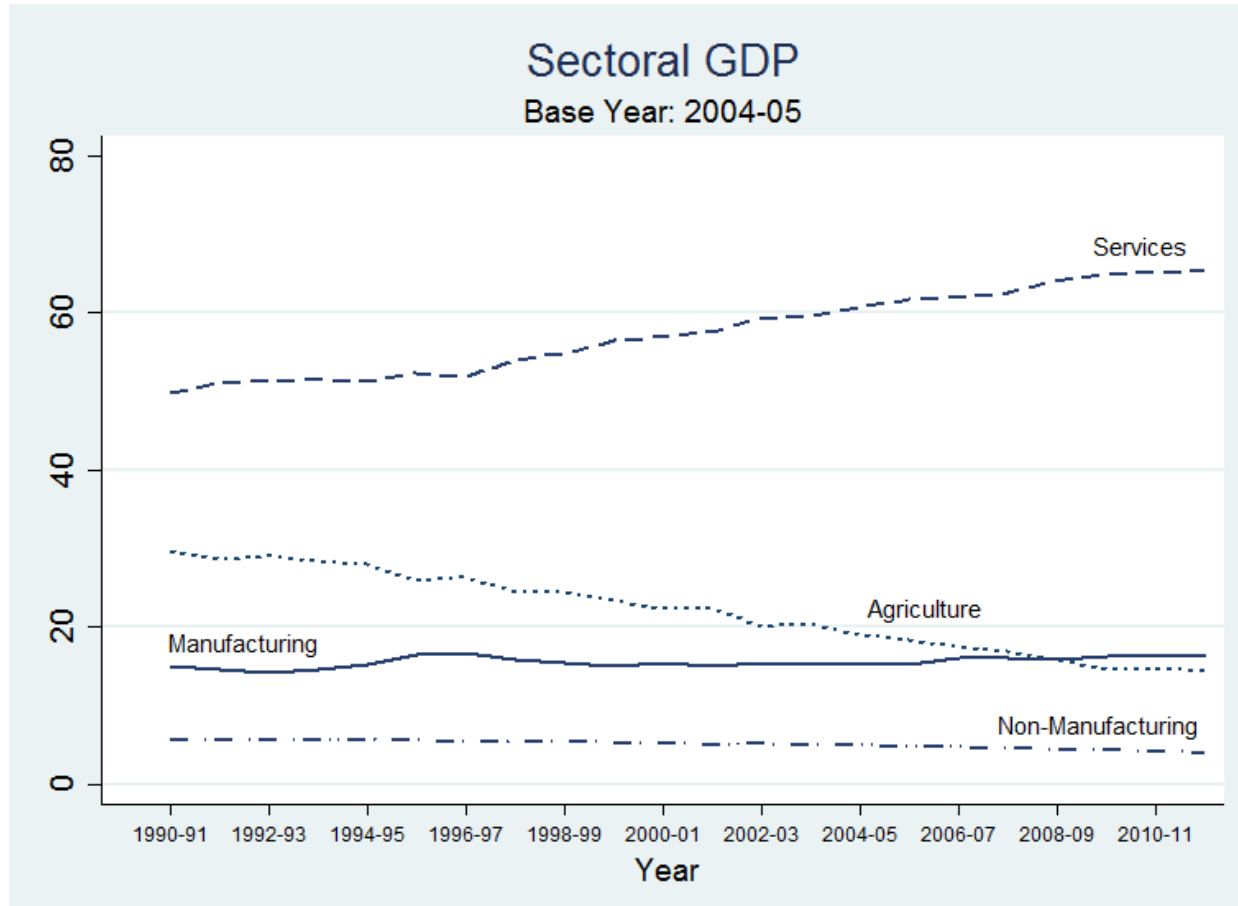


Understanding the Performance of India's Manufacturing Sector

Radhicka Kapoor

Contribution of the manufacturing sector to GDP has remained stagnant at around 15% for three decades...



Manufacturing sector has failed to emerge as an engine of job creation

Sectoral breakdown of Employment

Sector	1999-2000	2004-05	2009-10	2011-12	2015-16
Agriculture	62.1	56.6	53.0	48.9	46.9
Manufacturing	11.1	12.2	10.6	12.6	10.3
Non-manufacturing	5.2	6.5	12.0	11.7	12.6
Construction	4.4	5.7	11.4	10.6	11.6
Services	23.8	24.7	24.5	26.9	29.6

Source: NSS and Labour Bureau's Employment Unemployment Survey, various rounds

The imperative of manufacturing led growth

- It will generate faster growth of employment for low skilled and medium skilled workers compared to services-led growth. ([Distribution of population by education](#))
- Apart from generating direct employment, it will drive rapid growth of employment in other sectors. Rapid manufacturing growth will demand development of physical infrastructure (boosting construction), drive growth of employment in services that are required as inputs in manufacturing, and raise growth of non-traded services through the income effect.
- Manufacturing has remained under-developed implying that the potential for manufacturing growth is large.
- Services-led growth can no longer be rapid. Growth in the past created a large imbalance between domestic absorption (requiring mainly goods) and domestic production (of mainly services) that led to unsustainably large trade deficits; services exports simply could not finance the required goods imports. If growth is to be rapid, it must correct this imbalance between domestic absorption and domestic production; and manufacturing-led growth can enable this.

Dualism

India's manufacturing sector is characterized by its dualistic structure i.e., **the prevalence of an organised sector which coexists with a large unorganised sector.**

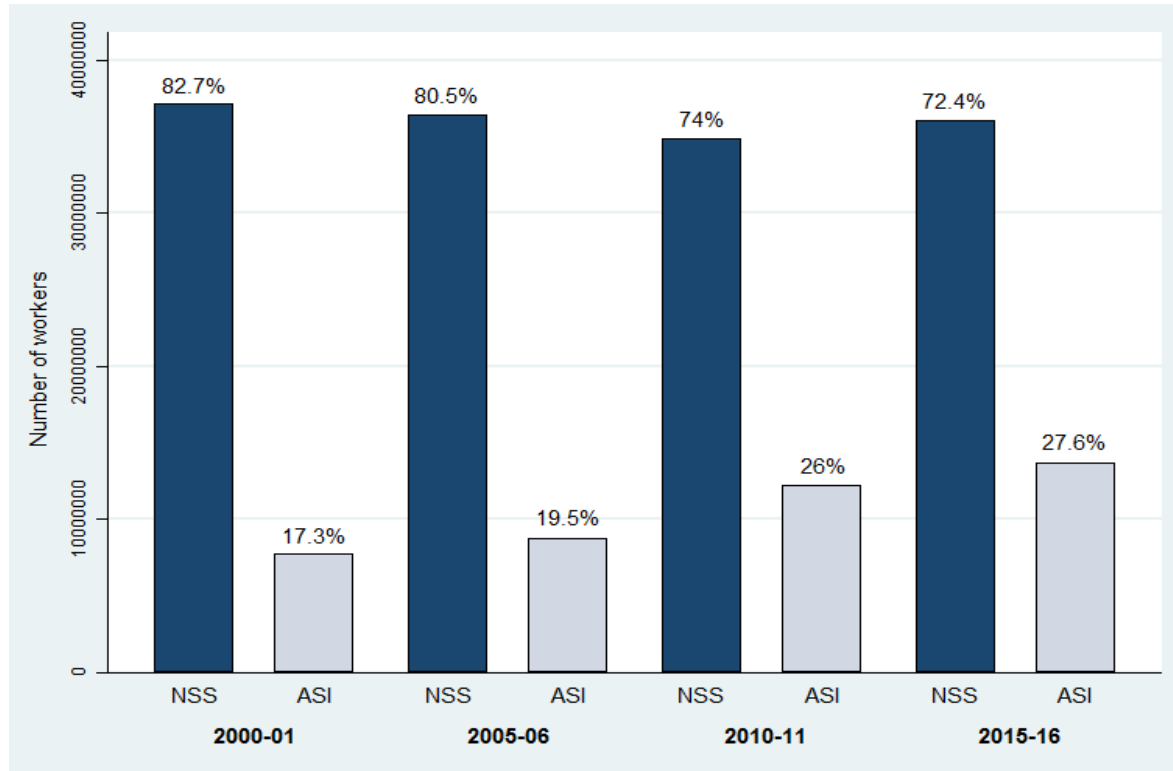
Employment and value added in manufacturing by type of establishment

	2015-16		
	OAME	NDME and DME	Organised
Distribution of employment (%)	45.6	26.9	27.5
Distribution of value added (%)	7.1	11.2	81.7

Source: NSS Unincorporated Enterprise Survey & Annual Survey of Industries (2015-16)

Firms in the organized sector pay higher wages, are more productive and provide better working conditions, security of tenure, non-wage benefits and social security than firms in the informal sector. It is this sector which has the necessary characteristics to create productive employment.

The unorganised sector has dominated the employment landscape over the years ...

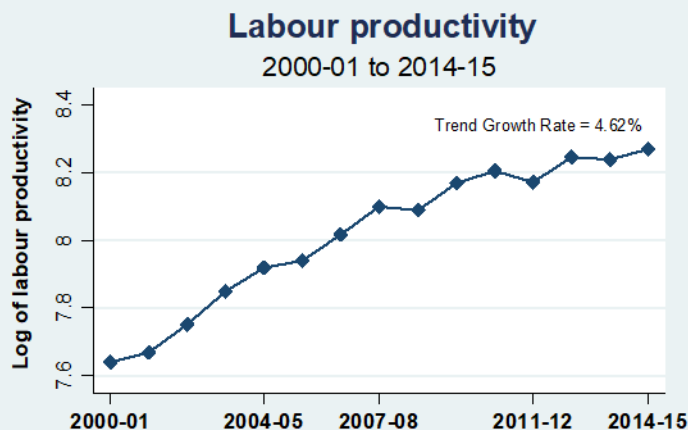
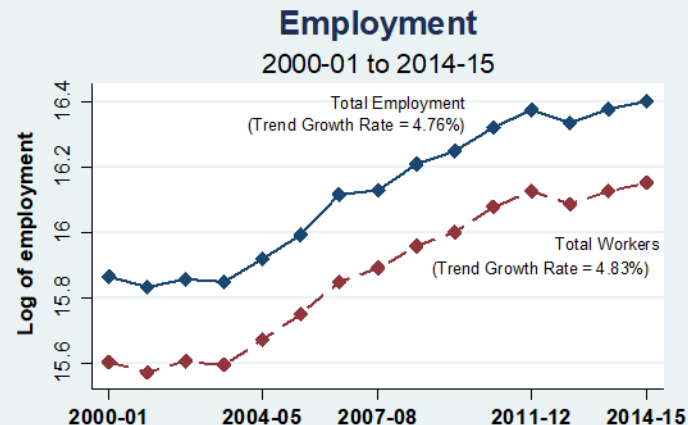
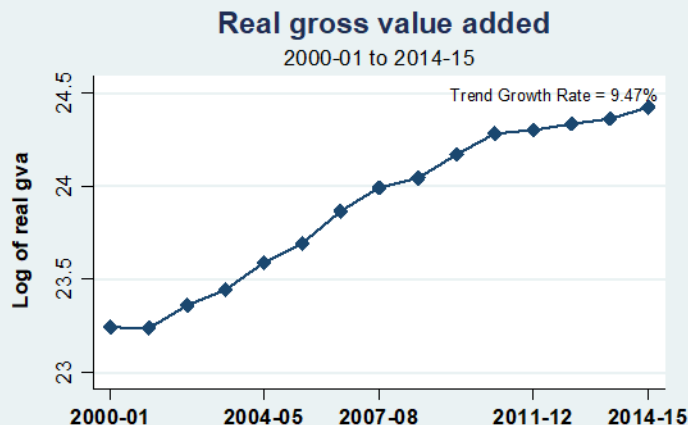


Source: NSS Unincorporated Enterprise Survey & Annual Survey of Industries (several years)

While, the share of organised sector has increased over time, the pace of job creation is worrying...

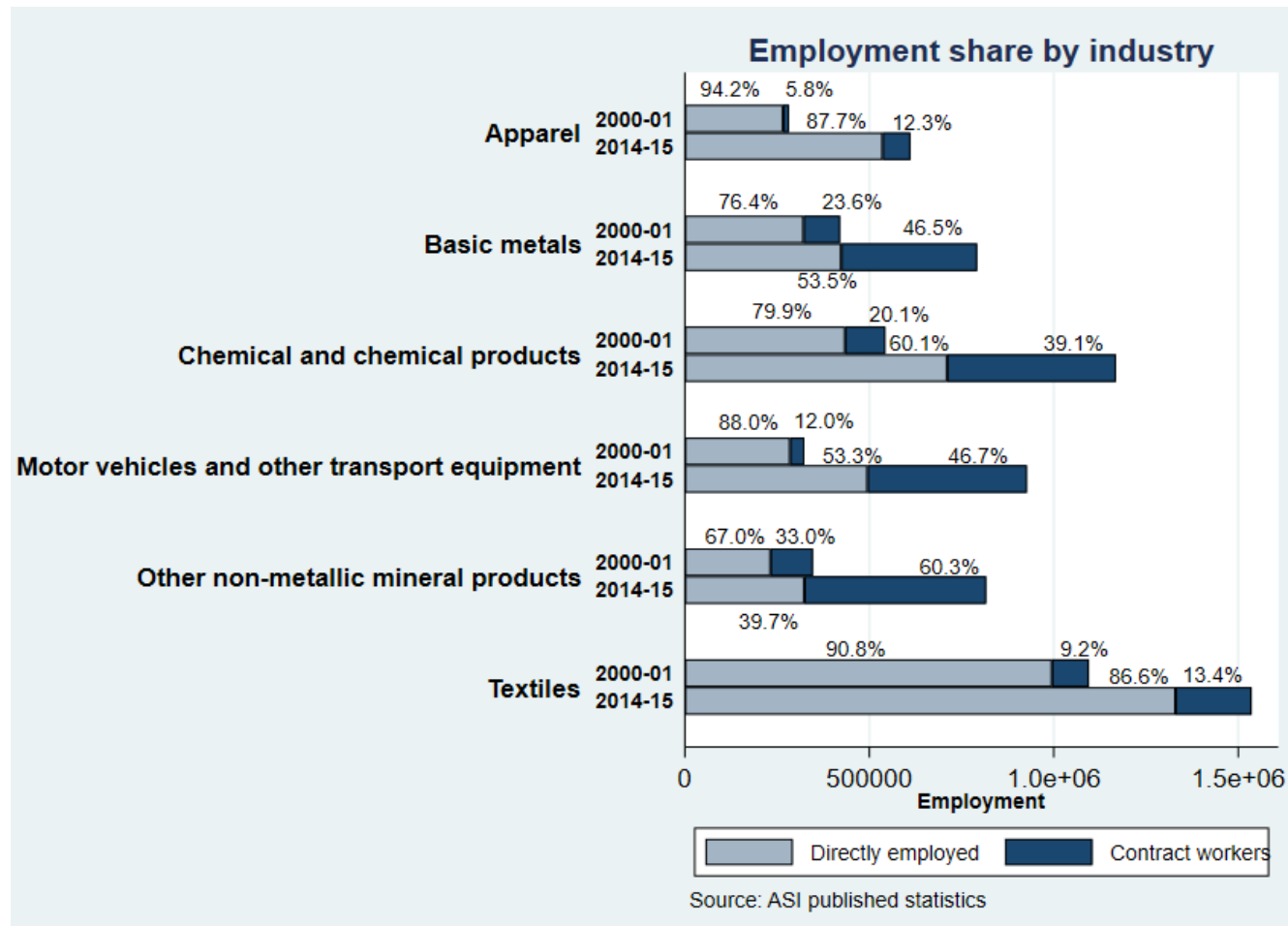
The problem of jobless growth is one of inadequate growth of formal jobs

Trends in Organised Manufacturing



Source: ASI published statistics and unit level data

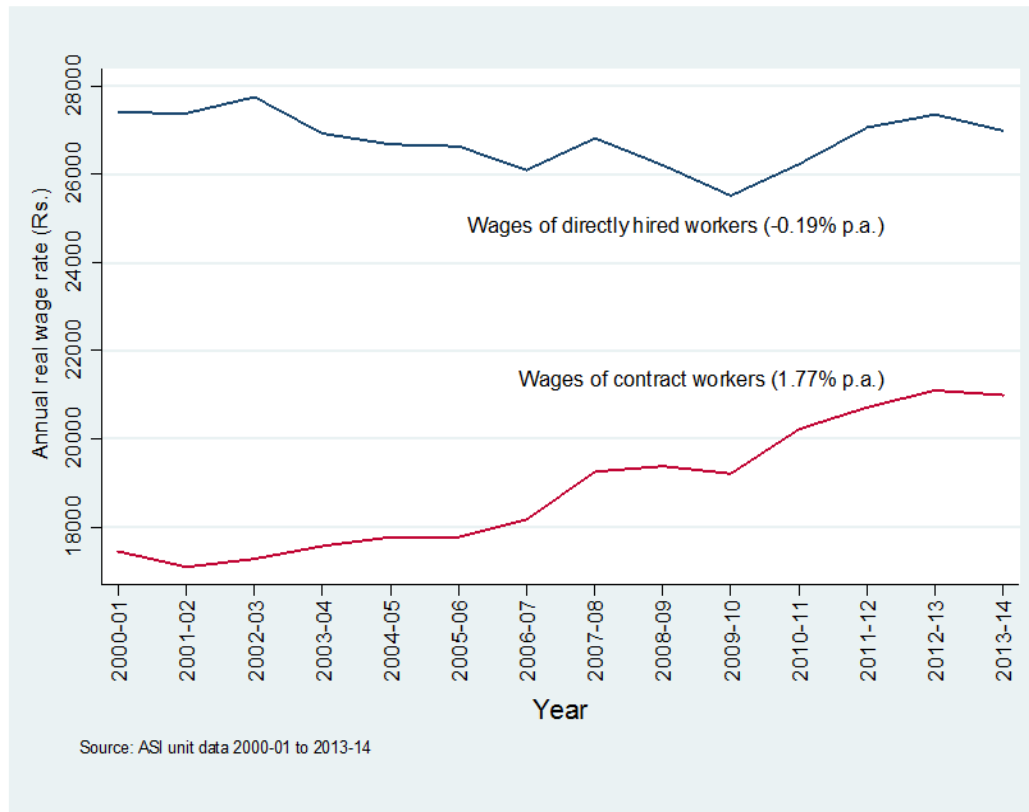
Despite India's comparative advantage lying in labor-intensive activities, India's manufacturing sector has specialized in relatively capital and skill intensive activities



Also, most of the employment growth has come through growth of contract workers

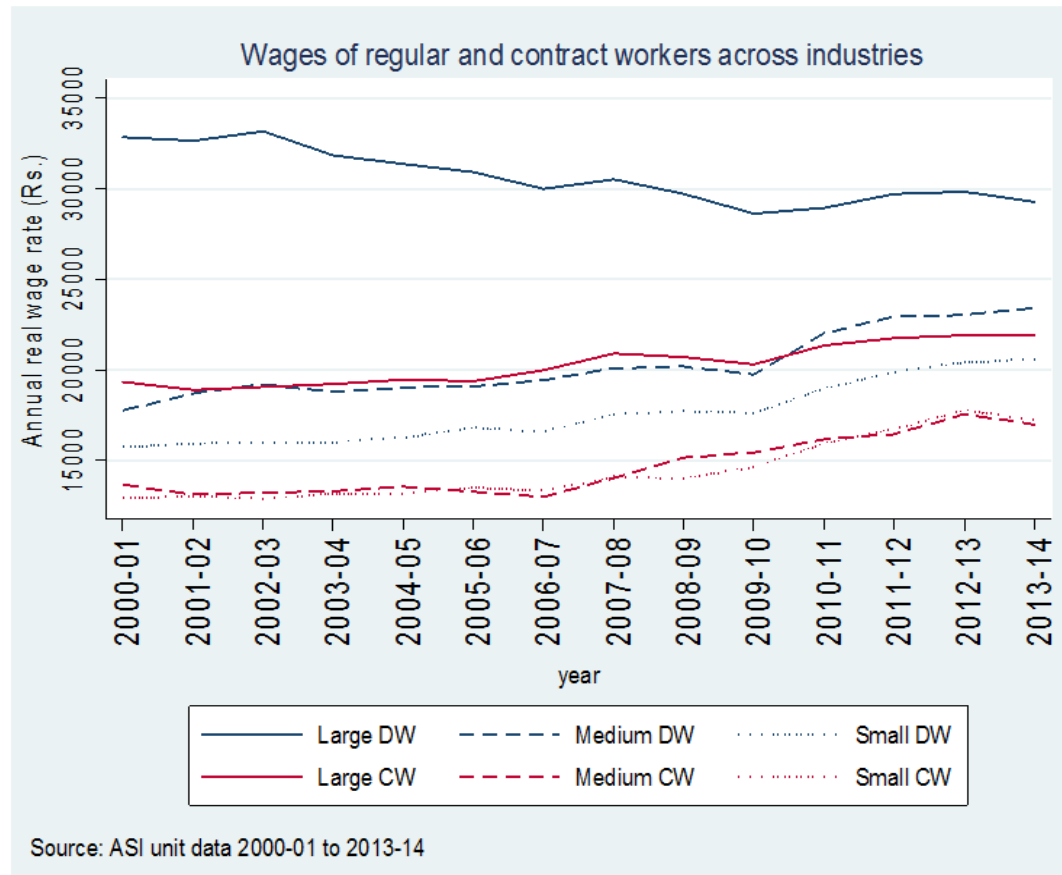
Quick aside on contractualisation...

- ***Why are firms hiring contract workers even though labour regulations have not become more stringent?***
- **Wages of contract workers are significantly lower than those of regular workers**



But, the wage differential is narrowing

Wage differential has narrowed in both labour and capital intensive industries, and in large firms



Why are firms hiring more contract workers even though they are becoming relatively more expensive?

Possible Explanation:

- To curb the bargaining power of regular workers keeping their wage demand in check.
- To use them as an alternative workforce to their strategic advantage against unionised regular workers.

Empirical specification:

$$\ln\left(\frac{CW}{TW}\right)_{fist} = \theta_0 + \theta_1 T + \theta_2 LMR_s + \theta_3 \left(\frac{W_c}{W_d}\right)_{fist} + \theta_4 GPER_{st} + Z_{fist}\kappa + v_i + \varepsilon_{fist}(1)$$

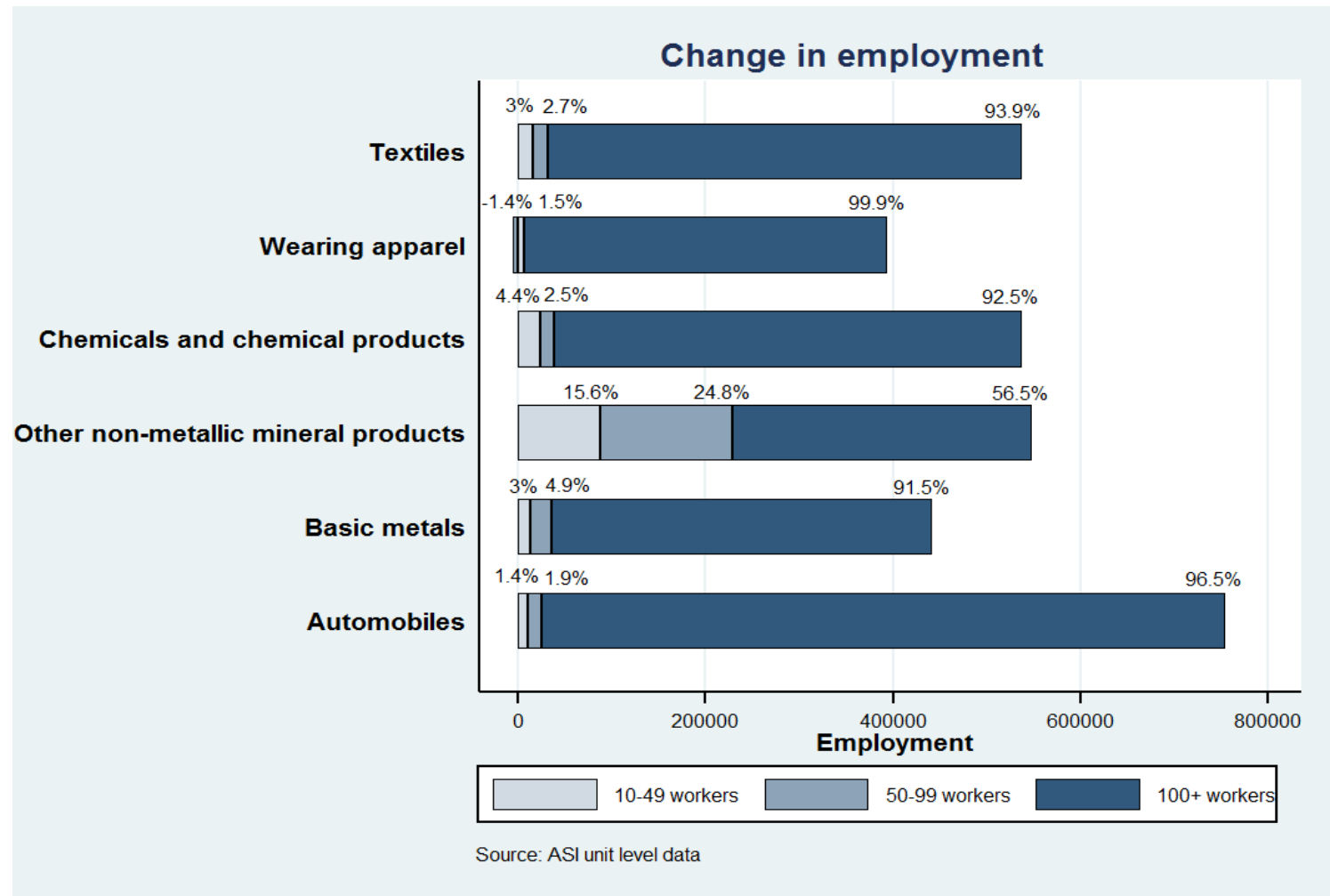
- *fist*: factory *f* belongs to industry *i* in state *s* at time *t*
- Instrumental variable approach: Instruments used for W_c/W_d are **minimum wages** and **absenteeism rates** of directly employed workers

Results

Category	ln(CW/TW)									
	All (1)	K-intensive (2)	L-intensive (3)	Small (4)	Medium (5)	Large (6)	Large K-intensive (7)	Large L-intensive (8)	Low CW (9)	High CW (10)
ln(WC/WD)	0.653*** (0.101)	0.337*** (0.125)	-0.834** (0.411)	-1.003*** (0.239)	0.146 (0.128)	0.707*** (0.227)	0.372* (0.203)	1.125 (1.470)	0.662*** (0.100)	-0.083 (0.091)
time trend	0.010*** (0.001)	0.014*** (0.001)	0.010*** (0.002)	0.000 (0.001)	0.016*** (0.001)	0.018*** (0.005)	0.023*** (0.005)	0.016 (0.024)	0.015*** (0.001)	0.008*** (0.001)
LMR-GHK	-0.060*** (0.008)	-0.067*** (0.010)	0.031 (0.031)	0.008 (0.011)	-0.030** (0.010)	-0.070*** (0.019)	-0.058*** (0.022)	-0.153 (0.140)	-0.062*** (0.008)	0.003 (0.003)
<i>N</i>	110,238	46,325	34,985	36,670	40,760	32,808	14,545	10,762	107,782	2,456
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RMSE	0.901	0.751	1.007	0.737	0.692	1.091	0.878	1.331	0.904	0.051

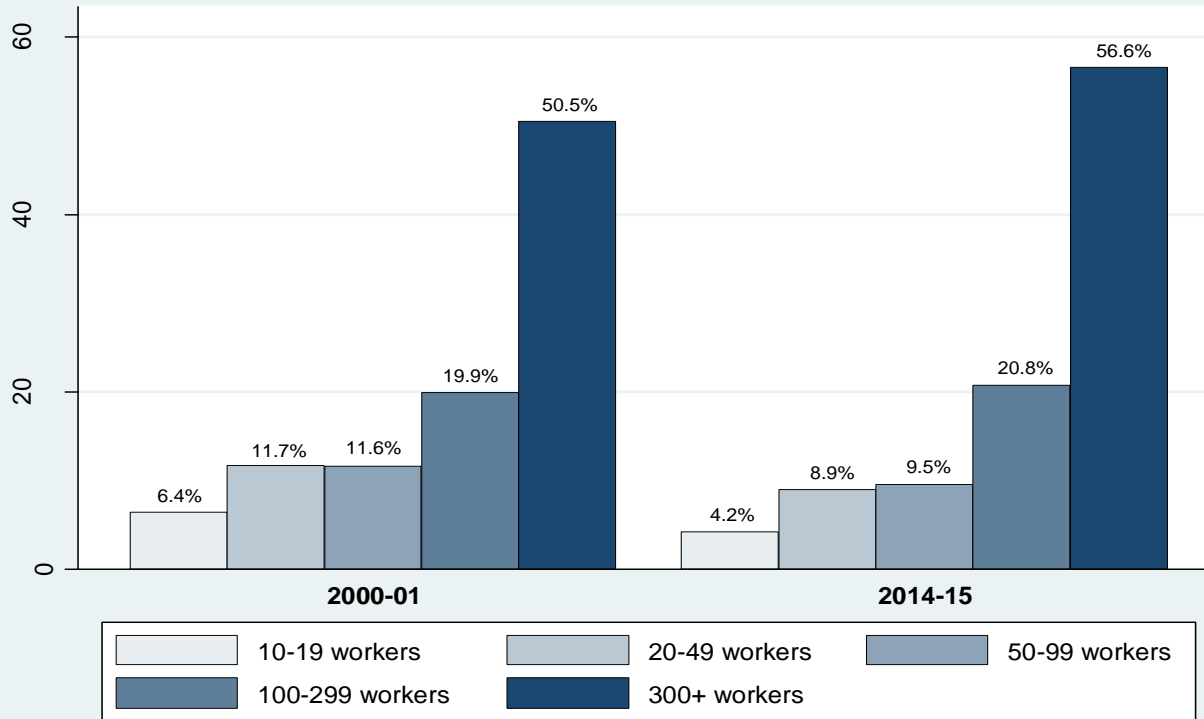
Source: ASI unit-level panel data 2000-01 to 2013-14; Note: Standard errors clustered at plant level are given in parentheses; (* p<0.01; ** p <0.05; *** p<0.10).

In each of these industries, employment growth driven by large firms



Share of large firms in total employment has risen modestly, while that of small firms has not increased...

**Distribution of employment by firm size
2000-01 to 2014-15**



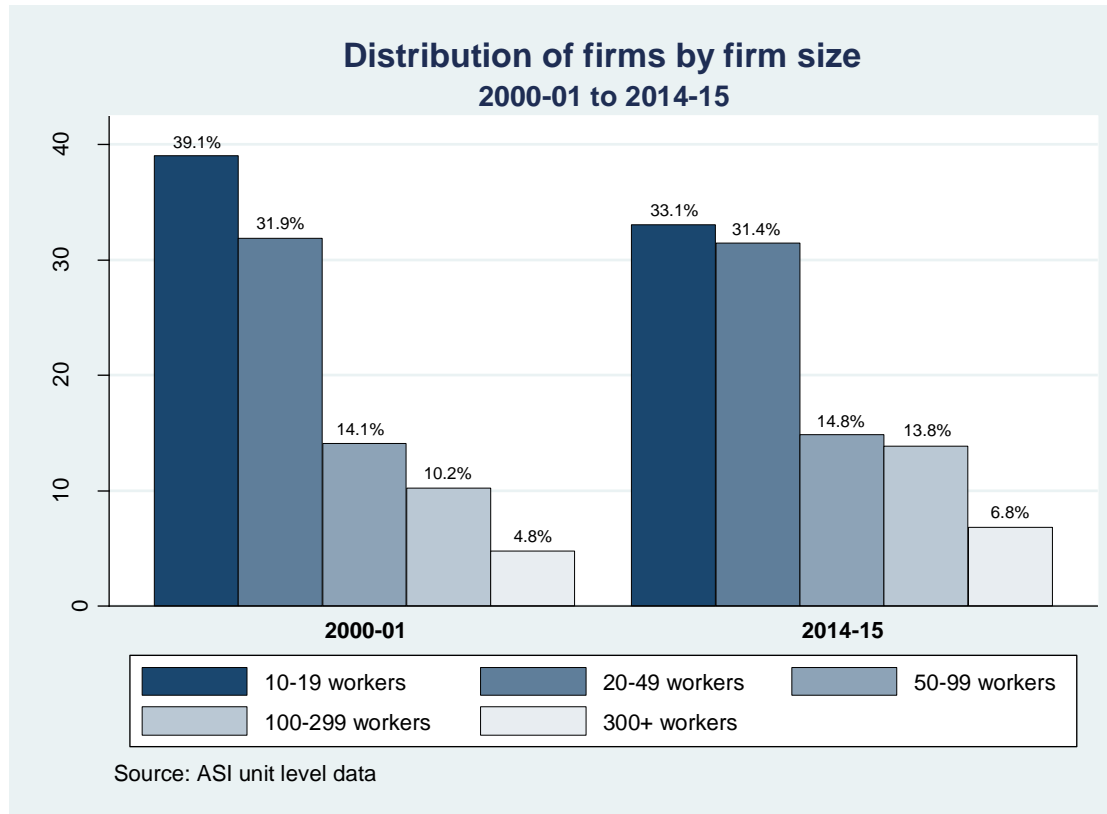
Source: ASI unit level data

**Trend growth rate of employment by
size bins**

10-19 workers	1.22
20-49 workers	2.69
50-99 workers	3.49
100-299 workers	4.92
300+ workers	5.68

The belief that SMEs are the drivers of employment growth appears questionable

But the firm size distribution continues to be dominated by small firms

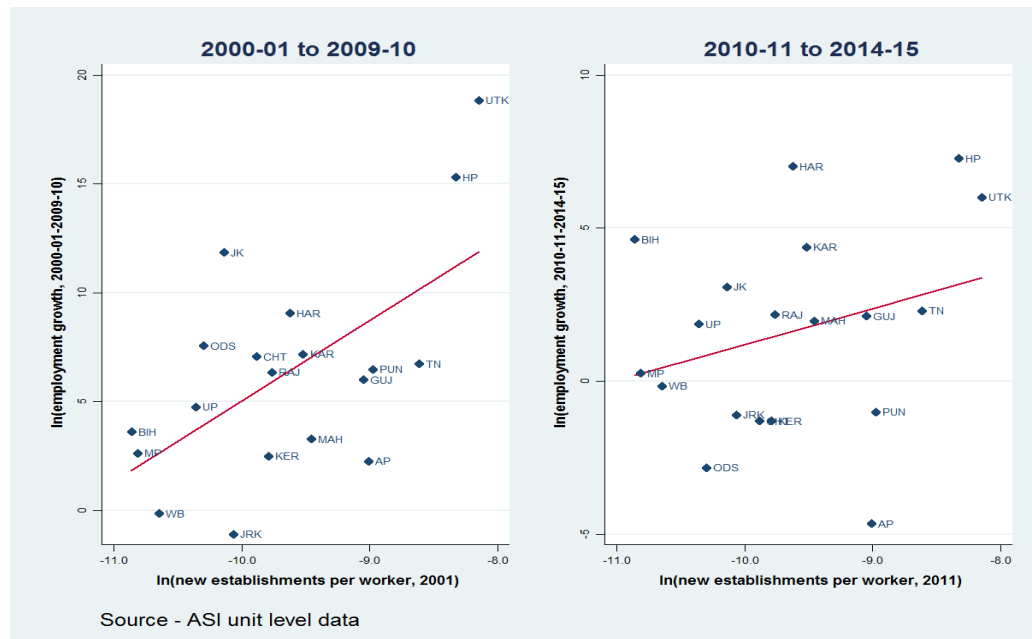


The dominance of small firms over the entire time period is reflective of the fact that these establishments are unable to expand (i.e. the transition from a small to a medium to a large enterprise seems difficult) and/or choose to remain small due to inbuilt incentive to remain undersized.

Both employment and firm landscape are dominated by old firms

Age Bin	Employment		Firms	
	2000-01	2014-15	2000-01	2014-15
Less than 5 years	10.5	9.3	15.2	13.2
5 to 9 years	17.1	19.5	22.5	21.9
10 years and above	72.3	71.15	62.2	64.7

Young new firms appear to be driving employment growth



Firm landscape is dominated by old and small firms

2000-01						
Distribution of firms by age and size				Distribution of employment by age and size		
size_bin	less than 5 years	5 to 9 years	10+ years	less than 5 years	5 to 9 years	10+ years
0-9 workers	18.04	20.08	27.09	0.26	0.43	1.5
10-19 workers	33.76	32.32	27.76	1.11	1.58	3.65
20-49 workers	27.77	25.65	22.76	2.06	2.75	6.73
50-99 workers	11.52	11.52	10.19	1.89	2.82	6.76
100-299 workers	7.02	8.02	7.79	2.66	4.5	12.37
300+ workers	1.88	2.41	4.41	2.58	5	41.37
2014-15						
size_bin	less than 5 years	5 to 9 years	10+ years	less than 5 years	5 to 9 years	10+ years
0-9 workers	25.83	24.09	27.92	0.24	0.35	1.18
10-19 workers	26.27	23.48	24.05	0.6	0.89	2.63
20-49 workers	23.61	24.11	22.53	1.26	2.02	5.54
50-99 workers	11.35	12.66	10.15	1.36	2.41	5.64
100-299 workers	10.13	10.83	9.84	2.73	4.74	12.9
300+ workers	2.81	4.82	5.51	3.15	9.11	43.28

The persistence of small old firms in the data reinforces the fact that firms are not expanding and growing as they age. This could be a result of two things: firms are too constrained to grow and/or they find it difficult to exit.

What constrained the growth of Indian manufacturing?

- Inadequate development of physical infrastructure
- Labour market rigidities
- Inadequate access to finance
- Regulatory bottlenecks for doing business in India
- Challenges of land acquisition
- Dilatory procedures for environmental clearances

Addressing the above is necessary to alleviate the bottlenecks constraining the growth of the manufacturing sector. However, this alone is not enough. To set its manufacturing sector on a high growth trajectory, India needs an industrial policy now more than ever before.

Rethinking Industrial Policy

- Need for an appropriate policy to identify industries which align with the countries comparative advantage and endowment structure, and are particularly important for employment generation.

➤ *Labour intensive industries*

➤ *Industries requiring very low levels of education/skills*

➤ *Linkage industries i.e. whose outputs are used as inputs by the more employment intensive industries*

- Focus on enterprise/firm characteristics
- Skill development programs need to be a core component of industrial policy

Summing up

- Contract workers driving growth of employment.
- Labour Regulations: Much ado about something?
- Misplaced focus on small and medium enterprises over large enterprises in generating employment.
- With rapid changes in technology, industry boundaries are blurring, and new industries are emerging. Even within established industries, sources of competitive advantage will shift in dynamic and often unpredictable ways.
- The only source of an enterprise's and a nation's sustainable competitive advantage will be its ability to learn and change faster than any potential competition from other industries and other countries.
- While it is important to provide shields to enterprises and firms within the overarching framework of industrial policy, these shields must be temporary. The process of building enterprise capabilities behind the shields must happen concomitantly.
- A policy for building competitive enterprise capabilities, which is essential for India to grow more income-generating opportunities for its youth, must focus on interwoven processes for growth of enterprises and growth of people's skills.

Distribution of population by education

Educational Qualification	Population Distribution		
	Male	Female	Total
Not Literate	13	26.8	19.6
Literate: Below Primary	7	9.6	8.3
Primary	11.6	12.7	12.1
Middle	18.4	15.9	17.2
Secondary	19.7	15	17.5
Higher Secondary	16.2	11.5	14
Certificate Course at			
Undergraduate Level	0.9	0.5	0.7
Diploma at Undergraduate			
Level	1.4	0.6	1
Graduate	9.7	5.8	7.8
Postgraduate and Above	2.1	1.4	1.8

Source: Labour Bureau (2015-16)

- *The 'not literate' category accounts for about one-fifth of the population*
- *The share of those having education above the higher secondary level is small*
- *On average, the education level of the population is quite low*

Link between educational attainment and sector of employment

Distribution of worker across sectors by education level (15+)

Worker Status	Not Literate	Literate: Below Primary	Primary	Middle	Secondary	Higher Secondary	Certificate Course at Undergrad Level	Diploma at Undergra- duate Level	Graduate	Postgradu ate and Above
Agriculture	71.8	62.8	54.4	46.9	39.6	31.6	18	10.4	10.2	4.8
Mining & Quarrying	0.4	0.4	0.4	0.4	0.3	0.4	1.1	1.3	0.2	0.3
Manufacturing	5.8	8.1	11.3	11.9	13.2	12.1	16.2	17.4	9.8	6.3
Electricity, Gas & Water supply	0.3	0.3	0.4	0.5	0.8	1	2.2	2.4	1	0.8
Construction	12.4	13.9	14.8	15.2	10.9	7.7	6.9	8	3.4	1.7
Trade, Hotel & Restaurants	4.4	7.1	9.4	12.2	16.8	20.3	16.2	16.4	16.7	8.6
Transport, Storage & Communication	1.8	3.2	4.3	6.1	7.7	7.4	7.4	7.6	8.9	7.9
Finance, Business, Real Est.	0.5	0.6	1.1	1.8	3.3	5.7	7.2	9.6	16.2	18.2
Health, edu, Public Admin	2.8	3.5	3.9	4.9	7.4	13.8	24.7	26.4	33.2	51.4

- Agriculture and construction have been main source of employment for those with low levels of education
- Manufacturing has provided employment for low and medium skilled workers
- Services have employed the most educated

