

Composition of the key sectors to GSDP, "A case study of Madhya Pradesh from 2001-02 to 2015-16"

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ABSTRACT

The Economy of the State of Madhya Pradesh is mainly agrarian and predominantly rural, with almost 70 per cent of its population engaged in agriculture, much above the all India average of 55 per cent. Agriculture and its allied services contribute 34% share in the state's economy during 2015-16. The study analyzed the contribution of agricultural and other macro sectors in GDP of the state economy. Further the study also depicts the trend in year wise growth of macro sectors especially agricultural sector in GDP of the State. It is observed from the study that the agriculture sector output increased from 2064608 lakhs during the initial period to 7164083 during the final year of the study period. It also forms weak form of J-Curve which refers it increases at the increasing rate during the reference time period except a dip in 2002-2003 where it reaches next to the bottom level in magnitude i.e. Rs. 2062387 lakhs while as it reached to Rs. 7164083 lakhs at the end of the reference period i.e. 2015-16 which is about 3.47 times increase compared with the initial year of the reference period. The percentage share of agriculture, industry and services sectors was about 22%, 29% and 48% in the initial year of the reference period which reached to about 27%, 25% and 48% at the end of the reference period with respect to the same macro sectors of the state economy respectively. The average share of agriculture is observed to be the highest about 27% in the last four year phase of the reference period while as it was lowest in the third four year phase about 22% of the reference period. depicts that irregular variation have taken place over the reference period with volatile fluctuations in 2002-03 when it dipped by about 45 percent.

1. Introduction

The role of the agricultural sector is very important and has wider scope in the state of Madhya Pradesh because of its agrarian and rural nature of economy. Agricultural sector is the main sector of the state economy as it contributes about one third shares to GDP of state economy. Most of the population of the state depends on this sector and especially a remarkable proportion of the rural population which depends either directly or indirectly for livelihood on this sector. According to the agricultural census 2011 near about 70% of the aggregate workers and about 85% of the total workers in rural areas are dependent on this sector for livelihood in the state of Madhya Pradesh. The structural change in output and employment are considered to be important indicators to measure the economic performance of the economy. The sectoral composition of output and employment are the most crucial indicators to measure the contribution of the different sectors in general and specifically contribution of agricultural sector of the state economy. The agricultural sector's share of output and employment is highest in the poor economies and declines systematically as GNP per capita rises. The share of both industry and services sector output and employment rise to offset this decline. But, during the first stage of the structural change most of the resources get shifted from agricultural to industrial sector and then finally in the second stage of the structural transformation resources are shifted from both agricultural and the industrial sectors to the services sector of the economy. The state is primarily an agricultural state, with almost 70 per cent of its workforce engaged in agriculture,

much above the all-India average of 55 per cent. Unlike other states where the share of agriculture in GDP has been falling, MP has undergone a reverse structural change after 2010-11. Between 2003-04 and 2010-11, the share of agriculture in GDP declined from 29.8 per cent to 22.5 percent (2004-05 prices), which reflected the national trend. However, after 2010-11, the share of agriculture in GDP has increased from 22.5 to 30.0 per cent (2004-05 prices) in 2014-15. Not only has the importance of the sector in the overall economy of MP increased but the sector has also performed significantly better than other states in the country. The agricultural GSDP of Madhya Pradesh increased at 9.7 per cent per annum during 2005-06 to 2014-15, surpassing even record holder Gujarat's 7.7 per cent. The last five years have been even more spectacular: agricultural GDP increased at 14.2 per cent per annum.

2. Objectives

- Share of agricultural sector and other macro sectors to GDP of the state economy.
- To analyze the trend in year wise growth rate of key sectors in the state.

3. Methodology

Mean:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i = \frac{x_1 + x_2 + \dots + x_N}{N}$$

Linking Factor Method: It is a method through which base year is changed or rebase is formed. It is simply done by using the following two formulas:

a) Deflator = (Factor) × (Out-put level of the corresponding year)

Whereas; Factor = (Old Base) ÷ (New Base)

b) Inflator = (Factor) × (Out-put level of the corresponding year)

Whereas; Factor = (New Base) ÷ (Old Base)

Annual Growth Rate or Simple Growth Rate: The annual growth rates for a series of T annual observations, say $y_1, y_2, y_3, \dots, y_t$ is defined as:

$$a_t = \frac{y_t - y_{t-1}}{y_{t-1}}$$

Whereas; y_t refers current year out-put.

y_{t-1} Refers previous year out-put.

4. Results and discussion

In order to analyze the contribution of agricultural sector in terms of both numerical figures and percentages in GSDP of state economy, the data has been analyzed for the entire period of 16 years, 8 years and 4 years respectively for the purpose of indepth analysis and in order to maintain uniformity.

Table-1: Sector wise Gross state domestic product at factor cost (at 2004-05 prices) in lakhs.

Year	Agriculture		Industry		Services		GSDP
	Absolute	%	Absolute	%	Absolute	%	
2000-2001	2064608	22.38	2691795	29.19	4466804	48.43	9223206
2001-2002	2566485	26.01	2725439	27.62	4576933	46.38	9868857
2002-2003	2062387	21.78	2703950	28.56	4702897	49.67	9469234
2003-2004	2890208	27.30	2848471	26.90	4849103	45.8	10587782
2004-2005	2753979	25.22	3062808	28.05	5103051	46.73	10919838
2005-2006	2973694	25.81	3209886	27.86	5338183	46.33	11521763
2006-2007	3055971	24.21	3746231	29.68	5820993	46.11	12623195
2007-2008	3001998	22.69	3968569	30.00	6258538	47.31	13229105
2008-2009	3289794	22.06	4721793	31.66	6903031	46.28	14914618
2009-2010	3598490	22.00	5045755	30.85	7713514	47.16	16357759
2010-2011	3604573	20.70	5391967	30.97	8415614	48.33	17412154
2011-2012	4136480	21.85	5675748	29.99	9116250	48.16	18928478
2012-2013	4942961	24.00	5811723	28.22	9837202	47.77	20591886
2013-2014	6035688	26.03	5959846	26.39	10586216	46.88	22581750
2014-2015	7249726	29.09	6224822	24.98	11446709	45.93	24921257
2015-2016	7164083	26.93	6558860	24.65	12880499	48.42	26603442

Source: (1) Handbook of Statistics of Indian States (2016-17), Reserve Bank of India, India. (2) Agricultural economic survey 2016, department of planning, economics and statistics, Madhya Pradesh.

Table 1 shows GSDP at constant prices (2004-05) the GSDP in absolute terms was about Rs. 9223206 lakhs in 2000-2001 which continuously increased in the exponential form as it forms weak form of J-Curve which refers it increases at the increasing rate during the reference time period except a dip in 2002-2003 where it reaches next to the bottom level in magnitude i.e. Rs. 9469234 lakhs while as it reached Rs. 29973238 lakhs at the end of our reference period i.e. 2015-16 this reflects an increase of about 3 times compared to the initial year of the reference period. Further it is observed from the table that generally the contribution of main three sectors and agriculture sector in specific terms shows some interesting figures. The agriculture sector output increased from 2064608 lakhs during the initial period to 7164083 during the final year of the study period. It also forms weak form of J-Curve which refers it increases at the increasing rate during the reference

time period except a dip in 2002-2003 where it reaches next to the bottom level in magnitude i.e. Rs. 2062387 lakhs while as it reached to Rs. 7164083 lakhs at the end of the reference period i.e. 2015-16 which is about 3.47 times increase compared with the initial year of the reference period. It is observed from the table that industrial Sector increased from Rs 2691795 lakhs to Rs 6224822 lakhs during the entire reference period. GDP from industrial sector remains greater than the agriculture sector during the entire reference period. In case of service sector the GSDP of state economy increases from Rs 4466804 lakhs in the initial year to Rs 12880499 lakhs in last year of the study period. The GSDP from service sector is observed to be two times greater than GDP from agricultural sector upto 2012-13. But from then on the gap between these two sectors in terms of GSDP declined remarkable due to growth of the agricultural sector.

Table-1.1: Sector wise Composition of Gross State domestic product at factor cost (2004-05 prices) in percentages

PHASES	AGRICULTURE	INDUSTRY	SERVICES	GSDP
2000-01 to 2003-04	24.37	28.07	47.57	100.00
2004-05 to 2007-08	24.48	28.90	46.62	100.00
2008-09 to 2011-12	21.65	30.86	47.48	100.00
2012-13 to 2015-16	26.69	26.06	47.25	100.00
2000-01 to 2007-08	24.42	28.48	47.09	100.00
2008-09 to 2015-16	24.17	28.46	47.37	100.00
2000-01 to 2015-16	24.43	28.42	47.15	100.00

Source: Based on table 1.

The percentage share of agriculture, industry and services sectors was about 22%, 29% and 48% in the initial year of the reference period which reached to about 27%, 25% and 48% at the end of the reference period with respect to the same macro sectors of the state economy respectively. However, Table 1.1 shows on average bases the percentage share of agricultural, industrial and service sectors were about 24%, 28% and 48% respectively for the entire reference period.

However, 8 yearly average share of the agricultural sector and the industrial sector has shown a mild decrement from 24.42% to 24.17% and 28.48% to 28.46% respectively from first 8 year phase to the second 8 year phase. However, in case of Service Sector a rise has been seen from 47.09% to 47.37% which is about 0.27 percentage.

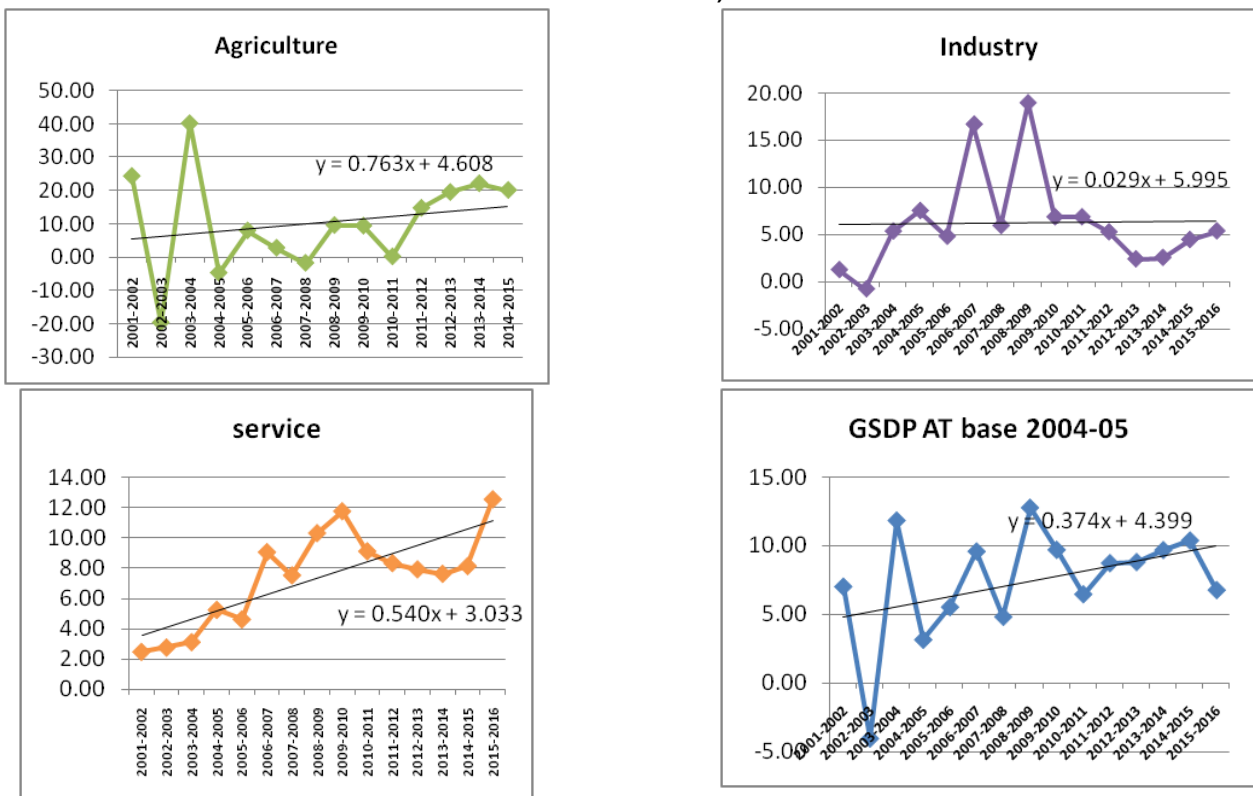
The average share of agriculture is observed to be the highest about 27% in the last four year phase of the reference period while as it was lowest in the third four year phase about

22% of the reference period. Similarly, the average share of the industrial sector observed to be the highest i.e. about 31% in the third four year phase of our reference time period while as it was lowest in the fourth four year phase which is about 28%. Likewise, the average share of Service Sector observed to be the highest about 48% in the first four year phase of the reference period while as it was lowest in the fourth four year phase about 47%. Hence agricultural sector in the state of Madhya Pradesh is attaining stability in the last four year phase as compared to previous four years phases. From the analysis it is clear that agricultural sector performance has been improving steadily in the last year phase.

5. Trend in year wise growth of key sectors in the state of Madhya Pradesh

Trend analysis provides the rate of change of a particular variable during the period of reference and the direction of change but it fails to provide the rate of change per annum.

Figure- 3.2.3: Linear Trend Line of Annual Growth Rate of Macro Sectors of the Economy of Madhya Pradesh at Constant Prices (2000-2001 to 2015-2016)



Source: Computed by Researcher based on table 1.

Figure 1 depicts that irregular variation have taken place over the reference period with volatile fluctuations in 2002-03 when it dipped by about 45 percentage points. The figure 1 also shows that agriculture sector also shows the same trend.

From the trend analysis of agricultural growth it becomes evident that its slope coefficient is 0.76 lakhs which means that there is 0.76 lakhs increase due to one unit change in time which is in this study is one year time period.

6. Conclusion

It is concluded from the study as the role of the agricultural sector is very important and has wider scope in the state of Madhya Pradesh because of its agrarian and rural nature of economy. Agriculture and its allied services contribute 34% share in the state's economy during 2015-16. It is observed from the study that on average bases the percentage share of agricultural, industrial and service sectors were about 24%, 28% and 48% respectively for the entire reference period. The average share of agriculture is observed to be the highest about 27% in the last four year phase of the reference period while as it was lowest in the third four year phase about 22% of the reference period.

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