

Growth and Prospects of Non-farm Employment in India: Reflections from NSS data

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Abstract

This paper attempts to explore the recent trends of non-farm employment in India and to identify the employment generating sectors that would absorb the rapidly growing labour force using various rounds of NSS unit level data. Major findings of this study suggest that a structural change in employment has been taking place since 2004-05, that could be rightly named as a Lewisian transition. Construction, services and labour intensive manufacturing sectors together continued to absorb the workers who left agriculture during the post 2004-05 periods. Given the demographic scenario and huge participation in education (particularly secondary and above level), about 11 million skilled, 9 million low-skilled and 43 million unskilled job seekers are expected to join the labour force by 2019-20. Thus, along with the skill development initiatives the government has to give top priority for generating employment in manufacturing and service sectors.

1. Introduction

1.1 Indian economy has been experiencing structural changes in both output and employment with falling share of agriculture and increasing share of both industry and service sectors output and employment in recent years. The structural change in employment shows an absolute decline in agriculture employment (about 5 million per annum) and increasing number of construction, manufacturing (particularly in the low skilled labour intensive subsectors) and service sector (trade, communication and social services etc.) employment (Mehrotra et al., 2014). During this transition phase an increase of low skilled employment including informal workers within organized sectors is observed (Mehrotra et al., 2014). The distribution of labour force by level of skill revealed that about 27 percent of the labour force were illiterates and about 40 percent having below secondary level of education and more importantly among the non-agricultural workforce (age group 15 to 59 years) only about 11 percent had either received or were receiving formal vocational training during 2009-10 in India (Mehrotra et al., 2013).

1.2 The increasing participation in education in recent years (Kannan and Raveendran, 2012; Rangarajan et al., 2011; and Thomas, 2012), would cause an increase of demand for non-agricultural jobs. Furthermore, skill development measures of the government (for example: formulation of the National Skills Development Policy, delivery of Modular Employable Schemes, upgradation of existing institutions through World Bank, upgradation of training institutes under Public Private Partnership mode, setting up of the National Skill Development Corporation, and the plan to establish 50,000 Skill Development Centres) would increase the number of vocationally trained people in the labour force in the next few years. This would also cause an increased demand for non-agricultural jobs. Given this, it is important to know the sectors that could drive the industrial and service sector employment

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in India so as to sustain the Lewisian transition that took place during the post 2004-5 periods in India.

1.3 This paper is organized in five sections. Section two provides the sources of data and methodology. Section three provides trends and patterns of non-farm employment in India and identifies the sectors that could drive non-farm employment in India. Section four provides the projected labour force size and its skill composition (for the year 2019-20) for which adequate number of jobs needs to be created. And section five provides the concluding remarks.

2. Data and Methodology

2.1 This study is based on secondary data taken from National Sample Survey (NSS) and Census of India. Variables like workforce and labour force and current participation in education are estimated using various rounds of NSS unit level data. Sectoral employment is estimated using the National Industrial classification (NIC, 2008) codes. Occupational structure of the work force is estimated using National Classification of Occupation (NCO, 2004) codes. Census population data are used for assigning weights to estimate absolute employment from the NSS employment estimates. The volume of current employment (UPSS²), and number of students currently participating in education are used to project the future labour force. The size of future labour force has three main components (see ILO, 1984): (1) The labour force newly entering (or expected) from within or outside the educational system; (2) The number of persons currently in the labour force and are expected to stay in the labour force and (3) The number of persons expected to be go out of the labour force on account of health constraints, retirement or death etc.

2.2 The new entrants into the labour force includes the inflow of both illiterate as well as literate (at various levels of general and technical education) persons. The volume of new entrants is estimated by multiplying the age (7 to 24 years), sex and education specific labour force participation rates with the number of persons currently not in the labour force (they are enrolled in both general and technical education). The number of persons likely to go out of labour force is estimated from the age distribution of the work force by their industry of employment. The attrition rate in agriculture and non-farm sector would be different. Persons currently (in 2011-12) working in agriculture belonging to the age group 65 and above would turn into 73 years and above by the end of 2019-20. Assuming this group of workers in agriculture would go out of labour force during 2019-20. The persons currently (in 2011-12) working in non-farm industry sectors (manufacturing and non-manufacturing) belonging to the age group 55 and above would turn into 63 years and above by the end of 2019-20. All these workers would retire from their respective jobs and hence would be out of labour force. Though retirement age in service sector is same as industry, those who are engaged in self-employed activities are less likely to go out of the labour force. To adjust this miniscule difference we assume that the persons belonging to the age group 65 and above (during 2011-12) working in the service sectors would go out of labour force by the end of 2019-20. Labour force is estimated using the following formula:

²Considering both usual principal status (UPS) and subsidiary status (SS) of employment together.

$$LF_t = \sum_e ELF_t^e + LF^1 + (1 - d) * LF_{t-1} \quad (1)$$

where $ELF_t^e = P^e \times ENR_t^c$

P^e = Age and sex specific labour force participation rate by level of education e .

ENR_t^c = Enrolment of students in class c in the year t

LF_t = Labour force in year t

ELF_t^e = New Entrants by level of education e in year t

LF^1 = New entrants without any education in the year t

d = Rate of attrition due to death or retirement

ELF_{t-1} = Labour force in the year $t-1$

2.3 This is a standard formula used by ILO (1984) for labour force projection. Before projecting the labour force and the number of new entrants for whom non-farm jobs need to be created, it is important to know the sectors that had been driving non-farm employment in India.

3. Trends and patterns of non-farm employment in India

3.1 Sectoral employment trends in India since 1993-94

3.1.1 Indian economy has been experiencing a structural change in employment during the period of high growth. During 2004-5 and 2009-10, about 24 million (4.8 million per annum) workers have left agriculture. This happened first time in the history of Indian economy. Additional 13 million workers (6.5 million per annum) have left agriculture during 2009-10 and 2011-12. Majority of the workers who left agriculture were found either in construction sector or in manufacturing and service sectors (see Table 1). This sectoral shift of workforce from agriculture to non-farm sectors is popularly known as the Lewisian transition (Lewis, 1954).

3.1.2 The non-farm employment increased about 3.7 million per annum during 1993-4 to 1999-00. The rate of increase in non-farm employment is much faster (about 7.5 million per annum) during 1999-00 and 2004-5. However, it has come down to about 5 million per annum during 2004-5 and 2009-10. During this period manufacturing sector employment declined about 3 million. Nevertheless, during 2009-10 and 2011-12 non-farm employment has increased by 13.5 million per annum (see Table 1). The sectors that drove non-farm employment (25 million increase) during 2004-5 and 2009-10 were construction sector (18.5 million), hotel trade sectors (2.7 million), transport, storage and communication sectors (2.4 million), real estate and finance (2.5 million) and community, social services (1.6 million) respectively. The sectors that drove the massive 27 million increase in non-farm employment during 2010 and 2012 period were: manufacturing sector (9 million), construction sector (6.2 million), community, and social services (7.4 million), hotels and restaurants sectors (2.3 million), and transport, storage and communication (2.9 million). To explore further the process of

structural change, it is important to find out the types of employment that had been generated in various non-farm sectors.

3.2 Non-farm Employment by types of employment

3.2.1 As we noted earlier, employment in agriculture decreased by as much as 24 million during 2005 and 2010, and further by 13 million during 2010-12. The decline in agricultural employment during 2005-10 was guided by decline in self-employed workers of which most of them have worked as unpaid family workers. It is important to note that these are the workers whose marginal product is very low. Further, during 2010 and 2012 the decline in agriculture employment is due to decline of casual employment (See Table 2). Since the low productive and casual labourers are leaving agriculture in the process of structural transformation it is expected that their productivity would increase.

3.2.2 The availability of alternative employment opportunities in construction at relatively higher wages is believed to be the main reason for this move out of agriculture. A continuous increase casual employment, 7 million during 2000-05, 17 million during 2005-10 and 5.4 million during 2010-12 in non-manufacturing sector (mainly in construction) indicates that the casual labourers left agriculture are engaged in non-manufacturing sector. Moreover, about 5 million increase of regular salaried workers in manufacturing sector and 14 million increase of regular salaried workers in service sectors clearly indicates the structural transformation that took place during post 2005 periods.

3.2.3 The increasing labour productivity will boost economic growth. Though, it is difficult to measure the labour productivity of the workers those who have left agriculture and have joined non-farm activities, occupational structure of the non-farm workers will provide a basic idea.

3.3 Non-farm Employment by Major Occupations

3.3.1 The occupation-wise distribution of non-farm sector employment enables us to explore sectoral skill compositions of the workforce, and its trend shows how this is changing over the years in India. An increasing number of skilled labour in a sector partly implies increasing labour productivity through rising capital intensity in that sector.

3.3.2 The volume of unskilled or low skilled workers (elementary occupation) and semi-skilled (plant and machine operators, assemblers etc.) workers have increased during 2004-5 and 2011-12 in the construction sector (see Table 3). The number of workers engaged in elementary occupations increased from 23 million to about 26 million during 2004-5 and 2011-12. And the number of plant and machine operators shows a huge increase from 1.4 million to 28 million during the same period. This occupational structure clearly indicates that those who are leaving agriculture also joining construction sector to perform either elementary jobs or work as machine/plant operators. However, declining share (from 89 percent to 52 percent) elementary job workers and increasing share of machine operators (from 5 percent to 42 percent) in construction sector during 2004-5 and 2011-12 indicates the fact that capital intensity is also growing in this sector. The growing capital intensity would likely to limit the unskilled labour absorption capacity of this sector in the long-run.

3.3.3 In manufacturing sector, it is found that both volume and share of unskilled or low skilled workers (elementary occupation) and semi-skilled (plant and machine operators, assemblers etc.) workers are increasing over the years (see Table 3 and Figure1). Though they are engaged as regular salaried workers, due to lack of proper skills they are found in low productive unskilled/semi-skilled occupations. The number of workers engaged in elementary occupations increased from 9.8 million to about 15 million during 2004-5 and 2011-12. The number of plant and machine operators also shows a huge increase from 11 million to 32 million during the same period. The increasing share of workers in the lowest occupations implies that those who are leaving agriculture might have joined manufacturing sector to perform either elementary jobs or as machine/plant operators. The number of workers working in the craft and related occupations have declined tremendously from 23.4 million to only 0.4 million. This could be an outcome of the rising capital intensity in Indian manufacturing sector which caused about 3 million decline of manufacturing employment during 2004-5 and 2009-10. But the increasing number of workers (3 million increase) in the top most occupations (professionals, technicians and administration staffs) implies the fact that entrepreneurs' have long term plans. This would help driving growth of employment and output of the manufacturing sector in long-run.

3.3.4 Similarly in service sector, the subsector transport, storage and communication shows an increasing number of unskilled or low skilled workers (elementary workers), whereas the subsectors like: hotel trade, community and social services (including education and health services) shows increasing demand for semi-skilled workers viz., sales and services workers, clerks and associate professionals etc. This is also reflected by their percentage share (see Figure 1) in total employment in those sectors.

3.3.5 The type of employment that is generated in each of these non-farm sectors not only plays a crucial role in driving the employment trends, but also provides the direction to the government for taking policy measures for future employment generation. It is therefore, important to provide the distribution of non-farm employment by types of employment and level of education (both general and technical education), which provides proper direction for initiating employment policy in India.

3.4 Non-farm Employment by Level of Education and Types of Employment, 2011-12

3.4.1 During 2011-12, out of total 242 million non-farm workers about 48 million (20 percent) were illiterates, 131 million (54 per cent) with up to secondary level of education (general education), 22 million (9 per cent) with higher secondary education (general education), 28 million (12 per cent) with graduate and above level of education (general education) and only about 13 million (5 percent) of workers having technical education (see Table 4).

3.4.2 Out of 48.3 million illiterate non-farm workers 18.7 million (39 percent) worked as self-employed, 7.1 million (13 per cent) as regular salaried workers and 22.4 million (46 percent) as casual labourers. Similarly, among the workers with up to secondary level of education, about 37 million worked as regular salaried workers, 56.3 million as self-employed and 37.6 million as casual labourers. It is important to note that about 60 million workers belonging to lowest education category (and with no education) worked as casual labourer.

Majority of these casual workers (42.5 million) are found in non-manufacturing (mostly in construction) sector. And about 9 million are found in manufacturing sector. These are the workers, who hardly avail any kinds of social security measures, and remain the most vulnerable group. Thus, it is necessary that the government should take necessary policy measures for the betterment of these vulnerable groups.

3.4.3 As expected, workers with higher secondary and above level of general education are mostly engaged as regular salaried workers in various service sectors. In these education categories out of total 50 million workers about 29 million worked as regular salaried workers, of which 18.5 million worked as self-employed and only 2.5 million as casual labourers. And out of 29 million regular salaried workers, 24 million were found in service sectors, 4 million in manufacturing and only 1 million in non-manufacturing sectors. Most of the self-employed persons (15 million out of 18.5 million) are found in service sectors. About 3 million of these self-employed workers are engaged in manufacturing activities and only about 0.5 million in non-manufacturing activities (including construction, electricity, water/gas supply etc.).

3.4.4 Workers with technical educations are mostly (9.6 million out of total 12.8 million) found employed as regular salaried workers in service (6.3 million), manufacturing (2.5 million) and non-manufacturing (0.8 million) sectors. Only 0.5 million worked as casual labourers and about 3 million worked as self-employed. Since the Government of India (GOI) has taken an initiative viz., Self-Employment and Talent Utilisation (SETU³) to facilitate self-employed activities, it would definitely promote the self-employment activities of technically educated persons those who are likely to join the labour force. However, it is equally important to initiate measures for promoting self-employment activities of persons those who are likely to enter the labour force with general education. Rather, the growing mechanization in agriculture in one hand, and scarcity of regular salaried jobs in manufacturing and service sectors, on the other, would result in an increased volume of open unemployment in India.

4. Trends and structure of labour force to be absorbed in non-farm sectors

For generating adequate number of non-farm employment, it is important to know the likely increase in labour force and the expected number of new entrants with their skill levels. Before we estimate the number of person that would join the labour force, it is important to find out the past trends of labour force in India.

4.1 Trends and growth of labour force in India

4.1.1 In India the size of labour force was 381.1 million in 1993-94, which increased about 104 million (6 million per annum) to reach at 484.7 million in 2011-12 (see Figure 2). The growth pattern of labour force is not smooth. It increased by 27 million (4.5 million per annum) during 1993-94 and 1999-2000, by 61 million (12.2 million per annum) during 1999-2000 and 2004-05, and surprisingly did not increase during 2004-05 and 2009-10, but a sudden 15 million increase (from 469.5 million to 484.7 million) during 2009-10 and 2011-12

³The Government has established a mechanism to be known as SETU (Self-Employment and Talent Utilisation) under NITI Aayog. SETU will be a Techno-Financial, Incubation and Facilitation Programme to support all aspects of start-up businesses, and other self-employment activities, particularly in technology-driven areas.

(7.5 million per annum). The annual growth rate of labour force during 1994 and 2000 was 1.15 percent, which increased to 2.8 percent during 2000 and 2005. Labour force growth rate has come down to about 0.04 percent during 2005 and 2010, but shows a revival with growth rate of 1.6 percent during 2010 and 2012. This uneven growth pattern of labour force is mainly attributed to the changes in demographic profile of the young population (Mehrothra et al., 2014), withdrawal of women from labour force rising enrollment in elementary and secondary schools (Thomas, 2012; Kannan and Raveendran, 2012; and Mehrothra et al., 2014), declining child labour, and partly due to improving living standards (Mehrothra et al., 2014).

4.1.2 Participation in Education seems to be the most likely reason for the slow growth of labour force. And because of this a massive increase of the labour force is noticed during 2009-10 and 2011-12. It indicates that a proportion of the students who were enrolled at secondary and above level of education have started joining the labour force. It could be expected that it would continue in next few years, hence the size of labour force would to grow further. The number of persons likely to join the labour force depends on both the size of current enrollment and their labour force participation rates (LFPR). Therefore, first, we have calculated the number of persons enrolled at various levels of education and their age, sex and education specific labour force participation rates; and then the size of new entrants.

4.1.3 Persons those will turn into 15 years and above during 2019-20 are currently (in 2011-12) belong to the age group 7 years and above. We have calculated both number of students enrolled at various levels of education and the number of persons not attending education (illiterates) belonging to the age group 7 years to 24 years (See Table 5). Within general education; about 252.6 million (126.4 million boys and 126.2 million girls) are attending up to primary education, 40.6 million (20.1 million boys and 20.5 million girls) are attending secondary education, 30.7 million (15.1 million boys and 15.6 million girls) are attending higher secondary education, 6.5 million (2.4 million boys and 204.1 million girls) are attending graduate and above level of education. Within technical education; about 2.3 million (1.5 million boys and 0.8 million girls) are attending secondary (below graduate courses) education and about 1 million (0.6 million boys and 0.4 million girls) are attending graduate and above level of courses. About 7.5 million persons in the age group 7 years and above are illiterates and they are not enrolled/attending any education. The above information is used to estimate the size of labour force for the years 2019-20 and provides two scenarios based on the method outlined in section two (Equation 1).

4.2 Projected Labour Force for the year 2019-20 in India

4.2.1 Scenario 1: If LFPR would remain constant as in 2011-12

4.2.1.1 This is a very restrictive⁴ assumption but it provides a rough idea about the labour force growth for the target year. The projected labour force for 2019-20 would be 543 million

⁴To test the credibility of this projection method we have projected the labour force size for the year 2011-12 assuming 2009-10 is the benchmark year. The projected labour force size (485.5 million with 351.3 million male and 134.3 million female) is very close to that of actual labour force (484.8 million with 350.6 million male and 134.2 million female) with slight over estimation. This over estimation, though negligible, arises mainly because of the declined LFPR (for both male and female) between 2009-10 and 2011-12.

with 390 million male and 153 million female. In other words, the size of labour force would increase by 58.2 million during 2011-12 and 2019-20 (See Table 5) with an average of 7.3 million per annum.

4.2.1.2 The distribution of expected new entrants with their level of education reveals that about 9 million (6.8 million boys and 2.3 million girls) would join the labour force with secondary, 6 million (4.5 million boys and 1.8 million girls) with higher secondary, and 2.5 million (1.3 million boys and 1.1 million girls) with graduate and above level of general education. About 1.5 million (1 million boys and 0.5 million girls) would join the labour force with technical educations. About 45 million (30.3 million boys and 14.3 million girls) would join the labour force with either up to primary level of education or with no education (illiterates).

4.2.2 Scenario 2: If LFPR for secondary and above education increases by 5% and for primary education and illiterates declines by 5% points

4.2.2.1 This scenario is based on a more realistic assumption. As the LFPR of illiterates persons and persons with primary levels of education are showing declining trends (from 1993-94 to 2011-12), it could be assumed that LFPR of these groups would decline further. The LFPR of boys having secondary and above level of education is very high (as compared to the overall male LFPR) and showing a slight increasing trend over the years. The LFPR of girls having secondary and above level of education is also greater than the overall female LFPR (overall female LFPR is showing a declining trends) and also showing an increasing trend over the years. It is therefore assumed that LFPR of these groups would increase. We have assumed that LFPR for secondary and above level of education will increase by 5 percent points whereas LFPR of illiterate and persons with up to primary education will decline by 5 percent points. Based on this assumption we have estimated the labour force size for 2019-20. The projected labour force size in 2019-20 is 540.8 million with 388.4 million male and 152.4 million female (see Table 5). The labour force would increase by 56.1 million from 2011-12 to 2019-20 with an average of 7 million per annum.

4.2.2.2 The distribution of expected new entrants with their level of education reveals that about 9 million (6.5 million boys and 2.2 million girls) would join the labour force with secondary, 7 million (4.7 million boys and 1.9 million girls) with higher secondary, and 2.5 million (1.4 million boys and 1.1 million girls) with graduate and above level of general education. About 1.5 million (1 million boys and 0.5 million girls) would join the labour force with technical educations. About 42.5 million (28.8 million boys and 13.6 million girls) would join the labour force with either up to primary level of education or with no education (illiterates).

5. Concluding Remarks and Policy Suggestions

5.1 Indian economy is passing through a phase of very rapid economic growth since 2003-04 which was accompanied by the structural changes in employment. An absolute decline (23.7 million) of agricultural employment was noticed during 2004-5 and 2009-10, of which 22.5 million were unpaid family workers. Additional 17 million decline of casual employment in agriculture during 2010 and 2012 indicates that labour absorption capacity

of farm sector has been condensed. Growing mechanization in agriculture and rising agricultural/rural wages were the major factors leading to the decline in agriculture workforce. The massive increase of non-farm employment during the post 2005 periods on the other hand clearly reflects a Lewisian transition, which is expected to sustain in India because of the increasing enrollments in higher education.

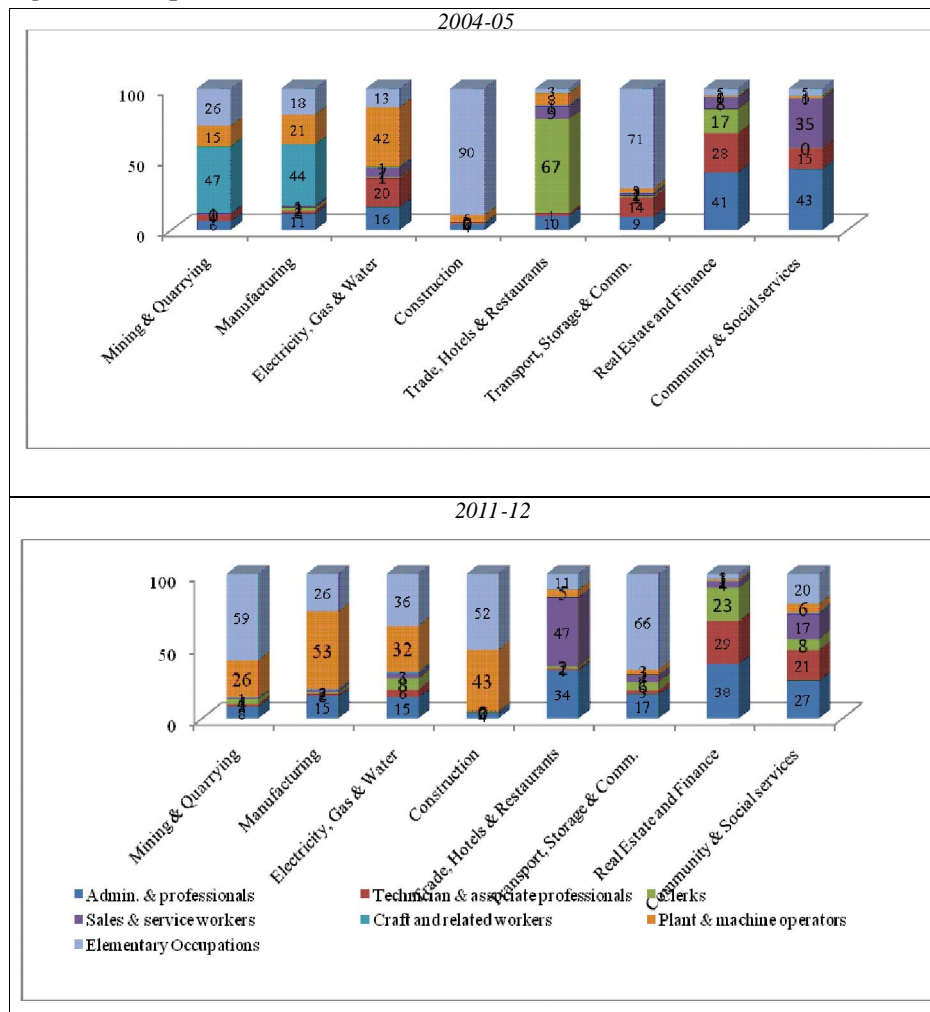
5.2 Those entering the labour force with either primary or secondary education are normally expected to search relatively low skilled jobs in manufacturing, non-manufacturing and service sectors. And those entering with higher secondary and above level of education would more likely to search for regular salaried jobs in the non-farm sectors. But the growing mechanization in agriculture limits the choices for job seekers entering with lower level of education. Therefore, it is important that the government should take quick and constructive measures for generating enough non-farm employment to reduce the volume of expected increased open unemployment in India. Given the estimates that about 11 million would enter the labour force with higher secondary and above level of technical education or general education, about 9 million with secondary level of general education, and about 43 million with primary education; employment policy of the government based on this skill distribution would help the economy to boost economic growth further.

5.3 Allocation of Rs. 6,000 crore for the smart cities project and the planning for development of infrastructure in another 500 cities by the government would help sustain the construction sector employment, which is expected to accommodate a substantial volume of low skilled job seekers. The initiatives like addressing regulatory and procedural hurdles, lowering tax burden, and modifying duty structure for raw material and intermediate goods to reduce cost of production etc. would boost manufacturing production. Moreover, a flexible labour regulation would encourage the producers to increase regular employments in manufacturing sector. Furthermore, generating employment opportunities for the vocationally and technically trained persons, and for those who have completed higher secondary and above level of general education, through financial assistance schemes would increase self-employment activities. However, the government should focus and give top most priority to skill development measures given the estimates that majority of India's job seekers are low-skilled. This would enable to satisfy growing demand for high skilled service workers in India and abroad in the recent years.

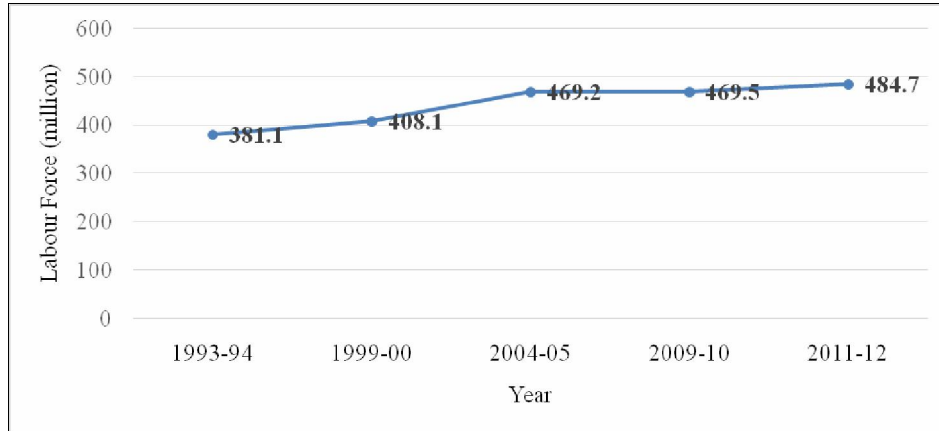
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Figure 1: Occupation-wise distribution of Non-farm workers (%) in India, 2011-12



Source: Author's estimates based on NSS unit level data

Figure 2: Trend of labour force in India, 1993-94 to 2011-12

Source: Author's estimates based on NSS unit level data

Table 1: Trends of Farm and Non-farm Employment in India, 1993-94 to 2011-12

Sectors	Absolute Employment (million)					Change in Employment (million)				
	1993-94	1999-00	2004-05	2009-10	2011-12	1994 to 2000	2000 to 2005	2005 to 2010	2010 to 2012	
Agriculture and Allied (Farm)	242.9	246.6	268.6	244.9	232.0	3.7	22.0	-23.7	-12.9	
Mining & Quarrying	2.7	2.2	2.6	3.0	2.6	-0.5	0.5	0.3	-0.4	
Manufacturing	38.9	42.8	53.9	50.7	59.8	3.8	11.1	-3.1	9.0	
Electricity, Gas & Water Supply	1.3	1.1	1.2	1.3	2.5	-0.3	0.1	0.0	1.2	
Construction	11.6	17.1	25.6	44.1	50.3	5.5	8.5	18.5	6.2	
Trade, Hotels & Restaurants	27.6	39.2	47.0	49.7	52.0	11.6	7.8	2.7	2.3	
Transport, Storage & Communication	10.3	14.0	17.6	20.0	22.9	3.7	3.6	2.4	2.9	
Real Estate and Finance	3.5	4.6	7.1	9.6	7.8	1.1	2.6	2.5	-1.7	
Community, Social services	35.2	32.1	35.6	37.1	44.6	-3.1	3.5	1.6	7.4	
Total Non-farm Employment	131.1	153.1	190.6	215.5	242.5	22	37.5	24.9	27	
Total Employment	374.0	399.5	459.1	460.2	474.2	25.5	59.6	1.1	14.0	

Source: Author's estimates based on NSS unit level data in various rounds

Table 2: Sectoral distribution of workers (PS+SS) by their status of employment in India, 1993-2012

Sectors & Types of Employment		No. of Workers (million)					Change in employment (million)			
		1993-94	1999-00	2004-05	2009-10	2011-12	1994-2000	2000-2005	2005-2010	2010-2012
Agriculture & Allied	own account worker	67.8	70.4	78.5	76.3	80.8	2.5	8.2	-2.2	4.5
	employer	5.0	2.6	3.2	2.8	3.4	-2.4	0.7	-0.5	0.6
	unpaid family worker	72.3	69.5	90.6	68.0	66.9	-2.8	21.1	-22.5	-1.1
	regular workers	3.3	3.5	2.9	2.1	1.9	0.2	-0.7	-0.7	-0.2
	casual workers	93.1	100.6	93.3	95.6	78.9	7.5	-7.3	2.3	-16.7
	sub-total	241.5	246.6	268.5	244.9	231.9	5.0	22.0	-23.7	-13.0

Table 2: Sectoral distribution of workers (PS+SS) by their status of employment in India, 1993-2012 (Contd.)

Sectors & Types of Employment		No. of Workers (million)					Change in employment (million)			
		1993-94	1999-00	2004-05	2009-10	2011-12	1994-2000	2000-2005	2005-2010	2010-2012
Manufacturing	own account worker	11.3	14.2	18.4	17.4	20.7	2.9	4.1	-1.0	3.3
	employer	0.8	0.4	0.8	0.8	0.9	-0.3	0.3	0.0	0.1
	unpaid family worker	6.4	7.5	9.5	6.4	7.8	1.2	2.0	-3.1	1.3
	regular workers	11.9	13.0	15.9	16.4	20.5	1.1	3.0	0.4	4.2
	casual workers	8.6	7.6	9.3	9.8	9.9	-1.1	1.7	0.5	0.2
	sub-total	38.9	42.8	53.9	50.7	59.8	3.8	11.1	-3.1	9.0
Non-manufacturing	own account worker	2.1	2.8	4.1	4.5	4.8	0.7	1.3	0.4	0.3
	employer	0.2	0.1	0.3	0.2	0.4	-0.1	0.2	-0.1	0.2
	unpaid family worker	0.2	0.3	0.4	0.6	0.5	0.1	0.1	0.2	-0.1
	regular workers	2.8	2.6	3.0	4.1	5.3	-0.2	0.4	1.1	1.2
	casual workers	10.4	14.5	21.6	38.9	44.3	4.1	7.1	17.3	5.4
	sub-total	15.8	20.4	29.4	48.3	55.3	4.6	9.1	18.9	7.0
Services	own account worker	29.5	33.7	42.6	45.6	49.2	4.2	8.8	3.1	3.6
	employer	1.3	0.8	1.8	1.6	2.2	-0.5	1.0	-0.1	0.6
	unpaid family worker	8.1	8.7	11.1	10.2	10.1	0.7	2.4	-0.9	-0.1
	regular workers	31.4	36.8	43.6	49.1	56.9	5.4	6.8	5.5	7.8
	casual workers	7.5	9.8	8.2	9.7	8.8	2.3	-1.5	1.5	-0.9
	sub-total	77.7	89.8	107.3	116.3	127.3	12.1	17.5	9.1	11.0

Source: Author's calculation based on NSS unit data in various rounds

Table 3: Sector-wise distribution of Non-farm workers (million) by their Occupations in India, 2004-05 and 2011-12

Type of Occupation	Sector of Employment							
	<i>Mining & Quarrying</i>	<i>Manufacturing</i>	<i>Electricity, Gas & Water Supply</i>	<i>Construction</i>	<i>Trade, Hotels & Restaurants</i>	<i>Transport, Storage & Communication</i>	<i>Real Estate and Finance</i>	<i>Community & Social services</i>
2004-05								
Administrator & professionals	0.16	6.1	0.20	1.01	4.7	1.6	2.9	15.4
Technicians & associate professionals	0.11	1.08	0.25	0.12	0.7	2.4	2.0	5.2
Clerks	0.00	1.26	0.01	0.03	31.5	0.22	1.2	0.12
Sales & service workers	0.03	0.70	0.08	0.08	4.1	0.28	0.59	12.4
Craft and related workers	1.2	23.4	0.01	0.04	0.37	0.09	0.01	0.07
Plant & machine operators & assemblers	0.38	11.4	0.52	1.4	3.9	0.54	0.07	0.51
Elementary Occupations	0.66	9.6	0.15	22.8	1.5	12.3	0.34	1.6
Others	0.00	0.19	0.01	0.10	0.07	0.07	0.02	0.27
Total	2.6	53.8	1.2	25.6	46.8	17.6	7.1	35.5

Table 3: Sector-wise distribution of Non-farm workers (million) by their Occupations in India, 2004-05 and 2011-12 (Contd)

Type of Occupation	Sector of Employment							
	<i>Mining & Quarrying</i>	<i>Manufacturing</i>	<i>Electricity, Gas & Water Supply</i>	<i>Construction</i>	<i>Trade, Hotels & Restaurants</i>	<i>Transport, Storage & Communication</i>	<i>Real Estate and Finance</i>	<i>Community & Social services</i>
2011-12								
Administrator & professionals	0.2	9.1	0.37	1.9	17.6	3.9	3.0	11.9
Technicians & associate professionals	0.04	0.9	0.15	0.18	0.6	0.7	2.3	9.4
Clerks	0.09	1.0	0.20	0.20	0.8	1.4	1.8	3.4
Sales & service workers	0.02	1.1	0.08	0.08	24.5	1.0	0.33	7.6
Craft and related workers	0.01	0.4	0.03	0.10	0.2	0.1	0.02	0.41
Plant & machine operators & assemblers	0.66	31.8	0.8	21.7	2.6	0.8	0.11	2.7
Elementary Occupations	0.28	8.2	0.3	25.7	0.54	10.7	0.07	1.3
Others	1.2	7.1	0.6	0.4	5.0	4.4	0.2	7.8
Total	2.6	59.7	2.4	50.2	51.9	22.9	7.8	44.5

Source: Author's estimates based on NSS unit level data in various rounds

Table 4: Distribution of non-farm workers (in million) by level of education and types of employment in India, 2011-12

Sectors of Employment	Types of Employment by Level of Education							
	<i>Self-employed</i>	<i>Regular salaried</i>	<i>Casual labour</i>	<i>Total</i>	<i>Self-employed</i>	<i>Regular salaried</i>	<i>Casual labour</i>	<i>Total</i>
Illiterate				Up to Secondary (general)				
Manufacturing	8.0	2.1	3.0	13.1	17.9	11.9	6.4	36.2
Non- Manufacturing	1.2	0.6	17.1	19.0	3.4	2.7	25.4	31.6
Services	9.5	4.4	2.3	16.2	35.0	22.4	5.8	63.1
Total	18.7	7.1	22.4	48.3	56.3	37	37.6	130.9
Higher Secondary (general)				Graduate and above (general)				
Manufacturing	1.9	2.2	0.3	4.4	1.2	1.9	0.1	3.2
Non- Manufacturing	0.4	0.5	1.2	2.2	0.4	0.6	0.4	1.3
Services	7.0	8.0	0.4	15.5	7.8	15.7	0.2	23.7
Total	9.3	10.7	2.0	22.0	9.4	18.2	0.6	28.2
Below Graduate (Technical)				Graduate and above (Technical)				
Manufacturing	0.19	1.67	0.12	1.98	0.11	0.78	0.02	0.90
Non- Manufacturing	0.16	0.52	0.14	0.82	0.08	0.27	0.02	0.37
Services	1.22	2.96	0.14	4.32	1.08	3.36	0.01	4.46
Total	1.57	5.15	0.4	7.12	1.27	4.41	0.05	5.73

Source: Author's estimates based on NSS unit level data

Note: Higher Secondary education includes both regular and diploma/ certificate courses.

Table 5: Current Enrolments (2011-12) by Sex and Level of Education and Projected Labour Force (2019-20) in India

Level of Education		No. of Persons Attending Education (Age group 7 to 24 years)			Projected New Entrants (million) by education					
		M	F	T	Scenario I			Scenario II		
					M	F	T	M	F	T
Illiterate and not attending education		5.7	15.2	20.9	3.3	4.2	7.5	3.2	4.0	7.1
General education	Up to Primary	126.4	126.2	252.6	26.9	10.1	37.0	25.6	9.6	35.2
	Secondary	20.1	20.5	40.6	6.8	2.3	9.1	6.5	2.2	8.6
	Higher Secondary	15.1	15.6	30.7	4.5	1.8	6.2	4.7	1.9	6.6
	Graduate & above	2.4	4.1	6.5	1.3	1.1	2.4	1.4	1.1	2.5
Technical education	Below Graduate	1.5	0.8	2.3	0.7	0.3	1.0	0.8	0.3	1.1
	Graduate & above	0.5	0.4	1.0	0.3	0.2	0.5	0.3	0.2	0.5
Total		171.8	182.9	354.7	43.8	19.9	63.7	42.3	19.3	61.6
Projected Labour Force					389.9	153	542.9	388.4	152.4	540.8

Source: Author's estimates based on NSS unit level data