An Economic Analysis of Sector Wise Contribution to GDP in India

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Abstract: *This study analyses the effect of fluctuation of agricultural, industrial and service sector of economy to thegrowth of GDP of India. Secondary data is collected from the Central statistical office from year 2000-01 to year 2019-20. Multiple Regression Analysis and Pearson's Correlation Coefficients were used to analyze the data. The study identified that the growth rate of contribution of service sector is on an increase from 2003-04 onwards. The study also reveals slow shifting of economic sector from agriculture to industry and industrial to service which result in negligible growth in GDP even after a long time period. The study also exhibits that GDP has a strong positive relationship with service and agricultural sectorand negligible relationship with industrial sector. This study suggests the policy makers to concentrate their attention on key areas of all economic sectors which can contribute more to GDP growth and thereby to achieve economic growth.*

Keywords: GDP, Economic sector, Development process, Regression analysis

1. Introduction

Indian economy is amalgamation of economic activities related to agricultural, industrial and service sectors. Sectoral transformation in India is the reallocation of economic activity across the broad sectors of agriculture, manufacturing and service that accompanies the process of economic growth (GDP). Agriculture and the allied sector contribute 15.96 per cent and its Gross Value Added (GVA) is around Rs. 23.82 lakh crore at the current prices in the Financial year 2018-19.The industrial sector contributes 24.88 per cent with GVA of Rs. 39.90 lakh crore. The services sector is the largest sector in India. The services sector accounts for 49.88per cent of total India's GVA of 137.51 lakh crore Indian rupees in the year 2018-19. Indian Economy is classified into three major sectors i.e., agriculture, industry and service sectors

- Livestock, Forestry and fishing have been combined in agricultural sector. This sector is also known as the primary sector. At the time of India's independence, this sector had the biggest share in the Gross Domestic Product of India. But year by year its contribution goes on declining and it contributes only 17 per cent of India's GDP at current prices
- Industrial sector includes 'Mining & quarrying', Manufacturing (Registered & Unregistered), Gas, Electricity, Construction, and Water supply. This is called as the secondary sector of the economy. It is contributing around 29.6 per cent of the India's GDP (at current prices) in 2018-19.
- Service sector includes 'Financial, real estate and professional services, Public Administration, defence and other services, trade, hotels, transport, communication and services related to broadcasting. This sector is also known as the tertiary sector of the economy. This sector is contributing around 54.3 per cent to the India's GDP in 2018-19.

2. Review of Literature

A notable number of research studies have been documented regarding the sector wise contribution of GDP over the years in india.

Konda Hari Prasad Reddy (2019) analysed and compared the contribution of the three major sectors (i.e., agricultural sector, industrial sector and service sector) of Indian economy to the overall GDP of India from 1990-91 to 2009-10. The study clearly showed that a sharp fall in the contribution of agricultural sector in overall GDP in 1990-91 it was 24.53 per cent and by the end of 2009-10 it is further reduced to 14.64per cent. He concluded that there is a significant difference among the performance of the three sectors.

Monica Thind and Lakhwinder Singh (2018) have highlighted the relationship between structural change and growth in 15 major states of India over 30-year period from 1983-84 to 2014-15. The authors found out that among 15 major states under study except Gujarat and Madhya Pradesh, the service sector contributes more than half of GSDP (Gross State Domestic Product). However, in Gujarat and Madhya Pradesh the contribution of service sector is less than 50 per cent of GSDP.

Deepak Kumar Behera (2015) examined the agricultural growth performance of Gujarat and India. He found that the growth of agriculture was higher than 10 per cent for Gujarat during the year 2001-02 to 2010-11 while economic growth was also high at 10.21 per cent. The production and area of diversification crops like livestock, fruits and vegetables, total horticulture was also higher in Gujarat than India during the period 2001-02 to 2010-11

Suraj Gandel (2015) analyzed the effect of fluctuation of agricultural, industrial and service sector of economy on the GDP growth of Nepal. His study showed that service sector

as major contributor to GDP of Nepal followed by agricultural and industrial sector respectively. The researcher also reveals slow shifting of economic sector from agriculture to industry and industrial to service which result in negligible growth in GDP even after a long time period. This study also suggests that economist to concentrate their attention on key areas of all economic sectors which can contribute more on GDP growth.

Fauzi Hussain and Yoke Yik (2012) examined the contribution of economic sectors to economic growth in both countries by using time series data from 1978 to 2007. The results of multiple regression analysis show that agriculture, manufacturing and services sectors have positive relationship with GDP per capita in China and India. However, the contribution of economic sectors to economic growth differs in China and India. Manufacturing sector contributes the highest to China's economic growth while services sector is the highest contributor to India's economic growth.

Objective of the Study
1) To analyse the contribution of the Agricultural, Industrial and Service sectors of Indian economy to the overall GDP of India.
2) To study the interrelationship among agriculture, industrial and service sector of Indian economy.

Data
This study is based on the secondary data obtained from the economic survey 2019-2020. This study uses annual time series data cover from 2000 to 2019. GDP at factor cost was taken for economic growth as this study examines the contribution of agricultural sector, industrial sector, service sector to GDP in India.

3. Analysis and interpretation

Table 1: Sector wise contribution to GDP in India from 2000-01 to 2019-20

2000-01	4.1	0.3	6.5	4.8
2001-02	5.4	5.5	2.7	6.3
2002-03	3.9	-4.9	7.1	6.4
2003-04	8	8.2	7.9	7.3
2004-05	7.1	1.1	10	8.0
2005-06	9.5	4.6	10.7	10.6
2006-07	9.6	4.6	12.7	9.5
2007-08	9.3	5.5	10.3	9.9
2008-09	6.7	0.4	4.7	10.7
2009-10	8.6	1.5	9.5	10.6
2010-11	8.9	8.3	7.6	8.8
2011-12	6.7	4.4	8.5	6.8
2012-13	5.4	1.4	3.6	7.9
2013-14	6.1	4.8	4.2	7.1
2014-15	7.2	1.2	6.7	9.6
2015-16	8	2.1	9.5	9.0
2016-17	7.9	6.8	7.5	8.5
2017-18	6.9	5	6	8.6
2018-19	6.6	2.7	7.5	7.6
2019-20	4.9	2.6	2.6	7.1

Source: CSO Data on GDP

Table 1 shows the annual growth rates of agricultural sector, industrial sector and service sector of India from 2000-01 to 2019 -20. There is no consistent growth in any of the selected sectors of the economy in India. In 2019 -20 GDP growth rate is 4.9 per cent due to lack of sign of improvement in many sectors. i.e., automobile, manufacturing, banking and agriculture.

Table 2: Result of the multiple regression

Variable	Unstandardized		t-Statistic	Sig.
	Coefficient	Std. Error		
Constant	-0.306	0.207	-1.481	0.58
Agriculture	0.254	0.013	19.791	0
Industry	0.283	0.016	17.674	0
Service	0.538	0.028	19.325	0
R Square	0.996			
R	0.992			
Adj. R Square	0.99			
Standard Error of Estimate	0.17193			

Source: SPSS output

The table 2 displays the result of the multiple regression analysis to determine the relationship between GDP and agricultural sector (X_1), industrial sector (X_2) and service sector(X_3) in India. The model of the equation is
GDP= $Y_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$
GDP= $-0.306 + 0.254A + 0.283I + 0.538S + \mu_t$

A value of Pearson's correlation coefficient R in the table is 99.2 per cent it means very strong positive relationship between agriculture, industry and service sectors of Indian economy. Coefficient of determination R^2 is 0.996 and it explains 99.6 per cent of variance in GDP is caused by fluctuation in agriculture, industry and service sector of the economy. The remaining 0.1 per cent of the variation is associated with other factors not taken in this study. Service sector is a more significant contributor to economic growth, it rises by1 per cent GDP is expected to increases by 0.538 per cent.The coefficient of X_1, X_2, X_3 are statistically significant at 95 per cent level. Where their actual t values are more than 2.6. This implies that these three sectors are related to GDP in India andalso, these three sectors have positive relationship with GDP.

Table 3: Correlation matrix
Association among these four variables can be understood from the table below.

	GDP	Agriculture	Industry	Service
GDP	1	0.581	0.733	0.774
Agriculture	0.581	1	0.111	0.139
Industry	0.733	0.111	1	0.45
Service	0.774	0.139	0.45	1

The above correlation matrix reveals that the value of correlation coefficient between GDP and agricultural sector is 0.581and that between GDP and industrial sector is 0.733. this value implies that strong positive relationship between GDP and industrial sector. Further the relationship between GDP and service sector is 0.774. This value implies that there is very strong positive relationship between GDP and service sector.

4. Conclusion

The analysis of sectoral contribution in India in these 20 years shows that agricultural sectors contribution has been

gradually and steadily declining due to untimely transport of goods, increases transport cost and lack of storage facility. Contribution of service sector to GDP is increasing in the study period due to IT and BPO are major contributor to service sector. India is the fast-growing large economy in the world. The natural economic movement of a country goes from agrarian economy to industrial economy and thereby to service economy but India has jumped from agrarian economy to a service economy. This study suggests that policy makers to concentrate their attention on key areas of all economic sectors which can contribute more on GDP growth.

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