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# Performance of MSMEs at the Extent of External Shocks

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**ABSTRACT**

*The nation's inclusive industrial development is significantly supported by the micro, small, and medium-sized enterprises (MSMEs), which serve as a complement to the major industries. In addition, the industry has several obstacles and difficulties, such as inadequate funding and credit, outdated technology, poor and inadequate infrastructure, a shortage of qualified labour, and many more. Due to their size and kind of business, MSMEs face several issues, making them comparatively more vulnerable to certain economic shocks. This study made an effort to examine how the MSME sector performed under external shocks like India's demonetisation of currency by looking at how employment, investment, and output levels were affected. It was noted that while some states managed to boost employment and investment and were resistant to shocks like demonetization, other states were more severely hit and were unable to withstand the adverse effects of demonetisation on their economic operations. One could conclude that the country's states' economies were affected unevenly by demonetisation.*

**Keywords**: Demonetisation, Employment, Investment, Output

**JEL Classification Codes:** E23, E24, L67

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## I. INTRODUCTION

Micro, Small and Medium Enterprises have been regarded as the engine of economic development and growth in almost all developed and developing countries. The MSMEs have been considered a highly vibrant and dynamic sector of the Indian economy over the last five decades. MSMEs sector complements the large industries thereby contributing significantly to the inclusive industrial development of the country. The share of MSMEs to GDP is around 30% (GOI, 2018) and the sector accounts for about 45% of manufacturing output and around 40% of total exports of the country. The sector employs around 11.10 crores job in rural and urban areas across the country. As per the National Sample Survey (NSS) 73rd round, conducted by National Sample Survey Office, Ministry of Statistics and Programme Implementation during the period 2015-16, there were 633.88 lakh unincorporated non-agriculture MSMEs in the country engaged in different economic activities (196.65 lakh in Manufacturing, 0.03 lakh in Non-captive Electricity Generation and Transmission, 230.35 lakh in Trade and 206.85 lakh in

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Other Services). It is seen that 31% of MSMEs were found to be engaged in manufacturing activities, while 36% in Trade and 33% in other services. The micro sector consisted of 630.52lakh enterprises which accounted for more than 99% of the total estimated number of MSMEs. Small and medium sectors consisted of 3.31 lakh and 0.05 lakh estimated MSMEs which accounted for 0.52% and 0.01% of the total estimated MSMEs respectively.

Despite the strategic importance of the industrial development of the country, the MSME sector experiences several constraints and challenges. These challenges could be in the form of lack of adequate capital and credit, poor and inadequate infrastructural facilities, lack of skilled human resources, outdated technology and dilatory and cumbersome regulatory practices. These MSMEs face obstacles due to their inability to access timely and adequate finance. According to International Finance Corporation estimates, the potential demand for India's MSME finance is about US$370 billion, resulting in a finance gap of US$230 billion (equivalent to 11% of GDP) in comparison to a finance gap of US$5.2 trillion (19% of GDP) for the group developing countries. (IFC, 2017). Various studies have noted that the Micro, Small and Medium Enterprises (MSMEs) have been adversely hit by the Goods and Service Tax (GST) rollout and demonetisation, which had a significant impact on the overall credit of the sector. The two major shocks; the introduction of GST and demonetisation had led to an increase in compliance costs and other operating costs for MSMEs as most of them were bought under the tax net. MSMEs suffer from various problems due to their size, and nature of business and are therefore relatively more susceptible to various shocks of the economy. Gems and jewellery, leather, handlooms and handicrafts, textiles, and carpets are various items of MSME exports which are highly labor-intensive and depend highly on cash for working capital requirements and payments to the labourers. Hence, these sectors were affected to a greater extent due to demonetisation. Therefore, this study attempted to analyse the impact of external shocks like demonetisation on the performance of the micro, small and medium enterprises in India.

## II. REVIEW OF LITERATURE

A lot of studies have been undertaken by many researchers regarding the performance of the MSME sector which can be explored from the following literature:

Economic factors like rate of interest, devaluation of currency, and exchange rates affect the performance of Micro, Small and Medium Enterprises through the changes in the capital investment and technology used. The proper management skills, innovative marketing strategies and financial skills lead to the growth of output and exports of the firms at a higher rate (Fouad, 2013; Behera, Das and Mohapatra, 2018; Das, 2017; Coad and Tamvada, 2012).

The regulatory and administrative environment, use of some assets as collateral, and maintenance of account records influence the availability of loans from formal sources. Hence, these obstacles to financial access harmed the performance of the firms (Bhavani and Bhanumurty, 2014; Mwihaki, 2015).

The regulation of firms by the government leads to a positive impact on the profits of the firms and also creates employment opportunities. The reasons for not registering with the government could be the lack of knowledge about government schemes, and information about the costs, and short-term and long-term benefits of those firms. (Sharma, 2012; Majumdar and Sengupta; 2010).

Investments in improved technology when associated with new capital formation help to increase asset returns, reduce infrastructural gaps and hence improve the competitiveness of the MSMEs (Mukherjee, 2018; Papanikalaou, 2011).

It is seen that sector-specific shocks did not have much impact on industrial production whereas the aggregate shocks had a greater impact on industrial production. Higher demand shocks and high productivity reduced the probability of exit of firms and hence increased production in the economy (Foerster, Starte and Watson, 2011). The transitory shocks seemed to explain a greater proportion of aggregate fluctuations whereas permanent shocks explained little aggregate fluctuations. A temporary adverse productivity shock results in lower long-run output (Franco and Phillipon, 2007; Galor and Tsiddon, 1992).

Apart from the above factors, it is studied that climate shocks also had an important role to play. Higher temperatures negatively affected the growth of the GDP and exports in poor conditions, as workers are less productive when it is hot. But it does not happen in rich countries (Jones and Olken,2010). The firms tend to merge when the lack of information and uncertainty is large. The small-scale merges proved to be profitable in such cases and hence led to social welfare (Zhou, 2008).

Various studies have focused on different factors like size and nature of firms, capital, labour, financial accessibility to the MSMEs, technological skills, management skills etc. which affect the performance of the MSMEs in India. But quite less number of studies have been conducted to find out the impact of other external shocks like taxation policies, registration policies, liberalisation policies, demonetisation etc. on the performance of MSMEs.

## III. OBJECTIVES

The present research is based on the following objectives:

- To analyse the sensitivity of employment in the MSME sector to demonetisation in India
- To examine the sensitivity of investment in the MSME sector to demonetisation
- To study the sensitivity of the output of the MSME sector to demonetisation

## IV. DATA AND METHODS

The research is based on secondary data which is comprised of data published by the Ministry of India in Annual MSME Reports. In addition, the unit level data from Annual Survey of Industries (ASI) is used to identify the impact of demonetization on events like factory-level output, employment, Net Value Added, fixed capital, invested capital and productive capital. In this chapter, the data regarding the factory-level output, factory-level investment and factory-level employment scenario

has been analyzed for some major states in India and the overall situation of the county. It is mainly based on descriptive statistics. The annual growth rates of employment, investment and output across the different states have been analysed from 2014-15 to 2017-18 to study the impact of demonetization on such variables.

## V. ANALYSIS

### *Sensitivity of Employment in the MSME Sector to Demonetisation in India*

Table-1 shows the employment status in the industrial sector all over India from year 2014-15 to 2017-18. The number of workers per factory has increased over the years. The growth rate of the number of factories has increased from 2014 to 2018, but the growth rate is less in the year 2016-17. Although the number of factories grew at a lesser rate, the employment rate was seen to be the highest as the workers per factory growth rate was highest in the year 2016-17. The table also depicts that the wages per worker have increased from the year 2014-15 to 2017-18, but there has been a declining yet positive growth in the wages of each worker. The total number of persons engaged in a factory grew by 1.82%, 3.49% and 3.47% in 2015-16, 2016-17 and 2017-18 respectively.

**Table-1: Growth in Employment and Wages in Different States of India Before and After Demonetisation**

| States | Year | WPF | TPE per Factory | Wages per Worker | Total Emoluments/ TPE | WPF Growth Rate | TPE Growth Rate | Wages per Worker Growth Rate | Total Emoluments Growth Rate |
|---|---|---|---|---|---|---|---|---|---|
| AI | 2014-15 | 46.67 | 60.24 | 1.31 | 2.21 | 0 | 0 | 0 | 0 |
| AI | 2015-16 | 47.77 | 61.34 | 1.4 | 2.38 | 2.4 | 1.8 | 7.2 | 7.3 |
| AI | 2016-17 | 49.66 | 63.49 | 1.49 | 2.52 | 4 | 3.5 | 6.2 | 5.9 |
| AI | 2017-18 | 51.43 | 65.69 | 1.58 | 2.68 | 3.6 | 3.5 | 6 | 6.5 |
| AP | 2014-15 | 26.48 | 33 | 1.36 | 1.95 | 0 | 0 | 0 | 0 |
| AP | 2015-16 | 25.58 | 31.83 | 1.52 | 2.14 | -3.4 | -3.6 | 11.9 | 10.1 |
| AP | 2016-17 | 28.13 | 34.72 | 1.6 | 2.22 | 10 | 9.1 | 5.1 | 3.6 |
| AP | 2017-18 | 29.88 | 36.65 | 1.68 | 2.37 | 6.2 | 5.6 | 4.9 | 6.5 |
| BH | 2014-15 | 35.58 | 41.4 | 0.65 | 0.96 | 0 | 0 | 0 | 0 |
| BH | 2015-16 | 28.5 | 32.98 | 0.76 | 1.17 | -19.9 | -20.3 | 16.4 | 22 |
| BH | 2016-17 | 28.03 | 32.92 | 0.81 | 1.28 | -1.7 | -0.2 | 7.7 | 8.7 |
| BH | 2017-18 | 30.07 | 35.18 | 0.89 | 1.35 | 7.3 | 6.9 | 9.6 | 5.9 |
| CH | 2014-15 | 50.84 | 63.84 | 1.99 | 3.04 | 0 | 0 | 0 | 0 |
| CH | 2015-16 | 45.41 | 56.6 | 2.1 | 3.15 | -10.7 | -11.3 | 5.4 | 3.8 |
| CH | 2016-17 | 47.14 | 60.27 | 2.01 | 3.08 | 3.8 | 6.5 | -4.2 | -2.2 |
| CH | 2017-18 | 43.95 | 55.43 | 2.11 | 3.24 | -6.8 | -8 | 4.6 | 5 |
| GJ | 2014-15 | 47.08 | 62.4 | 1.29 | 2.3 | 0 | 0 | 0 | 0 |
| GJ | 2015-16 | 48.78 | 64.02 | 1.45 | 2.5 | 3.6 | 2.6 | 12.1 | 8.7 |
| GJ | 2016-17 | 48.01 | 62.95 | 1.51 | 2.64 | -1.6 | -1.7 | 3.9 | 5.8 |
| GJ | 2017-18 | 52.78 | 68.71 | 1.6 | 2.78 | 9.9 | 9.2 | 6 | 5.3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| JH | 2014-15 | 52.45 | 66.5 | 2.39 | 3.54 | 0 | 0 | 0 | 0 |
| JH | 2015-16 | 50.08 | 63.45 | 2.58 | 3.81 | -4.5 | -4.6 | 7.6 | 7.7 |
| JH | 2016-17 | 50.6 | 66.17 | 2.54 | 3.73 | 1.1 | 4.3 | -1.3 | -2 |
| JH | 2017-18 | 53.39 | 67.09 | 2.61 | 3.92 | 5.5 | 1.4 | 2.5 | 5.1 |
| KT | 2014-15 | 59.56 | 77.51 | 1.45 | 2.46 | 0 | 0 | 0 | 0 |
| KT | 2015-16 | 59.26 | 77.47 | 1.59 | 2.6 | -0.5 | 0 | 9.5 | 5.6 |
| KT | 2016-17 | 62.03 | 79.81 | 1.77 | 2.93 | 4.7 | 3 | 11.2 | 12.7 |
| KT | 2017-18 | 61.3 | 78.81 | 1.9 | 3.12 | -1.2 | -1.3 | 7.5 | 6.5 |
| KE | 2014-15 | 40.21 | 52.47 | 1.19 | 1.64 | 0 | 0 | 0 | 0 |
| KE | 2015-16 | 36.02 | 44.71 | 1.42 | 2 | -10.4 | -14.8 | 19.4 | 22.3 |
| KE | 2016-17 | 32.47 | 41.52 | 1.55 | 2.16 | -9.9 | -7.1 | 9.2 | 7.8 |
| KE | 2017-18 | 31.61 | 40.57 | 1.65 | 2.35 | -2.7 | -2.3 | 6.4 | 8.9 |
| MP | 2014-15 | 60.6 | 81.14 | 1.2 | 2.01 | 0 | 0 | 0 | 0 |
| MP | 2015-16 | 60.55 | 80.96 | 1.4 | 2.31 | -0.1 | -0.2 | 16.8 | 14.8 |
| MP | 2016-17 | 62.39 | 82.91 | 1.45 | 2.44 | 3 | 2.4 | 3.7 | 5.4 |
| MP | 2017-18 | 62 | 83.39 | 1.54 | 2.67 | -0.6 | 0.6 | 6.2 | 9.4 |
| MH | 2014-15 | 45.64 | 65.86 | 1.69 | 3.19 | 0 | 0 | 0 | 0 |
| MH | 2015-16 | 48.61 | 69.85 | 1.77 | 3.35 | 6.5 | 6.1 | 4.9 | 5.2 |
| MH | 2016-17 | 50.55 | 71.31 | 1.89 | 3.43 | 4 | 2.1 | 6.8 | 2.3 |
| MH | 2017-18 | 53.6 | 76.07 | 2.01 | 3.75 | 6 | 6.7 | 6 | 9.4 |
| OD | 2014-15 | 76.65 | 93.76 | 1.64 | 2.51 | 0 | 0 | 0 | 0 |
| OD | 2015-16 | 70.95 | 87.46 | 1.75 | 2.67 | -7.4 | -6.7 | 6.8 | 6.6 |
| OD | 2016-17 | 73.02 | 89.32 | 1.99 | 2.91 | 2.9 | 2.1 | 13.8 | 8.9 |
| OD | 2017-18 | 74.7 | 91.16 | 2.21 | 3.3 | 2.3 | 2.1 | 11 | 13.4 |
| RJ | 2014-15 | 41.82 | 54.25 | 1.31 | 2.1 | 0 | 0 | 0 | 0 |
| RJ | 2015-16 | 43.4 | 56.2 | 1.39 | 2.24 | 3.8 | 3.6 | 6.1 | 6.9 |
| RJ | 2016-17 | 45.73 | 59.05 | 1.44 | 2.46 | 5.4 | 5.1 | 3.5 | 9.7 |
| RJ | 2017-18 | 46.94 | 60.37 | 1.57 | 2.66 | 2.6 | 2.2 | 8.8 | 8 |
| TN | 2014-15 | 45.97 | 56.17 | 1.18 | 1.95 | 0 | 0 | 0 | 0 |
| TN | 2015-16 | 51.71 | 62.32 | 1.2 | 2.01 | 12.5 | 10.9 | 1.4 | 3.2 |
| TN | 2016-17 | 53.84 | 64.7 | 1.31 | 2.19 | 4.1 | 3.8 | 9.6 | 8.9 |
| TN | 2017-18 | 55.45 | 66.78 | 1.39 | 2.28 | 3 | 3.2 | 5.7 | 4.1 |
| UP | 2014-15 | 45.3 | 59.42 | 1.16 | 2.03 | 0 | 0 | 0 | 0 |
| UP | 2015-16 | 47.78 | 61.56 | 1.22 | 2.17 | 5.5 | 3.6 | 5 | 6.6 |
| UP | 2016-17 | 51.23 | 66.23 | 1.32 | 2.41 | 7.2 | 7.6 | 8.3 | 11.2 |
| UP | 2017-18 | 53.01 | 67.65 | 1.37 | 2.48 | 3.5 | 2.1 | 4 | 2.9 |
| WB | 2014-15 | 55.33 | 69.41 | 1.31 | 1.85 | 0 | 0 | 0 | 0 |
| WB | 2015-16 | 53.46 | 68.26 | 1.38 | 1.97 | -3.4 | -1.7 | 6 | 6.7 |
| WB | 2016-17 | 51.94 | 66.83 | 1.45 | 2.15 | -2.8 | -2.1 | 4.9 | 8.8 |
| WB | 2017-18 | 54.2 | 69.62 | 1.51 | 2.3 | 4.3 | 4.2 | 4.2 | 7.4 |

Source: Annual Survey of Industries (Various Years)

Note 1: (Value Figures in Rs. Lakh & Others in Number), TPE-Total Persons Engaged, WPF-Workers per Factory

Note 2: AI-All India, AP-Andhra Pradesh, BH-Bihar, CH-Chhatisgarh, GJ-Gujarat, JH-Jharkhand, KT-Karnataka, KE-Kerala, MP-Madhya Pradesh, MH-Maharashtra, OD- Odisha, RJ-Rajasthan, TN-Tamil Nadu, UP-Uttar Pradesh, WB-West Bengal

In Andhra Pradesh, workers in factories reduced in the year 2015-16 and so also the casual workers. But then their number rose at a rate of around 1% in the year 2016-17 and again their number grew only to 6.21% in 2017-18. The number of workers per factory has shown a declining trend from the year 2014-15 to 2016-17 but increased in the year 2017-18 in Bihar. In Chhattisgarh, employment of workers has declined in the year 2017-18 and it is the lowest as compared to the employment of workers in other years. Despite the rise in wages in 2017-18, the number of workers per factory has reduced. In contrary to Chhattisgarh, Gujarat experienced an increment in the growth rate of workers in the year 2017-18 by 10%. It might be because of the rise in the growth rate of wages in 2017-18. Similarly, during 2016-17 and 2017-18, the number of total persons engaged increased in Jharkhand, however, the growth rate was higher in 2016-17 than in 2017-18 (Table-1).

It could be seen in Kerela that there has been a continuous decline in the number of workers but the rate of decline has reduced over the years despite the increase in wages per worker. It could be examined that the number of workers and total persons engaged has increased over the years 2014-15 to 2017-18 in Maharastra. Whereas in Odisha, initially there was a fall in the number of workers and total persons engaged in the industries in the year 2015-16 and then it increased in the subsequent years (Table-1).

The workers per factory and total persons engaged per factory have shown an inclining trend over these years in Rajasthan. It could be observed that in Tamil Nadu the number of workers per factory and number of total persons engaged has increased over these years but at a declining rate. In Uttar Pradesh, the growth rate of wages has increased in the years 2015-16 to 2016-17 and so also the growth rate of the number of workers per factory. The growth rates of the number of workers per factory and wages per worker have reduced in 2017-18 which could be due to the less availability of cash or a fall in the rate of investment in that year. In West Bengal, the number of workers per factory and total persons engaged has decreased in the years 2015-16 and 2016-17. But their number increased in 2017-18 (Table-1).

***Sensitivity of Investment of MSME Sector to Demonetisation in India***

Table-2 shows the investment status of the manufacturing sector in India from the year 2014-15 to 2017-18. It is seen that there was a drastic decline in the growth of fixed capital in the year 2017-18. There was a continuous fall in the growth of productive capital over the years. The drastic decline in the growth of invested capital and fixed capital could be due to the impact of demonetisation in the year 2016 affecting the availability of cash and liquidity in the financial market.

**Table-2: Investment Scenario Before and After Demonetisation in Different States of India**

| States | Year | FC per Factory | PC per Factory | IC per Factory | FC Growth Rate | PC Growth Rate | IC Growth Rate | Factory Growth Rate |
|---|---|---|---|---|---|---|---|---|
| AI | 2014-15 | 1073.82 | 1351.92 | 1524.93 | 0 | 0 | 0 | 0 |
| AI | 2015-16 | 1205.26 | 1522.92 | 1652.87 | 12.2 | 12.6 | 8.4 | 1.2 |
| AI | 2016-17 | 1358.39 | 1640.72 | 1829.24 | 12.7 | 7.7 | 10.7 | 0.8 |
| AI | 2017-18 | 1385.63 | 1656.62 | 1880 | 2 | 1 | 2.8 | 1.2 |
| AP | 2014-15 | 925.83 | 961.32 | 1223.49 | 0 | 0 | 0 | 0 |
| AP | 2015-16 | 1029.41 | 1131.41 | 1307.76 | 11.2 | 17.7 | 6.9 | 2 |
| AP | 2016-17 | 1146.87 | 1134.66 | 1467.71 | 11.4 | 0.3 | 12.2 | -0.6 |
| AP | 2017-18 | 1065.27 | 1153.24 | 1405.82 | -7.1 | 1.6 | -4.2 | 0.3 |
| BH | 2014-15 | 281.8 | 380.74 | 450.46 | 0 | 0 | 0 | 0 |
| BH | 2015-16 | 273.74 | 313.65 | 416.19 | -2.9 | -17.6 | -7.6 | 2.7 |
| BH | 2016-17 | 510.97 | 569.85 | 671.79 | 86.7 | 81.7 | 61.4 | -2.5 |
| BH | 2017-18 | 577.2 | 664.14 | 763.54 | 13 | 16.5 | 13.7 | -2 |
| CH | 2014-15 | 2774.46 | 5274.41 | 3456.6 | 0 | 0 | 0 | 0 |
| CH | 2015-16 | 2832.14 | 4495.84 | 3344.52 | 2.1 | -14.8 | -3.2 | 8.1 |
| CH | 2016-17 | 4025 | 4345.78 | 4597.35 | 42.1 | -3.3 | 37.5 | 2.4 |
| CH | 2017-18 | 3364.17 | 3475.77 | 3947.91 | -16.4 | -20 | -14.1 | 7.8 |
| GJ | 2014-15 | 1867.89 | 2137.82 | 2588.48 | 0 | 0 | 0 | 0 |
| GJ | 2015-16 | 2171.03 | 2398.26 | 2812.3 | 16.2 | 12.2 | 8.6 | 4.2 |
| GJ | 2016-17 | 2437.96 | 2540.5 | 3136.95 | 12.3 | 5.9 | 11.5 | 6.3 |
| GJ | 2017-18 | 2599.23 | 2773.32 | 3315.69 | 6.6 | 9.2 | 5.7 | 2.4 |
| JH | 2014-15 | 2763.53 | 2807.33 | 3765.36 | 0 | 0 | 0 | 0 |
| JH | 2015-16 | 2629.14 | 2899.62 | 3375.99 | -4.9 | 3.3 | -10.3 | 3.4 |
| JH | 2016-17 | 3614.05 | 3764.08 | 4454.1 | 37.5 | 29.8 | 31.9 | 1 |
| JH | 2017-18 | 3680.07 | 3959.78 | 4425.26 | 1.8 | 5.2 | -0.6 | 0.3 |
| KT | 2014-15 | 1345.08 | 1709.06 | 1859.16 | 0 | 0 | 0 | 0 |
| KT | 2015-16 | 1339.21 | 1738.86 | 1844.92 | -0.4 | 1.7 | -0.8 | 3.2 |
| KT | 2016-17 | 1358.07 | 1800.28 | 1887.58 | 1.4 | 3.5 | 2.3 | 2.9 |
| KT | 2017-18 | 1406.92 | 1817.09 | 1986.78 | 3.6 | 0.9 | 5.3 | 1.3 |
| KE | 2014-15 | 400.95 | 517.4 | 596.38 | 0 | 0 | 0 | 0 |
| KE | 2015-16 | 507.16 | 626.17 | 718.5 | 26.5 | 21 | 20.5 | 3.6 |
| KE | 2016-17 | 590.93 | 755.72 | 813.08 | 16.5 | 20.7 | 13.2 | 1.5 |
| KE | 2017-18 | 568.26 | 822.42 | 806.6 | -3.8 | 8.8 | -0.8 | -0.6 |
| MP | 2014-15 | 2294.73 | 2599.7 | 2915.13 | 0 | 0 | 0 | 0 |
| MP | 2015-16 | 3101.79 | 3387.77 | 3724.45 | 35.2 | 30.3 | 27.8 | 4.4 |
| MP | 2016-17 | 3322.66 | 3495.94 | 4000.02 | 7.1 | 3.2 | 7.4 | 1.5 |
| MP | 2017-18 | 3400.93 | 3657.14 | 4252.14 | 2.4 | 4.6 | 6.3 | 0.9 |
| MH | 2014-15 | 1178.78 | 1563.28 | 1741.13 | 0 | 0 | 0 | 0 |
| MH | 2015-16 | 1227.14 | 2050.72 | 1881.35 | 4.1 | 31.2 | 8.1 | -1.4 |
| MH | 2016-17 | 1251.32 | 2001.26 | 1861.54 | 2 | -2.4 | -1.1 | -4.3 |
| MH | 2017-18 | 1358.09 | 1801.97 | 2035.58 | 8.5 | -10 | 9.3 | -2.3 |
| OD | 2014-15 | 8186.9 | 8080.63 | 9452.44 | 0 | 0 | 0 | 0 |
| OD | 2015-16 | 9144.45 | 9134.56 | 10374.37 | 11.7 | 13 | 9.8 | 5.2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| OD | 2016-17 | 11078.54 | 10324.39 | 12120.07 | 21.2 | 13 | 16.8 | 3.5 |
| OD | 2017-18 | 11059.13 | 9906.62 | 12300.73 | -0.2 | -4 | 1.5 | 0.5 |
| RJ | 2014-15 | 851.81 | 1168.48 | 1204.52 | 0 | 0 | 0 | 0 |
| RJ | 2015-16 | 935.46 | 1271.39 | 1312.76 | 9.8 | 8.8 | 9 | 0.7 |
| RJ | 2016-17 | 1116.86 | 1517.09 | 1552.57 | 19.4 | 19.3 | 18.3 | -0.3 |
| RJ | 2017-18 | 1187.3 | 1562.76 | 1659.42 | 6.3 | 3 | 6.9 | 2.1 |
| TN | 2014-15 | 584.29 | 761.52 | 869.02 | 0 | 0 | 0 | 0 |
| TN | 2015-16 | 637.44 | 775.88 | 937.61 | 9.1 | 1.9 | 7.9 | -1.4 |
| TN | 2016-17 | 758.84 | 974.54 | 1081.57 | 19 | 25.6 | 15.4 | -0.3 |
| TN | 2017-18 | 734.49 | 1031.74 | 1070.42 | -3.2 | 5.9 | -1 | 1.5 |
| UP | 2014-15 | 732.95 | 897.95 | 1178.94 | 0 | 0 | 0 | 0 |
| UP | 2015-16 | 830.08 | 978.9 | 1272.64 | 13.3 | 9 | 7.9 | 2.9 |
| UP | 2016-17 | 867.71 | 1133.47 | 1360.88 | 4.5 | 15.8 | 6.9 | 0 |
| UP | 2017-18 | 874.61 | 1113.99 | 1370.36 | 0.8 | -1.7 | 0.7 | 3.5 |
| WB | 2014-15 | 946.75 | 1192.72 | 1450.14 | 0 | 0 | 0 | 0 |
| WB | 2015-16 | 985.87 | 1177.09 | 1432.76 | 4.1 | -1.3 | -1.2 | 2.1 |
| WB | 2016-17 | 1187.41 | 1452.37 | 1663.33 | 20.4 | 23.4 | 16.1 | 3.1 |
| WB | 2017-18 | 1231.73 | 1471.25 | 1775.09 | 3.7 | 1.3 | 6.7 | -0.6 |

Source: Annual Survey of Industries (Various Years)
Note 1: (Value Figures in Rs. Lakh & Others in Number) FC-Fixed Capital, PC-Productive Capital, IC-Invested Capital
Note 2: AI-All India, AP-Andhra Pradesh, BH-Bihar, CH-Chhatisgarh, GJ-Gujarat, JH-Jharkhand, KT-Karnataka, KE-Kerala, MP-Madhya Pradesh, MH-Maharashtra, OD- Odisha, RJ-Rajasthan, TN-Tamil Nadu, UP-Uttar Pradesh, WB-West Bengal

It was observed that in Andhra Pradesh, the fixed capital and invested capital had declined in the year 2017-18 with negative growth rates -7.11% and -4.21% respectively. A sharp decline in invested capital, fixed capital and productive capital was observed in 2017-18 in Chhattisgarh. It is observed in Gujarat that the fixed capital has increased but at a declining rate over the period 2014-15 to 2017-18. It could be seen that there was a reduction in invested capital and fixed capital in 2015-16. But a sharp increase in those capital in 2016-17. However, the growth rate of this capital again reduced in 2017-18 drastically in the state of Jharkhand (Table-2).

In Kerela, the number of factories has reduced in 2017-18 which might have led to the decline in the fixed capital and invested capital. The productive capital of the factories in Maharastra experienced a downward trend in 2017-18, but an upward trend in fixed capital and invested capital. There has been increase in fixed capital, productive capital and invested capital per factory in 2015-16 and 2016-17 but a decline in 2017-18 in Odisha (Table-2).

In Rajasthan, investments have increased the amount of fixed capital, productive capital and invested capital over the years. However, the annual growth rate has only declined in the year 2017-18. This fall in annual growth rates of capital has led to a reduction in annual growth rate of input as well as output in that year (Table-2).

It could be seen that the investment has gone up in fixed capital, productive and invested capital in the years 2015-16 and 2016-17 in Tamil Nadu. However, a decline in fixed capital and invested capital per factory could be observed in the year 2017-18 (Table-2).

In the industries of Uttar Pradesh, the growth rate of fixed capital and invested capital has continuously lowered from 2014-15 to 2017-18 and also productive had a negative growth in the year 2017-18. This fall in investments could be the reason of the fall in the growth rate of output in the year 2017-18 (Table-2).

***Sensitivity of Output of MSME Sector to Demonetisation in India***

Table-3 provides us a picture of the output from the industrial sector from the year 2014-15 to 2017-18 in India. It can be observed that in the year 2015-16, the input per factory has declined and therefore output has also reduced as compared to the year 2014-15. But input and output have increased in the subsequent years. The net value added by the industries has increased but at a declining rate from the year 2014-15 to 2017-18.

**Table-3: Growth in Production and Profit per Factory in Different States of India Before and After Demonetisation**

| States | Year | Input per Factory | Output per Factory | NVA per Factory | Input Growth Rate | Output Growth Rate | NVA Growth Rate | Factory Growth Rate |
|---|---|---|---|---|---|---|---|---|
| AI | 2014-15 | 2481.88 | 2987.31 | 423.18 | 0 | 0 | 0 | 0 |
| AI | 2015-16 | 2397.55 | 2943.75 | 460.06 | -3.4 | -1.5 | 8.7 | 1.2 |
| AI | 2016-17 | 2511 | 3093.49 | 487.91 | 4.7 | 5.1 | 6.1 | 0.8 |
| AI | 2017-18 | 2779.66 | 3400.17 | 520.91 | 10.7 | 9.9 | 6.8 | 1.2 |
| AP | 2014-15 | 1354.6 | 1573.31 | 175.38 | 0 | 0 | 0 | 0 |
| AP | 2015-16 | 1193.21 | 1430.7 | 190.94 | -11.9 | -9.1 | 8.9 | 2 |
| AP | 2016-17 | 1418.37 | 1636.31 | 160.72 | 18.9 | 14.4 | -15.8 | -0.6 |
| AP | 2017-18 | 1626.12 | 1909.75 | 220.51 | 14.6 | 16.7 | 37.2 | 0.3 |
| BH | 2014-15 | 1472.21 | 1665.04 | 165.03 | 0 | 0 | 0 | 0 |
| BH | 2015-16 | 1149.63 | 1317.54 | 144.62 | -21.9 | -20.9 | -12.4 | 2.7 |
| BH | 2016-17 | 1169.04 | 1350.69 | 152.05 | 1.7 | 2.5 | 5.1 | -2.5 |
| BH | 2017-18 | 1514.65 | 1734.37 | 185.04 | 29.6 | 28.4 | 21.7 | -2 |
| CH | 2014-15 | 3471.5 | 4264.03 | 646.18 | 0 | 0 | 0 | 0 |
| CH | 2015-16 | 2743.59 | 3204.4 | 309.39 | -21 | -24.9 | -52.1 | 8.1 |
| CH | 2016-17 | 2946.04 | 3495.3 | 366.12 | 7.4 | 9.1 | 18.3 | 2.4 |
| CH | 2017-18 | 3163.51 | 3747.17 | 432.44 | 7.4 | 7.2 | 18.1 | 7.8 |
| GJ | 2014-15 | 4581.89 | 5420.24 | 724.06 | 0 | 0 | 0 | 0 |
| GJ | 2015-16 | 3860.98 | 4724.64 | 736.94 | -15.7 | -12.8 | 1.8 | 4.2 |
| GJ | 2016-17 | 3939.73 | 4706.93 | 637.11 | 2 | -0.4 | -13.5 | 6.3 |
| GJ | 2017-18 | 4286.53 | 5110.4 | 681.96 | 8.8 | 8.6 | 7 | 2.4 |
| JH | 2014-15 | 3451.28 | 4422.47 | 774.32 | 0 | 0 | 0 | 0 |
| JH | 2015-16 | 3413.63 | 4053.32 | 478.26 | -1.1 | -8.3 | -38.2 | 3.4 |
| JH | 2016-17 | 3368.99 | 4311.67 | 742 | -1.3 | 6.4 | 55.1 | 1 |
| JH | 2017-18 | 3886.36 | 4935.77 | 814.53 | 15.4 | 14.5 | 9.8 | 0.3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| KT | 2014-15 | 3104.02 | 3675.52 | 453.57 | 0 | 0 | 0 | 0 |
| KT | 2015-16 | 2767.58 | 3374.11 | 495.38 | -10.8 | -8.2 | 9.2 | 3.2 |
| KT | 2016-17 | 3030.24 | 3759.34 | 620.25 | 9.5 | 11.4 | 25.2 | 2.9 |
| KT | 2017-18 | 3156.93 | 3912.84 | 645.2 | 4.2 | 4.1 | 4 | 1.3 |
| KE | 2014-15 | 1563.5 | 1757.7 | 163.6 | 0 | 0 | 0 | 0 |
| KE | 2015-16 | 1377.21 | 1618.62 | 210.69 | -11.9 | -7.9 | 28.8 | 3.6 |
| KE | 2016-17 | 1569.77 | 1860.3 | 258.78 | 14 | 14.9 | 22.8 | 1.5 |
| KE | 2017-18 | 1852.93 | 2145.03 | 253.35 | 18 | 15.3 | -2.1 | -0.6 |
| MP | 2014-15 | 3661.32 | 4304.95 | 506.54 | 0 | 0 | 0 | 0 |
| MP | 2015-16 | 3563.32 | 4370.17 | 619.2 | -2.7 | 1.5 | 22.2 | 4.4 |
| MP | 2016-17 | 3671.49 | 4554.36 | 678.89 | 3 | 4.2 | 9.6 | 1.5 |
| MP | 2017-18 | 4593.99 | 5674.63 | 880.61 | 25.1 | 24.6 | 29.7 | 0.9 |
| MH | 2014-15 | 3078.71 | 3914.61 | 730.15 | 0 | 0 | 0 | 0 |
| MH | 2015-16 | 3259.63 | 4140.43 | 770.15 | 5.9 | 5.8 | 5.5 | -1.4 |
| MH | 2016-17 | 3083.37 | 3979.9 | 773.05 | -5.4 | -3.9 | 0.4 | -4.3 |
| MH | 2017-18 | 3565.67 | 4569.35 | 871.43 | 15.6 | 14.8 | 12.7 | -2.3 |
| OD | 2014-15 | 3772.67 | 4679.98 | 595.25 | 0 | 0 | 0 | 0 |
| OD | 2015-16 | 3842.02 | 4651.23 | 490.14 | 1.8 | -0.6 | -17.7 | 5.2 |
| OD | 2016-17 | 3941.54 | 4952.22 | 605.59 | 2.6 | 6.5 | 23.6 | 3.5 |
| OD | 2017-18 | 6162.9 | 7500.65 | 880.12 | 56.4 | 51.5 | 45.3 | 0.5 |
| RJ | 2014-15 | 2023.36 | 2464 | 363.01 | 0 | 0 | 0 | 0 |
| RJ | 2015-16 | 2185.03 | 2661.07 | 397.78 | 8 | 8 | 9.6 | 0.7 |
| RJ | 2016-17 | 2440.96 | 2997.4 | 461.62 | 11.7 | 12.6 | 16 | -0.3 |
| RJ | 2017-18 | 2666.79 | 3228.68 | 460.92 | 9.3 | 7.7 | -0.2 | 2.1 |
| TN | 2014-15 | 1558.66 | 1849.04 | 231.97 | 0 | 0 | 0 | 0 |
| TN | 2015-16 | 1520.59 | 1872.44 | 291.98 | -2.4 | 1.3 | 25.9 | -1.4 |
| TN | 2016-17 | 1672.43 | 2056.76 | 316.73 | 10 | 9.8 | 8.5 | -0.3 |
| TN | 2017-18 | 1851.76 | 2286.32 | 362.93 | 10.7 | 11.2 | 14.6 | 1.5 |
| UP | 2014-15 | 2489.02 | 2845.89 | 294.26 | 0 | 0 | 0 | 0 |
| UP | 2015-16 | 2376.93 | 2799.92 | 358.73 | -4.5 | -1.6 | 21.9 | 2.9 |
| UP | 2016-17 | 2579.55 | 3239.98 | 591.71 | 8.5 | 15.7 | 64.9 | 0 |
| UP | 2017-18 | 2718.32 | 3255.67 | 464.98 | 5.4 | 0.5 | -21.4 | 3.5 |
| WB | 2014-15 | 2621.13 | 2895.11 | 202.22 | 0 | 0 | 0 | 0 |
| WB | 2015-16 | 2584.2 | 2913.31 | 242.33 | -1.4 | 0.6 | 19.8 | 2.1 |
| WB | 2016-17 | 2619.61 | 3006.53 | 302.97 | 1.4 | 3.2 | 25 | 3.1 |
| WB | 2017-18 | 2873.06 | 3345.52 | 387.99 | 9.7 | 11.3 | 28.1 | -0.6 |

Source: Annual Survey of Industries (Various Years)

Note 1: (Value Figures in Rs. Lakh & Others in Number) NVA-Net Value Added or profit

Note 2: AI-All India, AP-Andhra Pradesh, BH-Bihar, CH-Chhatisgarh, GJ-Gujarat, JH-Jharkhand, KT-Karnataka, KE-Kerala, MP-Madhya Pradesh, MH-Maharashtra, OD- Odisha, RJ-Rajasthan, TN-Tamil Nadu, UP-Uttar Pradesh, WB-West Bengal

In Andhra Pradesh and Bihar, input and output reduced in 2015-16 and then a positive trend was seen for subsequent years. It can be observed that in Gujarat

output have fallen at higher rate in 2015-16 as compared to the fall in the year 2016-17. The only positive rise can be seen in 2017-18. It might be because of the similar changes in the input growth rate over these years. The net value added by the industries has reduced by 13.54% in 2016-17 but it was increased by 7.03% in 2017-18. The output growth rate is seen to be negative in 2015-16, but it increased in the years 2016-17 and 2017-18 in Jharkhand (Table-3).

It could be seen in Karnataka that even the growth rate of factories was highest in 2015-16 among all those years, the input and output have fallen in this year this might be because of the fall in investment in invested capital and reduction in fixed capital. The input and output grew at a higher rate in 2016-17 and then their rates of growth have declined in 2017-18 (Table-3).

It could be observed that in Kerela the growth rate of Net value added was highest in 2015-16 and negative in 2017-18 (Table-3).

In Madhya Pradesh, the output of the factories has increased over the years. A sharp rise could be seen in output in the year 2017-18 implying that the demonetisation did not have much impact on transactions and other financial activities of such factories. The net value added also had a similar trend in these years. Similarly, in Maharastra, the input and output have highly increased in 2017-18 at a rate of 15.6% and 14.81% respectively (Table-3).

Also, in Odisha even after demonetisation, in the year 2017-18, the input, output and net value added per factory have faced a very high growth rate with 56.35%, 51.46% and 45.33% respectively. The output has shown a continuous rising trend with increasing growth rates from 2014-15 to 2017-18 in Tamil Nadu. The net value added per factory has increased at a very high rate in the year 2015-16 and 2016-17, but the growth rate was seen to be negative in 2017-18 in the state Uttar Pradesh. In West Bengal, there has been positive growth of output and Net value added per factory at an inclining rate over the years 2014-15 to 2017-18 (Table-3).

The demonetisation had a greater impact on the investment of the factories of a large number of states and on overall investment of India. Some states like Uttar Pradesh, Chhattisgarh and Rajasthan were badly hit due to demonetisation and almost all the economic activities were affected to a great extent and slowed down. The factories of these states were severely affected be because of their lack of technological advancements or their lack of access to the digital payment system. Most of the states like Odisha, Kerela, Tamil Nadu, and Andhra Pradesh were able to increase their output significantly but failed to make high investments in 2017-18. Their output has not declined because of the huge investments which were already undertaken in the previous years. States like Bihar, Jharkhand, Gujarat, and West Bengal have experienced very high employment and output in 2017-18, but were unable to increase their investment on capital at higher rates. States like Maharastra remained unaffected by such demonetisation or imposition of GST and could easily cope-up with the situation because of its practice and access to digital platforms for carrying out economic transactions.

## VI. CONCLUSION

Demonetisation had a significant impact on a large number of states and hence on the overall economy of the country India. Some states were worsely affected and

could not resist the harsh impact of demonetisation on their economic activities and thereby heading towards a severe slow down. This could be due to lack of improvement in technology and failure in access to digital payment system. Whereas huge investment projects already undertaken before 2017-18 have succeeded to increase the employment and investment in many states and these states have been resilient to shock like demonetisation. The reason behind this could be their easy access to digital platforms for carrying out economic transactions. Therefore, it could be concluded that demonetisation had an uneven impact on the economy across different states of the country.

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