A Comparative Study of DecadalLabour Share for Indian Manufacturing Industries

Abstract

Since 1980s and1990sthere are worries that the results in labour markets have not seen improvements for many parts of the workforce. Many analysts focused on India's labour markets express apprehension about the slow growth of employments in the organized sector and draws attention to re-investigate the wage productivity gap and the conditions of labour market in Indian manufacturing industries. The major question that we pose in this paper is that: How does labour share and labour share growth trends differ across decades at aggregate level for Indian manufacturing industries? Our comprehension of the wage productivity disparity in Indian manufacturing across decades depends on the value of labour share growth which we have derived straightforward and stems from the definition of labour share. Here, we have calculated the labour share and labour share growth curve at the aggregate level across decades from Annual Survey of Industries (ASI) data at 3 digit National Industrial Classification (NIC) for Indian manufacturing industries from 1973-74 to 2019-20. The results show that in each decade there is an upward shift in labour share and the reason of this upward shift is the more increase in real net value added than the increase in real wages in each decade. The main cause of this falling labour share trend across decades is the stagnation in real wages. The real wages have not risen a significant level over the decades, and it cannot nullify the effect of huge amount of increase in real net value added. Our policy imperatives might be the rigorous implementation of minimum wage regulationsfor different industry categories

Keywords: Labour Share, Manufacturing Industries, Decadal Comparison, Labour Share Growth

Introduction

While productivity is the outcome or result of the production process which is often determined by the technology wages may not be wholly 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.

Most of the mainstream literature of labour market and wage and productivity nexus miss out this divergence as they focus mainly on micro theoretic assessment of optimum wage and productivity bereft of any historical macro-economic settings.

The Indian macroeconomic environment has undergone a significant paradigmatic shift from a state-based planning regime to a more market-driven and private investment-dominated regime during the neoliberal period the starting point of which is 1991.

Indian labour rules and regulations have started to change significantly. However, in practice cutting across different firm sizes flexible labour has become the norm, not the exception. Rather, the rules have de facto become exceptional to follow. (Sen and Dasgupta, 2009)

The decadal comparison is important as helps us to realise how Indian Manufacturing Industries have made progression in terms of labour related aspects, here labour and labour share growth, over the period of time.

In this research article, we have tried to find out the comparative studies based on ASI data for the period of 1973-74 to 2019-20 as per 3-digit of NIC classification. Here, we have found out the curves of labour share, labour share growth at aggregate level, per worker level, and with log values to confirm our understanding about the comparative studies. Then, we have depicted the real wages curves and real net value added curves in a comparative sense to know the reason about the specific pattern of labour share curvesand have tried to address the issue of wage productivity gap across decades in the Indian manufacturing sectors for labourers. Finally, some suitable policy imperatives have been made.

Review of Literature

This work primarily draws upon the research conducted by Sen and Dasgupta (2009), which aimed to examine the wage productivity gap on a macroeconomic scale, essentially

highlighting wage differences among industrial workers across the country. Various efforts have been made to evaluate the labour share within India's manufacturing sector. In the context of India, studies by Sharma and Sharma (2019), Kesar and Bhattacherya (2020), Sarkar (2019), Samarasinghage (2024), Choudhry (2022), and Papola (2014) have offered substantial insights.

Paul et. al (2014) argued that during 1998-1999 to 2010-2011 the growth in nominal wages appears to have been crowded out by a consistent increase in the consumer price index for industrial workers, rendering a scenario stagnant real of temporarily wages in the Indian manufacturing sector. Manonmani (2012) examined wage productivity linkages in aggregate industries in India covering the period of 1998 to 2007-08. Based on the results obtained it was suggested that nationwide linkages of wages with productivity may be the best option for neutralization of a rise in the cost of living. All these studies (Paul et. al 2014; Nagraj 1994; and Acharya 2018) agreed and suggested that there is a decline in the power of organized labour via the labour market and there is an increased casualization of workers in recent years, reducing the bargaining power of the labour of the organized sector in the period of 1990s (Karan and Selvaraj 2008).Paul, B., &Muniyoor, K. (2024)have investigated the role of personal, household, and labour market characteristics in shaping the dichotomy between formal and informal employment in Maharashtra. The findings of the paper suggest that the wage gap between formal and informal employment is greatly influenced by individual and employment characteristics such as gender, marital status, years of schooling, technical education, vocational training, work experience, and industry of work.

The issue of decreasing labour share has been examined globally by Greasley, D & Oxley (1998); Blau & Kahn (2017); Katz (1999); Van Riel (2021); and Hurt (2022). The insights from their research have influenced us and have played a role in the development of this article.

Research Gap

The conditions and the performances of industrial labourers in several aspects of Indian manufacturing industries of the industrial sector in the Indian economy are still a burning question. Therefore, it is necessary to reinvestigate and assess the industrial sector concerning industrial labourers thoroughly from the beginning and then any suitable policy prescription based on reality might be justified. There is scanty of research where the issues of decadal

comparison and their contributions to the wage productivity gap have been addressed throughout. So, this area should also be covered.

Objective of the study

This research paper bears the following objective.

- Decadal comparison of labour share and labour share growth at an aggregate level (3-digit NIC) from 1973-74 to 2019-20.

Methodology for Comparative Studies

The fundamental method employed to assess the wage productivity gap in Indian manufacturing is quite simple and is based on the concept of labour share that we have derived from the standard macroeconomic fundamentals and following standard literatures (Sen and Dasgupta, 2009) on wage productivity gap and have formulated accordingly.

As mentioned in the beginning, the Annual Survey of Industries provided the data (3-digit NIC categorization for all India level). Panel data makes up the secondary data source. All data values have been translated into real terms using the consumer price index for industrial workers (CPI-IW) and the wholesale pricing index for manufacturing products (WPI-MP), once the study's key data variables have been taken into account. WPI-MP was used to convert the value of the outputs into real values, while CPI-IW was used to convert the worker earnings into real values. The Labour Bureau provided the CPI-IW data with 2016 as

its base year, and the Office of Economic Advisor provided the WPI-MP data with the base year of 2011-2012.

In this context, RWW represents real wages for workers, while RNVA denotes real net value added, and LS refers to labour share. To obtain RWW and RNVA, nominal wages for workers are adjusted using the industrial worker consumer price index, while nominal value added is deflated using wholesale price index data sourced from the RBI website.

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

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 whole price index numbers as is available from the RBI website.

The labour share mentioned above in (1) can instead be expressed as follows:

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

where LP is the labour productivity and w are the real wage rate that is obtained by dividing RWW by the number of workers (N).

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

$$\log(LS) = \log(w) - \log(LP) \quad (3)$$

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

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

Where wg is the real wage rate annual growth rate, lpg is the labour productivity annual growth rate and lsg is the labour share annual growth rate. Our understanding of the wage productivity gap in Indian manufacturing relies on equation (4). It's important to highlight that an increasing and positive labour share over time signifies that real wage growth is rising at a greater rate than labour productivity, while a decreasing and negative labour share indicates that labour productivity is increasing more significantly

than wage growth. The methodology described has been applied as general approaches for identifying the key variables. In this section, we have evaluated the decadal changes in labour share for different industry groups (3-digit NIC).

In Decadal Comparison, we have stratified our data in five parts, each for single decade. Decade 1 is from 1973-74 to 1979-80. Decade 2 is from 1980- 81 to 1989- 90. Decade 3 is from 1990-91 to 1999- 2000. Decade 4 is from 2000-01 to 2009- 10. Decade 5 is from 2010-11 to 2019-20. Then we have compared the LS and LSG. After computing the LS and LSG for decade, we have calculated the curves of real wages for each decade and make a comparative study. Similarly, we have calculated the curves for LP for each decade and make a comparative analysis.

We have found out the results both at aggregate and per worker level to understand the overall and specific scenario as there are several factors that can affect labour productivity. The main limitations of ASI data that we have faced that there is scanty in data to determine the degree of contribution of different types of workers on real net value added.

Empirical Findings

Comparison of Each Decade at Aggregate Level

The following tables expresses the decadal comparison from the values of Labour Share (LS) and Labour Share Growth (LSG) at aggregate level (3-Digit NIC) from 1973-74 to 2019-20 respectively. The total years of operation has been classified in five decades which are as follows

Table 1 Decadal Comparison with respect to Labour Share (LS) at aggregate level (3-Digit NIC) from 1973-74 to 2019-20

YEAR	LS of D1 (1973-74 to 1989-90)	LS of D2 (1980-81 to 1989-90)	LS of D3 (1990-91 to 1999-00)	LS of D4 (2000-01 to 2009-10)	LS of D5 (2010-11-to 2019-20)

1973-1974	0.750959991				
1974-1975	0.601578778				
1975-1976	0.669371289				
1976-1977	0.665525463				
1977-1978	0.642381911				
1978-1979	0.661106189				
1979-1980	0.775218307				
1980-1981		0.825311972			
1981-1982		0.715721109			
1982-1983		0.653792178			
1983-1984		0.645664891			
1984-1985		0.664727069			
1985-1986		0.656580136			
1986-1987		0.62420459			
1987-1988		0.695068291			
1988-1989		0.636399004			
1989-1990		0.596826574			
1990-1991			0.547039762		
1991-1992			0.539117933		
1992-1993			0.506151435		
1993-1994			0.451376051		
1994-1995			0.433845552		
1995-1996			0.418903618		
1996-1997			0.47519386		
1997-1998			0.404911885		
1998-1999			0.320549563		
1999-2000			0.309722216		
2000-2001				0.361400161	
2001-2002				0.288028954	
2002-2003				0.310522489	
2003-2004				0.26509477	
2004-2005				0.241886264	
2005-2006				0.251727103	
2006-2007				0.200055027	
2007-2008				0.174873855	
2008-2009				0.192060998	
2009-2010				0.193963695	
2010-2011					0.181895558
2011-2012					0.175339776

2012-2013					0.184303201
2013-2014					0.319616047
2014-2015					0.232248122
2015-2016					0.173656442
2016-2017					0.174679528
2017-2018					0.181145007
2018-2019					0.193116299
2019-2020					0.205099237

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

Table 2Decadal Comparison with respect to Labour Share Growth (LSG) at aggregate level (3-Digit NIC) from 1973-74 to 2019-20

YEAR	**LSG of D1 (1973-74 to 1989-90)**	**LSG of D2 (1980-81 to 1989-90)**	**LSG of D3 (1990-91 to 1999-00)**	**LSG of D4 (2000-01 to 2009-10)**	**LSG of D5 (2010-11-to 2019-20)**
1973-1974					
1974-1975	-0.198920335				
1975-1976	0.112690994				
1976-1977	-0.005745429				
1977-1978	-0.034774856				
1978-1979	0.029148201				
1979-1980	0.172607851				
1980-1981		0.825311972			
1981-1982		0.715721109			
1982-1983		0.653792178			
1983-1984		0.645664891			
1984-1985		0.664727069			
1985-1986		0.656580136			
1986-1987		0.62420459			
1987-1988		0.695068291			
1988-1989		0.636399004			
1989-1990		0.596826574			
1990-1991			0.547039762		
1991-1992			0.539117933		
1992-1993			0.506151435		
1993-1994			0.451376051		
1994-1995			0.433845552		

1995-1996			0.418903618		
1996-1997			0.47519386		
1997-1998			0.404911885		
1998-1999			0.320549563		
1999-2000			0.309722216		
2000-2001				0.361400161	
2001-2002				0.288028954	
2002-2003				0.310522489	
2003-2004				0.26509477	
2004-2005				0.241886264	
2005-2006				0.251727103	
2006-2007				0.200055027	
2007-2008				0.174873855	
2008-2009				0.192060998	
2009-2010				0.193963695	
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2015-2016					0.173656442
2016-2017					0.174679528
2017-2018					0.181145007
2018-2019					0.193116299
2019-2020					0.205099237

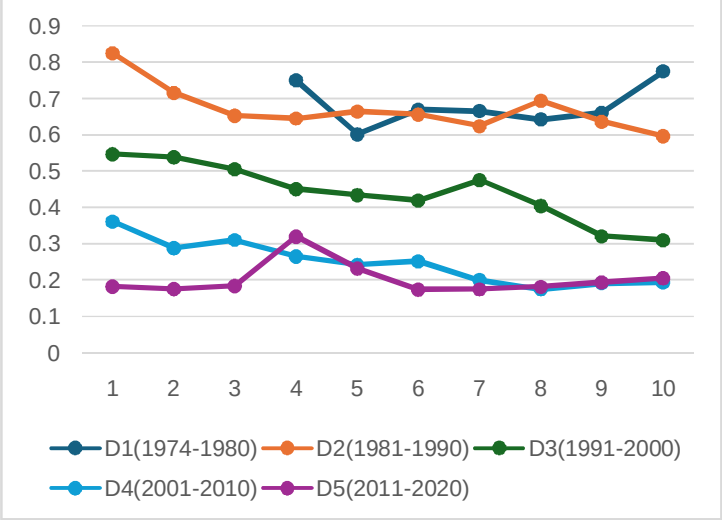
Source: ASI Database of Government of India. Authors' own calculation.

D1		**D2**		**D3**		**D4**		**D5**	
Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
0.680877	0.056494	0.67143	0.060385	0.440681	0.077444	0.247961	0.05693	0.20211	0.04272

Table3: Mean and Standard Deviation (S.D) for each decade

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

Figure 1: Comparing Trends in Labour Share among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)

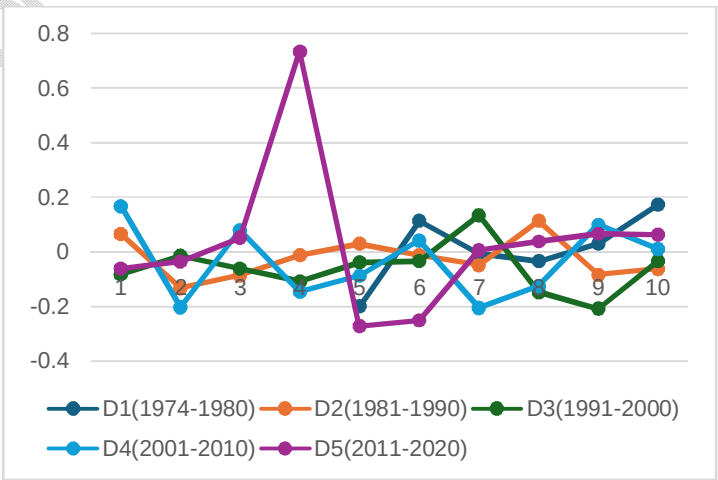


Source: ASI Database of Government of India. Authors' own calculation.

In this section, we have estimated the decadal comparison for LS and LSG at aggregative level. This comparison opens up the decadal scenario for wage productivity gap.

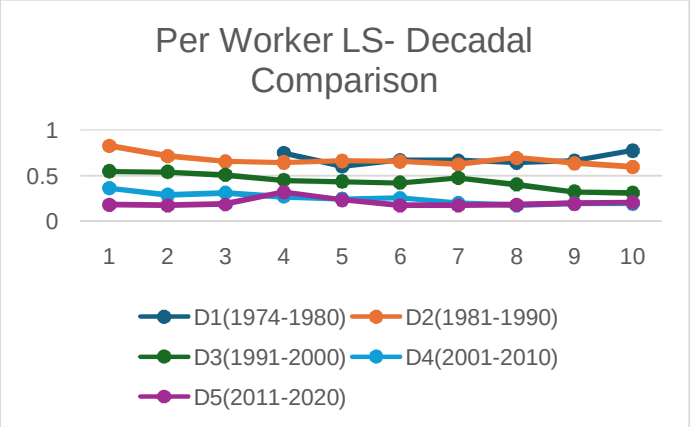
Figure 1 and 2 depicts the LS and LSG at aggregate level for 3-digit NIC. Figure 3 and 4 depicts the LS and LSG per worker to understand the per worker scenario. Whereas figure 5 and 6 shows the LS and LSG with log values.

Figure 2: Comparing Trends in Labour Share Growth among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)



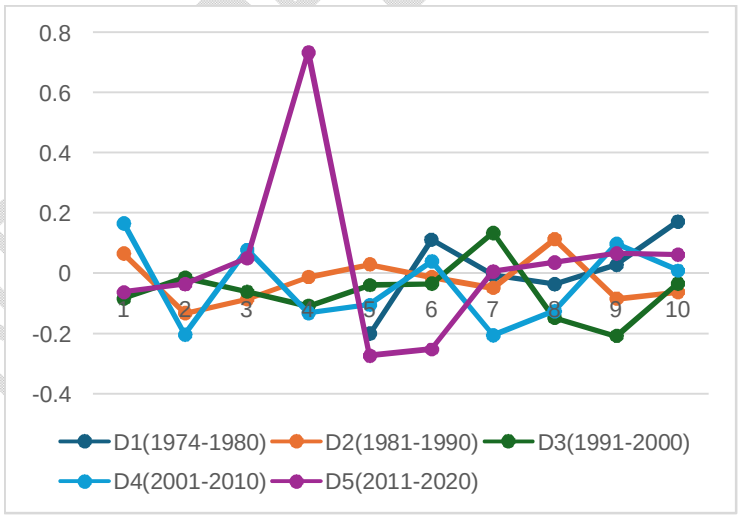
Source: ASI Database of Government of India. Authors' own calculation.

Figure 3: Comparing Trends in Labour Share per Worker among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)



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

Figure 4: Comparing Trends in Labour Share Growth per Worker among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)

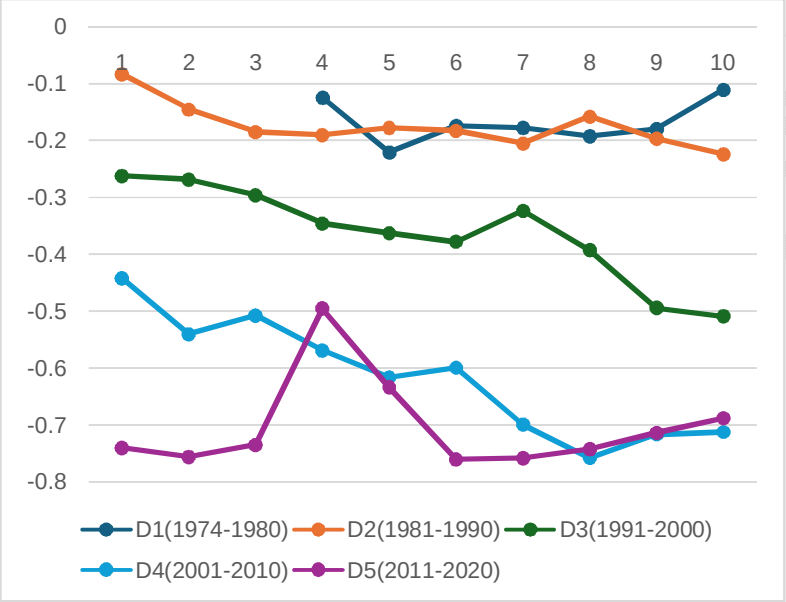


Source: ASI Database of Government of India. Authors' own calculation.

The graphs in figures 1 and 3 illustrate that the decline in labor share over the decade is due to the stagnation of real wages, while labor productivity (LP) experiences a consistent upward trend, resulting in a decrease in labor share (LS). The labor share growth (LSG) depicted in

figures 2 and 4 shows minimal fluctuations in both directions. In the most recent decade, the LSG in figures 2 and 4 demonstrates a steady increase before experiencing a sharp decline in the second quarter.

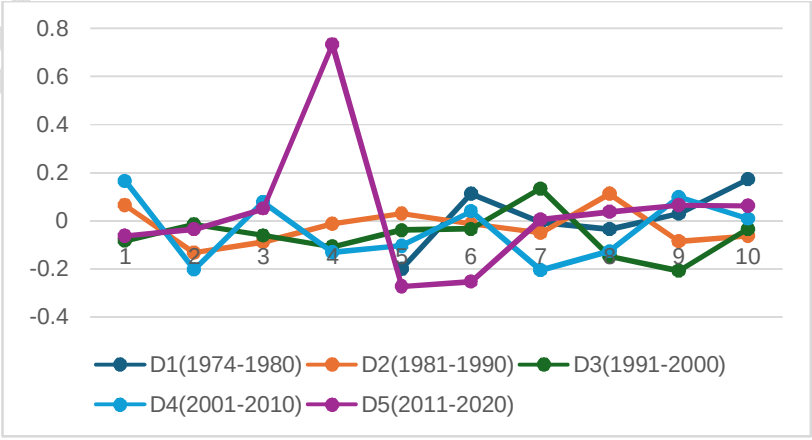
Figure 5: Comparing Trends in Labour Share (log values) among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)



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

Note: All the values have been converted into log values.

Figure 6: Comparing Trends in Labour Share Growth (log Values) among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)

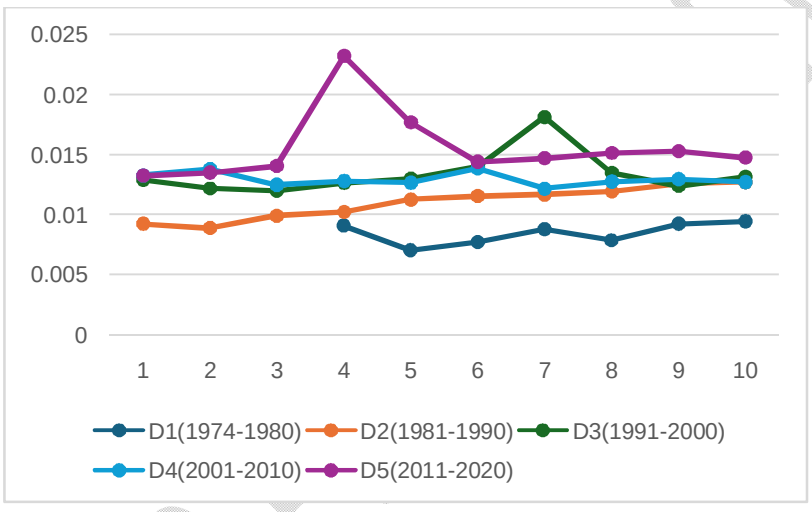


Source: ASI Database of Government of India. Authors' own calculation.

Note: All the values have been converted into log values.

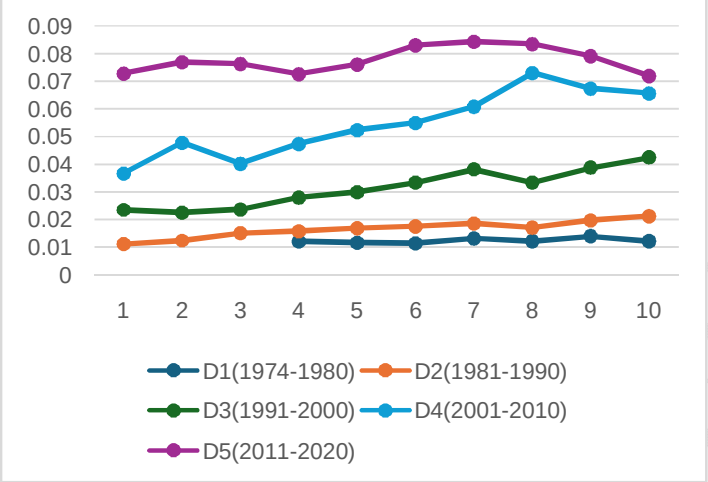
The following two figures Figure 7 and Figure 8 measure the Comparing Trends in Real Wage Rate to Workers and RNVA per Worker or Labour Productivity among last five decades at aggregate level for industry groups (3-Digit NIC classification)

Figure 7: Comparing Trends in Real Wage Rate to Workers among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)



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

Figure 8: Comparing Trends in RNVA per Worker or Labour Productivity among Last five Decades at Aggregate Level for Industry Groups (3-Digit NIC Classification)



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

Figures 5 and 6 present a similar scenario as the previous figures. Figures 7 and 8 illustrate the comparative trends in real wage rates for workers and RNVA per worker, or labor productivity, over the last five decades at an aggregate level for industry groups classified by the 3-digit NIC. It is apparent that the increase in real wage rates is significantly lower than the increase in RNVA.

From the above figures, from figure 1 to figure 8, we can easily highlight the following important points.

- In figure 1 and 3, we can see that the value of the LS is highest in Decade 1, and it has a chronologically decadal fall, and the value of the LS is lowest in Decade 5.
- In each decade, a horizontal parallel pattern has been observed which suggests that LS throughout a single decade for last 50 years has a stagnation per decade case.
- But in each decade, the LS has fallen almost 20%.
- In the second half of the last two decades, the LS is almost merged.
- The LSG from figure 2 and figure 4, it has 20% fluctuations in both directions.
- The LSG from figure 2 and figure 4 for the latest decade has a steady uprise to 70% and a sudden fall in the second quarter of this decade.

- From figure 5, it can be easily interpreted that the second half of the first two decades is almost same, whereas the last quarter in the decade 4 and decade 5 is almost same.
- In decade 3, in the last two quarter, the log LS curve has a steady fall.
- In figure 6, the log LSG curve in each decade possess the same scenario as figure 2 and figure 4.
- In figure 7, we have constructed the per worker wage growth for each decade.
- This will help us to understand the Decadal Wage Growth Pattern.
- It is clearly seen that the first decade the real wage was the least and in the last decade it was the most.
- The real wage has a very small difference in enhancement from 1974 to 2020.
- It can be asserted from the figures that real wage is lowest stagnant, rather it can be said that it is very slightly uprising.
- In the second quarter of the last decade, only it has a peak in real wage and then a steady fall and entered in third quarter.
- Figure 8 depicts the per worker LP growth and the Decadal Comparison for per worker LP.
- From D1 to D5, there is a chronological upward shift in LS curve.
- After liberalization, the LP curve has a strictly rise within the decade also.
- The Decadal LP curve has a wider range from 1974 to 2020.
- Now comparing the per-worker wage and per-worker LP curve i.e. figure 7 and figure 8, it can be easily concluded that the wage distribute disparity across decade is much lesser and lower than the LP disparity across the decade.
- The figure 1 and 3 shows that the fall in LS across decade which comes from the fact that real wage is almost stagnant and whereas LP has a steady uprise shift and thereby reducing the LS.

Conclusion:

Summing up the major findings of this section, it can be asserted that there exists decadal fall of labour share chronologically. The trends for all category of industry groups exhibit downward parallel shift in trends only in the Indian manufacturing industries since 1973-74. That means in all the five decades the labour share is subject to either stagnation or continuous downward trend, especially after 1991 when the economic liberalization programme was incepted in India. The main cause of this falling labour share across decades

is the stagnation in real wages. The real wages have not risen a significant level over the decades, and it cannot nullify the effect of huge amount of increase in real net value added.

Policy Imperatives:

These trends highlight a concerning situation for industrial workers, particularly in light of increasing inflation as shown by the CPI-IW. This creates a substantial challenge for employees in the formal manufacturing sector in India, necessitating the focus of policymakers. One possible policy response could involve (a) the rigorous implementation of minimum wage regulations in the nation and (b) frequent and prompt adjustments to the minimum wages for different industry categories based on information from the ASI database.

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