUSIONS**

In the outcome of proposed study supported the above phenomenon that Industrial sector and Service sector have a significant impact over GDP and there is no significant impact of Agriculture sector and agriculture and allied sector on GDP.

## REFERENCES

1. Dasgupta, S.S. (2005) Will Services be the New Engine of Indian Economic Growth? *Development and Change*, 36(6), 1035–1057
2. Basu, P. C. (2003) Liberalization, FDI, and Growth in Developing Countries: A Panel Cointegration Approach. *Issue Economic Inquiry*, 41(3), 510–516.
3. P. K. (2010) FDI and Economic Growth in the ASEAN Countries: Evidence from Cointegration Approach and Causality Test. *The IUP Journal of Management Research*, 9 (1), 38-63.
4. Srinivasan (2001) Does foreign direct investment promote economic growth? Evidence from east asia and latin america. *Contemporary Economic Policy*, 19 (2), 175–185.
5. Joshi and Seema (2008) Service Sector in India's Economy: Performance, Problems and Prospects. Country Paper submitted for Study Meeting on Expansion and Development of the Services Industry in Asia organised by Asian Productivity Organization. Seoul: 17–20 June.
6. Kalinova, Blanka, Angel Palerm, and Stephen Thomsen. 2010. OECD's Foreign Direct. Ninan (2011) *Inclusive Growth: A Challenging Opportunity*. Deloitte and All India Management Association. September. <http://www.deloitte.com/assets/Dcom->
7. Eichengreen Barry and Poonam Gupta (2010) "The Service Sector as India's Road to Economic Growth?" Working Paper No. 249, Indian Council For Research On International Economic Relations, New Delhi.
8. Fuchs, Victor R. 1968. *The service economy*. New York: National Bureau of Economic Research.
9. Ghosh B.N. (1991) "Development of Tertiary Sector", *Economic and Political Weekly*, Vol. 26, No. 8, pp. 452
10. Giri B.K., Asis Roy, Salil Kumar Mukhopadhyay (2007) "Calculation of Gross Value Added in the Unorganised Sector: An Alternative Approach to Measuring Labour Inputs", *Economic and Political Weekly*, Vol. 42, No. 37, pp 3740- 3744
11. GOI (2012) *Economic Survey 2012- 13*, Ministry of Finance, Government of India, New Delhi.
12. Hill T.P. (1977) "On goods and services", *Review of Income and Wealth*, Vol. 23, No 4, pp 315 – 339 Hill.
13. 315 – 339 Hill.
14. Chenery (1961) & Kasper (1978). Quantitative aspects of the economic growth of nations. Industrial distribution of national product and labour forces. *Economic Development and Cultural Change*, Supplement to *Vote*, 5 (4): 1-111.
15. Fuchs, v et.al.(1980)Lewis, W.A., 1954. Economic development with limited supplies of labour. *Manchester School of Social Science*, 22(2): 139-191.
16. Miroudot, S., J. Sauvage and B. Shepherd, 2010. Measuring the cost of international trade in services..
17. Szirmai, A. and B. Verspagen,( 2010). Is manufacturing still an engine of growth in developing countries, paper prepared for the 31st General Conference of The International Association for Research in Income and Wealth.
18. Warton, D.A.( 1974) The service industries in Canada, 1946-66, in B.S. Kierstead.
19. Colin clark "The Conditions of Economic Progress", Macmillan, London, Economic Survey .Economic Agricultural Statistics at a Glance 2010, Directorate of Economics and Statistics, Ministry of Agricultural, Government of India.
20. Fisher G.B. Alan "The Clash of Progress and Security ", Macmillan, London, 1935.
21. Government of Karnataka (2006), Karnataka Human Development Report 2005, Planning and Statistics, Government of Karnataka, Bangalore, p.15.
22. Misra and Puri (2009), "Indian Economy", 27th revised Edition, Himalaya Publishing House, Pvt. Ltd., Ramdoot , Dr. Bhalerao Marg, Girgan, Mumbai-400004, pp59 to 64.

### **Impact of Sectorial Growth on GDP**

23. Rudder Datt and Sundharam (2007), "Indian Economy", 55th revised Edition, Chand and Company Ltd., Ramnagar, New Delhi-110055, pp 742,830.
24. Clark et.al.(2011) "The Service Sector And Its Role In Economic Development".
25. Jansen, M. and Y. Vennes (2006) Liberalizing Financial Services Trade in Africa: Going Regional and Multilateral, Staff Working Paper ERSD-2006-03. Geneva: World Trade Organization, Economic Research and Statistics Division.
26. Jenkins, H. (2000) Commercial Banks Behaviour in Micro and Small Enterprise Finance, Development Discussion Paper 741. Boston, MA: Harvard Institute for International Development, Harvard University.
27. Kumar Vishnu, Alope Kar, Sanjay (2007) Service Producing Manufacturing Units and Their Impact on Sectoral GDP", *Economic and Political Weekly*, Vol. 42, No. 37, pp 3776-3780
28. Layton, Allan P. and Geoffrey H. Moore (1989) "Leading Indicators for the Service Sector" *Journal of Business & Economics and Statistics*, Vol. 7, No.3, pp. 379- 386
29. Lee Donghoon and Kenneth I. Wolpin (2006) Inter sectoral Labor Mobility and the Growth of the Service Sector, *Econometrica*, Vol. 74, No. 1, pp. 1- 46
30. Manna G. C. (2007) "Precision of Estimates of Gross Value Added Per Worker" pp 3750 - 3755
31. Mathur R. S. (1972) Economic Development and the Tertiary Sector, *Indian Journal of Industrial Relations*, Vol. 8, No. 1, pp. 31- 45.