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Creating Employment in the 12th Five Year Plan

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Abstract

This paper analyses employment trends and addresses the problem of creating decent and productive employment in the non-agricultural sector during the first decade of the new millennium. Its primary interest is to examine the transition in employment from informal employment in unorganized sector towards formal employment in non-agricultural organized sector. There has been a slight structural shift in employment away from agriculture towards non-manufacturing sector. An interesting dimension about this transformation is the rising employment in enterprises employing 20 or more workers and a decline in employment in enterprises employing less than 6 workers. The second half of the decade (characterised by high growth rate) witnessed a decline in employment in the manufacturing sector, despite the economy achieving an unprecedently high growth rate, while there was stagnation in service sector employment. With the rise in participation in education (in particular female education), it is most likely that larger number of educated youth, especially women, will be joining the labour force in future years, and given the fact that the highest open unemployment rate is among educated youth, this calls for more pro-active policies (going beyond "National Manufacturing Policy") towards employment creation in organized manufacturing and service sectors.

Introduction

The structural transformation that any developing economy should undergo is that the share of agriculture in output and employment declines over time, and the share of industry and services increases correspondingly. Till two decades ago the share of agriculture in total employment was nearly 70% in the Indian economy. The most recent NSSO survey (2009-10, 66th Round) suggests that this share has declined over time to 53%. But given the fact that 53% of the Indian workforce is producing barely 15% of GDP, the decline in the share of agriculture in total employment is nowhere close to fast enough. The share of industry and services in output has increased sharply within the last 20 years but their share of employment still remains low, at 22.7% and 24.4% respectively in 2009-10. Their contributions to GDP correspondingly are - industry 28.1% (manufacturing 15.9%, non-manufacturing 12.2%), and services 57.3% in 2009-10 (Table 1). Therefore, increasing employment outside of agriculture must be a desirable goal in and of itself. Thus, creating

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employment during the 12th Five Year Plan would require enhancement of the rate of transition of labour out of agriculture to industry and services.

Table 1: Share of Employment and GVA, 1999-2000, 2009-10

Sectors	Shares			
	1999-2000		2009-2010	
	Employment	GVA	Employment	GVA
Agriculture	59.9	23.8	53.2	14.6
Manufacturing	11.1	15.5	11.03	15.9
Non manufacturing	5.3	11.8	10.49	12.2
Services	23.7	48.9	25.28	57.3
Total	100	100	100.0	100

Source: CSO, and NSS Employment & Unemployment Surveys, various rounds.

One of the objectives in the 12th Five Year Plan, while creating employment, needs to be that the work created should be (a) decent work and (b) productive employment. While increasing productive employment in all sectors of the economy is the most desirable goal, one concern is that some of the employment generated in the growth process could well lead to employment growing faster in certain sectors than does Gross Value Added (GVA). In an ideal world this outcome is not the most desirable, since employment increase must only be an increase in productive employment, defined as the case when output grows faster than employment. However, in an economy which is suffering from 6.6% unemployment by the Current Daily Status (CDS) definition (2009-10), an increase in employment may not always and simultaneously also increase labour productivity. The movement of labour out of agriculture to higher productivity generating industry and services is itself a gain in terms of equity and efficiency in the economy, even though the productivity gain in the case of those workers hired after employment elasticity[1] goes over one (a phenomenon that we observe in some sectors, as discussed later) may not be termed as being employed productively and hence they constitute a loss in potential efficiency.

In order to achieve this objective two kinds of transitions would be needed: first, movement of unskilled labour from agriculture to unorganized industry or unorganized services; second, movement of labour from informal employment in the unorganized sectors to either formal employment in organized sectors (preferably), or at least informal employment in the organized sectors. We discuss each one of these transitions in this paper.

1. Annual rate of growth of employment relative to annual rate of growth of gross value added

There are several dimensions to ensuring more decent work at the current stage of development of the Indian economy. First, when agriculture labour migrates to urban areas in search of work and finds employment, even if it may be casual work in unorganized services or industry, it does so because urban wage rates in even the unorganized sector are better than those prevailing in agriculture (or there may be an absence of work opportunities in agriculture in his district or state). Otherwise labour is unlikely to migrate to uncertain informal employment in urban areas. This is in fact one kind of transition to more decent work than agriculture labour, merely because the wages are likely to be higher. This kind of work is still not such as to provide employment security or income security or social security – which is our definition of 'decent work – but it is still better than work in agriculture (which may or may not be available).

There is a second transition which is a positive step in the direction of decent work, which involves the *transition from informal jobs in the unorganized sector to informal organized sector* employment. Of the 93 per cent informal sector employment, some 7 percentage points are accounted for by informal employment in the organized sector (NCEUS, 2008). Informal employment (e.g. as contract labour) in the organized sector would be superior in terms of security of work because there is likely to be a written contract as opposed to a verbal one in the unorganized sector, some benefits (e.g. assured leave and health benefits) other than salary are likely to be involved, and some degree of security of tenure would be available as opposed to complete uncertainty of tenure of employment that characterizes informal employment in unorganized enterprises.

The third, or ideal type of employment creation that policy makers may like to see during the 12th Plan, is growth in the size and share of *formal employment in organized sector* enterprises. This is the case because such employment would be characterized by security of tenure and wage rates well above agricultural labour, neither of which prevail in informal work in unorganized enterprises, and informal employment in the organized sector. In addition, it would be characterized by nearly complete social insurance i.e., death and disability benefits, old age pension, maternity leave and health benefits. None of these three are likely to prevail to the same extent in the remaining three types of employment in the economy, which together account for 93% of the total employment in the country.

In the light of this conceptual framework we will examine in section 2 overall employment trends in the non-agricultural sectors both quantitative as well as qualitative in particular over the 2000s divided into two time periods i.e. 1999-2000 to 2004-05, and 2004-05 to 2009-10. In section 3 we will analyse sectoral employment growth in various sectors of the economy. The last section summarises major findings along with policy implications.

2. Overall Employment Trends in India in the Usual Principal and Subsidiary Status in the 2000s

In this Section we examine labour force and workforce participation rates over the period 1999-2000 to 2009-10, the work force estimates over the past decade, the unemployment rate by Usual Principal and Subsidiary Status (UPSS), wages and consumption expenditure. In addition to these quantitative dimensions of employment in the Indian economy we examine certain qualitative dimensions as well.

2.1 Quantitative Dimensions of Employment Trends:

Labour force participation rate (LFPR) and workforce participation rate (WFPR) between 1993 and 2009-10 has been declining (IAMR, 2011b). The LFPR is the ratio of the labour force in the age group 15 and above to the total population of the country. If the growth rate of total population is higher than the growth rate of those joining the labour force the LFPR shows a declining trend, which is exactly what the total shows. The total population growth rate, despite its constant decline over the past few decades, is still 1.6% per annum (2001-2011), while the growth rate of labour force is lower. There is a constant decline in both rural and urban LFPRs over the period, as well as in the WFPRs. As soon as the population growth rate, which is systematically declining, is exceeded by the growth rate of the labour force the LFPR will start increasing.

However, the growth in the labour force will be moderated by rising participation in education. The Right to Education for 6-14 years old will ensure that even those who turn 14 will continue in school – especially since there is a high likelihood that the RTE will be extended to age 16 (to cover classes 9-10). Moreover, with the introduction of the National Vocational Education Qualification Framework (NVEQF), and vocational education starting with class 9, there is a probability that drop-out after class 8 (age 14) will decrease, and children will continue in vocational education (IAMR, 2011a). Creating employment opportunities for the educated youth will be a challenge for the country in near future (Rangarajan, Kaul, and Seema, 2011).

The workforce had increased during 1999-2000 to 2004-5 by 60 million, but the corresponding increase in the second half of the decade is only two million. This number could be used to draw the conclusion that employment growth has slowed in the period of faster growth in the latter half of the decade, and therefore casts doubt on the value of economic growth as a goal. However, this is not true, and this is demonstrated by the following inferences that can be made from Table 2.

Table 2 : Workforce Estimates for 1999-2000, 2004-05 and 2009-10

(in millions)	Principal status	Principal status	Principal and Subsidiary status	
Age Group	0 to 24	25+	0 to 24	25+
1999-2000				
Rural male	46	150	48	152
Rural female	20	62	26	80
Urban male	15	60	15	61
Urban female	3	12	4	14
2004-05				
Rural male	48	167	51	168
Rural female	19	72	28	96
Urban male	18	71	18	72
Urban female	4	16	5	19
2009-10				
Rural male	41	186	45	187
Rural female	14	67	19	86
Urban male	16	83	16	84
Urban female	3	16	4	19

Source: NSS 50th, 55th and 66th Rounds.

The first point refers to what has happened to Principal Status employment between the first and second halves of the 2000s. The activity on which a person spends a relatively longer time (say farming his land) during the 365 days preceding the date of survey is regarded as the usual principal activity status (PS) of the person. In addition to her principal status activity, this person could have engaged in some other activity for 30 days or more during this time (called her subsidiary status). The two measures together are used to determine the size of the workforce, and also the number of persons both working as well as available for work (labour force). According to NSS employment and unemployment Surveys, since 1983 there has been a consistent improvement in principal status employment and a reduction in subsidiary employment (Anant and Mehta, 2011).

The second important finding is that there is a growing absence of those under 25 from the workforce, which is another extremely welcome development. If children under 6 and children over 14 are not in the workforce, it is because they are increasingly in school. In fact, the 0-24 year age group sees a sharp decline in their WPR. As we have analysed in the *India Human Development Report 2011,* this is happening because the incidence of child labour is declining and there is a simultaneous increase in school attendance of over 14-year olds (IAMR, 2011b).

Further, in the age group of 5-14 years, 89.3% of children were in school in 2009-10, up from 82.4% in 2004-05. Further this increase was higher for girls, rising from 79.6% in 2004-05 to 87.7% in 2009-10. In the 15-19 years age group, 59.5% of young people were in the educational system in 2009-10 as compared to 46.2% in 2004-05. Once again, the increase was more for girls, from 40.3 to 54.6%. In the next higher age group of 20-24 years, 22.5% of boys and 12.8% of girls were still in the educational system in 2009-10 against only 14.9 and 7.6% respectively in 2004-05 (Planning Commission, 2011).

The third important finding is about development in regard to women's employment. Since the 1980s there has been a near consistent decline in WPR for women (Mazumdar and Neetha, 2011; Rangarajan et al., 2011). In the Indian case, far from being a bad thing, this is entirely a welcome development. For Male PS employment in ages 25 or more, there has been a sharp increase in the growth of workers – quite the opposite of what might be implied by the mere two million increase in total employment that occurred between 2005 and 2010. However, the situation is quite different for women, whose employment has declined. Their employment fell because as we noted above, young women are attending school, which is where they belong. In fact, comparison over a longer period shows that from the 1980s there has been a sustained decline in women's employment[2]. The main worry here is that as Rangarajan et al (2011) note, only 44% of the decline in the female WPR is accounted for by increased participation of women of working-age in education.

The rural unemployment rate has been consistently lower than the urban one, which is not surprising given the reliance of the rural workforce upon self employment in agriculture even though it might be a last resort activity, since evidence is growing of rural distress among the 84% of all farmers who till under one hectare of land – the small and marginal farmers that eke out an uncertain livelihood. What is worrying is that on account of the slow rate of growth of output in agriculture in an otherwise high growth economy, the unemployment rate by UPSS has only shown an increase between 1993-94 and 2004-05, and has remained at roughly the same level in 2009-10 (IAMR, 2011b). On the contrary, in urban areas, where a lot of the economic growth has tended to be concentrated, there has been a decline of the unemployment rate.

Table 3 shows some further positive developments in the latter half of the 2000s. Unemployment by the CDS measure has declined, after rising from 6.06 per cent in 1993-4 to 7.31 per cent in 1999-2000 and further to 8.2 per cent in 2004-5. But, as we noted

2 Anant and Mehta (2011) point out that employment on account of subsidiary status, females and the young in 2004-5 shows an increase from 1999-2000, which marks a break in this long term pattern of decline. If we omit the data for 1999-2000, then the broad pattern of decreasing WPRs in these three categories is maintained. They also note that 'what confounds the picture is the fact that in 1999-2000 we have a much sharper fall in WPR in these categories, leading to a correction', which leads to an apparent rise in WPR between 1999-2000 and 2004-5. They note that this phenomenon has been explained by some as resulting from an employment slowdown in the 1990s, or due to the fact that 1999 was an unusual year on account of a recession. In either case the results are an illusion created by the 1999-2000 survey.

above, more men are indeed working in the latter half of the decade compared to the first half, more girls are going to school, both of which suggest that incomes are rising. It appears that this information is consistent with the phenomenon that wages are raising, not just in salaried work, but also in casual work. (Table 3). It is also consistent with the fact that the average number of months without work in the past year for casual workers declined between 2004-05 and 2009-10 (from 1.9 to 1.4 months in agriculture, from 1.4 to 1.1 months in rural non-farm work and from 1.5 to 0.9 months in urban areas) (Work Bank, 2012).

Table 3: Unemployment and Wages, 1993-4 – 2009-10

	Unemployment rate (%) (CDS)	Salaries & Wages	
		Regular	Casual
		(Rs. Per day, for male rural workers	
1993-94	6.06	58.48	23.18
1999-00	7.31	127.32	45.48
2004-05	8.2	144.93	55.03
2009-10	6.6	249.15	101.53

Source: NSS, 66th Round, 2009-10, and 50th Round, 1993-4

2.2 Qualitative Dimensions in Employment Trends:

Formal and informal employment in the non-agricultural sectors

The share of organized sector employment was around 14 per cent in both 1999-2000 and 2004-5. However, our analysis of the NSS 2009-10 data (NSSO, 66th Round) in the second half of the decade it has risen to 16 per cent. That is, unorganized sector employment has declined from 86 per cent in 1999-2000 and 2004-5 to 84 per cent in 2009-10. Organized and unorganized sectors have been defined as per NCEUS definition (Table 4).[3]

Analysis of formal versus informal employment, again using NCEUS definition,[4] shows employment within both organized and unorganized sectors with social security benefits. While there has been a decline in the share of formal employment from about 9 per cent in 1999-2000, to nearly 8 per cent in 2004-5 and further to 7 per cent in 2009-10, there has been a consistent increase in informal employment, especially in the organized sector (Table 4).

3. "The unorganized sector consists of all incorporated private enterprises owned by individuals or households engaged in sale and production of goods and services operated on a proprietary or partnership basis and with less than ten total workers."
4. "Unorganized/informal workers consist of those working in the unorganized sector or households, excluding regular workers with social security benefits, and the workers in the organized/formal sector without any employment and social security benefits provided by the employers."

The share of informal employment in the unorganized sector is unchanged at 99.5 per cent throughout the decade. This is because there are hardly any social security benefits for workers in the unorganized sector. However what is notable is that the share of formal employment in the organized sector has been falling continuously from 62 per cent in 1999-2000, to 53 per cent in 2004-5, further down to 42 per cent in 2009-10. This is matched by a corresponding increase in informal employment in the organized sector which currently stands at 58 per cent compared to 38 per cent at the beginning of the decade. Thus, while organized sector's share in employment is increasing, it is only due to increase in informal employment in that sector.

Table 4: Formal and Informal Employment in Organized and Unorganized Sector

Sectors	Employment		
	2009-10		
	Informal	Formal	Total
Unorganized	385.08 (99.4)	2.26 (0.6)	387.34 (100)
Organized	42.14 (57.8)	30.74 (42.2)	72.88 (100)
Total	427.22 (92.8)	33.00 (7.2)	460.22 (100)
		2004-05	
Unorganized	393.5(99.6)	1.4(0.4)	394.9(100)
Organized	29.1(46.6)	33.4(53.4)	62.6(100)
Total	422.6(92.4)	34.9(7.6)	457.5(100)
		1999-2000	
Unorganized	341.3(99.6)	1.4(0.4)	342.6(100)
Organized	20.5(37.8)	33.7(62.2)	54.1(100)
Total	361.7(91.2)	35.0(8.8)	396.8(100)

Note: Figures in parenthesis are %ages

Source: for 2009-10, computed from NSS 66th round, for 2004-05 and 1999-2000, NCEUS, 2007

As per our conceptual framework, the first two transitions are taking place. There is a movement of workers from agricultural sector to informal non-agricultural sectors, mainly construction. Next is the transition from informal employment in the unorganized sectors to informal employment in the organized sectors. This is shown by a decline of 8.4 million informal workers in unorganized sector along with an increase of 13 million informal

workers in the organized sector. Correspondingly, the share of all workers employed in the organized sector has increased (from 14 to 16 per cent). But the cause of worry is that formal employment in the organized sector, which is by definition the most decent form of employment, is not increasing. This shows that employers are increasingly hiring workers on contractual terms due to labour laws and other concerns.

Size of Enterprises by Employment:

In Table 5 we examine the number and share of workers in what could be termed as micro, small, medium/large enterprises. There seems to be a remarkable shift occurring in non-agricultural employment in the 2000s if we examine the size class of enterprises by the number of workers that they employed. The workers in the enterprises with less than six employees (i.e. micro enterprises) show a remarkable decline both in absolute as well as in relative terms between 2004-05 and 2009-10. Such micro enterprises accounted for 152.5 million workers in the middle of the decade, or 75% of all non-agricultural workers. By the end of the decade the number of workers in such enterprises had fallen by nearly 4 million, and the share of such micro enterprises in the total non-agricultural employment was down to 65.6%. Correspondingly there was an increase in the number of workers employed in enterprises with 6 and above but less than 10 workers, from 15.2 million in the middle of the decade to nearly 24 million at its end, thus raising the share of workers in such enterprises from 7.5% to 10.5% of all non-agricultural employment in the country. This is clearly a positive development since it is easier for slightly bigger enterprises to be reached with services (credit, marketing support, design support). It is also better for workers since it reduces the fragmentation and enables them to organize – which is next to impossible to achieve when workers are dispersed into millions of micro-enterprises.

What is remarkable about this shift in the size class of enterprises by employment in non-agricultural work is the growing absolute number of employees in enterprises where 20 or more workers were employed. Workers in what could be called the middle and large enterprises, by size class of employment, rose from 24 million in 2004-05 by a remarkable 15 million to nearly 39 million at the end of the decade. At the same time the share of such employment in total non-agricultural employment grew from 11.8% to 17.1%. This is consistent with our argument, based on the analysis of organized manufacturing employment in the latter half of the 2000s later, that there has been a rise in organized sector manufacturing.

Table 5: Number of Workers by Size of Enterprise

Number of Workers in Enterprises	2004-05		2009-10	
	Number of Workers in Million	Share	Number of Workers in Million	Share
Less than 6	152.5	74.9	148.7	65.6
6 & above but less than 10	15.2	7.4	23.8	10.5
10 & above but less than 20	11.8	5.8	15.4	6.8
20 & above	24.0	11.	38.8	17.1

Source: NSS , 61st & 66th Rounds.

This shift in the distribution of employment across firm size groups between 2005 and 2010 is very significant since World Bank (2012) reports that this distribution had not shifted over time between 1993-94 and 2004-05.

The Self-employed, Regular Wage Employed and Casual Wage Labour

Table 6 presents for three points of time disaggregated data for the workforce distributed by category-wise employment: the self-employed, the regular wage/salary worker and the casual labourer. The self-employed see a remarkable increase in employment in absolute terms until the middle of the decade, and then a decline; a similar trend is noticeable for the share of self-employed in the workforce. The decline is largely explained by withdrawal of women in the workforce of about 23 million women (of which 1.7 million got jobs as casual labour and 0.2 million as self-employed). As much as 21 million of these women were in rural areas who, as we noted earlier, withdrew because they were either now studying or engaged in domestic work. Urban women did the same but on a much smaller scale (Rangarajan et al., 2011; Himanshu, 2011).

The decline in the numbers of self-employed has a corresponding increase in the numbers of those who had casual work in the latter half of the decade. Both types of work are in the unorganized segment, so there is little change in terms of the quality of employment – both would involve informal employment.

In terms of the quality of employment, the one welcome development has been the consistent rise in both the absolute number as well as the share of workforce of regular workers, throughout the decade. The increase over the decade was 17 million. This welcome development needs to continue. The only downside about this increase, at least in the latter half of the decade, is that 96% of the jobs were picked up by men.

Table 6: Number of Workers according to UPSS Approach by Broad Employment Status (in Millions)

	1999-00	2004-05	2009-10
Self employed	209.3	258.4	232.7
Regular wage/ salaried employee	58.2	69.7	75.1
Casual labourer	130.3	129.7	151.3

Source: NSS

Incidence of Employment by Level of Education

It was a notable fact about the incidence of employment by level of education in India (by UPSS) that illiterates have the lowest rate of employment, and rate of unemployment tends to rise with every level of education: primary, secondary and higher secondary, with the highest unemployment rate characterizing those with diploma/certificates (or those with one or two years of post higher secondary education) (Table 7). In fact, the last group had an unemployment rate of 10.4% in 2004-05 and 9.6% at the end of the decade. The unemployment rate does decline for graduates and slightly again for post-graduates and above, but not significantly.

Table 7: Incidence of Unemployment for 15 years and above age group, by level of education, 2004-5 and 2009-10 (UPSS)

Level of Education	2004-05	2009-10
Not Literate	0.3	0.3
Literate Without Formal Schooling	1.2	0.3
Below Primary	1.2	0.7
Primary	1.4	1.2
Middle	2.7	2.1
Secondary	4.8	2.7
Higher Secondary	6.4	5.2
Diploma / Certificate	10.4	9.6
Graduate	8.8	6.9
Post Graduate & Above	8.1	6.7
All Level of Education	2.3	2.0

Source: NSS

In other words, those with relatively higher education are clearly still able to survive, precisely because unemployment over 182 days of the preceding 365 days (before the survey closed)

is a situation that can be borne only by the relatively well-off (who are also the relatively better educated). What is interesting is that by this UPSS measure the unemployment rate is very low for the illiterate or neo literate, but by the current daily status (CDS) measure the unemployment rate in the country is close to that (by UPSS) of those who have graduate qualification.

3. Non-agricultural employment: A Sectoral analysis of the 2000s and the potential for future employment growth

The strategy for increasing employment during 12th Five Year Plan must rely upon an analysis of how employment trends have evolved over the last decade. For this reason most of the analysis in this section will rely upon employment trends for agriculture, manufacturing, non-manufacturing industry and services. We examine employment trends for various sectors for three points of time: 1990-2000, 2004-05 and 2009-10 and the data are reported in Table 8.

The fundamental issue facing the Indian economy at the commencement of the 12th Plan period is whether more rapid employment growth can be combined with the rapid growth of output in industry and in services. The problem of employment growth not keeping pace with growth of output has been experienced in other developing countries as well and it has bothered policy makers for at least half a century ((Patnaik , 2011, Ghosh, 2011). One of the main objectives of the growth strategy in the 12th Plan period must be to ensure that the process of structural change in terms of employment is accelerated. So what is the nature of the structural change that is taking place in employment that we observe from the examination of data for three points of time (2000,2005 and 2010)?

Agriculture saw an absolute increase in employment in the first half of the decade from 238 million in 1999-2000 to nearly 259 million in 2004-05. This increase in agriculture, at face value, cannot be seen to be a positive development, if the expected structural transformation with growth is that there would be a shift of labour from agriculture to non-agricultural employment. However, if the increase in employment in agriculture in first half of the decade is accounted for by a diversification into allied economic activities like fishery, dairying, poultry, sericulture, horticulture and floriculture, it is indeed a welcome development.

While in the latter half of the decade there was a decline in absolute numbers employed in agriculture from 259 million to 245 million, the problem remains that total agricultural employment at the end of the decade was still higher than at the beginning of the decade. That means that the process of structural change in employment that one would expect with a period of very rapid, in fact unprecedented growth in output in the economy outside of agriculture, is not occurring. In fact, if anything that process of structural change is stalled at least as far as the employment structure in the economy is concerned.

In *manufacturing,* there is an absolute increase in employment in the first half of the decade from 44 million to nearly 56 million in 2004-05. This increase by nearly 12 million in manufacturing in the first half of the decade was, however, off-set by a decline by 5 million in the second half of the decade. What is interesting is that the absolute size of employment in 2009-10 (50.74 million) was up by about 15% from total manufacturing employment of 44 million at the beginning of the decade – but only an increase of 6 million in a period of 10 years. It may be pointed out here that even in China the number of workers in the manufacturing sector has stagnated at 230 million since 2004, even though industrial production has more than doubled during the period 2004 to 2010 (Ghosh, 2011).

Several different reasons could have combined to produce this rather grim outcome of a fall in manufacturing employment when output in manufacturing was growing. First, average annual increases in mean real wages in India have been 2.8% between 1983 and 2010. These have risen faster in the second half of the 2000s than earlier – driven perhaps by a greater shortage of skilled staff. Between 1994 and 2010, the wage differential between a particular level of educational attainment and the level of attainment just below has increased. Similarly, sharp increases have occurred in the wage premiums for skilled occupations (eg. managers, professionals, technicians, even clerks) over elementary occupations between 1993-94, 1999-2000, 2004-05 and 2009-10. Thus, the situation emerging is that the supply of workers at lower levels of education is increasing faster than demand while the demand for workers with secondary or tertiary education is exceeding the supply (World Bank, 2012). These data on wages suggest that the pace of technical change increased as a result, so that total employment actually fell despite an increase in total manufacturing output.

A second reason for the adverse employment outcomes could be that the structure of output (in manufacturing or services) shifted towards products or services that much less labour-intensive by 2010 compared to 2005. In other words, the products (or services) being produced in 2010 are more capital intensive, while the output of labour-intensive products actually declines – giving rise to a situation whereby the employment elasticity of output becomes negative overall for manufacturing.

Non-manufacturing industry has been the star performer in terms of generating employment in the decade. In the first half of the decade non-manufacturing employment increased from 21 million in 1999-2000 to 30 million in 2004-05, or nearly 50% increase from employment in 1999-2000. But in the second half of the decade, the absolute size of employment in non-manufacturing by the end of the decade was 1.6 times or compared to 2004-05, or 2.3 times relative to the level in 1999-2000. In fact, over the entire decade there was an increase in non-manufacturing employment by a total of 27.5 million jobs.

The most important contribution to the increase in non-manufacturing employment over the decade came from the construction sector (the increase was 8.5 million during the first half, while 18.1 million during the second half). Mining and quarrying has seen a small increase in employment, and electricity, gas and water supply have seen a very marginal increase.

Table 8: Employment across various sectors (in millions)-1999-2000, 2004-5, 2009-10

	Employment across various sectors (in millions)			Absolute increase in employment (in millions)	
Sectors	1999-2000	2004-5	2009-10	1999-00-2004-5	2004-5-2009-10
Agriculture	237.67	258.93	244.85	21.25	-14.08
Manufacturing	44.05	55.77	50.74	11.72	-5.03
Mining & quarrying	2.17	2.64	2.95	0.47	0.31
Electricity, gas & water supply	1.13	1.30	1.25	0.17	-0.05
Construction	17.54	26.02	44.08	8.48	18.06
Non manufacturing	20.84	29.96	48.28	9.11	18.32
	0.00	0.00		0.00	
Trade	36.63	43.36	43.53	6.74	0.17
Hotels & restaurants	4.62	6.10	6.13	1.48	0.03
Transport, storage & communication	14.61	18.47	19.97	3.86	1.5
Banking (& insurance)	2.25	3.10	3.82	0.84	0.72
Real estate, Renting and Business Activities	2.67	4.65	5.75	1.98	1.12
Public administration & defence	10.48	8.84	9.46	-1.64	0.62
Education	8.47	11.43	11.85	2.96	0.42
Health	2.62	3.34	3.59	0.73	0.25
Other Services	11.85	13.51	12.24	1.66	-1.27
Services	94.20	112.81	116.34	18.77	3.53
Total	396.76	457.46	460.22	60.70	2.76

Source: NSS Employment & Unemployment Surveys, various rounds.

Trade is far away the most important contributor to employment in *services* of the 10 service activities mentioned in Table 8. It accounts for a third of total services employment in the economy both at the beginning as well as at the end of the decade. It accounted for around

36% (nearly 7 million) of the increase in employment that occurred in the service sector in India in first half of the decade. However, in the second half of the decade, trade saw hardly any increase in employment. The second most important sector within services is transport, storage and communication. It accounted for 15.5% of the total services employment, and on account of the increase in employment that occurred throughout the decade it accounted for 17% of total service sector employment at the end of the decade.

The third most important segment in service sector employment is public administration and defence, in which there was a fall of nearly 1.6% in total employment in the first half of the decade, followed by the slight increase in the latter half. The important point is that compared to the beginning of the decade public administration and defence had seen a fall by 9.5% of total employment. At first sight this could be interpreted as a positive development, given the fact that the composition of employment within public administration in particular is heavily biased in favour of lower level personnel, or people with rather low levels of skills. For example, in the central government only 12% of all employees are accounted for by class A and class B group employees, while 88% of total central government employees are accounted for by groups C&D. Given that wages and benefits paid in government for levels C&D are well above those which are available to employees in the private sector at comparable level of employment and skills, this is a situation which remains completely unsustainable.

Among the economic services it is notable that hotels and restaurants have seen sharp increase in employment of 1.5 million in the first half of the decade starting from a base of 4.6 million at the beginning of the decade. What is surprising is that this growth was not sustained at all in the latter half of this decade and there was, in fact, no change in employment in this sector. The other important economic service which has shown, as expected, an increase in employment is banking and insurance in both the first half as well as the second half of the decade. Employment in banking and insurance, which was 2.25 million in 1990-2000, had risen to 3.82 million in 2009-10.

The other interesting service sector is real estate in which there was a consistent increase in employment throughout the decade, from 2.7 million in 1990-2000 to 4.7 million in the middle of the decade, to 5.7 million at its end. This is hardly surprising given that both housing as well as infrastructure investment in the 11th Plan period has been growing rapidly. We saw above that construction contributed the largest increase in total employment in the economy in both the first and second halves of the 2000s. The increase in employment in real estate is a mirror image of the increased construction activity. We know that investment in infrastructure at the beginning of the 11th Five Year Plan (2007-08) stood at 4.4% of GDP, but its share in GDP is expected to rise to 7.5% in the terminal year of the 11th Five Year Plan. Hence, it is not surprising that both construction (within industry) and real estate services have seen a consistent increase in employment.

One can foresee that this trend will remain unabated during the 12th Five Year Plan. This is because investment in infrastructure is expected to grow from $500 billion during the 11th Five Year Plan to 1 trillion dollars in the 12th Plan, i.e. to nearly 10% of GDP. Even more importantly the share of private sector in infrastructure investment, which was 30% of all infrastructure investment during the 11th Five Year Plan is expected to rise to 50% at the end of the 12th Plan. In other words, the scope for increase in employment in real estate services is going to be significant, just as expansion of employment in the construction sector is going to increase during the 12th Five Year Plan.

The somewhat intriguing results are in regard to employment in health and education services. Due to government investment in school education, especially the Sarva Shiksha Abhiyan, there has been an increase in the number of teachers hired by government schools throughout the country. Private school enrolment and hence teacher hiring have also increased. Hence, it is not surprising that there was an increase in the number of those employed in education from 8.5 million in 1990-2000 of about 3 million in 2004-05. However, there was hardly any increase in employment in education in the latter half of the decade. Meanwhile, the education sector's growth has remained robust: The growth rate of GVA between 1999-2000 and 2004-05 in education was 7.1% per annum, and it actually increased to nearly 8.4% per annum in the latter half of the decade.

Similarly, in health, which accounts for only a third of the employment generated by the education sector, there was a large increase in employment in the first half of the decade from 2.6 million to 3.3 million, but the increase in employment was marginal in the latter half of the decade. It appears that while the growth rate of GVA in health was robust (10.1% per annum) in the first half of the decade the GVA growth in the health sector declined to 4.2% per annum in the second half of the decade, which perhaps explains the rather small increase in employment in the health sector in the latter half of the decade. With persistent shortage of health workers even post National Rural Health Mission there is a possibility that greater thrust by government on the health sector will increase employment in the health sector in the 12th Plan.

The share of manufacturing in GDP is supposed to rise from its current 15% to 25% by the end of the 13th Five Year Plan at 2022 (Planning Commission, 2011). However, manufacturing today accounts for 15.3% of GDP, which is not any different from its 15.5% share in GDP in 1999-2000. The share of manufacturing in employment actually fell slightly from 11.1% of total employment in 1999-2000 to 11.03% in 2009-10. With increasing global integration different technologies are being imported which to a considerable extent are labour-saving. It is important that savings generated in such sectors are diverted towards labour intensive sectors including the social sectors (health, sanitation, and education in particular) which will generate demand directly as well as indirectly through the multiplier effect (Ghosh, 2011). If investment in the social sectors rises, disposable income with the consumers

goes up, thereby leading to an increase in demand. In India, investment in social sectors has remained at very low level, and therefore, domestic demand expansion through higher investment in the social sectors has not taken place. Further, the rise in interest rate has dampened investment growth. This can be one of the possible reasons why employment has not grown despite very high growth in output.

In other words, the challenge before the country's policy makers is to not only increase the contribution of manufacturing to gross value added in the economy, but also its contribution to employment – in a context wherein the last decade of rapid economic growth there has been almost no increase in the contribution of manufacturing to either output or employment in relative terms. Further, resource mobilization from labour-saving sectors to labour intensive sectors (including the social sectors) remains an important challenge for the policy makers.

3.1 Employment trends in the unorganized and organized segments of industry and services

In Table 9 we provide a detailed analysis of organized and unorganized employment, for agriculture, industry and services for three points of time: 1999-2000, 2004-05 and 2009-10.

Table 9 : Number of workers (in million) by sector, 1999-2000, 2004-5, 2009-10

Workers (in millions)	1999-2000			2004-05			2009-10		
	Total	Unorganized	Organized	Total	Unorganized	Organized	Total	Unorganized	Organized
Agriculture	237.67	232.2	5.47	258.93	252.8	6.09	244.85	242.11	2.74
Manufacturing	44.05	30.92	13.13	55.77	39.71	16.06	50.74	34.71	16.03
Non Manufacturing	20.84	13.89	6.95	29.96	20.64	9.32	48.28	30.36	17.92
Total Services	94.20	65.62	28.57	112.81	81.72	31.09	116.34	80.15	36.19
Total Workforce	396.76	342.64	54.12	457.46	394.90	62.57	460.22	387.34	72.88

Source: NSS

Agriculture: We have already seen earlier that structural change in terms of employment has hardly even begun during the period of rapid economic growth of the 2000s, despite rapid growth in industrial and services output. The numbers employed in agriculture at the end of the decade is in fact more than what it was at its beginning. The share of the organized segment of agriculture in total agricultural employment (238 million in 1999-2000 and 242 million in 2009-10) was barely 5.5 million at the beginning and fell further to 2.7 million

workers at the end of the decade, while numbers in the unorganized segment slightly increased from 232 to 242 million.

Manufacturing: In first half of the decade there was a very sharp rise of 30% in unorganized employment in manufacturing (from 31 to 40 million), but 5 million workers in unorganized employment in the manufacturing sector in 2004-05 had lost their jobs by the end of the decade; as a result total unorganized manufacturing employment had fallen to 35 million.

Organized manufacturing, which accounted for 30% of total manufacturing employment at the beginning of the decade, increased its share to only 31% by the end of the decade. In other words, to the extent that organized employment constitutes an improvement in the scale of decent work over unorganized sector employment (see Section 1), over the decade of rapid economic growth there was not any improvement in this regard either (Goldar, 2011a and b; Nagraj, 2011; Kannan and Raveendran, 2009; Mazumdar and Sarkar, 2004).

Manufacturing employment: Informal vs. formal employment in organized manufacturing

We have noted above, on the basis of an analysis of NSS data for 1999-2000, 2004-05 and 2009-10, that employment in the organized segment of manufacturing has grown from 13.13 million to 16.06 million (during the first half of the decade), and it remained there (16.03 million) during the second half of the decade. It is very important to emphasize that even in organized manufacturing employment, as defined by the NSS, there are both types of employment: formal and informal. We noted in Section-1 that the most decent form of employment would be formal employment in the organized sector of the economy.

In order to assess the size of formal vs. informal employment in organized manufacturing over the past decade we examine data from the Annual Survey of Industries for three points of time 1999-2000, 2004-05 and 2008-09 (the latest year for which ASI data for organized manufacturing is available for 2008-09). The contrast between employment in organized manufacturing as defined by the NSS as against the ASI definition is instructive. In 1999-2000 NSS reports organized manufacturing to be employing 13.13 million workers, while ASI reports that the size of employment in organized manufacturing in the same year is less than half at 6.3 million. The definition that ASI uses for organized manufacturing is that the firms counted are those registered under the Factory Act 1948 employing 10 or more workers; this is a tighter definition than the one used by the NSS to identify firms in organized manufacturing. NSS captures manufacturing enterprises run by government (or included in the public sector) and cooperatives, trust and other type of private enterprises employing 10 or more workers - these belong to organized manufacturing. The latter definition includes both formal and informal employment (see Section -1 for the distinction), while the ASI's definition is restricted mostly to formal employment. In other words the difference between the ASI's number for workers employed in organized manufacturing (6.3 million) and that of

the NSS (13.13 million), is explained by the fact that 6.53 milllion of the 13.13 million in NSS's organized manufacturing segment are mostly workers that would be regarded as contract or ad-hoc labour (i.e. informal workers in the organized segment of manufacturing industry) (NCEUS, 2008 and 2009).

By 2004-05 organized manufacturing by the ASI definition barely increased from 6.3 to 6.6 million, while NSS reports that it grew by 3 million (13.1 to 16.1 million). NSS is reporting that by the broader definition of organized manufacturing, employment remained unchanged at 16 million between 2004-05 and 2009-10. However, ASI is reporting that by the tighter definition (which focuses on formal employment mostly) it actually increased from 6.6 to 8.8 million between 2004-05 and 2008-09, i.e. the share of formal employment in organized manufacturing did increase.

Non-manufacturing industry

While employment in services and in manufacturing had increased sharply in the first half of the decade, in the second half employment in these sectors either increased slowly or fell. By contrast, employment in non-manufacturing industry, and especially construction, provided hope to the millions working in agriculture who wanted to leave agriculture in favour of employment in non-agricultural sectors. Mining saw an increase in employment from 2.17 million to 2.64 million in the first half of the decade, and a further increase to 2.95 million in the second half. Most of this increase was accounted for by the organized mining segment, while the unorganized segment saw only a very marginal increase in employment over the entire decade.[5]

The star performer of all sectors in respect of employment, by far, was construction, which saw an increase in employment from 17.54 million to 26 million in the first half of the decade and a further increase to 44 million. Table 9 shows that there was a very sharp increase in employment in the unorganized segment throughout the decade. However, the most surprising phenomenon is that the organized segment of construction also saw very sharp increase in employment, from 4.6 million to 6.35 million in the first half of the decade. But the most stunning increase is the doubling of employment that occurs in organized construction in the latter half of the decade within a matter of five years from 6.35 to 14.91 million. This latter increase in organized construction's contribution to employment growth could only be explained by the fact that there was a significant expansion of infrastructure investment during the 11th Five Year Plan period from 4% of GDP at the beginning of the Plan increasing to 7.5% of the GDP in the terminal year of the Plan. While most of the

5. It is possible that NSS data is not capturing the full extent of employment in mining in its unorganized segment, given large and growing evidence emerging over the decade of large scale illegal mining taking place in many mining states of the country (Chhattisgarh, Jharkhand, Andhra Pradesh, Orissa and Karnataka). It is perfectly possible that these workers in illegal mining were instructed not to report where they were working for fear of being identified as engaged in illegal activity.

increase in unorganized sector employment in construction would be that coming from private development of housing, it is possible that the large scale projects involving the construction of airports, metros, highways and express ways, urban flyovers, and private ports, are likely to have involved such huge firms as L&T, Gammon India, GMR, Shapoorji and so on – all of which are likely to have employed workers directly on terms usually applicable in the organized segment, even though their sub-contractors would also generate significant employment in construction in the unorganized segment.

Services

In the latter half of the decade when manufacturing employment, both organized as well as unorganized, was declining the organized segment of services continue to see a growth in employment. But the unorganized segment of services saw a fall in employment from 81.7 million to 80 million in the latter half of the decade. More than half of this decline in unorganized segment employment in services was accounted for by the decline in employment in wholesale and retail trade, which is perhaps a reflection of the overall fall in economic activity in the aftermath of the downturn of the Indian economy after the global economic crisis. Nevertheless, the experience of the 2000s suggests that organized segment employment may well continue to grow during the 12th Five Year Plan not only in the construction sub-sector, but also in services. Both these sub-sectors seem to have survived the impact of the global economic crisis.

4. Summary and Policy Implications

Some improvement in the transition to somewhat 'decent work'

Our analysis so far suggests that there has been an increase in relatively decent, productive work in at least two senses. First, there has been an increase in the share of industry and services in total employment, with agriculture's share in employment declining, and a corresponding increase in non-agricultural employment from 44% to 47%. In other words, there is not only an absolute increase in non-agricultural employment, where wages tend to be better than agriculture, but also an increase in the share of non-agricultural employment in the total employment in the country.

Organized segment employment has grown – from a share of 14 % at beginning to 16% of total employment at the end of the decade – an absolute increase of 19 million workers. The growth of this share is a welcome development. But clearly, the shift is small in a whole decade of rapid growth of output, and that should be worrying to policy makers concerned about promoting decent employment.

Positive dimensions of recent quantitative employment-related trends

First, for both rural and urban males there has been a significant rise in principal status employment since 1983, and this rise has been sustained in the second half of the 2000s. This

implies that these workers are relying on one source of employment, rather than more than one.

Second, there has been a sharp decline in the number of those under 25 years of age in the workforce. This denotes a drop in the labour participation rate, and a future increase in the educational level of the young population joining the workforce – a definitely positive development.

Third, the worker- population ratio for women has seen a decline since 1980s. The decline is much greater for rural females than for urban females. It was rural females who have tended to remain outside the school system historically. We know that girls' enrolment rate in school and college have been increasing consistently, not just at elementary level but also at secondary level and above. Hence, the decline in the female worker population ratio in the 0-24 year age group for women is a welcome development in the latter half of the 2000s.

Fourth, unemployment rates between 1993-94 and 2004-05 by current daily status had increased consistently from 6% to 8.2% of the labour force. However, consistent with the increase in the growth rate of economy the unemployment rate by the CDS measure has declined in the latter half of the 2000s to 6.6% in 2009-10.

Fifth, there has been a secular rise in the real wage rate for both regular and casual workers. This is consistent with the rise in monthly per capita expenditure in both rural and urban areas, which has led to a decline in the incidence of poverty.

Employment Potential in different sectors

The period of 2004-05 to 2009-10 was unusual in that there was a lower than expected increase in the labour force participation rate, because of a decline in participation of youth and women in the labour force, since they preferred to enter education. However, this lower growth in the labour force in the latter half of the decade will not continue and the pace of employment expansion will have to increase outside of agriculture. Organized segment employment in construction may well also continue to grow. It is the increase in organized construction employment that has driven the relative rise of organized employment in the economy in the latter half of the 2000s.

Agriculture: There was an absolute decline in total employment in *agriculture* of approximately 14 million.One would have expected that at least in the allied activities in agriculture – horticulture, animal husbandry, forestry and fisheries – there would be an increase in employment. The latter expectation derives from the high income elasticity of demand for fruits & vegetables, eggs, meat and fish. It is indeed intriguing that employment in these activities declined in absolute terms from 50.8 million to 34.6 million in the latter half of the decade. Of this decline of 16 million, 11 million is accounted for by decline in employment in

animal husbandry from 34 million in 2004-5, followed by 4 million decline in horticulture. One can hypothesize the reason why there is a decline in allied activities employment. A significant proportion of animal husbandry and horticulture activities are undertaken by women. With younger women in rural areas remaining longer in education, and with males migrating for rural non-farm or urban work, the burden of such work is falling upon women. Women were already burdened with household chores, and with increasing work on the family farm producing essential food crops, these additional allied agricultural activities are getting squeezed out in terms of the woman's time allocation. Clearly, these allied economic activities in agriculture are in urgent need of policy support by both state and central government if they are to flourish, and employment in these activities is to be increased.

Non-manufacturing Industry: Investment in mining will continue to increase during the 12th Five Year Plan, as it will be in power generation. Although these two industrial activities are relatively small employers, the rising investment should generate a modicum of employment in these sectors. But the largest increase in employment throughout the decade of the 2000s has continued to take place in construction. Since infrastructure investment and investment in housing is expected to grow very sharply during the 12th Five Year Plan, construction will continue to provide a source of escape for agricultural labourers desirous of moving out of agriculture. Organized segment employment in construction may well also continue to grow. It is the increase in organized construction employment that has driven the absolute and relative rise of organized employment in the latter half of the 2000s.

Manufacturing: Manufacturing employment increased sharply in the first half but then declined in the latter half of the decade. The fact that it fell just when there was a sharp increase in manufacturing output should worry policy-makers. Within manufacturing, which saw an increase in total employment in the first half of the decade by 11.7 million, a very sharp increase took place in the unorganized segment, of nearly 9 million new jobs.

The increase in organized employment was just under 3 million in the first half of the decade. In the latter half of the decade there was no change in organized manufacturing employment, while the unorganized segment in manufacturing saw a precipitous decline of 5 million workers. Clearly, the decade of the 2000s did not see any major change in the nature of the distribution of workers between the organized and unorganized segments of manufacturing.

Increase in manufacturing employment that took place through the decade was confined to informal employment. This is the long standing trend where manufacturing industry has tended to avoid taking on workers on the regular payroll, but have hired workers during the period of business upswing on informal contracts (contract workers, ad-hoc workers) and then let them go as the business cycle turned downwards.

The hope of the new proposed National Manufacturing Policy (NMP) is that not only will manufacturing become an engine of growth during the 12th Plan, but it will also provide at least 100 million additional decent jobs. Without these jobs "it will be difficult for Indian growth to be inclusive" (Planning Commission, 2011). There are a number of issues that are of concern in the NMP, as articulated in the Approach Paper to the 12th Five Year Plan. First, despite the rather mixed experience with identifying growth sectors in the 11th Plan document for both industry and services, the Approach Paper for the 12th Plan still goes ahead to identify so-called "priority sectors" (textile and garments, leather and footware, gems and jewellery, food processing industries, handlooms and handicrafts). Apart from stating the self-evident that these sectors are labour intensive, there has been no analysis to suggest why these sectors will be able to generate any more employment than they are currently doing. In order to make projections for the future about the employment generating capacity of any sector, a detailed sectoral analysis of the supply side constraints within each sector and the factors determining demand would have to be undertaken for such an identification by "priority sectors" to be meaningful.

A second issue in regard to the NMP is that it does not deal directly with one of the major threats to Indian manufacturing at home and abroad, i.e. Chinese manufacturing exports. The National Security Agency of the Central Government has similarly identified the threat posed by Chinese manufacturers for Indian manufacturing; however, we were unable to access their report. A serious response to the threat of Chinese manufacturing can only be formulated by detailed analysis of where the problem lies, both in terms of Government policy making as well as the private sector's ability to meet the Chinese challenge.

Finally, a critical component of the strategy for achieving the ambitious goals of the National Manufacturing Policy (NMP) is the National Investment and Manufacturing Zones (NIMZ), which will be greenfield townships that will develop to ensure agglomeration economies, superior infrastructure, no-compliance burden, flexible labour market conditions and skilled labour. These conditions do not appear to be very different from the Special Economic Zones (SEZ) which were earlier supposed to meet all the requirements for developing world-class manufacturing activity in India. It is not entirely clear why the NMIZ phenomenon, when implemented, will be able to solve all the problems besetting Indian manufacturing, and also result in a massive increase in employment, when the SEZ phenomenon failed to do so. In that sense, the plan for creating NMIZs could well remain another fond hope.

Services: Services_employment had increased between 1999-2000 and 2004-05 from 94.2 million to 112.8 million; however, in the latter half of the decade it has grown, but to a lesser extent. That seems to suggest that alongside construction, which has seen a huge boom throughout the decade in terms of output and employment, services may continue to be the absorber of workers during the 12th Five Year Plan. Almost all the service sub-sectors experienced a robust growth of GVA both in the first half as well as the second half of the

decade. It is remarkable that in the latter half of the decade when manufacturing employment, both organized as well as unorganized, was declining, the organized segment of services continued to see a growth in employment. Whereas the unorganized segment of services saw a fall in employment. Nevertheless, the experience of the 2000s suggests that organized segment employment may well continue to grow during the 12th Five Year Plan not only in the construction sub-sector, but also in services. Both these sub-sectors seem to have survived the impact of the global economic crisis.

We put forward some hypotheses as to why employment in manufacturing fell and in services barely increased in the latter half of the decade, in contrast to the first half. These hypotheses (bring wages and changes in the composition of output, i.e. more capital intensive products being produced) are being explored by us in research projects at the Institute of Applied Manpower Research (Planning Commission) currently.

Policy Implications of some Qualitative Dimensions of Employment

a) The increase in the middle and larger enterprises by size class of employment and the decline in the share of the micro enterprises in total employment, bodes well for the future ability of workers to organize themselves to demand their rights. The more fragmented workers are in tiny enterprises the more difficult it is for the government also to provide them with services like credit, marketing support or design support (Mehrotra and Biggeri, 2007). Further, the rise in the share of enterprises employing slightly larger number of workers is a welcome development from the viewpoint that there has historically been a problem in India of the "missing middle" in respect of size of enterprise. The recent developments seem to somewhat mitigate that problem.

b) We noted that unemployment as estimated by UPSS measure increased with increasing levels of education of workers. The problem of unemployment of the educated can only be addressed by improving the match between the skills and competencies imparted in education and the needs of industry. This requires greater industry participation at every level of vocational education and training: at secondary and higher secondary levels in schools; at polytechnic level; and in higher education as well. These tasks will be facilitated with the rapid introduction of a competency-based vocational education and training system, based on a National Vocational Education Qualification Framework (Mehrotra et al., 2011). This process that has been set in motion, but it is critical for its success that all the 17 Ministries of the Government of India come on board on one qualification framework for this country, and the private sector (represented by the National Skill Development Corporation – supported by Sector Skills Councils) plays a pivotal and cutting edge role in its implementation.

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