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The Evolution of India's Industrial Labour Share and its Correlates

Arjun Jayadev and Amay Narayan

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cse.azimpremjiuniversity.edu.in

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Abstract

There has been substantial recent interest in the decline of labour shares across countries. For the most part, attention has been focused on developed countries. We examine the evolution of India's labour share in its formal industrial sector from 1983-2016. Using two datasets corresponding to sectoral aggregate data and plant-level data respectively, we document a secular decline in the labour share across all sectors from 1983, with a stabilisation at very low levels (around 8 to 10 percent) starting around 2005. We then use the plant-level data to identify correlates that illuminate reasons for the overall decline in the labour share. We find strong evidence to support multiple causes: increased capital intensity, greater informalisation, greater privatisation, and productivity increases in larger firms. As such, we suggest that the declines in labour share experienced are due to a composite set of factors. Conversely, other potential explanations (e.g. regional variation in the labour share) have less explanatory power.

Introduction and Motivation

The labour income share reflects how much of national value added accrues to labour as opposed to capital. In recent times, there has been a revival of interest in the evolution of the labour share across countries. Much of this has been inspired by the prolonged decline in the fraction of income going to labour in the OECD countries beginning around 1980 after a long period of relative stability. While there has been concern about growing interpersonal inequality for a substantial period of time, the return to analyzing the share of an economy's national income which accrues to labour reflects the revival of a classical concern: whether the return to owning capital exceeds the returns to labour. If productivity gains do not translate into higher wages, this provides insight into the ways in which power dynamics or the nature of technology in the economy translate into differing outcomes for different classes of people. Indeed a common narrative suggests that political and economic changes beginning in the last great crisis of capitalism in the 1970s led to a regime of accumulation that has worked to the detriment of labour as a class. It has involved a transfer of power, influence and economic advantage to capital across a range of policies (for example in terms of allowing capital mobility, lowering taxes on capital and so on).

Many empirical exercises have been undertaken to unpack the decline in labour shares in developed countries¹. Studies have focused on several correlates including technology (see among others [Bentolila and Saint-Paul, 2003; Poterba, 1997] and global integration [Jayadev, 2007; Guscina, 2006]). Other, more recent efforts have focused on the role of privatisation [Azmat et al., 2012] or the role of imperfect competition and the rise of ‘super-star’ firms which have lower than average labour shares and which also account for a larger share of output than in the past. [Autor et al., 2017]².

One might have expected that these declines in labour shares are concentrated in the industrialised world and that the story in developing countries may be different since there has been both rapid growth and attendant structural change in the developing world during this period. More recent research suggests however that on average labour shares have declined in developing economies as well (see [Rodriguez and Jayadev, 2013; Karabarbounis and Neiman, 2013; Dao et al., 2017], among others). This in turn points to the possibility of common features and drivers across the world.

Measuring the national labour share of income in developing countries has been hampered because of the fact of both poor quality data and inherent ambiguity in the definition of the labour share in a context of large scale self-employment (the output of which could equally be

¹A short, and incomplete, but suggestive list includes [Karabarbounis and Neiman 2013]; [Barkai 2016]; [Stockhammer 2013]; [Rognlie 2014].

²There is, additionally some controversy as to whether the decline in labour share of GDP could be due to measurement issues such as the treatment of depreciation, housing or self employment [Elsby et al., 2013; Gollin, 2002]

attributed to labour or income). While some have tried to undertake adjustments using UN SNA accounts (for an example, see [Van Treeck \[2017\]](#)), in this paper we adopt a different tack and instead look at labour share in a developing economy, India, in the sector that constitutes unambiguously wage employment: the formal industrial sector. In doing so, we avoid the thorny questions of accounting for self-employment and other related concerns. We examine the evolution of the industrial labour share in India using two distinct but related datasets, the Annual Survey of Industries 3-digit level dataset (corresponding to sector-level data) and the Annual Survey of Industries 5-digit level dataset (corresponding to plant-level data) that constitute the formal sector. While this refers to a small fraction of the overall labour force, our hope is that by focusing on this area we can more carefully examine both the trends in the labour share and its correlates in a context in which it has not been adequately studied before.

Our contribution is threefold. First, we confirm that the global decline in labour share is also observed in India in this sector of the economy. Since 1980, the industrial labour share has declined by over 20 percentage points. Most of this decline occurred by 2007 after which the labour share has been very low but stable. We then establish that while the majority of decline in the labour share was accounted by within industry declines, using the more disaggregated data, we find that between-factory effects dominate after the mid 2000s. We then turn to the 5-digit data to identify plausible correlates of the labour share and find evidence for multiple channels that are common in the literature .

While our paper is, we believe, relatively novel in this focus, we are not the first to use this data. The paper that is closest to ours in spirit is [Kapoor \[2016\]](#) who provides a similar analysis using ASI 5-digit data. That paper focuses on the effects of rising capital intensity on the inequality of wages and earnings, such as between skilled and unskilled workers, or between managerial/supervisory staff and production workers. We differ here by concentrating on the correlates of the labour share as opposed to examining capital/labour intensity, by substantially expanding the time period under question, and by identifying a larger set of correlates than this previous work. Other related work includes [Goldar and Aggarwal \[2012\]](#), who use National Sample Survey data to study the informalisation of industrial labour in India. Specifically, they explore the impact of labour market reforms and rigidities, as well as increasing import competition, on the types of employment opportunities created.

Data

Any empirical exercise that examines the labour share needs to obtain a measure of the overall wage bill and the total value added in any period. In order to assess the trends in the labour share of income here, we obtain data from two different sources that provide information about the functional distribution of income at different levels of aggregation.

Our longer time series data (the ASI 3-digit data) was acquired from the Economic and Political Weekly Research Foundations (EPWRF) India Time Series database. Aggregated at the 3-digit industry level, this concorded series from the EPWRF gives us a relatively comprehensive view of trends in the industrial sector across the country. Conducted by the Central Statistics Offices (CSO) Industrial Wing, under the Ministry of Statistics and Programme Implementation (MOSPI), the ASI covers the industrial sector across the entire country. The frame contains all factories classified as per the Factories Act, 1948. The factory-level data is then aggregated at various levels. The first dataset is aggregated at the 3-digit industry level and consists of just under 3200 industry-year observations spanning 41 years and 65 industries. Industries are classified according to MOSPIs National Industrial Classification (NIC) codes. Our shorter, but more disaggregated, time series data is an unbalanced panel of over 900,000 factory-year observations for over 1700 5-digit industrial sectors. Unfortunately, the data is only available from 2000 to 2016. Data provided in both datasets include balance sheet measures such as fixed and working capital, income statement measures such as wages and salaries paid, and other statistics on employment and production. For the most part, we work with the latter dataset since it provides more variables to use and on which to test the various hypotheses.

Our key variable of interest, the labour share of income, is defined as the ratio of wages and salaries to value added by the industry (in the case of the 3-digit data) or the factory (in the case of the 5-digit data). Hence by definition, the labour share should always be between 0 and 1. However, since gross value added is not reported directly by firms or factories, we constructed this measure by subtracting the value of total inputs from the ex-factory value of output. We ensured that we used theoretically consistent measures of the labour share by excluding observations that had wage shares greater than 1. Any negative values for value added were replaced by the ex-factory value of output. We also top-coded and bottom-coded our capital intensity measure, by dropping outliers below the 1st percentile and above the 99th percentile. Any anomalous, negative values for capital intensity were dropped beforehand.

Figures [1a](#) and [1b](#) provides evidence of the long term decline in the labour share in both datasets.

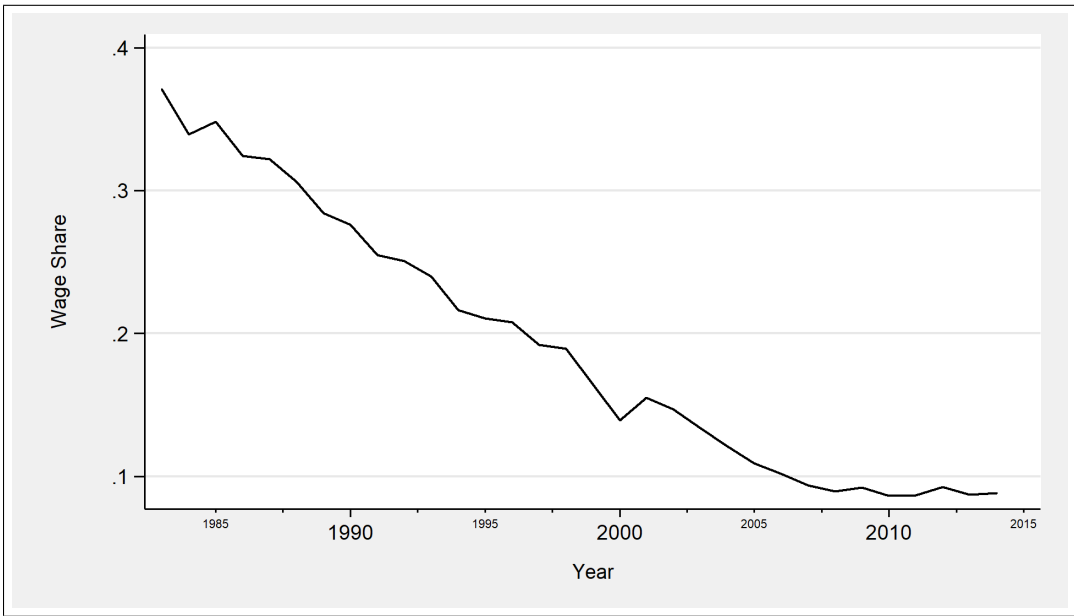


Figure 1a: Aggregate Wage Share 1983-2014 (3-digit Level)

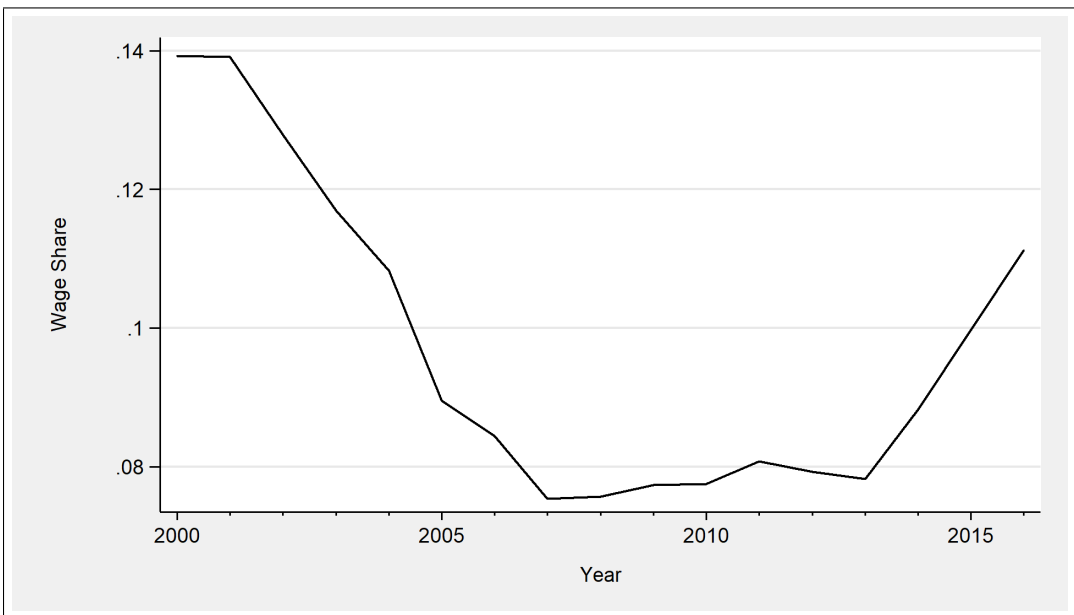


Figure 1b: Aggregate Wage Share 2000-2016 (5-digit Level)

Between vs. Within Firm Declines

An important consideration in assessing the reasons for the decline in the labour share is the extent to which the declines are driven by between-firm reallocation rather than a fall in the labour share within firms. For example, if the main reason for the fall in labour share is the decline in the bargaining power of labour across the economy, one should expect to see within-firm effects dominate. If on the other hand, the main reason has to do with some firms or sectors growing in size and also having below average labour shares, one should expect between-firm effects to dominate.

Figures 2a, 2b and 2c provide some indication of the dominant effects for both of the datasets. With the longer time frame provided by the ASI 3D data it is clear that at that level of aggregation, there have been declines in virtually all industries, strongly suggesting some economy-wide patterns at play. The shorter time span ASI 5D data suggests two distinct periods: one between 2000 and 2007 in which most factories saw declines and a period after 2007 in which there is no such strong pattern.

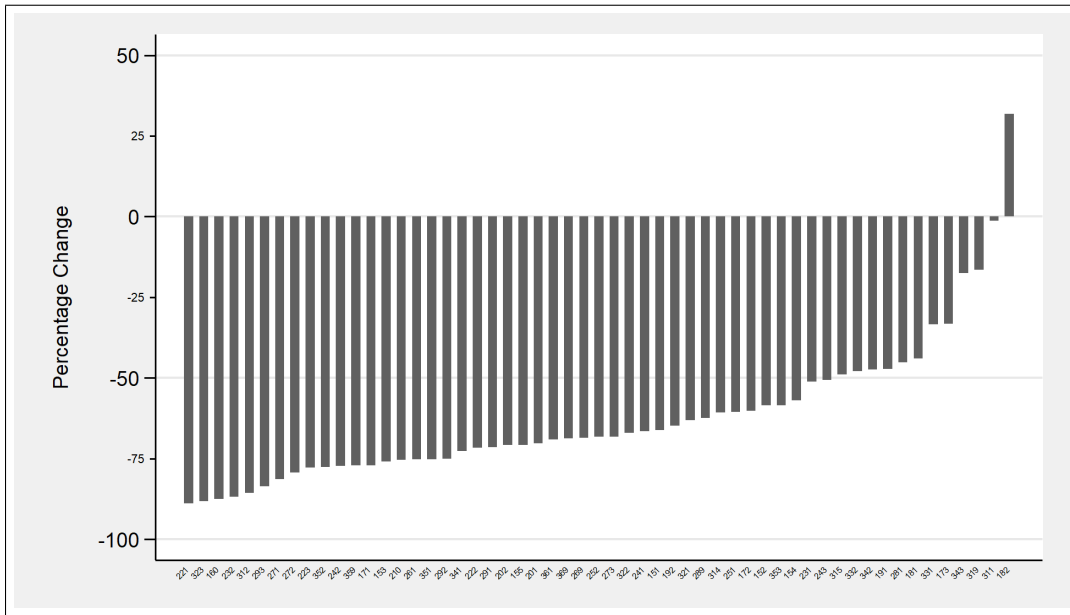


Figure 2a: Industry-level Change in Wage Share 1983-2014 (3-digit Level)

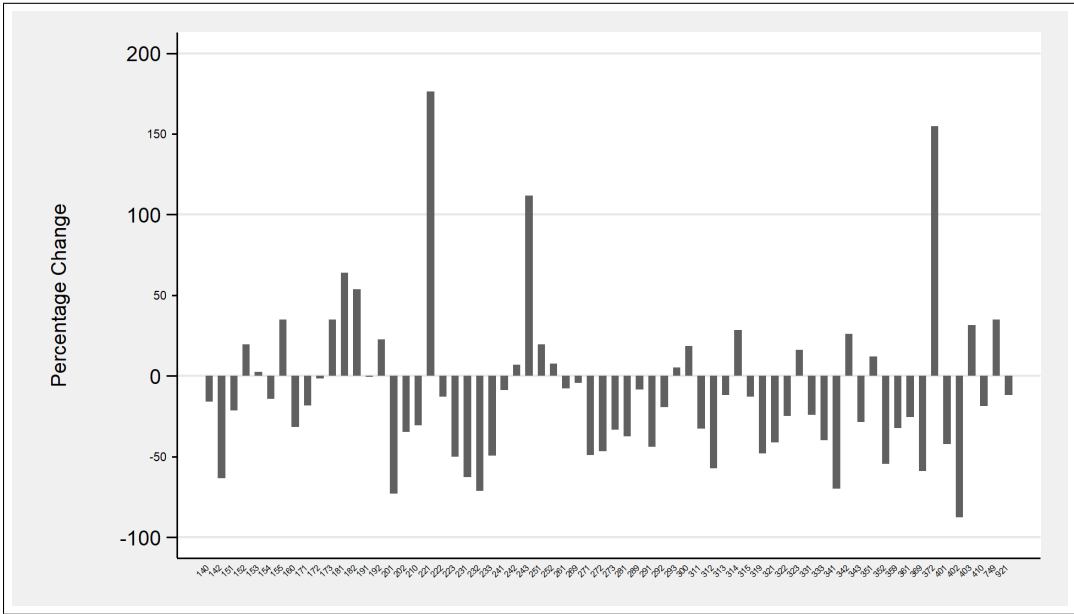


Figure 2b: Industry-level Change in Wage Share 2000-2007 (5-digit Level)

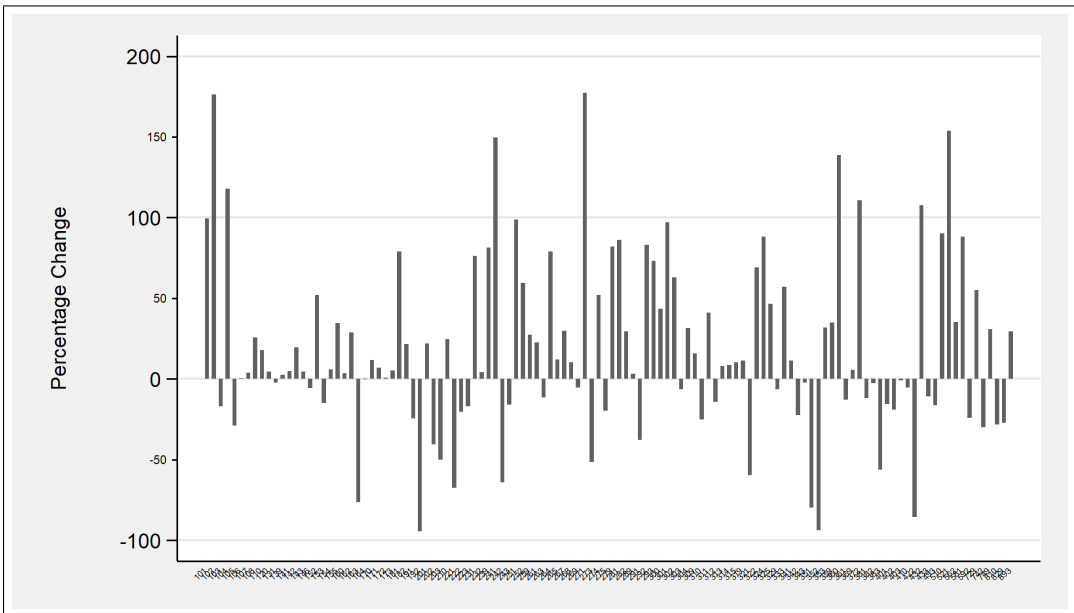


Figure 2c: Industry-level Change in Wage Share 2007-2016 (5-digit Level)

There are two ways in which one can assess the relative contribution of a between or within effect. A common approach is to carry out a shift-share decomposition [Syrquin, 1984; Timmer and Szirmai, 2000]. However, given the fact that for the 5-digit data data are uneven, as it is an unbalanced panel, interpreting a shift share decomposition is difficult. Instead we adopt a much simpler, but indicative regression as a benchmark to compare the contribution of labour share declines. This involves estimating two equations for the dataset where the data is in a panel form of factory ($i=1\dots n$), sector ($j=1\dots n$), and year ($T=1\dots t$). We keep only two years for comparison of the effect ($T=0,1$). We then run the two following regressions weighting each sector j by the weight of its wage bill in the overall wage bill for each sector-year.

$$LS_{ij} = \beta_{0ij} + \beta_1 T_{ij} + \epsilon_{ij} \quad (\text{Equation 1a})$$

$$LS_{ij} = \beta_{0ij} + \beta_1 T_{ij} + c_j + \epsilon_{ij} \quad (\text{Equation 1b})$$

[Equation 1a](#) measures the overall average change in the labour share for industry i between the first year and last year. β_1 includes between-industry, within-industry, and interaction effects, weighted by output.

[Equation 1b](#) undertakes the same regression but now controls for between-industry differences by introducing industry dummies c_j . As a result, β_1 now represents only average within-industry changes in the labour share.

Table 1 provides the result of these regressions for the 5-digit data, divided into 2 periods, from 2000 to 2007 and from 2007 to 2016.. As is evident, there is a strong negative trend between 2000 and 2007, and over half the effect can be attributed to within industry declines. By contrast, between 2007 and 2016, there is a positive overall trend in the labour share of income, albeit a very varied one across industries.

The results suggest that in the first time period, the within-industry effect was very negative, and reinforced an already negative overall trend in the labour share. By contrast, in the latter period, the within-industry trend was much more varied, resulting in a positive albeit statistically insignificant coefficient. The coefficient for the overall change in this period is also positive, and of a larger magnitude, suggesting that the between-industry effect reinforced the within-industry effect in this period.

To summarise, the period from 2000-2007 witnessed widespread, systematic declines in the industrial wage share caused by negative between- and within-industry effects. Between 2007 and 2016, however, the downward trend ended, with industries facing diverse changes in the labour share, and the regression results pointing to a positive aggregate change. This is in line with the wage share pattern as seen in [Figure 1b](#).

	(2000-2007)		(2007-2016)	
	Overall	Within	Overall	Within
Period 1	-0.821*** (-3.28)	-0.436*** (-6.64)		
Period 2			0.482** (0.210)	0.253 (0.167)
Observations	134	134	151	151
r2	.0754	.972	.0342	.961
Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$				

Table 1: ‘Between-Within’ Regression: [Equation 1a](#) and [Equation 1b](#)

Regression Model

In this section, we identify and test four different channels that are identified in the literature as key to the evolution of the labour share of income.

Technology A key determinant of the labour share in the literature is the nature of the technology in the economy.

If factors of production are compensated according to its marginal productivity, shifts in labour share is explained as a result of changes in factor productivity or a consequence of increasing capital-intensity of production . In any standard production function, the degree of substitution between factors has an effect on factor shares. More specifically, the *magnitude* of the elasticity of substitution (σ) can have vastly different economic implications; σ measures the change in factor proportions in the production process in response to a change in relative prices of the factors i.e. it measures how easily one factor can be substituted for the other.

If $\sigma = 1$, then relative prices and the K/L ratio have no impact on factor income shares. If $\sigma < 1$, this implies that increasing the supply of say, capital, *increases* the income share of the labour, suggesting that the factors are complements. However, when $\sigma > 1$, this implies that the factors are highly substitutable. In this case, a fall in the relative price of capital causing increased use of capital (higher K/L) in the production process would lead to a falling labour share of income [[Poterba, 1997](#)]. A similar argument is favored by [Karabarbounis and Neiman \[2013\]](#) who argue that improvements in Information and Communication Technologies (ICT) have resulted in lower relative capital prices. Again, if the capital-labour elasticity of substitution is greater than one, this will lead to lower labour shares

³. In order to test for this we use the ratio of fixed capital to total mandays as the explanatory variable.

Privatisation Azmat et al. [2012] argue that privatisation reduces labour’s share since the profit motive means that the incentives of managers move away from objectives such as job protection or ‘creating an empire’ because it shifts the incentives of senior managers towards shedding labour and increasing productivity. Specifically, private firms are expected to be less interested or requiring to be responsive to pressures from labour. In particular, Azmat et al. [2012] find that privatisation leads to a sharp decline in the amount of employment and that it is this channel, rather than the reduction of labour’s bargaining strength, that leads to the declines in labour share. While we do find sizeable impacts of privatisation, we do not try and address why this change came about. In order to test this channel, we use data on whether a firm is listed as private or public.. During the period under consideration, there was some privatisation but the vast majority of firms are private sector firms.

Employment Protection Another common determinant of declines in labour share is the weakening of the organisational strength of unions and/or the adoption of employment policies that reduce employment protection. Given the fact that India’s labour force is not heavily unionised, the main way in which employment protection can be reduced is a widespread informalisation of labour. Production workers in Indias manufacturing sector are of two kinds: those having employment protection and benefits who are termed ‘permanent’ and those hired from outside contractors who are not eligible for such protections (called ‘contract’ workers). There is evidence that informalisation of the formal labour force is increasingly a concern in India [Sengupta et al., 2009].As Das et al. [2015] note,

“it is important to point out that there is emerging evidence that employers in formal manufacturing in India circumvent the problems posed by the restrictive institutions .. by employing contract workers who are outside the purview of the major labour laws (Kapoor [2014]; Chaurey [2015]). Instead, contract workers and their employment are regulated by the provisions of the Contract Labour Act (CLA) 1970. The Act, which was originally intended to protect the interests and welfare of contract workers, is now used by employers to circumvent other restrictive labour laws. The CLA and particularly recent judicial interpretations of the Act in the 2000s in favour of principal employers has actually led to de facto reforms making the labour market more flexible contrary to popular perception.”

³It should be noted that most of the literature suggests that the elasticity of substitution is less than one [Chirinko et al., 2011; Lawrence, 2015; Oberfield and Raval, 2014; Antras, 2004; Hamermesh, 1996]. Other recent work, for example Alvarez-Cuadrado et al. [2017]; Herrendorf et al. [2015]; Buera and Kaboski [2012]; Leon-Ledesma et al. [2010]; Choi and Rios-Rull [2009]; Valentinyi and Herrendorf [2008], provide alternative estimates using various theoretical specifications. For a comprehensive note on the relationship between the elasticity of substitution and factor shares, see Chirinko and Mallick [2014]

Several reasons have been provided for this increase in informalisation, [Goldar and Aggarwal \[2012\]](#) argue for example that import competition forces movement towards a low labour protections regime in order for firms to remain competitive. A more prominent and often cited argument is that labour laws, and in particular the Industrial Disputes Act have worked as a deterrent on formalisation since onerous labour regulations work as a disincentive to formal labour hiring (For a contrary view see [Nagaraj \[2002\]](#)). The ASI 5-digit level data allows us to directly test for the effect of informalisation on the labour share since it includes data on contract workers⁴.

Concentration Finally, a newer, but important explanation provided by [Autor et al. \[2017\]](#) is that much of the decrease in the labour share in the US and other developed countries can be explained by the rise of ‘superstar’ firms with high profits and a low share of labour in firm value-added and sales. These firms are able to reduce costs and produce a larger part of the overall value simultaneously, implying that as an industry comes to be dominated by such firms, this could come with lower labour costs. [Autor et al. \[2017\]](#) suggest that industries are increasingly characterized by a “winner take most feature where a small number of firms obtain a very large share of the market. If production requires a fixed amount of overhead labour, then larger firms and greater concentration could lead to lower labour shares. Similarly if markups in the product market correlate positively with firm size then one might expect that there is a decrease in the overall labour share. If a ‘superstar’ firm’s share of output in the industry increases, one might expect that the labour share within the industry would fall. We proxy for this by using the share of a firm’s value added in the industry’s value added as indicative of a ‘superstar’ firm effect.

Other variables One explanation that is conspicuous by its absence is any variable to control for global integration. We had wished to try and use the degree of de facto trade integration or measures of protection for various industries. Unfortunately however, the ASI data is classified according to the National Industry Classification while trade data is classified using the HS6 system. While there are bridges available, the NIC code used in the dataset change over time, and therefore the existing bridges which might be used are prone to be full of errors⁵. This is a task for further research. In future work, we hope to also

⁴[\[Kapoor, 2016\]](#) explores this relationship centrally as well. As she notes, ‘[T]he increase in contract workers accounted for about 47% of the total increase in employment in the organised manufacturing’ from 2001-2011’

⁵We invested significant effort to try and include trade and internationalisation in our formulation. However, we encountered hurdles that could not be surpassed within any reasonable time frame. Namely, that all available data on trade in India is classified using the Standard Industrial Classification (SIC) system. Thus, each industry has a specific SIC code. The Annual Survey of Industries data used in our paper, however, classifies data using the National Industrial Classification (NIC) system. Here, every industry has a specific NIC code.

limit the sample to include firms that are primarily producing for the domestic market and which has primarily domestic competition vs. those that are more internationally exposed.

Table 2 provides unweighted summary statistics for the variables of concern, while Table 3 provides the same statistics except now the data is weighted by gross value added. Both tables provide the summary statistics over the entire time period, as well as for two sub-periods (2000-2007 and 2008-2016). An interesting point to note is that in the unweighted data, the mean wage share is over 30%, which would at first glance seem at odds with the aggregate trend observed in Figure 1b. This is a compositional effect due to the existence of a large number of very low-output factories with high wage shares. As soon as we account for this by weighting the data, as in Table 3, the mean wage share is below 8%.

Figure 3 provides the trend in the total number of factory employees over time. Figures 4a, 4b and 4c provide some visual evidence of the relationship between these explanatory variables and the wage share. In each case, the figures provide some prima facie evidence of some co-evolution between the variables.

Period		Wage Share	Capital Intensity	Relative Size	Contract Workers
2000-2016	Mean	30.5%	489008	0.24%	51.0%
	Median	26.1%	222885	0.01%	50.7%
	SD	21.5%	836771	2.21%	27.8%
	N	504916	346076	552192	221320
2000-2007	Mean	30.3%	320083	0.23%	49.5%
	Median	25.6%	147075	0.01%	48.5%
	SD	21.7%	610038	1.89%	28.4%
	N	227058	137426	250924	81086
2008-2016	Mean	30.7%	600270	0.25%	51.9%
	Median	26.5%	294572	0.01%	51.8%
	SD	21.4%	940785	2.43%	27.4%
	N	277858	208650	301268	140234

Table 2: Summary Statistics (5-Digit): **Unweighted**

Unfortunately, we found, there is no straightforward way of mapping SIC codes onto NIC codes in India. Not only are there a very large number of industries at the 5-digit level, but the industries are classified differently in the two systems. There has been, to our knowledge, only one effort in mapping the trade data codes onto the industrial classification codes, done by [Debroy and Santhanam \[1993\]](#).

Period		Wage Share	Capital Intensity	Relative Size	Contract Workers
2000-2016	Mean	7.9%	1930198	8.06%	47.3%
	Median	2.8%	949515	3.26%	49.4%
	SD	11.8%	2128855	12.76%	24.2%
	N	504916	282890	548709	181156
2000-2007	Mean	8.9%	1185386	7.2%	40.0%
	Median	4.3%	507215	3.0%	35.9%
	SD	12.3%	1486183	12.4%	26.4%
	N	227058	122434	248880	71786
2008-2016	Mean	7.6%	2100125	8.29%	48.8%
	Median	2.5%	1103919	3.29%	51.7%
	SD	11.7%	2180429	12.86%	23.5%
	N	277858	160455	299829	109370

Table 3: Summary Statistics (5-Digit): **Weighted**

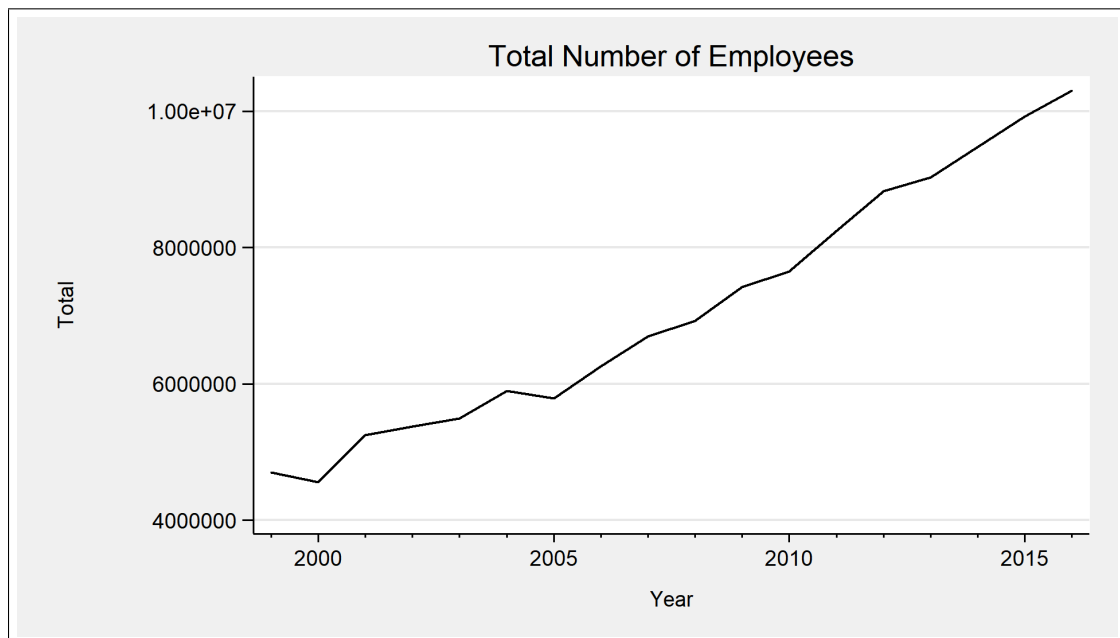


Figure 3: Total Number of Employees in Sample

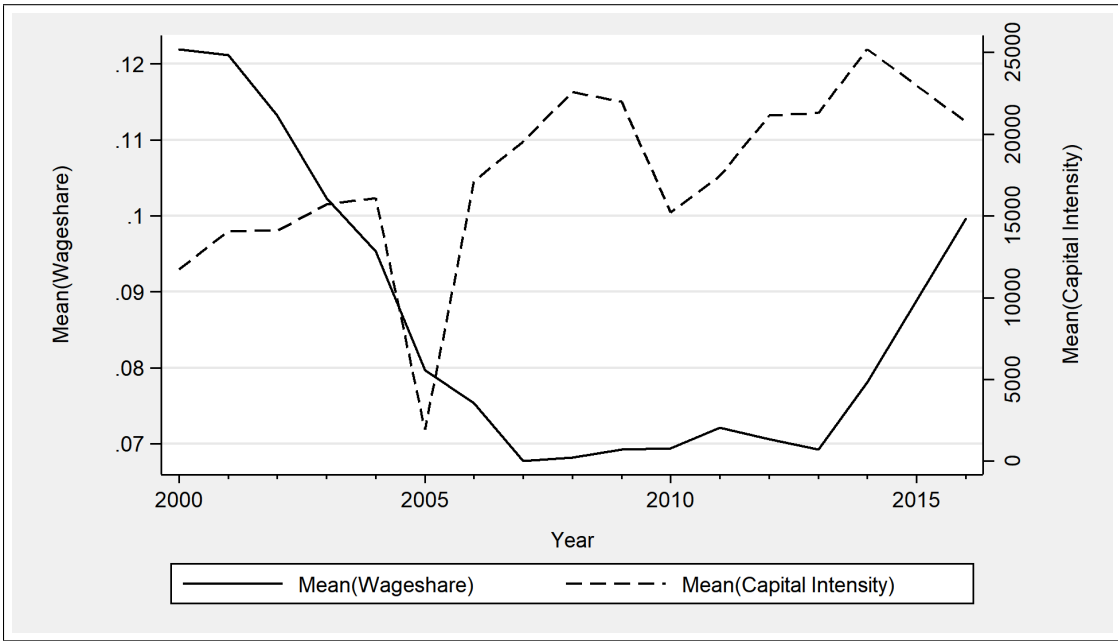


Figure 4a: Mean Wage Share vs Mean Capital Intensity

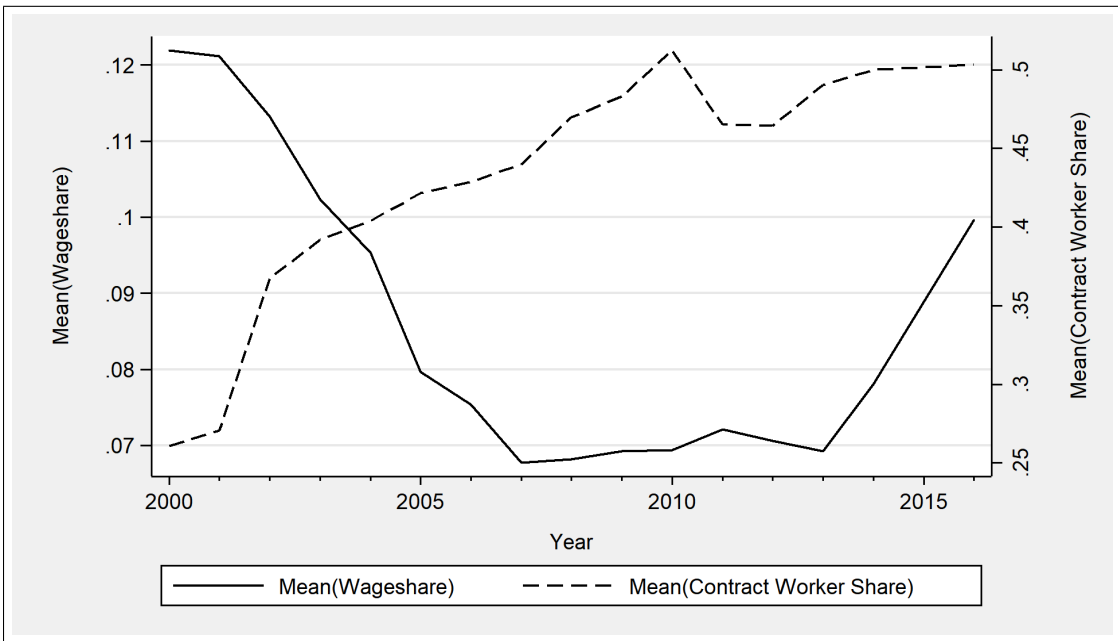


Figure 4b: Mean Wage Share vs Mean Contract Worker Share

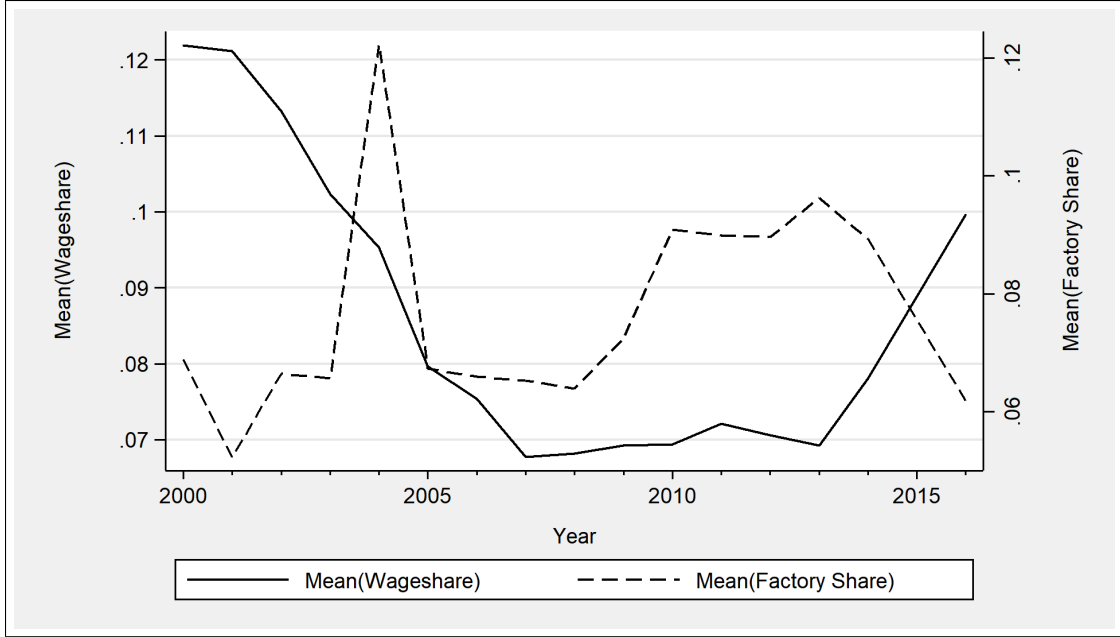


Figure 4c: Mean Wage Share vs Mean Factory Output Share

In order to formally test for these effects we estimate the following regression using the 5-digit data:

$$LS_{it} = \beta_{0i} + \beta_1 KL_{it} + \beta_2 PVT_{it} + \beta_3 SIZE_{it} + \beta_4 INFO_{it} + c_{it} + \epsilon_{it} \quad (\text{Equation 2})$$

where

- LS_{it} = Logged wage share of factory i at time t .
- PVT_{it} = Dummy variable signifying if a factory is publicly or privately owned.
- $SIZE_{it}$ = Logged share of the factory's output vis-à-vis its industry's output.
- $INFO_{it}$ = Logged share of contract worker days in the factory's total mandays.

We consider additional controls to deal with unobserved heterogeneity. Specifically, we include a full set of industry and year fixed effects (c_{it}) intended to capture a variety of factors such as the quality of workers and any time specific impacts that may arise (for example due to the business cycle), and an error term (ϵ_{it}). Data is weighted using the weights provided within the ASI.

Table 4 provides the result of the regression. We utilize a log-log framework for ease of interpretation. In accordance with the theory and extended literature mentioned here, we find sizeable and statistically significant relationships between the explanatory variables and

the labour share. Increases in capital intensity, privatisation, relative size, and informalisation at the factory level are all associated with declines in the wage share. As can be seen with the magnitude of the coefficients, relative to the other factors, rising capital intensity has the biggest implications for the wage share. Our log-log regression model allows for fairly straightforward interpretation of the coefficients; a 1% increase in capital intensity is associated with a fall in the wage share of approximately a fourth of a percentage point. A 1% increase in the relative size of a factory unit's output within its industry is associated with a fall in the wage share of $\sim 0.12\%$, and the corresponding figure for an increase in the fraction of contract workers in the factory's workforce is also $\sim 0.12\%$. The change in the wage share associated with the privatisation indicator shifting from 0 to 1 is $100 \cdot (e^{\beta_2} - 1)$, which translates to -10.06% .

	Main Regression
Log(K/L)	-0.246*** (0.002)
Private Indicator	-0.108*** (0.012)
Log(Size)	-0.119*** (0.001)
Log(Informalisation)	-0.116*** (0.003)
Observations	105840
R ²	.19

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Regression results from estimating [Equation 2](#)

Regional Variation

Economic activity across India is not uniformly distributed, and tends to be concentrated within certain states and cities. A potential alternative explanation for the decline in the labour share is geographical disparities. If, for instance, production and value added was shifting increasingly to low wage share states, the aggregate wage share would decline. Similarly, since industries of particular types may be concentrated in particular areas and if these industries experience sharper declines in the labour share, one might expect to see pronounced regional variation

Figure 6 on page 19 shows that in fact, there is very little variation in trends and levels of the state-level wage share. While there exist a few states which experienced more dramatic changes in the wage share (e.g. Manipur, Nagaland), these are usually smaller states with very little share in the overall value added in the country. We have tried a regression on wage share trends interacted with state dummies, but apart from these three or four anomalies, there is little evidence of any state seeing particularly different trends on average. As such, regional redistribution of production does not seem *prima facie* to be another plausible explanation for the decline in the aggregate wage share.

A common perception is that industrial employment in India is stymied by rigid labour market regulations⁶. We examine the impact of labour market rigidities on the wage share by using a ‘labour market rigidity index’ created by Gupta et al. [2009]⁷. They construct this composite measure of labour regulations across states by examining studies (such as the OECD’s study on the Indian labour market) and common patterns in state-level labour regulations. States are then classified into ‘flexible’, ‘neutral’, or ‘rigid’ labour market regimes (LMR)⁸. Figure 5 plots the wage share for states with ‘flexible’ LMR vs states with ‘rigid’ LMR. While states with relatively rigid labour market regimes did initially have a slightly higher wageshare compared to states with flexible labour market regimes, the trend in both categories is sharply downward until 2007 by which point they have converged and move roughly together after this period.

⁶There have been several challenges to this narrative (See Nagaraj [2002], for instance). Dutta [2003] and Ramaswamy [2003] argue that the increasingly common practice of employing contract labour has limited the effectiveness of labour market regulations in general

⁷For a detailed discussion on labour market regulations, see Anant et al. [2006].

⁸It is important to note that classifying state-level labour market regimes is a controversial exercise. While the classification used here is one example, there are several other possible methods, which could differ quite substantially in their definitions and results. It is often found that results depend on the inclusion or exclusion of specific states in the sample (See Goldar [2011] for a discussion on this point).

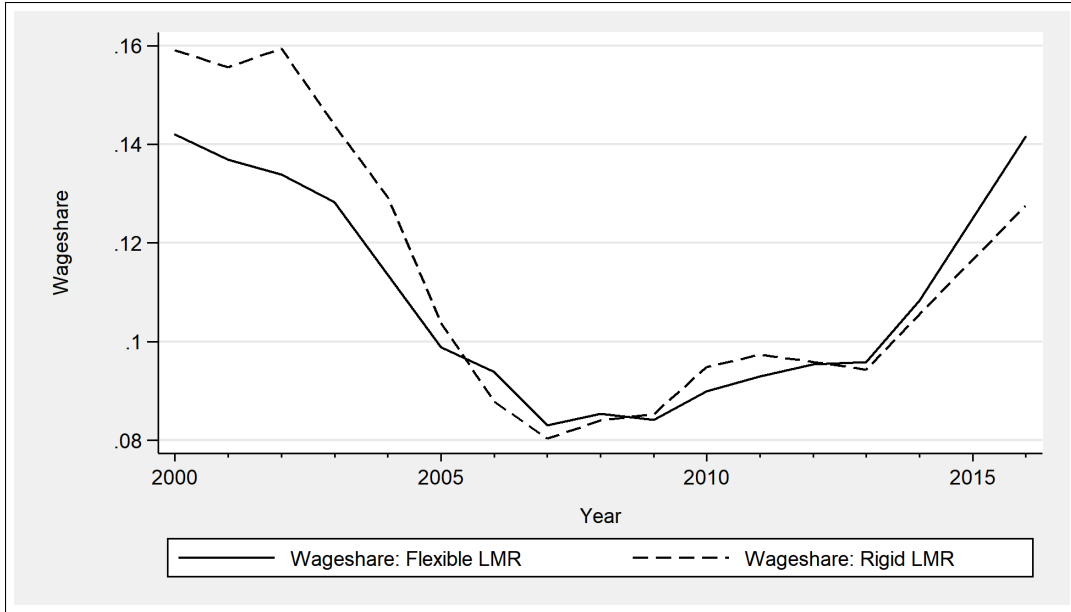


Figure 5: Change in Wage Share by States (Flexible vs Rigid LMR)

Discussion and Conclusion

We have here provided some description of the evolution of and determinants of the industrial labour share in India. The most striking feature has been the long term decline from around 30% in the 1980s to below 10% now. Like in other economies, capital intensive technology, industrial organisation towards more output being produced by low labour cost firms and the reduction in bargaining strength of labour are all robust correlates of this decline. We have made here no attempts at attempting to establish causality, and suggest here broad correlations that have plausible theoretical bases.

It should be remembered that here we are talking about a small part of India's labour force, and indeed a small part of India's industrial labour force. The vast majority of workers even in industry are not captured by these surveys, although organised manufacturing does account for roughly 2/3rd of total manufacturing output. That noted, we believe that our exercise still provides some illumination and some sobering considerations for policy makers. First, given that these data are from the formal sector, they are likely to reflect that part of the industry where the conditions of work and the labour-capital bargain are most favourable for workers. Moreover, it represents the majority of the value added in the Industrial sector. In the larger informal sector, while the labour share might be higher (given that capital intensity is likely to be lower), the quality of jobs is likely to be much worse.

The firms represented in the ASI are therefore a benchmark for desirable jobs available (in the industrial sector at least) for the large and growing Indian labour force.

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Moreover, the decline in India's labour share runs counter to the typical trajectory with development first noted by [Kravis \[1962\]](#) and [Kuznets and Murphy \[1966\]](#) who suggested that the process of development and the attendant structural change, as labour moved out of agriculture into organised wage labour, urbanisation and demographic changes, would serve to increase the labour share. Indeed, [Ortega and Rodriguez \[2001\]](#) find that in general manufacturing labour shares increase with the level of income of a country, while [Jayadev \[2007\]](#) finds that labour shares economy-wide do so as well. India's decreasing labour share during a period of very rapid growth is then at least a little puzzling.

In the last decade or so, various governments have rightly identified weak labour markets and lack of employment opportunities as a key concern for the Indian economy. Our analysis provides additional reason for concern. We show that, at least in the formal sector, workers have seen wages going substantially slower than productivity (hence the fall in wage share) - a process that will also serve to increase inequality. At the current juncture, workers obtain less than a tenth of the gross value added as compensation.

While we have provided some indication of some proximate correlates, we do not by any means suggest that these are exhaustive (indeed, we have reason to believe that at least

one key channel - internationalisation, is missing in our explanation). Although we have emphasized the importance of privatisation, technology, concentration and informalisation we cannot explain all of the fall in the labour shares even in an accounting sense. Other variables such as government industrial policies or globalisation write large may be possibilities but are vedy difficult to tackle with micro-economic data and with the limitations of the particular datasets we use. Future work might incorporate this and other concerns in designing interventions and policies.

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A Appendix

A.1

The table below shows our main regression results when run using net capital stock as opposed to gross capital stock, both when using weighted and un-weighted data. While there are some marginal differences in the magnitude of the coefficients, the interpretations of the relationships remain exactly as before.

	Unweighted	Weighted
Log(NET K/L)	-0.200*** (-143.05)	-0.184*** (-137.05)
Private Indicator	-0.124*** (-13.30)	-0.108*** (-9.11)
Log(Size)	-0.105*** (-103.32)	-0.117*** (-117.36)
Log(Informalisation)	-0.088*** (-34.76)	-0.042*** (-15.48)
Observations	163087	163087

t statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Regression results when using NET K