

**Services-led Growth, Employment and Job Quality: A Study of
Manufacturing and Service-sector in Urban India**

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Abstract

This is a study of employment growth, structure, and job quality outcomes in manufacturing and service-sector in urban India spanning the period 1999-2000 to 2009-10. The context is that of dynamic growth of service-sector in India beginning in the 1990s. This has raised the question whether India will skip the traditional sequence of agriculture to manufacturing with services taking up the leading sector role in India's growth path. We studied employment growth and related aspects of employment structure using the NSS surveys of employment and unemployment carried out in 1999-2000 and 2009-10 with a view to throw more light on the future role of manufacturing and services as providers of employment to large numbers joining the labour force. We did not find any acceleration in the service-sector employment growth relative to manufacturing in the urban areas of India. The good news is that young males have increased their share of regular employment both in manufacturing and services. However, we find greater duality in services sector in terms of the incidence of informality and wage inequality. In the service-sector those with more skills have received higher increases in real wage. The service-sector is relatively more skill demanding than manufacturing. We showed that skill composition of the workforce is markedly different between the two sectors with services clearly skill biased. Social security conditions are not found to be relatively much superior in services. Our results strongly suggest that service-sector is an unlikely destination for the millions of low skilled job seekers. India needs to focus on manufacturing sector to provide large scale employment.

Keywords:

Employment; Job quality; Services; Structural change; Wage inequality

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E24, O11, O14, O15, O53

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Abstract

This is a study of employment growth, structure, and job quality outcomes in manufacturing and service-sector in urban India spanning the period 1999-2000 to 2009-10. The context is that of dynamic growth of service-sector in India beginning in the 1990s. This has raised the question whether India will skip the traditional sequence of agriculture to manufacturing with services taking up the leading sector role in India's growth path. We studied employment growth and related aspects of employment structure using the NSS surveys of employment and unemployment carried out in 1999-2000 and 2009-10 with a view to throw more light on the future role of manufacturing and services as providers of employment to large numbers joining the labour force. We did not find any acceleration in the service-sector employment growth relative to manufacturing in the urban areas of India. The good news is that young males have increased their share of regular employment both in manufacturing and services. However, we find greater duality in services sector in terms of the incidence of informality and wage inequality. In the service-sector those with more skills have received higher increases in real wage. The service-sector is relatively more skill demanding than manufacturing. We showed that skill composition of the workforce is markedly different between the two sectors with services clearly skill biased. Social security conditions are not found to be relatively much superior in services. Our results strongly suggest that service-sector is an unlikely destination for the millions of low skilled job seekers. India needs to focus on manufacturing sector to provide large scale employment.

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Services-led Growth, Employment and Job Quality: A Study of Manufacturing and Service-sector in Urban India

1. Context and Focus

Labour market outcomes are critical to economic policy evaluation. Growth of jobs, earnings, job quality in terms of worker status like regular work or casual or self employment and the access to social security benefits tell us much about the wellbeing of workforce in an economy. Urban labour markets in particular merit separate focus as urban agglomerations play important role as drivers of economic transformation in the process of growth and development. This transformation is expected to provide large productive employment opportunities to absorb additions to the labour force. In the broader context of economic development and structural change the observed sequence was that manufacturing followed agriculture while the service sector became prominent only at later stage. India's experience appeared to be different with the share of services sector in GDP sharply going up in the 1990s, beginning with a share of 43 per cent 1990-91, to reach a high share of 57 per cent in 2009-10. This has raised the expectation in development policy discussions of the possibility of India skipping the traditional sequence and the service-sector assuming the role of the lead sector in India's growth path (Gordon & Gupta 1994; Singh 2008; Eichengreen & Gupta 2011). In this scenario labour shifting out of agriculture will get directly absorbed in services rather than in manufacturing. While there is broad agreement about the dynamism of the service-sector questions have been raised about the sustainability of services output growth by many others on several grounds (Acharya 2002; Bosworth, Collins & Virmani 2009; Panagariya 2008 among others). Dominance of informal sector and the associated low productivity of the service-sector is a key concern undermining the optimistic viewpoint. Others have pointed out the statistically significant contribution of modern segments of services to GDP growth and have suggested a complementary relationship between manufacturing and services as both are required to absorb India's large additions to the labour force (Eichengreen & Gupta 2011). In this context, a study of employment growth, structure and changes in skill/education composition of workforce in urban India in the last decade can throw more light on recent developments and future prospects.

In the decade of 2001-2011 the population of urban India grew by 2.76 per cent per annum and its share of total population increased to 31.1 per cent in 2010 from 27.8 per cent in

2001.¹ Two leading sectors in particular would be studied in detail, namely, manufacturing and services. The growth performance of manufacturing sector in India since 1991, the year of trade and industrial policy liberalisation, has been creditable with an estimated growth rate of 6.5 per cent per annum during 1992-2008. There was a manufacturing sector boom during the period 2003-04 to 2007-08 with an average growth rate of 9.4 per cent. However, the employment creation aspect (job less growth), slow growth rate of formal sector employment (so-called ‘good jobs’) and the continuing ‘duality’ with most of the job creation taking place in the informal sector has been a matter of serious concern and debate. While analyzing the urban sector we pay particular attention to the following sectors: Manufacturing and Services.² The service-sector is defined as a sum of the following sub-groups: Retail and Wholesale Trade, Hotels and Restaurants, Transport and Storage, Financial Intermediation, Real Estate, Public administration, Education, Community and Social services. In the following discussion we refer to these two segments as simply manufacturing and services. Other sectors would be referred to depending on the context. These two categories together have an employment share of 81 per cent in total urban employment.³

An issue not much discussed is the quality of jobs in urban areas. Quality of jobs is hard to define but easier to observe in terms of contractual conditions and access to social security benefits. Using the National Sample Survey (NSS) survey data 1999-2000 (55th) and 2009-10 (66th round), we undertake a comparative study of manufacturing and services in urban India in terms of employment growth, job quality, earnings distribution, human capital (education levels) and access to social security benefits. The survey results of 2004-05 (61st round) would be referred to sparingly as there is some suggestive evidence that it suffers from over estimation of employment numbers (Himanshu 2011). Following this introduction this paper is divided into three sections. The second section presents a discussion of employment growth and structure in urban India relative to that of all India. Section three contains a discussion of earnings inequality and the distribution of educational levels. A short discussion of worker status in terms of

¹ See Bhagat (2011). The decade of 2000s has showed signs of reversal of declining urbanisation trend of the 1990s.

² In terms of National Industrial Classification (1998), we study the following sections: Manufacturing (Section D) and Services sector equals the sum of the following sections (Retail and wholesale Trade, H (Hotels and Restaurants) + I (Transport and Storage) + J (Financial Intermediation) + K (Real Estate) + L (Public Administration) + M (Education) + O (Community and Social Services).

³ An industry *excluded* with a significant employment share is the construction sector with little more than 10 per cent share as we believe this needs separate treatment.

contracts and access to social security is provided in the fourth section. The fifth section concludes with remarks.

2. Employment Growth and Structure

It is useful to begin first by noting the output or GDP growth rates. The service sector output has grown rapidly since 1990 and by 2005 the share of services in GDP had reached well above the international norm that corresponds to the average share of services in countries with similar per capita GDP (Eichengreen & Gupta 2011).⁴ Our estimates based on National Accounts Statistics (NAS) data indicate that the service-sector has clocked an average annual compound growth rate of 8.7 per cent annum between 1999-2000 and 2009-10 as against 7.7 per cent achieved by manufacturing during the same period.⁵ Within the service-sector the group transport, storage and communications has grown the fastest at 11.8 per cent. This largely reflects the rapid growth of communication services that grew at more than 20 per cent.⁶ It is followed by trade and hotels at 8.5 per cent and other business services at 7.9 per cent. Real GDP estimates by sector are not available separately for rural and urban segments. However, as most of manufacturing and services activities are dominated by the urban sector, it can be safely assumed that the similar high output growth rates were achieved in the urban sector as a whole.

In Table 1 and Table 2, our estimates of employment growth rates by industry are shown for India and for urban India separately for easy reference.⁷ Manufacturing in urban India has grown at a faster rate (2.8 per cent) relative to all India (1.7 per cent) over the period 1999-2000 and 2009-10. Its growth rate is higher relative to the earlier period of 1993-99. In contrast, the service sector in urban India has grown at the same rate (2.5 per cent) as that of all India (rural + urban). A marginal slow down in services growth rate relative to the earlier period (2.6 per cent versus 2.9 per cent) can be attributed to the sharp fall in the growth of trade and hotel industry during 2000s. Business services segment that includes financial, real estate and software services

⁴ The critical question to ask, they point out, is whether this is just a structural convergence correcting the earlier neglect or a distinctive pattern of structural transformation (Eichengreen and Gupta (2011, p.4).

⁵ This matches closely with growth rates reported in the Reserve Bank of India, annual report 2010-11 for the period 2000-01 to 2008-09.

⁶ This is the estimate of Eichengreen and Gupta (2011, p.7). They further argue that the contribution of communications, business services, and financial services has in fact risen to the point where it contributes more to growth of GDP than manufacturing.

⁷ Employment is estimated using the NSS worker –population ratios and the mid-year population estimates for the survey years. Employment refers to all workers, that is, usual principal status (ps) and subsidiary status (ss) combined.

grew the fastest with a growth rate of 3.4 per cent. However, its share in total urban employment went up by less than 2 percentage points. What we find is that the service sector share (58 per cent) in urban employment in 2009-10 is stagnant at the level that it had in 1999-2000 (Table 3). An alternative way to understand the importance of the urban sector in job creation is to examine its contribution to employment in terms of absolute numbers (Table 4). Little less the 50 per cent of the employment created in India is accounted for by the urban sector in 2000s. More than 85 per cent of the jobs created in business services and more than 80 per cent of jobs in total manufacturing were in the urban sector. Similarly the urban sector share was more than 40 per cent in the two service industries, namely, trade and hotels; transport, and storage and communications. The three services taken together accounted for more than 56 per cent of the total India jobs. In short, urban manufacturing and services together accounted for 36 per cent of the absolute additions to total employment. This establishes the relative quantitative importance of services and manufacturing in urban employment growth. What has been the quality of the jobs created is a question that we attempt to understand in the next section.

Table 1: Employment Growth Rates by Industry in India: 1993-94 to 2009-10

Industry	1999-2000 over 1993- 94	2009-10 over 1999- 2000	2009-10 over 1993- 94	Share in Total Employment- 2009-10
Agriculture	0.10	-0.10	0.00	52.30
Mining & Quarrying	-2.80	2.70	0.60	0.60
Manufacturing	1.60	1.80	1.70	11.50
Electricity, water, etc.	-4.80	1.90	-0.60	0.30
Construction	6.40	9.70	8.40	9.70
Trade (Retail + Wholesale), Hotel and Restaurant	6.30	2.40	3.80	11.40
Transport, Storage and Communications	5.30	3.40	4.10	4.50
Other Services like Financial, Business, Public Administration, Education etc.	-0.70	2.40	1.20	9.80
Above Three Services	2.90	2.60	2.70	25.70
All Sectors	1.00	1.40	1.30	100.00

Note: Employment is measured by number of workers by usual status (ps+ss).

Source: NSS Employment and Unemployment Surveys adjusted for population censuses.

Table 2: Employment Growth Rates by Industry in Urban India: 1993-94 to 2009-10

Industry	1999-2000 over 1993-94	2009-10 over 1999-2000	2009-10 over 1993-94
Agriculture	-3.40	1.10	-0.60
Mining & Quarrying	-3.70	0.20	-1.30
Manufacturing	1.60	2.80	2.40
Electricity, water, etc.	-4.20	2.10	-0.30
Construction	6.30	5.30	5.70
Trade (Retail+ Wholesale), Hotel and Restaurant, Transport, Storage and Communications	8.00	1.60	4.00
Other Services like Financial, Business, Public Administration, Education etc	3.90	2.70	3.20
Above Three Services	-0.70	3.40	1.80
All Sectors	3.40	2.50	2.90
	2.30	2.70	2.60

Note: Employment is measured by number of workers by usual status (ps + ss).

Source: NSS Employment and Unemployment Surveys adjusted for population censuses.

Table 3: Structure of Urban Employment by Industry

Industry	1999-2000	2009-2010
Agriculture	8.70	7.50
Mining	0.80	0.60
Electricity	0.70	0.60
Construction	7.90	10.20
Manufacturing	22.70	23.00
Trade, Hotels and Restaurant	26.90	24.20
Transport, Storage, Communication	8.70	8.70
Other Services like Financial, Business etc.	23.50	25.20
Above Three Services	59.20	58.10
All Workers	100.00	100.00

Note: Same as Table 2.

Table 4: Distribution of Absolute Employment Change by Industry (in Million, 2009 over 1999)

Industry	Total	Urban	Urban share (%)
Agriculture	-2.50	1.00	-38.40
Mining	0.70	0.00	2.40
Manufacturing	8.40	6.90	81.60
Electricity, water, etc.	0.20	0.20	69.40
Construction	26.60	5.00	18.90
Trade, Hotel & Restaurant	10.80	4.50	41.50
Transport, Storage & Communications	5.80	2.50	43.80
Business, Financial & Other services	10.30	8.80	85.10
Above Three Services	26.90	15.80	58.70
All Workers	60.30	28.80	47.80

Source: Authors' estimates. See, text.

3. Structure of Urban Workforce, Worker Status and Job Quality

Urban Workforce

In 2009-10 the estimated size of the urban labour force (those with jobs plus those seeking jobs) is 126.9 million persons of which 122.6 million persons were having jobs constituting the workforce or those employed. This gives us an unemployment rate of little more than three per cent. Urban workforce has grown at the rate of 2.7 per cent per annum over the period 1999-2000 to 2009-10 (Table 2).⁸ Industry-wise distribution did not undergo much change with construction sector increasing its share to 10 per cent (Table 3). Other business services marginally increased as they are the only two sectors with growth rates higher than the sector growth rates during this period. In absolute terms, more than 28 million additional jobs have been created in urban India during this period. Urban India is expected to absorb additions to the labour force at a much faster rate. What is the status of urban workers in term of type of jobs, education, earnings and social security benefits? Has it improved or deteriorated in the last decade? These questions deserve attention from the viewpoint of worker well-being as well as potential growth. The reason for the latter (potential growth) is derived from the fact that urban India is relatively better positioned in terms of demographic dividend. Our estimated based on successive rounds of NSS surveys suggest that relative to rural sector the dependency ratio, the ratio of dependent population to working-age population, in urban India has declined from 0.6 in

⁸ It is similar the growth rate of urban labour force at 2.6 per cent for this period.

1993-94 to 0.5 in 1999-2000 both for males and females. Conversion of this demographic “gift” into real economic dividend depends on implementation of several structural and institutional reforms. Otherwise it remains as a growth potential not realized.⁹

Employment Status: Structure and Change

Three types of activity status within the category of those ‘employed’ can be distinguished and help one to differentiate job quality of the workforce. They are regular-wage workers, casual-wage workers and those who are self-employed. In other words two types of employment status get attention. They are wage employment and self-employment. Wage employment includes those with regular jobs (regular wage and salaried-RWS, hereafter) and those with casual wage jobs (CW). RWS refers to those who worked in other enterprises and received salary/wages on a regular basis (not on a daily basis or periodic renewal of contract). It is important to understand that the term ‘regular’ means only ‘continuous’ employment. Workers employed as contract workers may report as regular workers and not as casual-wage labourers, who are employed on a daily wage basis or periodic renewal of work contract. Casual wage workers are the most vulnerable category as they lack social security benefits and are least covered by labour regulations including minimum wage rules. Self-employment category consists of three types of workers. They are (i) own-account workers running household enterprise without hiring labour (ii) employers who run enterprises by hiring labour, and (iii) helpers in household enterprises. Income data is not reported for the category self employment. This makes it harder to judge the job quality between SE and RWS. Often SE takes the form of subsistence entrepreneurship due to lack of regular job opportunities. Downsizing and restructuring by formal sector enterprises (that involves retrenchment or voluntary retirement schemes) could force RWS to take up self employment. We begin by looking at all workers above the age of 15 and their distribution in three key categories of employment, namely, self-employment (SE), regular workers (RWS) and casual workers (CW). Casualisation of workforce would be the first indicator of any deterioration of job quality of the urban workforce.

⁹ See Bloom and Williamson (1998) discussion in the East Asian context.

Casualisation

Casualisation refers to the increase in the incidence of casual labour within an industry and the incidence is measured by the share of casual workers in total workforce in that industry. Often a widely held perception is that in the urban sector there has been a secular decline in the share of regular workers and a corresponding increase in the share of casual workers. Contrary to this perception, the employment shares have remained stable, with a marginal rise in the share of regular male workers and a significant increase in the share of female regular workers from 33 per cent in 1999-2000 to 39 per cent in 2009-10. The latter change has been largely a shift out of self employment as the share of casual jobs shows a decline of merely 1.8 percentage points. For workers of all ages the incremental contribution (share in the absolute change in total urban workers) of regular workers is 46 per cent as against 17 per cent for casual workers. Further the growth rate of regular workers of all ages is 2.9 per cent per annum similar to that of the casual workers (three per cent) but more than the growth rate of SE (2.7 per cent). It is possible that casualisation would have increased in particular industries (Pais 2002) but it has not been a sector wide phenomenon in the last decade. The observed decline in the share of casual and self-employed female workers needs to be counted as a welfare gain. It is possible to have a life-cycle pattern in employment that could account for the shift out of one category to another with urban males and females showing different type of movements (Glinskaya & Jalan 2006).¹⁰ For example young age workers (either regular/casual) may move to SE on reaching middle age having accumulated seed-capital and female workers shift out from self-employment to regular having perhaps more experience. This possibility is likely to be identified more clearly within sectors by using the age-specific distribution of SE, RWS and CW over the 11 year period.

Manufacturing versus Services

In Table 5, the age specific distribution of workers by work-status for the two survey years separated by gap of 10 years is presented. The data covers all workers (ps+ss: principal and

¹⁰ This is based on the empirical finding of Evan and Jovanovic (1989) for the US. They found that young workers may be more to risk taking and take up work as self employment it is the older workers who are likely to enter using the accumulated savings as capital.

subsidiary status).¹¹ Similar distribution for the PS workers was estimated and not presented here to save space. The following results emerge:

1. In manufacturing young male workers (15-30) increased their share of regular jobs. Both middle age workers (31-50) and older workers (51 and above) have lost some share of their regular jobs but their share of casual jobs went up substantially that suggest they are vulnerable to lose their regular jobs perhaps due to enterprise restructuring and technological change. Perhaps they also move take up SE. For all males the share of casual jobs shows a marginal increase. Female worker distribution was stable.
2. Younger male workers in services have increased their share substantially. Middle age workers lost regular jobs and increased their share of SE. Service sector has turned out to be a boon for female workers. Both young and middle age female workers increased their share of regular jobs. Significantly casual and SE declined for females of all ages. Service sector has created greater amount of regular jobs for female workers. This is a welcome development in the sense the demographic dividend is expected to result in greater female labour supply.
3. In manufacturing workforce the share of SE has decreased for males and for females in services. It increased for females in manufacturing and for males in services. This suggests an increasing number of female home-workers in manufacturing and male home-workers in services as the status of self employment are essentially house-hold employment.

¹¹ We estimated similar distribution for only principal status (ps) workers. We observed that for manufacturing when subsidiary status (ss) workers are added, the share of casual workers goes up, the share of regular workers does not change and the share of SE workers decline in 2009-10. This suggested that casual work dominates ss workers.

Table 5: Age-Specific Distribution of Worker Status in Manufacturing and Services: 1999-2000 and 2009-10

Age Group	1999-2000				2009-2010			
	SE	RWS	CW	Total	SE	RWS	CW	Total
Manufacturing								
Male								
15-30	26.41	37.36	36.23	100.00	21.19	42.57	36.24	100.00
31-50	31.1	45.03	23.87	100.00	29.55	38.98	31.47	100.00
Above 51	40.9	40.87	18.23	100.00	39.41	37.50	23.09	100.00
Total	30.03	41.24	28.73	100.00	26.97	40.37	32.66	100.00
Female								
15-30	51.83	23.36	24.81	100.00	53.90	21.76	24.34	100.00
31-50	53.67	18.84	27.5	100.00	57.45	14.72	27.83	100.00
Above 51	74.46	9.31	16.23	100.00	57.94	12.61	29.45	100.00
Total	54.57	20.12	25.31	100.00	56.04	17.41	26.55	100.00
Services								
Male								
15-30	46.95	40.94	12.11	100.00	42.84	48.30	8.86	100.00
31-50	44.52	49.15	6.34	100.00	48.06	46.26	5.68	100.00
Above 51	49.8	45.26	4.94	100.00	54.22	41.49	4.29	100.00
Total	46.08	45.6	8.31	100.00	47.23	46.24	6.53	100.00
Female								
15-30	37.12	51.84	11.05	100.00	23.07	69.48	7.45	100.00
31-50	36.6	53.03	10.37	100.00	29.28	62.15	8.57	100.00
Above 51	48.28	41.14	10.57	100.00	38.27	50.79	10.94	100.00
Total	38.27	51.11	10.62	100.00	28.32	63.19	8.49	100.00

Note: SE, RWS and CW denote self-employed, regular wage and salaried, and casual workers respectively.
Source: Unit level data from NSSO surveys 55th and 66th rounds.

Location of Workplace

An indirect evidence of the conditions of work is the location of the workplace of different categories of workers. In Table 6 the estimates of the proportion of three types of workers, self-employed, regular and casual, in terms of locations of their workplace is presented.¹² The following points may be noted:

1. Ninety per cent per cent of self-employed work in their own-dwelling/own enterprise office suggesting dominance of home-based workers in self-employment irrespective of the sector in which they work -either manufacturing or services.

¹² See Appendix for the concordance between location codes in NSS surveys.

2. Ninety four per cent of regular workers work in shops or offices that are outside of employer's dwelling.
3. In manufacturing, increasing share of casual home workers. The share of casual workers who work at employer's office has declined by 10 percentage points. At the same time the share of casual workers who work in their own dwellings has gone up by 10 percentage points. This is a clear sign of increasing production by home workers- a phenomenon widespread in tobacco, garment and food industries
4. In service-sector, in contrast, the proportion of casual workers who work in employer's offices has gone up significantly. Casualisation is equally increasing in the service sector.

Table 6: Distribution of Workers by Location of Workplace

Location	1999-2000				2009-10			
	SE	RWS	CW	Total	SE	RWS	CW	Total
Manufacturing								
Own dwelling or own office	90.70	3.00	3.00	35.10	89.90	4.30	12.40	36.80
Employer's dwelling or employer's shop/office	5.10	94.20	92.00	61.30	4.30	93.30	80.20	58.90
Street with fixed location	1.30	1.10	1.20	1.10	3.60	1.30	3.30	2.40
Construction site	0.90	0.30	1.80	0.70	1.00	0.40	2.50	0.90
Others	2.00	1.50	2.10	1.80	1.30	0.70	1.70	1.00
Total	100	100	100	100	100	100	100	100
Services								
Own dwelling or own office	75.70	2.70	3.90	33.00	78.80	3.20	5.20	32.90
Employer's dwelling or employer's shop/office	4.70	88.90	78.80	53.20	5.00	93.10	82.90	58.10
Street with fixed location	8.10	2.50	4.60	5.00	10.40	1.70	5.10	5.30
Construction site	0.40	0.20	2.00	0.40	0.70	0.10	1.50	0.40
Others	11.10	5.80	10.60	8.40	5.20	1.80	5.30	3.40
Total	100	100	100	100	100	100	100	100

Note: SE, RWS and CW denote self-employed, regular wage and salaried, and casual workers respectively.

Source: Unit level data from NSSO surveys 55th and 66th rounds.

Informal Employment and Enterprise Size

A related idea to that of casualisation is that of informality. Informal employment refers to jobs in enterprises that are not covered by labour and social security regulations. In the Indian context it refers to employment in the unorganised sector. Workers in informal enterprises are not covered by regulations related to conditions of work, retrenchment and minimum wages. They

are vulnerable and often bear the burden of economic shocks. However informality is much harder to capture in employment statistics. Often it is measured by the sum of the shares of CW and SE workers in total employment in a sector. This is based on the argument that self employment as captured in own-account enterprises and self employed owners who hire outside workers are often small enterprises which escape labour and tax regulations. RWS is a proxy for organized sector employment. As we noted earlier, regular employment does not imply employment in the covered sector or access to labour or social security regulations. RWS only suggests continuous wage-employment (see more on this below). The combined share of CW and SE workers in both manufacturing and services has remained stable in the period under consideration for both principal and all (ps+ss) workers. An alternative approach to capture informality is to consider employment distribution by the enterprise size of the worker. NSS surveys collect this information by asking the surveyed workers about the number of workers in the enterprise in which they work. We have tabulated this data separately for manufacturing and services and presented in Table 7.¹³ The following results emerge:

1. In manufacturing a higher proportion of regular workers work in the formal sector, in enterprise with more than 10 workers, than in services.
2. Significantly higher proportion of casual workers work in the informal sector, in enterprise with less than 10 workers, in services compared to manufacturing.
3. These two together imply that the incidence of informality or informal employment is more wide spread in the service-sector than in manufacturing.
4. Taking all workers together, services has a significantly higher proportion of workers in informal enterprises (66 per cent) than in manufacturing (55 per cent) in 2009-10.
5. As the relative incidence of informality is not showing signs of decline it is arguable whether the service-sector is likely to offer better employment status to urban workforce than manufacturing.

¹³ This is tabulated only for principal status (ps) workers. The percentage worker response for the category 'not known' is not shown here. It is probably comes from workers with more than 10 workers as labour regulations begin to bite in those firms.

Table 7: Distribution of workers by Enterprise Size

Sector	Less Than 10		More Than 10	
	1999-2000	2009-10	1999-2000	2009-10
Regular				
Manufacturing	29.30	28.40	55.10	58.90
Services	39.30	39.90	42.90	46.10
Casual				
Manufacturing	52.00	53.60	33.00	32.00
Services	76.10	77.40	10.20	11.90
All Workers				
Manufacturing	56.90	55.50	33.00	35.40
Services	67.80	66.00	22.00	25.20

Source: Unit level data from NSSO surveys 55th and 66th rounds.

4. Wage Inequality, Education and Social Security

Several estimated measures of inequality are presented in Table 8 for both the sectors. The evidence is clear that wage inequality among regular workers is increasing over time in both manufacturing and services.¹⁴ This is not surprising as we find the mix of formal and informal enterprise workers in both sectors. The key suggestive indicator is that the Mean Log Deviation that gives more weight to changes in the lower end of the distribution is much higher in services than in manufacturing in both 1999 and 2009. Wage inequality below the median (log difference between 50th and 10th percentile) is higher in the service sector relative to manufacturing (Table 8). It is not reducing over time leading to higher overall in inequality in service-sector (log difference between 90th and 10th percentile).¹⁵

¹⁴ Earnings inequality was not computed for the category casual workers as we did not observe large human capital differences among them.

¹⁵ This is consistent with the finding based on quantile regression coefficients for the year 1999-2000 that tertiary sector has greater duality, net earnings gap between the lowest quintile and the higher quintiles for regular wage earners, than in manufacturing (Mazumdar & Sarkar 2009, pp. 241-42).

Table 8: Wage Inequality among Regular Workers in Urban India: 1999-2009

Measures	Manufacturing			Services		
	1999-2000	2004-2005	2009-2010	1999-2000	2004-2005	2009-2010
Gini coefficient	0.41	0.43	0.45	0.42	0.45	0.46
Theil index (GE(a), a = 1)	0.28	0.33	0.36	0.29	0.34	0.34
Mean Log Deviation (GE(a), a = 0)	0.28	0.31	0.34	0.34	0.39	0.40
90-10 log wage Difference	1.89	NE	2.02	2.28	NE	2.48
90-50 log wage Difference	1.04	NE	1.27	0.95	NE	1.17
50-10 log wage Difference	0.85	NE	0.75	1.34	NE	1.32

Note: Daily wage rates were used with the data trimmed by 0.1 per cent of highest and lowest wage. NE: Not Estimated.

Source: Unit level data from NSSO surveys 55th, 61st and 66th rounds.

Real daily wage per male worker at 1999-2000 prices increased at the average annual compound rate of 1.3 per cent in manufacturing as against 2.4 per cent in services. The increase in the mean wages is heavily influenced by wage increases in the upper end of the wage distribution particularly in services. Figure 1 plots the distribution of mean real daily wage for regular workers in manufacturing and services by deciles for the years 1999-00 and 2009-10.¹⁶ The stark difference between the two sectors is obvious with the two-lines, representing the two years separated by 10 year gap, in manufacturing almost coinciding until we reach the poorest (or least-skilled) 60 per cent of the workers.

A substantive change that goes beyond the difference between the least skilled and the most skilled emerges when we plot the log real daily wage changes between 1999-2000 and 2009-10 by deciles in Figure 2.¹⁷ The log difference is interpreted as the percentage change between the two years.¹⁸ Two striking outcomes emerge: (i) Firstly, the growth rate of real wage is actually falling for the workers below the median wage in manufacturing (except for the bottom 20 per cent who have gained). It is more or less constant for workers below the median in services. In manufacturing the decline continues for workers with incomes in the bottom 70 per cent. The least skilled have received the lowest wage increases; (ii) Secondly, in services the

¹⁶ We have plotted the mean daily wage by percentiles and obtained similar result (not reported to save space).

¹⁷ This analysis is directly comparable to that of Kijima (2006). Kijima carries out the analysis for the entire urban sector and uses the log weekly wage differences for the period 1983 and 1999. She argues that wage inequality started increasing even before the economic reforms of 1991. She finds that wage inequality grew faster in urban India after 1993. Our results are more striking as explained in the text.

¹⁸ For each percentile, we subtract log real wage per day in 1999-2000 from that in 2009-10.

growth rate of real wage is sharp for those workers with income levels above the median. In contrast, in manufacturing real wage increases sharply only for those in the income group of top 20 to 30 per cent (see Figure 2). The implication is clear. The most skilled have experienced the highest wage increases in both manufacturing and services. It is substantially higher for the higher skilled workers in services. Overtime, the service sector has experienced greater skill shortages and the growth in service sector is relatively more skill demanding than manufacturing at higher skill levels. Skill biased technical change perhaps bites more overtime in the service sector.¹⁹

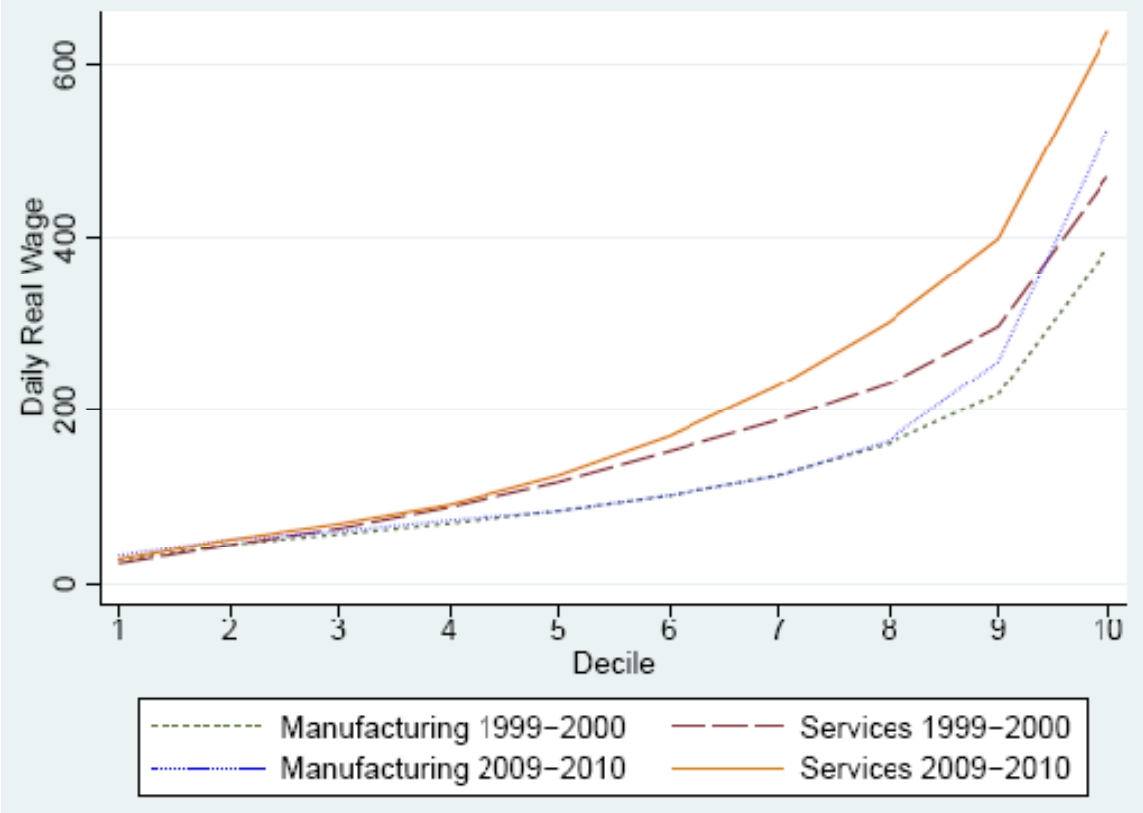


Figure 1: Average Daily Real Wage by Deciles in Manufacturing and Services

¹⁹ Greater use of information technology by the services industry could be an important reason. This proposition needs a separate study.

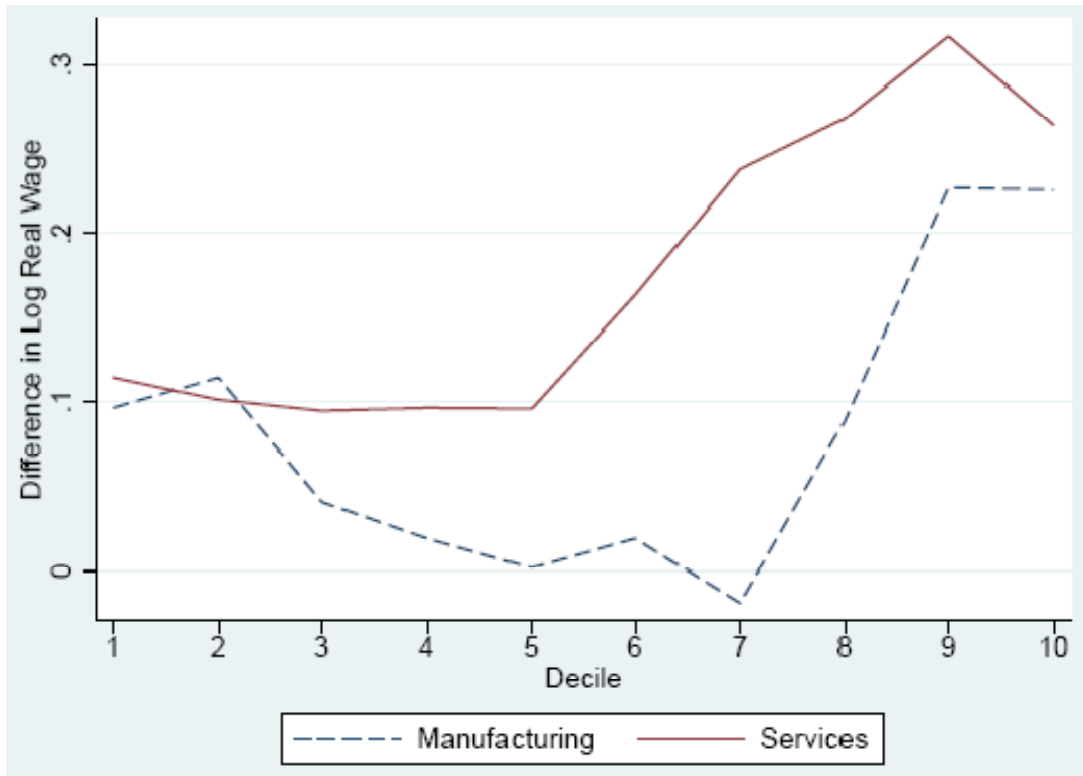


Figure 2: Percentage Change in Log Real Wage by Deciles between 1999 and 2009: Manufacturing versus Services

These conclusions are further confirmed when we plot the log real wage changes between 1999-2000 and 2009-10 by percentile group in Figure 3. The plot exhibits more fluctuations but it is consistent with our earlier finding. In manufacturing the decline continues for workers with incomes below the 80th percentile. This further sharpens above finding that in manufacturing the least skilled have received the lowest wage increases relative to services.

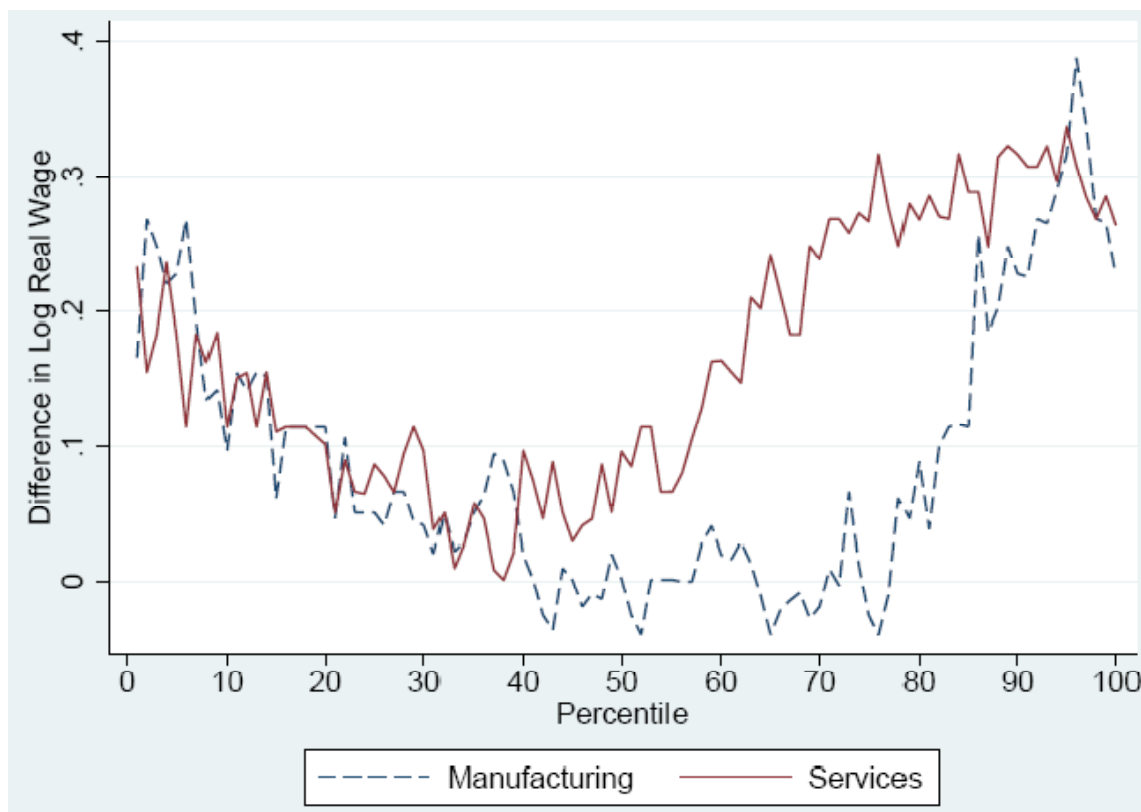


Figure 3: Percentage Change in Log Real Wage by percentile between 1999 and 2009: Manufacturing versus Services

Human Capital Stock Differences

The observed wage inequalities could be a reflection of greater human capital stock differences in the workforce. This makes us examine the distribution of educational levels overtime in these two sectors. We distinguish only three levels, namely, those with below primary education that includes not literate, middle school education and those with above secondary school that includes those with diploma and those with above graduate education. This is estimated separately for males and females (Table 9). The uneven change overtime in the service sector compared to manufacturing is evident. The proportion of male workers with above secondary education is significantly higher (61 per cent) in services compared to manufacturing (46 per cent) in 2009-10. The share of workers with graduates education and above among males is almost twice as that of manufacturing in 2009-10. This is not to deny the argument that overtime the skill mix in manufacturing and services would become increasingly similar (Eischengreen & Gupta 2011). However, if current education-skill distribution is taken as the correct reflection of

the underlying skill-demand structure then manufacturing would be the first destination for the majority of labour force who are expected to move into the modern sector. Manufacturing has much greater capacity to absorb labour with lower levels of education.

Table 9: Distribution of Workers by level of Education

Educational Level	Manufacturing		Services	
	1999-2000	2009-10	1999-2000	2009-10
Males				
Below Primary	39.20	32.50	31.80	22.60
Middle	19.80	21.20	18.90	16.20
Secondary	27.20	32.10	28.60	33.70
Graduate	13.80	14.20	20.70	27.40
Total	100.00	100.00	100.00	100.00
Females				
Below Primary	68.80	55.80	46.20	34.50
Middle	15.20	20.80	8.80	9.60
Secondary	11.90	17.70	20.0	20.20
Graduate	4.00	5.70	24.90	35.70
Total	100.00	100.00	100.00	100.00

Source: Unit level data from NSSO surveys 55th and 66th rounds.

What's happening to the educational attainment of the population over this time period? We would be interested to know the changes in the proportion of educated in the age group 15 years and above in the population. Here we define educated as those with secondary education and above. The focus is the urban sector. A comparison of the change in the proportion of educated in population between 1999-2000 and 2000-10 reveals the following. Among urban males, the proportion of educated increased from 46 per cent (1999-2000) to 56 per cent (2009-10). Among urban females the corresponding change is from 22 per cent to 32 per cent. The supply of educated labour has certainly not declined. The problem is more of mismatch between demand and supply of different and diverse skill levels.²⁰ It is fairly well established by econometric studies that returns to education by levels of education in India have been increasing in recent years (Agrawal 2011). In Figure 4, we show the wages per day of workers with 5 different levels of education for the year 2009-10. They are (i) not literate, (ii) literate and up to

²⁰ Labour market mismatch could originate from different sources that require a separate analysis.

middle, (iii) secondary and higher secondary, (iv) diploma/certificate, and (v) graduate and above. This is plotted for 6 selected industry groups.²¹ Three service industries, education and health, business and finance, transport and real estate have relatively higher returns.²²

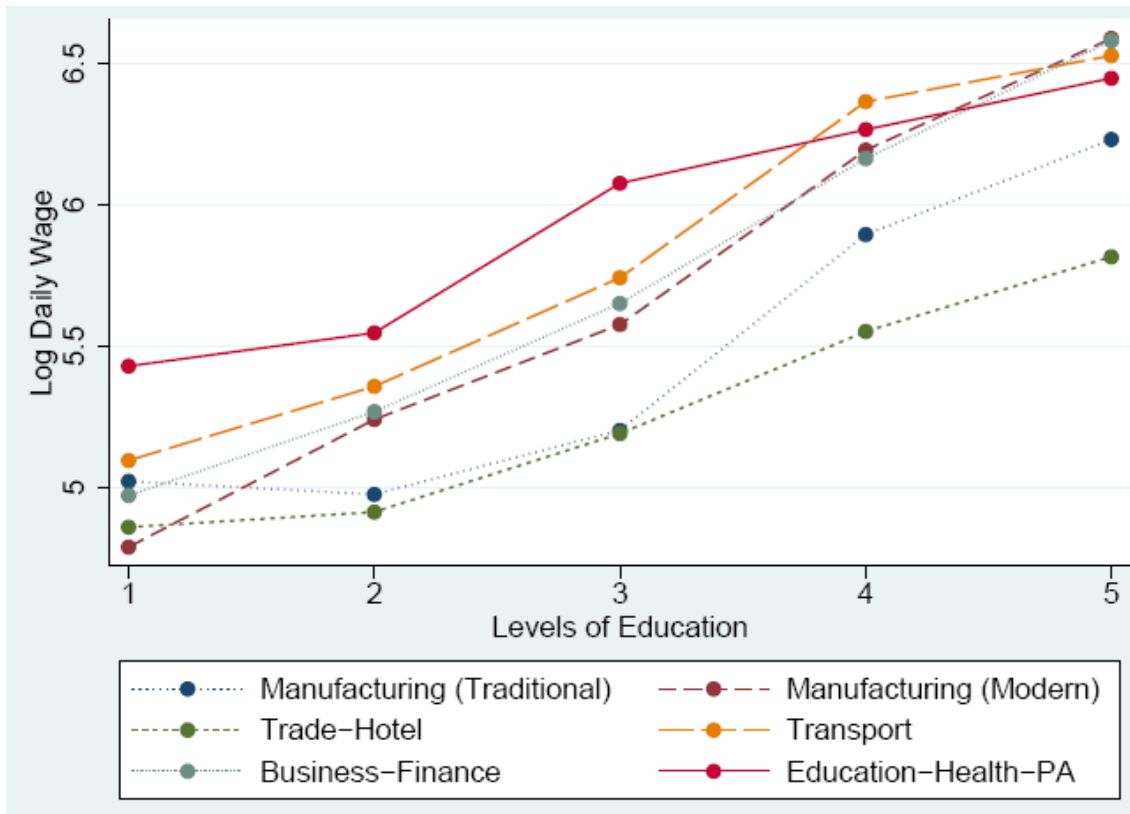


Figure 4: Returns to Education by Industry: 2009-10

Access to Social Security and Contract Status

Our findings are based on individual worker responses to questions asked for the time in the NSS employment and unemployment survey in the 61st round (2004-05) and repeated in the 66th round (2009-10). The question on access to social security benefits asks whether the worker is eligible for provident fund, pension, health care and gratuity benefits. One could tabulate the proportion saying ‘Yes’ and those saying ‘No’ to the above question. In manufacturing we find

²¹ Source: Table 46, National Sample Survey Organisation (2011, p. A504). Manufacturing (Traditional) includes Industry Divisions 15-22 and Manufacturing (Modern) includes Industry Divisions 23-37. PA denotes Public Administration.

²² This is only a broad approximate gross indicator as we have not controlled for many other worker attributes like experience.

that only 36 per cent of the workers reported that they have access to social security benefits.²³ The service sector fared better with 52 per cent saying yes to the question. However the averages are misleading due to large deviations. We have tabulated the responses of workers classified into 69 three-digit industry groups within service-sector and those in 59 three-digit industry groups in manufacturing. The results are shown in Table 10. We find that in less than 17 per cent of the 69 service industries, more than 75 per cent of the workers said that they have access to social security benefits. Similarly in less than 12 per cent of the 59 manufacturing industries, more than 75 per cent of the workers said that they have access to such benefits. Situation seems to improve somewhat in manufacturing over time. Overall there is nothing much to show that services offer better access to social security benefits.

Table 10: Access to Social Security Benefit: Industry Distribution 2004 and 2009

Percentage saying YES (Y)	No. of Industries- Manufacturing		No. of Industries-Services	
	2004-05	2009-10	2004-05	2009-10
$Y \leq 25$	26	21	26	26
$25 < Y \leq 50$	15	17	16	18
$50 < Y \leq 75$	11	13	15	13
$Y > 75$	7	8	12	12
Total (3-digit) Industries	59	59	69	69

Source: Unit level data from NSSO surveys 61st and 66th rounds.

The NSS surveys had also asked the workers about the type of job contract they work with their employers. In manufacturing only 20 per cent of the estimated workers reported that they have more than three year contracts and this percentage is better in services (35 per cent). Correspondingly, nearly 80 per cent of the manufacturing workers reported that they had no written contract and in services this percentage is less at 59 per cent. We have tabulated the distribution of responses (workers who indicated that they had more than 3 years of contract) within three-digit industry groups for the question (Table 11). The evidence suggests that contractual conditions are broadly similar between services and manufacturing.

²³ This refers to the 2009-10 survey.

Table 11: Workers with Contracts more than 3 years: Industry Distribution 2004 and 2009

Percentage saying YES (Y)	No. of Industries-Manufacturing		No. of Industries-Services	
	2004-05	2009-10	2004-05	2009-10
Y≤25	29	38	20	39
25< Y≤ 50	17	17	1	18
50<Y≤ 75	8	4	14	11
Y>75	4	0	4	1
Total (3-digit) Industries	58	58	69	69

Source: Unit level data from NSSO surveys 61st and 66th rounds.

5. Conclusions

We studied employment growth, structure and job quality outcomes in urban India between 1999-2000 and 2009-10. This is a period of dynamic growth of service-sector in India. We did not find any acceleration in service-sector employment growth relative to manufacturing in the urban areas of India. The good news is that young males have increased their share of regular employment both in manufacturing and services. The service sector has turned out to be a boon for female workers. Both young and middle age female workers increased their share of regular jobs. However, we find greater duality in service-sector in terms of informality and wage inequality. The incidence of informality or informal employment is more wide spread in the service sector than in manufacturing. Large number of them would in low productivity activities. Similarly wage inequalities are relatively higher in services and those with more skills have received significantly higher increases in real wage. The skilled in service-sector have gained proportionately more in terms of real wage growth. In other words, the service sector has experienced greater skill shortages and the growth in service-sector is relatively more skill demanding than manufacturing at higher skill levels. We showed that skill composition of the workforce is significantly different between the two sectors with services clearly skill biased. Social security conditions are not found to be relatively much superior in services. Our results strongly suggest that services sector would be an unlikely destination for the millions of low skilled job seekers. India needs to focus on manufacturing sector to provide large scale employment. Manufacturing has the capability because it has stronger backward linkages unlike the services sector. We cannot afford to neglect manufacturing at this stage of development. The policy signals have to clearly say that we stand to support manufacturing activity in a big way. Manufacturing has the potential to grow as fast as services.

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Appendix

Concordance between Location Codes in NSS surveys	
1999-2000	2009-10
Own-dwelling (21) plus own-enterprise office but outside own dwelling (22)	Own-dwelling unit (20)+structure attached to own-dwelling unit (21)+open area adjacent to own-dwelling unit(22)+detached structure adjacent to own dwelling unit(23)+own office but away from dwelling
Employer's dwelling(13)+employer's shop/office but outside employer's dwelling (24)	Same (25+26)
Street with fixed location (25)	Street with fixed location (27)
Construction site (26)	Construction site (25)
Others (29)	Others (29)

Note: Figure in brackets refers to location codes used in the respective NSS surveys.