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Labour Share in Indian Economy: An Exploratory Analysis of the Role of Trade, Technology and Structural Transformation

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Keywords: labour share, structural transformation, trade, technological progress.

JEL Code: D33, E25, F66

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This study analyses the trends, patterns and determinants of the labour share in India. While most of the literature on this topic covers only the organized manufacturing sector, this paper provides a detailed analysis of the labour share at the sectoral level, covering both formal and informal sectors of the entire economy. Using KLEMS data, we find that the aggregate economy-wide labour share declined from 54% in 1980 to 49% in 2016. Shift-share decomposition exercise reveals that both within and between sectoral factors played a role in determining the trends in the aggregate labour share. However, analysis at the disaggregated level reveals that the within sector decline in labour share is neither driven by technological progress, nor by exposure to international trade. Instead, it is mainly driven by two sectors: real estate and construction, neither of which is susceptible to the effects of technological change or trade. The between sector component, on the other hand, is driven by the idiosyncratic nature of the economy's structural transformation, which has favored the high skilled service sector and bypassed manufacturing completely. Within the organized manufacturing sector as well we find that the value-added share of capital-intensive sectors, with the lowest level of labour share, has increased steadily, while that of unskilled manufacturing has declined; leading to a decline in the labour share within the formal manufacturing sector. Sectoral level regression analysis reveals that, controlling for other factors like trade openness and capital intensity, a growth in the share of capital intensive and high skilled sectors leads to a decline in the sectoral wage share. We conclude that the apprehension regarding automation and globalization eating up labour's share of the income might be pre-mature in the context of India. The nature of reallocation of economic activity between sectors has an important role to play.

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1. Introduction

A number of studies have noted a significant decline in the share of income accruing to labour across countries - developed as well as developing - since the 1980s (Elsby Hobijn and Sahin, 2013; Karabarbounis and Neiman, 2014; Autor et al, 2017; Dao et al, 2017; Guschanski and Onaran, 2017). This finding is a departure from the work of Kaldor (1957) in which the long-standing stability of the labour share was considered to be a "growth fact". While a decline in labour share has important distributional implications[1], an appropriate policy response should be based on an understanding of the specific mechanisms behind this trend.

What are the possible factors that can potentially cause a decline of aggregate labour share in an economy? The usual explanations in the literature are those related to labour saving technological progress (Karabarbounis and Neiman, 2014), trade openness (Elsby et al, 2013) and erosion of union bargaining power (Guschanski and Onaran, 2018). If these explanations are tenable, a corollary is that the decline of labour share implies "exploitation" of labour by capital – that is, a more rapid growth of labour productivity than labour compensation. However, in contrast to such narratives, the observed decline of labour share could simply be a manifestation of the process of structural transformation of the economy. The aggregate labour share can indeed decline if capital intensive industries record a relative expansion while labour-intensive industries experience a relative contraction over the years. For instance, Autor et al (2017) find that a major part of the decline in the aggregate wage share in the U.S is due to the rise of 'superstar firms' i.e., firms with a high rate of profit and low labour share. Shifting of industry output towards these firms makes the market more concentrated and results in a decline in the labour share.

Turning to India, most of the existing literature have focused almost exclusively on the organised (formal) manufacturing sector (Goldar 2013; Ahsan and Mitra, 2014; Abraham and Sasikumar, 2017; Jayadev and Narayan, 2018; Maiti, 2019). While these studies observe a general decline of labour share, this result should not be generalized for the whole economy as the organised

[1]A higher share of income accruing to capital has been associated with greater inequality in income distribution (Piketty, 2013). The distribution of factor shares becomes especially important when, in spite of economic growth, there is no commensurate increase in the personal income of households (Atkinson, 2009). Declining labour shares may further affect the economy by adversely impacting household consumption, investment, net exports and government consumption (ILO, 2013; Wolf, 2014). Apart from these economic implications, declining labour share may also have serious political consequences.

manufacturing sector accounts for only about 5% of total employment in the country (Ghose, 2016). This chapter attempts to addresses an important gap in the literature by carrying out an economy-wide analysis of the trends and determinants of labour share in India. We cover the formal as well as informal segments of all three sectors - primary, secondary and tertiary- of the economy[2].

Our analysis makes use of INDIA-KLEMS (Capital, Labour, Energy, Material and Services) database, published by the Reserve Bank of India (RBI)[3]. A separate analysis of the organised manufacturing sector has also been carried out using data from the Annual Survey of Industries (ASI). Using the standard shift-share analysis, we decompose the aggregate labour share changes between selected years into "within-sector" and "between-sector" components. A higher share of the former as compared to the latter may imply that the labour share changes are mainly driven by one or more of the industry specific factors like skill biased technological progress, exposure to trade, changing labour market institutions etc. On the other hand, a higher share of the "between-sector" component may imply that the change in labour share is mainly brought about by the process of structural transformation – that is, changes in the composition of economic activity in the economy.

Our analysis shows that the extent to which labour share had declined is much less pronounced at the aggregate/economy-wide level as compared to that for the subset of organised manufacturing sector. Similarly, the extent of decline is less pronounced for total manufacturing sector consisting of both organised and informal sectors as compared to the subset of organised manufacturing. While the labour share in the primary sector has remained more or less constant, that in the service sector mimicked the overall economy-wide trend. The shift share analysis reveals that both "within" and "between" components played a role in explaining the changes in aggregate labour share. Further dissection of the data, however, suggests that the observed "within sector" decline

[2] An analysis for the non-farm business sector only (i.e., excluding agriculture and the salaried government sector) was undertaken as well. The overall results remain qualitatively similar.

[3] Previous studies mainly make use of the Annual Survey of Industries (ASI) database. While it covers only the formal sectors, the National Accounts Statistics (NAS) does not report labour and capital share of self-employed workers (mixed income), making it difficult to estimate labour share of the informal sectors. Some authors (Goldar, 2013) have resorted to the "rule of thumb" approach of appropriating two thirds of the mixed income of proprietors to labour and the rest to capital. The INDIA-KLEMS splits the mixed income of self-employed workers into a labour and capital components by using unit level data from employment-unemployment surveys of National Sample Survey Organization (NSSO) along with the available estimates of compensation of employees.

of labour share has been driven primarily by just two sub-sectors: real estate and construction, neither of which is susceptible to the presumed adverse effects emanating from technological progress or trade openness. Overall, there is little evidence to suggest that the "within sector" decline is driven by technological progress or international trade.

The decline along the "between sector" component has been driven by India's unique nature of structural transformation from agriculture to services even as the share of manufacturing sector in GDP remained low and stagnant. The fast-growing services and manufacturing sub-sectors have been skill and capital-intensive rather than labour-intensive (Gordon & Gupta, 2005; Kochhar et al, 2006; Panagariya, 2006; Singh, 2006; Eichengreen & Gupta, 2011; Veeramani, 2012; Ghose, 2015). That the group of labour-intensive sectors recorded relatively slow growth is a clear anomaly for a labour abundant open economy like India. Our analysis reveals that the economy's idiosyncratic structural transformation, from agriculture to skilled and capital-intensive sectors, explains a significant part of the decline of labour share in India, with the usual suspects - technological progress and trade openness – playing a rather limited role. We also carry out a sectoral-level regression analysis where we study the determinants of labour share. Here too we find that relative to other sectors in the economy, growth in the value-added shares of high skilled and capital-intensive sectors of the economy lead to larger declines in the labour share. While capital-labour ratio has an expected dampening effect on the wage share, variables capturing trade intensity does not seem to play an important role in determining sectoral labour shares.

The rest of the chapter is organised as follows. Section 2 provides further evidence to substantiate the unique nature of structural transformation in India. In Section 3 we discuss the trends and patterns of labour share at aggregate and disaggregate levels. Section 4 deals with the decomposition of labour share changes into "within" and "between" components. In Section 5, we carry out a regression analysis to study the determinants of labour share. Finally, Section 6 concludes.

2. Distinctive Pattern of India's Structural Transformation

The KLEMS database provides data on outputs and inputs for 27 sub-sectors of Indian economy for the period 1980-2016. We group these sub-sectors into three broad groups: (i) agriculture,

mining and quarrying (henceforth primary); (ii) manufacturing and (iii) services, construction and electricity (henceforth services).[4] The distinctive pattern of India's structural transformation is depicted in Figure 1. The share of manufacturing in country's GDP remained nearly constant at little below 20% for almost four decades since 1980. On the other hand, the share of services in GDP increased consistently from 43% in 1980 to 63% in 2016 while that of agriculture declined from 38% to 20%. This pattern is in sharp contrast to the development path followed by East Asian economies like China and South Korea.[5]

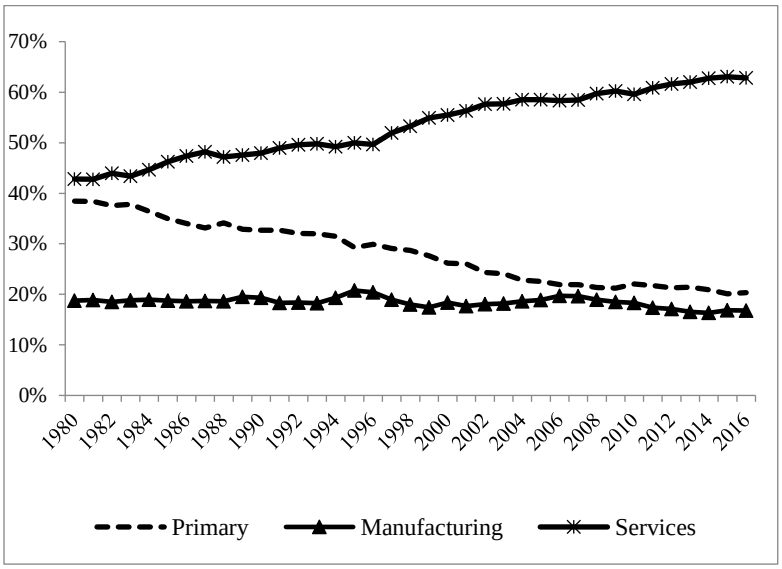
In order to analyse the structure of growth further, we consider the composition of value added within services and manufacturing. To this end, the sub-sectors within manufacturing are classified into three factor intensity-based categories: (i) natural resource intensive manufacturing, (ii) unskilled labour-intensive manufacturing and (iii) capital-intensive manufacturing (see Appendix Tables A.1 and A.2).[6] Similarly, the sub-sectors within services have been classified into two categories (i) 'high skilled services' (finance, business, education and health) and (ii) other services. Figure 2 depicts the composition of value added across these categories within manufacturing and services. Within services, the share of high skilled services nearly doubled from about 15% to 30% while that of other services declined (see panel a, Figure 2). Within the manufacturing sector, the GDP share of capital-intensive industries increased while that of other categories declined (panel b, Figure 2). The contrasting growth experience of manufacturing sub-categories is more striking when the attention is focused on the organised manufacturing sector: while the GDP share of capital-intensive industries (within organised manufacturing) increased from 38% in 1980 to 65% in 2016, that of unskilled-labour intensive industries declined from 46% to 14% (see Panel c, Figure 2). Overall, it is clear that skill intensive services sectors and capital-intensive manufacturing sectors experienced faster growth rate than labour intensive sectors.

Given that manufacturing led growth offers significant employment opportunities, the distinctive pattern of structural transformation in India is worrisome (Ghose, 2015). While services sector's share in GDP has been rising very fast, there has been no commensurate increase in its share in total employment (Gordon & Gupta, 2005). On the flip side, while the share of agriculture in GDP

[4] Refer to Table A.1 in the Appendix for sectoral descriptions and classification.
[5] While industry's share of GDP in India rose slightly from 24% in 1980 to 27% in 2000, it increased from 45% to 51% in China during the same period (Gordon and Gupta, 2005).
[6] This categorization is based on the factor intensity classification by Hinloopen and Marrewijk (http://www2.econ.uu.nl/users/marrewijk/eta/intensity.htm).

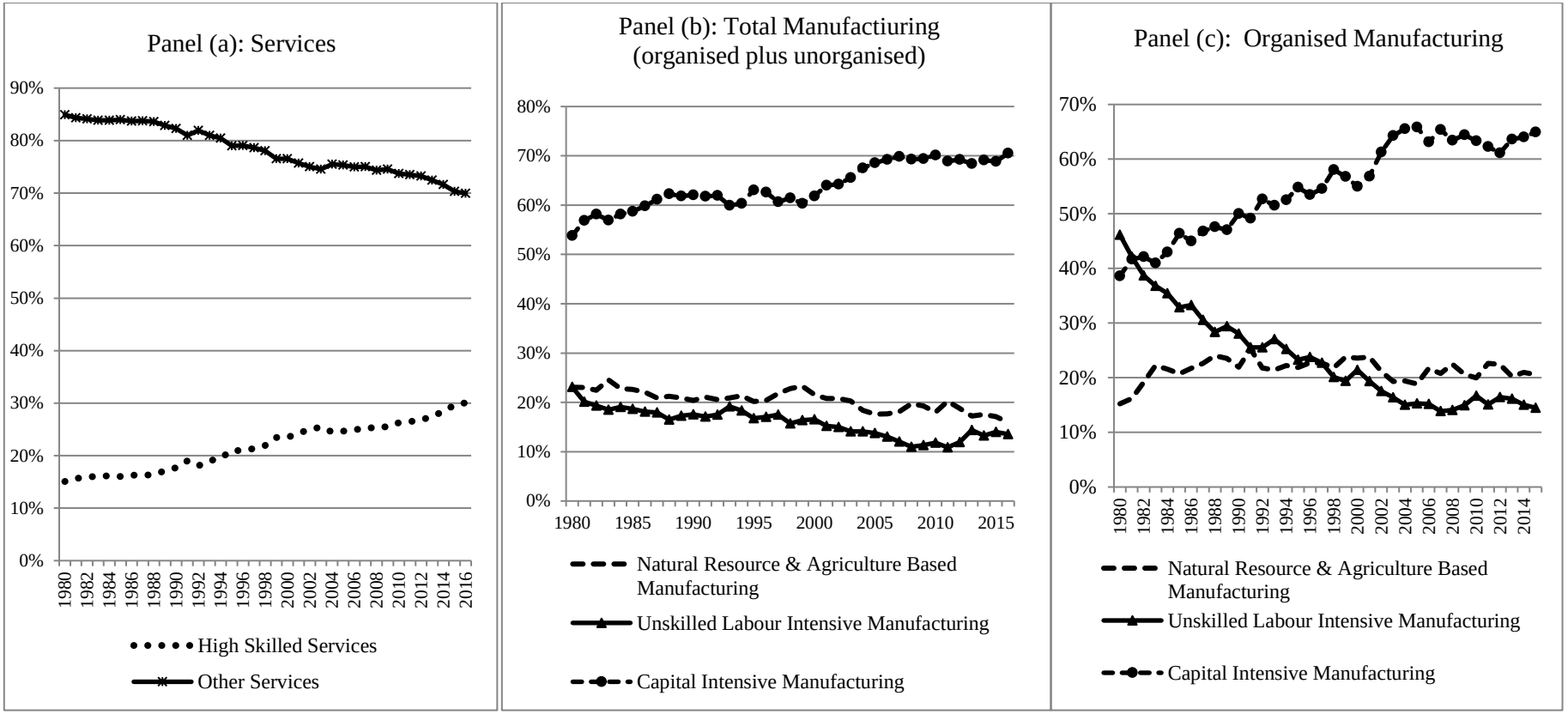
has been declining, its share in employment has not shown a corresponding decline. This distinctive pattern of India's growth shall have an important bearing on the pattern of employment and hence the trajectory of labour shares in the economy.

Figure 1. Share of broad sectors in GDP (%)



Source: Author's calculations using INDIA KLEMS 2019, RBI

Figure 2. Composition of Value Added within Each Sector Groups (%)



Source: Author's calculations using INDIA KLEMS 2019, RBI and Annual Survey of Industries (ASI) data.

3. Labour Share: Trends and Patterns

The aggregate economy-wide labour share is defined as the weighted average of the labour shares of the 27 sub-sectors of the economy, with weights being the sub-sector's share in total value added. It can be expressed as follows:

$$LS = \sum_i w_i . LS_i = \sum_i \frac{VA_i}{\sum_i VA_i} . LS_i \quad (1)$$

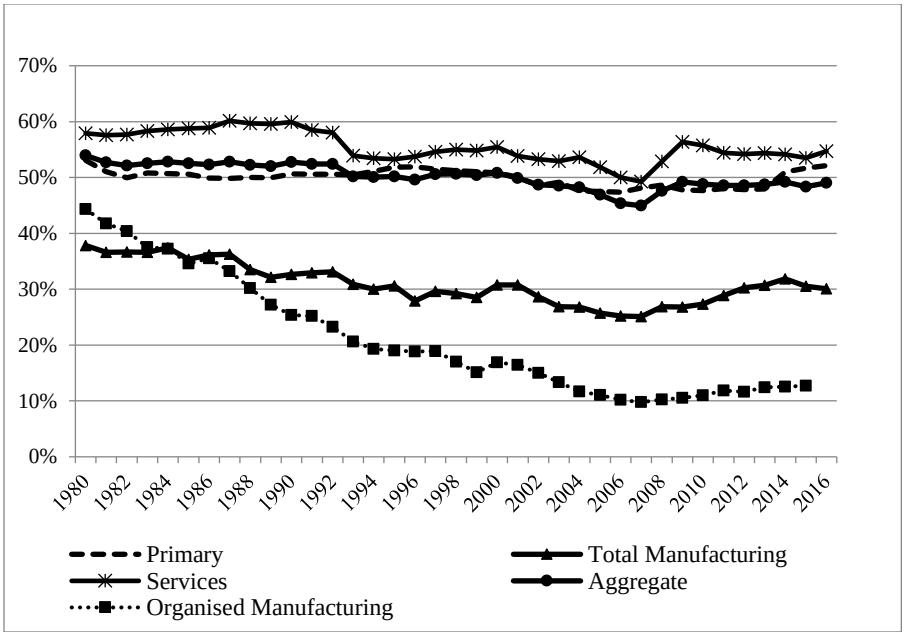
where; LS_i is the labour share in value added in sub-sector *i*, i.e., the ratio of wages to value added in sub-sector *i*. w_i is the weight, i.e., the share of sub-sector *i* in the economy's total value added.

Figure 3 shows labour share at the aggregate/economy-wide level as well as for the broad sector groups. The aggregate labour share declined gradually from an average of about 53% during 1980-1992 to about 45% in 2007 and then increased to 49% by 2016. It can be seen that the aggregate labour share mostly mimics the trends observed for the services sector, which is expected given the dominance of services in India's GDP. Among the broad sector groups, the share of income accrued to labour is the highest for the service sector. It was close to 60% during the 1980s but declined by about 10 percentage points between 1990 and 2007. Between 2007 and 2016, however, the labour share in services sector increased by 6 percentage points, from about 49% to 55%. For the primary sector, the labour share does not show any noticeable changes over the years and its level remains lower than that in services but higher than that in manufacturing. Among the three sector groups, manufacturing records the lowest values of labour share. Further, it has declined perceptibly over the years, particularly in organised manufacturing sector.

Informal manufacturing sector consists of mostly labour-intensive industries. Therefore, the lower value of labour share in organised manufacturing as compared to total manufacturing sector is not surprising. The labour share in organised manufacturing sector declined consistently from 44% in 1980 to 12% in 2015, clocking a massive decline of 32 percentage points, at an annual average rate of 4.3%. In contrast, for the total manufacturing sector, labour share has declined only 7 percentage points, from 37% in 1980 to around 30% in 2016. Consistent with the trends observed for the services sector, the labour share in manufacturing reached its minimum in 2006-07, subsequent to which it made a recovery. The steeper decline of labour share in organised manufacturing sector is expected given the increased value-added share of capital-intensive industries within this sector. It is clear that the studies that focus only on the organised

manufacturing sector miss not only the larger economy-wide picture but also the trends in manufacturing sector as a whole.

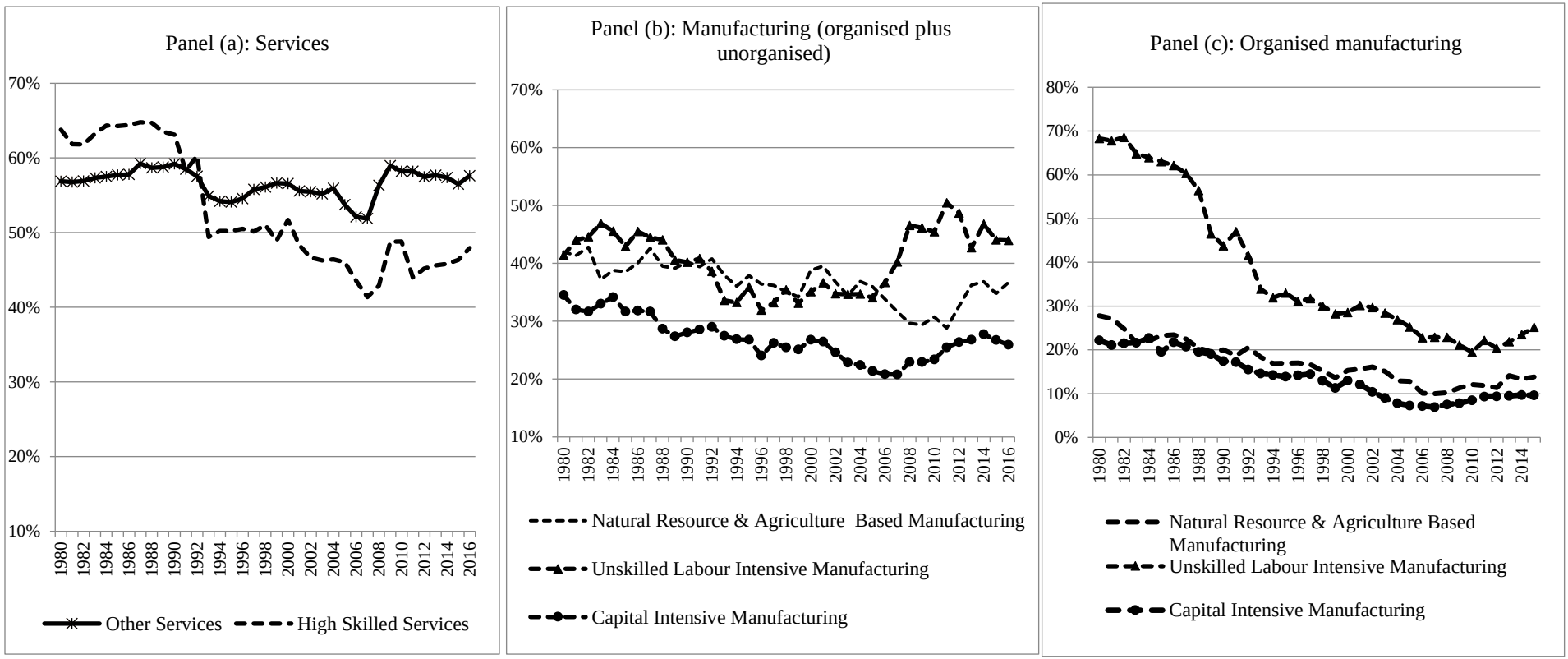
Figure 3. Share of Labour in Value Added in Aggregate and Broad Sector Groups (%)



Source: Author's calculations using INDIA KLEMS and ASI

Figure 4 shows a disaggregated picture within manufacturing and services. As expected, throughout the period, capital-intensive manufacturing exhibits the lowest values of labour share while the services sector shows relatively higher values (see panel a and panel b). Within organised manufacturing, the subgroup of unskilled, labour-intensive industries records the highest labour share while the capital-intensive group show the lowest value (panel c). Turning to the changes over time, between 1980 and 2016, a clear decline of labour share can be observed for capital intensive manufacturing (panel a) and high skilled services (panel b). Other two categories within total (organised plus unorganised) manufacturing - unskilled labour-intensive manufacturing and natural resource-intensive manufacturing - showed a declining trend until 1996 and 2011, respectively, and then recorded noticeable increases. Within organised manufacturing, while the labour share has declined steadily in all sub-categories, the decline is steepest for unskilled labour-intensive manufacturing.

Figure 4. Labour Share across Sector Groups (%)



Source: Author's calculations using INDIA KLEMS 2019, RBI and Annual Survey of Industries (ASI) data.

The aggregate labour share is expected to fall when economic activity shifts towards those sectors where the absolute values of the labour share are lower. This is what happened in India during the period under consideration. For, it is evident that the sectors with relatively lower labour shares (such as capital-intensive manufacturing and high skilled services) are the ones that recorded increases in GDP shares (see Figure 2). Further, these fast-growing sectors also experienced significant "within sector" decline in labour share over the years. On the other hand, the sectors with relatively higher labour share (such as unskilled labour-intensive manufacturing and other services) recorded relatively lower growth rate in terms of value added. Is the decline of labour share in capital intensive manufacturing and high skilled services driven by technological advancements or trade openness? Alternatively, is it driven by inter-industry resource reallocation within these sector groups? In what follows, we seek to answer these questions by carrying out a shift-share decomposition exercise.

4. Decomposition of Labour Share Changes: Relative Contribution of Within and Between Sector Components

Following OECD (2012) and Elsby Hobjin and Sahin (2013), the change in aggregate labour share (ΔLS) between years *t-k* and *t* can be decomposed into within (shift) and between (share) components using the following equation:

$$\Delta\, LS = \sum_i \overline{w_i}\ \Delta LS_i + \sum_i \overline{LS_i}\ \Delta w_i \qquad (2)$$

where the bar above the variables stands for the average value of the given variable for period *t* and *t-k* and the subscript *i* represents sector.

The first term on the RHS of the above equation ($\sum_i \overline{w_i}\ \Delta LS_i$) is the "within sector" (shift) component, which captures the contribution of changes in labour share within each sector, keeping the share of value added in each sector constant at its average value. The second term ($\sum_i \overline{LS_i}\ \Delta w_i$) is the "between sector" (share) component which gives the contribution of the changes in the value-added shares of each sector, keeping the share of labour value added constant at its average value. The within and between components capture the contribution of intra and inter sectoral changes, respectively, in aggregate labour share changes. The analysis is done for two sub-periods: pre-liberalization (1980-1993) and post-liberalization (1993-2016).

The decomposition results for the aggregate economy and for broad sector groups is reported in Table 1.[7] While the overall labour share recorded a decline during both pre- and post-liberalization periods, the relative contribution of "within sector" and "between sector" components differ significantly across these sub-periods. During the pre-liberalization period, the aggregate labour share declined by 3.75 percentage points, of which 78% (2.93 percentage points) was contributed by the within component while the remaining 22% (0.82 percentage points) was contributed by the between component. The decline along the within component can be seen across the board with the contribution of the primary sector (mainly mining and quarrying) being higher than that of manufacturing and services. As far as the between component is concerned, the decline in the contribution of primary sector (by 4.37 percentage points) is compensated by an increase in that of services (by 3.27 percentage points), thereby almost nullifying the effect in the aggregate. Thus, structural changes of the economy contributed little to the decline of aggregate labour share during the pre-liberalization period. Neither do we expect that technology and trade related factors are the likely candidates to explain the observed "within sector" decline as almost all sectors in India were subjected to significant trade protection during the pre-liberalization period.

During the post-liberalization period (1993-2016), the decline of labour share is fully explained by the "between sector" component. During this period, the decline of agriculture's share in value added led to 9.7 percentage point decline of labour share. On the other hand, the increased share of services in value added contributed to 6.8 percentage point increase of labour share. Results at the disaggregated level reveal that the main sub-sectors that contributed to the increase of labour share in services include business services (3 percentage points), financial services (1.14 percentage points) and trade (1.84 percentage points). In net terms, the process of resource allocation led to an overall decline of labour share by 2.1 percentage points as the increase in services did not fully offset the decline in agriculture. As far as the within sector component is concerned, we find that it contributed to an increase in labour share by about 1 percentage points. Thus, while the labour shares within sectors increased, structural transformation of economic activities – from agriculture to services – led to an overall decline of labour share during the post liberalization period.

[7] see Appendix Table A.3 for the decomposition results at the disaggregated sector level.

Table 1 Shift-Share Analysis of Changes in Labour Share: Aggregate and Sector Group Level

	1980-1993		1993-2016		1993-2007		2007-2016	
Sectors	**Within**	**Between**	**Within**	**Between**	**Within**	**Between**	**Within**	**Between**
Primary	-1.214	-4.377	0.592	-9.750	-0.329	-6.342	0.672	-3.159
Manufacturing	-0.768	0.288	0.318	0.780	-0.562	0.682	0.999	-0.021
Services	-0.953	3.269	0.006	6.877	-3.442	4.757	3.969	1.600
Total	-2.935	-0.820	0.917	-2.093	-4.333	-0.903	5.640	-1.580

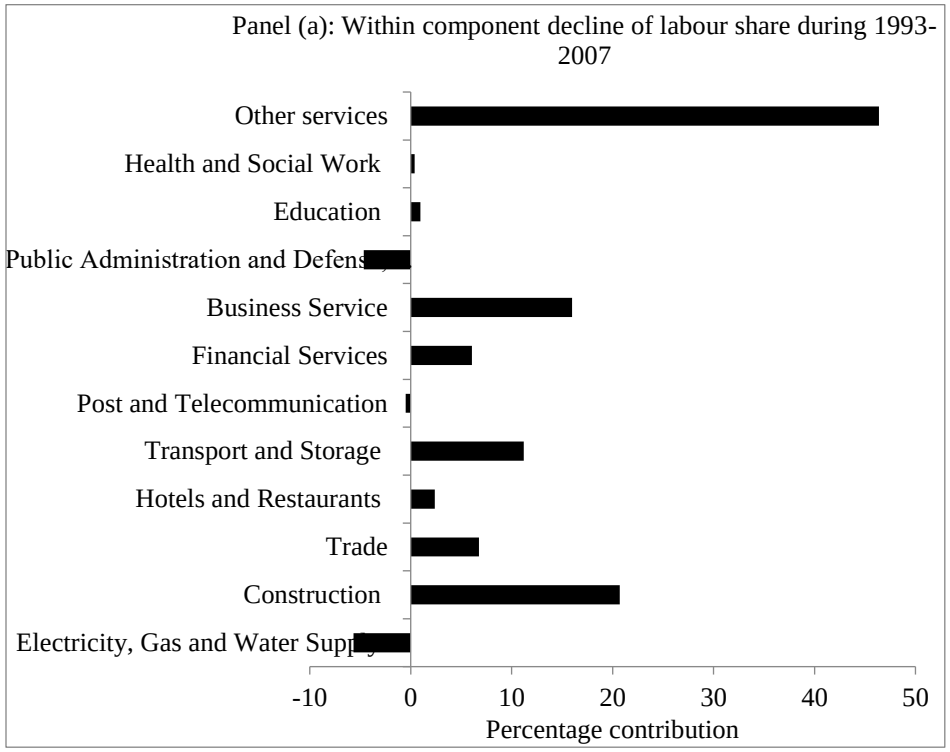
Source: Author's calculations using KLEMS

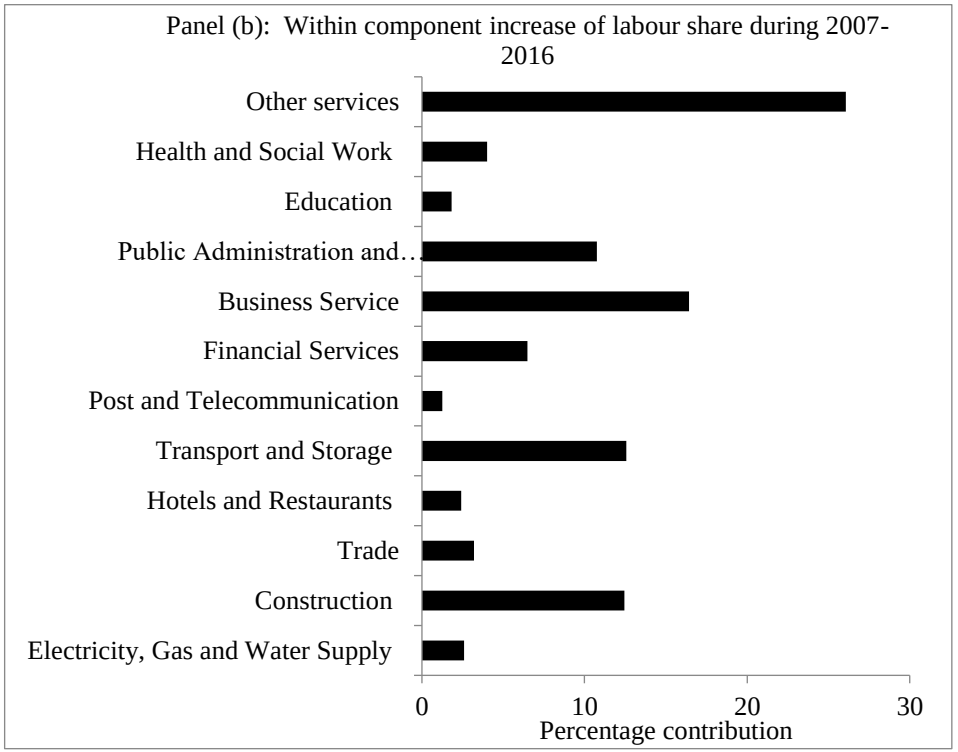
On the basis of the observed trends in aggregate labour share, we carry out the decomposition analysis for two sub-periods of the post liberalization phase: 1993-2007 and 2007-2016, of which the first sub-period corresponds to a decline in aggregate labour share while the second period witnessed some recovery. The choice of the year 2007 is based on the fact that the value of aggregate labour share reached its minimum in that year. The results show that both within and between components contributed to the decline of labour share during 1993-2007, with the contribution of the within component being much higher at about 80%. Almost 80% of the labour share decline along the within component was driven by the services sector.

A closer examination of data at the disaggregated level reveal that about 67% of the 3.4 percentage point decline along the within component of the service sector is driven by 'other services' and construction (see panel a, Figure 5). As per the sector classification in KLEMS database, 'other services' comprises of three non-tradable sub-sectors: (i) real estate, (ii) other community, social and personal service activities, activities of private households as employers and (iii) undifferentiated production activities of private households. An important point to be noted here is that, in India, none of these sectors are susceptible to labour saving technological progress or exposure to international trade. Construction and real estate sectors mainly respond to the upswings and downswings of the economy. The fear of automation and exposure to foreign competition eating up labour's share of the pie are generally discussed in the context of modern sectors such as business services and financial services. However, these sectors do not contribute significantly to the decline along the within component, reinforcing the point that the observed decline of aggregate labour share is unlikely to be driven by technological advancement or trade openness.

The second sub-period of the post liberalization phase (2007-2016) witnessed an increase of labour share, again driven by the within component particularly in services. The specific sectors that contributed to the increase along the within component are mainly the 'other services' and construction sector (See panel b, Figure 5), the same set of sectors that drove the decline along the within component during 1993-2006. Overall, it is clear that the trends in aggregate labour share during the post liberalization period has been mainly driven by relatively non-tradable sub-sectors such as real estate, construction, community and social services etc.

Figure 5. Percentage contribution of services sub-sectors in the "within" component changes of aggregate labour share (1993-2007 and 2007-2016)





Source: Author's calculations using KLEMS Database

Given that the organised manufacturing sector showed a much faster decline of labour share compared to the rest of the economy, we carry out the decomposition analysis separately for the organised manufacturing sector (see Table 2).[8] We find that the between component is slightly more important than the within component in explaining the decline of labour share in the organised manufacturing sector, particularly for the post liberalization period. During 1980-1993, the aggregate labour share declined by 23.6 percentage points with the contribution of within and between components being 11 and 12.6 percentage points, respectively. During the post-liberalization phase, the aggregate labour share for the organised manufacturing sector declined by almost 8 percentage points, of which 57% can be attributed to the between component.

Table 2. Shift-Share Analysis of Changes in Labour Share: Organised Manufacturing Sector

Period	**1980-1993**		**1993-2015**	
Industry Type	**Within**	**Between**	**Within**	**Between**
Natural Resource-intensive	-1.758	1.458	-0.84	-0.252
Unskilled Labour intensive	-6.907	-15.459	-1.694	-3.827
Capital intensive	-2.403	1.3788	-0.872	-0.409
Total	-11.068	-12.622	-3.406	-4.488

Source: Author's calculations using ASI

For both the periods the bulk of the decline in labour share, along both within and between components, has been brought about by the group of unskilled labour-intensive industries. It may be noted that the value-added share of unskilled labour-intensive industries within organised manufacturing sector recorded a consistent decline throughout the period of our analysis (see panel c, Figure 2). Had technological progress been the main factor behind the decline along the within component of the unskilled labour-intensive manufacturing sector, it is unlikely that its share in industry value added during the same period would decline so drastically. A sector which is in the process of adopting new-age, labour saving technology would typically be a growing sector in the economy. Instead, it is very likely that the decline of labour share within this sector is distress driven, rather than technology induced.

[8] Refer to Appendix Table A.4 for decomposition results at the disaggregated level.

5. Determinants of Labour Share: Empirical Framework and Results

In this section we turn to analyse the factors that determine sectoral labour share in India. We estimate two sets of regressions: one covering all sectors of the Indian economy and the other limited to the subset of the organised manufacturing sector. While the overall economy-wise analysis is based on the INDIA KLEMS Database and covers the years 2000 to 2014[9], the latter is based on the ASI Database spanning the years 1973 to 2015. We estimate the following panel data specification in both level and growth forms:

$$\ln(LS_{i,t}) = \alpha + \beta_1 ln(Import\ inter)_{i,t} + \beta_2 ln(Import\ final)_{i,t} + \beta_3 ln(Export\ Ratio)_{i,t} + \beta_4 ln(Cap\ Lab\ Ratio)_{i,t} + \beta_5 ln(Wage\ rate)_{i,t} + \beta_6 ln(VA)_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t} \quad (3)$$

where; the subscripts *i* and *t* denote sector and year respectively. $LS_{i,t}$ is the share of wages in total value added (i.e., labour share) in sector *i* and year *t*. The prefix 'ln' indicates the natural logarithmic transformation of that variable. γ_i and δ_t are the industry and year specific fixed effects (FE). $\epsilon_{i,t}$is the random error term. Based on existing literature we identify the following channels that determine labour share[10]:

Capital Labour Ratio: This is the ratio of capital stock to number of employees in a sector (denoted by *Cap Lab Ratio*). It is expected that with rising capital intensity, relative to labour, the share of wages accrued to labour in total value added would also decline. We would therefore expect this indicator to be negatively related to the labour share, as has already been documented in several studies (Abraham and Sasikumar, 2017; Jayadev and Narayan, 2018).

Wage Rate: Using data from KLEMS, we estimate the wage rate by dividing the real wage bill of a sector by the number of employees. We use the value-added deflator to convert the nominal wages into real terms. The direction in which this indicator influences labour share is not clear a priori. While an increase in the wage rate might lead to a higher labour turnover and thus a decline

[9] Although the INDIA KLEMS Database covers a longer time period, we restrict our analysis to the years 2000 to 2014 because the trade related variables in this specification, as we shall see shortly, are estimated using the World Input Output Database, which is available for the years 2000-2014 only. Note that the KLEMS database does not provide information on any trade related variables.

[10] Refer to Appendix Table A.5 for variable description and data sources.

in the labour share, it might also lead to an increase in the labour share due to rising wages. The final outcome would depend on the relative strength of the income and substitution effects.

Sectoral Value-added: This is the real value added in sector *i* (*VA*), obtained from KLEMS Database. We include this variable in our specification to control for the between-industry changes. For instance, an increase in the sectoral value added of industries which already have a high labour share, can lead to a rise in the labour share. Depending on the relative changes in the wage rate and other factors, a change in *VA*, can influence the labour share (Abraham and Sasikumar, 2017). The scale effects in specification (3) are picked up through this channel. In some of the specifications, we also add sectoral output share to control for the scale effects.

International trade: According to traditional trade theories, in a labour abundant economy like India, trade liberalisation should result in a rise in the returns to labour, relative to capital. However new trade theories suggest that the channel of trade can bring about capital augmenting technological change, leading to a negative effect on the labour share. *Import inter*, *Import final* and *Export Ratio* are the three trade related variables that we consider in our analysis[11]. The export orientation of a sector is captured through the variable *Export Ratio*, measured as the share of output exported by that sector. We might expect sectors that are more export intensive to also be more capital intensive and more competitive, leading to a lower wage share. On the other hand, it might also be the case that export intensive sectors are more efficient, produce more output and thereby have higher labour demand and wages. A priori, the direction in which exports might influence labour share is therefore unclear. On the import side, we delineate the import openness of a sector in terms of inputs and final consumption goods. *Import inter* estimates the share of imported intermediate inputs in total intermediate inputs used in sector *i*, and *Import final* is the

[11] While KLEMS does not provide data on any trade related variable, ASI provides data on export shares only from the year 2008 onwards. As a result, we obtain sectoral level data for the trade variables from other sources: World Input Output Database (WIOD) for the KLEMS based analysis and UN COMTRADE for the ASI based analysis. Since the sectoral classifications in the KLEMS and the WIOD databases are similar, we are able to construct all the three trade indicators using the input output tables from the WIOD for each sector in the KLEMS database. However, when we estimate the trade indicators for the organised manufacturing sector, we are unable to use trade values from the WIOD because the sectoral classifications in the WIOD are more aggregated as compared to the three-digit ASI industrial classification. Therefore, for the organised manufacturing sector, we obtain industry level import and export data from the UN COMTRADE database (accessed through WITS platform). This is possible by drawing a concordance between the ISIC (product classification in the UN COMTRADE database) and the National Industrial Classification (ASI sectors are classified according to the NIC). As a result, we are unable to bifurcate the openness channels into intermediate and final goods import for the ASI industries and instead use the conventional total imports as a share of output measure.

share of imported final goods in sector *i*. The direction of impact of both these measures of imports is ambiguous. While one can usually expect greater imports to lead to higher competition for domestic producers leading to lower wages, import of cheaper and better-quality intermediate inputs by domestic industry can lead to greater output and thereby higher labour demand. We therefore distinguish the imports of inputs and final goods in our analysis. While several existing studies (Dao et al, 2017; Elsby et al, 2013) have documented the negative impact of globalization on wage shares, it is also important to note that if imports lead to cost reductions or if they are complementary to domestic production, then they do not necessarily have a dampening effect on wage share (Guschanski and Onaran, 2018).

Equation (3) is estimated using the panel fixed effects estimation technique. The results of the level regressions are presented in Table 3. Columns 1 and 2 report estimates from the economy-wide analysis covering all sectors (KLEMS-based regressions) and the last two columns consider the organised manufacturing sector (ASI-based regressions) only. An important observation that comes to light is that none of the trade related variables turn out to be a significant determinant of labour's share in income for either the KLEMS-based or the ASI-based analysis. In contrast to previous studies, which find an adverse impact of import competition on labour share, in the Indian context this does not seem to be the case. Capital labour ratio, wage rate and value added turn out to be significant determinants of labour share across all specifications. As hypothesized, we observe a negative relationship between capital intensity and sectoral labour share. Wage rate exerts a positive effect, implying that the income effect from a rise in wage rate outweighs the substitution effect. Further, our results imply that a rise in sectoral value-added leads to a decline in the labour share.

Our analyses in the previous sections indicate that the high skilled and capital-intensive sectors within services and manufacturing which grew the fastest in India were also the ones with lower/declining labour share. To test this, we also add a dummy in our specification, which takes the value 1 for all the high skilled services and capital-intensive manufacturing sectors and zero otherwise.[12] In order to check whether the growth of these high skilled sectors have a negative effect on the labour share, we interact this dummy with a variable which measures the growth in value added share of that particular sector. We refer to this multiplicative term as the *Interaction*

[12] Refer to Appendix Table A.1 and A.2 for the list of such sectors in the KLEMS and ASI databases respectively.

variable (included in specifications 2 and 4). The coefficient on the interaction term is negative and significant, indicating that an increase in the value-added shares of the skilled and capital-intensive sectors of the economy have a larger negative effect on the labour share, relative to the rest of the sectors. These results indicate that reallocation of economic activity between industries (or sectors) had an important role to play in the movements of the labour share.

Table 3. Determinants of Labour Share: Level Regressions (Panel FE)
Dependent variable: ln(*LS*)

VARIABLES	Economy-wide Analysis (KLEMS-based)		Organised Manufacturing only (ASI-based)	
	(1)	(2)	(3)	(4)
ln(*Import inter)*	0.0171	0.0185		
	(0.0434)	(0.0425)		
ln(*Import final)*	0.0114	0.00417		
	(0.0115)	(0.0107)		
ln(*Import share*)			0.0271	0.0271
			(0.0162)	(0.0162)
ln(*Export Ratio)*	-0.0433	-0.0249	-0.0249	-0.0286
	(0.0311)	(0.0350)	(0.0185)	(0.0180)
ln(*Cap lab ratio*)	-0.270***	-0.265***	-0.290***	-0.273***
	(0.0922)	(0.0886)	(0.0558)	(0.0588)
ln(*Wage rate*)	0.525***	0.509***	0.828***	0.801***
	(0.0861)	(0.0846)	(0.0570)	(0.0619)
ln(*VA*)	-0.422***	-0.400***	-0.518***	-0.491***
	(0.0939)	(0.0900)	(0.132)	(0.132)
Interaction		-0.324***		-0.183***
		(0.0717)		(0.0290)
ln(*Output share)*			0.257	0.250
			(0.158)	(0.156)
Constant	3.707***	3.797***	6.427***	7.112***
	(1.158)	(1.150)	(2.048)	(2.493)
Observations	349	326	1,347	1,313
R-squared	0.622	0.640	0.762	0.770
Year dummies	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Number of industries	25	25	35	35

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4. Determinants of Labour Share: Growth Regressions (Panel FE)
Dependent variable: Δ(*LS*)

VARIABLES	Economy-wide Analysis (KLEMS-based)		Organised Manufacturing only (ASI-based)	
	(1)	(2)	(2)	(4)
Δ(*Import inter*)	-0.00288	0.0128		
	(0.00790)	(0.0216)		
Δ(*Import final*)	-0.00213	0.00230		
	(0.00248)	(0.00430)		
Δ(*Import Share*)			-0.0107***	-0.0119
			(0.00304)	(0.00805)
Δ(*Export Ratio*)	-0.0210***	-0.0335**	-0.00284	-0.0218
	(0.00514)	(0.0131)	(0.00666)	(0.0130)
Δ(*Cap lab ratio*)	-0.276***	-0.282***	-0.147***	-0.151**
	(0.0538)	(0.0569)	(0.0497)	(0.0726)
Δ(*Wage rate*)	0.936***	0.807***	0.700***	0.724***
	(0.0223)	(0.0496)	(0.0626)	(0.0831)
Δ(*VA*)	-0.986***		-1.006***	
	(0.0197)		(0.0270)	
Interaction		-0.950***		-0.551***
		(0.0164)		(0.120)
Δ(*Output Share*)			0.437***	-0.241
			(0.0606)	(0.156)
Constant	0.0246***	-0.0386***	0.0988***	0.0508*
	(0.00465)	(0.0134)	(0.0124)	(0.0252)
Observations	322	322	1,246	1,246
R-squared	0.959	0.762	0.847	0.485
Number of industries	23	23	35	35
Year dummies	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Equation (3) can also be estimated in its growth form by taking the logarithmic changes of all the variables. The results of this estimation are presented in Table 4. The KLEMS-based regressions are reported in columns 1 and 2, whereas the ASI-based specifications are reported in columns 3 and 4. Growth in capital labour ratio, wage rate and sectoral value added continue to have a significant effect across all the specifications. The coefficient of *Export Ratio* (see columns 1 and 2) and *Import Share* (see column 3) turns out to be negative and significant in some of the

specifications, a departure from the results obtained in Table 3. This might be occurring because to begin with, more export-oriented sectors might be more capital-intensive than other sectors. The import competition channel however, turns insignificant when the *Interaction* term is included (see column 4), implying that the negative relation between growth in sectoral imports and change in labour share is not robust. Finally, columns 2 and 4 reveal that the coefficient on the Interaction term turns out to be negative and significant, implying that the growth in the value-added shares of the skilled and capital-intensive sectors of the economy have a larger negative effect on the growth rate of labour share. Overall, our econometric analysis indicates the important role played by the nature of the structural transformation of the Indian economy.

6. Conclusion

This study analyses the trends and determinants of labour share in India at the aggregate, industry level. While most of the literature on this topic covers only the organised manufacturing sector, this paper provides a detailed analysis covering both formal and informal sectors within agriculture, manufacturing and services. Using KLEMS data, we find that the aggregate economy-wide labour share declined from 54% in 1980 to 49% in 2016. Shift-share decomposition exercise reveals that both within and between sectoral factors played a role in determining the trends in the aggregate labour share. However, analysis at the disaggregated level reveals that the within sector decline in labour share is neither driven by technological progress, nor by exposure to international trade. Instead, it is mainly driven by two sectors: real estate and construction, neither of which is susceptible to the effects of technological change or trade. The between sector component, on the other hand, is driven by the idiosyncratic nature of the economy's structural transformation, which has favoured the high skilled service sector while bypassing the manufacturing completely.

Within the organised manufacturing sector, we find that the value-added share of capital-intensive sectors, with the lowest level of labour share, has increased steadily, while that of unskilled manufacturing has declined, leading to a decline in the labour share pertaining to the formal manufacturing sector. Panel data regression analysis to examine the determinants of labour share adds credence to our findings. Import competition does not turn out to be a significant channel affecting labour shares. Instead, the growth in the value-added shares of skilled and capital-intensive sectors turn out to bear a significant negative effect on the share of income that is

apportioned to labour. We conclude that the apprehension regarding automation and trade eating up labour's share of the income might be pre-mature in the context of India. Instead, introspecting the economic conditions and government policies that led to a lopsided pattern of growth might shed more light on this issue.

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APPENDIX

Table A.1. Sector Classification in KLEMS Database

No.	ISIC Rev 3.1 Division	Description	Broad Sectors	Factor intensity-based classification
1	AtB	Agriculture, Hunting, Forestry and Fishing	Primary	Primary
2	C	Mining and Quarrying	Primary	Primary
3	15t16	Food Products, Beverages and Tobacco	Manufacturing	Agriculture and Natural Resource Based
4	17t19	Textiles, Textile Products, Leather and Footwear	Manufacturing	Unskilled Labour Intensive
5	20	Wood and Products of wood	Manufacturing	Agriculture and Natural Resource Based
6	21t22	Pulp, Paper, Paper products, Printing and Publishing	Manufacturing	Capital Intensive
7	23	Coke, Refined Petroleum Products and Nuclear fuel	Manufacturing	Capital Intensive
8	24	Chemicals and Chemical Products	Manufacturing	Capital Intensive
9	25	Rubber and Plastic Products	Manufacturing	Capital Intensive
10	26	Other Non-Metallic Mineral Products	Manufacturing	Agriculture and Natural Resource Based
11	27t28	Basic Metals and Fabricated Metal Products	Manufacturing	Capital Intensive
12	29	Machinery, nec.	Manufacturing	Capital Intensive
13	30t33	Electrical and Optical Equipment	Manufacturing	Capital Intensive
14	34t35	Transport Equipment	Manufacturing	Capital Intensive
15	36t37	Manufacturing, nec; recycling	Manufacturing	Capital Intensive
16	E	Electricity, Gas and Water Supply	Services	Other Services
17	F	Construction	Services	Other Services
18	G	Trade	Services	Other Services
19	H	Hotels and Restaurants	Services	Other Services
20	60t63	Transport and Storage	Services	Other Services
21	64	Post and Telecommunication	Services	Other Services
22	J	Financial Services	Services	High Skilled Services
23	71t74	Business Service	Services	High Skilled Services
24	L	Public Administration and Defense; Compulsory Social Security	Services	Other Services
25	M	Education	Services	High Skilled Services
26	N	Health and Social Work	Services	High Skilled Services
27	70+O+P	Other services	Services	Other Services

Table A.2. Sector Classification in ASI Database

No	NIC Code	Sector Description	Factor intensity-based classification
1	151+153+154	food products	Agriculture and Natural Resource Based
2	152	dairy product	Agriculture and Natural Resource Based
3	155	beverages	Agriculture and Natural Resource Based
4	160	tobacco	Agriculture and Natural Resource Based
5	171+172+173	textiles	Unskilled Labour Intensive
6	181	wearing apparel	Unskilled Labour Intensive
7	182+191	fur and leather	Agriculture and Natural Resource Based
8	192	footwear	Unskilled Labour Intensive
9	201+202	wood and wood products	Agriculture and Natural Resource Based
10	210	paper and paper products	Capital Intensive
11	221+222	publishing and printing	Capital Intensive
12	231	coke oven products	Agriculture and Natural Resource Based
13	232	refined petroleum products	Capital Intensive
14	241+233	basic chemicals and processing of nuclear fuel processing	Capital Intensive
15	242-2423	other chemical products	Capital Intensive
16	243	man-made fibers	Unskilled Labour Intensive
17	251	rubber products	Agriculture and Natural Resource Based
18	252	plastic products	Capital Intensive
19	261	glass and glass products	Unskilled Labour Intensive
20	269	non-metallic mineral products n.e.c.	Agriculture and Natural Resource Based
21	271	Basic Iron & Steel	Capital Intensive
22	272	precious and non-ferrous metals	Agriculture and Natural Resource Based
23	281	structural metal products, tanks, reservoirs and steam generators	Capital Intensive
24	289	other fabricated metal products	Unskilled Labour Intensive
25	292+291+300	special and general-purpose machinery, office, accounting & computing machinery.	Unskilled Labour Intensive
26	293 +315 + 319+ 321 + 312 +313	domestic appliances n.e.c, electric lamps and lighting equipment, other electrical equipment n.e.c, electricity distribution and control apparatus	Capital Intensive

27	311+314	electric motors, generators & transformers, accumulators, primary cells & primary batteries	Capital Intensive
28	322+323+331 +333	television and radio transmitters & receivers, medical appliances, watches and clocks	Capital Intensive
29	332	optical instruments &photographic equipment	Capital Intensive
30	341+343	motor vehicles	Capital Intensive
31	342+359	bodies (coach work) for motor vehicles; manufacture of trailers &semi-trailers, transport equipment n.e.c.	Capital Intensive
32	351+361	Building and repair of ships & boats, furniture	Unskilled Labour Intensive
33	352+369	railway and tramway locomotives, Manufacturing nec	Capital Intensive
34	353	aircraft and spacecraft	Capital Intensive
35	2423	Drugs and pharmaceuticals	Capital Intensive

Table A.3. Shift Share Analysis: Results at the Sub-Sector Level, All Economy

		1980-1993		**1993-2016**		**1993-2007**		**2007-2016**	
	Sectors	**Within**	**Between**	**Within**	**Between**	**Within**	**Between**	**Within**	**Between**
1	Agriculture, Hunting, Forestry and Fishing	-0.1252	-4.8056	0.7244	-9.4164	-0.2110	-6.1058	0.6895	-3.0646
2	Mining and Quarrying	-1.0885	0.4285	-0.1320	-0.3339	-0.1176	-0.2365	-0.0174	-0.0945
3	**Total (Primary)**	**-1.2137**	**-4.3771**	**0.5924**	**-9.7503**	**-0.3286**	**-6.3423**	**0.6721**	**-3.1591**
4	Food Products, Beverages and Tobacco	-0.1442	0.1255	-0.0723	-0.1437	-0.1790	0.0303	0.0897	-0.1569
5	Textiles, Textile Products, Leather and Footwear	-0.1702	0.0325	0.2413	0.0801	0.1442	-0.0343	0.0855	0.1261
6	Wood and Products of wood	0.0848	-0.3238	-0.0009	-0.1432	0.0382	-0.1335	-0.0218	-0.0271
7	Pulp, Paper, Paper products, Printing and Publishing	-0.0781	0.0339	0.0243	-0.0250	0.0001	-0.0001	0.0242	-0.0249
8	Coke, Refined Petroleum Products and Nuclear fuel	-0.0533	0.0799	-0.0111	0.0403	-0.0413	0.0224	0.0368	0.0114
9	Chemicals and Chemical Products	-0.1286	0.1917	-0.0938	0.2194	-0.0884	0.1045	0.0095	0.1000
10	Rubber and Plastic Products	-0.0336	0.0560	0.0304	0.1171	0.0004	0.0282	0.0329	0.0861
11	Other Non-Metallic Mineral Products	-0.0699	0.0525	0.0256	0.0751	-0.0471	0.0748	0.0834	-0.0104
12	Basic Metals and Fabricated Metal Products	-0.1275	-0.1092	0.2346	-0.0981	-0.1476	0.1440	0.4031	-0.2630
13	Machinery, nec.	-0.0785	0.0366	0.1141	0.0738	-0.0426	0.0864	0.1789	-0.0347
14	Electrical and Optical Equipment	0.0065	0.0378	-0.0167	0.1985	-0.0741	0.1564	0.0820	0.0175
15	Transport Equipment	-0.0106	0.0166	-0.0780	0.2732	-0.0938	0.1408	0.0446	0.1037
16	Manufacturing, nec; recycling	0.0353	0.0574	-0.0794	0.1126	-0.0309	0.0626	-0.0498	0.0514
17	**Total (Manufacturing)**	**-0.7678**	**0.2876**	**0.3184**	**0.7804**	**-0.5618**	**0.6824**	**0.9989**	**-0.0208**

18	Electricity, Gas and Water Supply	-0.2562	0.2654	0.2901	-0.0687	0.1948	-0.0080	0.1025	-0.0679
19	Construction	0.0590	-0.6749	-0.2122	0.4798	-0.7127	1.7369	0.4940	-1.2506
20	Trade	-0.0198	0.2633	-0.1420	1.9798	-0.2325	1.3177	0.1267	0.6258
21	Hotels and Restaurants	-0.0011	0.0501	-0.0024	0.2260	-0.0818	0.3129	0.0955	-0.1030
22	Transport and Storage	-0.3090	0.2414	0.0619	0.5681	-0.3850	0.4915	0.4988	0.0248
23	Post and Telecommunication	-0.0386	0.0153	0.0692	0.5617	0.0174	0.2325	0.0494	0.3317
24	Financial Services	-0.4169	0.6402	-0.0372	1.1832	-0.2085	0.6110	0.2574	0.4861
25	Business Service	0.0903	0.1893	-0.4737	3.4905	-0.5508	1.4534	0.6518	1.4623
26	Public Administration and Defense; Compulsory Social Security	-0.2231	0.5111	0.6117	-0.2432	0.1598	-0.4345	0.4266	0.2166
27	Education	-0.2580	0.3086	0.0320	0.5775	-0.0326	0.4490	0.0727	0.1203
28	Health and Social Work	-0.1030	0.2035	0.1273	0.1679	-0.0139	0.2121	0.1590	-0.0620
29	Other services	0.5232	1.2559	-0.3185	-2.0453	-1.5967	-1.6177	1.0345	-0.1839
30	**Total (Services)**	**-0.9532**	**3.2691**	**0.0062**	**6.8772**	**-3.4424**	**4.7568**	**3.9689**	**1.6001**
31	**Total (Economy) (3+17+30)**	**-2.9347**	**-0.8204**	**0.9170**	**-2.0927**	**-4.3328**	**-0.9031**	**5.640**	**-1.579**

Table A.4. Shift Share Analysis: Results at the Sub-Sector Level for Organised Manufacturing Sector

		1980-1993		1993-2015	
	Sector	**Within**	**Between**	**Within**	**Between**
1	food products	-0.71	0.6594	-0.172	-0.4
2	dairy product	-0.0051	0.0671	-0.123	0.1031
3	beverages	-0.02	0.044	-0.059	0.0728
4	tobacco	-0.286	0.226	-0.243	-0.03
5	textiles	-0.04	0.0306	0.0419	-0.031
6	wood and wood products	-0.023	-0.025	-0.027	-0.0011
7	coke oven products	-0.021	0.0307	0.0458	-0.111
8	rubber products	-0.084	0.0741	-0.023	-0.024
9	non-metallic mineral products n.e.c.	-0.39	0.2572	-0.137	0.0472
10	precious and non-ferrous metals	-0.18	0.094	-0.144	0.1225
11	**Total (Agriculture & Natural Resource Based)**	**-1.758**	**1.458**	**-0.84**	**-0.252**
12	textiles	-2.042	-1.766	-0.327	-1.648
13	wearing apparel	-0.344	0.5311	0.4773	-0.177
14	footwear	-0.163	0.1396	0.1194	-0.048
15	man-made fibers	0.0808	0.0808	0.1383	-0.266
16	glass and glass products	-0.053	0.0133	-0.052	-0.0061
17	other fabricated metal products	-0.083	0.0182	-0.033	0.125
18	special and general purpose machinery, office, accounting & computing machinery.	-4.206	-14.271	-1.998	-1.724
19	Building and repair of ships & boats, furniture	-0.096	-0.205	-0.02	-0.083
20	**Total (Unskilled Labour Intensive)**	**-6.907**	**-15.459**	**-1.694**	**-3.827**
21	paper and paper products	-0.082	-0.049	-0.061	-0.102
22	publishing and printing	-0.32	0.13	-0.135	-0.123
23	refined petroleum products	-0.093	0.1467	-0.146	0.239
24	basic chemicals and processing of nuclear fuel processing	-0.437	0.1957	-0.085	-0.181
25	other chemical products	-0.173	0.0841	-0.386	0.0742
26	plastic products	-0.077	0.1272	0.0387	0.151
27	Basic Iron & Steel	-1.15	-0.158	0.4392	-1.01
28	structural metal products, tanks, reservoirs and steam generators	-0.057	0.00984	0.0513	0.0171
29	domestic appliances n.e.c, electric lamps and lighting equipment, other electrical equipment n.e.c, electricity distribution and control apparatus	0.3557	0.3557	-0.293	-0.095
30	electric motors, generators & transformers, accumulators, primary cells & primary batteries	0.1009	-0.093	0.00082	-0.018
31	television and radio transmitters & receivers, medical appliances, watches and clocks	0.2055	0.2055	-0.147	-0.095
32	optical instruments &photographic equipment	-0.0027	0.0053	0.00185	-0.0071
33	motor vehicles	0	0	0.5349	0.5349

34	bodies (coach work) for motor vehicles; manufacture of trailers &semi-trailers, transport equipment n.e.c.	-0.098	0.1768	-0.169	0.2062
35	railway and tramway locomotives, Manufacturing nec	-0.334	-0.0012	-0.255	-0.331
36	aircraft and spacecraft	0.00975	0.0305	-0.033	-0.038
37	Drugs and pharmaceuticals	-0.249	0.2133	-0.228	0.3682
38	**Total (Capital Intensive)**	**-2.403**	**1.3788**	**-0.872**	**-0.409**
39	**Total (Economy) (11+20+38)**	**-11.068**	**-12.622**	**-5.939**	**-8.567**

Table A.5. Variable Description and Data Source

Variable	Description	Data Source (KLEMS-based regressions)	Data Source (ASI-based regressions)
LS	Sectoral Labour Share	INDIA KLEMS	ASI
Import inter	Share of imported intermediate goods in total intermediate goods used by a sector	WIOD	
Import final	Ratio of imported final goods consumed to total final goods consumption belonging to a sector.	WIOD	
Import share	Value of all imported goods, expressed as a share of the sector's output		UNCOMTRADE (for import value) and ASI (for sectoral output)
Export Ratio	Value of exports expressed as a share of the sector's output	WIOD	UNCOMTRADE (for export value) and ASI (for sectoral output)
Cap lab ratio	Ratio of real capital stock to number of employees in the sector	INDIA KLEMS Note: Real capital stock data is provided in INDIA KLEMS	ASI Note: we use the Wholesale Price Index (WPI) for machinery to deflate the nominal capital stock into real terms
Wage rate	Real wage rate in the sector	INDIA KLEMS Note: we use the value-added deflator to convert the nominal wage into real terms	ASI Note: we use the Consumer Price Index (CPI) to deflate the nominal wages into real terms
VA	Real value added in the sector	INDIA KLEMS Note: Real value-added data is provided in INDIA KLEMS	ASI Note: we use the Wholesale Price Index (WPI) for manufacturing to deflate the nominal gross value-added in a sector into real terms
Output share	Share of a sector's output in total industry's gross output		ASI