Wages, Productivity and Employment in Indian Manufacturing Industries: 1998-2010

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Abstract

The relationship between the growth rates of employment and productivity has been a serious cause of concern particularly in an economy where unemployment is more concentrated among low skilled workers. This paper attempts to examine the regional variation in output, employment and productivity growth with data from registered manufacturing industries across major states in India. The higher rate of growth of manufacturing output leads to higher rate of productivity growth, but not a faster rate of employment growth. The structural change took place in favour of capital that increased profit rate by displacing workers in manufacturing industries in India. Workers were affected badly more as compared to other employees, i.e. office staff and supervisors by this kind of job destroying structural change in manufacturing industry in India. This study observes significant regional disparity in industrial growth in India although the incidence of unevenness declined at a very slow rate. The Western part of the country has been traditionally leading in industrial development and the Eastern part has been lagging further behind.

1. Introduction

1.1 Stagnation of output growth along with zero, and indeed negative, employment growth in many manufacturing industries, particularly in the registered sector, in India during the 1990s is a serious cause of concern in the context of economic reforms. There has been strong evidence of deindustrialisation, particularly in the sense of negative employment growth in the registered sector, in most of the industries in India during the 1980s and 1990s. The level of employment declined in registered manufacturing industries in all states and at a higher rate in the industrially developed states. Between 1995 and 2000, about 1.1 million workers, or 15 percent of workers in the organised manufacturing sector lost their jobs (Nagaraj, 2004) at the national level and such losses have been widened across major states and industry groups.

1.2 The relationship between the growth rates of employment and productivity has been a serious cause of concern particularly in an economy where unemployment is more concentrated among low skilled workers. Undoubtedly, rapid and sustained productivity growth lifted the standards of living in the advanced industrialised nations during the era of the nineteenth century capitalism and even thereafter by any historical standards. But, ironically, in the developing world, the technological innovations and capital-intensive investments, the mainsprings of the productivity growth, may act as instigators of job destruction, particularly for unskilled workers. While there is no causal relationship between

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productivity growth and employment growth in either direction, economic growth continues to go hand in hand with structural change entailing "creative destruction" as celebrated in Schumpeter (1947). Old jobs are lost in declining industries and new jobs are created in the expanding sectors of the economy.

1.3 There has been a great debate on the implications of employment dynamics for productivity growth and it is very difficult to interpret the issues relating to productivity differentials across different regions as observed in India over the past decades. Some regions (e.g. Gujarat) outperformed the others in terms of productivity growth, but at the cost of lower, or even negative employment growth in some sectors. Again, employment growth is not high in some regions, namely West Bengal, experiencing lower productivity growth. This kind of stylised facts may raise the question of a possible trade-off between employment growth and productivity growth, and of a conflict between employment growth and real wage growth.

1.4 Against these stylised facts, this paper attempts to examine the regional variation in output, employment and productivity growth with data from registered manufacturing industries across major states in India. Most of the empirical studies (Bairam 1991, Atesoglu 1993 and Scott 1999) used cross-country regressions for estimating a relationship between output growth and employment growth in manufacturing activities. There have, however, been hardly any studies of this type with time series data for manufacturing industries in a developing country like India.

1.5 This study is motivated by Kaldor's (1966) hypothesis that employment growth and productivity growth are positively related, but not at the proportional rate, largely because of the dynamic increasing returns to scale associated with the invention and innovation in manufacturing industries. Labour productivity growth in the manufacturing sector is positively related to output growth of this sector because of static and dynamic increasing returns to scale. Kaldor observed a highly significant relationship suggesting that the output growth played a major role in determining productivity growth and also employment growth in the manufacturing sector[2]. The higher rate of growth of manufacturing output leads to higher rate of productivity growth, but not a faster rate of employment growth.

1.6 After this introductory remark, section 2 discusses about the data used in this study. Section 3 describes the regional contributions to total output from registered manufacturing industry in India. Section 4 deals with the changing pattern of different structural ratios over time across states. Regional variations in growth rates of different parameters are examined in section 5. Section 6 concludes.

2. Data

2.1 In this study we utilise data provided by the *Annual Survey of Industries* (ASI), the main source of information about the industry published by the Central Statistical Office (CSO), Government of India. However, there are some problems of both coverage

[2] Kaldor estimated the relationship between output growth and employment growth by using data for twelve OECD countries over the period 1953-54 to 1963-64 by applying cross country regression.

and intertemporal comparability of the ASI data. The ASI distinguishes between the census sector which corresponds to the larger units and the sample sector which consists of units below the size that qualifies a factory as a member of the census sector. The coverage of the factory units in ASI under census sector was changed in 1997-98. Previously, factories employing 100 or more workers were included in the census sector and the rest in the sample sector, but since 1997-98 factories employing 200 or more workers have been covered on census basis and the remaining factories on sample basis. In carrying out empirical exercise we have used ASI data from 1998 to 2010 simply because of this change in the coverage under the census sector and the major change in national industrial classification (NIC) in 1998-99.

2.2 Gross output at constant prices is used in this study as a measure of real output. ASI reports gross output data in value terms (Rs. Lakh). Nominal values of gross output are deflated by the wholesale price indices at 1993-94 base period for manufactured goods. In estimating productivity we have used two distinct types of labour inputs: workers and other employees. Numbers of workers and of employees are recorded separately in the ASI. Workers are defined to include all persons engaged directly or indirectly in the production process. Employees, on the other hand, include all workers defined above and other persons engaged in supervisory and managerial activities. We subtract the number of workers from the total number of employees to obtain the number of persons engaged in supervisory and managerial activities and define them as 'other employees'. Unlike other factors of production, capital is used beyond a single accounting period and measuring capital stock is rather problematic. Figures of fixed capital shown in the ASI include the values of plant and machinery along with other types of assets used in production, transportation, living or recreational facilities, hospitals, schools, etc., and are measured in terms of historical prices based on the book value of fixed assets.

3. Regional share of manufacturing output

3.1 Nearly one-third of the gross value added of the registered manufacturing sector has been contributed by the two western region states, Gujarat and Maharashtra, absorbing roughly one-fourth of the total employment in this sector. Maharashtra continued to occupy the top position till the first half of the previous decade contributing more than 19 percent to the national output from registered manufacturing in 2001-02, then it ranked second in 2010-11. Gujarat gained its position to the top by raising its share significantly from 15 percent in 2001-02 to over 17 percent in 2010-11. The eastern region states, on the other hand, have been continually losing their prominence. West Bengal's share in value added by India's factory sector remained at around 4.4 per cent in 2010-11. Rajasthan and Uttar Pradesh in the north-west and Madhya Pradesh in the central region experienced a marginal increase in their shares in the country's factory sector, as did the three southern states of Andhra Pradesh, Tamil Nadu and Karnataka (Table 1).

3.2 Regional variation in industrial development has been clear from the estimated figures as shown in Table 1. West Bengal, for example, experienced a dramatic fall of output share over the decades and at a significantly higher rate in the period of license permit raj. It is well documented that the recessionary effect on industry in West Bengal was not only the most severe but long lasting as well (Bagchi, 1998), and this was partly attributable to

industrial policies of the central government of the country. In spite of the industrial slow down, the rate of labour absorption, as shown by the country's employment share, in registered manufacturing industries located in West Bengal was significantly higher than that in Gujarat having a much larger share of factories till the mid-1990s, but it followed a steep deterioration throughout[3]. The relative share of gross output was also higher in West Bengal even during the recessionary phase of the 1970s and then started to lagging behind.

3.3 The growth rate of output from registered manufacturing declined significantly after the mid-1980s in industrially advanced states, namely Maharashtra and Gujarat, but the rate increased in West Bengal during the same period (Das, 2007). Unregistered manufacturing, on the other hand, displayed higher output growth in industrial states, including West Bengal, during this period compared to the previous regime. Income from the services sector grew at a higher proportional rate everywhere during the post-reform period than in the pre-reform phase in India, but the growth acceleration of this sector was higher in the Southern region states and also in Maharashtra and West Bengal. Agriculture shows no growth improvement in most of the states in the country, and indeed in the post-reform epoch, the growth rate fell in states dominated by agriculture, such as Punjab, Uttar Pradesh and Orissa. West Bengal and Andhra Pradesh, however, showed improvement in the growth rate of agricultural output after the mid-1980s.

4. Changing pattern of structural coefficients of industries by states

4.1 Structural change in registered manufacturing occurred in favour of capital during the period 1998-2010, highly unevenly across the major states as shown by the coefficient of variation (CV) in the last row of Table 2. In terms of capital-labour ratio, Gujarat was at the top, followed by Uttar Pradesh, Himachal Pradesh, Orissa, Madhya Pradesh and Karnataka. Capital intensity in registered manufacturing increased dramatically in Orissa during this period. The states including Jharkhand, Andhra Pradesh, Chhattisgarh, Uttaranchal and West Bengal also experienced a marked increase in capital labour ratio during this period. In Maharashtra, the leading industrial state of the country, however, capital labour ratio was low throughout the period. On the other hand, capital intensity in registered manufacturing declined in Uttar Pradesh, Karnataka, Madhya Pradesh along with some other states during the same period. Capital labour ratio in registered manufacturing varied from 2.8 in Delhi to 33.7 in Orissa in 2010-11.

4.2 Manufacturing workers have been highly dominating in the ASI sector everywhere in India (Table 2). About three fourth of the total employees in registered manufacturing in India were workers in 1998 and the proportion increased to 78 percent in 2010 at the national level. In Assam, Andhra Pradesh, Bihar, Kerala, Tamil Nadu and West Bengal the share of manufacturing workers was 80 percent and above during 1998-2010. The proportional share of workers to total employees varied between 65 percent in Delhi and 86 percent in Kerala and Bihar in 2010. Regional variation in workers' composition has been very low during this period.

[3] A comparison of manufacturing growth between West Bengal and Gujarat has significance because they are prominent industrial states in the eastern and western regions respectively with distinct types of socio-political character. For detail analysis of comparative study between West Bengal and Gujarat see Das (2007).

4.3 We have calculated real wage per employee, taking all types of employees, in the registered manufacturing sector. Table 2 displays the variations in wage rate by major states in India in different years between 1998 and 2010. Wage rate in real terms in registered manufacturing varied widely across the regions as measured by the CV. Although the real wage rate improved in almost all states over this period, the regional variation has still been prominent. In 1998, wage per employee was higher in Chhattisgarh, Jharkhand, Maharashtra, Himachal Pradesh, West Bengal, Karnataka and Haryana as compared to the rest of the country. In 2010, the pattern of inequality roughly the same with higher wage rate in Jharkhand, Maharashtra, Chhattisgarh, Karnataka, Delhi, Haryana and Orissa.

4.4 Figures 1 and 2 display the trends in output and employment in registered manufacturing across 21 states in India during 1998-2010. There has been no sign of systematic convergence in either indicator. Gujarat performed better in terms of output and gross value added followed by Maharashtra, Tamil Nadu, Karnataka and Andhra Pradesh. While West Bengal and Uttar Pradesh performed moderately, the performance of the other states was not promising. The regional distribution of gross value added per factory was roughly the same as for gross output, but gross value added increased at a slower rate compared to the rate of growth of gross output during 1998-2010. Incidence of industrial employment had traditionally been high in Jharkhand and West Bengal. Recently, however, Tamil Nadu, Andhra Pradesh, Maharashtra and Gujarat registered higher absorption of manufacturing workers as compared to other states. Workers are dominating in the manufacturing sector in India. But, in Bihar, Chhattisgarh, Jharkhand the proportion of manufactured workers and other employees are roughly equal.

4.5 Labour productivity, measured by output labour ratio, in registered manufacturing increased significantly in every states during 1998-2010 (Table 3). It is clear that productivity for other employees has been markedly higher than the productivity of manufactured workers (in some states 5 times or more) for obvious reasons. Productivity of manufactured worker was the highest in Gujarat and the lowest in Tamil Nadu in 2010-11. Labour productivity increased at the highest rate in West Bengal during 1998-2010.

5. Growth rates of output, employment and capital

5.1 Table 4 displays growth rates of number of factories, output, labour and fixed capital in the registered manufacturing sector across different states in India over the period 1998-2010. Number of factory units increased at highly uneven rates across different regions of the country. Factory units grew at less than 4 percent rate at the national level. While Himachal Pradesh and Uttaranchal experienced significantly higher rate of expansion in manufacturing units, the industrially advanced states of Gujarat and Maharashtra along with other states like West Bengal exhibited a marginal rate of growth during this period. Output growth in registered manufacturing was spectacular during the past decade. Growth rate was more than 10 percent in most of the states with the highest rate in Uttaranchal. But, the growth rate was below the national average in some industrial states including Maharashtra, West Bengal and Tamil Nadu.

5.2 Fixed capital in real terms grew at the highest rate in Uttaranchal and at the lowest rate in Kerala displaying a wide regional variation of it. Growth rates of employment were 5

percent and 3.8 percent for workers and other employees respectively at the all India level. Employment of worker increased at below 5 percent in Gujarat and below 3 percent in Maharashtra. The growth rate of employment of other employees, however, was significantly less than the rate for workers everywhere in the country. Employment growth was even negative in West Bengal and Jharkhand. West Bengal achieved 11 percent growth of real output with negative employment growth of either type of employees.

5.3 We also have looked at the growing pattern of profitability, productivity of workers and wage rate in registered manufacturing industries across the major states in India. Table 5 displays the regional distribution of growth rates of these parameters. Profit grew at more than 1 percent rate in Uttaranchal, Himachal Pradesh, Orissa and Jammu and Kashmir. But the profit rate was very low and even falling in some regions, namely, Kerala, Assam and Delhi. Productivity of workers grew at a significantly higher proportional rate than the employment growth or the growth in wage by following some fundamentals of capitalist development. Although productivity of workers had grown at the double digit rate in most of the states, wage rate grew at the significantly lower rates in all states, and indeed, the wage in real terms actually declined in West Bengal during 1998-2010. The regional variation in growth rates of value added followed roughly the same pattern as for productivity of workers.

6. Conclusions

6.1 In this study, we have tried to figure out the regional variation in output, employment and productivity growth in registered manufacturing industries across the major states in India during the period after one decade of economic reforms. The structural change took place in favour of capital that increased profit rate by displacing workers in manufacturing industries in India during 1998-2010. In most of the industries in India, a smaller labour force relative to the size of capital has been employed and over 70 per cent of them were ordinary workers. Thus workers were affected badly more as compared to other employees, i.e. office staff and supervisors by this kind of job destroying structural change in manufacturing industry in India. Workers were displaced tactfully in the process of structural change, but technological diffusion did not take place even by factor substitution (Das 2011). The contribution of labour to output growth was significantly higher than that of capital. This was achieved partly by increasing the workload of the ordinary workers without technological up-gradation of machinery. Furthermore, there is no causal relationship between productivity growth and employment growth in either direction.

6.2 This study observes significant regional disparity in industrial growth in India although the incidence of unevenness declined at a very slow rate. The Western part of the country has been traditionally leading in industrial development and the Eastern part has been lagging further behind. Surprisingly enough, some industrially less significant states like Uttaranchal performed dramatically in either indicator of industrial growth during the period 1998-2010. Structural change occurred in Indian industries in favour of capital, but at an uneven rate across the states. Capital labour ratio increased not only because of higher employment of capital but because of the displacement of workers as well. Output growth increased at a higher rate with slower employment growth or negative employment growth may be an indicative of higher work burden per worker even in indecent work conditions

during the post-reform period in India. The mismatch between output and employment growth also implies higher productivity growth contributing to more profit of the capitalist class.

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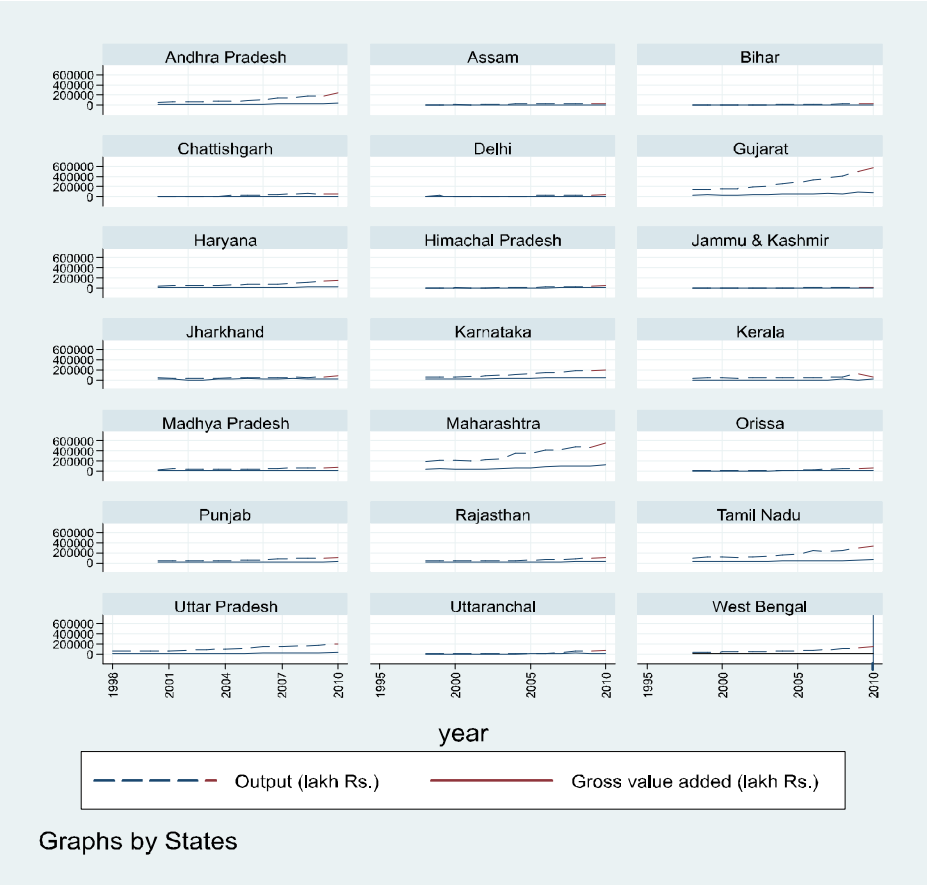
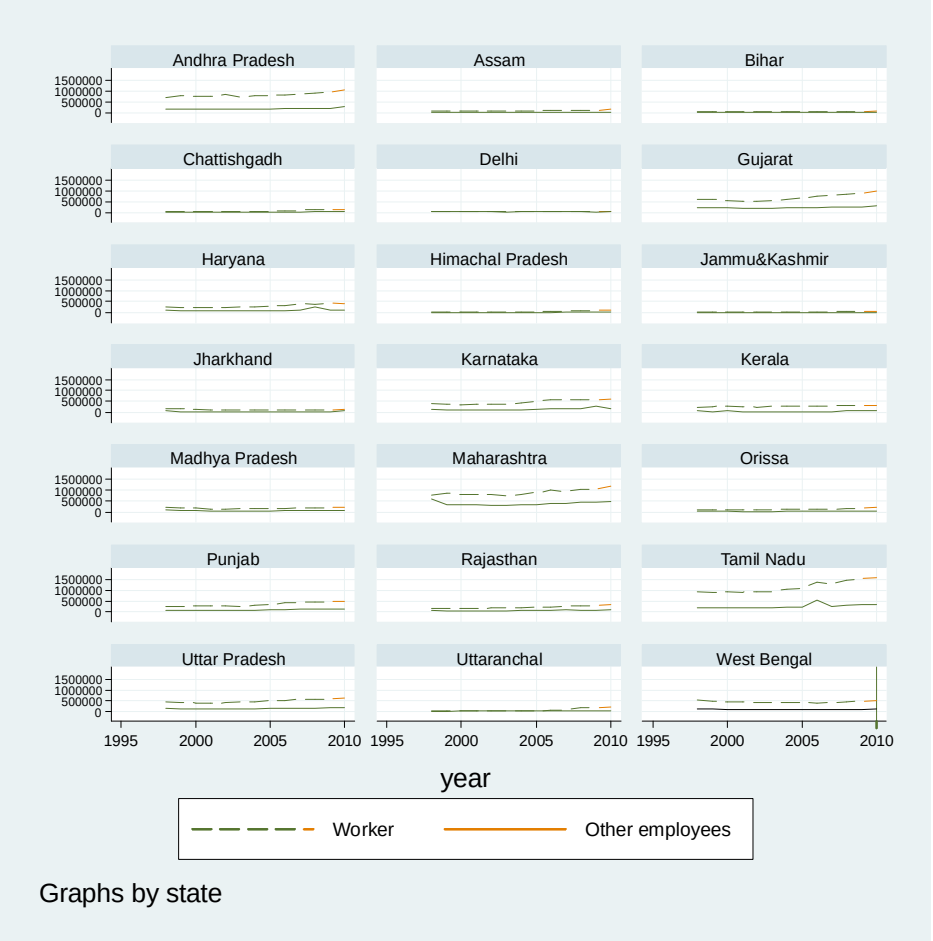
Figure 1 : Output and GVA in registered manufacturing



Source: As for Table 1

Figure 2 : Number of workers and other employees in registered manufacturing



Source: As for Table 1

Table 1 : Share of states in gross output (at constant 1993-94 prices) by factory sector in India

States	2001-02	2005-06	2010-11
Andhra Pradesh	6.8	6.2	7.4
Assam	1	1.3	0.9
Bihar *	2.8	3.1	2.8
Gujarat	15.1	16.1	17.2
Haryana	4.7	4.5	4.6
Himachal Pradesh	0.6	0.9	1.5
Jammu & Kashmir	0.2	0.4	0.4
Karnataka	5.5	6.9	6.1
Kerala	2.6	2.3	1.8

Table 1 : Share of states in gross output (at constant 1993-94 prices) by factory sector in India (Contd)

States	2001-02	2005-06	2010-11
Madhya Pradesh**	5.1	4.2	4.2
Maharashtra	19.3	19.6	16.8
Orissa	1.4	1.5	2.0
Punjab	3.8	3.1	3.2
Rajasthan	3.2	2.8	3.2
Tamil Nadu	10.2	10.0	10.1
Uttar Pradesh***	7.6	7.0	8.6
West Bengal	4.4	4.3	4.4
C.V.	**0.95**	**0.97**	**0.92**

Source: *Annual Survey of Industries Time Series data*, and *Annual Series (Volume 1)*, Central Statistical Organisation, Government of India.

Note: Figures shown in the Table are in percentage to all India total.

* includes Jharkhand, ** includes Chhattisgarh, *** includes Uttaranchal

Table 2 : Changes in selected structural ratios: 1998-2010

States	Capital labour ratio				Share of worker to total employee (%)				Wage per employee (Rs. lakh)			
	1998	2002	2006	2010	1998	2002	2006	2010	1998	2002	2006	2010
Andhra Pradesh	9.7	5.7	7.3	14.6	82	84	84	79	0.37	0.42	0.46	0.6
Assam	7.4	5.4	9.9	9	84	84	86	85	0.33	0.38	0.40	0.51
Bihar	5.3	7.0	9.3	7.9	82	82	84	86	0.44	0.46	0.37	0.45
Chhattisgarh	6.2	25.6	9.8	12.8	75	69	75	75	1.25	1.14	1.11	1.09
Delhi	3.1	5.6	6.8	2.8	69	66	69	65	0.59	0.70	0.75	0.93
Gujarat	18.2	21.3	24.5	18	74	73	75	77	0.56	0.70	0.73	0.84
Haryana	5.7	10.4	9.8	7.4	73	72	77	78	0.62	0.77	0.78	0.92
Himachal Pradesh	16.4	19.5	25.5	18.1	76	73	75	77	0.63	0.63	0.78	0.87
Jammu and Kashmir	2.2	3.2	6.0	8.8	77	78	80	80	0.53	0.47	0.45	0.51
Jharkhand	9.6	16.5	21.9	19.1	75	76	77	68	0.95	1.26	1.30	1.27
Karnataka	12.7	11.5	12.4	10.6	74	75	78	78	0.62	0.71	0.75	0.94
Kerala	5.7	4.2	5.1	5.3	81	84	86	86	0.45	0.49	0.49	0.54
Madhya Pradesh	14.7	11.9	16.1	13.2	70	76	76	75	0.48	0.68	0.71	0.81
Maharashtra	6.4	12.9	17.9	8.5	58	70	71	71	0.77	0.92	1.04	1.15
Orissa	15.4	16.3	26.0	33.7	67	77	76	81	0.6	0.85	0.83	0.91
Punjab	6.8	5.5	6.8	7.5	79	78	80	79	0.46	0.49	0.50	0.53
Rajasthan	10.6	10.6	10.5	12	74	77	78	78	0.55	0.58	0.59	0.7
Tamil Nadu	8	5.8	8.4	8	81	82	82	82	0.47	0.51	0.55	0.68
Uttar Pradesh	16.5	11.6	11.9	8.6	73	75	77	77	0.6	0.61	0.64	0.77
Uttaranchal	8.4	13.5	13.6	12.5	79	67	75	81	0.49	1.06	0.80	0.71
West Bengal	2.9	7.6	9.5	9.1	80	79	82	81	0.63	0.70	0.69	0.74
All India	**9.1**	**10.2**	**12.6**	**11.8**	**75**	**77**	**78**	**78**	**0.59**	**0.66**	**0.69**	**0.78**
C.V.	**0.53**	**0.55**	**0.52**	**0.56**	**0.08**	**0.07**	**0.06**	**0.07**	**0.34**	**0.35**	**0.34**	**0.29**

Source: As for Table 1

Table 3 : Changes in labour productivity: 1998-2010

States	Productivity of workers				Productivity of other employees			
	1998	2002	2006	2010	1998	2002	2006	2010
Andhra Pradesh	6.2	8.5	12.3	15.3	28.1	43.6	66.0	75.9
Assam	7.5	8.6	19.9	17.9	38.9	45.7	117.5	97.9
Bihar	7.4	13.1	25.2	23.6	32.7	59.7	136.0	131.5
Chhattisgarh	12.7	19.6	30.4	35.8	38.0	42.7	93.0	108.8
Delhi	15.8	19.8	20.1	23.7	34.5	39.1	44.0	54.5
Gujarat	16.5	28.3	39.3	44.3	48.2	77.2	120.6	146.8
Haryana	11.1	21.9	24.0	23.4	30.3	57.6	81.1	89.7
Himachal Pradesh	14.3	22.9	35.9	30.9	44.6	62.3	107.6	105.4
Jammu and Kashmir	9.1	8.1	18.5	18.3	30.1	29.2	71.8	92.4
Jharkhand	10.3	15.8	31.3	39.2	31.2	51.3	102.5	112.8
Karnataka	9.4	15.1	22.5	24.5	27.0	45.5	78.2	47.3
Kerala	7.8	9.3	12.8	30.2	34.2	50.5	77.8	189.4
Madhya Pradesh	12.1	24.2	25.5	25.5	28.7	75.3	81.5	75.6
Maharashtra	17.2	22.2	36.3	36.0	24.1	52.4	87.3	84.8
Orissa	9.3	15.0	21.7	21.5	19.2	51.1	69.7	101.3
Punjab	11.0	14.0	14.5	15.9	40.2	49.5	57.4	63.3
Rajasthan	12.3	17.5	20.4	21.6	34.7	58.6	72.6	78.9
Tamil Nadu	7.4	10.5	14.6	15.0	32.0	47.4	67.3	66.2
Uttar Pradesh	11.1	17.5	20.3	23.4	30.5	51.4	68.7	80.6
Uttaranchal	7.7	19.1	24.8	25.8	29.5	38.5	76.1	97.5
West Bengal	5.3	10.1	16.5	20.7	22.0	39.0	72.9	91.1
All India	**10.7**	**16.2**	**22.9**	**25.0**	**30.7**	**53.7**	**82.6**	**86.9**
C.V.	**0.32**	**0.36**	**0.34**	**0.32**	**0.22**	**0.23**	**0.27**	**0.34**

Source: As for Table 1

Table 4 : Growth rates of factory units, output, capital and labour: 1998-2010

States	Number of factories	Real output	Real fixed capital	Worker	Other Employee
Andhra Pradesh	3.7***	11.2***	10.1***	2.5***	3.8***
Assam	4.8***	12.0***	7.6***	3.4***	2.5***
Bihar	3.4***	13.0***	5.7***	3.9***	0.7
Chhattisgarh	5.0***	14.3***	10.6***	6.1***	4.8***
Delhi	-0.8	4.2***	1.7**	0.1	-0.3
Gujarat	1.6*	12.6***	7.1***	4.8***	3.2***
Haryana	1.8***	10.7***	7.6***	6.4***	4.6**
Himachal Pradesh	12.7***	19.8***	17.4***	13.3***	12.6***
Jammu and Kashmir	7.3***	21.6***	20.3***	9.1***	6.8***
Jharkhand	3.6***	8.7***	5.2***	-2.1***	0.1***
Karnataka	2.7***	13.0***	6.9***	4.9***	4.8***
Kerala	2.7***	9.6***	2.5***	2.8***	0.5
Madhya Pradesh	1.3**	5.9***	3.6**	1.1	0.3
Maharashtra	1.6*	9.7***	7.0***	2.9***	1.1*
Orissa	3.0***	14.3***	16.7***	7.1***	2.9*
Punjab	4.8***	8.7***	7.7***	5.9***	5.2***
Rajasthan	3.5***	10.0***	5.6***	5.8***	4.2***
Tamil Nadu	3.6***	10.6***	8.0***	5.5***	5.5***
Uttar Pradesh	1.9***	9.7***	1.5*	3.8***	1.8**
Uttaranchal	12.1***	27.2***	25.2***	18.9***	16.1***
West Bengal	1.3**	11.0***	7.3***	-0.3	-1.4**
All India	**3.9*****	**12.3*****	**8.8*****	**5.0*****	**3.8*****

Note: Growth rates are calculated by estimating log linear trend in percentage form. The values of fixed capital and output are in real terms (at 1993-94 prices). *significant at 10% level, **significant at 5 % level, ***significant at 1% level, the rest are statistically insignificant

Source: As for Table 1

Table 5 : Growth rates of profit rate, productivity of workers, real wage and real gross value added: 1998-2010

States	Profit rate	Productivity of workers	Real wage	Real GVA
Andhra Pradesh	0.7***	12.9***	6.7***	11.7***
Assam	-0.4***	13.1***	5.9***	7.7***
Bihar	0.4***	14.1***	1.8***	7.1***
Chhattisgarh	0.8***	12.9***	5.4***	13.1***
Delhi	-0.2***	8.6***	3.1***	1.5***
Gujarat	0.4**	12.6***	7.0***	10.1***
Haryana	0.2*	9.0***	7.9***	9.7***
Himachal Pradesh	1.6***	11.0***	16.6***	22.7***
Jammu and Kashmir	1.4***	17.3***	8.9***	25.4***
Jharkhand	0.4	14.6***	1.1	6.6***
Karnataka	0.5***	12.4***	7.5*	11.0***
Kerala	-0.3**	11.5***	3.1**	2.6***
Madhya Pradesh	0.5***	9.4***	3.8***	6.3***
Maharashtra	0.7***	11.8***	5.3***	10.0***
Orissa	1.4***	12.7***	9.0***	15.3***
Punjab	0.0***	7.4***	6.6***	7.3***
Rajasthan	0.5***	9.0***	6.7***	9.2***
Tamil Nadu	0.2***	9.5***	8.1***	9.4***
Uttar Pradesh	0.3***	10.7***	5.3***	7.2***
Uttaranchal	2.0***	13.5***	19.2***	30.7***
West Bengal	0.7***	16.0***	-0.2	6.8***
All India	**0.6*****	**11.9*****	**6.6*****	**11.0*****

Note: Growth rates are calculated by estimating log linear trend in percentage form. *significant at 10% level, **significant at 5 % level, ***significant at 1% level, the rest are statistically insignificant.

Source: As for Table 1