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EMPLOYMENT GROWTH, EDUCATION AND SKILLS IN INDIA: EMERGING PERSPECTIVES

M. Satish Kumar and Partha Pratim Sahu*

Using the employment and unemployment panel data of the National Sample Survey Organisation (NSSO), this paper attempts to map the spatial and temporal dimension of skills and education profiles of India's workforce. After an assessment of India's employment challenge, this study analyses the changing pattern of skill distribution among Indian workers by their gender, location, type, regions and broad sectors of the economy. The paper draws on the emerging literature and presents its empirical data to outline the essential skill and educational characteristics of workers, and its variations across broad sectors of the economy at both the national and sub-national levels.

Key words: Skill, Education, Job, Rural–Urban, India, Neo-liberalism

I. INTRODUCTION

The phenomenal economic performance of India and China has attracted tremendous interest across wide academic and policy circuits. Today, the citizens' obsession with the 'growth first' (Peck, 2001, p. 394; see also Peck and Tickell, 2002) mantra has reached a frenzied climax, whereby every dip in the proclaimed forecast of GDP growth is keenly observed by all and sundry, thereby reinforcing the neo-liberal adage of achieving faster growth under any circumstances. An oft-repeated rhetoric that has followed this line of reasoning has been that of 'inclusive growth', a catchall phrase used by commercial and financial mandarins, which appears to be well-meaning in terms of intention, but delivers little by way of actual implementation. The purported inclusivity remains limited when increasing inequalities between rural and urban spaces, or between the corporate/capital class and the labourers, are being addressed. It neither engages with widening regional divergences, nor facilitates the establishment of jobless economic growth in all its glory. The naturalisation of the neo-liberal agenda has been comprehensively dissected in all its multi-layered facets (Agnew, 2009; Peck and Tickell, 2002; Peck, 2001; Harvey, 2007; Chandrasekhar and Ghosh, 2002; Harriss, 2001; Bhaduri, 2005; Ahmed, 2012; Hirway, 2012). As Agnew (2009, pp. 215-16) notes, "...a range of other modes of economic interaction and political regulation have also been at work alongside the trend towards neo-liberal globalisation". This is clearly highlighted by Ahluwalia's (2002) 'gradualism' of economic reforms in India.

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There has been a re-territorialisation of economic authority across the federal states, demanding greater piece of the central 'cake', which seems to jeopardise the managed elements of neo-liberal polity beyond the Washington Consensus. Thus, neo-liberalism as a political and economic project remains firmly entrenched in the Indian context, where there is a gradual shift towards a Beijing Consensus away from the Washington Consensus. As Peck and Tickell (2002, p. 400) note, "...neo-liberalism is qualitatively different from competing regulatory projects and experiments: it shapes the environments, contexts, and frameworks within which political-economic and socio-institutional restructuring takes place". Since 1993, there has been a flurry of research papers on India, tracking and explaining the trajectory of economic growth and outstanding challenges that remain unfulfilled (Rodrik and Subramanian, (2004). Today, the primary demand is for a return to high growth and faster jobs creation.

The first strand of research included: Vashishtha, 1993; Filmer and Pritchett, 1999; and Zagha, 1999, whose work identified the key challenges in the Indian labour market, that is, those of educational bottlenecks and endemic poverty. Likewise, Banerjee and Duflo, 2000, provided new insights into the emergence of the software revolution, while Vijaybhaskar, *et al.*, 2001, presented empirical evidence on the skill premium, which acted as a barrier for non-engineering graduates in their attempts to seek employment opportunities in the Indian labour market. The second strand related to works by Kingdon and Unni, 2001; and Kingdon, 2007, which identified the ways in which wage returns to education increase with the level of education. In other words, the wage-education relationship provides a convex scenario. This period also witnessed increased engagement with issues of human capital and skill shortages, and various means for improving technical skills in the labour market (Agarwal and Naqvi, 2002; Aggarwal, 2004; Chadha, 2003; Mathur and Mamgain, 2002; V. Singh, 2002; C.S.K. Singh, 2003). The importance of appropriate skill development programmes in the new environment of liberalisation has been reinforced in the Indian context. Therefore, enhancing the skills of the national workforce through education and training has become a primary objective of economic policies aimed at developing global competitiveness.

The third strand of literature provides a disaggregated picture of regional and rural-urban variations in the context of rapid economic growth. These relate to the issues of skill premium and skill-biased technological changes observed across both the organised and unorganised sectors and of total factor productivity differentials. Rising wage inequality has been an area of concern, especially in terms of its impact on wealth distribution and poverty remediation in the organised and unorganised sectors of the economy (Amin and Mattoo, 2008; Asadullah and Yalonetzky, 2012; Asuyama, 2012; Azam, 2012; Basu, 2008; Cain, *et al.*, 2010; Chamarbagwala, 2006; Das and Zajonc, 2008; Dougherty, 2008; Ghani, *et al.*, 2012; Hirway, 2012; Kijima, 2006; Kochhar, *et al.*, 2006; Kotwal, *et al.*, 2011; and Kumar and Subramanian, 2012).

The generic conclusion that has emerged is that the shift of labour from the low productive agriculture sector to the secondary and tertiary sectors has been lagging as compared to the corresponding shift in China or indeed in Thailand (Kochhar, *et al.*, 2006). Kijima (2006)

further elaborates this point when re-affirming the lack of labour allocation across sectors in the 1990s.

Given that 80 per cent of the new entrants to the workforce have no opportunity for acquiring skill training and advancement, the existing training capacity is only 3.1 million per annum as against 12.8 million people joining the labour market. This also needs to be matched with the large number of unorganised production centres, which account for a workforce of 395 million, constituting 86 per cent of the total workforce (Kumar, 2012). The pre-eminent concern in India today is that despite rapid economic growth, where on an average 13 million people in the age group of 16-59 years are anticipated to enter the labour market during the next four decades, the 'continuing jobless growth' of the last 15 years still maintains a stranglehold in the Indian context, crippling the redistributive aspect of growth (see Acharya, 2006; Bhalotra, 1998; Kochhar, *et al.*, 2006; Mehta, 2005). Even at the regional level, the fast-growing states in India are showing an increasing tendency towards a more advanced skill-intensive economy, spurred by private investments (Kochhar, *et al.*, 2006). Indeed, Rodrik and Subramanian (2005) further reiterate the fact that the states with a higher propensity for manufacturing capability have demonstrated higher growth performance during the post-1990 period. The shift of labour to the more productive, skill-intensive sector may not necessarily translate itself into higher employment growth. Indeed, the higher propensity to sub-contract production and even service activities to the unorganised sector helps in reducing the fixed and operating costs, and thereby in increasing the profit margins (Kotwal, *et al.*, 2011). Since the acceleration of economic reforms in 1991, employment growth in the manufacturing sector has been below par and a majority of the output growth has been manifested through capital-intensive firms (GoI, 2008; Krueger, 2007; Pieters, 2010).

There is a clear emergence of a paradox whereby the proliferation of contract labour among the organised sector in all spheres of the manufacturing and services industries in India has created a scenario in which "...net increases in employment [have] occurred exclusively in the least productive, unorganised and often informal part of the economy" (Kotwal, *et al.*, 2011). Dougherty (2008) states that during the period 2000-05, manufacturing employment was greatly absorbed by the additional capacity in the informal sector. There is now clearer evidence to show that the expansion of the informal sector and the concomitant casualisation of the Indian labour market can be attributed to the prevalence of restrictive labour legislations, which discriminate against size and prevent economies of scale, while reinforcing measures for trimming operational costs and increasing profit margins in a competitive space (Besley and Burgess, 2004; Dougherty, 2008; Kochhar, *et al.*, 2006). It is notable that the growth of the service sector in India has been productivity-led, and has been characterised by a higher output per worker with an increasing demand for skilled workers, which is reflected in premium wages (Pieters, 2010). This explains the 'jobless growth paradox'.

The objective of this paper is to map the spatial and temporal dimensions of the skill and education profiles of India's workforce. The analysis in the paper is intended to provide relevant inputs for policy-making and to raise issues for further research. This paper is distinct from

the recent works that have emerged on India and extends the debate to an understanding of the status of employment and unemployment in India, while firmly establishing the challenge of a 'jobless growth' scenario in the country despite its high economic growth. The remainder of the paper is organised as follows: Section II provides a brief discussion on the data issues. Section III describes the employment performance since the early 1970s, with a special focus on the post-reform period. Section IV discusses the education profile of the total population, including both workers and non-workers. Sections V and VI analyse the education profiles of the workers and their work participation rates, respectively, across different levels of education. Sections VII and VIII provide detailed estimates of the educational attainment of workers by their type, gender and location on the basis of unit level data from the National Sample Survey (NSS) labour market surveys. Section IX goes deeper and presents a regional analysis of the educational status of workers by the broad sectors of the economy. Section X concludes the paper, while presenting its key findings along with an indication of the broad policy measures needed to meet the employment challenges in the context of the changing skill profile of the Indian workforce.

II. DATA SOURCES: A NOTE

While acknowledging problems pertaining to the availability of data, we do not dwell on their inadequacies. Instead, we attempt to tease out the broad patterns. The data used in this study comes from the Employment and Unemployment Schedule of the Indian National Sample Survey Organisation (NSSO), administered nationally by the Government of India. The Employment and Unemployment Schedules are conducted every five years in four sub-rounds, each with duration of three months. We use the six thick rounds of the NSSO data to cover the period, during the pre- and post-economic reforms period; that is, 1983, 1987-88, 1993-94, 1999-2000, 2004-2005 and 2009-2010. While the greater focus is on workers, we also briefly include non-workers in this analysis. The employment-unemployment data provides the most comprehensive source of information on the changing labour market in India. All estimates presented in this paper are based on the Usual Principal Activity Status (UPS), unless otherwise indicated. The status of activity on which a person spends a relatively longer time during the preceding 365 days from the date of the survey is considered as the principal status activity of the person.

In the NSS reports, employment is characterised into three types: self-employed, regular salaried jobs, and casual labour. People who operate their own farm or non-farm enterprises or are independently engaged in a profession on their own account or under a partnership are deemed as self-employed. Employees working on a regular basis on farms or at non-farm enterprises owned by others (that is, not on the basis of the daily or periodic renewal of a work contract) are defined as 'regular salaried workers'. Finally, those who are casually engaged on farms or at non-farm enterprises owned by others and who earn wages according to the terms of a daily or periodic work contract are classified as 'casual labourers'. The NSSO provides information on the levels of education for 13 different categories. In order to map the levels of skill and education of the workers, we have converted (re-grouped) these

13 categories into five broad groups or levels of education, that is, Not Literate, Literate up to the Middle Level, Literate up to the Secondary Level, Graduates and Above, and Literate up to the Secondary Level and Above.

III. THE EMPLOYMENT SITUATION IN INDIA: LONG-TERM AND POST-REFORM PERFORMANCE

An analysis of the employment data collected during the various quinquennial surveys conducted by the NSSO in their 27th to the latest 66th rounds is presented in Table 1. It suggests that along with the decline in population, the growth rate of the labour force based on the Usual Principal and Subsidiary Status (UPSS) has also been continuously declining from 2.94 per cent during the period 1972-73 to 1977-78 to 1.10 per cent during the period 1993-94 to 1999-2000. However, during the periods 1972-73 to 1977-78 and 1987-88 to 1993-94, the growth rate of the labour force was higher than that of the population. The growth rates of employment also followed a similar pattern though they remained less than the growth rates of the labour force except for the periods 1977-78 to 1983, 1987-88 to 1993-94, and 2004-05 to 2009-10. However, it clearly emerges from Table 1 that employment growth has been decelerating rapidly, and that during the last period, that is, 2004-05 to 2009-10, it even went down to only 0.22 per cent per annum. Thus, faster economic growth during the post-liberalisation era has not been accompanied by sufficient employment opportunities for the growing population of the country.

On the contrary, employment in absolute terms increased from 374.4 million in 1993-94 to 398.4 million in 1999-2000, signifying a rise of 1 per cent per annum. During the period 1999-2000 to 2004-05, it rose at a rate of 2.81 per cent per annum, while the population grew at a rate of 1.71 per cent. The acceleration in the growth rate in employment during this period was primarily due to a sharp rise in self-employment and expansion in unorganised sector employment, which are characterised by low wages. Therefore, a lot of doubt has been cast on the quality of this employment growth. Even with a high rate of employment growth, unemployment rates (by any measures) in 2004-05 were higher than the corresponding rates in 1999-2000 and real wages also declined during the period 1999-2000 to 2004-05 (Papola and Sahu, 2012; Unni and

Table 1
Annual Rate of Growth of Population, Labour Force and Employment

<i>(Percentage)</i>			
<i>Period</i>	<i>Population</i>	<i>Labour Force (UPSS)</i>	<i>Employment (UPSS)</i>
1	2	3	4
1972-73 to 1977-78	2.18	2.94	2.61
1977-78 to 1983	2.21	2.06	2.19
1983 to 1987-88	2.13	1.73	1.53
1987-88 to 1993-94	2.06	2.24	2.39
1993-94 to 1999-2000	1.97	1.10	1.04
1999-2000 to 2004-05	1.71	2.85	2.81
2004-05 to 2009-10	1.65	0.15	0.22

Source: Authors' own estimates based on various rounds of NSS data on employment and unemployment.

Raveendran, 2007). The results of the last NSSO Round (2009-10) suggested a near-stagnation of employment during the period 2004-05 to 2009-10. The deceleration in the growth rate in employment is primarily due to a decline in the labour force participation rate (LFPR) during 2009-10 as compared to the previous period. The decline in the LFPR during the period 2004–05 to 2009-10 has been attributed to many factors, especially an increase in the rate of school enrolment, among others. A decomposition of the decline in LFPR by factors indicated that 44 per cent of the prospective workers did not join the labour force or withdrew from it due to reasons pertaining to education while 31 per cent did not join or withdrew due to domestic and personal reasons. Nearly 15 per cent of the child workers withdrew from the labour market during this period (Rangarajan, *et al.*, 2011).

Table 2
Total Employment and Organised Sector Employment

Sector	Number (in million)				Growth rate (per cent per annum)		
	1994	2000	2005	2010	1994/ 2000	2000/ 2005	2005/ 2010
1	2	3	4	5	6	7	8
1. Total Population	894.2	1005.3	1094.0	1187.1	1.97	1.71	1.65
2. Total Labour Force	381.6	407.4	468.8	472.4	1.10	2.85	0.15
3. Total Employment	374.4	398.4	457.6	462.6	1.04	2.81	0.22
4. Organised Sector employment	27.4	28.0	26.5	28.3	0.34	-1.10	1.35
(i) Public sector	19.4	19.3	18.0	17.5	-0.09	-1.38	-0.56
(ii) Private sector	7.9	8.6	8.5	10.8	1.43	-0.23	4.91

Notes: 1. The total labour force and employment figures are based on the Usual Principal Plus Subsidiary Status (UPSS).

2. The organised sector employment figures are as reported in the Employment Market Information System of the Ministry of Labour, Government of India, and pertain to the 1st of March of the years 1994, 2000, 2005 and 2010.

Source: Authors' own estimates based on the Economic Survey (various years) and various rounds of NSS data on employment and unemployment.

The trends in organised sector employment, especially in the public sector, show a decline during the recent period. It is clear from Table 2 that public sector employment, which constituted nearly 70 per cent of the total organised sector employment in 1994, significantly declined from 19.4 million to 17.5 million in 2010. This decline may be attributed to the persistent disinvestment policies and many other structural adjustment programmes. Although private sector employment has been increasing over the years, this increase has been slow and not sufficient enough to compensate for the decline in public sector employment. The private sector has, therefore, not been able to absorb the millions of unemployed in the country. Thus, the overall deceleration in employment, coupled with a further contraction in the organised sector, is a matter of serious concern for the Indian economy. The problem is more acute for the educated unemployed because of the contraction of organised sector employment and the increasing number of educated persons, resulting in a mismatch between skills and jobs. Given this background, it would be pertinent to analyse the trends and

composition of employment for various categories of educated persons, including males and females in rural-urban settings at the macro level.

IV. EDUCATIONAL LEVEL OF THE POPULATION

The level of educational attainment of a country determines the quality of its population and its employment and employability prospects. Before discussing the educational attainment of the population, it would be useful to examine the changes in literacy rates over time that affect the number of literate people among the population.

Table 3 presents the literacy rates (that is, the percentage of literates) by gender since the 38th Round of the NSS, that is, since 1983, for rural and urban India. The table shows that over the years, literacy rates have significantly improved in both rural and urban India. While the rural male literacy rate went up from 44.9 per cent in 1983 to 70.6 per cent in

Table 3
Literacy Rate (per cent) by Gender and for Rural and Urban Areas

<i>Period/ NSS Round</i>	<i>Rural</i>		<i>Urban</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
1	2	3	4	5
1983 (38 th)	44.9	21.9	69.3	51.5
1987-88 (43 rd)	48.4	26.0	71.9	55.6
1993-94 (50 th)	54.5	32.1	75.9	61.6
1999-2000 (55 th)	58.8	38.5	78.4	65.7
2004-05 (61 st)	63.6	45.0	80.5	69.3
2009-10 (66 th)	70.6	53.4	83.6	73.6

Source: Same as for Table 1.

2009-10, the rural female literacy went up from a low 21.9 per cent to more than 50 per cent during the period under study. However, the literacy rates are substantially higher for males as compared to females in both rural as well as urban areas. Another important aspect revealed by Table 3 is that literacy levels for both males and females in rural areas grew faster during the period 2004-05 to 2009-10 as compared to the corresponding rates in urban areas during the same period. In urban areas, a rapid improvement in these rates for both males and females occurred during the period 1987-88 to 1993-94. The increase in the female literacy levels was higher than those for males during the period 1983 to 2009-10 in both rural as well as urban areas. During the last 27 years, male literacy rates improved by 26 and 14 percentage points in rural and urban areas, respectively, whereas the corresponding female literacy rates increased by 32 and 22 percentage points, respectively.

It is also important to examine the distribution of persons by different levels of their educational attainment. Table 4 presents the distribution of persons of all ages by four different educational categories, namely, 'not literates', 'Literate up to the Primary Level', 'Literate up to the Middle Level', and 'Literate up to the Secondary Level and Above' for all-India during the years 1983 and 2009-10. It is clear from the table that the proportion of educated workers (defined as having attained an educational level of secondary and above) has increased in all categories during a span of 27 years. The proportions of educated

Table 4
Percentage Distribution of Persons by General Education Levels

<i>Locale/Gender/ Period</i>	<i>Not Literate</i>	<i>Literate Up to the Primary Level</i>	<i>Middle Level</i>	<i>Secondary Level and Above</i>
1	2	3	4	5
<i>Rural Males</i>				
1983	55.0	31.2	8.5	5.2
1987-88	51.6	32.5	9.0	6.9
1993-94	45.5	33.7	10.9	9.8
1999-2000	41.2	34.2	12.6	11.7
2004-05	36.4	36.1	14.0	13.4
2009-10	29.4	35.7	16.0	18.8
<i>Rural Females</i>				
1983	78.0	17.3	3.2	1.4
1987-88	74.0	19.9	3.9	2.2
1993-94	67.9	23.0	5.6	3.4
1999-2000	61.5	26.0	7.5	5.0
2004-05	55.0	29.3	8.9	6.7
2009-10	46.7	31.8	11.1	10.3
<i>Urban Males</i>				
1983	30.5	34.4	14.5	20.4
1987-88	27.7	35.7	13.5	22.9
1993-94	24.1	33.2	14.5	28.1
1999-2000	21.6	30.9	15.6	31.7
2004-05	19.5	30.0	16.0	34.5
2009-10	16.4	27.4	15.0	41.1
<i>Urban Females</i>				
1983	48.3	30.3	10.2	11.0
1987-88	44.1	31.9	9.7	14.0
1993-94	38.4	31.0	11.8	18.7
1999-2000	34.3	29.9	13.2	22.5
2004-05	30.7	29.4	14.4	25.5
2009-10	26.4	27.0	13.6	32.8

Source: Same as for Table 1.

persons are much higher for the urban areas as compared to rural areas. The rising share of educated persons is bound to have an impact on the quality of the workforce. However, the decelerating trend in employment witnessed during the last two decades throws up immense challenges for these groups in terms of their entry into the labour market and their prospects of getting suitable and financially rewarding employment.

V. USUAL ACTIVITY STATUS BY LEVEL OF EDUCATION

Table 5 presents the distribution of the usually employed (aged 15+ years) by the level of education at the all-India level. It is clear from the table that in 1983, more than half the male workers in the rural areas belonged to in the category of 'Not Literates'. Another

40 per cent were semi-literates, that is, those who had acquired education only 'up to the primary or middle standard'. Only 7.2 per cent had acquired education up to the secondary level and above, and these are generally described as 'educated workers'. However, a bare 1.3 per cent of the rural workers during 1983 had attained an education level of 'Graduates and Above', which constitutes a part of the 'educated workers'. It has been found that the share of 'Not Literates' declined to 40 per cent by the year 1999–2000, and then to 26 per cent in 2009–10. The decline seems to have been sharper during the post-1993–94 period as compared to the earlier period due to the rising literacy rates. Correspondingly, there was also a significant increase in the semi-literate category from around 40 per cent in 1983 to 43.5 per cent in 1999–2000 and 45.8 per cent in 2009–10. This increase was quite impressive in the category of 'Literate up to the Secondary Level and Above', which went up from 7.2 per cent in 1983 to 16.5 per cent in 1999–2000, and then to 27.2 per cent in 2009–10. This became possible due to the availability of better and improved educational infrastructure.

However, in case of rural females, a predominance of the 'Non-literate' category has been observed. Rural females constituted around 87 per cent of the usually employed workers in 1983, with the figure declining to 75.3 per cent during the year 1999–2000, signifying a decline of around 11.7 percentage points during a span of around 17 years due to a higher rate of increase in female literacy in the rural areas. During the next ten years, it further declined from 75 to 50 per cent. It may be pointed out that literacy rates were lower among the females, in general, and rural females, in particular. On the other extreme, there were very few, that is, only 1 per cent of the rural female workers, who were 'educated' or who had studied 'up to the Secondary Level and Above', and their share increased to 3.8 per cent by 1999–2000, and again increased by nearly four times in 2009–10.

In contrast, urban workers are relatively more qualified as compared to rural workers, in the case of both males and females. Table 4 shows that only 22.6 per cent of the urban male workforce was 'Not Literate' in 1983, and that its share further declined to 16.1 per cent by 1999–2000, signifying a decline of around 6 percentage points during the study period. During the period 1999–2000 to 2009–10, this figure further declined to 10.4 per cent. However, there has been a consistent rise in the share of the workforce under the category of 'Literate up to the Secondary Level and Above', that is, the category of educated workers, which rose from 29.1 per cent in 1983 to 43 per cent in 1999–2000, thereby accounting for an increase of around 14 percentage points (or a little less than 1 per cent point per annum). During the next decade (2000 to 2010), it increased by almost 1 per cent point per annum. The improvement in levels of education witnessed during the period 2000–2010 seems to have been far greater than the corresponding improvement during the period 1983 to 1999–2000.

Comparatively, the illiteracy levels (that is, the figures in the 'Non-literate' category) among urban female workers account for a much higher share as compared to urban males; however, they are substantially lower for urban males than their rural counterparts. The illiteracy figure was as high as 60.3 per cent in 1983, which declined to 43.7 per cent by 1999–2000, and then to 23.6 per cent by 2009–10, showing a decline of 37 percentage points during the 27-year period (or a decline of almost 1.3 per cent per annum). However,

Table 5
Percentage Distributions of the Usually Employed (15+) by Education Category

<i>Locale/Gender/ Period</i>	<i>Not Literate</i>	<i>Up to the Primary Level</i>	<i>Middle Level</i>	<i>Secondary Level</i>	<i>Higher Secondary Level</i>	<i>Graduate and Above</i>	<i>Secondary Level and Above</i>
1	2	3	4	5	6	7	8 (5+6+7)
<i>Rural Males</i>							
1983	52.9	29.4	10.5	5.9	0.0	1.3	7.2
1987-88	49.8	29.9	10.9	7.5	0.0	1.8	9.3
1993-94	44.4	29.4	13.4	7.2	3.1	2.5	12.8
1999-2000	40.0	27.4	16.1	9.2	4.1	3.2	16.5
2004-05	34.2	29.6	18.0	9.0	4.4	3.8	17.2
2009-10	26.0	25.3	20.5	14.7	8.0	4.5	27.2
<i>Rural Females</i>							
1983	87.0	10.1	1.8	0.8	0.0	0.2	1.0
1987-88	84.8	11.0	2.4	1.4	0.0	0.3	1.7
1993-94	79.9	13.8	3.7	1.6	0.6	0.5	2.7
1999-2000	75.3	15.1	5.7	2.4	0.7	0.7	3.8
2004-05	67.8	18.1	8.0	3.3	1.3	1.0	5.6
2009-10	49.8	21.9	13.5	8.2	4.2	2.0	14.4
<i>Urban Males</i>							
1983	22.6	30.6	17.6	19.2	0.0	9.9	29.1
1987-88	20.5	31.0	15.8	21.0	0.0	11.5	32.5
1993-94	18.5	26.0	17.3	15.3	8.6	14.3	38.2
1999-2000	16.1	22.0	18.8	16.9	9.3	16.8	43.0
2004-05	13.2	22.9	19.4	14.9	9.1	17.0	41.0
2009-10	10.4	16.0	17.5	19.5	13.9	19.8	53.2
<i>Urban Females</i>							
1983	60.3	17.9	5.2	9.6	0.0	6.8	16.4
1987-88	54.5	18.5	5.7	11.2	0.0	10.0	21.2
1993-94	48.3	18.5	7.4	7.8	5.2	12.6	25.6
1999-2000	43.7	17.1	9.4	8.7	5.9	15.2	29.8
2004-05	37.6	19.8	10.6	6.9	5.0	16.4	28.3
2009-10	23.6	17.2	15.3	15.9	12.1	14.6	42.6

Source: Same as for Table 1.

there was an impressive increase in the category of 'Literate up to the Secondary Level and Above', that is, the educated workforce, from 16.4 per cent in 1983 to 29.7 per cent in the year 1999-2000, and further to 42.6 per cent in 2009-10. In short, the quality of the urban workforce is distinctly better than that of the rural workforce.

VI. EDUCATION-SPECIFIC WORKER POPULATION RATIO

The proportion of persons aged 15 years and above, who are usually employed in a particular education category per hundred persons, is defined as the education-specific Worker Population Ratio (WPR). The WPR varies with the education level. It is highest among the 'Not-Literates' and steadily falls as the education level increases. It is the least for those in

the category of 'Graduates and Above'. Table 6 shows that in the case of rural males, the overall WPR was 85.6 per cent in 1983, which declined to 82.9 per cent by 1999-2000, and then to 80.1 per cent in 2009-10. A decline has also been observed in the WPR in the case of 'Non-literates' among rural males from 91.0 per cent in 1983 to 89.1 per cent in 1999-2000, and then to 87.1 per cent in 2009-10. On the other extreme, there was an increase in the WPR in the category of 'Graduates and Above' from 77.4 per cent in 1983 to 80.2 per cent in 1999-2000, and an increase from 66.5 per cent at the secondary level in the year 1983, to 71.3 per cent in 1999-2000. Nonetheless, this increase was not enough to offset the declining trends in the WPR because non-literates continue to constitute a major segment of

Table 6
Education-specific Worker Population Ratio (%) for Persons Aged 15 Years and Above

<i>Locale/Gender/ Period</i>	<i>Not Literate</i>	<i>Up to the Primary Level</i>	<i>Middle Level</i>	<i>Secondary Level</i>	<i>Higher Secondary Level</i>	<i>Graduate and Above</i>	<i>All</i>
1	2	3	4	5	6	7	8
<i>Rural Males</i>							
1983	91.0	88.5	70.2	66.5	--	77.4	85.6
1987-88	90.2	87.0	68.8	66.4	--	76.6	83.9
1993-94	91.3	89.8	73.5	68.3	62.9	79.2	84.6
1999-2000	89.1	87.2	75.2	71.3	67.9	80.2	82.9
2004-05	88.7	88.7	78.1	69.9	66.4	81.8	83.0
2009-10	87.1	89.6	76.7	68.2	60.6	77.3	80.1
<i>Rural Females</i>							
1983	40.7	27.7	15.8	15.8	--	22.0	37.3
1987-88	41.4	27.4	17.6	17.5	--	25.0	37.3
1993-94	39.1	28.9	17.7	15.3	16.1	29.3	34.6
1999-2000	40.4	30.3	20.5	17.3	13.4	26.9	35.0
2004-05	41.6	32.7	25.3	20.4	16.9	28.5	35.9
2009-10	33.9	30.1	22.6	16.6	13.2	26.0	29.0
<i>Urban Males</i>							
1983	86.3	84.1	68.8	65.2	--	81.0	76.9
1987-88	85.5	82.7	66.2	64.5	--	79.9	75.4
1993-94	86.6	84.4	71.3	66.3	58.9	80.7	75.8
1999-2000	83.6	82.4	72.5	66.1	59.9	89.7	74.5
2004-05	82.4	85.1	75.0	66.2	59.1	78.5	75.2
2009-10	81.4	84.1	75.7	66.4	56.6	78.4	73.6
<i>Urban Females</i>							
1983	24.1	13.4	7.1	13.4	--	27.9	18.0
1987-88	23.0	13.2	8.1	12.5	--	29.7	17.5
1993-94	23.3	15.0	9.1	10.8	12.6	28.1	17.5
1999-2000	22.9	14.6	9.9	10.4	11.1	25.2	16.6
2004-05	25.0	18.6	11.7	9.5	10.3	26.5	18.5
2009-10	19.7	17.4	13.1	8.2	7.7	24.3	15.9

Source: Same as for Table 1.

the population in spite of the increasing literacy rates. In contrast, during the period 2000-2010, there were varying degrees of decline in the WPR at various education levels, except in the categories of 'Literate up to the Primary Level' and 'Literate up to the Middle Level'.

The WPR in the case of rural females is much lower as compared to the corresponding figure for their male counterparts. Overall, the WPR for rural females was only 37.3 per cent as compared to 85.6 per cent for rural males in the year 1983. It declined to 35.0 per cent by the year 1999-2000, and further to 29.0 per cent in 2009-10. The WPR, therefore, follows the same pattern as that for the 'Non-literates', which declined slightly from 40.7 per cent in 1983 to 40.4 per cent in 1999-2000, and then declined sharply to 33.9 per cent in 2009-10. There were moderate increases in the 'Literate' categories. However, in the case of the category of 'Graduates and above', it increased from 22.0 per cent in 1983 to 26.9 per cent in 1999-2000 but marginally declined to 26.0 per cent in 2009-10.

In the case of urban males, the overall WPR was 76.9 per cent in 1983, which declined to 74.5 per cent by the year 1999-2000, and then to 73.6 per cent in 2009-10. The WPR in the case of 'Not Literates' was the highest, that is, 86.3 per cent in 1983, which declined as the level of education increased. However, in the case of the category of 'Graduates and Above', it rose substantially from 81.0 per cent in 1983 to 89.7 per cent in 1999-2000, but witnessed a significant decline by 2009-10. Nevertheless, among the 'Non-literates', it declined over the years. Urban females show a lower WPR as compared to their rural counterparts. The WPRs are the highest even among the 'Non-illiterates', unlike in the case of the urban and rural males and rural females. Nonetheless, the WPRs in case of urban females for the category of 'Graduates and Above' declined over the years from 27.9 per cent in 1983 to 25.2 per cent by 1999-2000, and further to 24.3 per cent in 2009-10. The analysis clearly shows an overall contraction of the labour market as also the fact that it is moving towards the achievement of a qualitatively better composition. The following section provides a detailed analysis of the composition of the workforce in both rural and urban areas.

VII. COMPOSITION OF WORKERS BY GENERAL EDUCATION CATEGORY

Tables 7A and 7B present the composition of male and female workers, respectively, by the type of work for those aged 15 years and above, for each general education category by the Principal Usual Activity Status (UPS). Among the rural males, the 'Non-literates' were predominantly (51.37 per cent) engaged as self-employed during the pre-reform period of 1987-88 (that is, in the NSS 43rd Round), followed by casual workers (42.44 per cent). However, the continuous shift towards casual status is very distinctive during the post-reform periods, that is, the proportion of 'Not Literate' in casual employment increased from 42.44 per cent in 1987-88 to 48.50 per cent in 1999-2000, and further to 50.70 per cent in 2009-10. Even the opportunities for self-employment have declined over the years for the 'Non-literate' category (see Table 7A). The opportunities available for 'Non-literates' securing a regular source of employment were very limited during the pre-liberalisation phase and further tended to decline by 2009-10; their share in regular employment declined by 50 per cent from 6.19 per cent to 2.87 per cent during the period under discussion. Male workers

who had acquired a middle level of literacy were predominantly engaged as self-employed workers, but their proportion declined from 64.59 per cent in 1987-88 to 56.11 per cent in 2009-10. In contrast, the proportion of casual wage employment increased by around 10 percentage points during the period 1987-88 to 2009-10. On the other hand, regular employment opportunities, which were already low, tended to decline further during the given periods. However, male workers having completed secondary education are generally engaged as self-employed workers, and their number has been increasing marginally but consistently since 1987-88. It increased by 2 percentage points during 1999-2000 (that is,

Table 7A
Composition of (Male) Workers Aged 15 Years
and Above by General Education Category

Particulars	NSS Rounds	Rural				Urban			
		Self- employed	Regular	Casual	Total	Self- employed	Regular	Casual	Total
1	2	3	4	5	6	7	8	9	10
Not Literate	1987-88	51.37	6.19	42.44	100.0	44.51	24.40	31.09	100.0
	1993-94	50.49	3.76	45.75	100.0	44.09	21.91	34.00	100.0
	1999-2000	48.34	3.16	48.50	100.0	44.89	19.59	35.52	100.0
	2004-05	51.96	3.48	44.56	100.0	47.29	20.34	32.37	100.0
	2009-10	46.43	2.87	50.70	100.0	42.86	18.77	38.37	100.0
Literate up to the Middle Level	1987-88	64.59	9.66	25.75	100.0	44.50	39.90	15.59	100.0
	1993-94	62.35	7.68	29.97	100.0	43.64	36.95	19.41	100.0
	1999-2000	63.47	8.70	27.83	100.0	42.23	35.58	22.20	100.0
	2004-05	62.59	9.48	27.93	100.0	44.02	38.90	17.08	100.0
	2009-10	56.11	8.26	35.63	100.0	42.44	35.56	22.01	100.0
Literate up to the Secondary Level	1987-88	59.18	31.81	9.01	100.0	36.39	60.32	3.29	100.0
	1993-94	62.21	25.02	12.77	100.0	39.43	55.55	5.02	100.0
	1999-2000	61.56	21.81	16.63	100.0	40.83	52.49	6.68	100.0
	2004-05	67.90	16.12	15.98	100.0	49.85	42.28	7.86	100.0
	2009-10	63.18	11.88	24.94	100.0	44.93	44.17	10.89	100.0
Graduate and Above	1987-88	44.24	52.19	3.57	100.0	28.02	71.61	0.37	100.0
	1993-94	45.76	51.45	2.79	100.0	31.22	68.11	0.67	100.0
	1999-2000	50.07	45.29	4.63	100.0	36.13	63.08	0.79	100.0
	2004-05	60.93	35.04	4.04	100.0	41.74	57.36	0.90	100.0
	2009-10	51.49	42.14	6.37	100.0	33.76	64.76	1.48	100.0
Literate up to the Secondary Level and Above	1987-88	56.63	35.97	8.01	100.0	33.49	64.45	2.26	100.0
	1993-94	58.86	30.06	10.80	100.0	35.98	59.62	3.36	100.0
	1999-2000	58.73	26.07	14.17	100.0	38.98	56.62	4.38	100.0
	2004-05	65.16	23.27	11.57	100.0	44.35	51.96	3.95	100.0
	2009-10	61.16	19.82	19.02	100.0	40.04	54.18	5.77	100.0

Source: Same as for Table 1.

from 59.18 per cent to 61.56 per cent) and again by 2 per cent (63.18) in 2009-10. However, at the same time, the participation of male workers in regular employment was a little less than one-third of the total, thus showing a sharp decline. The share of rural male workers increased more sharply as compared to that of 'Not-literates' and of the category of 'Literate up to the Middle level' during the post-reform period (see Table 7A).

The rural male workers who had completed graduation were largely employed in regular jobs in 1987-88 followed by self-employed workers. It has been observed that the number of self-employed workers increased from 44.24 per cent in 1987-88 to 50.07 per cent in 1999-2000, and further to 51.49 per cent in 2009-10 due to shrinking job opportunities, especially

Table 7B
Composition of (Female) Workers Aged 15 Years
and Above by General Education Category

Particulars	NSS Rounds	Rural				Urban			
		Self- employed	Regular	Casual	Total	Self- employed	Regular	Casual	Total
1	2	3	4	5	6	7	8	9	10
Not Literate	1987-88	54.04	3.33	42.63	100.0	43.67	18.95	37.38	100.0
	1993-94	48.89	1.87	49.25	100.0	40.47	16.97	42.56	100.0
	1999-2000	48.33	1.68	49.99	100.0	42.63	19.11	38.25	100.0
	2004-05	61.09	1.45	37.45	100.0	50.50	20.79	28.71	100.0
	2009-10	48.64	1.68	49.68	100.0	38.42	24.14	37.44	100.0
Literate up to the Middle Level	1987-88	63.10	6.81	30.09	100.0	47.39	28.62	23.99	100.0
	1993-94	59.15	5.14	35.71	100.0	47.52	28.01	24.46	100.0
	1999- 2000	56.00	5.27	38.73	100.0	50.74	29.30	19.95	100.0
	2004-05	67.04	3.56	29.40	100.0	53.42	27.35	19.23	100.0
	2009-10	58.55	6.99	34.45	100.0	46.72	30.43	22.85	100.0
Literate up to the Secondary Level	1987-88	39.46	51.84	8.69	100.0	18.50	79.13	2.37	100.0
	1993-94	44.42	42.82	12.76	100.0	21.76	74.87	3.37	100.0
	1999- 2000	49.43	34.23	16.34	100.0	25.74	69.73	4.53	100.0
	2004-05	73.68	14.14	12.17	100.0	50.00	45.97	4.03	100.0
	2009-10	56.86	16.84	26.29	100.0	46.25	43.19	10.56	100.0
Graduate and Above	1987-88	20.67	79.33	0.00	100.0	9.91	89.82	0.26	100.0
	1993-94	21.68	78.32	0.00	100.0	12.94	86.62	0.43	100.0
	1999- 2000	20.68	72.90	6.42	100.0	16.68	82.72	0.60	100.0
	2004-05	43.65	55.42	0.93	100.0	24.53	75.09	0.38	100.0
	2009-10	24.74	73.53	1.73	100.0	14.21	84.89	0.90	100.0
Literate up to the Secondary Level and Above	1987-88	35.56	54.87	7.12	100.0	14.47	84.39	1.38	100.0
	1993-94	39.22	47.71	10.20	100.0	17.47	80.93	1.93	100.0
	1999- 2000	44.49	41.94	14.63	100.0	21.10	76.28	2.53	100.0
	2004-05	64.71	26.14	9.15	100.0	33.51	64.43	2.06	100.0
	2009-10	48.92	34.28	16.81	100.0	24.30	72.50	3.20	100.0

Source: Same as for Table 1.

in the regular/salaried employment category. Regular employment, despite being the largest category of employment for rural male graduates, had tended to decline throughout the post-reform period due to the paucity of regular jobs and the shrinking of government and public sector employment opportunities resulting from the implementation of liberalisation policies. Consequently, educated persons started seeking employment either as self-employed workers or by joining the ranks of casual workers. The emergence of casualisation of the workforce seems to have been an important phenomenon during the post-liberalisation period even for those having acquired higher levels of education.

In the case of rural female 'Non-literate' workers, more than half were self-employed in 1987-88, followed by casual workers. However, by 1999-2000, there was a decline in the number of workers in the self-employed category, and their share continued to remain at around 48 per cent in 2009-10 (see Table 7B). Very few people had access to regular jobs in the labour market, which have shrunk further since then. Casual wage employment has increased over the years by around 7 percentage points, which also suggests the increasing casualisation in the labour market. Those who had attained middle level education dominated the self-employed market, followed by casual employment, both of which have shown a tendency to increase, as in the 'Non-literate' category. However, the regular employment opportunities, which were already low, have further declined or remained stagnant. Among the rural female workers, especially for those who have attained the secondary level of education, there is a better distribution of employment with a majority of them being engaged as regular salaried workers, followed by self-employed and casual workers. The post-reform period does show a definite increase in the number of self-employed persons and a decline in regular employment. The increase in casual employment has been observed to occur at the expense of regular employment. The preference for regular jobs among a majority of the graduate rural female workers (79.83 per cent) is much higher than among their male counterparts (see Table 7B). This is followed by self-employment (20.67 per cent). It is clear that female graduates were generally not opting for casual jobs. In the post-reform employment scenario, however, more than 6 per cent of the female graduates have been dislodged from regular employment to the status of casual workers, as the labour market is shrinking.

To sum up, it has been seen that in the case of the rural workforce, a major concentration of workers is in the self-employed category except that in the category of 'Graduates and Above', wherein the workers concentrate only on getting regular jobs. However, in the categories of 'Not-literate' and 'Literate up to the Middle Level', the second preference goes to casual wage employment. This is because among those not educated up to the secondary level, only a few workers are able to get regular salaried jobs. Nevertheless, one finds that casualisation has tended to increase in all the educational categories during the post-liberalisation period. In contrast, regular wage employment has tended to decline for all educational categories due to the shrinkage of jobs in the government sector and the pursuit of disinvestment policies in the public sector. The improvement and modernisation of technology with a very low labour-capital ratio has also led to the further casualisation

of labour. Self-employment, though declining among the categories of 'Non-literates' and 'Literate up to the Middle Level', has shown an increasing trend among the educated workers, as they are not finding enough regular jobs. An analysis by gender reveals almost the same pattern. Casualisation has tended to increase during the post-liberalisation period and has become as important in the case of females as that of males.

Let us now turn to urban India. A gender-wise analysis suggests that a majority of urban males in the 'Not Literate' category were engaged as self-employed workers (44.51 per cent), followed by casual workers (31.09 per cent), and about 24.40 per cent were employed as regular employees in 1987-88 (see Table 7A). A clear trend of increasing casualisation and declining regular job opportunities has also been observed among the 'Not Literate' urban male workers. This is in sharp contrast to the pattern observed for rural male workers. The pattern for male workers having middle level of education is exactly the same as that for the 'Non-literates'. However, a larger number of those having a secondary level of education tend to be engaged in regular employment (60.32 per cent), followed by self-employment (36.39 per cent). Thus, while there has been an increase in self-employment and casualisation of the urban male workforce over the liberalisation period, regular wage employment opportunities have been shrinking during the corresponding period—the latter declined from 60.32 per cent in 1987-88 to 44.17 per cent in 2009-10. This pattern is also replicated for workers in the 'Graduates and Above' category. Nevertheless, the share of employment among regular salaried workers in urban areas is quite high as compared to the rural areas.

In the case of urban female workers, a majority of the 'Not Literate' women were engaged in self-employment (43.67 per cent), followed by casual employment (37.38 per cent), while around 19 per cent were employed in regular jobs in 1987-88 (see Table 7B). During the post-1990 period, there was a marginal decline in the share of workers in the self-employment category, and a corresponding increase in casual labour, with the share of regular salaried jobs remaining almost intact. However, during 2004-05, the proportion of self-employed increased significantly, offsetting the decline in casual employment. By 2009-10, the incidence of self-employment declined, while there was a marginal increase in regular employment and a significant increase in casual employment. Women belonging to the category of 'Literate up to the Middle Level' were also predominantly engaged as self-employed workers (47.39 per cent), followed by those in regular employment (28.62 per cent), while the remaining (23.99 per cent) were casual workers in 1987-88. By 1999-2000, there was an increase in the number of workers in the self-employed and regular wage categories and a slight decline in those engaged as casual workers. However, in 2009-10, the incidence of self-employment again declined to the levels of 1987-88 and regular employment continued to decline. At the same time, women with secondary education were seen to be predominantly engaged in stable regular jobs (79.13 per cent), followed by self-employment (18.50 per cent), and a small share in casual employment (2.37 per cent). However, there was a sharp fall in the percentage of urban women engaged as regular workers, which declined from 79.13 per cent in 1987-88 to 43.19 per cent in 2009-10. Thus, there has been a huge increase in the number of workers in both the self-employed and casually employed categories during the post-reform years.

VIII. DISTRIBUTION OF WORKERS BY EDUCATIONAL CATEGORIES

This section discusses the distribution of workers (aged 15 years and above) engaged in various principal usual activity categories by general education. Table 8A shows that the share of 'Not Literates' among rural male workers was around 45 per cent and showed a declining trend, whereas the category of 'Literate up to the Middle Level' was almost been stable during the period 1987-88 to 2009-10. Although the share of educated workers is currently small, it has started showing an increasing trend. This clearly brings out the fact that more than 90 per cent of the self-employed workers in 1987-88 belonged to the category of either 'Not Literate' or 'Literate up to the Middle Level', and only 10 per cent can be termed as educated self-employed. This type of educational composition of the self-employed category may be the prime reason for the low levels of productivity and earnings in the context of India. More than 65 per cent of the casually employed rural males are 'Not Literate' and another 33 per cent are only 'Literate up to the Middle Level'. Only a few, that is, the remaining 2 per cent of the educated workers, are casually employed. Surprisingly, in the case of regular employed workers, around 30 per cent of the employed during 1987-88 were 'Not Literate' and 38 per cent were 'Literate up to the Middle Level' only. In short, a majority of those who are 'Not Literate' and literate rural males are concentrated in the casual labour and self-employed category while a major share of the educated workers are being absorbed in regular wage employment. The tendency for the educated to get self-employed has been strengthening during the post-liberalisation period, as regular jobs are shrinking. Some of the educated rural males are also being employed as 'labour under distress', which may not be a welcome phenomenon. In contrast, rural 'Non-literate' females were predominantly classified as casual labourers (89.69 per cent), self-employed workers (86.48 per cent), and regular employed workers (60.44 per cent) in 1987-88. Their shares declined by the year 2009-10, and more drastically so in the case of regular salaried jobs. Educated female workers are more visible in the regular employed category rather than in self-employment or in the casual labour category, and this trend has been getting reinforced over the years.

Elaborating the above pattern by gender, one finds that a majority of the urban male workers are 'Literate up to the Middle Level', followed by the 'Educated Workers', whose share has been increasing over the years. The share of 'Not Literates' is the least and has been declining over the years. The urban males literates belonging to the category of 'Literate up to the Middle Level' were seen to be concentrated in self-employment and regular wage employment during 1987-88 (see Table 8A). This trend has, however, continued to decline over the years, except in the case of casual labour employment, which has shown an increasing trend during the post-liberalisation period. The share of 'Non-literates' in various categories has also tended to decline over the years, indicating that during the post-liberalisation period, access to the job market has been shrinking for the 'Non-literates'. In contrast to males, a majority of the female workers are 'Not Literate', followed by those who are 'Literate up to the Middle Level', and 'Educated Workers'. The distribution of female workers engaged in different activities by educational categories clearly suggests that 'Non-literates' dominate the categories of wage employment and self-employment, which has declined during the

Table 8A
**Percentage Distribution of Male Workers Aged 15 Years
 and Above by General Education Categories**

<i>Particulars</i>	<i>NSS Rounds</i>	<i>Rural</i>				<i>Urban</i>			
		<i>Self- employed</i>	<i>Regular</i>	<i>Casual</i>	<i>Total</i>	<i>Self- employed</i>	<i>Regular</i>	<i>Casual</i>	<i>Total</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Not Literate	1987-88	44.70	29.73	65.23	49.80	22.32	11.20	44.20	20.51
	1993-94	39.60	18.96	58.86	44.43	19.92	9.41	39.34	18.50
	1999-2000	35.57	14.00	59.07	41.56	17.54	7.51	34.33	16.12
	2004-05	30.80	13.00	45.90	34.20	14.00	6.60	29.40	13.20
	2009-10	24.80	9.34	37.45	28.30	12.00	5.11	25.83	11.46
	2009-10	24.80	9.34	37.45	28.30	12.00	5.11	25.83	11.46
Literate up to the Middle Level	1987-88	46.10	38.04	32.47	40.85	51.05	41.90	50.70	46.91
	1993-94	47.10	37.33	37.14	42.80	46.15	37.14	52.55	43.29
	1999-2000	46.59	38.40	33.82	41.46	41.78	34.53	54.35	40.83
	2004-05	49.00	39.00	47.70	47.60	42.00	36.60	58.60	42.30
	2009-10	47.81	36.58	50.76	47.97	36.84	27.58	56.44	36.28
	2009-10	47.81	36.58	50.76	47.97	36.84	27.58	56.44	36.28
Literate up to the Secondary Level	1987-88	7.80	23.12	2.10	7.54	18.72	28.40	4.80	21.04
	1993-94	11.30	29.24	3.80	10.29	23.02	30.83	7.51	23.91
	1999-2000	14.93	31.80	6.67	13.70	25.95	32.73	10.51	26.23
	2004-05	10.50	16.50	4.40	9.00	16.60	15.50	7.80	14.90
	2009-10	14.88	17.06	8.13	12.48	19.29	18.45	11.25	17.57
	2009-10	14.88	17.06	8.13	12.48	19.29	18.45	11.25	17.57
Graduate and Above	1987-88	1.40	9.11	0.20	1.81	7.91	18.50	0.30	11.54
	1993-94	2.00	14.47	0.20	2.48	10.91	22.62	0.60	14.31
	1999-2000	2.91	15.80	0.44	3.28	14.73	25.23	0.80	16.82
	2004-05	3.10	11.70	0.40	3.00	11.90	18.00	0.70	12.80
	2009-10	4.19	20.91	0.72	4.31	17.43	32.53	1.84	21.13
	2009-10	4.19	20.91	0.72	4.31	17.43	32.53	1.84	21.13
Literate up to the Secondary Level and Above	1987-88	9.20	32.23	2.30	9.31	26.63	46.90	5.10	32.57
	1993-94	13.30	43.71	4.00	12.80	33.93	53.45	8.11	38.20
	1999-2000	17.84	47.60	7.12	16.50	40.68	57.96	11.31	43.04
	2004-05	20.20	48.00	6.40	18.20	43.90	56.80	12.00	44.60
	2009-10	27.38	54.07	11.78	23.72	51.11	67.30	17.71	52.24
	2009-10	27.38	54.07	11.78	23.72	51.11	67.30	17.71	52.24

Source: Same as for Table 1.

period under study, as also seen in the case of males. The share of the regularly employed was also quite high in the category of 'Not Literates' but showed a sharp decline of around 14 per cent during the period 1987-88 to 2009-10 (see Table 8B).

IX. A REGIONAL ANALYSIS

Recent studies have concluded that the share of private sector services has been expanding in the developed and fast-moving states. On the other hand, public sector services (which includes administration services) have expanded in the backward regions of India. The fast-growing

Table 8B
**Percentage Distribution of Female Workers Aged 15 Years
 and Above by General Education Categories**

<i>Particulars</i>	<i>NSS Rounds</i>	<i>Rural</i>				<i>Urban</i>			
		<i>Self- employed</i>	<i>Regular</i>	<i>Casual</i>	<i>Total</i>	<i>Self- employed</i>	<i>Regular</i>	<i>Casual</i>	<i>Total</i>
1	2	3	4	5	6	7	8	9	10
Not Literate	1987-88	83.48	60.44	89.69	84.91	62.10	29.40	76.98	54.54
	1993-94	77.42	40.60	85.80	79.91	53.80	22.68	75.05	48.36
	1999-2000	73.27	32.03	81.46	75.43	48.55	21.50	73.45	43.71
	2004-05	65.70	26.60	76.00	67.80	42.40	21.60	65.80	37.60
	2009-10	56.25	17.59	65.15	58.05	31.83	15.85	54.55	29.27
Literate up to the Middle Level	1987-88	15.42	19.58	10.01	13.43	29.90	19.70	21.92	24.20
	1993-94	20.48	24.40	13.60	17.47	33.90	20.08	23.15	25.95
	1999-2000	23.32	27.63	17.33	20.72	35.06	20.00	23.25	26.52
	2004-05	28.60	29.00	22.20	26.10	36.90	23.80	31.80	30.40
	2009-10	35.19	28.05	31.51	33.17	41.08	20.09	39.17	31.34
Secondary Level	1987-88	1.00	15.46	0.30	1.39	5.40	25.20	1.00	11.20
	1993-94	1.90	25.10	0.60	2.16	7.80	26.97	1.60	13.04
	1999-2000	3.10	27.03	1.10	3.12	9.79	26.20	2.91	14.60
	2004-05	3.70	13.60	1.30	3.30	7.10	9.00	1.30	6.90
	2009-10	5.32	14.30	2.79	4.69	10.74	7.95	4.31	8.20
Graduate and Above	1987-88	0.10	4.52	0.00	0.27	2.60	25.70	0.10	10.06
	1993-94	0.20	9.90	0.00	0.47	4.50	30.27	0.20	12.65
	1999-2000	0.30	13.31	0.10	0.72	6.59	32.30	0.40	15.17
	2004-05	0.40	9.90	0.00	0.70	5.30	21.60	0.20	11.30
	2009-10	0.87	23.48	0.07	1.77	8.99	42.57	1.00	22.36
Secondary Level and Above	1987-88	1.10	19.98	0.30	1.70	8.00	50.90	1.10	21.22
	1993-94	2.10	35.00	0.60	2.70	12.30	57.24	1.80	25.65
	1999-2000	3.40	40.34	1.20	3.80	16.38	58.50	3.31	29.80
	2004-05	5.80	44.40	1.70	6.00	20.70	54.60	2.50	31.90
	2009-10	8.55	54.36	3.33	8.77	27.09	64.06	6.28	39.39

Source: Same as for Table 1.

states with a diversified development profile are: Tamil Nadu, Karnataka, West Bengal, Delhi and Maharashtra. These states have been showing an increasing tendency towards becoming more advanced skill-intensive economies, spurred by private investments. There has been a decline in the share of manufacturing and a sharp rise in the share of services. "With the centre no longer enforcing inter-state equity, divergences in growth rates between states have increased" (Kochhar, *et al.*, 2006, p. 1015). The moot point, however, is as to how far India should continue to maintain a combination of the labour-intensive and skill-intensive manufacturing and service sector base in order to attain high economic growth.

The recent experience of regional growth has thrown up some interesting and intriguing patterns, as the traditionally laggard states like Bihar, Odisha and Jharkhand, among others have out-performed the developed states (that is, Gujarat, Maharashtra and Tamil Nadu, among others) in terms of growth figures. For sustaining such unprecedented growth, *inter alia*, meeting the demand for skilled workers would be a crucial challenge. It has also been observed that during the reform period, states have been competing with each other (in terms of their resource endowments, infrastructure, business-friendly regulations, and offers of all kinds of incentives) to attract private investment. In such a scenario, the conduction of a regional analysis of the skill profile of workers would be an important exercise. Table 9 presents the sectoral distribution of workers (UPS) by various levels of education in 17 major states. Some of the key points that emerge from this table are discussed below.

In each and every state, the proportion of illiterate workers has declined over the period under study in varying proportions. During the period 1983 to 2009-10, in as many 12 states the proportion of illiterate persons declined by more than 25 percentage points. In Kerala and West Bengal, however, the rate of decline was smaller, that is, less than 20 percentage points. The decline was also observed across production sectors, with substantial variations. Interestingly, the proportion of illiterate workers in agriculture declined at a much faster rate than those in the secondary and tertiary sectors, with significant inter-state variations. For instance, in the states of Haryana, Himachal Pradesh and Jammu Kashmir, the proportion of illiterate workers in agriculture declined by more than 30 percentage points. The rates of decline in the tertiary sector, across states, were lower as compared to those in the primary and secondary sectors.

In addition to the notable decline in the proportion of illiterate workers, a significant improvement was also witnessed in the share of workers in the categories of 'Literate up to the Primary Level' and 'Literate up to the Middle Level'. Barring a very few states, the proportion of workers in the cohort of 'Literate up to the Primary Level' improved in 2009-10 as compared to that in 1983. Further, with rare exceptions, varying degrees of improvement were observed in each state and in each of the three broad sectors of the economy. However, it is disheartening to note that quite a large proportion of illiterate workers are still engaged in the primary sector. The pace of worker transition across the education ladder has thus occurred at a lower degree than anticipated during the last 27 years.

The central focus of our analysis, however, is on the proportion of educated workers, that is, those in the category of 'Literate up to the Secondary Level and Above'. In each and every state, the proportion of workers belonging to the category of 'Literate up to the Secondary Level and Above' has increased at varying rates. This proportion has been increasing at a faster rate in the tertiary sector and at a much slower pace in the primary sector, resulting in widening gaps across sectors in terms of educational attainments. Even in 2009-10, in as many as six states, the proportion of workers belonging to the category of 'Literate up to the Secondary Level and Above' is less than 25 per cent. It is disappointing that in states like Assam, Odisha, Rajasthan and West Bengal, only 20 per cent of the workers were 'Literate up to the Secondary Level and Above'.

Table 9
Distribution of Workers by Their Levels of
Education in Major Indian States: 1983/2009-10

State	Sector	1983				1993-94				1999-2000				2009-10			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Andhra Pradesh	Prim.	81.6	14.0	2.8	1.6	74.2	17.8	4.8	3.2	70.2	18.1	6.3	5.3	59.2	23.1	9.3	8.3
	Sec.	54.4	29.1	8.3	8.2	52.8	25.5	8.8	12.8	46.2	26.4	9.7	17.7	33.2	25.2	16.4	25.2
	Ter.	40.2	26.1	12.5	21.2	32.8	24.8	12.0	30.4	29.4	20.3	13.0	37.4	20.4	16.2	15.4	48.1
Assam	Total	70.5	18.2	5.3	6.0	63.2	20.2	6.7	9.8	57.8	19.8	8.3	14.2	44.5	21.8	12.2	21.5
	Prim.	46.8	40.0	10.0	3.1	40.7	41.2	13.8	4.3	36.7	36.7	19.0	7.6	19.2	40.2	28.5	12.1
	Sec.	25.3	42.6	18.2	13.9	15.8	31.1	27.9	25.2	27.1	33.1	19.1	20.7	16.7	34.9	28.9	19.5
Bihar	Ter.	21.3	29.1	20.8	28.8	16.5	27.3	21.8	34.4	23.9	27.0	18.2	30.9	9.0	26.5	23.6	40.8
	Total	39.7	37.7	13.0	9.7	33.7	37.4	16.4	12.5	31.6	33.0	18.7	16.7	16.1	35.9	27.2	20.8
	Prim.	74.6	13.0	8.7	3.7	66.3	16.1	8.7	8.9	64.2	15.3	8.9	11.6	44.9	21.2	10.6	23.3
Gujarat	Sec.	59.5	22.3	11.2	7.1	51.9	18.7	12.8	16.6	53.3	21.0	9.9	15.8	45.1	25.4	12.7	16.8
	Ter.	42.2	19.3	16.9	21.6	30.6	21.8	15.3	32.3	33.4	18.7	11.6	36.3	26.2	18.3	12.2	43.3
	Total	68.3	14.9	10.1	6.7	59.5	17.2	10.1	13.2	57.9	16.5	9.5	16.2	40.8	21.4	11.4	26.5
Haryana	Prim.	64.6	25.5	6.8	3.1	55.1	30.5	7.0	7.4	49.7	27.2	13.1	9.9	38.8	30.1	19.3	11.7
	Sec.	29.4	41.6	13.8	15.1	21.3	38.1	14.8	25.8	23.0	27.3	23.0	26.6	10.8	26.8	24.9	37.5
	Ter.	20.2	30.9	14.1	34.8	15.6	26.9	14.9	42.6	14.4	22.2	19.4	44.0	10.2	18.2	18.9	52.7
Himachal Pradesh	Total	50.0	29.2	9.4	11.4	39.3	31.3	10.4	19.0	37.1	26.1	16.2	20.6	25.1	26.1	20.3	28.5
	Prim.	66.2	18.3	10.5	5.0	49.8	25.1	9.9	15.2	38.2	24.8	12.9	24.1	30.0	27.3	10.0	32.7
	Sec.	41.4	29.4	17.0	12.1	37.8	23.2	14.1	24.9	25.0	27.5	15.3	32.2	22.8	28.1	13.6	35.5
Jammu & Kashmir	Ter.	28.0	22.8	16.4	32.9	22.5	24.0	13.6	39.9	16.3	19.1	15.9	48.6	14.1	19.1	11.5	55.3
	Total	54.0	20.8	12.7	12.5	38.0	24.4	12.0	25.6	27.7	23.4	14.5	34.3	22.8	25.0	11.6	40.6
	Prim.	62.4	25.9	6.6	5.1	52.9	29.3	8.1	9.7	40.7	31.8	11.3	16.2	27.2	27.2	15.1	30.4
Karnataka	Sec.	42.3	33.6	10.4	13.6	31.8	38.9	11.5	17.8	21.0	36.8	17.8	24.4	15.2	30.9	20.2	33.8
	Ter.	12.6	18.2	12.5	56.7	10.6	20.9	13.8	54.7	10.2	16.9	16.5	56.4	5.9	14.6	11.5	68.1
	Total	55.6	25.7	7.5	11.1	43.6	29.3	9.4	17.7	31.0	29.8	13.5	25.7	20.1	25.4	15.4	39.1
Kerala	Prim.	73.7	13.5	9.0	3.8	57.5	22.1	13.1	7.4	45.3	24.7	16.0	14.0	41.0	17.8	22.6	18.6
	Sec.	61.9	18.8	10.8	8.5	38.1	25.9	19.1	16.8	38.1	27.2	15.5	19.2	36.5	16.1	27.3	20.0
	Ter.	26.7	14.8	18.2	40.3	11.2	13.4	21.2	54.2	9.9	12.6	19.7	57.8	11.9	7.7	20.6	59.8
Madhya Pradesh	Total	62.4	14.9	11.1	11.6	39.5	20.0	16.7	23.9	33.7	21.7	17.0	27.7	28.6	13.4	23.2	34.8
	Prim.	69.0	20.8	6.9	3.3	64.0	21.3	8.6	6.2	61.8	18.8	10.4	9.0	43.9	22.9	16.9	16.3
	Sec.	41.8	33.4	11.5	13.3	38.1	28.9	12.4	20.5	29.3	23.5	19.5	27.7	23.4	22.7	22.3	31.6
Odisha	Ter.	25.1	24.0	16.8	34.2	21.4	21.6	16.4	40.6	19.2	15.9	17.8	47.0	14.5	11.5	14.4	59.5
	Total	57.1	23.3	9.4	10.3	51.7	22.5	10.7	15.1	48.8	18.9	13.1	19.2	32.6	19.9	17.2	30.3

Kerala	Prim.	24.7	54.6	16.5	4.3	12.8	47.3	28.3	11.6	14.3	44.5	27.8	13.4	7.8	37.6	35.3	19.4
	Sec.	15.6	53.2	23.8	7.5	8.0	43.1	33.2	15.6	6.4	33.4	39.5	20.6	3.8	24.7	40.8	30.8
	Ter.	9.5	37.7	23.1	29.7	3.3	27.2	31.0	38.4	4.2	24.4	30.0	41.4	2.7	14.6	28.2	54.5
	Total	18.4	49.6	20.0	12.1	8.6	39.9	30.4	21.1	8.2	33.6	32.0	26.2	4.4	24.0	33.9	37.7
Madhya Pradesh	Prim.	76.3	18.6	3.5	1.6	67.3	23.5	4.6	4.6	62.2	25.3	7.4	5.1	43.1	29.7	12.7	14.5
	Sec.	46.7	34.1	9.3	9.9	42.0	28.3	9.1	20.6	43.3	28.2	10.9	17.6	27.1	32.7	19.2	21.1
	Ter.	24.8	28.6	14.2	32.4	21.3	27.4	11.1	40.2	17.5	24.2	15.6	42.7	11.0	19.3	14.6	55.1
	Total	67.1	21.5	5.4	6.1	58.3	24.5	6.0	11.2	53.4	25.4	9.0	12.1	36.0	28.5	13.9	21.6
Maharashtra	Prim.	65.1	25.9	6.6	2.4	55.4	26.9	11.9	5.7	49.6	26.2	15.6	8.5	32.6	27.5	19.6	20.3
	Sec.	29.0	33.1	17.0	20.9	24.5	24.5	22.8	28.2	17.3	25.5	23.5	33.7	11.6	20.4	24.6	43.4
	Ter.	18.2	27.3	18.2	36.3	14.4	21.8	20.9	42.9	10.8	18.5	22.7	48.1	6.9	13.4	19.1	60.6
	Total	51.0	27.2	10.3	11.5	40.6	25.3	15.8	18.3	34.4	24.0	18.7	22.9	21.0	21.9	20.3	36.8
Odisha	Prim.	67.0	26.5	5.3	1.2	63.4	25.6	8.4	2.6	59.3	26.2	10.6	3.9	39.1	31.3	18.3	11.3
	Sec.	52.8	32.3	9.6	5.3	47.7	28.9	13.2	10.2	48.5	27.5	13.5	10.4	33.2	27.6	23.6	15.7
	Ter.	31.7	27.2	18.0	23.0	24.1	27.6	20.5	27.8	19.0	24.4	21.5	35.1	10.9	20.7	23.2	45.1
	Total	59.7	27.4	7.8	5.1	55.4	26.3	10.8	7.5	51.0	26.1	12.8	10.1	32.1	28.4	20.3	19.1
Punjab	Prim.	61.5	23.7	7.7	7.1	54.7	20.3	10.5	14.5	48.3	20.8	11.2	19.7	34.5	23.8	12.8	28.9
	Sec.	36.1	32.3	14.2	17.4	28.2	27.4	16.9	27.5	28.2	28.9	15.7	27.2	22.9	28.2	18.9	30.0
	Ter.	28.1	23.4	13.2	35.3	19.9	21.0	12.6	46.5	18.3	19.4	13.6	48.7	14.1	16.1	13.7	56.2
	Total	48.9	25.0	10.2	15.9	38.6	21.8	12.4	27.3	33.5	22.1	13.0	31.5	23.7	22.4	15.0	38.8
Rajasthan	Prim.	83.7	11.7	3.1	1.4	75.8	14.9	6.0	3.3	67.3	18.9	8.6	5.1	57.6	21.5	11.3	9.6
	Sec.	57.8	26.4	8.2	7.7	50.3	27.6	10.9	11.2	46.7	28.3	12.8	12.1	39.9	27.0	19.6	13.5
	Ter.	27.5	28.9	15.0	28.6	24.2	21.9	16.6	37.2	16.1	19.9	18.4	45.6	13.7	20.9	16.1	49.3
	Total	73.1	15.9	5.3	5.7	62.5	18.3	8.7	10.5	54.3	20.9	11.2	13.7	43.3	22.7	14.4	19.7
Tamil Nadu	Prim.	63.5	28.8	5.7	2.0	56.1	30.7	8.0	5.3	54.7	27.6	10.3	7.5	38.2	32.5	17.0	12.4
	Sec.	35.7	42.5	12.5	9.3	29.1	38.7	14.9	17.3	23.7	35.8	18.7	21.8	17.5	32.1	22.1	28.2
	Ter.	24.8	31.8	17.1	26.3	18.1	29.7	17.0	35.2	13.7	25.4	19.5	41.5	8.9	19.4	16.9	54.8
	Total	48.8	32.3	9.7	9.2	40.4	32.3	11.8	15.5	36.5	29.0	14.7	19.8	24.4	28.7	18.4	28.4
Uttar Pradesh	Prim.	69.8	18.2	7.6	4.5	60.9	17.8	11.5	9.8	55.9	17.8	13.7	12.5	42.1	19.1	18.4	20.4
	Sec.	57.2	25.4	8.2	9.2	46.1	25.5	11.8	16.6	43.3	24.0	15.1	17.6	38.7	26.3	18.2	16.8
	Ter.	40.2	22.0	12.1	25.7	30.7	20.3	13.4	35.6	30.1	17.7	15.1	37.1	19.7	17.0	17.1	46.1
	Total	62.7	19.8	8.5	9.0	52.9	19.3	11.9	15.9	48.0	18.8	14.3	18.9	36.0	20.4	18.1	25.6
West Bengal	Prim.	56.5	32.1	7.3	4.1	46.1	36.5	11.4	6.1	45.8	33.1	12.7	8.4	32.5	42.5	14.3	10.8
	Sec.	33.8	39.0	13.6	13.6	34.0	40.6	12.2	13.2	31.7	38.0	16.9	13.4	20.5	46.1	16.8	16.6
	Ter.	23.8	30.8	15.4	30.0	20.4	29.2	17.7	32.8	21.3	26.7	18.8	33.1	17.0	28.4	15.5	39.1
	Total	43.6	33.1	10.6	12.7	35.9	35.3	13.4	15.4	35.9	32.3	15.3	16.5	24.7	38.8	15.3	21.2

Notes: 1. Prim. = Primary; Sec. = Secondary; Ter. = Tertiary; 2. Levels of education: I = Illiterate; II = Up to the primary level; III = Up to the middle level; IV = Up to the secondary level and above; 3. Bihar, Madhya Pradesh and Uttar Pradesh are undivided states.

Source: Authors' own estimates based on unit level data on employment and unemployment (various rounds).

The pattern of change in the skill profile of Indian workers across states has varied across different time periods. What is more relevant to this discussion is a probe in the pattern and pace of changes that occurred during the reform period. The following section presents an analysis of the pattern of improvement in the skill profile of workers between the periods 1993-94 to 1999-2000, on one hand, and 1999-2000 to 2009-10, on the other. During these periods, the proportion of illiterate workers declined while that of workers who were literate up to the 'primary', 'middle' and 'secondary and above' levels of education increased at varying rates. However, the improvements witnessed during the period 1999-2000 to 2009-10 were more marked as compared to the improvements seen during the first six years of the reform period, that is, 1993-94 to 1999-2000. Except in a couple of states, the decline in the proportion of 'illiterate' workers occurred at a much faster rate during the period 1999-2000 to 2009-10. Similarly, the pace of improvement in the share of workers who had acquired education up to the middle and secondary levels was also higher during the period 1999-2000 to 2009-10 as compared to the period 1993-94 to 1999-2000. However, there were significant inter-state and inter-sector variations in the skill levels of the workforce.

The above discussion raises a few more concerns and challenges. First, the overall improvement in the quality of workforce has been anything but satisfactory. This is compounded by the fact that a large proportion of workers are still struggling with low levels of educational attainment. Further, in the agriculturally advanced states such as Punjab and Haryana, the proportion of educated workers is about 30 per cent. Similarly, in the industrially developed states such as Maharashtra, Gujarat and Tamil Nadu, nearly 50 per cent of the secondary sector workers have acquired education only up to the middle level. Thus, all the broad sectors of the Indian economy are, by and large, suffering from a weak human capital base. The widening inter-sectoral gaps in educational attainment also lead to wage inequality. There is a wide variation in the wages and earnings of workers (both regular and casual) across the educational categories. Workers with higher educational achievements tend to get higher wages as compared to those who are less educated, and even with the same educational category, there is a gender (male: female) and locational (rural: urban) wage gap (Karan and Selvaraj, 2008).

It would be a challenge to facilitate the shift of workers from the primary to the secondary and tertiary sectors at low levels of educational attainment. However, the task of improving the quality of existing workers engaged in various sectors of the economy is equally important, given the technology- and skill-intensive growth process witnessed during the globalised regime. Over the years, the service sector has emerged as an important source for generating new employment opportunities. However, there is bound to be a huge mismatch between the requirement and availability of skills in this sector.

X. CONCLUSIONS

With the shrinkage of employment opportunities in the government sector, in general, and the public sector, in particular, due to the on-going process of disinvestments, the employment situation has become quite grim. On the other hand, rising literacy levels in both rural and

urban areas among both male as well as female workers has resulted in higher unemployment rates for educated persons. Unemployment among the educated may also be high because of a mismatch between the available skill and education levels of the educated and those requisitioned by employers. This paper is an attempt to trace the pattern and growth of employment during the periods 1987-88 to 2009-10 by analysing the NSS data. It is well known that educated and skilled workers are able to take advantage of both the challenges and opportunities thrown up by globalisation. The uneducated and unskilled workers would, however, face the brunt of the restructuring of the economy, leading to redundancy, skill mismatches and under-employment among them under the present unstable labour market regime.

The following are the various trends that are discernible from an analysis of the quinquennial employment-unemployment surveys conducted by the NSSO during its 38th, 43rd, 50th, 55th, 61st and 66th Rounds:

- (i) Literacy rates in India are higher for males as compared to females, and higher in the urban areas as compared to rural areas, irrespective of gender categories.
- (ii) The increase in the rural literacy rate for males and females was higher than that in the corresponding rates in the urban areas during all the sub-periods under study.
- (iii) The increase in the female literacy rates has been higher than that of the male literacy rates, thereby bridging the gaps between male and female literacy, and rural and urban literacy. There has also been a perceptible increase in the share of educated workers in the rural as well as urban areas.
- (iv) An analysis of the WPRs indicates an overall contraction in the labour market and a qualitative change in the workforce structure in both the rural as well as urban areas. However, there are significant variations in various sub-periods under study.

An analysis of the structural composition of workers (aged 15 years and above), by general educational category for each principal usual activity category, suggests that among those who were 'Not Literate', and 'Literate up to the Middle Level', both males and females occupied a dominant position in the self-employment category followed by casual work. Further, both males and females have an edge over regular employment in the case of educated workers. The relatively more educated female workers tend to be in regular employment as compared to their male counterparts. However, regular employment has declined during the post-liberalisation period due to a significant shrinkage in the job market. Casualisation, which is quite low for both males and females in the category of 'Educated Workers', was almost non-existent during the pre-liberalisation period. However, it has emerged as a notable trend during the post-liberalisation period and continues to expand. This may be indicative of the service-oriented nature of employment, which leads to a proliferation of both self-employment and regular salaried jobs as options for both males and females. This feature has been accentuated particularly during the post-reform period, as indicated by the 55th Round and beyond. Regular jobs, which constituted an attraction among job-seekers during the pre-reform period in the 1980s, still hold their sway.

An analysis of the composition of various employment categories by general education suggests that a majority of the rural workers are 'Not Literate' and only 7 per cent of them are 'Educated Workers'. However, the share of 'Educated Workers' has increased during the post-liberalisation period due to an increase in literacy rates. The available data clearly suggests that the size of the shares and educational categories are inversely related. This relationship holds true for all individual usual principal activity categories. A majority of rural males belonging to the categories of 'Not Literate' and 'Literate up to the Middle Level' are concentrated in the casual labour and self-employed categories while a major share of the 'Educated Workers' are getting absorbed in regular wage employment. However, economic liberalisation policies have reduced the number of regular job opportunities, often forcing even the 'Educated Workers' to join the ranks of the self-employed, and in certain cases, compelling them to seek jobs as casual workers.

The state-wise skill profile of workers reveals that over the period under study, there has been a substantial improvement in the educational attainment of the workers in terms of a decline in the proportion of illiterate workers and an increase in the proportion of workers having acquired education up to the middle, and secondary and above levels. However, there are substantial inter-state and inter-sectoral variations. Agriculture still operates with a large proportion of workers who are illiterate workers, while semi-educated (that is, literate up to the primary and middle levels) workers dominate the secondary and tertiary sectors. The proportion of educated workers (that is, those who are literate up to the secondary and above levels) is still very low, especially in the primary and secondary sectors. The inter-sectoral gap in educational attainment has serious implications for raising inequality in terms of both the per worker productivity as well as wages and earnings. During the post-liberalisation period, the job market can be seen to be quite hostile to the 'Non-literate' workers. Regular salaried employment is predominant among the 'Educated Workers', but has been declining during the post-liberalisation period, and casualisation has been increasing across all the categories. It is thus clear that during the post-liberalisation period, uneducated and unskilled workers are in a great deal of trouble and even the educated workers have been finding it difficult to get regular jobs.

Thus, not all economic growth is equally employment-intensive. There are a number of factors associated with 'jobless growth' in the Indian context. The trend towards increased casualisation during the post-reform era can be attributed to the transfer of labour-intensive production to small firms, thereby lowering costs associated with economic reforms (Datt, 1993). The employers' preference for additional hours instead of additional workers was one reason for the jobless growth phenomenon (Bhalotra, 1998). In other words, efficiency wages were increased as opposed to increasing employment. Again, inertia in employment can also be attributed to restrictive labour laws and the actual number of hours worked was considered more important than the number of hours paid for (Bhalotra, 1998; Fallon and Lucas, 1993). Further, inappropriate labour market regulations affect labour costs in the formal sector, resulting in a proliferation of unorganised firms (Dougherty, 2008). The restructuring of productive enterprises in the wake of economic reforms has resulted in the

dismantling of inefficient enterprises, leading to job losses during the early period of the reforms. The shift towards capital-intensive and skill-intensive enterprises has meant that a majority of the unskilled and some of the semi-skilled workers would not get a foothold in the labour market. Thus, strong productivity growth can generate jobless growth if the aggregate demand is insufficient because of a decline in the rural purchasing power.

The inadequate quality of education and skill deficit has become a major constraint in the path of long-term economic growth and sustainability. If economic growth has to transform the lives of the average in India, raising productivity in the labour-intensive agriculture and manufacturing sectors (Salcedo, *et al.*, 2010, p. 924), in both the organised and unorganised sectors, and transforming the archaic labour laws of the 1950s era would be critical for infusing dynamism in the economy. We see that the regulatory variants of the nation-state have made a virtue of economic growth imperatives, ably assisted by the glorified media and even the judicial arm of the government, that is, the Supreme Court. Regional disparities, uneven development, and indeed jobless economic growth have been naturalised to conform to the imperatives of the neo-liberal agenda at the cost of the majority, who remain voiceless and confined to the marginal spaces of the formal and informal sectors of both the economy and society.

References

- Acharya, S. (2006), *Essays on Macroeconomic Policies and Growth in India*, Oxford University Press, New Delhi.
- Agarwal, R. and T.F. Naqvi (2002), "Skill Development in the Changing Global Context", *The Indian Journal of Labour Economics*, Vol. 45, No. 4, pp. 1105-19.
- Aggarwal, S.C. (2004), "Labour Quality in Indian Manufacturing: A State Level Analysis", *Economic and Political Weekly*, Vol. 39, No. 50, pp. 5335-44.
- Agnew, J. (2010), "Money Games: Currencies and Power in the Contemporary World Economy", *Antipode*, Vol. 41, No. 1, pp. 214-38.
- Ahluwalia, M.S. (2002), "Economic Reforms in India since 1991: Has Gradualism Worked?", *Journal of Economic Perspectives*, Vol. 16, No. 3, pp. 67-88.
- Ahmed, W. (2012), "From Militant Particularism to Anti-neoliberalism? The Anti-Enron Movement in India", *Antipode*, Vol. 44, No. 2, pp. 1059-80.
- Amin, M. and A. Mattoo (2008), "Human Capital and the Changing Structure of the Indian Economy", *Policy Research Working Paper Series 4576*, The World Bank, Washington DC.
- Asadullah, M.N. and G. Yalonetzky (2012), "Inequality of Educational Opportunity in India: Changes over Time and across States", *World Development*, Vol. 40, No. 6, pp. 1151-63.
- Asuyama, Y. (2012), "Skill Distribution and Comparative Advantage: A Comparison of China and India", *World Development*, Vol. 40, No. 5, pp. 956-69.
- Azam, M. (2012), "Changes in Wage Structure in Urban India, 1983-2004: A Quantile Regression Decomposition", *World Development*, Vol. 40, No. 6, pp. 1135-50.
- Banerjee, A.V. and E. Duflo (2000), "Reputation Effects and the Limits to Contracting: A Study of the Indian Software Industry", *Quarterly Journal of Economics*, Vol. 115, No. 3, pp. 989-1017.
- Basu, K. (2008), "The Enigma of India's Arrival: A Review of Arvind Virmani's Propelling India: From Socialist Stagnation to Global Power", *Journal of Economic Literature*, Vol. 46, No. 2, pp. 396-406.

- Besley, T. and R. Burgess (2004), "Can Labour Regulation Hinder Economic Performance? Evidence from India", *The Quarterly Journal of Economics*, Vol. 119, No. 1, pp. 91-134.
- Bhaduri, A. (2005), *Development with Dignity: A Case for full Employment*, National Book Trust, New Delhi.
- Bhalotra, S.R. (1998), "The Puzzle of Jobless Growth in Indian Manufacturing", *Oxford Bulletin of Economics and Statistics*, Vol. 60, No. 1, pp. 5-32.
- Cain, S.J., R. Hasan, R. Magsombol and A. Tandon (2010), "Accounting for Inequality in India: Evidence from Household Expenditures", *World Development*, Vol. 38, No. 3, pp. 282-97.
- Chadha, G.K. (2003), "Human Capital Base of the Indian Labour Market: Identifying Worry Spots", Presidential Address Delivered at the 45th Annual Conference of the Indian Society of Labour Economics, Jadavpur University, Kolkata, 15-17 December, Mimeo, pp. 1-39.
- Chamarbagwala, R. (2006), "Economic Liberalisation and Wage Inequality in India", *World Development*, Vol. 34, No. 12, pp. 1197-2015.
- Chandrasekhar, C.P. and J. Ghosh (2002), *The Market that Failed: A Decade of Neo-liberal Economic Reforms in India*, LeftWord Books, New Delhi.
- Das, J. and T. Zajonc (2008), "India Shining and Bharat Drowning: Comparing Two Indian States to the Worldwide Distribution in Mathematics Achievement", *World Bank Policy Research Working Paper No. 4644*, Washington DC, pp. 1-54.
- Datt, R. (1993) "New Economic Policy and its Impact on Industrial Relations and Employment in India". *Indian Journal of Labour Economics*, Vol. 36, No. 1, pp. 66-76.
- Dougherty, S. (2008), "Labour Regulation and Employment Dynamics at the State level in India", *OECD Economics Department Working Paper No. 624*, Paris.
- Fallon, P. and R.E. Lucas (1993), "Job Security Regulations and the Dynamic Demand for Industrial Labour in India and Zimbabwe", *Journal of Development Economics*, Vol. 40, No. 2, pp. 241-75.
- Filmer, D. and L. Pritchett (1999), "Determinants of Education Enrolment in India: Child, Household, Village, State Effects", *Journal of Educational Planning and Administration*, Vol. 13, No. 2, pp. 135-63.
- Ghani, E.A., G. Goswami and W.R. Kerr (2012), "Is India's Manufacturing Sector Moving Away from Cities?" *NBER Working Paper Series No. 17992*, Mass., USA.
- Government of India (GoI) (2008), *Eleventh Five-Year Plan, 2007-12*, Planning Commission, Oxford University Press, New Delhi.
- Harriss, J. (2001), *De-politicizing Development: The World Bank and Social Capital*, LeftWord Books, New Delhi.
- Harvey, D. (2007), *A Brief History of Neo-liberalism*, Oxford University Press, Oxford.
- Hirway, I. (2012), "Inclusive Growth under a Neo-Liberal Policy Framework: Some Critical Questions", *Economic and Political Weekly*, Vol. 47, No. 20, pp. 64-72.
- Karan, A.K. and S. Selvaraj (2008), "Trends in Wages and Earnings in India: Increasing Wage Differences in a Segmented Labour Market", *ILO Asia-Pacific Working Paper Series*, ILO-SRO, New Delhi.
- Kijima, Y. (2006), "Why Did Wage Inequality Increase? Evidence from Urban India, 1983-99", *Journal of Development Economics*, Vol. 81, No. 1, pp. 97-117.
- Kingdon, G.G. (2007), "The Progress of School Education in India", *Oxford Review of Economic Policy*, Vol. 23, No. 2, pp. 168-19.
- Kingdon, G.G. and J. Unni (2001), "Education and Women's Labour Market Outcomes in India", *Education Economics*, Vol. 9, No. 2, pp. 173-95.
- Kochhar, K., U. Kumar, R. Rajan, A. Subramanian and I. Tokatlidis (2006), "India's Pattern of Development: What Happened, What Follows", *Journal of Monetary Economics*, Vol. 53, pp. 981-1019.
- Kotwal, A., B. Ramaswami and W. Wadhwa (2011), "Economic Liberalisation and Indian Economic Growth: What's the Evidence?", *Journal of Economic Literature*, Vol. 49, No. 4, pp. 1152-99.

- Krueger, A.O. (2007), "The Missing Middle", *Working Paper No. 343*, Stanford Center for International Development, Stanford.
- Kumar, A. (2012), "Bridging India's Skill Gap", *The Hindu*, New Delhi, 5 March.
- Kumar, U. and A. Subramanian (2012), "Growth in India's States in the First Decade of the 21st Century: Four Facts", *Economic and Political Weekly*, Vol. 47, No. 3, pp. 48-57.
- Mathur, A. and R.P. Mamgain (2002), "Technical Skills, Education and Economic Development in India", *The Indian Journal of Labour Economics*, Vol. 45, No. 4, pp. 1015-46.
- Mehta, B.P. (2005), "How India Lost the Will to Reform", *The Financial Times*, 1 November.
- NSSO (Not Dated), "Employment and Unemployment Situation in India" (various years), National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.
- Papola, T.S. and P.P. Sahu (2012), "Growth and Structure of Employment in India: Long-term and Post-Reform Performance and the Emerging Challenge", *ISID Occasional Paper Series 2012/01*, New Delhi.
- Peck, J. (2001), "Neo-liberalising States: Thin Policies/Hard Outcomes", *Progress in Human Geography*, Vol. 25, No. 3, pp. 445-55.
- Peck, J. and A. Tickell (2002), "Neo-liberalising Space", *Antipode*, Vol. 34, No. 3, pp. 380-404.
- Pieters, J. (2010), "Growth and Inequality in India: Analysis of an Extended Social Accounting Matrix", *World Development*, Vol. 38, No. 3, pp. 270-81.
- Rangarajan, C., P. Iyer and S. Kaul (2011), "Where is the Missing Labour Force", *Economic and Political Weekly*, Vol. 46, No. 39, pp. 68-72.
- Rodrik, D. and A. Subramanian (2004), "Why India Can Grow at 7 per cent a Year or More: Projections and Reflections", *Economic and Political Weekly*, Vol. 39, No. 16, pp. 1519-26.
- (2005), "From Hindu Rate of Growth to Productivity Surge: The Mystery of the Indian Growth Transition", *IMF Staff Papers*, Vol. 52, No. 2, pp. 193-228.
- Salcedo, J., R. Hasan and R. Magsombol (2010), "Accounting for Inequality in India: Evidence from Household Expenditures", *World Development*, Vol. 38, No. 3, pp. 282-97.
- Singh, C.S.K. (2003), "Skill, Education and Employment: A Dissenting Essay", *Economic and Political Weekly*, Vol. 38, No. 31, pp. 3271-76.
- Singh, S. (2002) "Education, Skills and Training: Some Perceptions", *The Indian Journal of Labour Economics*, Vol. 45, No. 4, pp. 1079-93.
- Unni, J. and G. Raveendran (2007), "Growth of Employment (1993-94 to 2004-05): Illusion of Inclusiveness?", *Economic and Political Weekly*, Vol. 42, No. 3, pp. 196-99.
- Vashishtha, P. (1993), "Regional Variations in Urban Poverty in India", *Margin*, Vol. 26, No. 1, pp. 483-561.
- Vijaybhaskar, M., S. Rothboeck and V. Gayathri (2001), "Labour in the New Economy: Case of the Indian Software Industry", *The Indian Journal of Labour Economics*, Vol. 44, No. 1, pp. 39-54.
- Zagha, R. (1999), "Labour and India's Economic Reforms", in J. Sachs and N. Bajpai (eds.), *India in the Era of Economic Reforms*, Oxford University Press, New Delhi, pp 160-85.