

Wage Productivity Gap and Labour Market Flexibility: A Study based on Indian Manufacturing Industries during 1973-2020

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The present study is an attempt to analyse and assess the wage-productivity gap in the Indian manufacturing industries during the last few decades along with a focus on labour market flexibility in recent time. We carry out the study at the All-India level using the available ASI database for the period 1973-2020. The basic objective of the study is two-fold: (a) to assess the wage productivity gap in Indian manufacturing industry based on secondary data available from Annual Survey of Industries (ASI) and (b) to see whether the labour market flexibility at the same time period has any mutual association with the wage productivity gap in Indian manufacturing industry. We measured the wage-productivity gap at the 3-digit level of the NIC classification of industry groups by regrouping them into divisions of industries. We have tried to relate the wage productivity gap in terms of labour share with the ongoing effort for labour market flexibility in India since 1991.

Keywords: *Wage, Labour Productivity, Wage-Productivity Gap, Labour Share, Labour Market Flexibility,*

Introduction

The present study aims at the examination of wage productivity gap in manufacturing sector in India since 1973. We have considered 1973 as the starting year of our investigation as ASI data got published by the Government of India from that year only. Also, it is to be noted that there is no data available in India for the unorganized or informal manufacturing industries. So, the present study is restricted to the organized or formal manufacturing sector in India. As per the standard microeconomic understanding, as is delineated in terms of the marginal productivity theorem, an individual labourer is paid according to her marginal productivity based upon standard assumptions of perfectly competitive market structure and also homogeneous production function. Two points merit attention at this juncture:

- (a) While productivity is the outcome or end result of the production process which is often determined by the technology, wages may not wholly be determined by the production process or technology. Rather, they are determined to a great extent by the labour market institutions in a particular macroeconomic context.
- (b) Given (a) above, it means the labour wage and labour productivity may display *four* possible inter-relations as follows:

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- (i) Wages may increase proportionately more than productivity over time;
- (ii) Wages may increase proportionately less than productivity over time;
- (iii) Wages and productivity may change similarly at the same proportion over time;
- (iv) Wages may stagnate over time while productivity is rising.

What kind of trend wage would register over time relative to productivity would depend quite significantly on the macroeconomic environment governing the labour market and labour institutions on the one hand, and also, on the technological progress on the other hand. The focus of the present study is to judge (a) whether the wage productivity gap in Indian manufacturing during the post-liberalisation period has widened or not and (b) to find out whether there is any connectivity between wage-productivity gap and flexible labour regime which is the norm of the day.¹

¹When we say Indian manufacturing sector, we restrict ourselves to the formal manufacturing sector in India. The manufacturing sector is divided between formal and informal segment. As far as the standard official definition of an informal unit is concerned it is an enterprise which employs less than 10 workers and without power or employs less than 25 workers and with power and also, in general, these are the enterprises which are not registered with the Government under the Factory Act and hence, the labour laws of the land do not apply to them.

The data on contractual employment is available in ASI database from 2001 only. The data for labour share (LS) or wage share for directly employed and contractually employed are provided here as follows:

| year | LS directly | LS contractual |
|------|-------------|----------------|
| 2001 | 0.284643 | 0.07338 |
| 2002 | 0.223929 | 0.061381 |
| 2003 | 0.235529 | 0.071699 |
| 2004 | 0.196433 | 0.07083 |
| 2005 | 0.176058 | 0.06969 |
| 2006 | 0.171088 | 0.084504 |
| 2007 | 0.139344 | 0.066838 |
| 2008 | 0.117847 | 0.058523 |
| 2009 | 0.132129 | 0.063826 |
| 2010 | 0.128902 | 0.064961 |
| 2011 | 0.119109 | 0.062786 |
| 2012 | 0.113697 | 0.06163 |
| 2013 | 0.120966 | 0.063337 |
| 2014 | 0.200752 | 0.118865 |
| 2015 | 0.15752 | 0.074728 |
| 2016 | 0.110778 | 0.062879 |
| 2017 | 0.110424 | 0.064256 |
| 2018 | 0.113436 | 0.067709 |
| 2019 | 0.11843 | 0.07434 |
| 2020 | 0.112694 | 0.074862 |
| 2021 | 0.107076 | 0.071119 |
| 2022 | 0.088959 | 0.062968 |

The flexible labour rules allow the firms to contain their labour cost which is now vital for their survival in the growing competitive market environment. The unit labour cost in Indian manufacturing has registered significant drop from around 9 percent of total operating cost of production to little over 5 percent across the manufacturing sector in India since the beginning of the new policy regime in 1991 as can be confirmed from the official ASI data (Dasgupta 2013).

Furthermore, the process of informalisation is also a mean to achieve this cost reduction. It is more cost-effective for a manufacturing firm (a) to outsource labour-intensive works outside its factory premise in a labour surplus economy and (b) also to informalise its own in-house production by raising the proportion of relatively less paid casual and contractual workers in the total workforce of the firm.

This introduction sets the backdrop of the present study the sole objective of which is to examine the wage productivity gap in Indian formal manufacturing production and also to see the connectivity of labour share with degree of informalisation of the formal manufacturing space. For doing this analysis we depend on the factory level Annual Survey of Industries (ASI) data at the 3-digit level published by the Central Statistics Office of Government of India.

The study is organised as follows. While the Section 1 provides a brief review of existing literature as far as the question of wage productivity gap and related issues are concerned in general and Indian context, the methodology of the study is spelt out in the following section. Section 3 provides the empirical findings of the study pertaining to wage productivity gap in Indian manufacturing sector since 1973. Section 4 provides an empirical analysis to probe the connectivity between labour share and degree of informalisation where the latter is taken as a proxy for labour market flexibility in quantitative term. Section 5 involves a more disaggregate analysis by dividing the existing industry groups in high, medium and low degree of informalisation category. The concluding section sums up the major findings of the study and would make an attempt to provide some policy imperatives.

A Brief Review of Existing Literature

The present study draws its main inspiration from the ILO concept of Decent Work in which wages commensurate with productivity plays a large role.² Karanassou and Sala (2010) made an attempt to revisit the wage productivity gap at the macroeconomic level, which basically signifies functional distribution of national income at the country level. In the case of developed countries like Italy, France, Japan, Spain, the UK and the US for the period 1960-2008 they found traces of declining or stagnating labour shares in terms of their employment trajectories. However, a study with respect to France by Bruneau and Girard (2021) found slowdown in labour productivity in recent time.

The particular literature from which we drew immensely for the present study is the *Global Wage Report 2012/13 – Wages and equitable growth* published by the

²See the webpage <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm> for an understanding of the ILO concept of Decent Work. This webpage is accessed on 1st August 2023 by the authors.

ILO in 2013. Although the study is meant for depicting global picture of wages and associated aspects – especially the inequitable growth worldwide in recent time, we found Part II of the Report on “Falling labour shares and equitable growth” quite relevant for our purpose. And the methodological clue for the present study follows from this Report.

Similar assessment regarding falling labour shares in the current context is provided in ILS (2008, 2011, and 2012) so to gauge whether free markets may function for better work or not. ILO (2008, 2010 and 2012) too indicates the disturbing labour conditions in developed and developing countries including the emerging markets of India and China. OECD (2011 and 2012) also made attempts to find out what the drivers of low wage and inequality in labour income are. IMF (2007) views the current labouring and wage conditions as something pro cyclical in nature.

In a different context and for a different purpose, Papanikos (2024), found variations of self-employed in Eurozone countries where many of the self-employed might be involved in manufacturing activity which is also not uncommon in India but the study in the Indian context is rare.

In Indian context in recent time there are some attempts to address the question of labour in different forms – labour organisations (Chakrabarti and Dhar 2008; Shyam Sundar 2012), labour conditions (Sen and Dasgupta 2008), labour policy (Papola 2011), informalisation (Papola 1980 and 1981; Sanyal and Bhattacharya 2009; Chakrabarti and Dhar 2008) and labour costs (Kumar and Felpe 2011).

Besides these articles, in the paper ‘The productivity-wage and productivity-employment nexus: A panel data analysis of Indian manufacturing’ (Bhattyacharya, et al. 2011) has inspired us as this article investigated the long-run relationship between labour productivity and employment, and between labour productivity and real wages in the case of the Indian manufacturing sector for the period 1973–1974 to 1999–2001, Where it has been found that both employment and real wages exert a positive effect on labour productivity and their results further suggests that flexible labour market has a significant influence on manufacturing productivity, employment and real wages in the case of Indian manufacturing.

There are few works on wage-productivity nexus as well as technological development in Indian Manufacturing Industries using the available data for different time periods [Bhalotra (1998), Banga (2005), Das and Sengupta (2015), Kapoor (2016), Abrham and Sasikumar (2017), Das, Basu and Halder (2017), Chakraborty (2018), and Jain (2019)]. These studies have attempted to investigate the wage-productivity nexus in Indian manufacturing and also, the impact of technological development on this nexus. However, we did not come across any study which has linked wage-productivity gap in Indian manufacturing industry with the ongoing labour market flexibility in India.

Methodology of the Study

The basic methodology followed to calculate the wage productivity gap in Indian manufacturing is a simple one which actually follows from the definition of labour share as follows:

$$LS = \frac{RWW}{RNVA} \quad (1)$$

where LS stands for labour share and RWW and RNVA stand for real wages to workers and real net value added respectively. We arrive at RWW by deflating nominal wages to workers by consumer price index numbers for the industrial workers and RNVA by deflating nominal value added by wholesale price index numbers as is available from the RBI website.

The labour share as noted in (1) above can also be written as follows:

$$LS = \frac{w}{LP} \quad (2)$$

where w is the real wage rate arrived at dividing RWW by the number of workers (N) and LP is the labour productivity (or real net value added per worker) arrived at dividing RNVA by N.

Taking log of both sides, (2) can be expressed as follows:

$$\begin{aligned} \log(LS) \\ = \log(w) - \log(LP) \end{aligned} \quad (3)$$

Taking total differentials of both sides of (3) we can write:

$$lsg + wg - lpg \quad (4)$$

where lsg is the annual growth rate in labour share, wg is the annual growth rate in real wage rate and lpg is the annual growth rate in labour productivity.

Equation (4) is crucial for our understanding of wage productivity gap in Indian manufacturing. Note that an increasing and positive annual growth over time in labour share would indicate proportionately more growth in real wage than in labour productivity whereas a negative and also falling annual growth over time in labour share would signify proportionately more rise in labour productivity relative to wage.

Also, one can understand this gap crudely by looking at our equation (2) above, that is from the absolute value of labour share (LS). A falling labour share (LS) over time, as is indicated in terms of (2) above, would mean relatively more increase in labour productivity (LP) than real wage (w). Hence, if labour share (LS) is found to fall over time that would indicate a rising wage productivity gap as defined above.

To assess whether wage productivity gap has been rising or not we have used the concept of labour share (LS) as delineated above. We have done this assessment for the period 1973-2020.

We carried out the calculation of real wage (w), labour productivity (LP) and labour share (LS) for all industry groups taken together at the 3-digit NIC classification of industries as contained in ASI database. This helps us to provide an aggregative understanding of the wage productivity gap in Indian manufacturing since 1973. Next, in order to capture the situation what is dubbed as flexible labour regime we have calculated degree of informalisation which means the percentage of workers employed through contractors in the total workers employed. Note that

the data for number of workers employed through contractors are available only from 2000 in the ASI database.

Next, we made an attempt to see if there exists any mutual association between labour share and degree of informalisation and for this we calculated simple correlation coefficient between labour share and degree of informalisation to see whether labour share under flexible labour regime has increased or decreased. The same we captured in terms of a simple econometric exercise involving labour share as the dependent variable and the degree of informalisation as the explanatory variable as follows:

$$LS = \alpha + \beta(\text{Doinf}) + \mu \quad (5)$$

where LS is labour share, Doinf is degree of informalisation and μ is the random error term. Our null hypothesis is $\beta = 0$ against the alternative hypothesis $\beta \neq 0$.

We have also tested the above regression by including capital intensity i.e. capital labour (K/L) ratio as another explanatory variable to test whether along with degree of informalisation technological improvement i.e. change in capital-labour ratio has any effect on the observed labour share during the period under consideration as follows:

$$LS = \alpha + \beta(\text{Doinf}) + \gamma(\text{K/L}) + \mu \quad (6)$$

where K/L is the capital-labour ratio in the Indian manufacturing industry for the period 1973-2020.

Alternatively, we have also proceeded as follows:

$$W/L = (\text{GVA}/L)(W/\text{GVA}) \quad (7)$$

Where W is nominal wages, L is the number of workers and GVA is Gross Value Added.

This can be treated as nominal wages per worker being identically equal to the product of GVA per worker and the Wages share in GVA.

This identity in real terms can be rewritten as:

$$(W/L)(1/\text{CPI}_{IW}) = (\text{GVA}/L)(1/\text{WPI}_{MP})(W/\text{GVA})(\text{WPI}_{MP}/\text{CPI}_{IW}) \quad (8)$$

Where CPI_{IW} and WPI_{MP} are the Consumer Price Index for Industrial Workers and Wholesale Price Index for Manufacturing Products respectively.³

Expression (8) can be rewritten as:

$$RW = LP.WS.RP \quad (9)$$

Where RW is real wage, WS is wage share and RP is relative price.

³Note that in India there is no Producers' Price Index. So, we have used Wholesale Price Index for the Manufacturing products.

So, from the above,

$$RWg - LPg = WSg + RPg \quad (10)$$

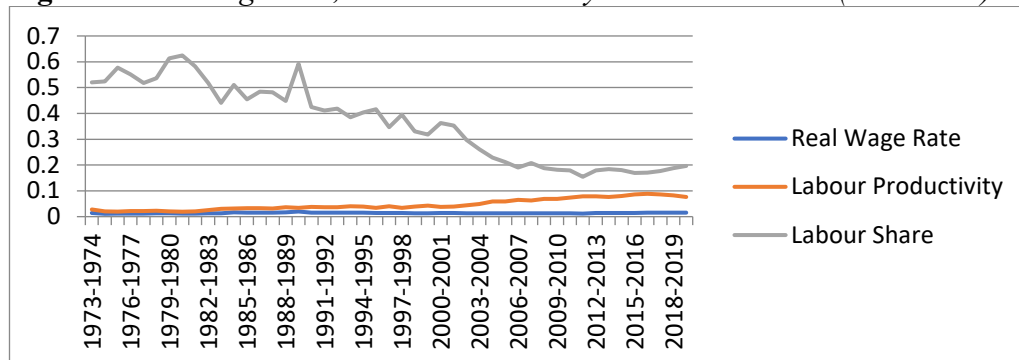
This mean real wage growth rate minus labour productivity growth rate is equal to wage share growth rate plus the relative price growth rate

Empirical Findings

As can be seen from Figure 1 below over the period under consideration in Indian manufacturing while real wage remained almost stagnated labour productivity have moved up significantly indicating widening wage productivity gap, which can also be seen from the little downwardly stagnant labour share line in the figure over the years for all the manufacturing industries taken together. As the graph suggests, while the rise in labour productivity is quite steep over the years the same is not true for real wage. The widening wage productivity gap can be more prominently understood from Figure 2 below where we have plotted annual growth rate in labour share for all industries during the period under consideration. Although the downfall in labour share growth is not smooth over time as it has some peaks at some years yet the overall trend is negative. Hence, at the aggregate level the wage productivity gap has widened during the post-liberalisation period. The divergence between labour productivity and real wage became steeper and steeper implying fall in labour share over time.

Therefore, from Figure 1 and Figure 2 below it can be said that taking all the 3-digit industry groups together, the wage productivity gap in Indian manufacturing industries has widened.

Figure 1. Real Wage Rate, Labour Productivity and Labour Share (1973-2020)



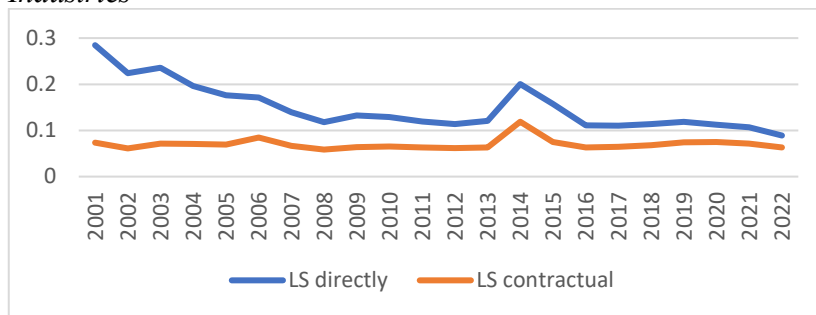
Source: Authors' calculation based on ASI data of Government of India

Note that annual labour share growth rate was negative for 24 years for the period under consideration. The steepest fall in the annual labour share growth rate occurred during 1992-93 just after the inception of economic liberalization programme in India from June 1991. This is also a period (after 1991) which can be dubbed as the beginning of the period characterised by flexible labour regime. So, it would be interesting to note whether falling labour share over time as depicted from Figure 1

and Figure 3 has any connectivity with labour flexibility in Indian context – the discussion of which is taken up in the following section.

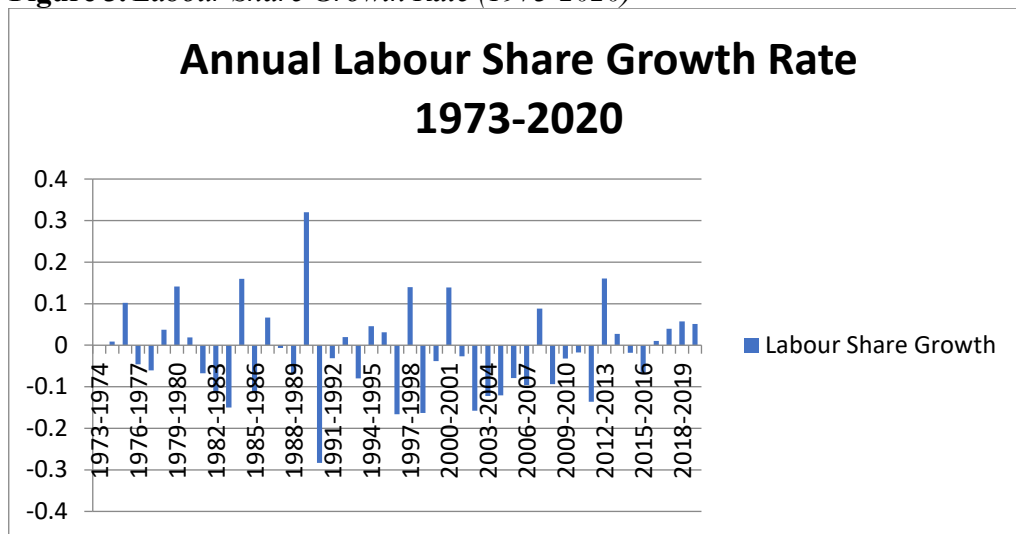
For empirical calculation we have defined degree of informalisation as the percentage of contractual workers in total workers and degree of formalisation as the percentage of directly employed workers in total workers. The two series viz. Degree of informalisation and Degree of formalisation are depicted in Figure 2 below. As can be seen from the figure, the two series exhibits continuous downward trends with a small peak around 2014-15.

Figure 2. Degree of Informalisation and Formalisation in Indian Manufacturing Industries



Source: Authors’ calculations based on ASI data base

Figure 3. Labour Share Growth Rate (1973-2020)



Source: Authors’ calculation based on ASI data of Government of India

Table 1. *GVA, Real Wage for Regular and Contractual Employment and Relative Price (in terms of equation 8 above)*

| Year | total GVA | total RW | RW directly employed | RW contractual employment | Relative Price | Total no. of workers |
|------|-----------|----------|----------------------|---------------------------|----------------|----------------------|
| 2001 | 247678.5 | 87665.38 | 70499.9 | 18174.57 | 34.76 | 6135236 |
| 2002 | 311321.9 | 87946.29 | 69714.03 | 19109.2 | 36.26 | 5957848 |
| 2003 | 273626.1 | 83170.69 | 64446.88 | 19618.76 | 37.70 | 6161493 |
| 2004 | 322762.8 | 83868.7 | 63401.11 | 22861.35 | 39.15 | 6086908 |
| 2005 | 388787.8 | 92207.81 | 68449.14 | 27094.47 | 40.65 | 6599298 |
| 2006 | 455709.3 | 112619.6 | 77966.32 | 38509.09 | 42.45 | 7136097 |
| 2007 | 563041.6 | 110404.2 | 78456.44 | 37632.32 | 45.29 | 7880536 |
| 2008 | 693613.6 | 118684.1 | 81740.58 | 40592.25 | 48.10 | 8198110 |
| 2009 | 555909.2 | 106768.5 | 73451.96 | 35481.57 | 52.48 | 8776745 |
| 2010 | 565208.6 | 109629.9 | 72856.39 | 36716.29 | 58.97 | 9157802 |
| 2011 | 675612.8 | 122891 | 80471.66 | 42419.26 | 65.13 | 9901970 |
| 2012 | 736141.8 | 129065.7 | 83697.16 | 45368.4 | 70.59 | 10438365 |
| 2013 | 712970.8 | 131402.8 | 86245.14 | 45157.75 | 77.96 | 10051626 |
| 2014 | 701550.5 | 224226.8 | 140837.3 | 83389.68 | 85.51 | 10444404 |
| 2015 | 757450 | 175916.3 | 119313.5 | 56602.63 | 90.88 | 10755288 |
| 2016 | 856233.8 | 148690.5 | 94851.6 | 53838.94 | 96.01 | 11136133 |
| 2017 | 912355.7 | 159369.9 | 100745.8 | 58624.24 | 99.97 | 11662947 |
| 2018 | 947231.2 | 171586.2 | 107450.3 | 64135.96 | 103.05 | 12224422 |
| 2019 | 938185.5 | 180853.6 | 111109.4 | 69744.29 | 108.67 | 12798588 |
| 2020 | 869562.7 | 163092.1 | 97994.61 | 65097.51 | 116.85 | 541799 |
| 2021 | 929285.2 | 165594.1 | 99504.37 | 66089.6 | 119.87 | 12594563 |
| 2022 | 1235650 | 187728.8 | 109922.4 | 77806.3 | 123.26 | 13609931 |

Source: Annual Survey of industries and authors' calculations.

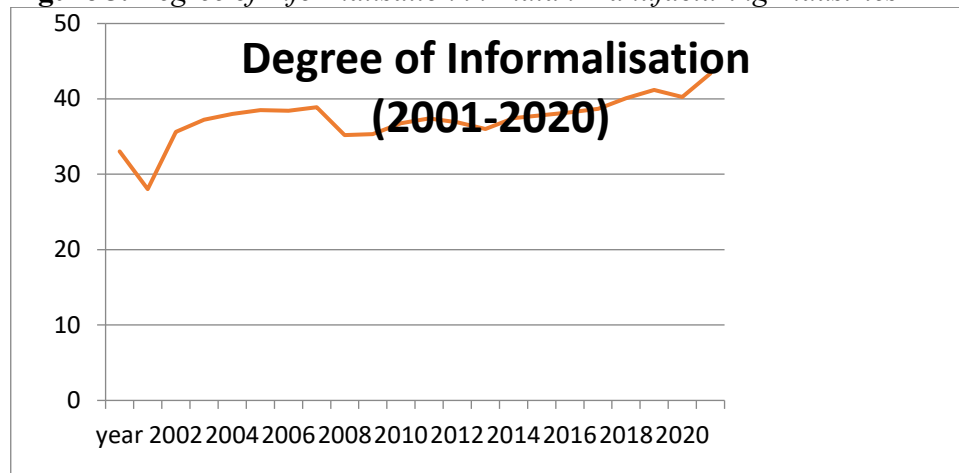
Table 1 shows gross value added, labour share for directly employed as well as contractually employed and also the relative price and total number of workers since 2001 as the data on number of contractual workers got started published from 2001 only. This calculation is based on equation (8) in the previous section on Methodology.

Labour Share and Labour Market Flexibility

Flexibility in the labour market implies doing away with rigid labour rules and replacing them with flexible labour norms like easy hire and fire, casualization or contractualisation of the labour force employed and like (Sen and Dasgupta, 2009). We are considering here the manufacturing industry groups as contained in ASI data base published by the Government of India. The data on employment through contractor (which we have taken as the number of contractual workers in the labour employed in any industry group at the 3-digit level) is available only from 2000. So, we have to contain our exercise for the period 2000-18. We have taken percentage

of contractual workers in the total workers employed in any industry group as the proxy for labour market flexibility which we have termed as degree of informalisation (doinf) in an industry group. Figure 3 below indicates the trend in degree of informalisation in Indian manufacturing industries at the 3-digit level during 2000-18. As can be seen from the Figure 3 below the degree of informalisation had registered unabated rise since 2000. One point merits attention at this juncture. In India not all rigid labour laws are yet to be changed. There are discussions to do this at the policymakers' level in view of containing unit labour cost in the face of steep competition that the Indian manufacturing industries are encountering after opening up of the domestic market following the inception of economic liberalization programme in 1991. However, as Sen and Dasgupta (2009) has observed although there is not much *de jure* change in rigid labour laws but the *de facto* labour market regime is characterised as flexible one compared to what it was in 1970s and 1980s. And rising degree of informalisation in a way does signify rising flexibility in Indian manufacturing industries as far as the labour is concerned. This might have helped on the other hand to enhance efficiency of labourers employed as we have seen in the previous section in terms of rising labour productivity.

Figure 3. Degree of Informalisation in Indian Manufacturing Industries



Source: Authors' calculation based on ASI data from Government of India

To check the mutual association between labour share and degree of informalisation we have calculated the correlation coefficient between them – the value of which is -0.62. The value is high with a negative sign. This implies high degree of negative association between labour share and degree of informalisation. To test the causal relationship we run the following regression which is already indicated in the Methodology Section above:

$$LS = \alpha + \beta(\text{Doinf}) + \mu \quad (3)$$

where LS is labour share, Doinf is degree of informalisation and μ is the random error term. Our null hypothesis is $\beta = 0$ against the alternative hypothesis $\beta \neq 0$.

Our result shows the following:

$$LS = 0.638891 - 1.12879(\text{Doinf}) \quad (4)$$

Both the intercept term and the coefficient term are significant at the 5% level of significance with R^2 of this regression being 0.39. This implies that if degree of informalisation increases by 1 percent the labour share will fall by 1.12879 percent. This vindicates the alternative hypothesis of our regression exercise as mentioned above which means as the degree informalisation (Doinf) increases (falls) labour share in Indian manufacturing industries falls (rises). Falling labour share may be a matter of concern with the inception of flexible labour regime although the need of the hour is to cut the unit cost of production to sustain the steep competition in the goods market following opening up of the Indian economy to a great extent after the beginning of the liberalization era in 1991. And it is very difficult for any industry to reduce non-labour costs of production and so, the onus falls on the labour. One ray of hope in recent time is that real wage has been showing little bit rising trend of late.

Now we test the regression where in addition to degree of informalisation we include capital-labour ration as another explanatory variable – the result of which is given below:

$$LS = 0.6055 - 0.0091(\text{Doinf}) - 0.2869(\text{K/L}) \quad (5)$$

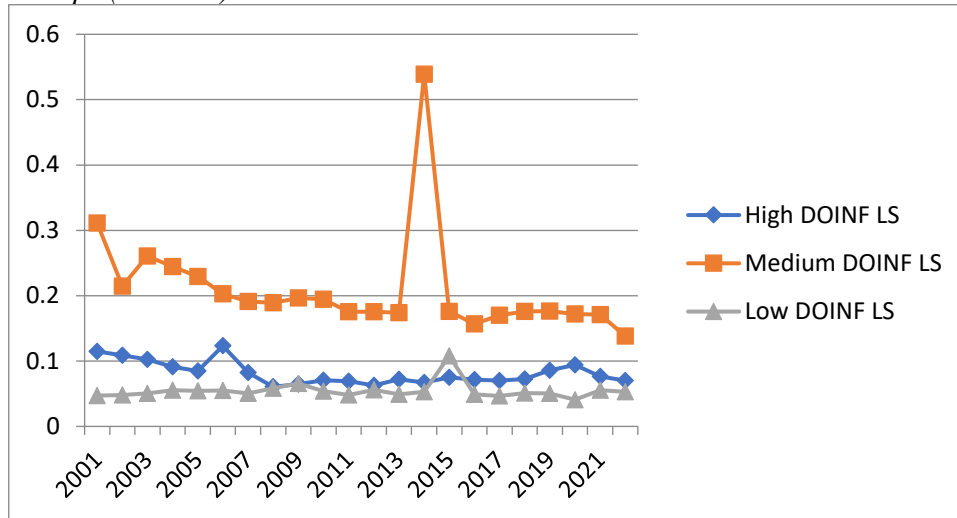
The coefficients are significant at the 5% level and the sign of the coefficients is as expected i.e. negative and R^2 is 0.42 which is significant at 5% level. This implies that with the increase in both degree of informalisation and capital-labour ratio (which is here representative of technological improvement) labour share falls. However, it is the technological improvement compared to increase in degree of informalisation which exerts more downward pressure on labour share in Indian manufacturing industries. Another important point to note here is that the value of intercept term is also significant and not very low implying that there may be other factors than these explanatory variables which may have significant influence upon labour share.

A More Disaggregate Analysis

In this section we take a more disaggregate view of Indian manufacturing industries in terms of degree of informalisation as defined above. We first consider the mean degree of informalisation for all the industries from 2001 to 2022. And then we consider the mean value of the degree of informalisation from least value to the mean value and categorize the industry groups as low degree of informalisation group whose degree of informalisation is less than this mean value i.e. 22.86%. Next, we consider the mean value of the degree of informalisation from the total mean value to the maximum value and categorize the industry groups as high degree of informalisation group if their degree of informalisation is greater than this mean

value i.e. 39.56%. The remaining industry groups whose degree of informalisation lies between 22.86% and 39.56% are dubbed as medium degree of informalisation group. Figure 4 below shows the labour shares of these three groups during 2001-22.

Figure 4. Labour Share of High, Medium and Low Degree of Informalisation Industry Groups (2001-22)



Source: Source: Authors' calculation based on ASI data from Government of India

Note that in each of these industry groups labour share has witnessed continuous downtrend. However, one noticeable fact is that labour share in medium category of industry groups have remained above the high and low category of industry groups. Also, labour share remained most of the time below the labour shares of high category of groups – a result which is counter-intuitive. Note also that there is a sharp peak in labour share in medium category of industry groups in the year 2015 which also merits some attention. But one can assert that barring few years wage productivity gap in each one of these industry groups was increasing or widening from 2001 to 2022. We could not carry out the same exercise from 1973 (from when ASI data is available) because data on number of contractual workers are available only from 2001. In very recent time i.e. during 2020-22 one can observe slight increase in the labour share of the low degree of informalisation group while the other two categories registered sharp fall. Our general hypothesis as can be drawn from the preceding regression analysis in the earlier section is that labour share would be least in high degree of informalisation group followed by medium and then low. But that is not the case as we can see from the above diagram. It may be due to some factors which are as follows:

- (i) In low degree of informalisation group the wage rate is considerably lower than the other two groups so that these industries did not feel the urge to increase the number of contractual workers to reduce their unit labour cost of production.
- (ii) Low category of industries may be mostly more technology driven (compared to the other two categories) which may imply labour intensity is already low

and hence, there was no urge to increase the number of contractual workers unlike the other two categories.

Another point to note at this juncture is that it is the medium category of industries where labour shares throughout the period under consideration remained above the labour shares of the other two categories. This may be said that these industries are more labour intensive i.e. low capital-intensive industries and in spite of having increasing degree of informalisation over the years could not reduce unit cost of labour unlike the other two industry groups.

We also did a panel regression of labour share (LS) on degree of informalisation (doinf) and capital-labour ratio(K/L) as follows:

$$LS_{it} = \alpha_{it} + \beta_{it}(\text{doinf}) + \gamma_{it}(K/L) + \mu \quad (6)$$

where i denotes an industry group and t denotes time (here, year).

The result of random effect regression we got is as given below:

$$LS_{it} = -0.8606162 - 0.1036256(\text{doinf}) - 0.3769291(K/L) \quad (7)$$

Table 2. Results of Linear Regression with Capital-Labour Ratio (K/L) and Degree of Informalisation (doinf) as Explanatory Variable and Labour Share being the Dependent Variable

| Explanatory Variables | Coefficient |
|-----------------------|----------------|
| Doinf | -0.1036256*** |
| K/L | -0.3769291*** |
| CONSTANT | -0.8606162 *** |
| R squared within | 0.8650 |
| Chi- square | 34.43 |

Source: ASI Database of Government of India. Authors' own calculation of econometrics.

Note: S.E is in 1st parenthesis.

***P < 0.01

**P < 0.05

*P < 0.10

Prob. > Chi-square

Therefore, this is the Hausman test result. Here, the fixed effect model is chosen on the basis of our Hausman Test Statistic and its significance level.

All the coefficients including the intercept term are significant at the 1% level of significance. But as we have found in the preceding section it is the capital intensity which exerts more downward pressure on labour share than the degree of informalisation. Note also that the sign of the intercept term and the other two coefficients is, as expected, negative. The relatively large value of the intercept term compared to the other two coefficients suggests that there are also factors other than the degree of informalisation and capital-labour ratio which might have negative influence on labour share on these industry groups.

Conclusion

The major aim of this paper was to probe the wage productivity gap in the Indian manufacturing industries since 2001. We have used ASI data at the 3-digit level to do this study and have found widening wage productivity gap or falling labour share over time. We have also tried to see whether flexible labour regime has anything to do with the observed trend of labour share. And we have found a high and negative correlation between degree of informalisation (taken as a proxy for labour flexibility) and labour share during 2001-2022.

With the opening up of the Indian economy since 1991 and also, with paradigmatic shift in the Industrial Policy regime after 1991 the Indian manufacturing industries are subject to steep competition. So, the need of the hour is to reduce unit cost of production. But given the technology and other related factors, it is quite difficult (if not impossible) to curtail the non-labour costs of production. Therefore, there was no way out but to reduce the labour costs of production which is imminent in terms of falling labour share since 1991. With the entry into a flexible labour regime probably it became easier to contain labour costs of production. Liberalization policies and flexible labour regime will continue to remain as it is today as there is no other alternative for the state in a highly integrated world economy. The state may come out with some policies concerning the social security of the contractual or casual workers in the formal segment of the Indian manufacturing industries. Or the state may think in terms of Universal Basic Income (UBI) which is a social welfare proposal in which the beneficiaries (here the contractual workers in the formal Indian manufacturing industries) would regularly receive a minimum guaranteed income in the form of an unconditional transfer payment from the state. However, given the current fiscal management challenge faced by the Government whether such a scheme will be viable is a big question.

Acknowledgment

The authors are indebted to Indian Council of Social Science Research (ICSSR) without whose help it would not have been possible to present the paper at the 18th Annual International Symposium on Economic Theory, Policy and Applications organized by ATINER during 1-4 July 2024 at Athens. We remain grateful to the conference participants for their comments on this paper. We are also grateful for the comments received from two anonymous referees and we have incorporated all the suggestions of the reviewers. We also are grateful to Debabrata Roy for his kind help in the econometric analysis. The usual disclaimer applies.

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- See the webpage <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm> for an understanding of the ILO concept of Decent Work. This webpage is accessed on 1st August 2023 by the authors.