

**Growth and Productivity Performance of Small Manufacturing
Enterprises (SMEs) during Reforms Period:
Insights from Major States in India**

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Abstract

The paper seeks to examine growth and pattern of employment generation, investment and real value added in the Small Manufacturing Enterprises (SMEs) in India during 1978-79 to 2000-01. In order to capture variation across different categories of states, 15 major states in India have been classified into high income, middle income and low-income states. Further, to capture productivity growth in the sector during the reforms period, both partial factor productivity method and total factor productivity method have been adopted.

Based on different rounds of National Sample Survey conducted during 1978-79 to 2000-01, slow down in growth of SMEs is noticed during the reforms period. In spite of higher labor productivity, total factor productivity growth has declined during the reforms period.

JEL Classification: D24, O47, R11

Keywords: Productivity; Unorganized Manufacturing; Economic Reforms; Growth; States

1. Introduction

The Small and Micro Enterprise Sector (SMS) has been playing a crucial role in both income and employment generation of the Indian economy since independence till date. Currently, these enterprises account for about 60 per cent of the Net Domestic Product and 92 per cent of total employment in the country. But during the reforms period (1990s and onwards) this sector seems to have been facing several challenges and therefore striving to sustain with the restructuring process. There is apprehension about large-scale shakeout and restructuring in the sector primarily on account of liberalization policy. But it does not confirm that the future scenario will be completely bleak for the SMS. On account of slow growth in employment coupled with low and declining elasticity of employment in the large organized sector, high hopes are being pinned on this sector (Papola, 2004). This is based on the assumption that faster growth of this sector in a more competitive environment is feasible due to the cost advantage of this sector. Therefore, enterprises in the SMS can enter large markets in the liberalized trade regime. Again, with the emergence of flexible production systems and sub-contracting of production activities, the SMS is expected to achieve a faster growth through improvement in efficiency and productivity.

Against this backdrop, the paper makes an attempt to assess growth and productivity performance of the SMS in India and various categories of states during the pre-reforms and reforms periods. The analysis is based on the performance of Small Manufacturing Enterprises (SMEs) as it constitutes a major part of the SMS.

It needs to be mentioned that the SMEs in this study have been defined by using the employment size criterion and the focus is mainly on the unorganized manufacturing sector in India¹. The analysis is based on the data obtained from surveys of unorganized manufacturing sector conducted by National Sample Survey Organisation (NSSO) for the period 1978-79 to 2000-01. The entire time span is divided into two periods, namely, pre-reforms period (1978-79 to 1990-91) and reforms period (1994-95 to 2000-01) so as to analyse the performance of this sector during various periods.² The analysis is carried out for country as a whole with focus on 15 major states as the latter accounts for a major share in gross real value added and employment in the former.

The paper is organized as follows: in section 2 an attempt is made to discuss the methodological issues and data base while section 3 focused on the likely impact of economic reforms on the unorganized sector. An overview of SMEs in India has been captured in section 4 while section 5 dealt with performance of SMEs across states during both pre-reforms and reforms period. The productivity of the factors of production has been examined in section 6 followed by summary and concluding observations in section 7.

Section 2

Data Base and Methodology

Data Specification

Based on the available NSSO surveys, this study has focused on the unorganized segment of the manufacturing sector. The NSSO conducted sample surveys of the unorganised manufacturing sector, as a follow-up survey to the main economic Census, during its 33rd (1978-79), 40th (1984-85), 45th (1989-90), 51st (1994-95) and 56th (2000-01) rounds. Enterprise formed the basic ultimate unit for all these surveys. These survey reports provide information about the number of enterprises, type of ownership, employment (full time and part time / hired and other), fixed assets, capital, wages, value added and so on; both at the state and industry level. It also provides information for the OAMEs, NDMEs and more recently for DMEs, and for rural and urban areas³. These large-scale surveys covered all the states and Union Territories (UTs)⁴.

Inputs and Output

(i) Output (V): Gross value added figures have been used to represent output. Use of gross value added at constant prices to represent output is a common practice in the Indian empirical literature (Goldar, 1986; Ahluwalia, 1991; Balakrishnan and Pushpangadan, 1994; Balakrishnan and Pushpangadan, 1998). The values are expressed in 1993-94 prices. Further, to make the figures comparable over time, Net State Domestic Product (NSDP) at factor cost pertaining to the unregistered manufacturing sector with 1993-94

as the base year has been used to deflate value added⁵. Since the values of NSDP in the period under study are expressed in two different bases, splicing method has been adopted to construct deflators with a common base.⁶

(ii) Capital Input (K): The figures for gross fixed assets available in NSSO reports have been used to measure capital input. This includes land, buildings and other construction, plant and machinery, transport equipment, tools and other fixed assets that have a normal economic life of more than one year from the date of acquisition. The values are expressed in 1993-94 prices⁷.

(iii) Employment: Employment refers to the number of workers in the sector including full-time and part time, hired and other, workers.

(iv) Number of Enterprises: Total number of enterprises in the unorganized manufacturing sector as reported by the NSSO is taken as the number of enterprises. The unorganised manufacturing sector is comprised of three types of enterprises, Own Account Manufacturing Enterprises (OAMEs), Non-Directory Manufacturing Enterprises (NDMEs), and Directory Manufacturing Enterprises (DMEs). OAMEs employ only family labour while NDMEs and DMEs employ hired labour. The number of workers is less than six in case of NDMEs and more than or equal to six in case of DMEs.

Methodology Adopted

To measure growth of factor productivity, both partial and total factor productivity approach has been used. In partial factor productivity approach both labour productivity and capital productivity has been emphasized. The definition of the said indicators is as follows:

(i) Labour Productivity: Gross real value added / Total number of persons engaged.

(ii) Capital Productivity: Gross real value added / Real fixed assets, (excluding working capital).

For estimation of total factor productivity growth, growth accounting method has been used.

Growth Accounting Method

The nub of the growth accounting approach (hereafter, GA) is the severance of change in output due to change in the quantity of factor inputs from residual effects such as technological change, learning by doing, managerial efficiency and so on. TFP growth substitutes these influences. The origins of growth accounting method can be traced back to Tinbergen and Solow (1957). In this paper, a two-input framework has been used for estimating the TFP growth rates, as done earlier by Ahluwalia (1991) and Balakrishnan and Pushpangadan (1994). Following Balakrishnan and Pushpangadan (1994), the Divisia-Tornquist (D-T) approximation has been used for the calculation of TFPG. The TFPG under the D-T approximation is given by the following equation:

$$TFPG = (\ln Q_t - \ln Q_{t-1}) - \sum_{i=1}^n 1/2(s_{i,t} - s_{i,t-1})(\ln X_{i,t} - \ln X_{i,t-1})$$

where TFPG is Total Factor Productivity Growth

Q denotes output, X_i represents factors of production and s_i share of factors of production in total output

In the growth accounting framework, information about the share of each primary factors (s_i) in total value added is required. Due to the non-availability of data on emoluments, the share of labour and capital in output has been estimated by using Cobb-Douglas Production function.

Section 3

Reforms and the Unorganised Manufacturing Sector

The measures to liberalise India's industrial policy framework begun in the late 1970s which consisted of deregulation and delicensing in certain industries, assigning a larger role to the private sector, and a gradual shift from direct physical controls to indirect controls (Raj, 1986; Chandrasekhar, 1988). This process of liberalization accelerated in 1991..... "the changes that these reforms brought in were 'fundamental' in nature compared to the 'marginal' changes in the previous decade" (Ahluwalia, 1991). The important industrial policy reforms introduced in 1991 includes the abolition of the institutional entry barrier, namely the system of industrial licensing, in all industries except in a small list of strategic and potentially hazardous industries and in a few industries reserved for the small scale sector, and removal of

investment controls on large industrial houses enforced under MRTP act. Other measures under the reform package include opening up of areas reserved for the public sector to the private sector and the decision to reduce the government share in public sector enterprises. Accordingly, the number of industries reserved for the public sector was reduced to 6 in 1994 from 17 in 1991. Alongside, many of the public sector enterprises were partially privatized while retaining the government share in excess of 51 percent. Licensing requirements for industrial investment were dispensed with in all but 18 industries.

Policy changes in the external sector such as reduction in tariff and removal of non-tariff restrictions on imports, liberalization of the foreign investment and technology import policies and exchange rate policy reforms also have a direct influence on the industrial sector. Licensing and other physical controls of imports were eliminated for non-consumer goods and tariff rates were drastically lowered. Import licensing was done away with for most goods except consumer goods; import-weighted tariff declined to 27 per cent from the pre-1991 level of 87 per cent; and exchange rates were devalued by 20 per cent (Ahluwalia and Little 1998, pp. 4-5). Scope for foreign direct investment was widened. Further, the 1990s also witnessed several reform measures in the financial sector of the economy that also have a bearing on the performance of the industrial sector.

These policy reforms are likely to affect the industrial productivity through a variety of channels. These include (1) increased competitive pressure, (2) greater and cheaper access to better foreign technology and imported intermediate commodities, (3) removal of various constraints on input use, technology choices and investment decisions of industrial firms, (4) greater technological dynamism and (5) more realistic exchange rate and favorable economic conditions. In other words, the above said reforms were aimed at making Indian industry more efficient and productive, technologically up-to-date and competitive; with the expectation that efficiency and productivity improvement, technological up-gradation/change and enhancement of competitiveness would enable Indian industry achieve rapid growth. Therefore, the success of reforms in the manufacturing sector can be judged by the changes in industrial productivity which is attempted in the later sections of this paper.

Section 4

SMEs in India: An overview

In the process of economic development, the contribution of SMEs can be judged from the following aspects. The SMEs can facilitate accumulation of foreign exchange while it ensures judicious use of it for import of capital goods and inputs. By adopting labour intensive method of production, SMEs can facilitate absorption of more labour so as to improve generation of employment. From table 1 it is evident that SMEs alone provides employment of 80-85 per cent of total employment in the manufacturing sector. In contrast, about 30 per cent of value added in the manufacturing sector is generated in this sector (SMEs) implying low productivity of the factors of production. Among various types of manufacturing enterprises, OAME provides employment to relatively a larger number of people.

Analysis of employment in rural and urban areas reflects a fall in share of employment during 1984-2001 in the rural area. In other words, the share of SMEs located in the rural area in terms of employment has come down by about 7 percentage points (from 60 to 53 per cent) during the said period, implying an average fall by about 0.5 percentage points per year. But no noticeable change in share of value added is noticed in the rural area during 1984-2001 barring 1994-95.

Table 1: Share of SMEs in Total Manufacturing Sector Employment and Value Added (per cent)

Year	OAME		NDME		DME		Total SMEs		
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Total
Share in Total Manufacturing Sector Employment									
1984-85	50.1	12.2	5.4	5.8	4.6	6.2	60.1	24.2	84.3
1989-90	45.9	11.7	5.1	6.9	6.5	7.3	57.5	25.9	83.4
1994-95	43.3	11.7	4.4	7.4	6	7.8	53.7	26.9	80.6
2000-01	42.5	13.1	4.3	8.1	6.5	7.9	53.3	29.1	82.4
Share in Total Manufacturing Sector Value Added									
1984-85	10.2	5	2.3	6	1.7	7.1	14.2	18.1	32.3
1989-90	8.8	4.3	2	5.2	2.5	6.7	13.3	16.2	29.5
1994-95	6.1	3.9	1.4	4.1	2.1	5.8	9.6	13.8	23.4
2000-01	8.3	4.2	1.8	5.6	3	6.6	13.1	16.4	29.5

Note: Total Manufacturing Sector Comprises of SMEs and Registered Factories.

Value added is at constant 1981-82 prices

Source: Mukherjee, Dipa (2004)

To evaluate growth of small manufacturing enterprises during the last few decades, few major indicators, namely, number of enterprises, employment, real fixed capital stock and real gross value added have been taken into consideration (table 2). It is apparent from table 2 that the size of the small manufacturing sector has increased in the said four variables over the period under consideration (1978-2001). For instance, the number of enterprises and employment of workers in the unorganized SMEs almost doubled in about two decades since 1978-79. Undoubtedly, all the said indicators witnessed positive growth during the pre-reforms period (1978-79 to 1989-90) and reforms period (1994-95 to 2000-01) but it is surprising to learn that the growth momentum was not sustained during the latter period. The erosion in growth during the reforms period is pronounced in gross of value added and employment.

Table: 2 Size and Growth of Small Manufacturing Enterprises in India

Indicators	1978-79	2000-01	Growth Rate (per cent)	
			Pre-Reforms Period	Reforms Period
Enterprises (in lakhs)	84.69	170.24	6.13	2.71
Employment (in lakhs)	182.14	370.81	6.25	1.86
Fixed Capital (in billion)	71.16	495.98	12.77	6.68
Gross Value Added (in billion)	86.57	412.28	11.05	6.15

Note (i) Real Annual average growth has been estimated.

Source: National Sample Survey Organization (2004): Surveys on the Unorganized Manufacturing Sector, and other issues.

A similar pattern of decline in growth rate is noticed across different types of enterprises, namely OAMEs, NDMEs and DMEs, during the reforms period (table 3). In other words, as compared to the 1980s, the growth of said variables (enterprise, employment, fixed capital and gross value added) witnessed a fall irrespective of types of enterprises and sectors (rural and urban). The extent of decline is pronounced in DME as it recorded negative growth during the reforms period.

Table 3: Size of the Sector by Types of Enterprises and Location

Variable		1978-79	2000-01	Growth Rate (per cent)	
				Pre-Reforms Period	Reforms Period
Enterprises (in lakhs)					
Types	OAME	71.78	146.65	6.33	3.085
	NDME	9.56	17.12	4.95	1.13
	DME	3.35	6.47	4.90	-0.19
Sector	Rural	63.68	119.35	6.12	2.16
	Urban	21.01	50.9	6.16	4.07
Employment (in lakhs)					
Types	OAME	116.14	250.61	7.03	1.69
	NDME	27.86	55.62	5.67	2.18
	DME	38.13	64.58	3.96	2.24
Sector	Rural	125.04	239.86	6.29	1.35
	Urban	57.11	130.95	6.16	2.83
Fixed Capital (in Rs. billion)					
Types	OAME	29.05	194.28	14.37	7.50
	NDME	19.72	134.17	14.05	6.32
	DME	22.39	167.52	8.69	6.05
Sector	Rural	38.24	190.34	11.68	7.17
	Urban	32.92	305.64	13.92	6.38
Gross Value Added (in Rs. Billion)					
Types	OAME	34.25	174.3	12.07	5.97
	NDME	17.62	103.15	13.33	7.09
	DME	34.7	134.82	8.44	5.69
Sector	Rural	38.69	182.68	11.08	7.52
	Urban	47.88	229.6	11.04	5.14

Source: National Sample Survey Organization (NSSO): Surveys on the Unorganized Manufacturing Sector

Section 5

Structure of SMEs across Major States

The performance of SMEs does not necessarily be uniform at the subnational level (states). Therefore to capture its growth performance across various categories of states, 15 major states have been taken into account. Further, the chosen states have been classified into 3 groups based on per capita income: High-income states (Punjab, Maharashtra, Haryana and Gujarat); Middle-income states (Tamil Nadu, Karnataka, Andhra Pradesh, West bengal, and Kerala); and Low-income states (Madhya Pradesh, Assam, Orissa, Rajasthan, Uttar Pradesh and Bihar)⁸.

Table 4: Share of Gross Value Added by each State in Total SMEs in India (in per cent)

States	1978-79	1984-85	1989-90	1994-95	2000-01
Punjab*	1.13	2.2	1.74	2.99	3.8
Maharashtra*	11.83	9.4	14.34	13.23	12.81
Haryana	3.84	2.72	1.87	2.33	1.89
Gujrat	7.79	4.95	11.03	9.22	7.68
<i>High Income States*</i>	<i>24.59</i>	<i>19.27</i>	<i>28.98</i>	<i>27.77</i>	<i>26.18</i>
Tamil Nadu	18.89	15.2	11.43	9.72	10.17
Karnataka*	2.99	7.65	6.24	4.3	4.97
Andhra Pradesh*	3.97	6.64	4.93	4.67	6.48
West Bengal	20.46	10.96	13.28	9.5	10.74
Kerala	4.06	5.45	2.55	1.63	2.87
<i>Middle Income States</i>	<i>50.37</i>	<i>45.9</i>	<i>38.43</i>	<i>29.82</i>	<i>35.23</i>
Madhya Pradesh	4.32	2.73	2.45	3.6	2.56
Assam	1.22	1.42	1.17	1.26	1.09
Orissa	2.42	1.24	1.41	2.25	1.91
Uttar Pradesh*	7.6	18	12.13	14.48	10.52
Bihar*	3.3	2.11	1.82	4.77	3.98
Rajasthan	6.17	5.27	6.5	2.77	3.79
<i>Lower Income States</i>	<i>25.03</i>	<i>30.77</i>	<i>25.48</i>	<i>29.13</i>	<i>23.85</i>
<i>India</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Level of Regional Concentration					
Top 3 States (%)	51.18	44.16	39.75	37.43	34.07
Bottom 3 States (%)	6.59	4.77	4.32	5.84	4.89
Herfindahl Index ⁹	0.117	0.1	0.091	0.076	0.069

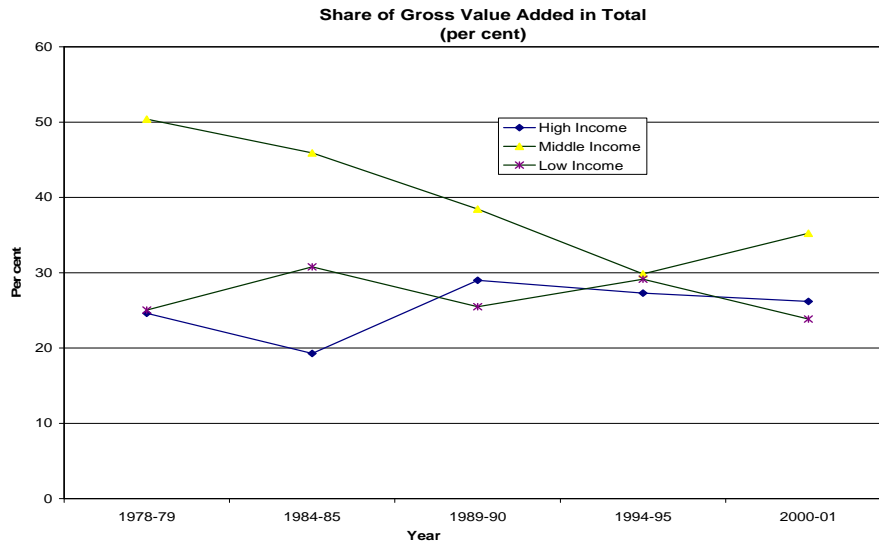
Notes (i): States are grouped into high income, middle income and low income groups based on per capita income. The share of each group in the total value added is also reported.

(ii) An asterisk sign that follows the names of states and regions indicates that the share of the respective states and regions in the total value added by the small manufacturing sector has increased between the period, 1978-79 and 2000-01.

(iii) Gross value added is measured in constant 1993-94 prices.

Source: National Sample Survey Organization (NSSO): Surveys on the Unorganized Manufacturing Sector

Chart 1



The state level analysis reflects that a major part (85 per cent) of gross value added is generated in 15 major states in 2000-01. This implies that remaining 15 per cent of gross value added has been mobilized in 13 other states and Union Territories during the said year (table 4). Further, in employment aspect 15 major states provide employment to 91 per cent of total people working in the SMEs in 2000-01 (table 5).

The association between gross value added and employment reveals that relatively more output is generated in the high-income states as compared to the level of employment. For instance, 15 per cent of total people working in the SMEs has been absorbed in the high income states while it contributes 25-29 per cent of gross value added. In contrast, the percentage share of total people working in the low-income states is much more than the share of gross value added in those states.

As regards level of disparity, about one-third of gross value added is generated in top 3 states while the bottom three states account for close to 5 per cent of total in 2000-01. However, it is interesting to learn that level of concentration has come down over the years. The share of top 3 states in gross value added has dropped from 51 per cent in 1978-79 to 34 per cent in 2000-01. Again, the Herfindhal index value reflects consistent fall in the level of concentration over the said period (0.12 in 1978-79 to 0.07 in 2000-01).

Among the various categories of states, no consistent change in share of gross value added is observed in low income and high-income states. In contrast, the share of middle income states in GVA witnessed a sharp decline (from 50 per cent in 1978-79 to 30 per cent in 1994-95 with improvement in 2000-01) over the years, implying dominance of middle income states has come down. The extent of decline is relatively high during the 1990s.

Table 5: Percentage share of each state in Total Employment of SMEs

States	Employment			
	1978-79	1989-90	1994-95	2000-01
Punjab	2	2	2	2
Maharashtra	8	7	7	8
Haryana	2	1	1	1
Gujrat	4	5	5	4
High Income States	16	15	15	15
Kerala	6	4	2	3
Tamil Nadu	13	10	9	9
Karnataka	5	5	6	5
Andhra Pradesh	9	9	8	9
West Bengal	14	17	13	16
Middle Income States	47	45	37	42
Rajasthan	2	4	3	3
Madhya Pradesh	6	4	4	4
Assam	1	1	2	1
Orissa	4	7	9	6
Uttar Pradesh	12	15	18	15
Bihar	7	6	8	4
Low Income States	33	36	43	33
Major states	96	95	96	91

Source: NSSO reports, various issues.

Factors Influencing Growth of Output

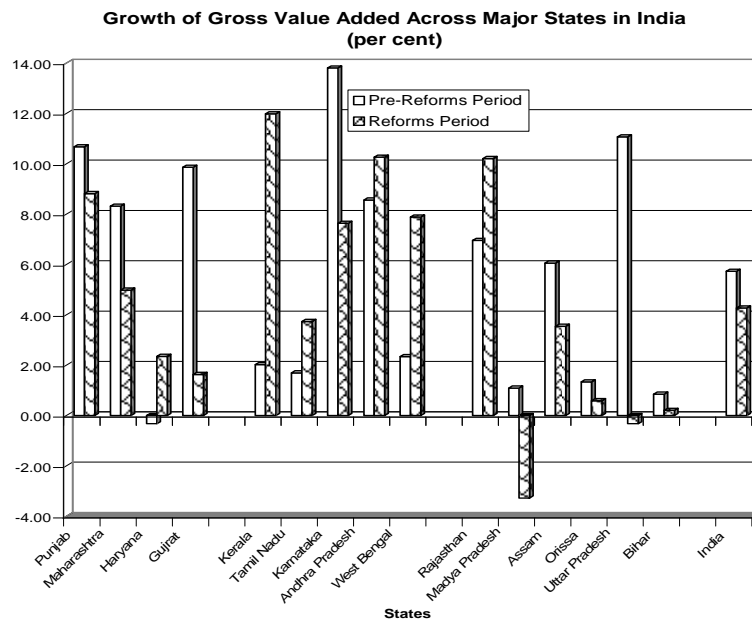
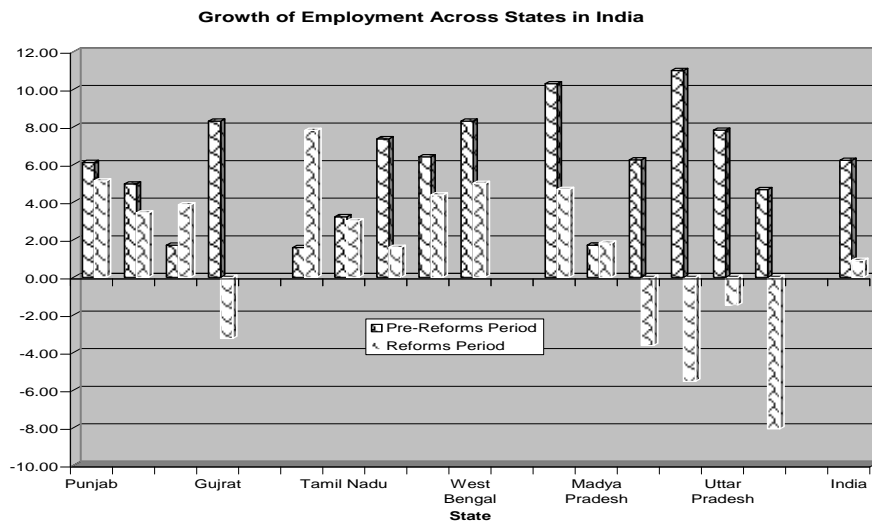
A comparative analysis of growth of real gross value added during the pre-reforms and reforms period reveals a considerable growth decline in India and in both high income and low income states (table 6, charts 2&3). Contrary to it, middle income states together witnessed improvement in growth in value added during the reforms period. It may be partly on account of spectacular growth rate achieved by Kerala, West Bengal and Andhra Pradesh. At the other end, a state-specific analysis reveals considerable erosion in growth in Uttar Pradesh, Gujarat and Madhya Pradesh during the reforms period.

Table 6: Growth of Major Indicators: Pre-Reforms vis-à-vis Reforms Period (in Per cent)

Sl No.	States	Growth of Value Added		Employment		Fixed Capital	
		Pre-reforms Period	Reforms Period	Pre-reforms Period	Reforms Period	Pre-reforms Period	Reforms Period
1	Punjab	10.68	8.81	6.11	5.13	11.08	12.86
2	Maharashtra	8.32	4.98	4.96	3.43	7.91	-2.29
3	Haryana	-0.33	2.35	1.71	3.86	3.68	12.07
4	Gujrat	9.86	1.63	8.31	-3.25	12.16	0.01
5	High Income States	8.04	4.19	5.69	1.55	9.09	1.96
6	Kerala	2.02	11.99	1.59	7.81	3.76	17.54
7	Tamil Nadu	1.70	3.74	3.22	3.00	6.32	5.72
8	Karnataka	13.81	7.64	7.37	1.59	5.13	7.34
9	Andhra Pradesh	8.56	10.26	6.41	4.39	3.59	7.42
10	West Bengal	2.34	7.89	8.31	5.00	6.62	13.38
11	Middle Income States	3.86	7.19	5.83	4.11	5.38	8.95
12	Rajasthan	6.96	10.21	10.29	4.67	12.47	8.31
13	Madhya Pradesh	1.09	-3.28	1.71	1.83	2.46	5.09
14	Assam	6.06	3.54	6.25	-3.63	4.48	1.53
15	Orissa	1.34	0.59	11.00	-5.53	10.59	-1.51
16	Uttar Pradesh	11.07	-0.33	7.83	-1.48	9.12	3.01
17	Bihar	0.85	0.21	4.67	-8.07	12.01	-4.66
18	Low Income States	6.62	0.88	6.99	-2.60	9.08	2.70
19	Major States	5.73	4.27	6.22	0.90	7.77	4.39
	India	11.05	6.15	6.25	1.86	12.77	6.68

Source: Estimated from NSSO Surveys, various issues

Note: Real annual average compound growth has been estimated for gross value added and fixed capital stock while for employment only nominal average compound growth has been estimated.

Chart 2**Chart 3**

The decline in growth of gross value added in India and both high and low income states can be primarily on account of decline in growth of factors of production. From table 6 it is evident that there has been decline in growth of employment and fixed investment in India during the reforms period as compared to pre-reforms period. Similarly, growth of enterprises in India also witnessed a fall during the reforms period (table 2).

Evidently, a positive correlation between growth of gross value added and growth of employment is noticed during the reforms period, implying fall in growth of GVA can be partly due to decline in growth of employment (Table 7). This is applied for fixed capital stock also. In other words, there has been improvement in the relationship between fixed capital stock and GVA during the reforms period. However, this is noticed along with fall in growth of fixed capital during the said period.¹⁰

Table7: Correlation Coefficient of Growth of Variables during Pre-Reforms & Reforms Periods for Major States in India

Variables	Gross Value Added	
	Pre-Reforms Period	Reforms Period
Employment		
(a) Pre-Reforms Period	0.44	-
(b) Reforms Period	-	0.7*
Fixed Capital Stock		
(i) Pre-Reforms Period	0.24	-
(ii) Reforms Period	-	0.65*

*: significant at 5 per cent level.

A state level of analysis of association between growth of gross value added and various factors of production (fixed capital and employment) during pre-reforms and reforms periods is reflected by charts 4-7. From this radar diagram it is evident that during reforms period growth of employment is lower than that of gross value added barring few states. But it seems both the variables are somewhat moving in tandem. In contrast, during the pre-reforms period, growth of GVA and employment does not seem to be moving together except in few states. Almost similar feature is noticed for growth of gross value added and growth of fixed capital during the period prior to introduction of reforms.

Chart 4

Growth of Gross Value Added & Employment Growth in Major States during Pre-Reforms

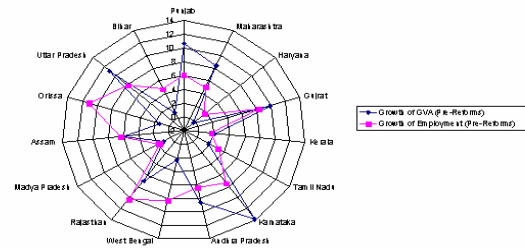


Chart 5

Growth of Value Added and Growth of Employment Across Major States in India (Reforms Period)

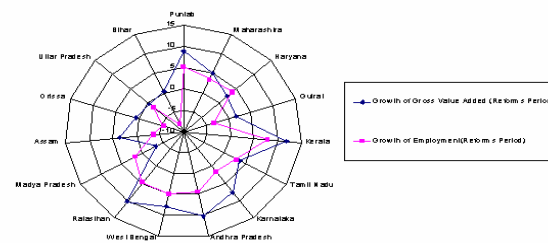


Chart 6

Growth of GVA & Fixed Capital Growth (Pre-Reforms Period)

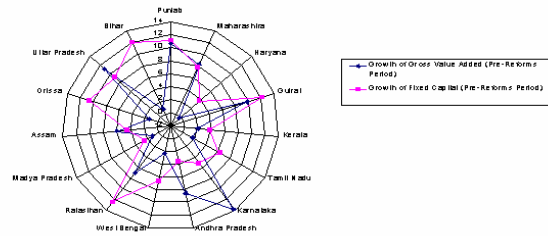
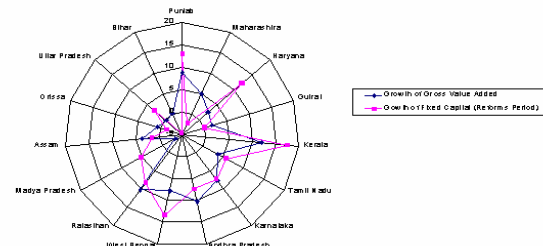


Chart 7

Growth of Gross Value Added & Growth of Fixed Capital Stock in Major States of India (Reforms Period)



It is often argued that in the backdrop of decline in growth of employment in the organized manufacturing sector, the unorganized manufacturing sector can act as shock absorber so as to improve growth of employment. But it is noticed that both unorganized and organized manufacturing sector have witnessed decline in employment growth since the mid-1990s and therefore, it is the cause for serious concern.

Section 6

Productivity Growth in SMEs

Based on the previous analysis it is observed that decline in growth of employment and fixed capital stock might have contributed to decline in growth of gross value added. But this may be the result of an attempt made by the enterprises to improve efficiency in the production process by choosing for an optimum level of capital-labour ratio. Therefore, an attempt is made to examine both partial factor productivity and total factor productivity of the factors of production.

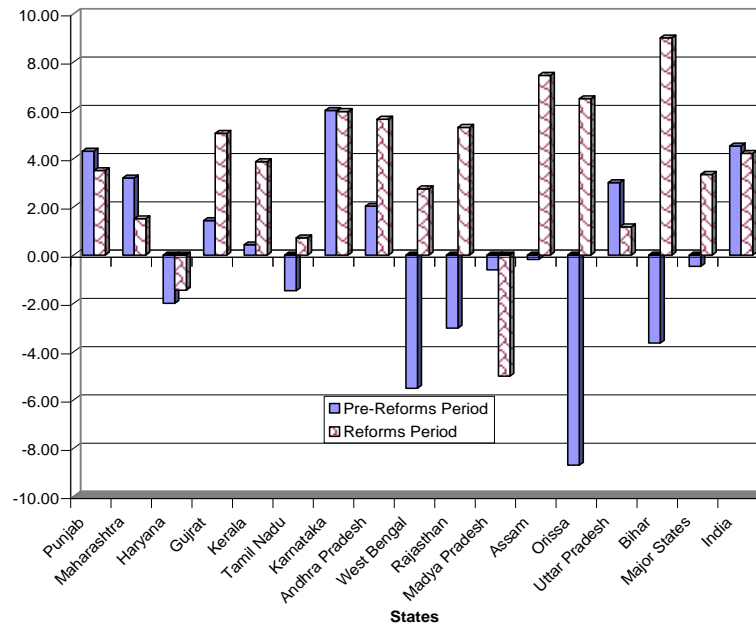
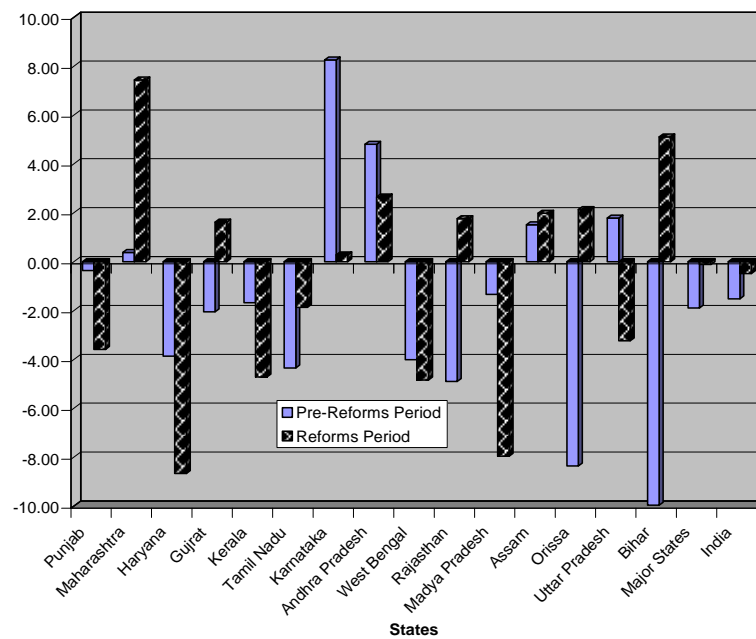
Based on partial factor productivity approach an improvement in growth of labour productivity for 15 major states as a whole is noticed during the reforms period as compared to the pre-reforms period (table 8). For instance, out of 15 major states, 11 states have experienced improvement in growth while the remaining 4 states witnessed a fall during the said period (chart 8). However, there has been marginal decline in growth of labour productivity for the economy as a whole during the reforms period.

As regards capital productivity, negative growth is observed during the reforms period for both the major states together and the Indian economy as a whole (table 8 and Chart 9). But as compared to the pre-reforms period, the rate of decline in growth has slowed down during the reforms period. For instance, growth in capital productivity in India declined from -1.5 per cent per annum during pre-reforms period to -0.5 per cent during reforms period (table 8).

Table 8: Growth of Partial Factor Productivity in SMEs Across States

States	Labour Productivity		Capital Productivity	
	Pre-Reforms	Reforms Period	Pre-Reforms	Reforms Period
	1978-90	1994-2001	1978-90	1994-2001
Punjab	4.31	3.51	-0.36	-3.59
Maharashtra	3.19	1.50	0.38	7.44
Haryana	-2.00	-1.45	-3.87	-8.67
Gujarat	1.43	5.05	-2.05	1.62
Kerala	0.43	3.87	-1.68	-4.72
Tamil Nadu	-1.48	0.72	-4.35	-1.87
Karnataka	6.00	5.95	8.25	0.28
Andhra Pradesh	2.02	5.63	4.80	2.65
West Bengal	-5.51	2.75	-4.01	-4.84
Rajasthan	-3.03	5.29	-4.90	1.75
Madhya Pradesh	-0.61	-5.01	-1.33	-7.96
Assam	-0.18	7.45	1.51	1.98
Orissa	-8.70	6.48	-8.36	2.13
Uttar Pradesh	3.00	1.17	1.78	-3.24
Bihar	-3.65	9.00	-9.97	5.11
Major States	-0.46	3.34	-1.90	-0.12
India	4.52	4.21	-1.52	-0.49

Source: Estimated from NSSO Surveys, various issues.

Chart 8**Growth of Partial Factor (Labour) Productivity in SMEs Across Major States in India****Chart 9****Growth of Partial Factor (Capital) Productivity in SMEs across Major States in India**

Based on the above discussion, one may be tempted to conclude that the reforms process has positively contributed in improving the productivity of the unorganized sector. But it should also be noted that despite the improvement in productivity growth, the growth in value added has declined in the reforms period. Therefore, it is possible that the observed improvement in partial factor productivity may not be reflecting true productivity gain. This is precisely because rapid growth in partial factor productivity measure could be due to improvement in growth of omitted variables (factors remained constant) and therefore, it can be quite misleading (Diewert, 2003). For instance, capital deepening (shifts in technique of production) can lead to a rise in labour productivity and fall in capital productivity. Therefore, changes in labour productivity is merely a reflection of substituting one factor by another (Majumdar, 2004). However, this problem can be resolved to a large extent by analyzing total factor productivity growth which encompasses the effect not only of technical progress but also of better utilization of capacities, learning-by-doing, and improved skills of labour (Ahluwalia, 1991). Therefore, a measure of total or multi-factor productivity change is much more useful and informative.

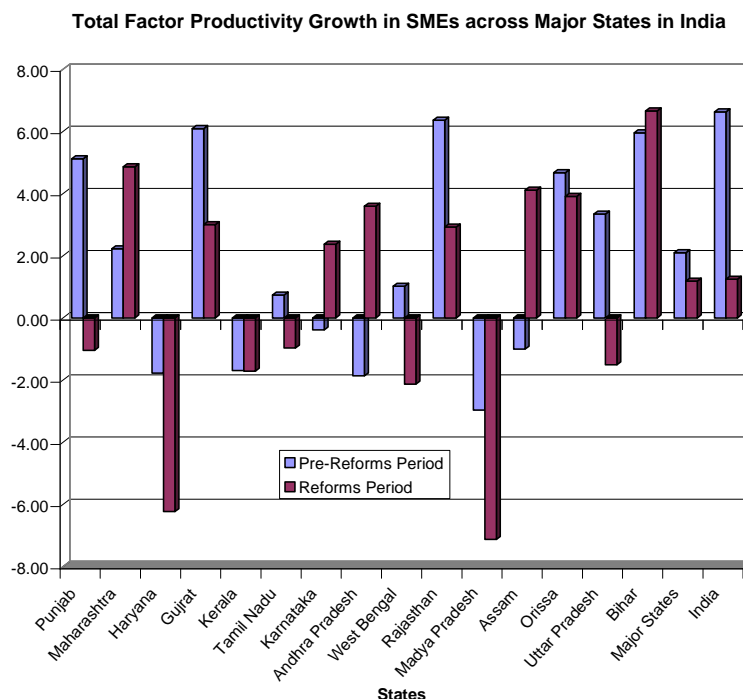
Analysis of total factor productivity growth in India and major states reveals erosion during the reforms period as compared to the pre-reforms period (table 9). This is noticed despite improvement in labour productivity growth and slowdown in negative growth of capital productivity in major states during the said period. Therefore, it indicates failure in some of the crucial aspects such as improving technical efficiency and learning by doing, enhancing skills of the labour force and so on.

Table 9: Growth of Total Factor Productivity

States	Pre-reforms		Reforms	
	Growth Rate	Index	Growth Rate	Index
Punjab	5.12	105	-1.05	99
Maharashtra	2.22	102	4.86	105
Haryana	-1.77	98	-6.23	94
Gujarat	6.09	106	3.00	103
Kerala	-1.70	98	-1.71	98
Tamil Nadu	0.74	101	-0.97	99
Karnataka	-0.39	100	2.37	102
Andhra Pradesh	-1.86	98	3.59	104
West Bengal	1.02	101	-2.13	98
Rajasthan	6.36	106	2.93	103
Madhya Pradesh	-2.96	97	-7.13	93
Assam	-1.01	99	4.11	104
Orissa	4.67	105	3.91	104
Uttar Pradesh	3.34	103	-1.51	98
Bihar	5.95	106	6.66	107
Major States	2.10	102	1.18	101
India	6.63	107	1.25	101

Source: Estimated from NSSO Surveys, various issues.

Chart 10



Performance of Unorganized sector and Policy Issues

In the recent past, performance of various types of activities that encompass the unorganised sector has been assigned due importance by the planners partly due to the structural changes taking place in the Indian economy. The significance of the unorganised sector activities in the process of India's development has been emphasized due to the following reasons: (i) there has been a decline in employment growth in the 1970s, 1980s and 1990s in the economy and the growth in employment was lower than the growth of labour force (Planning Commission, 2002); (ii) reforms introduced in the 1990s have led to reduction in public sector spending on certain crucial sectors. As a result, decline in growth of organized sector employment was noticed during the 1990s especially in the later part of the 1990s. This was more evident in large scale organized manufacturing sector (Nagaraj, 2004); (iii) the labour market is widely believed to be suffering from excessive intervention leading to substituting of capital for labour, and thereby creating a downward effect on employment growth in the organized sector. Added to this, labour market reforms such as reduction of the extent of protection and repealing of the job security clause might have accentuated the employment problem in the organized sector (Nagaraj, 2004). Then again, with increasing deregulation and delicensing of economic activities, the process of casualisation and feminisation of labour is on the rise (Mitra, 2001). 'Flexible specialisation' methods of production have encouraged the development of modern small-scale industries with flexible labour regimes. These possibilities have renewed the interest in the informal sector and its role in the economy during this era of liberalisation.

The importance of unorganized sector is also determined by the performance of the organized sector. Based on major findings of various studies it can be argued that economic policies introduced during the reforms period has affected the manufacturing sector to a large extent. During the 1990s, there has been a fall in growth of employment in the organised manufacturing sector (Nagaraj, 2004). At the other end, the impact of the economic policies on the unorganised manufacturing sector can be both positive and negative. Steadily increasing labour force and declining employment elasticity in the highly

productive organised industrial sector especially after the introduction of economic reforms have generated more interest on the informal sector activities. In contrast, with the gradual dismantling of industrial licensing, removal of import licensing and restrictions on production capacity, tariff reduction and relaxation of rules for foreign investment, large industrial units can be able to enter market niches hitherto occupied by the informal sector. In this context, a pertinent issue deserve urgent attention is the future growth prospect of unorganised sector, given the challenges and constraints faced by this sector.

The present analysis reveals that unorganized sector could not derive much benefit from the reforms initiated in the industrial sector during the 1990s. The productivity growth of the sector witnessed a declining trend during the reforms period. This may be partly due to use of obsolete technologies in the production process. Further, growth of employment and fixed investment has declined during the reforms period confirming the fact that technological up-gradation and improvement in skill of the workforce need to be prioritized so as to improve growth in output of the unorganized sector.

Section 6

Summary and Concluding Observations:

The performance of SMEs has undergone noticeable change during the reforms period. For instance, we notice erosion in growth of output (gross value added) across different categories of states and at the national level during the reforms period. However, the level of disparity in generation of output (share in gross value added) has been smoothened across the states over time.

An attempt to identify the proximate determinants of growth of output reveals high degree of association between growth of gross value added and growth of employment. This has been strengthened during the reforms period, implying growth of employment plays a crucial role in the output growth. But there has been decline in growth of employment along with growth of fixed capital during the reforms period. This is indeed a matter of concern for two reasons: (1) SMEs provide employment to about 80 per cent of total people working in the manufacturing sector and (2) growth of employment in the organized manufacturing sector itself has declined during the reforms period.

Analysis of partial factor productivity approach reflects substantial improvement in labour productivity during the reforms period. But erosion in total factor productivity growth during the said period suggests the need to look into aspects such as improving technical efficiency and learning by doing, enhancing skills of the labour force and so on.

Needless to say, an improvement in productivity growth in the unorganized sector through development of skill, better management and improvement in access to institutional credit need to be emphasized so as to foster high rate of growth in the sector.

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¹ Based on this criterion, the SMEs consist of units with less than 10 employees and units with 10 to 19 employees that do not use electric power.

² The major economic reforms in India were introduced in 1991. On account of non-availability of data during 1991-94 and beyond 2000-01, we had to consider 1994-95 to 2000-01 as the reforms period. It needs to be noted that National Sample Survey Organization of the Government of India conducts survey once in every five years. Therefore, it is difficult to obtain time-series data on the unorganized manufacturing sector.

³ In the beginning, the CSO surveyed the Directory Manufacturing Establishments (DME) employing 6 or more persons with at least one hired worker and the NSSO surveyed Non-Directory Manufacturing Establishments (NDME) employing less than six persons with at least one hired worker and Own-Account Manufacturing Enterprises (OAME). From 1994-95 onwards, the responsibility for collecting and analyzing data and publishing the results for the entire unorganized manufacturing sector lies with the NSSO.

⁴ For instance, the recent survey conducted in 2000-01 covered the whole of the Indian Union except (i) Leh and Kargil districts of Jammu and Kashmir, (ii) villages situated beyond 5 Kms. of bus route in the state of Nagaland and (iii) inaccessible villages of Andaman and Nicobar. A stratified sampling design was adopted for selection of the sample first stage units (FSUs). The FSUs were villages in rural areas and UFS blocks in urban areas. A total of 14528 first stage units consisting of 5586 villages and 8942 urban blocks were surveyed. The Ultimate Stage Units (USUs) for the survey were enterprises. The method of circular sampling has been employed for selecting the USUs from the corresponding frame in the FSU. A total of 152494 enterprises (Rural: 60770 and Urban: 91724) were surveyed all over India. A detailed note on sample design and estimation procedure followed in the 56th survey is given in the Appendix B of the survey report.

⁵ The NSDP figures for the unregistered manufacturing sector of Indian states were obtained from the report on Domestic Products of States of India: 1960-61 to 2000-01 (EPWRF, 2003).

⁶ The values of NSDP for the years 1980-81 to 1996-97 were expressed in 1980-81 prices while for the years 1993-94 to 2001-02 were expressed in 1993-94 prices (EPWRF, 2003). These have been converted to a common base period, i.e., 1993-94.

⁷ Following Salim and Kalirajan (1999) and Hossain and Karunaratne (2004), we argue that the use of gross figures to represent the capital stock can be justified in the case of developing countries such as India in general and unorganized manufacturing sector in particular on the ground that capital stocks are more often used at approximately constant levels of efficiency for a period far beyond the accounting life measured by normal depreciation until it is eventually discarded or sold for scrap. Thus even though the value of old machine declines, it need not lead to any decline in the current services of the capital equipment. In addition, we believe that if there is any distortion in the capital input, it would be distorted uniformly in all the states. Therefore, the relative performance of states should not be seriously affected by this shortcoming.

⁸ For the purpose of comparison over time, figures for some of the newly formed states have been merged with their parent states (undivided state).

⁹ Herfindahl index is used as a measure of concentration. It is in the form $\sum s_i^2$, where s_i is the share of the i th State in total value added in the country. The index takes values in the range of 0 to 1. A value of 0 indicates zero concentration and a value of 1 indicates maximum concentration. For a detailed review on the generalized index of diversification see Gollop and Monahan (1991).

¹⁰ As mentioned, there has been improvement in growth of gross value added in the middle-income states during the reforms period. This may on account of improvement in growth of fixed capital and capital-labour ratio. On the other hand, growth of employment registered a marginal decline during reforms period in the middle-income states.