Share of Profits and Wages in India-

Analysis of Trends Since 1991

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In the fulfillment of requirementsFor the award of the Degree of the

DOCTOR OF PHILOSOPHY

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DECLARATION

I, **Jasmin**, hereby declare that the Thesis titled "***Share of Profits and Wages in India- Analysis of Trends Since 1991",*** submitted by me in partial fulfilment for the award of the degree of **Doctor of Philosophy** of the **School of Social Sciences,** Jawaharlal Nehru University is my original work. This thesis has not been previously submitted in part or full for the award of any other degree to this university or any other university.

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CERTIFICATE

It is hereby recommended that this thesis may be placed before the examiners for evaluation.

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I would like to dedicate this to my mother and my brother Aman, I owe this accomplishment to them. I would not have been able to achieve any of this without their prayers, support and unparalleled love.

July, 2019 Jasmin

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Overview

The question of income distribution: what makes it so significant?

The issue of income distribution holds great significance; it is one of the oldest questions in economics, touched upon by prominent thinkers. Growth of income and its distribution are two intertwined issues. Growth, for any economy, can never be an end in itself; in fact, it is imperative to keep a check on how this growth is shared by various factors that contribute to it. High growth, accompanied by skewed income distribution cannot bring development. Such growth may be unsustainable. Growth of profits at the expense of wages can have far-reaching effects for the economy. Aggregate demand and investment might suffer, as incomes and consumption stagnate. Also, growth dependent on profits might fuel demand for imports or goods that are capital intensive, especially for a developing country, weakening future options for better employment, remuneration for the workers, thereby weakening the working class further.

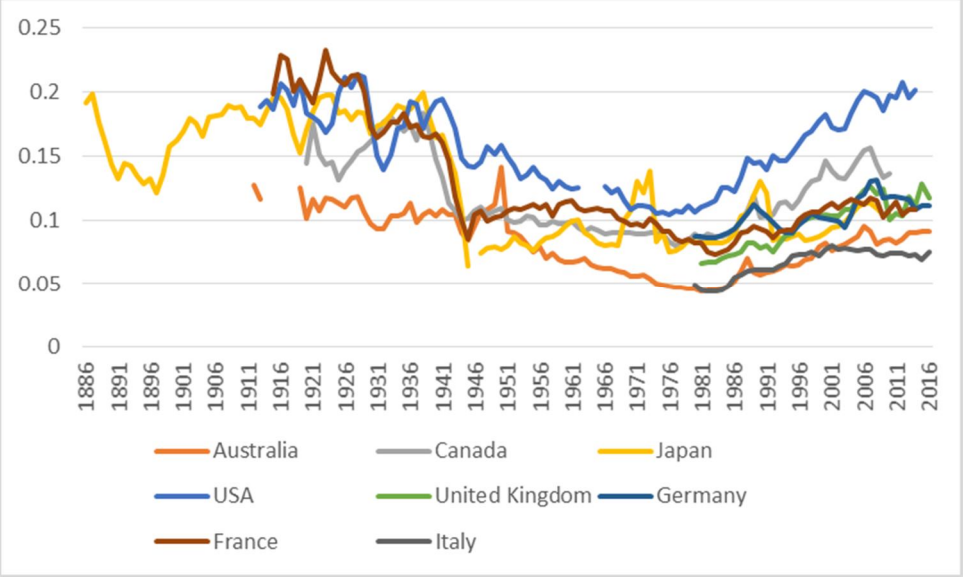
In this context, Thomas Piketty's work on wealth and income inequality; the growing share of capital incomes across the world deserves mention. Piketty puts up an important question in the introduction to the book, "Do the dynamics of private capital accumulation inevitably lead to the concentration of wealth in ever fewer hands, as Karl Marx believed in the nineteenth century? Or do the balancing forces of growth, competition, and technological progress lead in later stages of development to reduced inequality and greater harmony among the classes, as Simon Kuznets thought in the twentieth century?" (Piketty & Goldhammer, 2014).

Piketty's analysis traverses through the period 1870-2010, spanning the data for eight developed countries; Australia, Canada, France, Germany, Italy, Japan, United Kingdom and USA. Piketty's analysis establishes that the wealth-income ratio has risen, during the mentioned period for each of these countries, from about 200-300% to nearly 600-700%. For the period 1870-2010, the wealth-income ratios for these countries have followed a u-shaped pattern. An

explanation of these trends, is offered in terms of relative price and volume effects. Piketty argues that the capital markets were functioning smoothly, until several anti-capital policies were imposed, which led to a decline in the price of assets through the 1970s. 1980s onwards, noticeable asset price recovery took place, as these anti-capital policies were lifted.

Using the simple Harrod-Domar-Solow framework, Piketty shows that wealth-income/capital-output ratio, given by β, is equal to s/g[1]. This framework spells out why the wealth-income ratios in Japan and Europe have risen. These countries have witnessed a fall in the rate of growth of population and productivity. The wealth-income ratios are lower in the United States compared to Europe because the population has grown at a higher rate in the USA, while savings have grown at a lower rate (Piketty & Zucman, 2014).

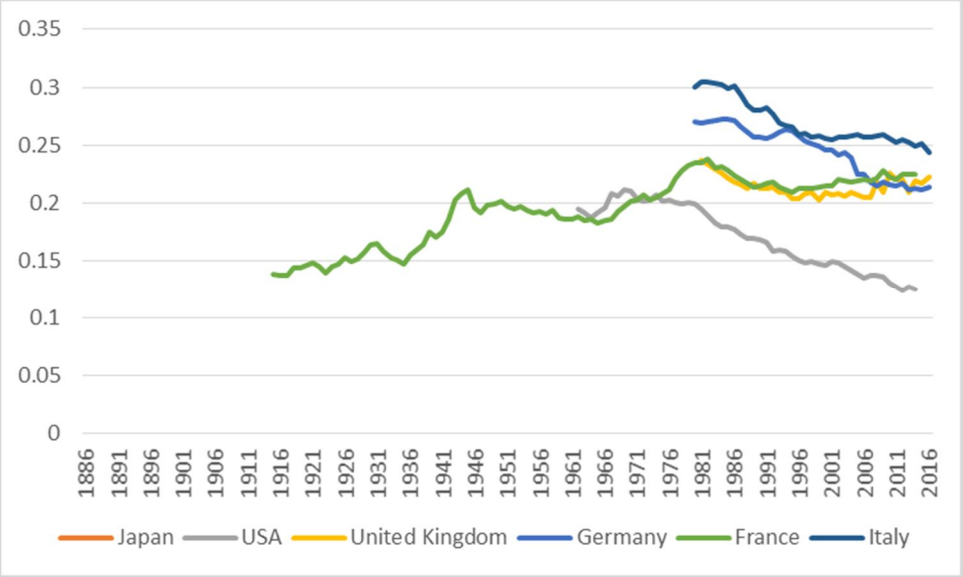
Figure I-1 Share of Top 1% in the National Income



Source: World Inequality Database

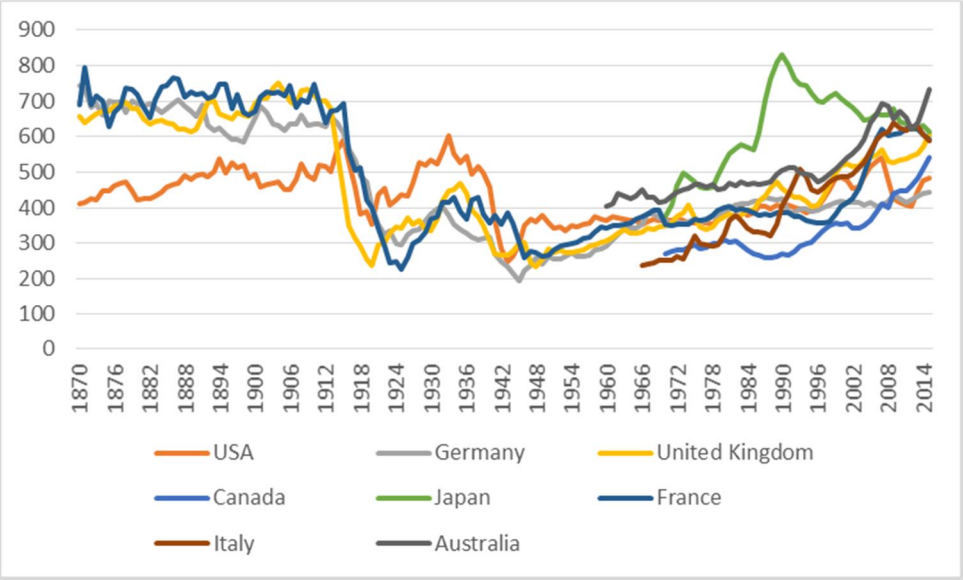
[1] The ratio of saving rate s, net of depreciation divided by the income growth rate g, under the conditions of a slowdown in population and productivity growth.

Figure I-2 Share of Bottom 50% in the National Income



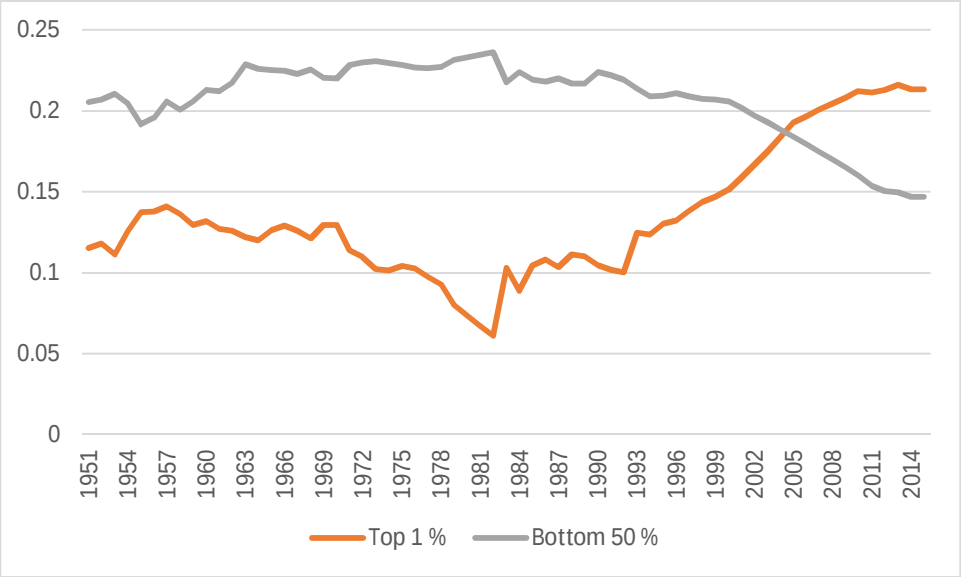
Source: World Inequality Database

Figure I-3 Wealth/ Income ratios (%) 1970-2015



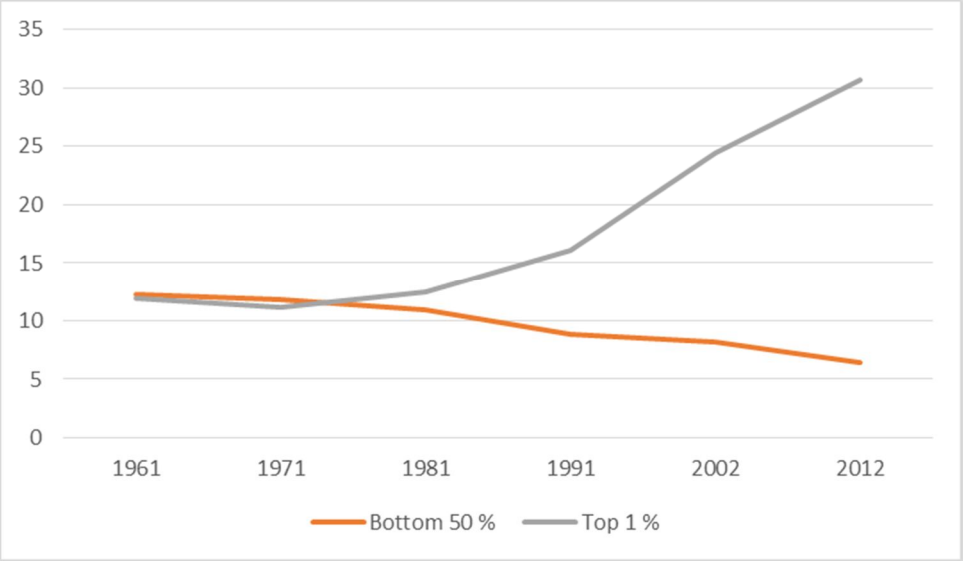
Source: World Inequality Database

Figure I-4 Income inequality, India (National Income Share) (%)



Source: World Inequality Database

Figure I-5 Share in Total Wealth, India (%)



Source: World Inequality Database

Figure I-1 & I-2 explore the income inequality in the developed countries, figure I-3 depicts the trend in wealth-income ratios in these countries. Figure I-4 & I-5 show the share of the top 1% and the bottom 50% of the population in national income and total wealth for India. The figures

suggest that India's experience has not been very different from the global inequality story. People in India struggle with sharp vertical and horizontal inequalities. This inequality has several dimensions and is ever growing. Income and wealth inequality are two ways to measure economic inequality, and these two forms may reinforce each other. Inequalities in non-income dimensions are also equally worrisome. Unfortunately, in India, certain classes of people end up bearing a disproportionately higher burden of inequality.

International Scenario

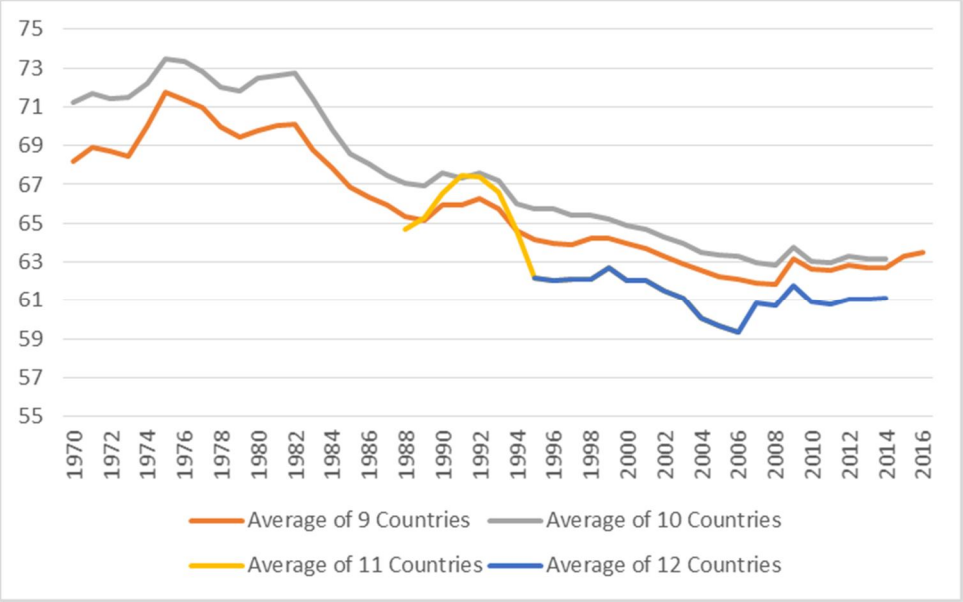
Karabarbounis and Neiman (2013) state how stability in labor income share has become a key assumption in various macroeconomic models, since Kaldor's work in 1961[2]. According to Bowley's Law, in the long run, the labor income share is constant. The recent empirical evidence, however, puts this stability in question, indicating a consistent decline in the share of labour income. The decline in labor income share is a global trend. Giovannoni (2014) mentions that the 2000s witnessed a drastic deterioration of the income distribution around the world, and this has triggered, a rise in the research to explore the factors responsible for this trend. The global crisis of 2008, and the greater availability of data can be understood as the factors behind this reinvigorated interest. Figure I-6[3] clearly displays a downward trend in the labor income share.

Trends in labor share are also reflected by movement in wages vis-à-vis labor productivity, as shown in figure I-7. Wage share has two components – real wages and labor coefficient (inverse of labor productivity). Real wages, in turn, depend on nominal wages and prices, whereas the labor coefficient depends on the nature of technological progress.

$$\frac{Wages}{Total\ Income} = \frac{w}{p}\frac{L}{O}$$

[2] In fact, until 1980s stable labor share was accepted as a stylized fact of economic growth.
[3] The 9 countries are Australia, Canada, Germany, France, Italy, Japan, Spain, the United Kingdom and the United States. The other series include respectively the Republic of Korea (10 countries), Mexico (11 countries) and Turkey (12 countries).

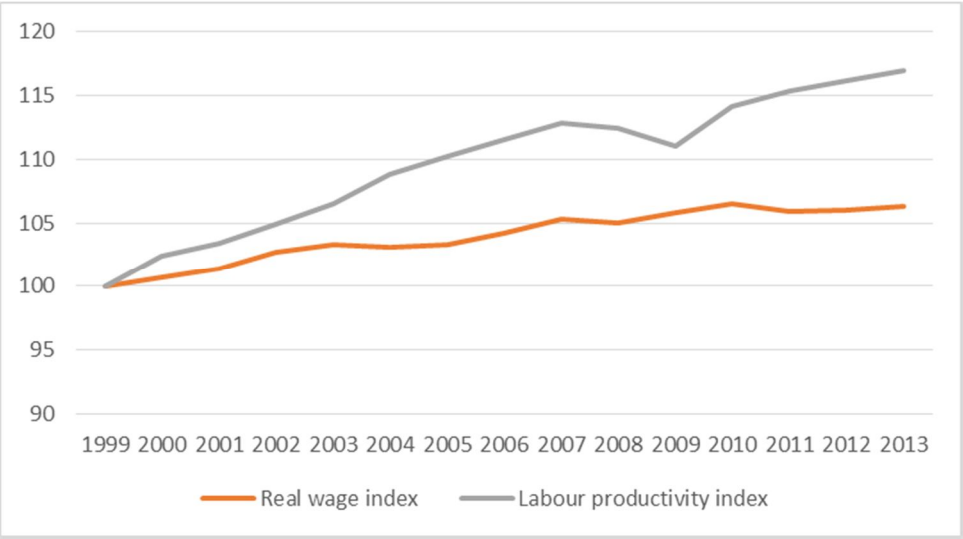
Figure I-6 Labour income share in selected G-20 Countries (%)



Source: AMECO Database

The equation above shows that the share of wages can decline, ceteris paribus, either due to a decline in real wages or a rise in labour productivity or if growth in productivity outstrips the real wage growth. The last of which indicates that the gains in productivity are not entirely accruing to the wage-earning class.

Figure I-7 Real wage and productivity growth for developed economies



Source: Global Wage Report 2014/15

A multitude of factors are at work to bring about this decline. Technological changes and innovation have contributed significantly in pulling down the labor share. The growing importance of high and medium-technology manufacturing, as well as financial services where profits have been rising, are all important factors. Globalization of international trade and increasing openness implies an easier availability of cheap labor from the developing economies; this helps hold down the wages and weakening the bargaining strength of the workers in the first world. Capitalism, today, has grown to a stage where the traditional entrepreneur has been replaced by the financial investor. In the m-c-ć-ḿ circuit discussed by Marx, the focus has shiften from production i.e. c-ć to what part of m-ḿ is appropriated by which class and how to increase this difference. This is happening by squeezing the working class in general. There is pressure on the enterprises and production units to generate increasing financial returns for their investors, and in this pursuit, all the efforts are made to cut down the costs, which involves wage compression. Erosion of the bargaining power of the labor institutions has added to the plight of workers.

Indian Experience

The rich literature in this area helps understand the broad trends in inequality in India. However, understanding the dynamics of inequality among different groups/classes is important. This is crucial to examining whether class structure plays a role in explaining the asymmetric distribution of income as well as to analyse why the benefits of growth have been cornered by certain classes, while the others remain excluded from the process of growth.

Vakulabharnam (2010) discusses the distributional dynamics of growth in India. The paper indicates an increasing divergence between the urban elite, managerial & supervisory professionals, and rural rentier classes, who have experienced growing incomes and the unskilled urban workers, small and marginal peasants and agricultural labour, facing impoverishment. The overall consumption Inequality is stratified into inter-class and intra-class components, which suggests that there are acute disparities within the broad classes as well. Since the consumption propensities of the rich and the poor classes differ from each other vastly, the underlying income disparities will exceed the consumption inequality. His analysis reveals that the biggest gainers out of the growth process are the urban elite, rural elite and the non-agriculture workers have

gained moderately, while the urban workers (non-unionised), small peasants, and agricultural workers have lost.

Table I-1 Mean consumption expenditure and mean ratio for various urban rural classes

Class	1993-94			2004-05			
	Mean	Population (%)	Mean Ratio	Mean	Population (%)	Mean Ratio	Ratio growth
Owner/Manager (Formal)	1345	0.95	2.64	1490	1.16	2.55	-0.03
Owner/Manager (Informal)	816	3.58	1.6	982	4.32	1.68	0.05
Manufacturing - professional	1006	1.6	1.98	1247	0.45	2.14	0.08
Manufacturing – skilled	682	6.17	1.34	721	6.72	1.24	-0.08
Manufacturing - unskilled	527	2.14	1.04	537	1.47	0.92	-0.11
Services - professional	1170	1.25	2.3	1534	1.01	2.63	0.14
Services - skilled	884	4.59	1.74	1055	3.85	1.81	0.04
Services - unskilled	629	4.46	1.24	648	5.08	1.11	-0.1
Urban - unclassified	872	0.05	1.72	1331	1.25	2.28	0.33
Urban - subtotal	787	24.74	1.54	897	25.2	1.54	0

Rich farmer	524	7.36	1.03	601	6.23	1.03	0
Middle farmer	445	8.02	0.87	497	7.54	0.85	-0.03
Small farmer	406	10.52	0.8	459	10.07	0.79	-0.01
Marginal farmer/tenant	426	5.09	0.84	451	5.59	0.77	-0.08
Agriculture workers	322	20.74	0.63	354	18.56	0.61	-0.04
Rural professional	600	2.62	1.18	928	1.5	1.59	0.35
Rural moneylender	669	0.01	1.31	999	0.01	1.71	0.3
Absentee LL + non-agriculture self-employed	465	3.31	0.91	563	4.94	0.97	0.06
Non-agriculture self-employed	422	6.15	0.83	482	7.4	0.83	0
Absentee LL + others	514	1.08	1.01	690	0.98	1.18	0.17
Non-agriculture workers	417	6.67	0.82	488	11.01	0.84	0.02
Rural unclassified	483	3.64	0.95	650	0.87	1.11	0.17
Rural subtotal	417	75.26	0.82	476	74.8	0.82	0
All India	500	100	1	583	100	1	0

Source: Vakulabharnam (2010)

Research on inequality in India indicates that economic inequality has risen post the reforms of 1991. Himanshu (2018) states that this rise in inequality is a consequence of policies favouring

capital. The agrarian sector in India is known to be perennially in distress. Growth in the agriculture sector has fallen far behind the growth in services and manufacturing sector. The agriculture sector has witnessed a substantial decline in public investment and weakening of state support, which impacts the small farming groups, the hardest. Withdrawal of subsidies, limited availability of subsidized agricultural credit, introduction of trade liberalization, and the resultant volatility in the agricultural prices has heightened the pressures for small and marginal farmers.

The agrarian distress has compelled the agricultural labour and small farmers to take resort non-agricultural activities. The migration takes up intra-rural form, due to limited availability of opportunities in the urban areas. Table I-1 suggests that inequality has risen in the rural non-agriculture sector as well.

The urban sector has grown at a higher rate than the rural sector; this growth is largely fuelled by the organized services sector. Even in these high growth industries, it is the capitalist and managerial classes as well as formal, highly skilled workers who have been the primary beneficiaries. These sectors are typically, intensive in exports and depend on skilled labour. In the manufacturing sector, again it is the supervisors and the managerial class, skilled professionals who have gained. The consumption of owners and managers in the informal sector in urban areas has grown, despite the growing inequality in this group. This group displays great heterogeneity in the sense that the individuals function in activities which generate high-income as well as occupations where the returns are abysmal. At the same time, the consumption of the unskilled workers has shown a sharp decline. The gains from growth in the Indian economy are unevenly distributed among different classes.

Anand and Thampi (2016), Himanshu (2018) extend evidence supporting a sharp rise in wealth inequality in India in the last decade. The gini coefficients of wealth are reported by sector in table I-2. This data complemented with the data on India's billionaires from Forbes shows that the wealth inequality in India has grown sharply.

Table I-2 Gini Coefficient of Wealth by Sector

	Rural			Urban			Total		
	1991	2002	2012	1991	2002	2012	1991	2002	2012
Total Assets	0.62	0.63	0.67	0.73	0.71	0.77	0.65	0.66	0.74
Net Worth	0.62	0.63	0.68	0.74	0.72	0.78	0.66	0.67	0.75

Source: Anand and Thampi (2016)

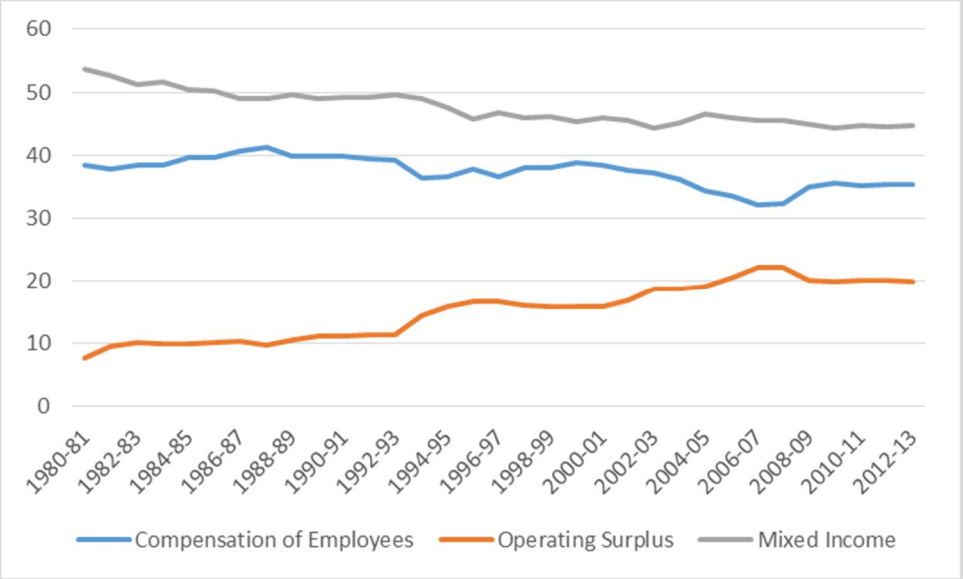
The number and wealth of billionaires in India have grown, these billionaires emerge from different industries in manufacturing, services, construction, etc. These sectors could be knowledge-based or could be having a close alliance with the state.

This research derives motivation from the important literature discussed above. This study attempts to explore trends in profit share and wage share. The objective is to identify the underlying factors that have been causing divergence.

National Accounts Statistics (compiled by Central Statistics Office) shares data on the National Domestic Product series. It also publishes data on compensation for employees (CE), operating surplus (OS), and mixed-income (MI) for selected groupings of NAS industries. Figure I-8 shows that there has been an upturn in the share of operating surplus, along with a decline in the share of compensation of employees and mixed-income. Table I-3 compares the decadal averages of compensation of employees, mixed-income and operating surplus. The rise in the operating surplus has been sharper since 1993-94. The broad picture indicates a rise in profits inflation at the expense of the income of workers and the self-employed[4].

[4] In countries like India, mixed-income corresponds to the income of self-employed in the unorganized segment of the economy, which assumes a pattern akin to wage incomes.

Figure I-8 Share of compensation of employees, operating surplus and mixed income in national domestic product (%)



Source: Author's Computation, National Accounts Statistics

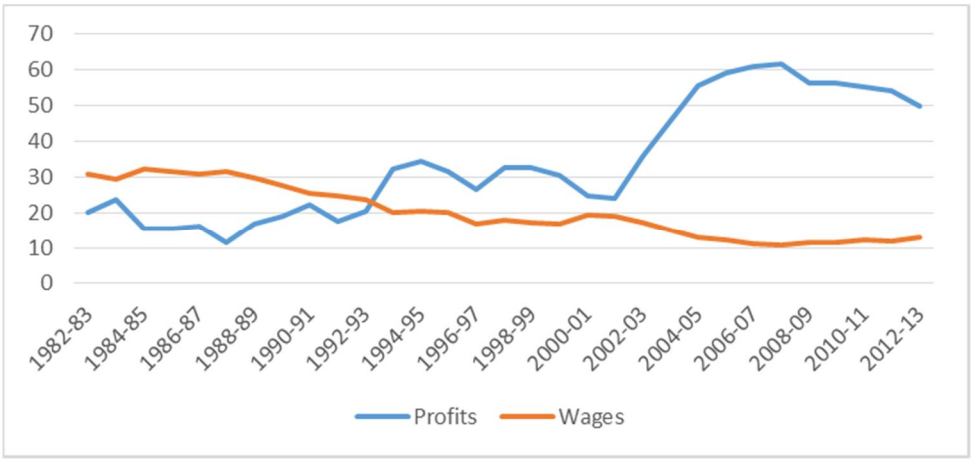
Table I-3 Decadal average of the share of compensation to employees, operating surplus and mixed income

Decades	Compensation of Employees	Operating Surplus	Mixed-Income
1980s	39.41	9.93	50.66
1990s	38.06	14.52	47.42
2000s	35.2	19.42	45.38

Source: National Accounts Statistics

If we look at the data sectorally, the broad trends are as follows; data on profit share and wage share for the organized manufacturing sector is shown in figure I-9 below. The divergence in the profit and wage share is clearly visible. The data for the Indian manufacturing sector reveals that workers haven't been able to reap the benefits of economic growth. Workers have seen their share falling in the net value added, while the share of profits has sharply increased.

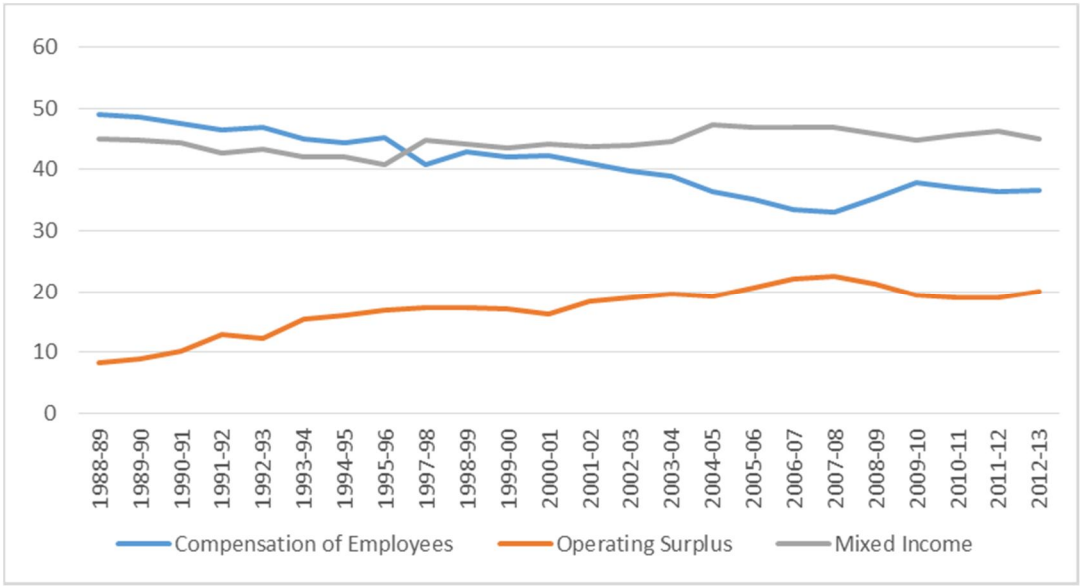
Figure I-9 Share of profits and wages in the net value added by the firms (%)



Source: Author's Computation, Annual Survey of Industries

Figure I-10 confirms the fall in compensation of employees as a share of net domestic product for the service sector. At the same time, the share of operating surplus has risen. The share of mixed-income has remained constant. For the agriculture sector, data on net receipts from cultivation, wage work and non-agriculture business across size class of land also brings out marginalization of the bottom size classes.

Figure I-10 Share of compensation of employees, operating surplus and mixed income in national domestic product (%) Service Sector



Source: Author's Computation, National Accounts Statistics

Table I-4 Monthly income (average) from different sources per agricultural household (Rs.) 2012

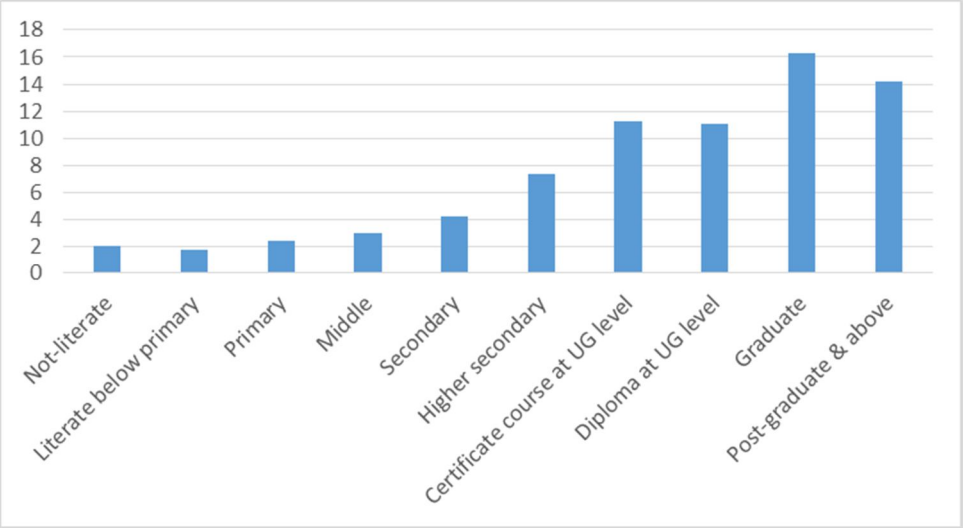
Size class of land possessed	Income from wages/salary	net receipt from cultivation	net receipt from farming of animals	net receipt form non-farm business	Total Income
<0.01	2902	30	1181	447	4561
0.01 - 0.40	2386	687	621	459	4152
0.41 - 1.00	2011	2145	629	462	5247
1.01 - 2.00	1728	4209	818	593	7348
2.01 - 4.00	1657	7359	1161	554	10730
4.01 - 10.00	2031	15243	1501	861	19637
10.00 +	1311	35685	2622	1770	41388
all sizes	2071	3081	763	512	6426

Source: Author's computation, Situational Assessment Survey (2012)

While the trends in factor shares suggest that the rich are appropriating a higher share of the output in each sector, the data signals wage inequality as well, particularly for the manufacturing and service sector. Himanshu (2018) confirms this finding; the paper discusses that the composition of the work-force has been changing, which has resulted in a fall in the share of agricultural labourers and cultivators with a corresponding rise in the proportion of wage workers and self-employed in the non-farm activities. On the other hand, private salaried workers have maintained their share with a small decline in the share of salaried government employees. The private salaried workers and salaried government workers have seen the highest growth in per worker incomes.

It will be discussed later how the ratio of salaries of managers and supervisors to worker wages have gone up substantially in the manufacturing sector. Nayyar (2009) sheds light on this; he discusses how service industries with low skill/educational requirements are characterized by low overall quality of employment. Service sub-sectors differ in terms of salaries offered, reflecting a premium to education and skill, for instance, IT and banking, financial and insurance sector. Unfortunately, employment expansion seems to have taken place at a relatively higher pace in service industries, low on employment quality.

Figure I-11 Unemployment rate across education classes (%)



Source: Labour Bureau- Employment Unemployment Survey (2015-16)

At the same time, in India, the unemployment rates are higher for high education classes. This points to the fact that the employment generation in the country is very low.

In this dissertation, different factors have been analyzed to understand disparities in different sectors. In chapter 2, following key factors have been looked into for the manufacturing sector: increased mechanization, compression of wages amidst rising input costs, rising price-cost margin, informalization and contractualization, declining union labour strength as well as ineffective labour laws and employment programs.

The disparity in the service sector may depend on a variety of factors. Chapter 3, explores these factors; Informal employment, difference in educational attainment/skills/training, technological advancement have implications for wage inequality among workers. Close association of certain

sectors with the state may usher in “economic rents”, such sectors are rent-thick. Most of the service industries like Information technology, retail, restaurant, media, construction, telecom, entertainment, banking, and financial services either depend on the state for licenses or are knowledge-based. This means that the firms in such sectors have an exclusive right over the knowledge or technology developed by them, which could generate high profits. Rising capital intensity, declining corporate tax rates may also boost the profit share. Degree of engagement of sectors in international trade could also influence the distribution of factor incomes.

In chapter 4, for the agriculture sector, a set of drivers of disparity have been explored: Inequality in access to land and other productive assets, a large pool available as cheap labour, mechanization, inability of the farmers to cope with rising input prices and farmer indebtedness, participation of the poor households limited to unskilled and semi-skilled wage employment, declining public investment and policy unresponsiveness.

The study analyses listed factors for the key sectors; while providing econometric evidence for the impact of some of these. In the agriculture sector, the analysis is not of profit and wage share; rather the chapter explores different factor causing distress and disparity in the incomes of different classes. The marginalization of small peasants, agricultural labour and a presence of huge pool of non-farm wage workers has been fuelling incomes of the rich not just in agriculture, but manufacturing and services as well. The informal and unskilled workers in the industry have taken the hit to allow room for further growth in the incomes of owners, managerial and skilled classes.

The existing studies on income inequality and distribution of income, miss out an identifying the factors behind inequality, except for associating it with the economic reforms in 1990s. My research attempts to fill this gap. It studies, in a comprehensive manner, what those factors are.

Chapter -1 Literature Review

1.1 Introduction

Inequality has several interpretations. To some economic thinkers "economic inequality", means "income inequality", "monetary inequality" primarily inequality in the status of living and conditions of life. There are others who perceive inequality in terms of unfair treatment when it comes to rights or law or an asymmetric distribution of political power. There could also be social inequality, where in there might be a lopsided distribution of power and rights in favor of certain social classes or segments of society (inequality based on caste, class, gender, etc.).

Several debates are attached with inequality. According to the Kuznets hypothesis, inequality followed an inverted – U-shaped trajectory, rising with industrialization and falling later. It is also argued that there is a trade-off between equality and efficiency. Inequality offers an incentive to the entrepreneur to innovate and spur growth[5]. At the same time, there are others who propound that equality goes a long way in securing sustainable growth, with political and social stability.

Indian economy continues to struggle with inequality; inequality that has multiple dimensions. The country, apart from witnessing skewed growth and inequitable distribution of income suffers from inequality based on caste, class, region ethnicity, gender. This inequality translates into inequitable access to opportunities, skewed distribution of social power, thereby suppressing the ability of the marginals to achieve the desired functionings and develop their capabilities, thereby increasing economic inequality as well.

[5] The American economist Arthur Okun, believed that there may be a trade-off between inequality and economic efficiency – in other words, attempting to reduce inequality beyond a certain level may lead a society to use its economic resources less efficiently than it could do. In a famous phrase, Okun theorised that money taken from the rich in taxes would be carried to the "the poor in a leaky bucket. Some of it will simply disappear in transit, so the poor will not receive all the money that is taken from the rich."

1.2 Theoretical Background

The study aims at a detailed examination of the factors behind the growing divergence profit and wage share in India. The issue of income distribution holds great significance. It is one of the oldest questions in economics, touched upon by prominent thinkers. The size of the economic pie and its distribution are two intertwined issues. That these questions have become deeply ingrained in the macro and development analysis, is not an overstatement.

Ricardo in the preface of his book "On The Principles Of Political Economy And Taxation" elevated the issue of distribution to one of the principal problems of political economy.

"The produce of the earth – all that is derived from its surface by the united application of labour, machinery and capital, is divided among three classes of the community, namely, the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated. But in different stages of society, the proportions of the whole produce of the earth which will be allotted to each of these classes, under the names of rent, profit, and wages, will be essentially different [...] To determine the laws which regulate this distribution is the principal problem in Political Economy [...]"

-David Ricardo (1817), p. 1

This section explores alternative theories on distribution, rendering a deeper understanding on the issue of distribution of income and the drivers of factor shares.

Atkinson (2009), Karabarbounis and Neiman (2013), Giovannoni (2014), state how stability in labor income share had become a key assumption in various macroeconomic models, since Kaldor's work in 1961. The issue of income distribution received enormous attention from prominent economists and thinkers in the early 20th century as well as in 1950s & 60s. The topic took a backseat since 1960s. The 2000s witnessed a drastic deterioration of the income distribution globally, and this has been accompanied by an intensification of research efforts to explore the factors responsible for this trend. The topic has gained interest since the crisis of

2008 and the greater availabililty of data can be understood as the factors triggering this reinvigorated interest.

Alternative perspectives and theories on distribution of income exist in the literature, from the period before Adam Smith to the present day. What follows is a somewhat detailed discussion on each of these frameworks.

Sandmo (2013) states that the classical economists, before Marx, contributed to the field of economics, a comprehensive framework to explain the functional distribution of income, however, they could not say much about the personal distribution of income. This lacuna in the framework occurred because there was no theory to explain the distribution of ownership. Therefore, it was simply assumed that distribution of ownership of capital and land was ascertained by historical processes that could not be rendered an economic explanation. Marxian theory of distribution on the other hand, is premised on a class analysis with an explicit attempt to explaining the historical process. We begin the discussion with the classical framework.

1.2.1 Classical theory of income distribution

Adam Smith stated that for any commodity, "natural rates of wages, profit and rent" ascertain its "natural price". These rates are the average rates of wages, profits and rent governed by the general situation of supply and demand of these factors: labour, capital stock and land. When the supply in the market at any time doesn't match the effective demand, the wage, rent or profit (any of the component of price of this commodity) will be above or below their natural rate. This will influence the supply in the following periods so as to equilibrate supply and demand. Competition in the market ensures that the market price equals natural price. In the most primitive stages of society, where no accumulation has taken place, the whole produce of the labour belongs to the labourer. However, as soon as the capital gets accumulated with certain people, the value generated by the labour gets divided into two components: wages and profits.

In the price of commodities, the profits component behaves unlike the wage component and is guided by different principles. The ratio of these two components varies across different lines of production. In Smith's theory, both profit and rent are treated as deductions from the product of labour. Smith devoted an elaborate discussion on rent; it was a "natural right" of the landowners on the natural produce. The ratio of these two components varies across different lines of

production. In Smith's theory, both profit and rent are treated as deductions from the product of labour. Smith devoted an elaborate discussion on rent; it was a "natural right" of the landowners on the natural produce.

He further adds that the masters have a better bargaining position; they make a consistent effort to avoid any rise in the wage rate. Rise in the labour demand is the only factor that can drive up the wage rate ; this is, in turn, dependent upon the rate of accumulation of capital or stock. The condition of the labouring poor is the happiest in a progressive state. The increase in capital stock, lowers profits and raises wages. When the capital of many rich merchants is invested into the same industry, the competitive forces tend to lower profit.

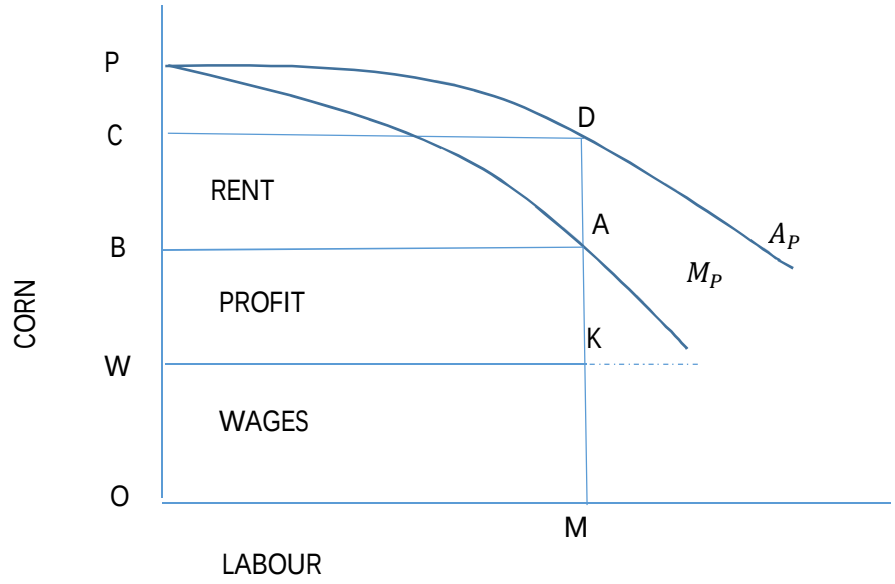
Rent as a component of price behaves differently from wages and profits. While high wages and high profits are a result of high prices, high rent is an effect of it. Adam Smith further states that the interest of landowners and labourers is connected, the interest of wage earners as well as of landlords was identified with the progress of capital accumulation. It is this relation which Ricardo explores in great detail later. The rate of profit does not rise with the prosperity, unlike rent and wages it is low in the rich countries, and vice versa. The merchants and manufacturers make all efforts to limit competition.

The theory also states that any increase in the general wage rate will push up the population growth and therefore the work-force, and this would tend to reverse any initial increase in wages, maintaining wages at a subsistence level.

Ricardo (1817) mentions that the share of the entire produce of the earth allotted to factors of production, will be essentially different, in different stages of society. Kaldor (1955) splits Ricardo's theory into: "marginal principle" and "surplus principle". "Marginal principle" relates to the share of the output that is paid as rent, and the "surplus principle", explains the division of the remaining output between profits and wages. The dynamics in agriculture ascertain the distribution in the industry. Rent is the difference between the average product of labour and the marginal product of labour, this difference, essentially captures the extent of diminishing returns. It is assumed that the wage rate is at subsistence level and is constant in terms of corn. Capital accumulation determines the demand for labour. As capital accumulation takes place, the labour

force grows. The wage-fund grows horizontally along the imaginary line shown in figure 1-1. Profits are a residual, i.e. the difference of wage fund from marginal product of labour.

Figure 1-1 Functional Distribution of Income



Source: Kaldor (1955)

The money rate of profit must be the same in both industry and agriculture, which is ensured by adjustments in relative prices. Any rise in the wage fund (due to agricultural protection or taxation) squeezes out the profits, Ricardo utilized Malthusian theory of population, to argue that a wage rate above the subsistence level will lead to an increase in population and the supply of labour. The wage fund and population, grow in tandem in the long run. There are limits to the quantity as well as the quality of land, as more and more land is utilized to support a greater amount of population, diminishing returns push up the rent[6]. Thus, the rent and the price of corn rises. Profits being a residual, this increase in rent comes at the cost of profits.

The distribution between capitalists and workers serves as the basis for the capitalist system of production, in the Marxian theory. Surplus value is created in the production process. The rate of surplus value: s/v, reflects the degree of exploitation of the worker at the hands of the capitalist. The surplus value is denoted by s and v denotes the variable capital. Wages relate to a

[6] This involves moving from land of superior quality to inferior quality.

subsistence level[7]. Depending on the amount of surplus value the capitalists want to extract, given the fact that subsistence level wage is predetermined, the actual length of the working day can be varied. The availability of a 'reserve army' of labour keeps the wages from rising above the subsistence level. Marx assumed that the capitalist enterprise grows at the expense of pre-capitalist enterprise, where the large pool of labour lies. As long as there exists pre-capitalist enterprise to support the expansion of the capitalist enterprise, the supply of labour exceeds the demand for labour, maintaining wages at subsistence. This is usually the case in initial stages, after that the reserve army of labour is maintained through mechanization. Mechanization boosts labour productivity and reduces the labour time required, therefore increasing the surplus value. As per the Marxian theory, capitalists accumulate, due to competition among capitalists.

Shaikh (2016), using the Marxian perspective, developed a comprehensive framework to explain the trends in profit and wage share.

He analyses how real wages are dependent on labour struggles. It is the conflict between labour and capital that determines how the money valued-added received by the firm is distributed. Capitalists have all the incentive to push labour to the lowest limit possible, say, some historically determined minimum wage. On the other hand, labour strives to push itself to the highest wage possible, the upper limit being the real value added per worker or the productivity of labour (yr_t).

The socially achievable product wage wr_t^*, which the labour gets lies between the two extremes discussed above. It is the difference between the productivity and this product wage (real wage measured in terms of product's price) that constitutes real profit per worker.

The relationship between productivity and achievable product wage is expressed as follows:

$yr_t = wr_t + ml_t$

Where, yr_t = productivity of labour

wr_t= possible product wage

ml_t= real profit per worker

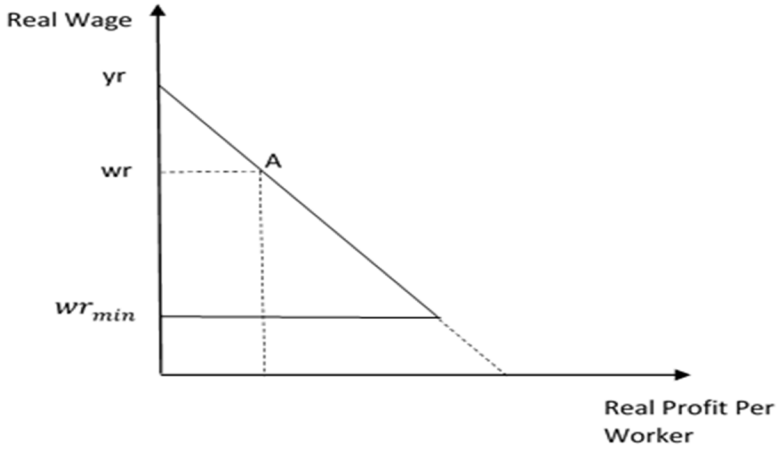
[7] The subsistence level wage, is the wage necessary for the reproduction of the worker. This, however, could be variable, since it depends on historical developments and the given living conditions in a country.

As indicated by the equation, the upper limit on the real wage is given by the productivity of labour. The lower limit is some minimum, $wr_{\min t}$, which depends on the productivity of labour determined by historical trajectory of technology, length of working day and intensity of labour.

$wr_{min\,t} = \alpha_t \,.\, yr_t$

α_t, here is the historical dependence and $0<\alpha_t<1$

Figure 1-2 Average real wage per worker



Source: Shaikh (2016)

The bold downward sloping line beginning at yr represents the wage-profit tradeoff between the minimum and maximum limits of the real wage. Points on this bold line can be understood, to represent various set of workers and firms with different strategies. A point, such as A on this feasible range then represents the average real wage and profit per workers. A, can be characterized as the ratio of average discretionary wage to maximum discretionary real wage. This ratio can be expressed as α'_t.

$\alpha'_t \equiv \frac{wr_t - wr_{min\,t}}{yr_t - wr_{min\,t}}$ such that $0<\alpha'_t<1$.

The capital and labour conflict given by β_t influences the relation between the real wage and productivity. The relationship can be expressed as below:

$wr_t = \beta_t \,.\, yr_t$

And $\beta_t = \alpha_t + (1\text{-}\alpha_t) \,.\, \alpha'_t$, $0 < \beta_t < 1$

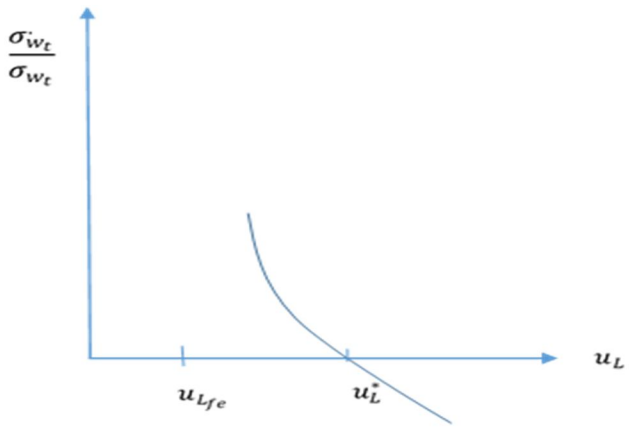
Any rise in the labour strength, β_t will bring about a rise in real wages in line with productivity growth.

$\frac{\beta_t}{\beta_t} = f(u_L^* - u_{L_t}),\ f' > 0$

The equation illustrates that the rate of change in β_t depends on the unemployment situation in the economy. If the labour market is tight, meaning the unemployment rate u_{L_t} is below some critical rate u_L^*, the labour strength increases. A rise in unionism can also push up β_t. The classical wage curve suggests that the change in the wage share is a negative related to unemployment.

$\frac{\sigma_{w_t}}{\sigma_{w_t}} = f(u_{L_t} - u_L^*),\ f' < 0$

Figure 3 The Classical Wage-Curve



Source: Shaikh (2016)

The classical wage curve in the figure above portrays a stable wage share at an unemployment rate of u_L^*, which is different from the full employment rate. A downward shift in this curve implies a reduction in the reactive strength of labour, implying as slower growth in the real wages relative to productivity. Shaikh states that a move towards globalization brings the economy closer to full employment. This will be reflected in a downward shift of the curve.

If the actual wage share were to rise over some given time interval because an acceleration in aggregate demand decreased unemployment, this would show up as an upward movement along the Classical curve. A subsequent deceleration in demand would create a corresponding downward movement along the curve.

Shaikh (2016) represents the classical output growth as under:

$g_{yr} = f_{yr}[(1\text{-}\sigma_w).\ R_n\text{-}i_n] + \epsilon$

Here, g_{yr} denotes the rate of growth of output, $1\text{-}\sigma_w$, is the share of profits, R_n is the capacity capital ratio, i_n is the nominal rate of interest and ϵ represents changes due to expectations, supply, demand and output-capacity ratio all of which are affected by injections of purchasing power fueled by consumer debt, government deficits, and export surpluses, as well as internal and external influences on the interest rate. The growth rate depends on the normal net profitability.

Beginning from a point where g_{yr}=0, if there is a temporary rise in demand shown as an upward shock in ϵ will lead to a permanent rise in output with no change in the growth rate. This will bring about a fall in unemployment and a rise in unit labour costs. The firms will try their best to mitigate this rise in costs. This could be done by raising productivity by raising capital intensity, improving technology or by increasing the labour force by importing labour.

The capitalists have all the incentive to maintain or boost their share of profits, which can be done by fixing up higher markups. Increasing the share of profits is easier in an economy which has a surplus and unorganized labour. Increasing informalization of industries and contractualization of labour reduces the strength and the bargaining power of the workforce. The wages of labour then can be easily compressed.

Increased mechanization and efforts to raise productivity only imply a larger profit for the capitalists since the wages in such an economy can be compressed. In the long run R_n can also change overtime, with the adoption of lower cost methods of production, moving away from the use of labour and altering the factor use. This will further pull down the wage share.

Similarly, a supply shock (a fall in ϵ), a rise in the cost of inputs can be accommodated by undercutting the wages.

1.2.2 Neoclassical Theory

Neoclassical theory states that each agent receives a factor income corresponding to its contribution to total output, ruling out any form of exploitation[8]. This school of thought generalized the diminishing marginal productivity principle to all the factors of production. They prove that labour and capital's share in income is constant, only under certain conditions.

Y=F(K,L) Let's take a simple production function to describe the aggregate production in the economy. Y stands for output, K & L for the stock of capital and labour. Assuming that the production function is characterized by constant returns to scale and the elasticity of substitution between factors equal to 1, a rise in the real wages relative to real interest rate, encourages the firms to substitute capital for labour, thereby reducing employment. Factor shares are constant, under the conditions mentioned. However, the factor shares won't stay stable, if the elasticity of substitution between factors is different than one.

The theory stresses on the fact that the capital keeps pace with growth in the labour force and technical progress. The neoclassicals criticized Malthusian theory for not taking into account technological progress and its inability to explain a rise in the living standards of all classes in society. The theory also regarded monopoly profit as a distinct form of revenue. Profit according to the modern theories of imperfect competition, in general, contain an element of monopoly revenue. The demand elasticity faced by the firm has a huge role to play in this.

1.2.3 Heterodox Framework

Moving on to the heterodox school of thought, Kalecki's theory of income distribution connects distribution of income to the pricing behaviour of firms in the industries, class struggle and the ratio of prices to the material costs. The theory emphasizes that prices in the industrial sector are dependent on costs, unlike the primary sector, where prices are demand determined. Kalecki distinguishes between raw material prices and manufacturing prices. Raw material prices are

[8] It rests on the microeconomic framework that can be traced back to Leon Walras, which stated that all the markets clear, determining an equilibrium price for all goods and factors.

demand-determined because industry supply is relatively inelastic in the short run. On the other hand, manufacturing prices are cost-determined because the sector is"imperfectly competitive" and firms typically carry excess capacity so that output can easily respond to demand. Kalecki (1965) assumed that under normal circumstances, firms function below the full capacity level. The unit variable costs, which include wages and costs of material per unit of output, remain constant over a range of output. The mark-up on the unit variable costs depends on the degree of monopoly that the firms enjoy .

Hein (2015) gives a formal representation of this price determination mechanism:

$$P_j = (1 + m)[\frac{w}{y} + P_f e\mu]$$

Where the output price p in sector j is equal to 1 plus a mark-up, w is the nominal wage rate, y is the productivity of labour, P_f is the unit price of imported raw material in foreign currency, the exchange rate is denoted by e and μ denotes the imported materials per unit of output. The wage share, therefore depends on the mark-up, unit material costs and labour costs, as well as economy's sectoral composition.

Monopoly power depends on the following:

- The mark-up is determined by the extent of market concentration.
- The degree of monopoly is also positively related to non-price competition, i.e. expenditure on sales promotion and advertising.
- Also, if overheads rise, and profits decline, tacit agreements towards greater collusion are quite likely. Resultantly, prices relative to unit costs might rise. Overhead costs, include interest and dividend payments. A rise in these might be passed on by the capitalists by raising the mark-up.
- If strong trade unions build pressure to raise wages, the firms who want to maintain their profit margin, will raise the wages only by increasing their prices.

All these mechanisms have repercussions for income distribution.

Kaleckian price formation framework also helps understand this conflict between the wage and profit share.

Patnaik (2018) explains that as per Kaleckian theory, if the mark-ups stay constant, a rise in nominal wages will simply translate into higher product price, leaving the real wages as well as, the wage share, for a given level of labour productivity, unaffected. Since wage bargaining is done in nominal terms, trade unions are incapable of influencing the wage share. It was on these grounds that the kaleckian theory was criticized by Mitra. Mitra postulated that the level of mark-up was also itself a function of the strength of trade unions. The stronger trade unions may be able to to keep the profit margins under check, resultantly the wage share will be higher than otherwise.

Kalecki, in his theory spoke of imperfect competition. Certainly, the oligopoly sector consists of price- maker firms, however, the raw material producing sector consists of price-takers. The share of these raw material producers in the total output of the sector into which their produce is used as an input, acts as a residue, after the capitalists of that sector and the unionized workers have claimed their shares. Trade union action, then, can raise the wage share, at the expense of these raw material producers, through an adverse movement in their terms of trade. This brings out the role of the agriculture sector acting as a cushion, taking the squeeze. The incomes of the capitalists and organized workforce may very well rise at the expense of the petty agents in agriculture.

Looking at the price formation in a broad form can help locate the role of the factors mentioned above in determining the share of wages in an open economy. If output price is considered to be cost-plus (or markup), as is often the case for non-primary commodities, we can get the following identity:

$$1 \equiv (1 + \mu)\left(\frac{wL}{pO} + \frac{e\acute{p}}{p}\mathrm{m} + \frac{p_a}{p}a\right)$$

where,

p = output price

μ = markup

w = nominal wage

L/O = labour coefficient

e= nominal exchange rate (Rs per Dollar)

ṕ = dollar price of imported inputs

m = coefficient of imported inputs

p_a = price of domestic inputs

a=coefficient of domestic inputs

The identity placed above indicates that the share of wages (wL/pO) is inversely proportional to the share of capital μ, domestic inputs $\frac{p_a}{p}a$ and international inputs $\frac{e\acute{p}}{p}$m. An increase in international competition is an attempt to increase e ṕ /p so that domestic goods become cheaper than their international equivalents. Any such attempt can be successful if one of the other components can be depressed[9]. Given the fact that the capitalists might have an upper hand in not letting their share fall, the burden of such an adjustment will fall on the workers or the primary input producers, in either case, there will be a rise in inequality. If the workers are strong enough, let their share fall, the entire burden may fall on the primary producers. A rise in the price of material inputs, be it imported or domestically sourced could exert additional pressure on the wage share in an effort to maintain competitiveness.

Markups form an important part of the price-fixing process. The temptation to raise markup is usually satisfied by bringing the wage costs down. An increase in productivity, while opening the possibility for increased real wages, simultaneously opens the door to raise markups. The framework also addresses the impact of the rise in overheads. As discussed previously, interest and dividend payments are important overhead costs, a rise in these costs might be passed on through a rise in the price-cost margin. If the presence of trade unions is strong, as discussed

[9] Low and stagnant wages through their effects on the prices of non-tradeables, have also been responsible for preventing India's 'national price level' (ratio of PPP conversion factor to market exchange rate) from catching up even in the face of high inflation. This has helped sustain the rupee exchange rate at a more competitive level than that in other Asian economies.

earlier, the share of the raw-material producers will go down. This linkage is relevant for financial capitalism and the pressure to generate high returns.

Moving on to labour productivity, the identity suggests that any attempt to raise productivity of labour, through mechanization, at a rate higher than the rise in real wages (i.e. a fall in wL/pO) ipso facto means a rise in the share of capital if the other shares remain the same.

Informalization of industries that were earlier a part of the formal sector, increasing the availability of workers ready to work on a contractual basis and weak labour laws imply at the reduced bargaining power of the labour. This naturally results in a reduced share for the workers. Strong trade unions and organized labour force can push for higher wages and the unions can be effective only if they are able to bring down the oligopoly power of capitalists.

The same framework can offer explanation for services as well, since the service sector in India depends on contractual labour too, uses inputs from manufacturing and agriculture sector. However, dynamics may differ across subsectors because services are skill driven; a skilled and organized workforce can push for a higher income share. In fact, skill-biased technical change is at central to the wage inequality debate[10]. SBTC leads to a rise in the ratio of wages of skilled and unskilled workers. This adds to the heterogeneity, making the nature of inequality complex. While the dynamics between workers and capitalists determine profit and wage share, skill-biased technical change offers an explaination for wage inequality.

In the agriculture sector the process of exploitation may be conveyed through the following equation:

$$\pi = pq - (c(q) + F)$$

Where $\pi = profit$

p = Minimum Support Price

q = Agriculture output

$c(q)$ = Inputs

[10] Skill-Biased Technical Change involves a shift in production techniques, favouring skilled over unskilled labour, thereby increasing its relative productivity and relative demand

F = Fixed Costs

The variables listed above vary as per the size class of land, in other words wealthy farmers may be able to afford better farming equipment, irrigation practices and better quality of inputs, while the poor and marginal farmers have to resort to outdated implements, inefficient grade of inputs which impacts the productivity. The ability to sell at minimum support prices, availability of credit, coverage under crop insurance, awareness about new inputs and technology depends on the wealth of the farming household. Impoverishment keeps the households in a poverty trap.

Keynes doesn't discuss a distribution theory. However, he hints at one when he states that the more the capitalists spend, greater are the profits they receive. Kaldor uses the Keynesian technique to find that the share of profits is determined by the ratio of investment to output, assuming wage earners' and capitalists' propensities to save, to be given. He assumed that the propensity to save out of profits is positive and small amount of savings are made out of wage income. The share of profits in income is shown to depend on the investment decision of capitalists.

Kaldor assumes to begin at the state of full employment[11]. The total Income Y is given and is divided into wages and profits.

Y= W + P (Identity)

I = S (Identity)

S= $S_w + S_P$

Taking investment and saving functions as given, we get I = $s_w W + s_P P$

$$\frac{P}{Y} = \frac{I}{Y}\frac{1}{s_p - s_w} - \frac{s_w}{s_p - s_w}$$

The special case $s_w = 0$ is the assumption behind Keynes's widow's curse and kalecki's theory of profits "Capitalists earn what they spend and spend what they earn".

With this theoretical backdrop, the study analyses the factor shares in India, with the key objective to understand the reasons behind the divergence in the profit share and wage share and

[11] Kaldor made this assumption in response to Harrod's proposition on warranted rate of growth being unstable and this is not a general assumption in his work.

intra-wage inequality in manufacturing and services sector. This divergence is linked to the crisis in agriculture.

1.3 Empirical Literature

Owing to a revival of interest in the analysis of the distribution of income, quality research on this issue, both old and recent exists. This work derives motivation from the existing literature on this topic. The objective is to analyze in relation to India, going beyond the manufacturing sector and explaining the factors responsible for divergence rather than just discussing the trends. This section gives an account of the empirical literature surveyed for the proposed study.

A large number of studies discuss the global scenario. Ellis & Smith (2007) show that many developed economies in recent years, have witnessed a sharp growth in profits, and the profit share has been high compared with historical experience. The paper discusses how rapid technological advancement has raised rate at which capital goods become obsolete. The constant churn in both capital and jobs, confers a stronger bargaining power to the firms relative to the labour force, this implies a greater profit share for firms.

Guerriero and Sen (2012) report empirical evidence to a secular decline in the labour share globally, in particularly 1980s onwards. This study sheds light on important factors underlying the decline in the labour share. They suggest that foreign direct investment and mechanization negatively impact the labour share. The impact of other factors, such as economic development, education levels, and regulatory institutions in the labour market, on the income distribution cannot be discounted.

Karabarbounis and Neiman (2013) confirm the declining trend in global share of labour incomes since 1980s, suggesting that the decline is pervasive across a large set of countries and industries. They present evidence in support of a decline in the relative price of investment goods. This, as they discuss, is primarily due to mechanization and advances in information technology, inducing firms to substitute away from labour.

Dùhaupt (2013), in light of the different theoretical frameworks, surveys literature on possible explanations for the consistent decline in labour share. While heterodox economists argue that neo-liberalism, spread of financialisation and a fall in workers' bargaining power are responsible for the decline in labour's share, neoclassical economists relate this decline to skill-biased technological change and globalization.

Piketty (2014) discusses how wealth and income inequality have risen across the globe and why will they continue to rise. The central finding is a U-shaped pattern in the wealth-income ratio for the period 1870-2010. This rise in inequality is sharper in the recent period. The rise in inequality post-1970 is also attributed to skill-biased technical change, i.e. the rise in demand for skilled workers. However, the SBTC argument has been challenged on several grounds. Rohit (2013) discusses these arguments: firstly, SBTC fails to explain the disparate movement in inequality in the capitalist countries which experienced similar technology revolutions. Secondly, if inequality was actually driven by skill-biased technical change, why did inequality rise at a faster rate in 1980s than 1990s when the technological revolution was far more widespread. Thirdly, this argument discounts the role of minimum wage laws and union density.It is therefore, important to understand that this rapid rise in inequality is a consequence of growing capital incomes as well as acute wage inequality i.e. the rise in top salaries.

Bengtsson and Waldenstrom (2015) investigate how capital share in national income relates to income inequality overtime. The findings suggest that in the long run, strong relationship exists between, the income distribution and aggregate capital in the economy. For Anglo-Saxon and Nordic countries, this relationship is quite strong, especially when only top capital incomes are considered.

Mishel & Bivens (2015) analyze the growing gap between overall productivity growth and the pay of workers in the U.S. since the 1970s. A careful examination of this gap between pay and productivity provides important insights about how to address the problem of stagnating wages and rising inequality.

The Global Wage Report 2016/17 documents that the fall in the labour's share of income is a trend, being felt worldwide. The study also argues in favour of a strong link between declining labour income share and increasing inequality.

The literature on this issue exists with respect to India also.

Bhattacharya et al. (2009) investigate the impact of employment and real wages on productivity of labour for manufacturing industries at two digit level over the period 1973-74 to 1999-2001 for India. The findings confirm that employment and real wages have a positive impact positive on productivity of labour. The paper also discusses how flexibility in the labor market suppresses wages and increases employment.

Vakulabharnam (2010) analyses the role of class-structure in explaining the rising levels of inequality in India. The paper also connects the trends in inequality with the Indian policies.

Roy (2012) looks into factor shares such as wages, profits, rents, and interests and also analyzes the changes in the share of inputs in the value of output. The changes are identified at the macro level and also at more disaggregated levels of the corporate sector, manufacturing sector and two digit level industries. The paper argues that rising capital intensity in industries can largely be explained by the fact that growth in India increasingly depends on profit income. Also, the paper discusses that investments in the manufacturing sector were not always aimed at acquiring productivity-raising machinery but also to create capacities that did raise productivity. The paper highlights that average wage of workers have fallen far short from their productivity, the skill premium in an excess labour supply situation does not really depend on the skill requirement of specific sectors but by the relative absorption capacity of various sectors.

Roy (2012) explores trends in the factor income shares at the macro level for India. The paper takes a closer look at these shares in various service sector industries, and at two-digit level manufacturing industries. He further argues, that the rising prodit incomes in India, has led to a growth in capital intensity, which in turn has speeded up the growth in labour productivity. The data, confirms that the growth in productivity of labour has outstripped real wage growth.

Goldar (2013) explores the trends in wages and share of wages in the organized manufacturing sector post-1991. He discusses the wage inequality between the skilled and unskilled workers in the manufacturing state. The findings confirm a downward movement of wage share in India. This trend is attributed to rising capital intensity, adoption of technology which is labour-saving in nature, a drastic decline in the bargaining power of trade unions and weakening of labour institution. The paper, through econometric modelling, establishes a negative relationship between the wage share and expoert instensity.

Basole (2014) confirms that income inequality in India has risen post reforms. The data for top 1% incomes, shows that the real top incomes which were declining in most of the planning period, witnessed an upturn around the early 1980s. The inequality in incomes intensified in the 1990s.

Basu and Das (2015) analyze the role of technological factors, in the growth of profit shares in the organized manufacturing sector. The paper finds evidence supporting a rise in profit share, technological factors being the primary drivers of growth in profit.

Anand & Thampi (2016), using the data from the rounds of All-India Debt and Investment Survey (2012 & 1991), extend empirical evidence in support of high wealth concentration in India. The wealth inequality is analysed for different asset categories, for both rural and urban sectors.Wealth inequality is studied across states, and social and religious dimensions as well. The data suggests that wealth inequality has grown sharply, particularly after 2002. The sharp inequality in India has resulted in an asymmetric distribution of gains from growth among those who were already wealthy.

The literature and important references used for each of the sectors are discussed as follows:

1.3.1 Manufacturing Sector

Abraham (2010) studies how technological growth in the organized Indian manufacturing, has led to arise in the wage share of skilled workers. The study discusses how advancement in information technology has led to a growing demand for skilled workers, thereby exacerbating

wage inequality in the sector. Trade however, doesn't seem to be impacting the levels of mechanization and adoption of technology.

Goldar and Aggarwal (2010) point out that the level of informalization in India has heightened, since 1980s. This informalization has occurred in two forms; firstly, there has been a continuous rise in unorganized employment in the manufacturing sector. Secondly, various subsectors in the organized manufacturing sector are sliding to the informal sector owing to the massive use of contractual and informal workers.

Das et al. (2015) highlight the role of decline in labour strength as a factor affecting a fall in labour income share. The paper examines several indicators of union labour strength. The findings suggest, that since 1980s, the bargaining position of unions has shown a decline. This downfall caught speed in 1990s.

Sen & Das (2015) observe a decline in labour-intensity in organized manufacturing, which they connect with a rise real wages relative rental price of capital. The ratio of real wages to the rental price of capital has risen because of a fall in the rental price of capital. Reduction in import tariffs for capital goods and increasing trade openness in this sector has encouraged a switch to machines and other labour-saving technology.

Kapoor & Krishnapriya (2017) use data from the Annual Survey of Industries for the recent period (2000-01 to 2011-12). They find that a very strong objective behind firms employing contract labour, is to keep the bargaining power of the unionized regular workers under check. The impact of the presence of contract workers on the bargaining strength of the regular worker, will certainly depend on the size and capital intensity of the firm, as well as the existing proportion of contract workers.

Abraham & Sasikumar (2017) argue that the rising labour market flexibility has driven a fall in wage share in the manufacturing sector. The increased market flexibility is a result of several forms of substitution of labour. The change in the composition of work-force, shows that there is an increased substitution of contract workers in place of regular workers. At the same time, there is an increase in the number of work hours for the labour, replacement of permanent male employees witrh females, adoption of machinery and labour-saving technology. Global

integration has brought about greater capital availability at reduced relative prices, inducing greater flexibility in the labour markets.

Vashisht (2017) provides evidence for skill-biased technical change in India. Technological advancement in the country has led to mechanization of routine tasks, which were eatrlier performed by workers with intermediate skill levels. There is an increase in the demand for skilled workers, to take over activities which are intensive in skill. At the same time, the proportion of contract workers in total employment has grown. This has important implications for wage inequality.

Basole & Narayan (2018) study recent trends in the Indian manufacturing sector. Drawing unit-level data from annual survey of industries for a long period (1983-2016), the study suggests contraction in the wage share, increased contractualization, substantial growth in the ptroductivity of labour compared to small changes in the real wage and earnings as well as rising divergence in the earnings of the employees and wages of workers.

1.3.2 Service Sector

Mitra (2009) attempts to study the impact of international trade on nemployment in the services sector. The econometric exercise fails to establish any significant influence of trade on employment generation in the Indian service sector.

Himanshu (2010) reports a rise in the number and wealth of Indian billionaires, using forbes data. The study, explores the nature of the sector where these billionaires have emerged. He discusses that the wealth generating sectors could be “rent-thick” owing to their close alliance with the state or they could be “knowledge-based”, where the owners have an exclusive right on the knowledge produced. Walton & Gandhi (2012) perform a similar analysis, but concentrate on the dynamics of “rent-thick”sectors.

Mazumdar (2010) is one of the few studies, providing econometric evidence in support of a positive impact of foreign earnings on the wage share in the information technology industry. The period of analysis is 2000-2006. The analysis of data for Indian firms in the software

indusrty, reveals that higher foreign earnings bring about improvement in the wage share of the workers.

Nayyar (2012) explains the heterogeneity in the service sector. The paper evaluates the status of various service industries, based on a set of characteristics; size of the unorganized sector, skill intensity, capital intensity, degree of integration in the international markerts. The service industries are very different from each other. These characteristics determine, the earnings of different classes in each of the sectors, wage inequality and the growth of the industry in particular.

Srivastava (2016) discusses how non-standard forms of employment in India have risen. These non-standard forms include, workers being employed without any written contract or social security benefits. It is apalling that the non-standard employment is not limited to casual work but has encroached regular work as well. He connects this pattern of employment to a rise in non-farm workforce in the agriculture sector. Increasing global integration and competition has also encouraged this change in nature of employment.

Abraham (2017) analyses recent trends in the labour force, indicating that workers are increasingly being engaged informally, in potentially productivity dampening activities. In this context, this study explores the productivity implications of the increasing informalisation of the Indian labour force.

Mazumdar et al. (2017) study the inequality in wage earnings. Inequality in wage earnings is shown to be dependent on formality of employment, as well as the education level associated with the job. The study highlights the increasing use of informal workers in formal enterprises.

1.3.3 Agriculture Sector

Patnaik (2011) argues that the current divergence is the result of a combination of two important trends. Firstly, there has been a drastic slowing down of the expansion of material production especially in the agriculture and allied activities, and in particular, the foodgrains have seen falling per capita output. This is a consequence of the state induced agrarian crisis. Second, the country has witnessed an asymmetric pattern of growth, favouring a speedy expansion of

services. This lopsided growth has caused a boom in the construction, hospitality and real estate sector attacking the property of small peasants.

Ramakumar (2012) highlights the abysmal state of public investment and institutional support in Indian agriculture in India. While public investment and expenditure do show some signs of improvement around 2000s, a revival of India's agricultural sector requires a far greater impetus to public spending.

Situation assessment survey (2013) results display that rich households own larger than average land holdings. They own and use modern agricultural machinery and inputs. Also, they make substantial investments in agricultural production. They can diversify agricultural production, and cultivate high-value crops. Richer farmers have been able to capitalize on globalized market conditions, while marginal, small and medium farmers have failed to cope adequately with the increased input prices and price volatilities in the liberalized market.

Birthal et al. (2014) examine incomes of farming households from different farm and non-farm activities. The data shows that marginal and small peasant classes depend on the non-farm activities for income, to a greater extent than farming activities. For instance a large proportion of these marginal farm households engage in wage work as well as livestock rearing, to support the household income. On the other hand wealthy farmers earn high incomes from farm practices, so they don't need to diversify on the income sources. This unequal dependence on income sources also has implications for the distribution of income across the farm households, with small peasants ath bottom of the distribution and land rich farmers at the top.

Reddy et al. (2014) assess the changing structure of rural production and employment in the last two decades and its repercussions on rural labour market. The rural labour market has undergone profound structural transformation with labour moving from agriculture towards non-agricultural activities.

Chandrasekhar et al. (2016) compare two rounds of situation assessment survey of farming households (2003 & 2013) to find high inequality in agricultural incomes. The returns from cultivation are highly varied across the land size classes. This income inequality may be attributed to the unequal land ownership. Small and fragmented land explains low incomes in Indian farming. Das & Kumar (2017) also report a similar finding.

Gupta (2016) analyses census data for the period 2001-2011 and finds a fall in the number of cultivators along with a rise in the number of agricultural labourers. Falling average size of farm holdings, rising wages in agriculture, farming practices becoming increasingly infeasible are some of the factors which are causing outward migration from agriculture.

Mazumdar (2016) explains that the conditions for a strong wage-depressing tendency in the Indian economy and the heightened informalisation and casualisation of work were set up among other things by the onset of a deep-rooted agrarian crisis since the mid-1990s. Stagnation in agriculture, increasing risks in production and marketing in a liberalized trade and market regime, weak institutional support and lack of alternative livelihood opportunities were the cause of this crisis. The crisis impacted small and marginal farmers the most.

This study concentrates on analyzing trends in profit and wage share in the manufacturing and service sector. It also presents a detailed assessment of the conditions in the agriculture sector, which could explain the rise in the income shares of capitalists in the other two sectors. Data on wage inequality has also been looked into. The research studies discussed above have guided this dissertation. The literature has served as a strong motivation and for this study. These references have been used to substantiate the arguments made in the current work.

1.4 Objective

It has been discussed at length, that the labour income share around the globe has been consistently falling and a similar trend is evident in India as well. In the Indian case, there is evidence supporting divergence in profit and wage share as well as skill-driven wage inequality. Data for manufacturing and services confirm these trends, at the same time abysmal conditions in agriculture, availability of large pool of labour ensures profit spiral in other sectors

The obhective of this research is to explore the trends in the profit and wage share and the factors behind the observed divergence. Following are the key issues, this dissertation revolves around:

- Analysis of trends in profit and wage share.
- Exploring wage-inequality

- Identifying the drivers of disparity in each of the key sectors and explaining how these factors are raising incomes of the capitalists and the top salaries in the economic ladder

1.5 Data Sources

The data for this study has been sources from varied secondary sources. Data on broad trends in factor shares at the global level and for India has been sourced from, World Inequality Database, National Accounts Statistics, KLEMS Database, Prowess and others.

For the manufacturing sector, data from EPWRF and unit level data from Annual Survey of Industries. Price indices have been sourced from Reserve Bank of India, and Labour Bureau of India.

For the service sector, unit level data from employment-unemployment surveys conducted by national sampling survey office as well as labour bureau has been used to explore the data on employment and average wages for different service industries. Information on corporate tax rates was worked out from prowess and receipts budget, India. Reserve Bank of India collects financial information on the corporate sector. Select financial ratios are worked out industry wise and reported for public and private companies; this data has been used for service sector.

The analysis for agriculture sector draws heavily on the two rounds of Situational Assessment Survey (2003 & 2013). Data on important variables in agriculture has been drawn from Directorate of Economics and Statistics, Ministry of Agriculture. Commission on Agricultural Costs and Prices shares information on cost of production of agriculture commodities. Information on farm inputs is shared in the input survey, same data has been reported.

1.6 Structure of the study

The study begins with a discussion on inequality around the world followed by a review of the recent experience of inequality in India. Trends in profit & wage share at the global level are examined, broad trends are analysed for the Indian economy. This chapter surveys the existing literature on inequality, divergence in factor shares, wage-inequality and the factors behind these trends. It also extends a theoretical framework to understand the asymmetric distribution of

income in India. Chapter 2 presents an analysis of trends in profit and wage share in organized Indian manufacturing and the factors contributing to it. Chapter 3 discusses these contours for the service industries and the reasons for disparity. Chapter 4 presents an assessment of India's agriculture sector, seeking factors that explain distress of small peasants and labour in agriculture, which in turn helps understand the divergence and wage inequality in the other sectors. The study ends with some policy suggestions.

Chapter 2- Divergence in Wage Share and Profit Share: Manufacturing Sector

2.1 Introduction

The Indian manufacturing sector is fraught with several inefficiencies. The slow growth of Indian manufacturing has always been a concern for policymakers, and the sector has long performed below its potential. The manufacturing sector contributes a meager 18 % to GVA at 2011-12 prices, the share in employment being equally disappointing, stands at 12.6%. Apart from the sclerotic status of the manufacturing sector, growing informality is also an impediment hampering its performance.

Amidst abysmal performance of Indian manufacturing on the front of growth and employment, the division of returns is also asymmetric. The data for the Indian manufacturing sector reveals that workers haven't been able to reap the benefits of economic growth.

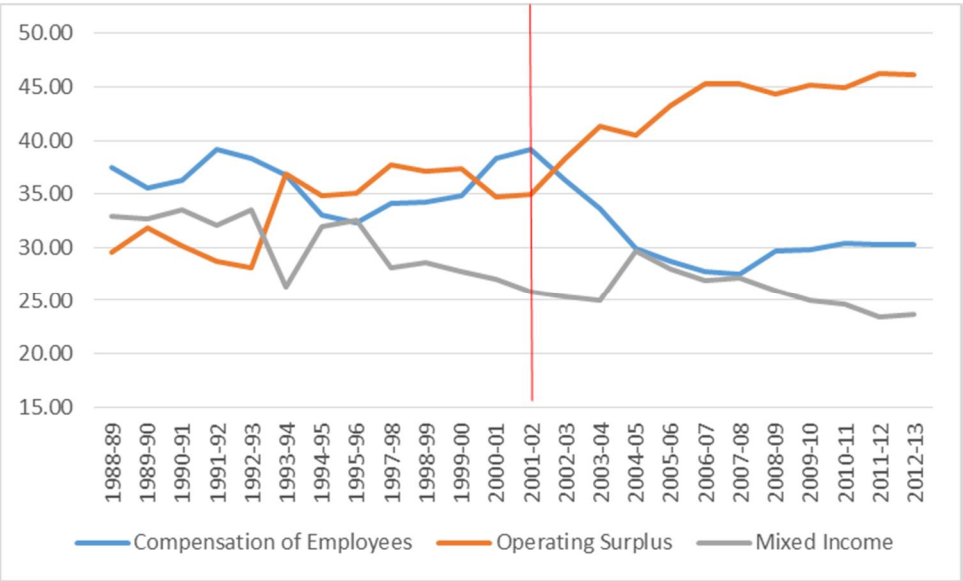
Himanshu (2012) writes

> When productivity grows, one should look at how much of that goes to wages and how much to profits. In the last ten years, though there has been a growth in productivity, workers have benefited less from this. This is because the share of profits in the value added has more than doubled as compared to the share of wages. This is happening in both the manufacturing and services sector where companies are using the loopholes as

well as the lack of implementation of labor laws to suppress wages. Companies and even the government are increasingly using contract workers to bring down wage costs and improving productivity.

Figure 2-1 shows the share in factor incomes in national domestic product for the manufactutring sector. There has been a decline in the share of compensation of employees and mixed-income along with a sharp escalation in the share of operating surplus. Share of operating surplus in the manufacturing sector has consistently risen since 2001-02. The trend is confirmed by data from Annual Survey of Industries. The data for Indian manufacturing sector reveals that workers haven't really been able to reap the benefits of economic growth. Workers have witnessed a falling share in the net value added of industries even as the share of profits has sharply increased, figure 2-2 confirms this trend. 2001-02 onwards the divergence becomes glaringly visible.

Figure 2-1 Share of factor incomes in NDP % (Current Prices)



Source: National Accounts Statistics

Table 2-5 Share of factor incomes in NVA % (GVA Series)

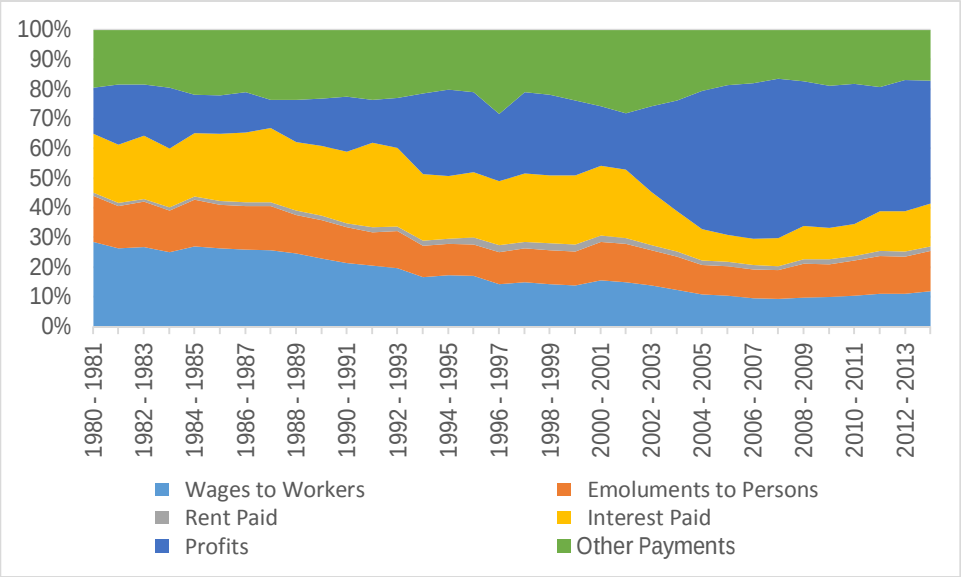
Year	Compensation of Employees	Operating Surplus	Mixed Income
2011-12	28.72	63.32	7.96
2012-13	29.55	61.91	8.54
2013-14	29.38	61.48	9.14
2014-15	30.41	60.86	8.73
2015-16	29.86	61.86	8.27

Source: National Accounts Statistics

Figure 2-2 Profit and wage as a share of NVA (%)

Source: Annual Survey of Industries

Figure 2-3 Share of various factor payments in NVA (%) Nominal Prices

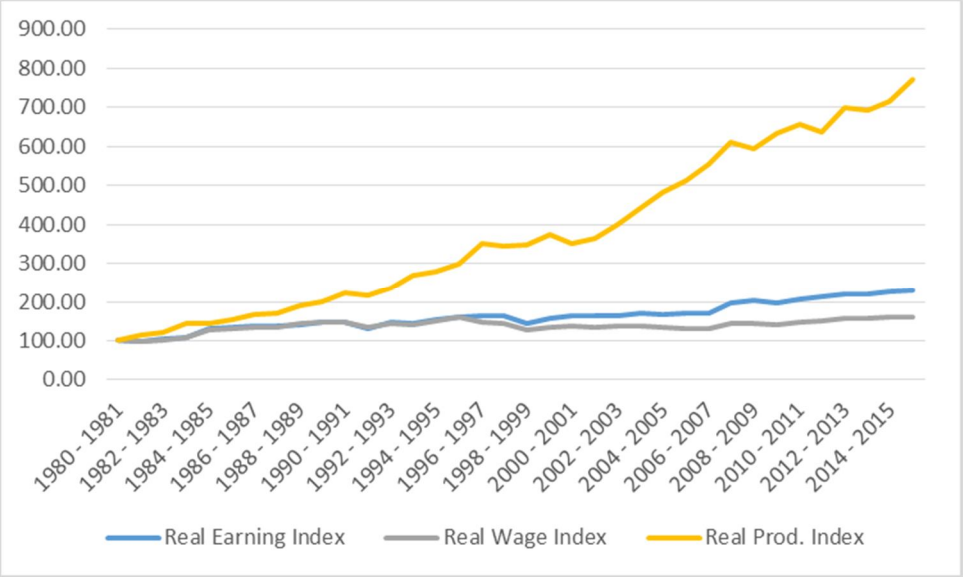


Source: Author's computation, EPWRF

It is easy to observe that the composition of factor payments has changed overtime drastically. The share of wages going to workers has been consistently declining since the 1980s, with an abysmal improvement since 2010, vis-à-vis the trend. While emoluments to persons other than workers have followed a path akin to the share of wages to workers, it needs to be highlighted that the decline in the emoluments was slower and the recent improvement is happening at a faster pace.

The wage share appears to be stable till 1987-88 and declines after that, giving way to the other factor payments to rise. The share of rent payment has always been very small hovering in the band of 1-3%. In the 1990s, both wage share and interest payments fell as the profit share rose. In the 2000s, the wage share continued to decline, also the decline in interest payment share created room for the rise in profit share.

Figure 2-4 Trends in real productivity, real earning & real wage (Indices)



Source: Author's computation, EPWRF

Figure 2-4 shows that the real productivity in organized manufacturing has risen at a high rate, leaving both earnings & wages, trailing behind. Figure 2-5, helps compare the real earning (Total emoluments/Total persons involved) with real wage (Wages to workers/Number of workers). It is clear that even though real earnings haven't grown in tandem with real productivity, it is the workers who have suffered while the other employees have seen their remuneration rise.

Figure 2-5 Comparison of real earning & real wage

Source: Author's computation, EPWRF

Using the EPWRF data, the wage share of industries at two digit level was calculated. Out of 22 industries, only two have shown a rise in the wage share. The wage share for the manufacture of wearing apparel dressing and dyeing of fur, after falling from 35.21% in 1980-81 to 11.89% in 1993-94, rose to around 35.80% in 2014-15. Similarly, Tanning and Dressing of Leather Manufacture of Luggage, Handbags, Saddlery, Harness, and Footwear exhibited a fall in wage share and a rise later. These two industries are an exception to the trend. The literature suggests that this recent improvement in the wage share could be a result of the tighteness in the labour market due to global trade participation. There has been a decline in the wage share in all the other industries, with some rise only in the recent years.

The share of wages in NVA declined prominent agro-based industries – food products and beverages, tobacco products, and textiles, as well as most high- and medium-technology industries, such as chemical and chemical products, machinery and equipment, office accounting and computing machinery, radio, TV, etc., and medical precision equipment. This indicates that the wage compression has been pervasive.

There could be a multitude of factors responsible for this divergence in the factor incomes. The paper explores these factors in the following sections.

2.2 Factors behind the divergence

The growth of real wages and the discussed divergence depends on a lot many factors:

- Increased mechanization
- Compression of wages amidst rising costs of other factor inputs to maintain competitiveness
- The ability to set high markups
- Informalisation & contractualisation
- Union labour strength
- Role of labour laws and employment programs

The factors mentioned above have a great contribution in affecting the current trends. Certainly, the factors might vary in their impact from one industry to another, making subsector analysis imperative.

We study these factors one by one.

2.2.1 Increased Mechanisation

Trends in labor share are also reflected by movement in wages vis-à-vis labor productivity. Wage share has two components – real wages and labor coefficient (inverse of labor productivity). Real wages, in turn, depend on nominal wages and prices, whereas the labor coefficient depends on the nature of technological progress.

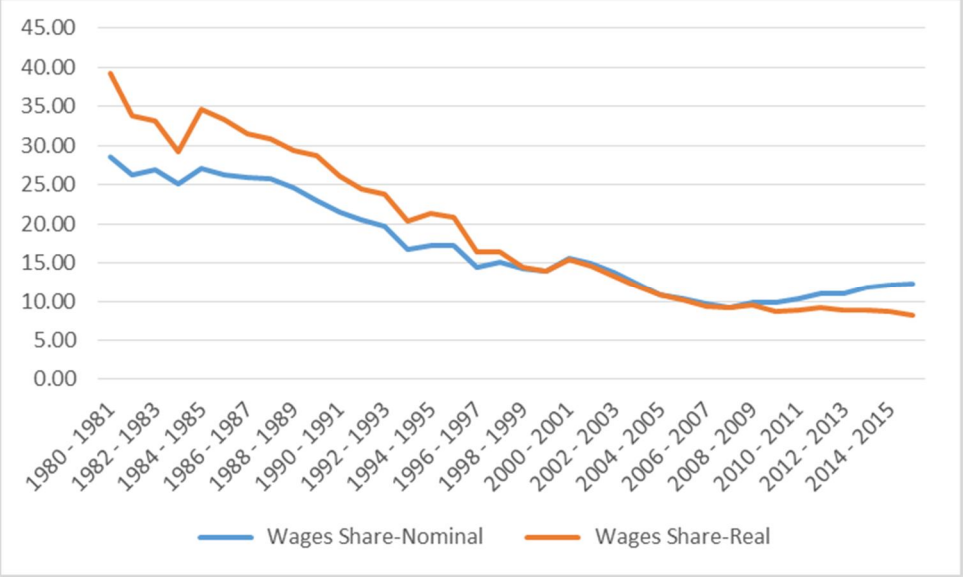
$$\frac{Wages}{Total\ Income} = \frac{w}{p}\frac{L}{O}$$

The equation above shows that the share of wages can decline, ceteris paribus, either by a fall in real wages or a rise in labor productivity or if growth in productivity outstrips the real wage

growth. The last of which indicates that the gains in productivity are not accruing entirely to the wage-earning class.

Technological changes, capital intensity, and innovation can impact labour productivity. If the growth of labour productivity exceeds the growth of real wages, it indicates that a part of the gains in productivity are being pocketed by the capitalists. We analyze the real wage per worker (deflated by CPI-IW) and real productivity[12] for each industry at the three-digit level. This means that there is a relative price effect involved here. Figure 2-6 shows that there is a divergence between the nominal and real values of wage share, this is due to the divergence in CPI-IW & WPI-MP as exhibited in figure 2-1A in the appendix. However, it is also evident seen that relative changes in prices is not the only factor behind the decline in the share of labour in GVA.

Figure 2-6 Wage share in GVA: Comparing nominal and real values (%)



Source: Author's computation, EPWRF

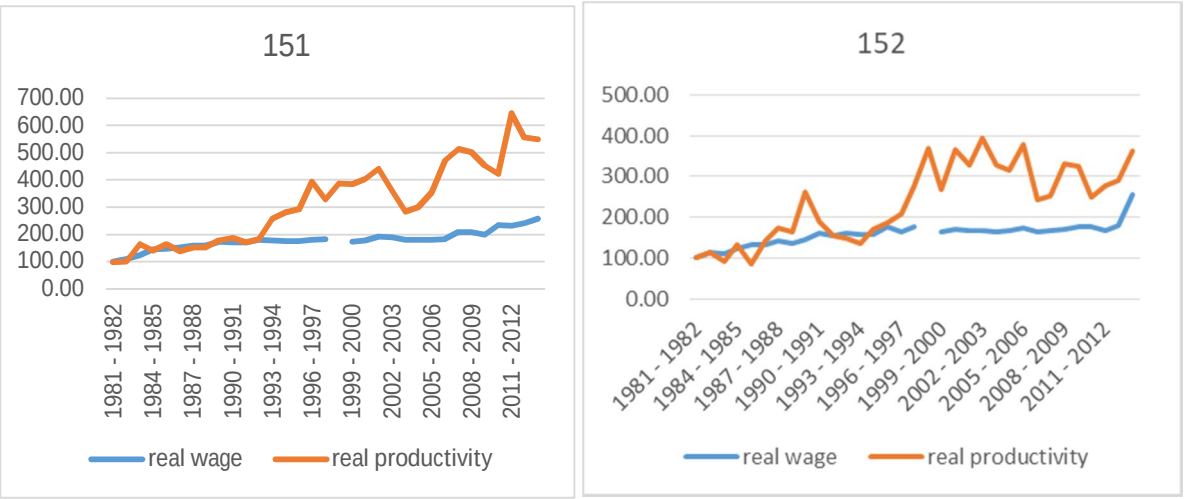
Note: Nominal GVA is deflated using WPI-MP with base year 2004–05 to arrive at the real GVA. The share of workers is deflated using CPIIW after shifting the base year to 2004–05.

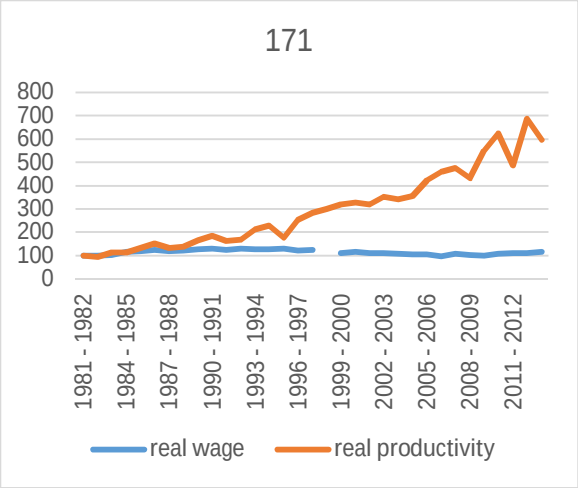
In what follows, the paper gives evidence on labour productivity exceeding real wage growth in the case of the majority of the industries. The wholesale price indices have been worked out for

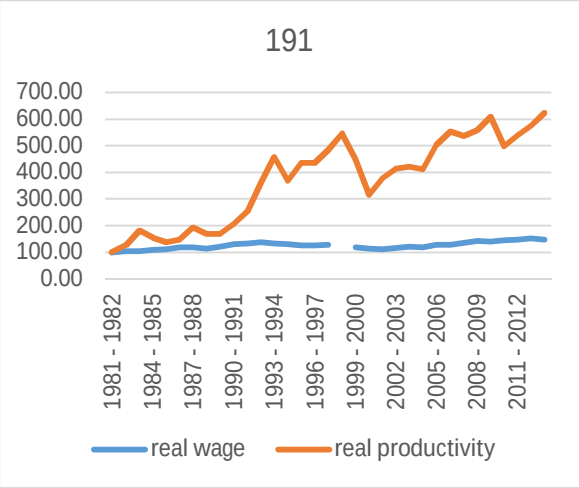
[12] Real Productivity has been calculated by dividing the gross value added by the number of workers and the appropriate wholesale price index for the industry.

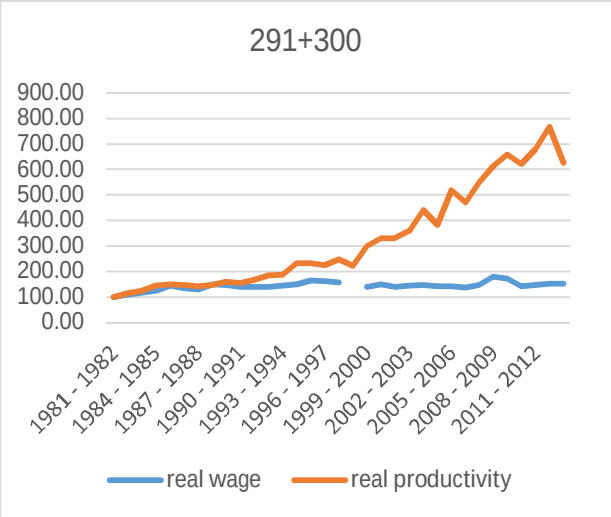
each industry. Out of 56 industries, 48, show a declining product wage ($\frac{w}{p}\frac{L}{O}$). Manufacture of knitted and crocheted fabrics, manufacture of glass and glass products, manufacture of electric motors, generators and transformers, manufacture of optical instruments and photographic equipment are exceptions to this trend. There are other industries where real wage and productivity seem to have moved in tandem. Following are the graphs plotting real wage movement vis-à-vis labour productivity growth for a few important manufacturing industries. The codes have been assigned to industries as per NIC-2004. List of three digit industries as per NIC-2004 is shared in the appendix.

Figure 2-7 Real wage and real productivity index









Source: Author's Computation, EPWRF

Capital intensity may be computed as real fixed capital per total persons employed[13]. The fixed capital data is reported by annual survey of industries which has been adjusted for depreciation. The nominal value is deflated using WPI for machinery and machine tools. To classify industries as labour or capital intensive, capital intensity can be calculated. I have done this for all the three-digit industries in the organized manufacturing sector since 1980-81. An industry is classified as labour intensive; if the computed capital intensity is below the median value for the

[13] Total persons engaged include workers (directly employed or employed through contractors), employees other than workers (supervisory, managerial, and other staff) and unpaid family members/proprietor, etc.

manufacturing sector and vice-versa. Intensity is a relative measure, and median is a good benchmark to decide an industry's technological intensity.

Following industries have been identified as capital-intensive using the data for the period 2000-01 to 2013-14.

Table 2-6 List of Capital-Intensive Industries

151	269
155	271
171	272
210	293
221	312+313
223	314
231	321
232	322
241+233	323
242	341
243	343
251	353
252	359
261	

Source: Author's Computation, EPWRF

Capital intensity has been on the rise not just in the capital-intensive industries but also the in the industries which are labour-intensive; this raises questions on the ability of the Indian manufacturing sector to create jobs. The following table shows the capital intensity of 25 labor-intensive industries for the periods 1990-91 to1999-2000 and 2000-01 to 2013-14[14].

[14] Only those industries that are labour-intensive in both the periods have been listed. Certain industries are labour intensive in the first period and capital intensive in the second and vice versa, such industries have been dropped.

Table 2-7 Capital intensity of labour-intensive industries

Industry	1990/91-1999/00	2000/01-2013/14
152	2297.27	4278.02
153	826.35	2581.20
154	1480.01	4196.74
160	173.43	524.74
172	1925.35	3372.50
173	1387.01	2125.29
181	750.95	1271.51
182	1674.12	2797.38
191	1198.88	1948.38
192	1280.42	1614.19
201	290.57	1186.47
202	1374.90	3322.66
222	2011.46	4650.44
273	1732.38	5809.19
281	1464.69	3870.34
289	2195.62	3786.82
292	2131.04	4847.10
311	1978.25	4334.41
319	1499.67	4525.30
342	2149.36	4706.55
351	1362.17	12244.25
352	921.40	3212.79
361	1126.82	3482.29
369	1112.87	2292.67
371+372	828.46	4451.58

Source: Author's Computation, EPWRF

The change in the average capital intensity for the labor-intensive industries is 160%, while that for the capital-intensive is 140% between the two periods1990-91 to1999-2000 and 2000-01 to 2013-14, indicating that the use of technology is rising rapidly in the labor-intensive sectors.

There are indicators of technological upgradation, other than capital intensity. Prowess database shares information on key financial indicators of over 17,000 manufacturing firms. Data on Royalty, technical know-how fees and research, development expenditure both on capital and current account and sales has been assimilated from prowess.

Table 2-8 Technological upgradation in the manufacturing sector

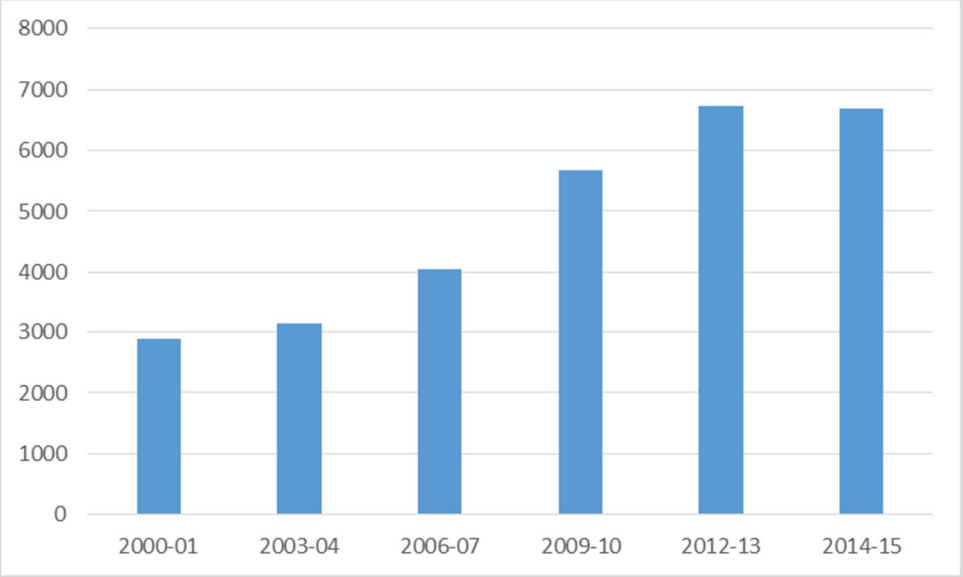
Year	Royalty, technical know-how fees/Sales	R & D Expenditure/Sales	Year	Royalty, technical know-how fees/Sales	R & D Expenditure/Sales
1987	0.01	0.19	2003	0.38	0.27
1988	0.03	0.19	2004	0.36	0.26
1989	0.04	0.19	2005	0.38	0.25
1990	0.06	0.17	2006	0.38	0.26
1991	0.12	0.17	2007	0.41	0.30
1992	0.20	0.21	2008	0.44	0.29
1993	0.21	0.20	2009	0.45	0.37
1994	0.24	0.18	2010	0.44	0.39
1995	0.29	0.19	2011	0.67	0.31
1996	0.36	0.18	2012	0.51	0.31
1997	0.28	0.21	2013	0.43	0.33
1998	0.31	0.21	2014	0.49	0.41
1999	0.25	0.21	2015	0.57	0.50
2000	0.26	0.19	2016	0.60	0.52
2001	0.27	0.20	2017	0.68	0.42
2002	0.33	0.25			

Source: Author's Computation, PROWESS

The figures in table 2-4 above show that the expenditure on research has grown significantly. While the data points to a rise in R&D intensity, Vashisht (2017) highlights that the R&D intensity in India is still very low compared to global standards. It is believed that the firms in the developing nations have a tendency to meet their machinery and technology requirements through imports. Literature suggests that capital imports in India have risen substantially, in the post-reform period[15].

Annual Survey of Industries reports data on information and communication technology (ICT) investment in the manufacturing sector. The following graph shows how ICT investment has grown 2000-01 onwards.

Figure 2-8 ICT Investment (deflated value)



Source: Author's Computation, Annual Survey of Industries

Increasing adoption of machinery, improvement in technology can give way to a change in the composition of the workforce. Vashisht (2017) discusses how the composition of workforce in the Indian manufacturing. During the period 1980-81 to 1999-00, the share of managers and

[15] The Indian government allowed capital imports in the mid-1980s, and since then, the imports of capital goods have increased from around US$5 billion in 1987-88 to around US$100 billion in 2012-13 (RBI 2014).

supervisors in the total persons engaged rose steadily. However, 2000-01 onwards, some decline in this share can be noticed. This is concomitant with the rise in the share of contract workers in the total number of persons engaged.

Data reveals that for the manufacturing sector, the share of supervisors and managers has remained stable since 2000-01, hovering around 9-10%. At the three-digit level, 23 industries have registered a fall in the share of managers and supervisors in total persons engaged, while the remaining 33 have experienced an increase. Table 2-5 furnishes information about the same. At the same time, the ratio of managerial salary to worker wages has risen in all the industries except two. The fact that this ratio is rising affirms that the supervisor and managerial class of employees are getting better returns out of employment even when their share in total persons engaged is falling. Figure 2-9 plots ratio of managerial salary to worker wages for three-digit industries and the data shows that this ratio is higher in 2013-14 compared to 2000-01. This points to rising wage inequality. Wages differ for individuals across the economic ladder, jumping steeply for the employees at the topmost positions.

Table 2-9 Share of supervisors and managers in total persons engaged in different industries

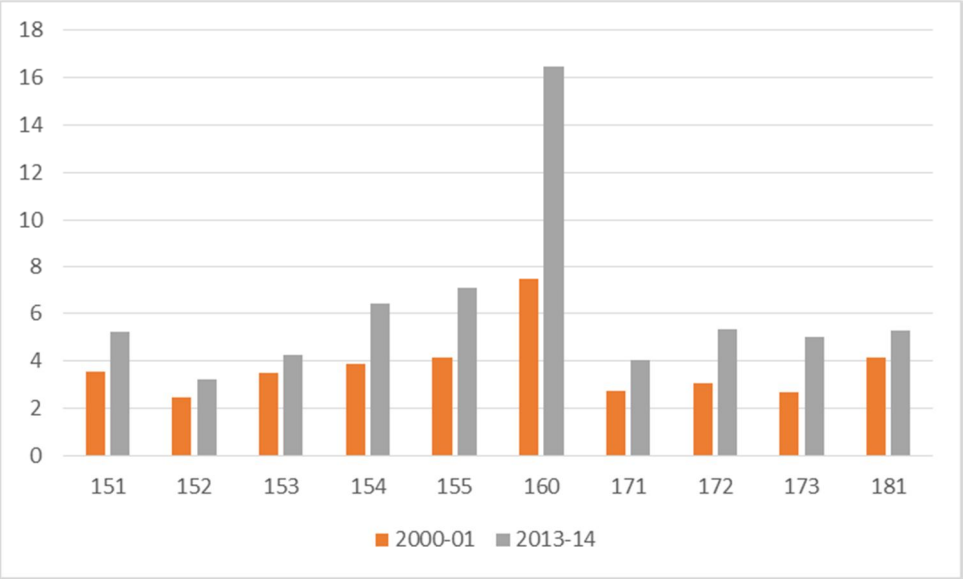
Industry	2000-01	2013-14	Industry	2000-01	2013-14
151	6.91	9.05	271	11.29	11.72
152	8.53	9.61	272	11.88	11.64
153	7.78	9.41	273	13.99	12.26
154	5.46	6.37	281	11.72	12.09
155	8.41	9.38	289	12.13	9.80
160	1.42	1.52	291+300	17.36	12.64
171	6.12	7.05	292	17.10	14.89
172	8.65	7.35	293	11.06	13.27

173	7.43	5.58	311	15.21	16.76
181	6.19	7.23	312+313	17.23	10.26
182	0.91	12.52	314	18.46	11.67
191	6.88	5.73	315	10.65	9.01
192	7.79	6.16	319	14.74	12.16
201	8.72	10.38	321	15.87	13.40
202	9.59	9.78	322	31.27	17.02
210	10.31	10.53	323	14.69	11.14
221	13.50	11.85	331+333	14.68	12.29
222	11.01	12.57	332	11.16	11.43
223	18.20	8.24	341	16.41	18.17
231	7.83	10.65	342	11.21	11.13
232	18.14	19.24	343	15.72	10.79
241+233	15.08	15.83	351	8.62	11.27
242	13.41	14.12	352	6.81	10.58
243	5.62	12.75	353	5.88	24.96
251	9.66	9.55	359	13.06	9.66
252	13.27	10.41	361	7.32	10.07
261	7.22	9.64	369	10.28	8.75
269	9.07	7.63	371+372	0.98	9.99

Source: Author's Computation, Annual Survey of Industries and EPWRF

Figure 2-9 Ratio of earnings of supervisors and wage to workers

(a)



(b)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232
241+233
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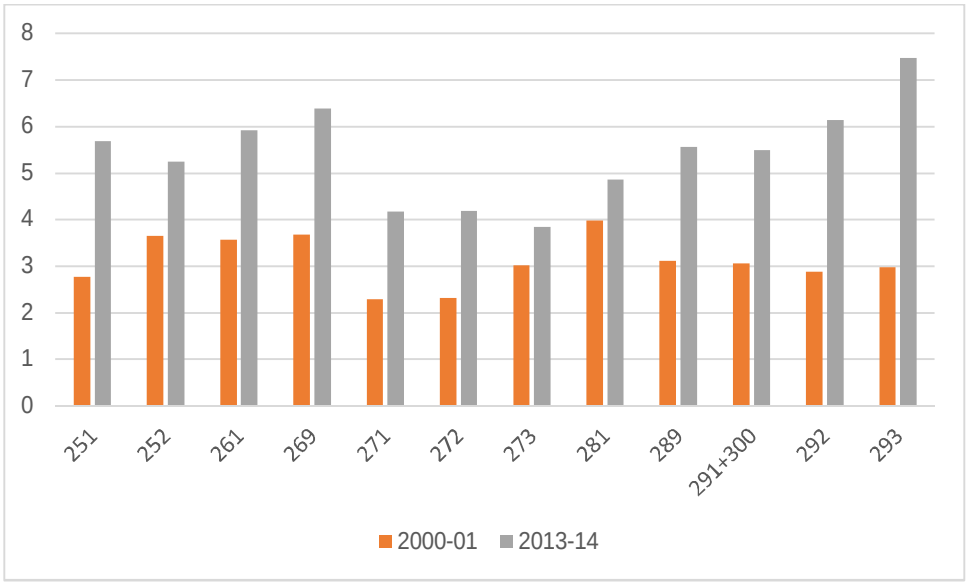
2000-01
2013-14

(c)


8
7
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291+300
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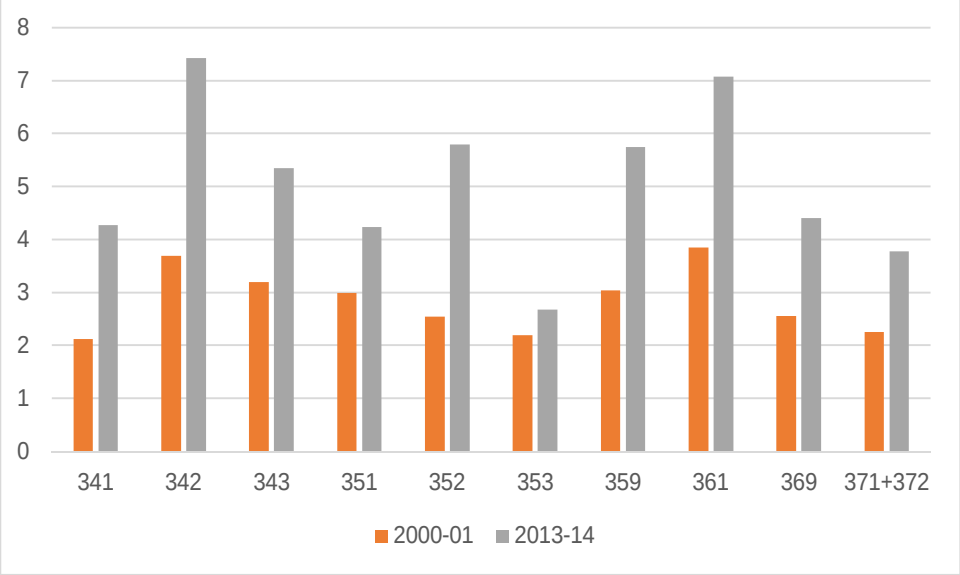
293
2000-01
2013-14

(d)

(e)



Source: Author's Computation, Annual Survey of Industries and EPWRF

Table 2-6 given below is taken from Vashisht (2017), it is evident from the table that the share of the skilled workers in manufacturing employment has gone up and at the same time, their wage share has also gone up significantly.

Table 2-6 Occupation structure and Wage share in Manufacturing Sector (%)

	Employment Share			Wage Share		
Skill Level	1993-94	2011-12	Change	1993-94	2011-12	Change
High Skill	5.3	8.4	3.1	15.3	27.1	11.8
Intermediate Skill	76.5	70.2	-6.3	70.8	59.4	-11.4
Unskilled	18.1	21.5	3.4	13.9	13.5	-0.4

Source: Vashist (2017)

Note: High Skill = Managers, Professional and Associate Professional. Intermediate skill = Plant and Machine Operators, Clerks and Craft-related occupation. Unskilled = Elementary occupation

This serves as evidence of skill-biased technical change, not only the demand for skilled workers has gone up, their remuneration has risen too. Now, if we look at the employment share of unskilled workers, that too has increased. The only class of workers who have seen a decline in employment, are the workers with intermediate skills. Key takeaway from this table is that the employment of the skilled and unskilled workers has grown at the expense of semi-skilled workers. The wage inequality is reflected in the data as well. The wage share of the high skilled workers has grown by nearly 12% during the period 1993-94 to 2011-12.

There are two important dimensions to the inequality in the organized manufacturing sector: firstly, there is a strong divergence in the profit share and the wage share. Secondly, wage differential exists between the blue-collared and white-collared workers. The workers at the bottom level experience acute inequality, while the wages at the bottom of the pyramid continue to stay low, salaries of CEOs, managers, supervisors have grown substantially, and profits have risen too.

2.2.2 Input Costs

The Kaleckian price formation process was discussed in chapter 1 in detail. If output price is considered to be cost-plus (or markup), as is often the case for non-primary commodities, we can get the following identity:

$$1 \equiv (1 + \mu)\left(\frac{wL}{pO} + \frac{e\acute{p}}{p}m + \frac{p_a}{p}a\right)$$

where,

p = output price

μ = markup

w = nominal wage

L/O = labour coefficient

e= nominal exchange rate (Rs per Dollar)

ṕ = dollar price of imported inputs

m = coefficient of imported inputs

p_a = price of domestic inputs

a=coefficient of domestic inputs

The identity placed above indicates that the share of wages (wL/pO) is inversely proportional to the share of capital μ, domestic inputs $\frac{p_a}{p}a$ and international inputs $\frac{e\acute{p}}{p}m$.

A rise in the price of material inputs, be it imported or domestically sourced could exert pressure on the wage share. The capitalists will not take a hit on their profit margin, to make up for the rise in input costs, the wage share may be compressed.

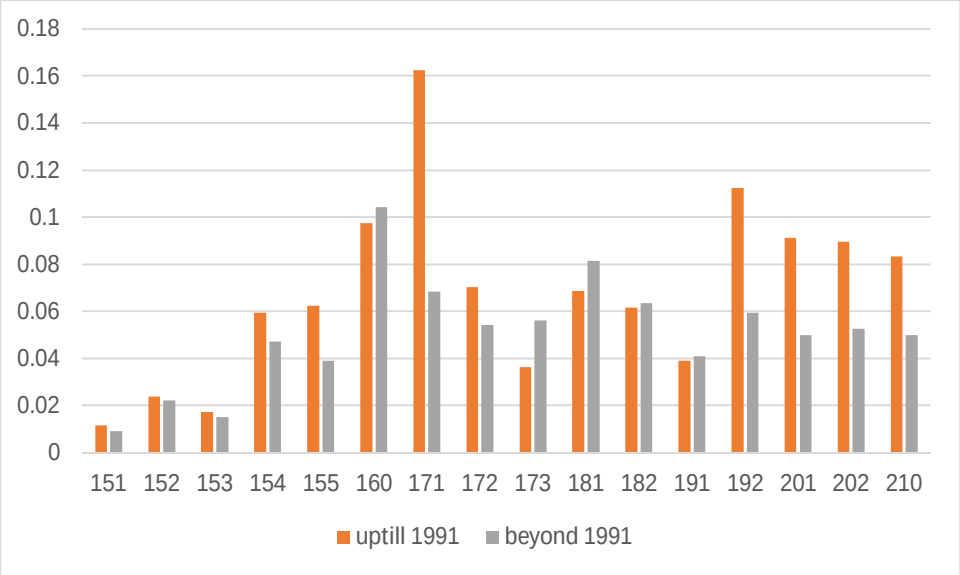
Figure 2-10 plots the wage cost to input cost (material and fuel) ratio for 53 three-digit industries[16]. As explained above, the burden of a rise in the input costs can be passed on to the

[16] Industries 223, 343 and 371+372 have been eliminated due to non-availability of data.

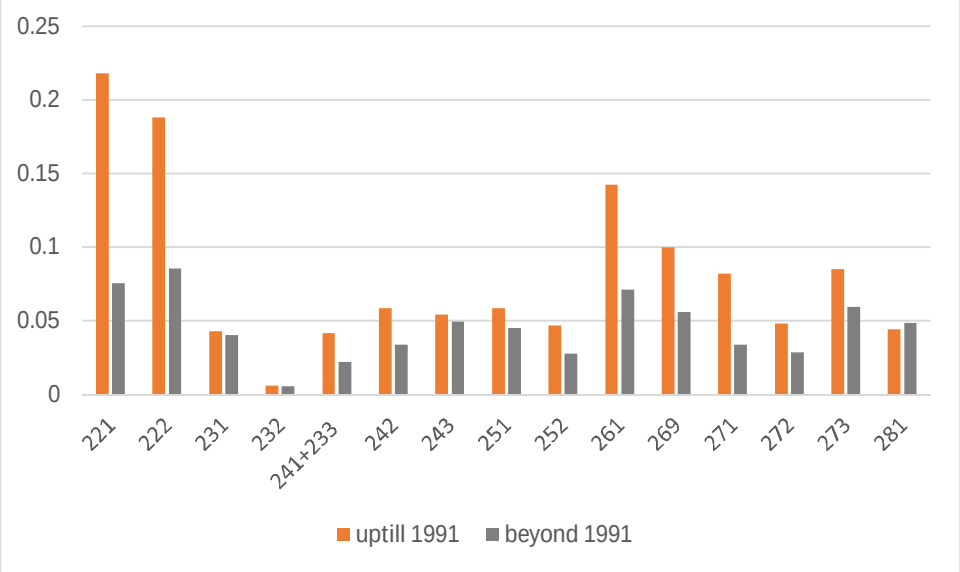
labour in terms of a smaller wage share. The ratio has declined for most of the manufacturing subsectors.

Figure 2-10 Ratio of wage cost to total input cost

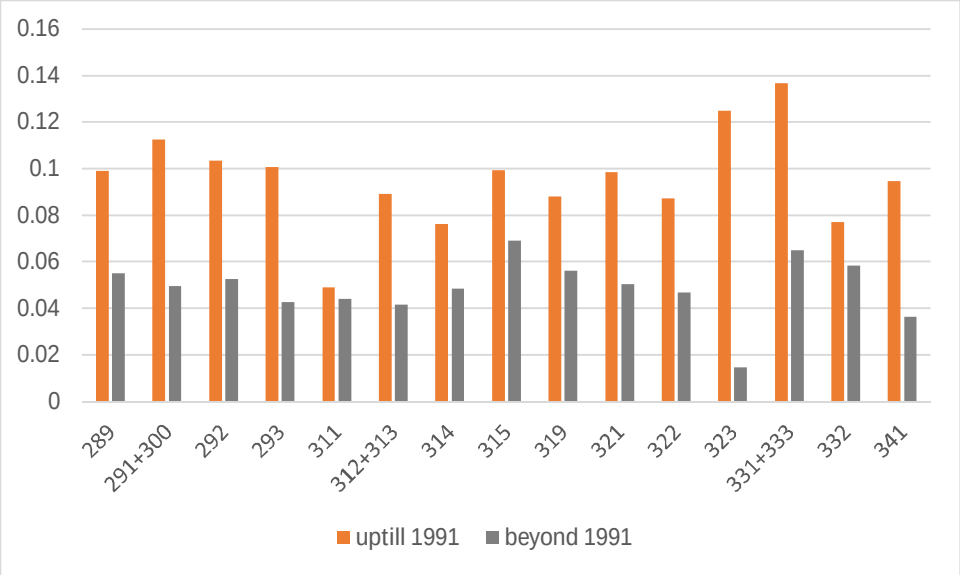
(a)



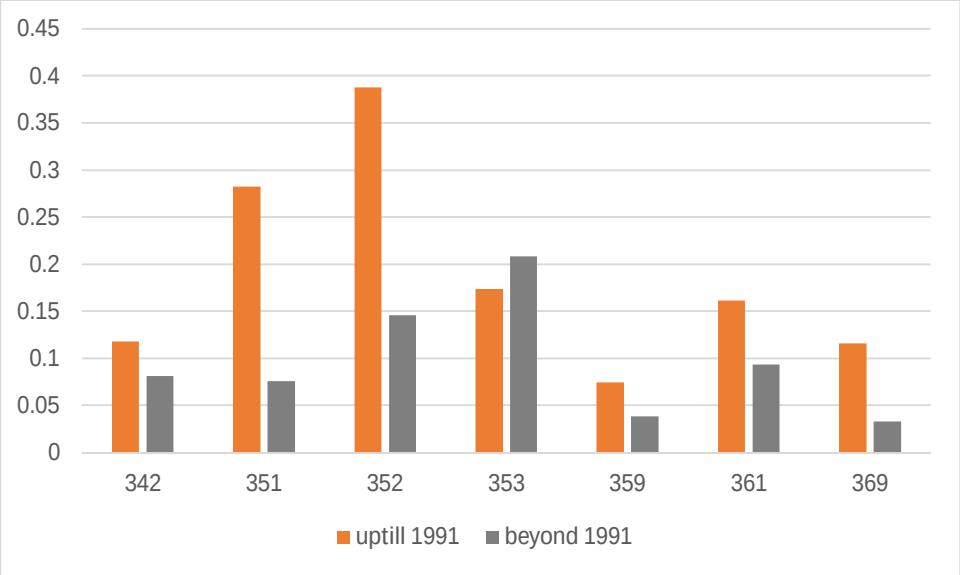
(b)



(c)



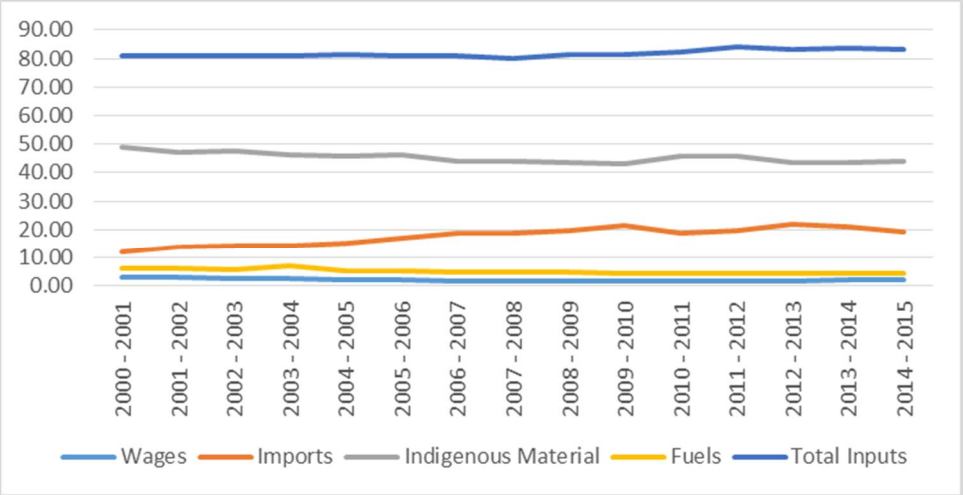
(d)



Source: Author's Computation, Annual Survey of Industries and EPWRF

Figure 2-11 plots the imports, indigenous raw material consumed, fuel, wages and total inputs as a proportion of the value of output. Data reveals that while the wage and fuel cost of the manufacturing sector has declined consistently and expenditure on indigenous materials also declined, with a rise and fall around 2010-11during the period 2000-01 to 2014-15, expenditure on the imported material has risen all through.

Figure 2-11 Share of various input costs in value of gross output (%)



Source: Author's Computation Annual Survey of Industries and EPWRF

For imports, the unit value index of imports computed by Reserve Bank of India has been used to deflate the value of imports taken from annual survey of industries and compute the quantum index. Wholesale price index has been used to deflate the expenditure on indigenous raw-materials. It is important to note that the share of materials consumed (indigenous and imported) in the value of gross output has risen from 60.5% in 2000-01 to 63.1% in 2014-15. Figure 2-12 below plots import price (this includes the exchange rate component) and quantum index, wholesale price and indigenous raw-material quantity index

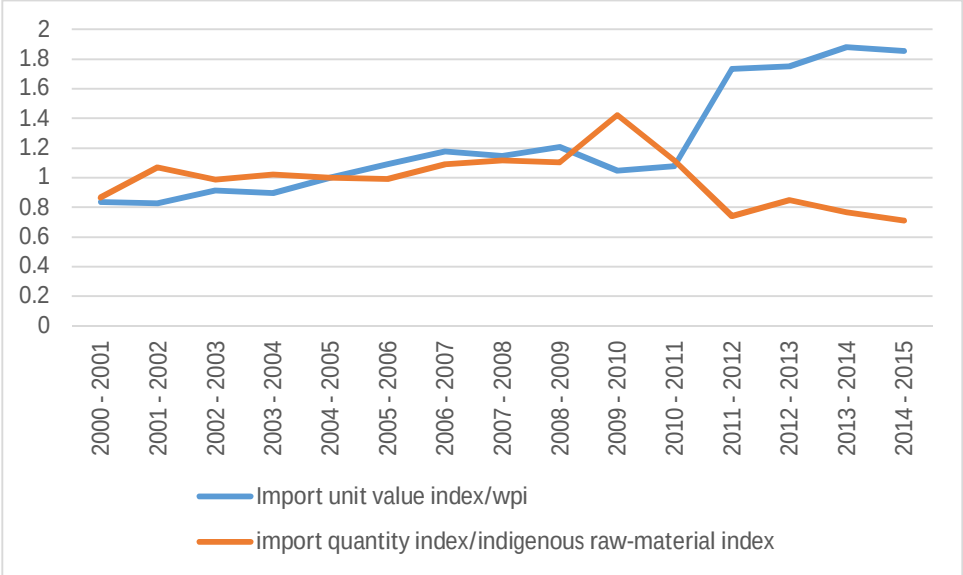
Figure 2-12 Indices for imported and indigenous material consumed

Source: Reserve Bank of India, Annual Survey of Industries

While the quantity of material imported by the manufacturing sector fluctuates with the import prices and the exchange rate, the raw-material purchased within the country has grown in quantity even when the prices have risen.

Figure 2-13 below plots the ratio of Import price (unit value) index and WPI as well as the ratio of the quantity of imports index and indigenous raw material index.

Figure 2-13 Trends in the relative price of materials consumed and quantity



Source: Reserve Bank of India, Annual Survey of Industries

In relation to the question why the wage share has been falling, the graphs above show that efforts have been made by the manufacturing sector to meet its material requirements within the country and from the rest of the world amidst rising import and national price level. The contraction in the wage share, as well as a fall in fuel expenditure, has created room for maintaining the material requirement.

The variable import unit value index/WPI in figure 13 is e ṕ /p, and it has been rising dramatically in recent years. The data extends evidence in support of the fact that wage share has been compressed to attain competitiveness.

2.2.3 Rising Mark-Ups

Markups form an important part of price fixing process. The temptation to raise markup is usually satisfied by bringing the wage costs down. An increase in productivity, while opening the possibility for increased real wages, simultaneously opens the door to raise markups.

Goldar & Kato(2006) calculate price-cost margin, using the following formula:

Price-Cost Margin: [Value of Output – {Salary and Wages + Expenditures on Materials + Expenditure on Power}]/Value of Output

The data shows that mark-ups have risen, but the change has been slow. About 36 industries have witnessed a rise in mark-ups.

Table 2-10 Price-Cost Margin

Industry	Uptill 1991	Beyond 1991	Industry	Uptill 1991	Beyond 1991
151	0.05	0.06	271	0.13	0.15
152	0.05	0.06	272	0.13	0.18
153	0.05	0.06	273	0.11	0.12
154	0.12	0.12	281	0.12	0.14
155	0.22	0.22	289	0.15	0.14
160	0.13	0.28	291+300	0.19	0.17

171	0.11	0.12	292	0.16	0.15
172	0.12	0.13	293	0.12	0.14
173	0.10	0.12	311	0.27	0.17
181	0.10	0.15	312+313	0.07	0.14
182	0.15	0.10	314	0.17	0.21
191	0.07	0.09	315	0.17	0.16
192	0.10	0.11	319	-49.84	-24.89
201	0.12	0.07	321	0.31	0.62
202	0.15	0.12	322	0.88	-2.58
210	0.17	0.15	323	0.58	0.77
221	0.14	0.22	331+333	-0.45	0.42
222	0.17	0.17	332	-2.62	-0.56
223		0.29	341	0.83	0.91
231	0.09	0.13	342	-3.14	-10.91
232	0.09	0.13	343		0.91
241+233	0.18	0.19	351	0.73	0.91
242	0.18	0.22	352	0.69	0.85
243	0.26	0.21	353	0.82	0.78
251	0.15	0.16	359	0.90	0.95
252	0.14	0.14	361	0.83	0.89
261	0.15	0.19	369	0.88	0.96
269	0.19	0.24	371+372		0.97

Source: Author's Computation EPWRF

Table 2-11 Regression results: Markup (dependent variable)

	(Fixed Effects) markup	(Random Effects) markup
Concentration_ratio	0.328***	0.297***
	(0.103)	(0.087)

Contract_workers	0.005	-0.009
	(0.098)	(0.094)
Constant	1.937	3.949
	(6.579)	(6.829)
N	132	132
r2 within	0.095	0.095

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Using the data from prowess, industry wise concentration ratio has been worked out since the year 1987. The regression results reported in table 2-8 above use data on markups, concentration ratio, and contract workers for the period 1998 to 2013, for 22 three-digit industries. For the period stated, a positive relationship exists between the markup and the concentration ratio. The relationship is statistically significant at 1%. Result for the Hausman test has been shared in the appendix table 2-1A part (a), the Hausman test supports random effect model. Another regression was tried with a dummy variable for capital intensity: the dummy is assigned value 1 if the industry is capital intensive and 0 otherwise. The dummy was reported to be collinear and dropped in the fixed effect model. Results of the random effect model are reported in the appendix table 2-1A part (b). The model suggests that capital intensive industries have a higher markup; the coefficient is significant at 10%. Industry-wise four-firm concentration ratio are shown in table 2-2A.

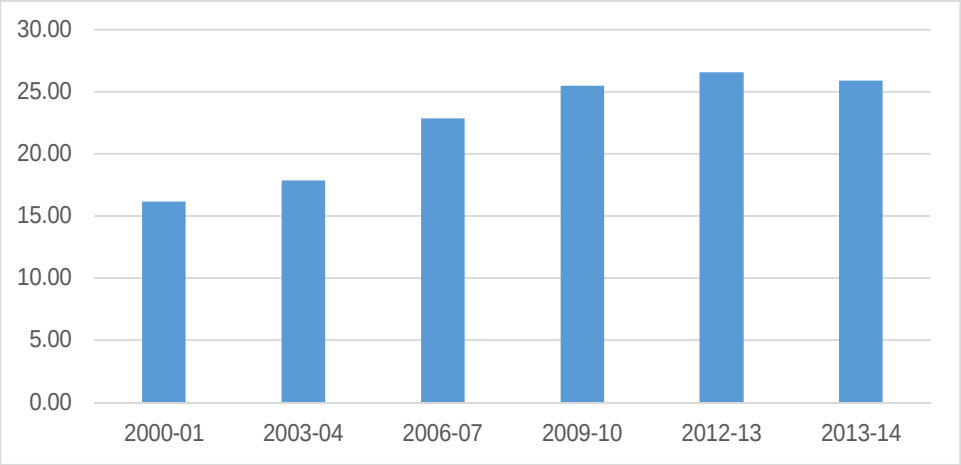
There are studies on markups and market concentration. Sedai (2017) finds evidence of a rise in markups as well as a market concentration in the organized manufacturing sector. The study uses market concentration and monopoly power indices to determine the degree of competition. Goldar and Aggarwal (2004) in their paper discuss, how liberalization, removal of quantitative restrictions on imports intensified competition in Indian industries, which brought down the price-cost margins. Beena (2014) also finds deterioration in the HHI in the post-liberalization period. Literature also suggests that the margin may be influenced by firms' conduct like advertising, marketing, distribution and technology related strategies, integration of firms, etc.,

as well as by policies of the government and various other structural aspects of the market. This means that the concentration-profit margin relationship is dynamic in nature rather than a static as it is generally conceived. Market power may not be the only factor determining mark-ups.

2.2.4 Contractualization and informalization

A growing body of evidence indicates a huge inflow of contract labour ready to work for low wages. In fact, informalization of labor-intensive industries and growing contractual hiring of labour are interrelated. Das et al. (2015) furnish an important fact, which displays a growing preference for contract workers. They state that the share of workers in the total persons engaged has stayed constant, while the proportion of contract workers in total workers has been on a continuous rise[17]. Ample availability of the informal labour and an increasing absorption of this labour in the formal sector has kept the wages in the formal sector, low.

Figure 2-14 Contract workers as a share of total persons engaged (%)



Source: Author's Computation Annual Survey of Industries

Figure 2-14 plots the share of contract workers in total persons engaged in the manufacturing sector. As can be seen, this share has been on a rise. Table 2-11 below gives information on share of contract workers in total persons engaged as well as their wage share in total emoluments at the three-digit level. The employment of contract workers has gone up in most of

[17] The share of the workers category in total persons engaged has remained remarkably stable (76.25 per cent in 2000-01, 76.69 per cent in 2006-07, and 77.61 per cent in 2011-12), but the share of contract workers in total workers engaged has been on a continuous rise from 21.31 percent in 2000-01 to 30.37 percent in 2006-07 and further to 34.61 per cent in 2011-12.

the industries. Table 2-9 also shows the ratio of salary to the managerial and supervisory staff to the wage income of contract workers. The average salary of supervisors was six times the average wage of contract workers in 2000-01, and in 2013-14 it has become seven times.

Table 2-12 Status of contract workers in the manufacturing sector

Industry	Employment Share		Wage Share		The ratio of supervisors salary to contract workers wage income	
NIC	2000-01	2013-14	2000-01	2013-14	2000-01	2013-14
151	26.41	29.62	15.99	18.42	4.23	5.46
152	15.49	30.62	4.56	14.74	5.73	5.15
153	29.04	27.79	24.61	17.66	3.43	4.69
154	7.43	14.28	4.40	8.87	4.68	6.52
155	19.59	39.22	9.08	18.04	5.97	8.63
160	59.60	22.02	41.91	15.67	8.84	16.97
171	7.11	13.11	4.85	8.97	3.32	4.46
172	17.69	18.52	12.74	12.49	3.27	5.49
173	6.46	5.57	5.71	3.59	2.39	5.64
181	4.91	12.39	4.42	9.29	3.37	4.81
182	8.42	30.57	6.99	21.52	6.79	4.14
191	8.59	28.86	5.45	19.83	3.38	5.92
192	19.62	12.73	15.44	8.59	3.16	6.02
201	4.63	5.48	5.42	6.98	1.79	1.68
202	7.77	23.99	5.90	16.16	2.72	4.31
210	17.06	23.35	8.86	12.93	4.24	5.37
221	1.47	18.49	0.42	7.04	6.83	5.85
222	5.40	13.57	2.95	6.57	4.23	5.27
223	3.90	0.00	1.09	0.00	9.50	
231	7.71	23.91	2.32	8.90	5.48	5.20
232	16.87	43.01	3.14	9.34	8.28	10.43
241+233	15.53	34.15	4.61	10.92	6.38	8.83
242	13.11	27.61	5.27	11.28	6.41	7.37
243	7.39	15.85	2.27	5.40	6.48	8.50
251	5.42	32.07	2.50	15.41	4.57	7.52
252	13.09	27.59	7.80	15.39	4.13	5.85
261	14.78	36.76	7.22	18.24	5.36	7.17
269	27.30	50.42	13.67	26.69	5.31	7.74
271	16.88	35.13	7.94	14.49	3.85	6.74

272	15.04	40.12	5.30	12.92	5.18	8.89
273	22.17	31.15	11.90	17.45	4.43	4.67
281	25.03	35.95	8.84	16.61	7.35	6.58
289	17.98	31.28	9.02	16.62	4.53	6.55
291+300	9.25	22.77	3.67	7.40	5.10	7.98
292	6.35	21.64	2.31	8.10	5.49	8.06
293	7.75	21.41	24.75	7.90	0.66	9.04
311	4.15	24.29	0.85	9.20	11.59	6.60
312+313	10.79	38.64	3.79	16.21	6.18	8.64
314	14.99	31.42	7.67	15.37	4.53	6.80
315	8.30	39.93	3.32	22.10	5.82	6.39
319	10.99	26.46	3.96	12.23	5.42	7.01
321	4.86	19.27	1.25	6.68	8.03	8.92
322	7.53	28.01	2.04	7.71	5.82	11.39
323	6.54	35.57	2.00	10.76	8.78	17.33
331+333	3.58	18.16	1.15	7.36	7.07	6.25
332	1.76	3.02	0.70	1.47	5.75	6.87
341	1.49	20.33	0.41	5.49	5.88	9.12
342	27.53	36.21	18.64	14.78	4.41	9.67
343	10.10	36.59	3.95	17.26	5.99	7.05
351	18.86	60.77	10.28	29.88	4.44	5.50
352	6.87	29.39	3.09	12.33	4.55	8.15
353	0.00	19.32	0.00	16.97		1.98
359	8.53	36.82	4.01	17.14	4.59	7.80
361	8.47	25.10	3.16	12.25	7.67	7.78
369	13.51	15.08	10.03	11.06	2.80	4.29
371+372	0.14	32.59	0.03	22.58	7.86	3.96

Source: Author's Computation Annual Survey of Industries

There is a high likelihood that greater dependence on contractual employment reduces wage share. Contract workers need not be paid bonus, provident fund payment, etc. The data above suggests that the wage rates of contract workers are lower than those of permanent workers. Also, contract workers provide firms with greater flexibility in hiring and firing of workers. In effect, increasing contract workers' share in total workers would reduce the per worker costs for the firm.

Abraham and Sasikumar (2017) analyse man-days worked for permanent employees and contract workers. They find that contract workers are being substituted for permanent employees, also for workers the number of workdays have risen. The first one reduces the fixed costs of

labour, and the second one enhances total output without the incurrence of additional labour costs. Moreover, it is the permanent workers' days of work that rise while for the temporary workers the increase is much lower, indicating that employers do rationalize labour use between permanent workers and temporary workers by increasing the days of work of permanent workers and increasing the number of temporary workers. Employers thus seem to see permanent workers' time and temporary workers as substitutes.

The informal sector is the one where workers work at abysmally low remuneration with no job security, written contract, benefits, etc. Not just the informal workers, but the presence of informal firms can have repercussions for the wage share. Goldar and Aggarwal (2012) state that growing informal employment in the manufacturing sector is definitely a cause of concern, however, rising subcontracting arrangements along with a rise in contract and temporary workers has led to informalization of the organized manufacturing sector itself which is equally worrisome. As per the 67th survey round on unorganized manufacturing sector, the employment in the unorganized manufacturing sector is 34.8 million.

Table 2-13 Annual growth rate of workers (2004-05 to 2011-12)

Workers	Without contract	With contract
Regular	4.1	0.7
Casual	0.8	-1.2
All employees	2.8	0.3

Source: NSSO, Various Rounds on Employment-Unemployment

Informal regular workers (without contract) have grown at a rate of 4.1 % during the period 2004-05 to 2011-12. Srivastava (2016) In the organized manufacturing sector as a whole, the formal workers have grown at 1.5% annually during the same period while the rate of growth of informal workers is 6.5%.

A rise in the number of workers in non-standard forms of employment makes them vulnerable to exploitation; there is no stability of tenure and no guarantee of better standards of living. For the sector, this implies rising wage inequality and bigger profits.

2.2.5 Union Labour Strength

The actual distribution of increased productivity depends on the relative bargaining strength of the two claimants. Das et al. (2015) discuss how decline in the union labour strength could have led to a fall in the wage share.The deterioration in the bargaining status of trade unions, picked up pace around the 1990s. Important indicators like: the number of man-days lost due to industrial disputes as a proportion of man-days worked, union density, strikes and lockouts have all reduced in number. This indicates that trade unions have been losing strength[18].

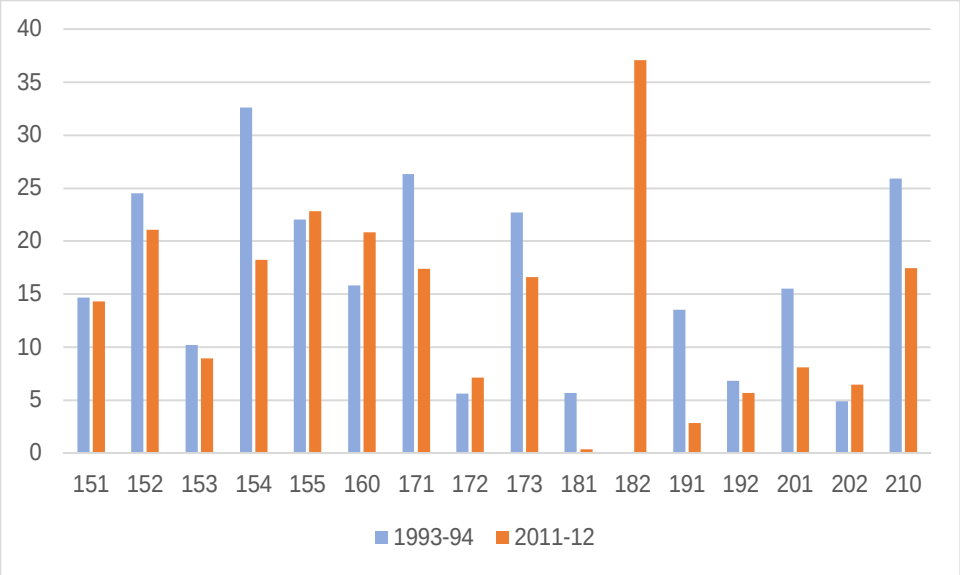
As per the data in the Employment-unemployment round, NSSO, the union density was 18.78% in 1993-94. This has declined to 5.47% in the year 2011-12. The values have been computed as per the usual principal status of employment.

Following is the information on union density at the three-digit level.

Figure 2-15 Union Density (%)

(a)

[18] The important indicators of union strength show a downfall, starting in the 1980s and accelerating in the 1990s. There is no evidence of deterioration in industrial relations as captured by the absence of a strong trend in man-days lost due to industrial disputes as a proportion of man-days worked over the whole of the 1980s. Second, union density declined from 45 percent in the late 1970s to about 30 percent in the late 1980s, which further declined in the 1990s. Third, the proportion of man-days lost due to strike started to fall in the 1980s, and the decline accelerated sharply in the 1990s (Nagaraj, 1994; Dutt, 2003).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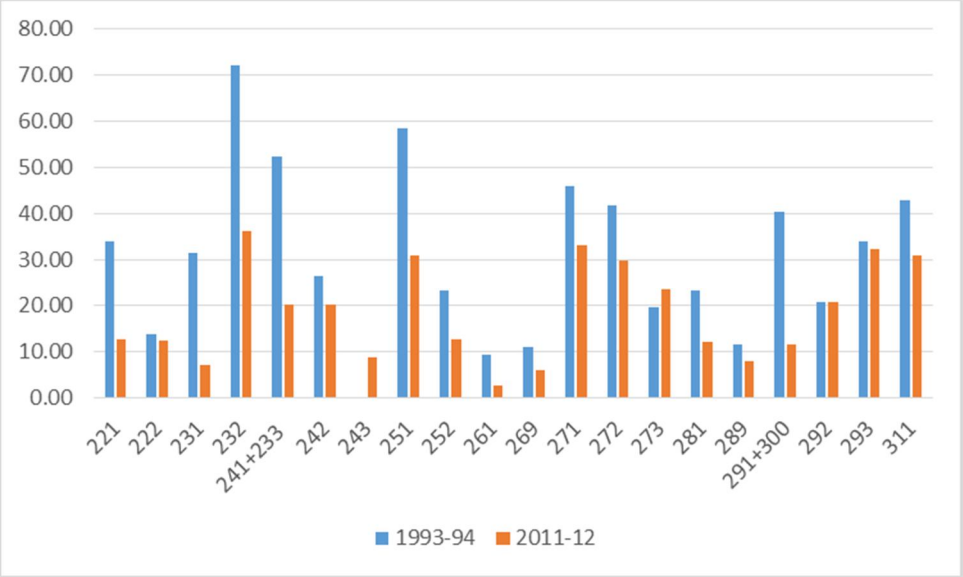
1993-94
2011-12

(b)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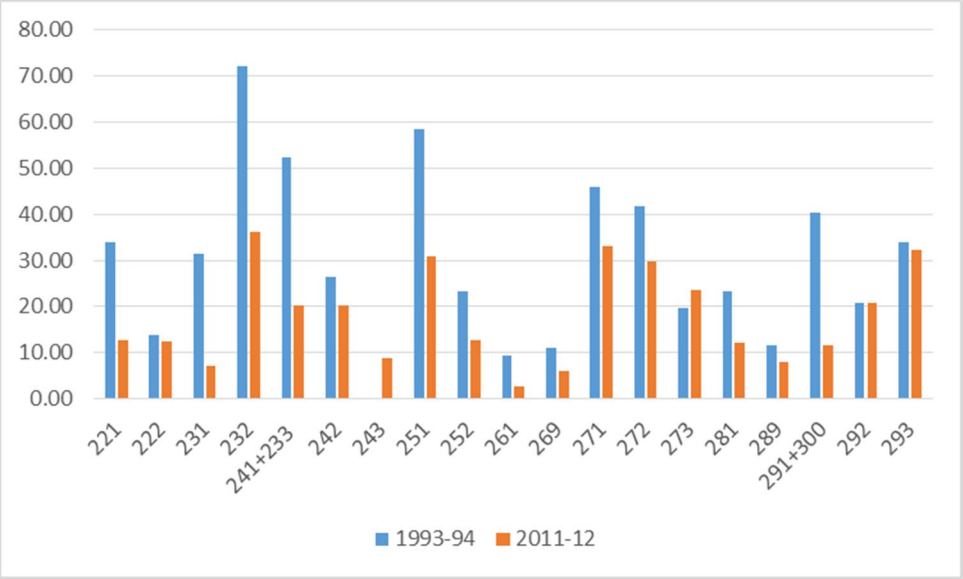
1993-94
2011-12

(c)



Source: Author's Computation NSSO, Employment-Unemployment Survey 50th, and 68th round

Table 2-11 shows how working-class strength has gone down. The share of mandays lost due to strikes and lockouts in total mandays worked has gone down.

Table 2-14 Strikes and Lockouts in the Manufacturing Sector

year	No. of Disputes			No. of Workers Involved			Share of Mandays lost in total mandays worked		
	Strikes	Lockouts	Total	Strikes	Lockouts	Total	Strikes	Lockouts	Total
1991	1278	532	1810	872482	469540	1342022	0.06	0.07	0.14
1992	1011	703	1714	767484	484741	1252225	0.08	0.08	0.16
1993	914	479	1393	672024	281843	953867	0.03	0.07	0.10
1994	808	393	1201	626326	220103	846429	0.03	0.07	0.10
1995	732	334	1066	682595	307100	989695	0.03	0.05	0.08
1996	763	403	1166	608673	330631	939304	0.03	0.05	0.08
1997	793	512	1305	637480	393787	981267	0.03	0.05	0.07

1998	665	432	1097	800778	488145	1288923			
1999	540	387	927	1099240	211455	1310695			
2000	426	345	771	1044237	374062	1418299	0.06	0.09	0.15
2001	372	302	674	488596	199182	687778	0.03	0.10	0.13
2002	295	284	579	900386	179048	1079434	0.05	0.09	0.15
2003	255	297	552	1010976	804969	1815945	0.02	0.14	0.16
2004	236	241	477	1903054	169167	2072221	0.03	0.10	0.13
2005	227	229	456	2722784	190817	2913601	0.05	0.09	0.15
2006	243	187	477	1903054	169167	2072221	0.02	0.09	0.11
2007	210	179	389	606168	118406	724574	0.06	0.05	0.11
2008	240	181	421	1513620	65678	1579298	0.03	0.04	0.07
2009	167	178	345	1793387	73817	1867204	0.03	0.04	0.07
2010	199	172	371	989533	84940	1074473	0.05	0.04	0.08
2011	179	191	370	644626	90137	734763	0.02	0.03	0.05
2012	133	185	318	1221056	86398	1307454	0.01	0.03	0.04

Source: Report on absenteeism, labour turnover, employment and labour cost

Table 2-12 below gives compares the share of mandays lost due to industrial disputes. A fall in this share for a majority of industries, reflects a deterioration of labour bargaining power.

Table 2-15 Mandays lost (%) due to industrial disputes

Industry	1994	2012	Industry	1994	2012
151	0.32	0.03	272	1.89	0.41

152	0.04	-	273	-	0.00
153	0.05	0.03	281	1.37	0.11
154	0.53	0.09	289	3.85	0.06
155	0.61	0.12	291+300	1.46	0.09
160	0.04	0.01	292	0.62	0.03
171	3.73	1.84	293	1.02	-
172	8.30	0.19	311	0.62	0.07
173	0.28	-	312	0.00	0.00
181	0.22	0.06	313	3.87	0.00
182	-	-	314	0.20	-
191	0.24	-	315	7.04	-
192	0.32	0.13	319	0.22	0.03
201	0.00	3.18	321	0.02	0.12
202	0.53	0.74	322	-	-
210	0.91	0.20	323	-	0.30
221	0.44	0.61	331+333	2.76	2.08
222	0.22	0.28	332	0.06	-
223	-	-	341	7.31	0.15
231	2.73	0.35	343	0.00	0.02
232	0.80	0.22	351	0.03	0.01

241	0.36	0.01	352	0.07	-
242	0.69	0.36	353	-	1.09
243	-	-	359	0.17	0.02
251	0.74	0.20	361	0.00	0.03
252	0.26	0.25	369	1.18	0.59
261	3.49	0.07	371+372	-	0.08
269	0.49	0.02			
271	0.43	0.21			

Source: Report on absenteeism, labour turnover, employment and labour cost

Declining labour power and deteriorating status of trade unions is an evidence of worsening bargaining positon of the working class, which allows the capitalists to grab a bigger share.

2.2.6 Labour laws and employment programmes

Labour laws have been blamed for the labour market not being in equilibrium. It has been considered that India's labour laws are too rigid and have put a halt to the development process in India. They are considered as the reason for deterring private and foreign investment along with the generation of formal employment.

Labour laws define the rights and obligations of the trade unions, workers and employers. The laws ecompass a variety of areas. These include; health and safety standards at the workplace, registration of trade unions and their powers. The framework duly describes unfair labour practices, employment standards, working hours, leaves, minimum wage, recruitment as well as laying off procedures.

The framework of labour laws in India is quite complex. The laws essentially protect, the formal workers. While on paper, pro-worker laws exist for informal workers as well, implementation of laws is fraught with hurdles. The biggest drawback is that informal workers are not aware of

their rights and legislative systems available for them. Also, since unorganised sector largely stays outside the ambit of laws and regulations, hence enforcement of labour laws on this sector is difficult. Unfortunately, the informal sector accounts for a large fraction of workforce. Apart from these problems, the laws may vary across states and jurisdictions.

India has a minimum wage setting system to ensure wage security of the workers, minimum wage is set in accordance with the subsistence needs of the workers. The minimum wages are usually set in the public sector and these in turn guide the wage policies in the private sector.

While the minimum wages apply to the workers in the public sector, presence of unions in the organized private sector also assures that the wages the workers get, do not fall below the stipulated minimum wage, the minimum wages are ineffective in the case of informal workers. Also, the literature highlights that the policy suffers from poor fixation norms, inefficient implementation and enforcement as well disparity in coverage.

The Minimum Wages Act of 1948 does not discriminate between workers in the organized or formal or unorganized or informal sector; it also does not discriminate between permanent/temporary and casual/regular workers. In that sense, it has the widest reach. But in actual practice, this reach has been limited by the condition that it is applicable to only those employments which the appropriate government approves. Originally, the Act was made applicable to 25 employments including agriculture, in Central and State schedules. As per the provisions in the Act, appropriate governments can add new employments to the schedule and revise the wages. As of 2013, there are 45 scheduled employments in the Central, 1466 in the States and 188 in Union Territories There is a large variation in minimum wage rates for the same employment/occupation across states and this is not due to the differences in cost of living. For example, minimum wages for agricultural labourers as on 31.12.2011 varied between Rs 80 in Arunachal Pradesh and Rs 92 in Odisha to Rs 170 in Mizoram and 178 in Haryana. In 2013, the revised minimum wages for agriculture varied from Rs.80 in Arunachal Pradesh, Rs.126 in Odisha to Rs.269 in Karnataka (Papola & Kannan, 2017).

Table 2-16 Percentage of casual workers in non-agricultural sector receiving less than the National Minimum Wage (Rural)

National Minimum Wage (INR 122.08) (2011-12) Rural						
Sl.no		Male		Female		Total
1	Delhi	0	Mizoram	0	Sikkim	3.9
2	Kerala	1.3	J& K	2.4	Kerala	5.6
3	Sikkim	1.6	Sikkim	11.7	Uttaranchal	7.6
4	Punjab	6.2	Bihar	19.9	Punjab	8.0
5	Uttaranchal	6.7	Kerala	24.0	Delhi	8.7
6	Arunachal	10.0	Arunachal	24.5	J& K	11.7
7	Meghalaya	11.0	Haryana	28.1	Arunachal	12.3
8	Haryana	11.6	Rajasthan	31.6	Haryana	12.9
9	J& K	12.2	Pondicherry	32.1	Meghalaya	13.4
10	Andhra Pradesh	13.7	Manipur	33.4	Karnataka	20.4
11	Karnataka	14.1	Meghalaya	37.8	Rajasthan	20.6
12	HP	14.6	Andhra Pradesh	41.4	Andhra Pradesh	20.8
13	Tamil Nadu	15.9	Punjab	45.0	HP	20.9
14	Rajasthan	17.9	Madhya Pradesh	51.7	Pondicherry	25.4
15	Goa	19.3	Odisha	54.8	Tripura	25.7
16	Tripura	20.2	HP	57.7	Manipur	26.6
17	Manipur	22.8	Uttaranchal	59.2	Nagaland	27.5

18	Pondicherry	22.9	Maharashtra	59.8	Bihar	29.0
19	Assam	26.2	Tripura	60.5	Assam	29.2
20	Maharashtra	26.6	Assam	60.9	Mizoram	29.4
21	Nagaland	27.5	Karnataka	62.0	Tamil Nadu	32.5
22	Bihar	29.1	Goa	64.3	Maharashtra	33.0
23	Jharkhand	34.3	Tamil Nadu	65.4	Jharkhand	36.1
24	Mizoram	36.4	West Bengal	70.7	Uttar Pradesh	39.1
25	Uttar Pradesh	37.3	Jharkhand	71.7	Goa	41.4
26	West Bengal	41.2	Gujarat	72.6	West Bengal	43.3
27	Odisha	42.1	Uttar Pradesh	80.4	Odisha	44.3
28	Gujarat	43.1	Chhattisgarh	93.9	Gujarat	47.0
29	Madhya Pradesh	52.2	Delhi	100	Madhya Pradesh	52.1
30	Chhattisgarh	71.0	Nagaland		Chhattisgarh	77.4
	All India	28.2	All India	52.6	All India	31.4

Source: Papola & Kannan (2017)

Table 2-17 Percentage of casual workers in non-agricultural sector less than the National Minimum Wage (Urban)

National Minimum Wage (INR 122.08) (2011-12) Urban						
Sl.no		Male		Female		Total
1	Sikkim	0	Pondicherry	2.6	Sikkim	0
2	Nagaland	0	Himachal Pradesh	4.8	Nagaland	0
3	Mizoram	0	Delhi	6.3	Mizoram	1.0

4	Delhi	3.5	Jammu & Kashmir	9.4	Delhi	3.6
5	Meghalaya	4.7	Mizoram	12.5	Jammu & Kashmir	7.0
6	Kerala	4.7	Manipur	25.4	Pondicherry	7.3
7	Jammu & Kashmir	6.7	Bihar	34.2	Kerala	10.5
8	Punjab	7.5	Haryana	37.3	Meghalaya	12.1
9	Pondicherry	8.1	Andhra Pradesh	39.8	Punjab	12.5
10	Uttaranchal	9.0	Kerala	40.4	Uttaranchal	13.4
11	Tripura	9.0	Tamil Nadu	49.8	Haryana	14.7
12	Tamil Nadu	12.3	Rajasthan	54.5	Tripura	15.3
13	Haryana	13.5	Meghalaya	58.6	Manipur	16.8
14	Andhra Pradesh	13.8	Goa	61.8	Himachal Pradesh	17.6
15	Manipur	16.3	Uttar Pradesh	65.3	Tamil Nadu	18.6
16	Arunachal Pradesh	16.8	Sikkim	65.7	Andhra Pradesh	19.0
17	Himachal Pradesh	18.5	Karnataka	66.1	Arunachal Pradesh	24.7
18	Rajasthan	21.1	Madhya Pradesh	68.8	Rajasthan	25.4
19	Karnataka	23.6	Odisha	69.8	Karnataka	31.0
20	Maharashtra	25.7	Maharashtra	71.0	Maharashtra	34.0
21	Jharkhand	26.5	Punjab	78.2	Jharkhand	34.3
22	Odisha	32.1	Tripura	79.9	Bihar	34.8
23	Gujarat	33.1	Gujarat	81.6	Odisha	37.7
24	Bihar	34.8	West Bengal	83.0	Uttar Pradesh	43.0
25	Assam	37.7	Jharkhand	87.4	Gujarat	43.5
26	Uttar Pradesh	41.6	Assam	90.0	Assam	43.6

27	Goa	44.3	Chattisgarh	91.2	Goa	46
28	Madhya Pradesh	44.7	Uttaranchal	93.1	Madhya Pradesh	46.5
29	West Bengal	48.4	Arunachal Pradesh	NA	West Bengal	53
30	Chattisgarh	57.9	Nagaland	NA	Chattisgarh	67.9
	All India	27.4	All India	62.3	All India	32.3

Source: Papola & Kannan (2017)

Still a large percentage of workers receive a wage less than the national minimum.

It is often said that the pro-worker regulations hurt, workers the most. The stringent regulations are believed to hamper business investment and profits, therefore destroying jobs. Storm (2019) critically examines the conceptual and econometric framework used in the QJE article of Besley and Burgess (2004). Besley & Burgess, on the basis of econometric evidence, argue that pro-worker regulation is associated with lower output, employment, investment and productivity in India's manufacturing sector and is believed to have influenced Indian Labour Law framework immensely. Storm (2019) highlights the flaws in the conceptual framework adopted by Besley and Burgess (2004) as well as the econometric measurements. Contrary to the findings of Besley and Burgess (2004), Storm (2019) finds a positive impact of labor regulation on manufacturing output, when state-specific time trends are included. Roychowdhury (2019) examines the insider-outsider theory of employment and unemployment. The labour maret flexibility argument is based on real wage rigidity explained by labour turnover costs. The shortcomings of the I-O theory in explaining the existence of involuntary unemployment and the dependence of its policy prescription on the operation of Say's law makes it a weak theoretical foundation for the labour market flexibility argument.

Given the employment situation in the country, various employment generation programs have been announced in the past. There have been programs aimed at generating employment and ensuring minimum livelihood in the rural areas. At the same time, schemes at the level of micro and small enterprises have also been formulated with a special focus on boosting manufacturing employment. It is believed that these programs could play a significant role not only in a sense, that there will be more jobs but also in ensuring a secure livelihood for the people at the bottom-

most layer, i.e., the rural workers. Unfortunately, these programs have failed to yield desired results have not been achieved. Make in India is a campaign, with a goal to transform India into a global manufacturing hub and generate enough employment. While "Make in India" has invited a lot of support, there are economists who advise that sticking to the service sector and generating jobs there is a better move, Green (2014). It is the high-quality jobs that India needs to generate. Amirapu and Subramaniam (2014) emphasize that it is the formal manufacturing sector which is characterized by high productivity and dynamism, not the informal sector. The feasibility of such an approach is under question, given the fact that India is on the road to premature deindustrialization[19].

There are several other programs and schemes on paper. Startup India initiative aims to build a strong eco-system for nurturing innovation and new startups. Ramifications have been made in the FDI policy regime to ensure that India remains attractive and an investor-friendly destination. Government has put in place a comprehensive FDI policy regime, bringing the more activities under the automatic route, raising sectoral investment limits, and easing conditionalities. Focus is on strengthening existing infrastructure in roads, railways, ports, and waterways across the country. Several measures have been undertaken to ease the business environment[20]. The Ministry of MSME undertakes several initiatives to promote output and employment. A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship is implemented to provide support to MSMEs. There are schemes to improve access to credit. Support for self-employment

[19] Amirapu and Subramanian (2014) highlight the disparity in the performance of states on the manufacturing front. They state that Gujarat, Maharashtra and Tamil Nadu are the few states which could achieve a high share of manufacturing sector in the GDP. In all the other states, manufacturing is now on a decline, in fact, even in the states that could not even industrialize effectively.

20 Liberalization of industrial licensing with a large number of components of Defence Products' list excluded from its purview, various Central Government and State Government services are being integrated on a single window to smoothen the process of obtaining environment and forest clearances ,a single window for import clearances called Single Window Interface for Facilitating Trade has been set up. An Investor Facilitation Cell has been created under the National Investment Promotion and Facilitation Agency 'Invest India' to guide, assist and handhold investors during the entire life-cycle of business. The State Governments are also being included in these efforts.

is provided under the Prime Minister's Employment Generation Programme. The National Manufacturing Competitiveness Programme aims to promote efficient manufacturing, technology up-gradation, and quality certification for MSMEs.

Measures are ongoing to channelize the efforts and provide impetus to skill-development to improve the employability of workers in India. The Skill India initiative and its various components such as 'Pradhan Mantri Kaushal Vikas Yojana (PMKVY)' and 'Skill Loan Scheme' synergize the existing efforts in Make in India by aligning skills of the individuals to suit the industrial requirements. They also aim to tap India's comparative advantage in labor-intensive sectors such as textiles and leather. Sectoral schemes like Integrated textile parks, for handloom, silk and jute sectors in the Ministry of Textiles; leather clusters, skill upgradation for people in leather and footwear sector; scheme for mega food parks, etc. aim to increase employment generation

Despite all these schemes and programmes, unemployment has increased from 3.8% (2011-12) to 5% (2015-16). Following figures show that the recent employment generation campaigns have failed to generate jobs.

Table 2-18 Unemployment Rate in India (UPSS)

Year	Rural	Urban	Total
2011-12	3.4	5	3.8
2015-16	5.1	4.9	5

Source:EUS, Labour Bureau and Economic Survey 2015-16

State of working India (2018) highlights that as per the labour bureau employment unemployment survey 2015-16, that unemployment is high among the educated. The educated unemployed also commonly state skill mismatch as the reason for their unemployment. Therefore, the problem is not just job generation but also unavailability of quality jobs, with desirable characteristics.

2.9 Econometric Analysis-factors behind the drop in wage share

This section presents an econometric analysis exploring the factors behind a fall in wage share. A panel of 55 three-digit manufacturing industries for the period 2000 – 2013 is constructed. The

dependent variable is the wage share. A list of explanatory variables are used: Price-cost margin, share of contract workers in total persons engaged, real capital to labour ratio to capture the capital intensity, ICT investment (deflated), skill premium, union density, share of materials consumed in total inputs and wage per worker.

The price-cost margin is expected to be negatively related to the wage share and so is share of contract workers. Greater capital intensity and ICT investment indicate a substitution away from labour and are expected to be negatively related to the wage share. A higher skill premium indicates lower wages to the workers vis-à-vis other employees at the upper tiers which points again to a negative relationship. Any rise in wage per worker would lead to a rise in wage share. Union density has been used as a dummy, with value 1 for the industries where union density is high (value higher than the median) and 0 otherwise. Higher union density is expected to boost the wage share.

Table 2-19 Regressiom for wage share

	(Fixed Effects) Wage_share	(Random Effects) Wage_share
Contract_workers	-0.170***	-0.076*
	(0.049)	(0.041)
capital_intensity	-0.009	-0.013***
	(0.006)	(0.004)
ICT_investment	-0.002	-0.008*
	(0.005)	(0.004)
Skill_Premium	-0.453**	-0.686***
	(0.203)	(0.193)
Wage_per_worker	0.003	0.001
	(0.003)	(0.002)
Union_density		-1.055
		(1.430)
Material_consumed	0.076	0.038
	(0.061)	(0.052)
Price_cost_margin	0.003	-0.002
	(0.003)	(0.002)

Constant	15.876***	20.894***
	(5.409)	(4.312)
N	273	273
r2 within	0.155	0.113
between	0.035	0.372
overall	0.066	0.270

Wage Share: Dependent Variable
Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The regression results for both fixed and random effects are reported. Random effects assumes that the ui are uncorrelated with the X variables but vary (randomly) across individuals. So when there is a reason to believe that individual entity effects are important for the analysis, randome effect model can be used. As per the random effect model: share of contract workers, capital intensity, ICT investment and skill premium are significant in explaining the variation in the wage share. The coefficient of these explanatory variables also carry expected signs. The hausman test for these two models however suggests that fixed effect is a better model for the data under analysis. As per the fixed effect model only the share of contract workers and skill premium are statistically significant and hold expected signs. The hausman test is shown in the appendix in table 2-3A.

The analysis confirms that growing contractualization and rising wage inequality in terms of a higher skill premium have contributed to the drop in wage share. Rising capital intensity and ict investment may also be reckoned as important factors behind the compression in wage share.

Conclusion

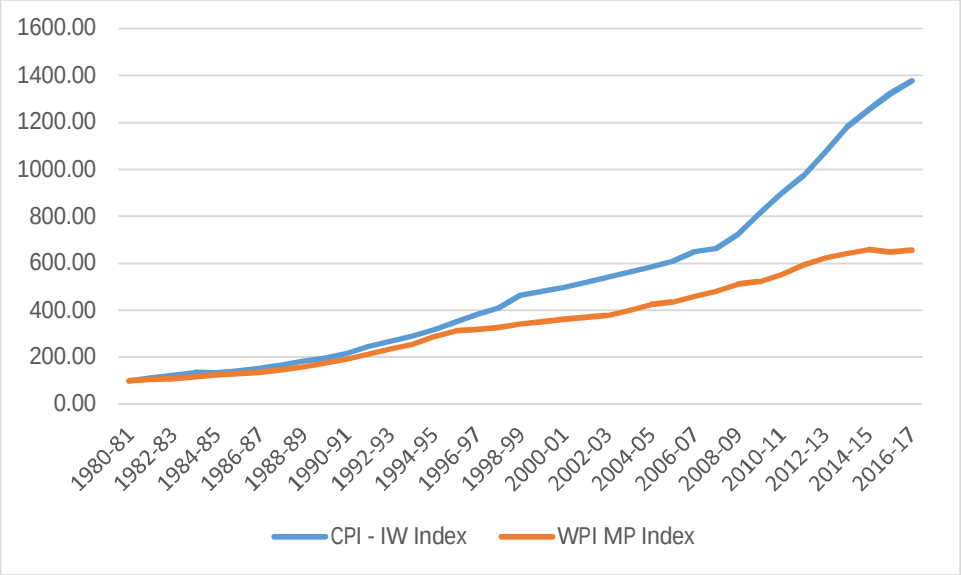
The analysis of the Indian manufacturing sector confirms a general trend of spiraling profit incomes and plummeting wage shares. A multitude of factors are responsible for these trends in varying degrees. Technological changes and innovation have played a significant role in pulling the labor share down. The rise in the other input costs also becomes a reason for a cut in the wage share. Mark-ups have risen as well, transferring the share of workers to the profit earning class. Contractualization of workforce and informalization of work have also played a prominent

role in keeping the growth benefits from the workers. Weak labour institutions have also added to the plight. The efforts of the employment generation programs and other initiatives is to generate employment, such that even if the labour productivity grows at a higher rate than the real wage and resultantly the product wage goes down, people at least get employment. However, if the labour force growth exceeds the growth in output net of growth in labour productivity, the unemployment will rise.

In the case of Indian manufacturing, the product wage for the workers has been falling and resultantly the wage share has been shrinking. At the same time, employment is not getting generated. These two problems have worsened the situation of the workers.

APPENDIX- A

Figure 2-16A Divergence in the CPI-IW & WPI-MP



Source: Author's computation, Reserve Bank of India

Table 2-1A Regression Results

(a)

```
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    resultsf     resultsr       Difference          S.E.
-------------+----------------------------------------------------------------
concentrat~o |    .3276967      .296619        .0310777        .0540285
contract_w~s |    .0054538    -.0094902         .014944        .0267125
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic
```

```
  chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          =        0.38
Prob>chi2 =      0.8252
```

(b)

	(Random Effects) markup
Concentration_ratio	0.282***
	(0.086)
Contract_workers	-0.023
	(0.094)
K_Intensive	13.343*
	(7.355)
Constant	-2.843
	(7.656)
N	132
R2 within	0.094
0verall	0.203

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2-2A Four Firm Concentration Ratio (%)

Industry	1994	2005	2012	Industry	1994	2005	2012	Industry	1994	2005	2012
151	20.93	34.44	38.34	251	65.34	64.53	64.52	331+333	64.83	63.16	56.17
152	52.19	51.34	66.52	252	22.29	21.81	19.79	341	93.95	79.27	67.82
153	38.71	32.76	43.53	261	58.42	42.88	73.05	342	55.23	32.42	27.92
154	25.17	16.81	23.35	269	34.69	35.38	34.95	343	24.98	15.92	17.17
155	51.41	38.31	61.14	271	62.20	43.39	36.56	352	85.68	67.68	56.16

160	96.58	93.13	91.69	272	47.91	69.82	64.95	359	70.61	79.90	88.57
171	15.27	13.33	4.12	273	23.33	33.83	30.69	369	62.91	48.55	41.62
172	37.27	26.97	33.08	281	80.79	83.29	83.88				
173	84.65	44.35	57.71	289	41.44	21.48	24.33				
181	55.81	43.38	24.68	291+300	26.01	30.62	30.65				
191	54.89	79.65	67.28	292	41.00	28.14	31.57				
192	56.64	50.76	51.58	293	51.84	71.00	66.65				
202	64.42	55.94	64.85	311	58.19	46.74	46.98				
210	38.45	29.39	24.62	312+313	34.99	44.44	46.76				
221	89.77	54.76	49.53	314	86.05	76.14	78.06				
222	0.00	96.59	90.65	315	93.14	75.64	84.77				
232	90.08	83.72	82.78	319	67.00	41.89	29.25				
241+233	34.18	39.90	30.08	321	66.19	40.92	32.96				
242	26.80	22.30	19.65	322	78.96	94.28	94.73				
243	38.65	51.91	39.77	323	91.01	98.42	98.79				

Source: Prowess

Table 2-3A Regression on wage share

```
                         ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
```

contract_w~s	-.1704726	-.0762856	-.094187	.0255694
capital_in~y	-.0088306	-.0133679	.0045372	.0045844
ICT_invest~t	-.0016122	-.0077164	.0061041	.001781
Skill_prem~m	-.452521	-.6861157	.2335947	.0619803
Wage_per_w~r	.0032908	.0011999	.0020909	.0022067
Materials_~d	.0762121	.0382563	.0379559	.0329863
Price_cost~n	.002824	-.0023609	.0051849	.0024407

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 59.15

Prob>chi2 = 0.0000

Chapter 3-The Divergence in Service Sector

3.1 Introduction

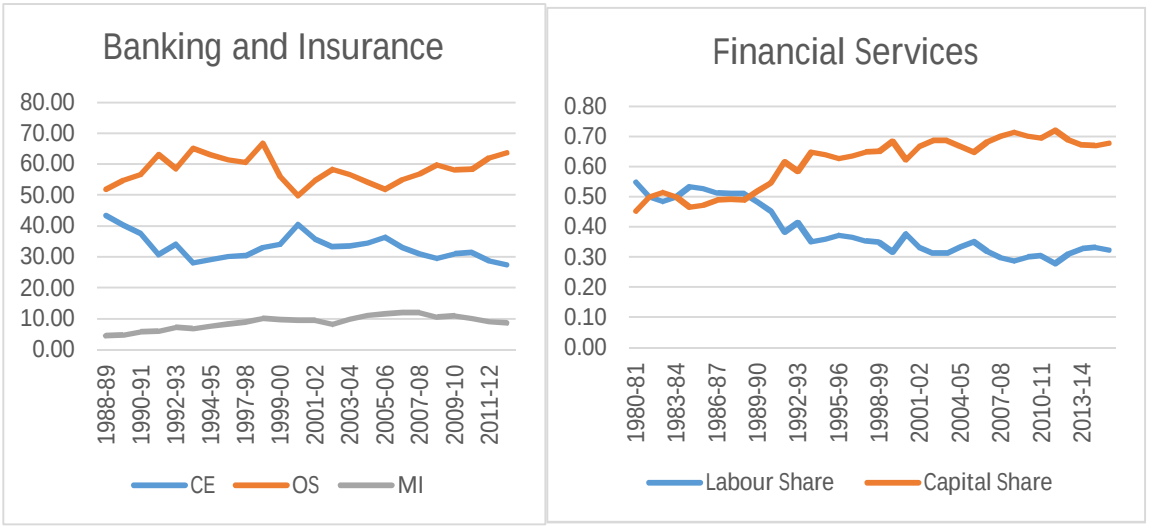
India's service sector has displayed a remarkable performance and has made a significant contribution to growth in the recent economic experience. India has established an enviable position in the global markets, owing to the export of services.

While a well-functioning, competent service sector is critical for good economic performance, reasonable employment generation capacity and fair return to labour is the key to ensure inclusive growth. It is a widely accepted fact that while the service sector in India has leapfrogged manufacturing sector in terms of growth, it has had limited success in generating employment and ensuring the quality of employment. The present status of the service sector points at the possibility that the ever rising drift between profit and wage share may not be limited solely to the manufacturing sector of the country.

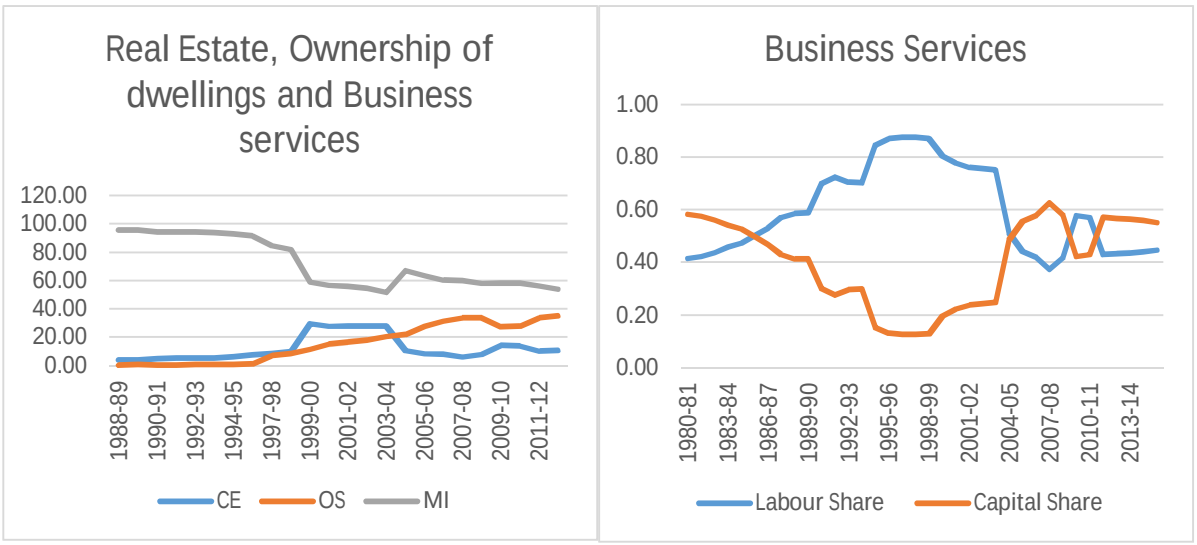
What follows is an exploration of the trends in factor incomes for the service sector. The charts below analyze the factor shares from two sources, National Accounts Statistics and India-KLEMS database. KLEMS is a database on capital (K), labour (L), energy (E), material (M) and services (S) at the two-digit industry level. Both National Accounts Statistics and KLEMS database have been used to draw inferences about the factor income movements. The trends in factor incomes are shown in the figures below.

Figure 3-17 Sectors where operating surplus is on a rise

(a)



(b)



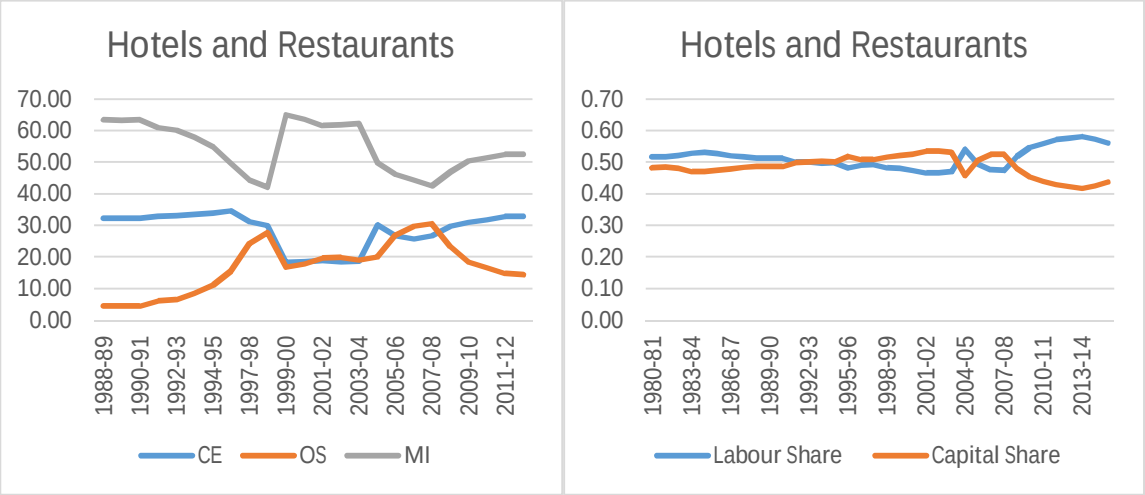
Source: National Accounts Statistics and KLEMS Database

For financial services like banking and insurance, the charts display that the profit share is spiraling unambiguously, at the expense of the labour income. The gap has been widening in

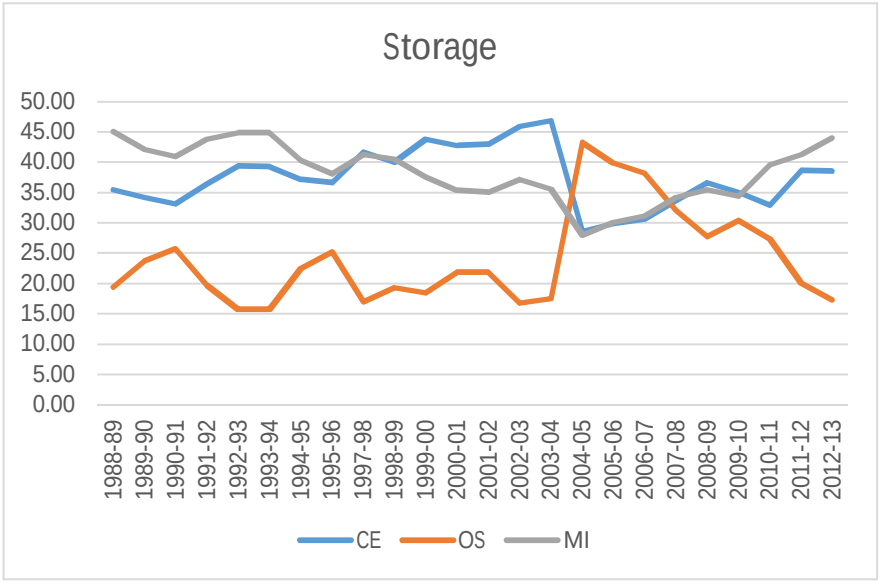
the recent years. The operating surplus has risen for real estate, ownership of dwellings and business services, while the compensation for employees and mixed income has fallen. The KLEMS database confirms a recent rise in the capital income.

Figure 3-18 Sectors where operating surplus is declining

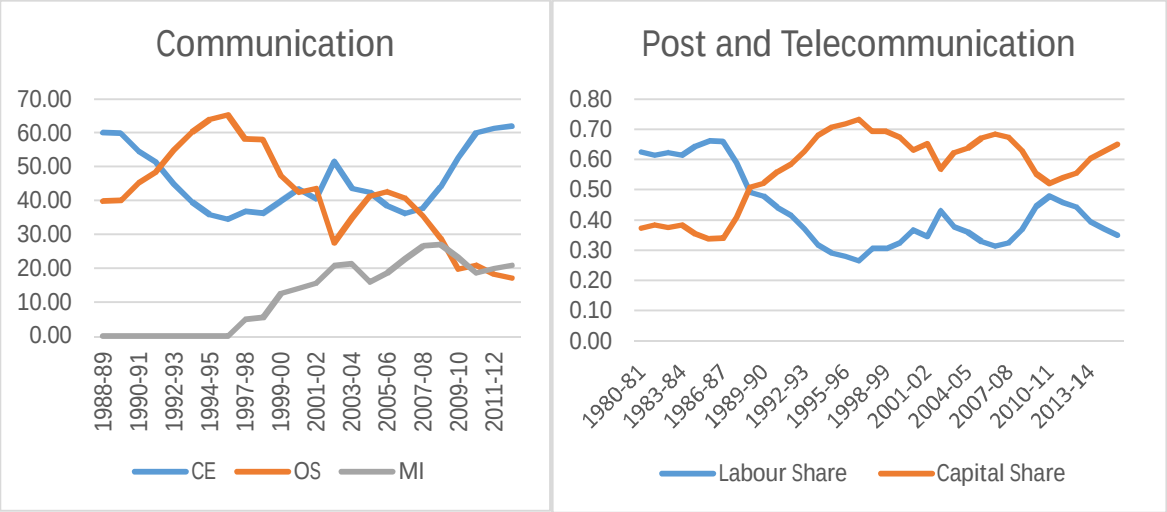
(a)



(b)



(d)



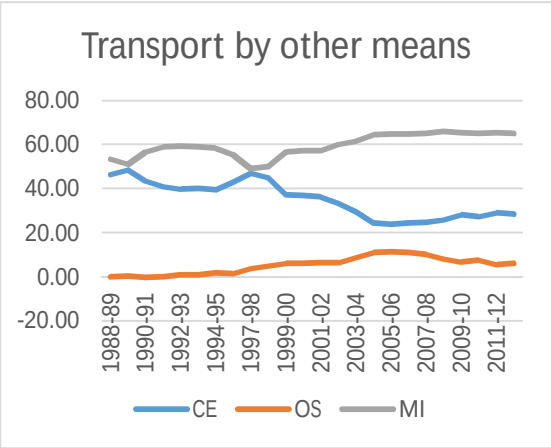
Source: National Accounts Statistics and KLEMS Database

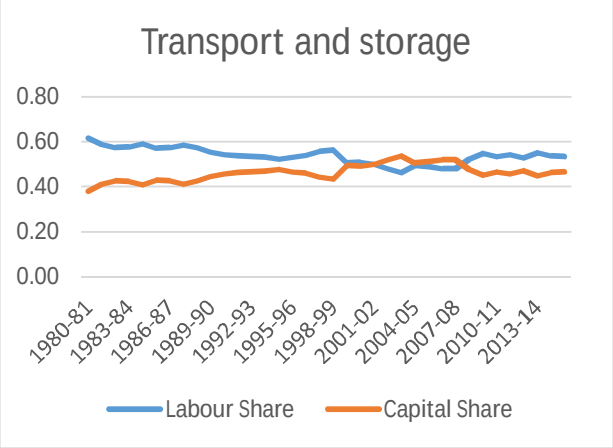
For hotels and restaurants, the operating surplus has risen; the same is reflected in a rising capital share for this sub-sector. However, for the recent years, the data shows that it is the labour component of income that is growing. For storage, operating surplus has remained low except for a sharp jump in 2003-04. KLEMS combines information for transport and storage, capital and labour share have moved in tandem with labour share superseding capital share most of the time.

Operating surplus in the case of communication, has declined with a few spurts in-between and the mixed income has increased alongside. KLEMS database suggests that capital income has risen drastically. It seems that for communication, the capital component in the mixed income category is high.

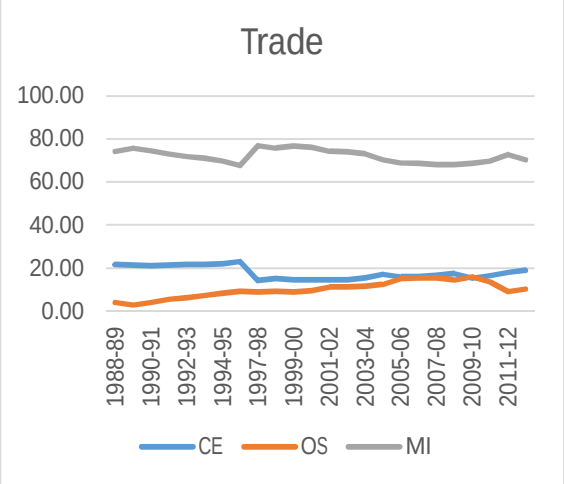
Figure 3-19 Sectors where operating surplus has not changed much

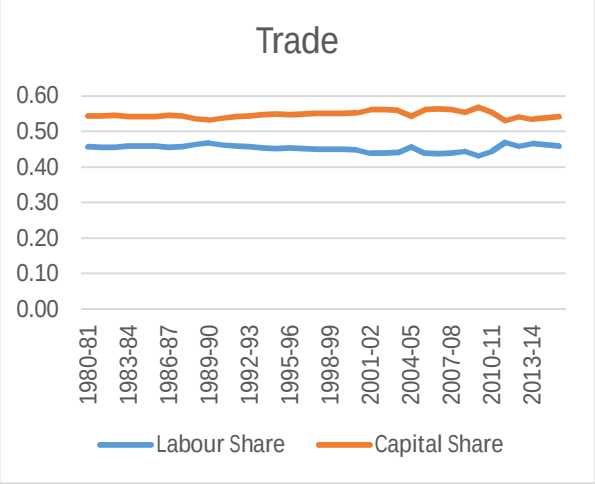
(a)


Transport by other means
80.00
60.00
40.00
20.00
0.00
-20.00
1988-89
1990-91
1992-93
1994-95
1997-98
1999-00
2001-02
2003-04
2005-06
2007-08
2009-10
2011-12
CE
OS
MI

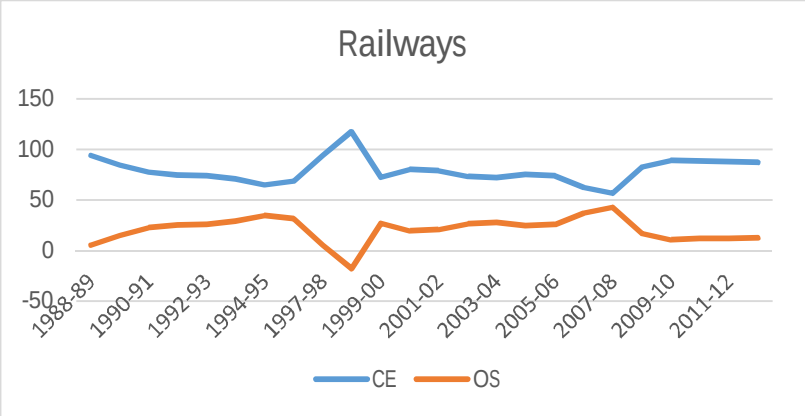

Transport and storage
0.80
0.60
0.40
0.20
0.00
1980-81
1983-84
1986-87
1989-90
1992-93
1995-96
1998-99
2001-02
2004-05
2007-08
2010-11
2013-14
Labour Share
Capital Share

(b)

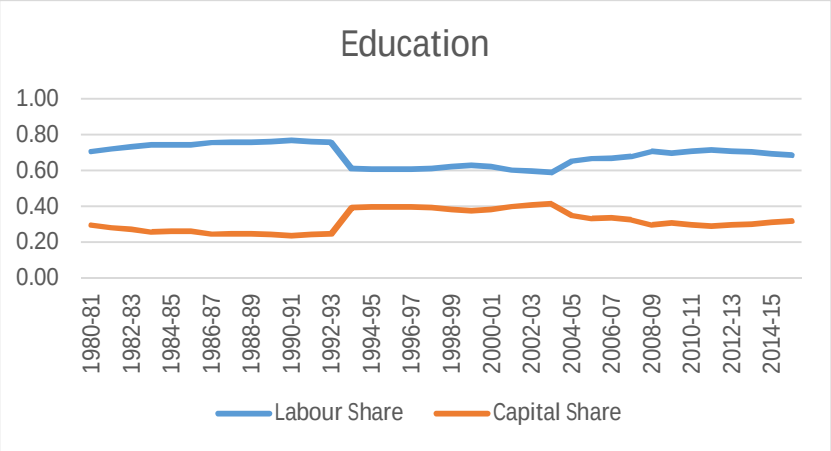

Trade
100.00
80.00
60.00
40.00
20.00
0.00
1988-89
1990-91
1992-93
1994-95
1997-98
1999-00
2001-02
2003-04
2005-06
2007-08
2009-10
2011-12
CE
OS
MI


Trade
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1980-81
1983-84
1986-87
1989-90
1992-93
1995-96
1998-99
2001-02
2004-05
2007-08
2010-11
2013-14
Labour Share
Capital Share

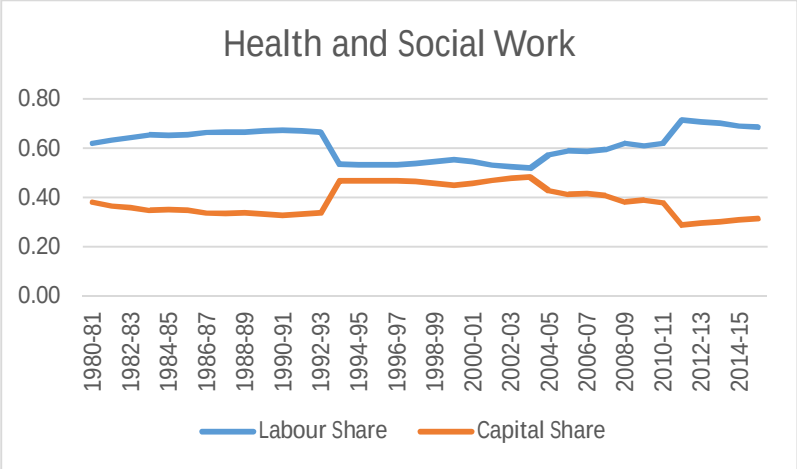
(c)


Railways
150
100
50
0
-50
1988-89
1990-91
1992-93
1994-95
1997-98
1999-00
2001-02
2003-04
2005-06
2007-08
2009-10
2011-12
CE
OS

(d)


Education
1.00
0.80
0.60
0.40
0.20
0.00
1980-81
1982-83
1984-85
1986-87
1988-89
1990-91
1992-93
1994-95
1996-97
1998-99
2000-01
2002-03
2004-05
2006-07
2008-09
2010-11
2012-13
2014-15
Labour Share
Capital Share

(e)



Source: National Accounts Statistics and KLEMS Database

As per national accounts statistics, income of the self-employed have risen for transport by other means and compensation to employees has fallen drastically. The operating surplus has shown a very small increase.

It is clear that, in the case of trade, both mixed income and compensation to employees have declined slightly to create room for a small rise in operating surplus. Data from KLEMS constant capital and labour share, however 2010-11 onwards, the gap between profit share and wage share has contracted. For railways, the compensation to employees is surpassing the profits, but there have been periods where operating surplus has seen a rise. There is no mixed income reported for this sector.

For subsectors like, Education, Health and Social Work, the labour share has remained above the capital share. But the gap between these shares contracted during the period 1992-93 to 2001-02.

The trends shared in figures 3-1, 3-2 & 3-3 above indicate that there are service sub-sectors experiencing a rise in the profit share recently and there are others that have experienced it in the past. The skewed income distribution is not restricted to manufacturing sector alone. This makes it imperative to assess the trends in service industries and explore the factors responsible for this divergence. Table 3-1, below shows industry wise average profits for periods 1991-00, 2001-10 & 2011-18.

Table 3-20 Average Profit before tax (Rs. Crore) and percentage change

Service Industry	Nic_code	1991-00	2001-10	2011-18	% change	% change
Construction of buildings carried out on own-account basis or on a fee or contract basis	41001	47.69	144.12	108.82	202.21	-24.49
Wholesale and retail trade; repair of motor vehicles and motorcycles	45000	77.44	57.20	107.76	-26.14	88.39
Wholesale trade, except of motor vehicles and motorcycles	46000	90.17	73.15	110.12	-18.87	50.53
Retail trade, except of motor vehicles and motorcycles	47000	73.75	84.03	46.47	13.94	-44.70
Land transport and transport via pipelines	49000	124.23	257.42	484.62	107.21	88.26
Water transport	50000	901.78	721.06	506.87	-20.04	-29.71
Air transport	51000	1574.19	230.89	656.72	-85.33	184.43
Warehousing and support activities for transportation	52000	648.27	610.94	753.18	-5.76	23.28
Courier activities	53200	54.57	105.28	23.39	92.93	-77.78
Short term accommodation activities	55100	132.66	102.68	96.47	-22.60	-6.05
Bars and Restaurants with bars	56301	50.96	21.42	-23.43	-57.97	-209.42
Motion picture, video and	59000	25.94	58.69	128.80	126.23	119.47

television programme production, Sound recording and music publishing activities						
Programming and broadcasting activities	60000	188.90	249.75	707.39	32.21	183.24
Telecommunications	61000	2103.04	2925.10	1978.61	39.09	-32.36
Computer programming, consultancy and related activities	62000	123.71	396.18	1249.03	220.24	215.27
Information service activities	63000	51.47	203.51	398.37	295.38	95.75
Financial service activities, except insurance and pension Funding	64000	746.82	632.75	1783.58	-15.27	181.88
Insurance, reinsurance and pension funding, except compulsory social security	65000	0.00	18.56	38.33		106.51
Other financial activities	66000	1816.85	662.87	990.57	-63.52	49.44
Real estate activities on a fee or contract basis	68200	0.00	3.11	73.40		2257.99
Professional , Scientific and Technical Activities	69000	0.00	-13.16	27.85		-311.69
Management consultancy activities	70200	41.51	48.30	98.38	16.35	103.69
Architectural and engineering activities and related technical consultancy	71100	26.10	72.39	137.68	177.35	90.19

Scientific research and development	72000	40.27	31.36	101.87	-22.13	224.86
Advertising and market research	73000	85.02	118.81	63.86	39.74	-46.25
Other professional, scientific and technical activities	74000	0.48	1.89	7.56	297.01	300.04
Veterinary activities	75000	0.00	0.00	1.14		
Rental and leasing activities	77000	52.33	34.23	87.87	-34.59	156.68
Employment activities	78000	4.06	12.89	58.09	217.42	350.65
Travel agency, tour operator and other reservation service activities	79000	83.91	67.78	39.81	-19.23	-41.26
Security and investigation activities	80000	28.75	45.17	99.39	57.12	120.05
Office administrative, office support and other business support activities	82000	91.81	48.22	152.21	-47.47	215.65
Public administration and defence; compulsory social security	84000	95.18	74.61	86.19	-21.61	15.51
Primary education	85000	25.98	23.30	55.64	-10.32	138.81
Human health activities	86000	44.00	49.86	121.15	13.32	142.95
Creative, arts and entertainment activities	90000	103.04	56.16	133.69	-45.50	138.07
Other amusement and recreation activities n.e.c.	93290	17.73	25.83	66.74	45.71	158.40

Activities of membership organizations	94000	14.09	14.42	45.31	2.34	214.21
Repair of other personal and household goods n.e.c.	95299	237.01	77.01	91.27	-67.51	18.52
Other personal service activities	96100	1.51	7.00	8.47	362.91	21.08

Source: Author's Computation, Prowess

Service sector in India is characterized by heterogeneity, naturally quality of employment, wages, type of contracts, human skill, technological advancement etc. vary across service-subsectors. Owing to this heterogeneity an array of potential reasons behind the widening gulf between factor shares may be listed.

3.2 Factors behind divergence:

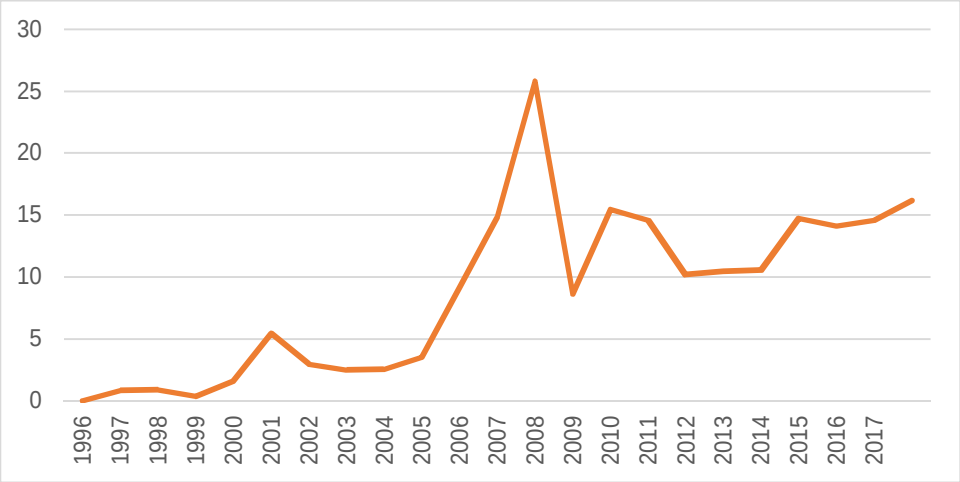
- Rent-thick and knowledge-based sectors
- Formal and informal employment
- Capital Intensity - Incorporation of technological advancement
- Skill Intensity - Educational barriers to entry for job seekers
- Declining corporate tax rates
- Dynamics of International factors

Out of the mentioned factors, informal employment, the difference in educational attainment/skills/training, technological advancement have implications for wage inequality among workers. The chapter presents an analysis of rent-thick and knowledge-based sectors and the concentration of profits in these sectors. Rising capital intensity, declining corporate tax rates may also boost the profit share. Degree of engagement of sectors in international trade could also influence distribution of factor incomes. Each of these factors are discussed in detail in the following sections.

3.2.1 Rent-Thick and Knowledge-based sectors

Walton & Gandhi (2012) discuss that the rise in the number of billionaires and their wealth has been a striking feature of India's growth story since 1990s. The surge in the billionaire wealth given the size of the Indian economy, existing levels of inequality as well as poverty among a large fraction of population raises serious concerns. Figure 3-4 below plots trends in the share of billionaire wealth to the GDP for India. The figure shows a consistent rise in the billionaire wealth, except for a sharp drop around the time of financial crisis. Walton & Gandhi (2012) in their analysis, explain that the billionaire wealth follows closely the trends in stock market and economic growth. Therefore, a crash is seen in the graph above, around the time of the global crisis.

Figure 3-20 Billionaire wealth to GDP (US$) ratio (India)



Source: Forbes

Data has been taken from the annual listing of billionaires by forbes. Forbes came up with its first listing in the year 1996 with only three Indians making it to the billionaire list: Kumar Birla, Lakshmi Mittal and Dhirubhai Ambani. In the year 2017 the list grew to a count of 100, Rana Kapoor was the last on the list with a wealth of $1.46 billion, implying that while the list stopped at 100 people there could be more Indians above the mark of $1 billion. One of the drawbacks of the forbes dataset on billionaires is that it only includes disclosed wealth of the billionaires which may be under-reported.

What is important, is to explore the sectoral source of wealth for Indian billionaires. Billionaires have been classified by the country of residence, non-resident billionaires have been excluded. Billionaires in India come from a variety of sectors, a broad categorization of sector is possible to understand the forces behind this surge in wealth. These sectors could be closely connected to state, which could explain the presence of "economic rents", resource-related where exclusive ownership promises high profits. The billionaires could also be coming from knowledge-based sectors, again in such sectors the exclusive right over the knowledge or technology developed could generate high profits.

The sectors have been classified as per the classification presented in Freund and Oliver (2016) with slight modification.

Table 3-21 Sector classification for billionaires

Broad Sector Category	Major Components	Industry Sub-categories
Resource-related	Energy, Solar and wind, mining, steel	Energy, Solar and wind, mining, metals
New	Computer technology, software, medical technology, pharmaceuticals	Computer technology, medical technology
Non-Tradable	Retail, entertainment, media, telecommunications, construction, restaurants and other service industries	Retail, restaurant, media, construction, telecom, entertainment
Financial	Banking, insurance, hedge funds, private equity, venture capital, investments, diversified wealth, real estate	Banking, Investment, Money management, venture capital, hedge funds, private equity/leveraged buyout, real estate
Tradable	Agriculture, consumer goods, shipping, manufacturing	Consumer goods, non-consumer industrial
Others	Education, engineering, infrastructure, sports team ownership, unidentified diversified wealth	Diversified/other

Source: Freund & Oliver (2016)

Table 3-22 Number of billionaires-broad sectoral classification

Year	Resource-related	New	Non-tradable	Financial	Tradable	Other

1996	1	0	0	0	0	1
2001	1	2	0	0	0	1
2010	7	16	6	8	10	17
2017	5	23	10	12	31	10

Source: Forbes & Billionaires Characteristics Database

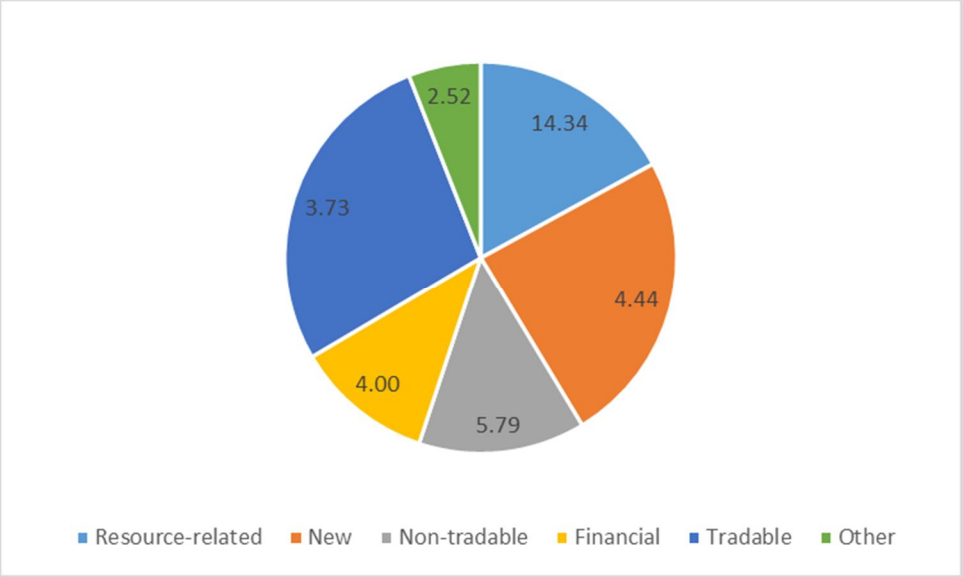
As can be seen in table 3-2, a large number of billionaires fall in to the category, "other" because for these billionaires, primary source of wealth cannot be worked out, they derive their wealth from multiple activities. The number of billionaires in the categories: "New", "Non-Tradable", "Financial" and "Tradable" have grown.

Figure 3-5 shows the distribution of total billionaire wealth for the year 2017 across the broad sectors discussed above, the data labels in the pie chart correspond to the wealth per billionaire in each of these sectors. Resource-related industries like oil, energy, mining and metal are rent-thick in the sense that the State plays an important role in conferring licenses. These benefits conferred by the state on limited market players has made it one of the most remunerative sectors.

The category "New" includes industries related to computer and medical technology. These industries are knowledge based. Homegrown technology got a great boost in the post liberalization era, in fact the literature highlights that the first wave of wealth creation was witnessed in information technology. At the surface it seems like the interaction of knowledge based sectors with the state is limited. Though the firms in this sector are not dependent on the government for licenses or contracts however, these firms are usually involved in projects and agreements with the government[21]. Mazumdar (2008) mentions that the information technology sector has been one of the biggest beneficiaries of tax sops granted by the government. Chandrasekhar (2003) highlights that the government supported the IT sector with infrastructure investment, duty free access to hardware for software exporters and zero taxation of export profits.

[21] Gandhi & Walton (2012): Technology firms (Wipro, HCL and Infosys) have been involved in various state and central government projects under the National e-Governance Plan. Engineering firms often provide equipment to government departments or public sector units. Two firms, Torrent Group and RPG Group, have diversified business activities into power and have supply agreements with government. Another company, Serum Institute has a vaccine supply agreement with government (and is also involved in liquor). Yet the core business of these firms is not driven by government contracts.

Figure 3-21 Wealth distribution across sectors and wealth per billionaire (2017)



Source: Forbes & Billionaires Characteristics Database

Non-tradables including industries like Retail, restaurant, media, construction, telecom, entertainment as well as the financial sector have also experienced an extreme accumulation of wealth. Most of the service industries fall into the categories: “New”, “Non-Tradable” and “Financial’”. The rise in the number of billionaires and wealth accumulation of this magnitude in these sectors explains how growth in India is closely linked to ballooning profits of the rich which implies a squeeze in the share of wages.

Database on biliionaire characteristics created by Caroline Freund and Sarah Oliver, classifies billionaires into two categories: self-made and inherited wealth. In the year 1996, according to the database there were three billionaires, out of which 1 billionaire was self-made and the other two had inherited wealth. In the year 2014, 37 billionaires belonged to the self-made category and about 19 had inherited wealth.

Table 3-1A shares the four firm concentration ratio for important service subsectors. Data has been derived from Prowess and the sample of firms taken is 30,922. The table shows that the market concentration in the Indian service sector has been slow to decline. While for most of the industries the concentration ratio has fallen, indicating penetration of new market players. New market agents have found inroads to construction, wholesale and retail trade, financial

services telecommunication, higher education, hospital activities. However the concentration ratios are still high, ensuring profits for the existing players.

3.2.2 Formal and informal employment

Formal and informal employment can exist both within the organized and unorganized sector. The informal or unorganized sector, characterized by the non-applicability of labour laws, absence of contracts and lack of employment benefits, creates large scale employment for unskilled workers. In India's National Accounts Statistics, the unorganized segment of any sector is defined to include the economic activity of operating units that are not regulated under any legal provision and hence do not submit regular accounts to the government.

Labour in the unorganised sector or informal labour in the organised sector has no protection of tenure and remuneration. Greater is the incidence of informality greater is the likelihood for a low wage share in the corresponding industry.

NCEUS treats all private and public limited companies, irrespective of size, and all other establishments with ten or more workers, as belonging to the formal sector. In manufacturing, the definition of the organised sector is aligned to the coverage of the Factories Act which is 10 or more workers working with the aid of power, and 20 or more workers working without the aid of power. Workers covered by the Factories Act also are entitled to social security benefits and other protection. In other sectors, organised sector establishments (other than public sector establishments) are those with 20 or more workers. Using this definition, each service sub-sector may be categorized into formal and informal sector.

Employment in the organized sector as well as the nature of employment (in terms of the job being formal/informal) has repercussions for the wage that an individual earns. To estimate this impact, data from employment unemployment surveys: 1999-00, 2004-05 & 2011-12 has been used to run a regression restricting the data only to the service industries. For the purpose of regression the employment data has been categorized under the heads of organized and unorganized sector, as per the NCEUS definition discussed above. A worker is considered to be

an informal worker if he/she is not eligible for any social security benefit. The regression uses data only on usual principal status, since the wage data corresponding to subsidiary status is missing. Logarithm of real wage has been regressed on a set of explanatory variables. The regression results for have been reported in table 3-4.

Table 3-4 Regression results log Real Wage(Panel 1999-00, 2004-05 & 2011-12)

	(1) Logearning
Organized_sector	0.297***
	(0.005)
Formal_employment	0.773***
	(0.005)
Rural_sector	-0.107***
	(0.004)
Male	0.398***
	(0.005)
primary	0.082***
	(0.008)
middle	0.157***
	(0.007)
secondary	0.354***
	(0.007)
Higher_secondary	0.445***
	(0.007)
graduate	0.751***
	(0.006)
age1	0.682***
	(0.020)
age2	0.558***
	(0.024)

Total_days	0.027***
	(0.000)
year1	0.078***
	(0.005)
year2	0.252***
	(0.005)
Constant	2.738***
	(0.022)
N	121061
r2	0.635
rss	50470.322

The regression utilizes a set of dummy variables as explanatory factors.

*Dummies

Organized_sector= 1 if employed in organized sector, 0 otherwise

Formal_employment= 1 if the employment is formal, 0 otherwise

Rural_sector= 1 if individual works in the rural sector, 0 otherwise

Primary, middle, secondary, higher_secondary and graduate are dummies for different levels of education

age1: if the individual is of working age, 0 otherwise (15-60 years)

age2: if the individual is above 60 years, 0 otherwise

Total_days: Number of days worked in a week

Year1: dummy for year 2005

Year2: dummy for year 2012

Having controlled for important attributes like sector, gender, level of education, age and total no. of days worked in a week, the regression results suggest that if the job is of formal nature, wages experience a substantial improvement. Belonging to the organized sector offers better wages but the improvement isn't much.

If the individual is working in the rural sector there is a relative disadvantage in terms of lower earnings. The regression also suggests that men earn better returns for their work. The coefficients of dummies representing different levels of education show that higher levels of

education correspond to better earnings, this finding will be utilized in the section on skill intensity. Also if the individual if of working age the wage is higher, compared to what a person not belonging to the working age, receives.

Greater the no. of days worked in the week, higher is the wage, as suggested by the coefficient of the explanatory variable Total_days. The dummies, year1 & year2 show that the wages have grown overtime, base year being 2000.

All the variables in the model have a statistically significant relationship with the dependent variable and the coefficients carry expected signs.

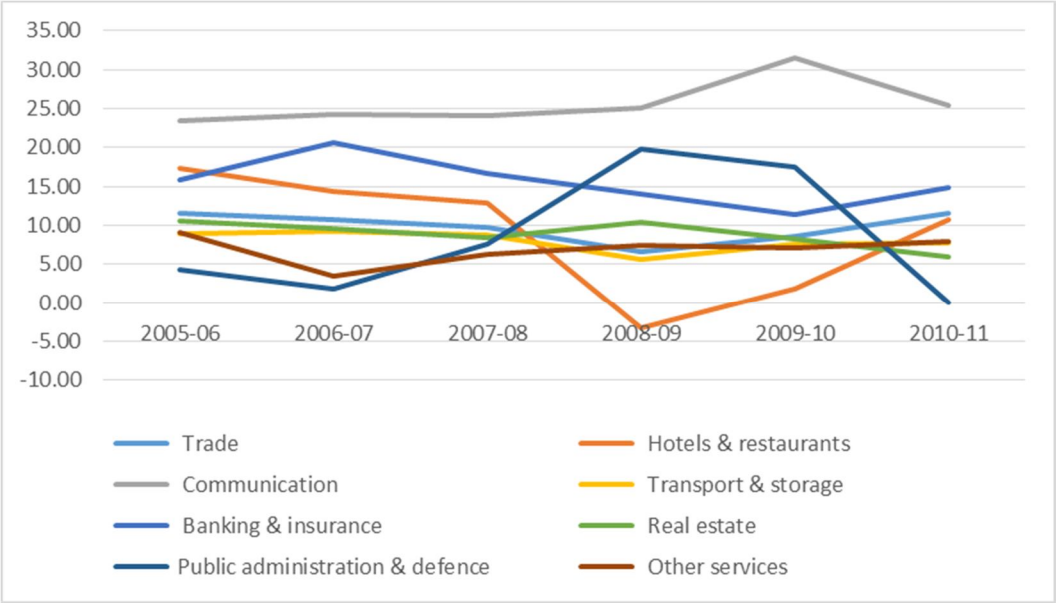
Table 3-5 Service sector employment (2011-12), Usual Principal Status

Subsector	Employment Share (%)	Organised sector (%)	Formal sector (%)	Average Wage (Rs.)	Average Wage Organised	Average Wage Formal
Wholesale & retail trade	22.21	17.71	8.51	1434.30	2186.06	3177.20
Transportation & Storage	14.98	39.59	25.06	2096.67	3262.97	4172.87
Accommodation & food services	5.72	27.04	10.77	1546.57	2098.01	2501.33
Information & Communication	4.42	83.26	64.81	5231.64	5872.57	6704.16
Financial & Insurance Activities	4.36	90.02	71.74	4870.84	5105.09	5892.21
Real Estate Activities	0.32	49.80	34.39	2455.75	3237.76	4067.71
Professional, scientific & technical activities	1.80	62.78	50.08	3973.66	4973.21	5769.76
Administrative & support service	3.31	60.31	37.76	2165.37	2593.71	3217.80
Public Administration	10.74	100.00	86.16	3998.45	3998.45	4424.58
Education	16.86	88.65	63.67	3336.24	3513.01	4436.04
Human, health & social work	4.28	81.72	53.42	2876.12	3230.93	4211.83
Arts, entertainment and recreation	0.72	40.46	20.37	1758.51	2112.96	2728.17
Other service activities	5.31	15.28	7.43	1032.70	1749.72	2144.90
Activities of households	4.98	5.24	3.69	875.71	1203.63	1718.53

Source: Author's computation, NSSO 68th round

As can be seen from table 3-5, the size of organised sector and formal employment are low in certain subsectors like: Wholesale and retail trade, Transportation and storage, accommodation and food services. These sectors employ a substantial fraction of labour. On the other hand well-paying sectors like information and communication, financial and insurance services, where there is a better chance of getting into formal work arrangement, aren't contributing much to employment. The growth rate of these sectors is shown in figure 3-6. Information & communication as well as financial services have grown at a high rate, compared to the other sectors. Even in the recent period, the mentioned sectors have shown a strong growth record (2012-13 to 2015-16). The wage difference between the sectors has led to wage-inequality.

Figure 3-22 Growth in GVA (%) (2004-05 prices)



Source: National Accounts Statistics

Table 3-6 presents information from the labour bureau survey 2015-16. The data confirms that remunerative sectors like Information and communication, finance and insurance activities, public administration are but have absorbed few people.

There is evidence of high levels of informality and at the same time non-standard forms of employment prevail, a large fraction of regular workers are employed without a written contract. This is the case, even in those sectors where the size of organized sector is fairly large. Informal employment is one of the prominent reasons behind falling wage share and rising wage inequality.

Table 3-6 Proportion of regular employees Usual Principal Status

Sector	Share of service sector employment	Formal labour share	Regular employees	Regular employees without written contract
Wholesale and retail trade	19.06	51.98	37.30	88.29
Transportation & storage	15.99	30.71	59.76	74.53
Accommodation & food services	4.23	38.21	39.18	81.89
Information & communication	3.74	58.69	84.27	67.38
Financial & Insurance activities	4.63	70.16	89.82	54.48
Real estate activities	0.27	50.76	49.86	76.44
Professional, scientific & technical activities	3.17	58.34	81.23	62.89
Administration & support service	7.43	50.41	75.27	63.40
Public administration	8.50	79.58	91.65	44.81
Education	21.35	63.68	88.71	50.56
Human health & social work activities	4.83	56.94	80.17	57.10
Arts entertainment & recreation	0.51	37.33	38.93	70.29
Other service activities	3.36	37.91	35.91	85.08
Activities of households	2.93	15.79	33.34	87.48

Source: Author's computation, Labour bureau survey 2015-16

3.2.3 Skill Intensity

India's services sector has witnessed rapid growth of business process outsourcing, software, financial and telecommunication services which are likely to be biased in favour of the educated/ highly skilled employees.

Regression results in table 3-4, highlight that higher levels of education offer better wages. Literature also extends empirical evidence, that educated individuals are more likely to find employment in the organized sector. Service sector is heterogeneous to a great extent. The subsectors vary greatly in terms of their skill intensity and educational requirements.

Table 3-7 below has been extracted from Nayyar (2013). Averages have been worked out for various employment unemployment rounds during the period 1983-2005. Table 3-7 presents average picture of the data for the period (1983 to 2004-05), table 3-8 shares information for the year 2011-12. Information for the year 2015-16 from the labour bureau survey is shown in table 3-10. While the NSSO surveys on employment-unemployment and the labour bureau surveys on employment-unemployment differ in methodology and sample size, the findings seem to be consistent.

A comparison between table 3-7, 3-8 and 3-9 suggests that the educational status hasn't improved much for wholesale & retail trade, hotels & restaurants, transport, storage. This also reflects in the wages these sectors have to offer.

Table 3-7 Illiterates, graduates (and above) and skilled workers as a percentage of the labour force of different services sectors: 1983 to 2004–05

Sector	Illiterates	Graduates (and above)	Total number of professional, technical, executive and managerial workers
Wholesale & retail trade	23.8	10	8.6
Hotels & restaurants	25.1	4.2	17.6
Railways	10.9	16.2	4.2
Transport by other means	24.9	3.5	9
Storage	23.5	8.6	8.9
Communication	1.8	25.1	19.7
Banking & Insurance	1.2	49.6	25.9
Real Estate & renting services	9.3	17.9	27
Business services	1.8	53.3	37.6
Public Administration and defence	6.6	27.4	15.5
Community services	4.4	46.3	76.6
Personal, recreational and entertainment services	36.4	3.6	8.3

Source: Nayyar (2013)

Table 3-8 Educational level across service subsectors: 2011-12 (usual principal status)

Subsector	Share in service sector employment	Average Wage	Illiterate Workers	Average Wage	Graduate and above workers	Average Wage
Wholesale & retail trade	21.52	898.51	10.87	576.75	15.44	1570.00
Transportation & Storage	15.27	2165.03	13.76	1345.51	9.99	5534.24
Accomodation & food services	5.54	1082.36	17.62	592.49	7.91	2571.25
Information & Communication	4.51	5544.20	0.81	2554.50	68.12	6992.71
Financial & Insurance Activities	4.22	4802.17	0.59	1415.61	68.47	5850.57
Real Estate Activities	0.31	2365.63	5.88	843.87	39.90	4432.56
Professional, scientific & technical activities	1.91	3704.09	1.76	993.73	52.10	5266.47
Administrative & support service	5.18	1572.03	22.63	891.02	19.50	3345.90
Public Administration	10.40	4024.31	5.76	1679.83	38.60	5179.01
Education	16.33	3326.82	2.48	867.71	63.07	3912.64
Human, health & social work	4.14	2846.93	5.35	1078.06	32.22	4770.79
Arts, entertainment and	0.71	1548.74	14.98	705.76	12.88	3160.54

recreation						
Other service activities	5.14	728.25	26.51	458.77	4.81	1696.93
Activities of households	4.82	873.41	37.34	653.26	2.16	831.49

Source: Author's Computation NSSO 68th round

The data on education level across service subsectors for the year 2011-12 and 2015-16 for UPSS workers (Usual principal & subsidiary status) is shown in table 3-2A and 3-3A in the appendix.

As per the national classification of occupations, the workers can be categorized as per the occupations they are engaged in. For tables 3-9 & 3-10 the proportion of skilled workers is computed as the ratio of professional, technical and related workers, executive and managerial workers as a percentage of total workers.

Table 3-9 Professional, technical and related workers, and administrative, executive and managerial workers as a percentage of total workers for different services sectors (2011-12)

Subsector	Skilled Workers (Principal Status)	Average Wage	Skilled Workers (UPSS)
Wholesale & retail trade	19.29	899.04	19.40
Transportation & Storage	5.53	6042.62	5.52
Accomodation & food services	19.49	874.59	19.77
Information & Communication	66.71	7089.79	66.53
Financial & Insurance Activities	46.04	6393.28	46.02
Real Estate Activities	44.99	3084.00	44.93
Professional, scientific & technical activities	59.98	4725.94	60.41
Administrative & support service	13.62	3100.42	13.51
Public Administration	26.98	5796.78	26.96
Education	81.98	3642.25	82.03
Human, health & social work	65.76	3353.54	65.22
Arts, entertainment and recreation	28.20	1603.59	31.64
Other service activities	16.55	1273.38	16.16
Activities of households	2.22	709.99	3.00

Source: Author's Computation NSSO 68th round

Table 3-10 Illiterates, graduates (and above) and skilled workers as a percentage of the workers in different services sectors: 2015-16 (usual principal status)

Subsector	Share in service sector employment	Illiterate Workers	Graduate and above workers	Total number of professional, technical, executive and managerial workers
Wholesale & retail trade	18.73	4.72	16.87	4.57
Transportation & Storage	16.33	6.15	9.98	3.30
Accomodation & food services	4.16	8.44	9.80	4.05
Information & Communication	3.71	0.90	67.36	57.42
Financial & Insurance Activities	4.55	0.67	62.94	31.40
Real Estate Activities	0.26	1.70	54.77	61.32
Professional, scientific & technical activities	3.21	1.12	65.88	65.40
Administrative & support service	8.26	7.60	25.23	8.86
Public Administration	8.35	2.28	37.31	14.67
Education	20.98	2.35	60.54	84.92
Human, health & social work	4.75	2.64	35.16	67.18
Arts, entertainment and recreation	0.54	11.60	19.00	43.38
Other service activities	3.30	16.79	8.21	15.11
Activities of households	2.88	30.63	2.95	3.83

Source: Author's computation, Labour bureau survey 2015-16

As the tables show, the proportion of skilled workers is higher in Information & Communication, Financial & Insurance Activities, Professional, scientific & technical activities and so are the earnings of the skilled workers engaged in these sectors.

3.2.4 Capital Intensity

The capital intensity of a sector may be calculated as the ratio of net capital stock to the total number of people employed. The capital–labour ratio is a standard measure of capital intensity and impacts the labour productivity. Net capital stock in India's National Accounts Statistics covers three types of assets: construction, machinery and equipment, and software.

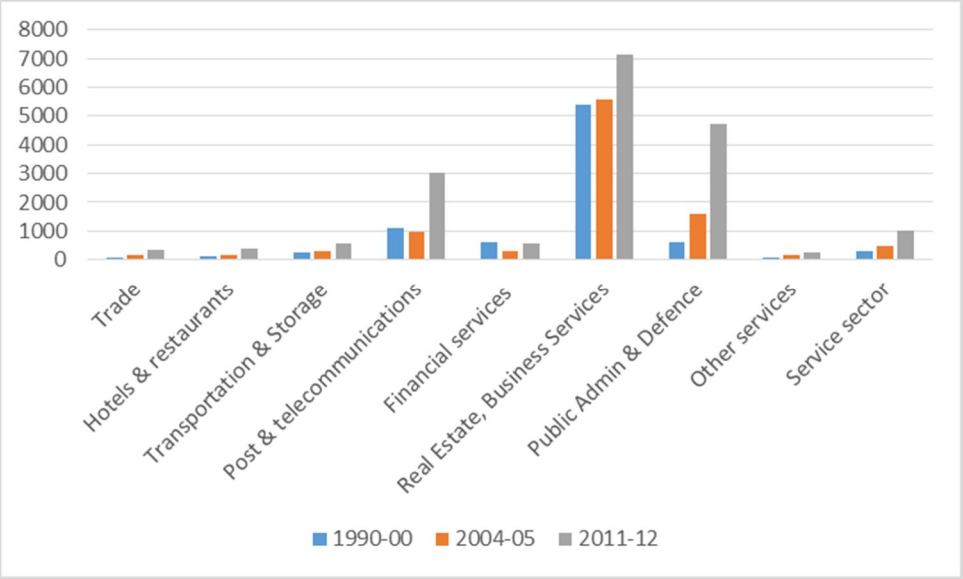
Table 3-11 Net Capital Stock (per 1000 persons)

Subsector	Usual Principal Status			Usual Principal + Subsidiary Status		
	1990-00	2004-05	2011-12	1990-00	2004-05	2011-12
Trade	57.53	141.66	353.97	55.64	137.54	344.39
Hotels & restaurants	115.78	172.41	379.57	112.93	165.20	368.86
Transportation & Storage	256.73	312.93	554.21	254.90	310.59	551.20
Post & telecommunications	1090.95	987.42	3010.91	1068.26	961.45	2983.70
Financial services	623.77	318.53	557.94	617.53	312.40	547.66
Real Estate & Business Services	5384.61	5570.68	7130.60	5225.44	5427.73	7029.54
Public Admin & Defence	594.29	1581.04	4739.58	593.13	1578.79	4734.88
Other services	74.36	155.49	268.74	71.27	144.44	254.72
Service sector	303.15	473.05	1011.82	295.04	455.96	981.26

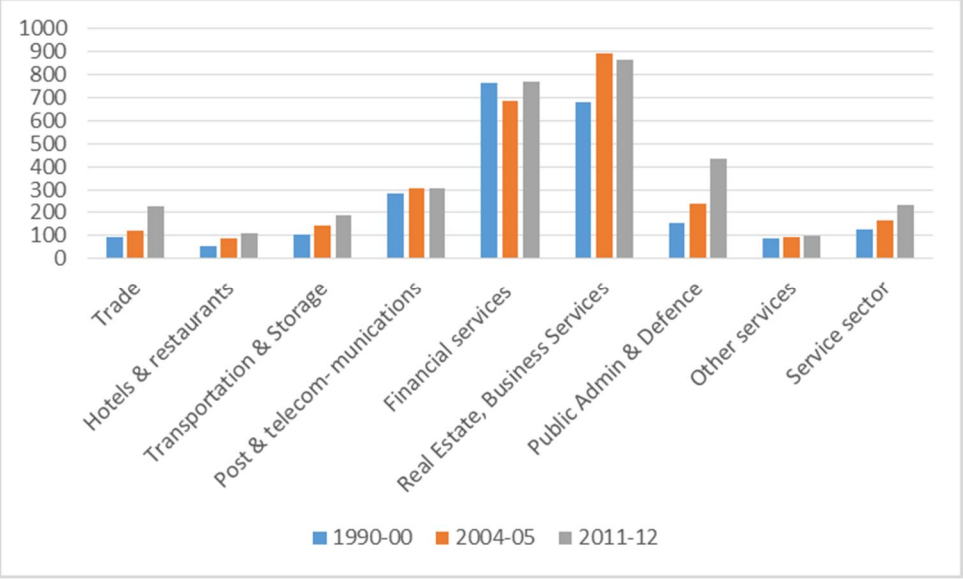
Source: Author's Computation, NSSO surveys and National Accounts Statistics

Figure 3-23 Net Capital Stock and Output per 1000 workers (2004-05 prices)

(a)



(b)



Source: Author's Computation, NSSO surveys and National Accounts Statistics

Figure 3-7 panel (a) & (b) show the data on net capital stock and output per 1000 workers. For real estate and business services, the capital intensity is very high, because of the presence of real estate in this grouping. It is obvious that the grouping, real estate and renting services sector has a very large capital stock. Real estate and renting services involve output in the form of actual or imputed rental income, corresponding to which no employment is required. In fact, Nayyar (2013) shows that the output of the real estate and renting services sector increased by about four times the increase in the employment it created between 1980–81 and 2004–05.

Trade, Hotels & restaurants and other services which include education, community and recreational services have a low capital intensity. Transportation & storage, financial services can be placed at medium level of capital intensity.

Post & telecommunication and business services (owing to real estate), public admin & defence are highly capital intensive. For most of the industries, the labour productivity seems to be moving in tandem with capital intensity. It is interesting to notice that for sectors like post & telecommunication and financial services, where the capital intensity is at medium level, experience high labour productivity. This could be due to a positive interaction of technology complementarity and labour skill.

The discussion on skill and capital intensity, suggests that the skilled workers engaged in sectors which are intensive in technology, enjoy a better quality of employment and earnings. Also these sectors showing high labour productivity; *Financial services, Real Estate & Business Services & Public Admin & Defence* have also witnessed a substantial rise in profits in the recent period.

3.2.5 Corporate Tax Rates

Having discussed the key characteristics of the service industries, this section explores the role of tax rates in explaining rise in profits in service subsectors. The discussion that follows, suggests that the companies with higher profits, pay lower effective corporate tax. Also the labour intensive sectors have a higher effective tax rate on an average.

The statutory corporate tax rate in India is one of the highest in the world. Data on corporate tax rates world-wide are shared in table 3-4A. However, the effective tax rates are lower, owing to tax breaks and exemptions. As per the receipts budget 2018-19, the Income-tax Department received 6,08,836 corporate returns electronically up to 30th November 2017 for the financial year 2016-17. The effective tax rate for the sample was 26.89 percent [higher than the rate (28.24 percent) reported in 2015-16]. The statutory tax rate being nearly 31% in case of companies having income up to Rs. 1 crore, 33.06 % for companies having income up to Rs. 10 crores and 34.61% in for companies having income exceeding Rs. 10 crores. The average statutory rate of tax, therefore, worked out to be 34.38 %.

Table 3-12 Profile of sample companies across range of profits before taxes (Financial Year 2016-17) (Sample size - 6,08,836)

Sl.no.	Profit before taxes	Number of companies	Share in profits before taxes	Share in total income (%)	Share in total corporate income tax liability (%)	Ratio of total income to profits before taxes (%)	Effective tax rate (%)
1	Less than zero	2,60,194	0.00	0.69	0.65	0.00	0.00
2	Zero	17,912	0.00	9.31	3.11	0.00	0.00
3	Rs. 0-1 crore	2,90,250	2.55	3.00	2.79	89.42	29.43
4	Rs. 1-10 crore	31,941	6.63	7.34	7.20	84.16	29.20
5	Rs. 10-50 Crore	5,997	8.74	8.92	9.42	77.64	29.00
6	Rs. 50-100 Crore	1,110	5.29	5.17	5.53	74.46	28.11
7	Rs. 100-500 Crore	1,097	15.63	15.33	16.84	74.62	28.98
8	More than Rs. 500 Crore	335	61.17	50.25	54.45	62.51	23.94
	All Companies	6,08,836	100.00	100.00	100.00	76.08	26.89

Source: Receipt Budget (2018-19)

As is evident from the table, the tax liability is distributed disproportionately across the companies, with effective tax rate being lower for companies with higher profits.

Table 3-13 Profile of sample companies across range of Effective tax rates (Financial Year 2016-17) (Sample size - 6,08,836)*

Sl.no.	Effective tax rate (%)	Number of companies	Share in total profits (%)	Share in total income (%)	Share in total tax liability (%)
1	Less than zero and zero	2,75,176	3.61	0.76	0.67
2	0-20	70,390	20.57	8.63	9.47
3	20-25	24,619	28	17.99	23.49
4	25-30	78,022	11.27	12.77	11.95
5	30-33	1,03,596	30.12	43.75	39.61
6	>33	39,121	6.44	16.1	14.81
7	Indeterminate, PBT=0	17,912	0	0	0
	Total	6,08,836	100	100	100

Source: Receipt Budget (2018-19)

Table 3- 14 Effective tax rate of sample companies in the manufacturing and service sectors (Financial Year 2016-17) (Sample size - 6,08,836)

Sl.no.	Sector	Number of Companies	Share in total profits (%)	Share in total tax liability (%)	Effective tax rate (%)
1	Manufacturing	1,24,205	46.32	42.64	24.75
2	Service	4,84,631	53.68	57.36	28.73
	Total	6,08,836	100	100	26.89

Source: Receipt Budget (2018-19)

Information for effective tax rates is available for manufacturing and service sector as well. The service sector has a higher effective tax rate compared to the manufacturing sector. However, the tax rates for both the sectors lie below the statutory tax rate.

Table 3-15 Sector wise effective tax rates (%)

Sl.no.	Sector	Industry	Effective tax rate (%)
1	Trading	Chain Stores	33.11
2	Trading	Retailers	28.83

3	Trading	Wholesalers	32.86
4	Trading	Others	12.12
5	Commision Agents	General Commision Agents	28.11
6	Builders	Builders	27.98
7	Builders	Estate Agents	20.25
8	Builders	Property Developers	24.14
9	Builders	Others	24.87
10	Contractors	Civil Contractors	29.43
11	Contractors	Excise Contractors	28.99
12	Contractors	Mining Contractors	44
13	Contractors	Others	27.2
14	Professionals	Charted Accountants, Auditors, etc.	33.83
15	Professionals	Fashion Designers	25.48
16	Professionals	Legal Professionals	28.66
17	Professionals	Medical Professionals	30.79
18	Professionals	Nursing Homes	31.01
19	Professionals	Specialty Hospitals	29.95
20	Professionals	Others	31.9
21	Service Sector	Advertisement Agencies	33.25
22	Service Sector	Beauty Parlours	20.95
23	Service Sector	Consultancy Services	37.06
24	Service Sector	Courier Agencies	41.09
25	Service Sector	Computer Training/ Educational and Coaching Institutes	32.03
26	Service Sector	Forex Dealers	26.73
27	Service Sector	Hospitality Services	30.29
28	Service Sector	Hotels	27.73
29	Service Sector	IT enabled services, BPO service Provides	29.59
30	Service Sector	Security Agencies	34.85
31	Service Sector	Software development Agencies	24.72
32	Service Sector	Transporters	26.41
33	Service Sector	Travel Agents, Tour Operators	33.01
34	Service Sector	Others	32.46
35	Financial Service Sector	Banking Companies	43.29
36	Financial Service Sector	Chit Funds	33.67
37	Financial Service Sector	Financial Institutions	39.11
38	Financial Service Sector	Financial Service Providers	29.03

39	Financial Service Sector	Leasing Companies	21.47
40	Financial Service Sector	Money Lenders	26.52
41	Financial Service Sector	Non-Banking Finance Companies	32.43
42	Financial Service Sector	Share Brokers, Sub-brokers, etc.	26.47
43	Entertainment Industry	Cable Television Productions	31.17
44	Entertainment Industry	Film Distribution	21.52
45	Entertainment Industry	Film Laboratories	26.98
46	Entertainment Industry	Motion Picture Producers	34.97
47	Entertainment Industry	Television Channels	27.61
48	Entertainment Industry	Others	26.77
49	Others	Others	18.44

Source: Receipt Budget (2018-19)

Tax exemptions to different sectors vary greatly. The healthcare industry, for instance, receives great deal of tax exemptions and benefits. Area-based exemptions such as for SEZs and tax relief for infrastructure firms account for the rest of the forgone revenue. Deductions are offered to industrial undertakings derived from the integrated business of handling, storage, and transportation of food grains, processing, preservation and packaging of fruits and vegetables, cold chain facility, Offshore Banking Units and International Financial Services Centre, telecommunication services. It is to be noted that the sectors intensive in face relatively high effective rates, as relatively few benefits and exemptions are offered to them.

Table 3-16 Sector wise effective tax rates-Prowess

Industry	nic_code	1991-00	2001-10	2011-18
Construction of buildings carried out on own-account basis or on a fee or contract basis	41001	3.91	13.06	15.93
Wholesale and retail trade; repair of motor vehicles and motorcycles	45000	34.90	25.47	24.78
Wholesale trade, except of motor vehicles and motorcycles	46000	11.39	12.91	19.61

Retail trade, except of motor vehicles and motorcycles	47000	11.08	11.71	19.68
Land transport and transport via pipelines	49000	16.27	14.93	17.48
Water transport	50000	6.78	14.17	15.04
Air transport	51000	9.22	1.94	12.98
Warehousing and support activities for transportation	52000	14.36	11.49	18.68
Courier activities	53200	11.91	13.04	19.46
Short term accommodation activities	55100	8.57	8.77	16.26
Bars and Restaurants with bars	56301	11.68	12.68	19.28
Motion picture, video and television programme production, Sound recording and music publishing activities	59000	8.42	10.30	15.01
Programming and broadcasting activities	60000	9.80	7.16	12.66
Telecommunications	61000	11.67	6.20	10.83
Computer programming, consultancy and related activities	62000	7.91	7.79	20.25
Information service activities	63000	15.45	10.13	37.50
Financial service activities, except insurance and pension Funding	64000	11.76	10.29	12.84
Insurance, reinsurance and pension funding, except compulsory social security	65000		22.07	23.72
Other financial activities	66000	14.59	15.00	18.10
Real estate activities on a fee or contract basis	68200		8.20	12.85
Professional , Scientific and Technical Activities	69000		-0.23	9.50
Management consultancy activities	70200	16.77	12.96	10.10
Architectural and engineering activities and related technical consultancy	71100	19.22	16.46	24.31
Scientific research and development	72000	17.27	6.28	19.97
Advertising and market research	73000	32.86	12.68	19.20
Other professional, scientific and technical activities	74000	23.81	12.09	26.12
Veterinary activities	75000			0.00
Rental and leasing activities	77000	11.46	10.68	10.97
Employment activities	78000	7.49	18.91	4.25
Travel agency, tour operator and other reservation service activities	79000	20.83	16.88	18.04
Security and investigation activities	80000	11.93	11.22	16.53
Office administrative, office support and other business support activities	82000	18.63	0.53	13.88

Public administration and defence; compulsory social security	84000	10.34	5.93	8.78
Primary education	85000	9.11	-5.34	12.88
Human health activities	86000	2.68	6.93	18.59
Creative, arts and entertainment activities	90000	6.86	6.56	9.49
Other amusement and recreation activities n.e.c.	93290	7.10	10.52	8.25
Activities of membership organizations	94000	-2.10	7.49	9.88
Repair of other personal and household goods n.e.c.	95299	6.27	8.09	13.03
Other personal service activities	96100	42.06	30.54	10.07

Source: Prowess

Table 3-14, utilizes data on the ratio of corporate tax to profit before tax for various service sector firms. The average effective tax rate for the period 2011-18 is quite high for wholesale & retail trade, bar& restaurants, warehousing and support activities for transportation as well as courier activities. These sectors involve a high fraction of labour force.

3.2.6 International Integration

The extent of engagement in international trade may impact the earnings of the employees of that sector. This section explores the relationship between exporting behavior of the service industry earnings of the employees. Mazumdar (2010) evaluates the relationship between foreign earnings and wage share for a large number of information technology–sector firms in India over the period 2000-2006. The results establish that the foreign earnings and wage share relationship is positive and significant for Indian firms during the entire period of analysis.

Reserve Bank of India collects financial information on the corporate sector. Select financial ratios are worked out industry wise and reported for public and private companies. Making use of this information, following regression exercise has been done for the period 2010-2017. The dependent variable is remuneration to total expenditure and the key independent variable is, exports to sales ratio. A set of important control variables have been included; profit to sales ratio, debt to equity ratio, cost of raw materials to expenditure, interest paid to expenditure.

The impact of cost of raw materials to expenditure and interest paid to expenditure on remuneration to total expenditure is expected to be negative, because a rise in the share of

other input costs will entail a contraction in the share of remuneration. A high profit share, in terms of a rise in profit to sales ratio is also expected to put pressure on remuneration of employees. The debt equity or leverage ratio (leverage) is also used as a control variable, since lender pressures could influence firms to cut wage costs.

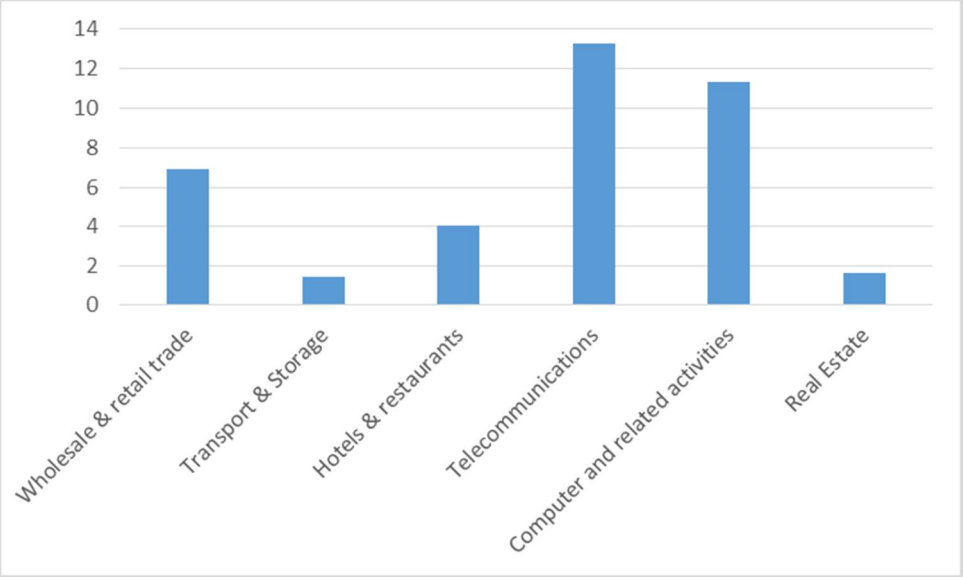
Table 3-17 Regression results for Remuneration to Total Expenditure (dependent variable)

	(Fixed) Remuneration to employees to total expenditure	(Random) Remuneration to employees to total expenditure
Gross profit (EBIT) to sales	0.202	0.199
	(0.133)	(0.139)
Debt to equity	-0.128***	-0.132***
	(0.037)	(0.039)
Exports to sales	0.264**	0.364***
	(0.117)	(0.116)
Cost of raw materials to total expenditure	-0.409***	-0.418***
	(0.058)	(0.060)
Interest paid to total expenditure	-0.891***	-0.721***
	(0.211)	(0.211)
Constant	36.848***	35.523***
	(4.609)	(4.799)
N	69	69.
r2	0.629	0.619

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3-17 suggests that higher the proportion of export earnings to sales higher is the share of employee compensation in the total expenses. As per the data, compensation to employees for the service sector is negatively related to the leverage status of the industry. The impact of profits to sales on share of remuneration in total expenditure is positive and insignificant.

Figure 3-8 Export to sales ratio (average of the period 2010-2017)



Source: Author's Computation, Reserve Bank of India

As figure 3-9 indicates, international integration as measured by exports to sales ratio is the highest for telecommunications & computer related activities. India is a leading service provider of ICT services and has a strong global presence. Since these sectors have been growing substantially and they have to compete on the international front for best services, these sectors use their comparative advantage which is the high skilled labour. It is in best interest for these sectors to keep the attrition rate low and ensure that the employees stay motivated. Thus, participation in the global markets may stimulate the skill premium. The existing literature suggests that for the Indian service sector, international trade does not lead to a significant improvement in employment. Mitra (2011) finds that exports and imported capital and imported raw materials do not have a positive and significant impact on employment in the service sector. Therefore, it could be through the wage growth that the earning share could grow.

Conclusion

The chapter begins with an analysis of data on operating surplus and compensation to employees to identify key sectors where the profits have grown. Financial and insurance services show an unambiguous increase in profits. Different characteristics of service industries are explored to find out the key drivers behind profit concentration and wage inequality. Informal employment and rising demand for high skilled workers has led to wage inequality. Rent-thick and knowledge based service industries have experienced growth in profits.

Rising capital intensity has not only contributed to wage inequality, the rise in labour productivity due to rise in capital intensity may also explain growth in profits. The chapter presents data serving evidence to the fact that corporate tax policy favours the companies with higher profits. Freebies and exemptions given to certain sectors, reduce their effective tax rates.

An assessment of the relationship between export earnings and employee remuneration shows that higher export earnings in the case of service sector leads to higher remuneration to expenditure ratio. This finding is critical for the sectors which have a strong presence on the international front.

APPENDIX-B

Table 3-1A Four-firm concentration ratio

Service Industries	1987-90	1991-00	2000-10	2010-11
Activity related to screen printing		100.00	95.09	86.47
Bottling of LPG/CNG		100.00	100.00	100.00
Water collection, treatment and supply			100.00	100.00
Treatment of waste water or sewer by means of physical, chemical or biological processes			100.00	100.00
Construction of buildings carried out on own-account basis or on a fee or contract basis and activities relating to alteration, addition, repair, maintenance	46.71	66.18	53.49	48.03
Construction and maintenance of motorways, streets, roads, other vehicular and pedestrian ways, highways, bridges, tunnels and subways, railways and rail-bridges, airfield, power plants, power, telecommunication and transmission lines, utility projects and other civil engineering projects	90.05	79.97	70.91	69.41
Site preparation including drilling, boring and core sampling for construction, geophysical, geological or similar purposes	100.00	87.95	74.41	60.55
Wholesale and retail sale of new vehicles (motor vehicles, passenger motor vehicles, ambulances, minibuses, jeeps, trucks, trailers and semi-trailers, parts and accessories), maintenance and repair	96.92	91.81	73.23	68.56
Activities of commission agents, brokers dealing in wholesale trade	93.23	78.15	67.51	70.38
Whole sale of other agriculture raw materials	99.48	99.21	98.44	96.58
Wholesale of other basic/manufactured food stuffs	100.00	98.18	91.07	80.55
Wholesale of households goods [Includes wholesale of household textiles, footwear, furniture, pharmaceutical and medical goods, equipment and appliances, n.e.c; photographic equipment, games, toys and sports goods (also includes bicycles, cycle rickshaw, tonga & other non-mechanised vehicles); leather goods and travel accessories; cleaning materials etc.]	93.04	84.38	81.22	75.41
Wholesale of other machinery, equipment and supplies including computer-controlled machine tools and computer-controlled sewing and knitting	98.13	92.04	83.67	74.65

machines				
Wholesale of industrial chemicals	96.26	92.10	82.58	74.45
Other non-specialised wholesale trade	53.17	30.01	38.62	38.85
Retail trade, except of motor vehicles and motorcycles	100.00	97.72	87.23	83.89
Retail sale in non-specialized stores	100.00	97.62	77.47	68.34
Retail sale of food, beverages , dairy, poultry, tobacco in specialized stores		100.00	99.14	98.35
Retail sale of automotive fuel in specialized stores [includes the activity of petrol filling stations.			100.00	100.00
Retail sale of information and communications equipment in specialized stores		100.00	99.92	97.18
Retail sale of books, newspapers and stationary in specialized stores		100.00	99.80	98.92
Retail sale of other household appliances (garments, footwear, security systems, such as locking devices, safes, and vaults, without installation or maintenance services etc. , wooden, cork and wickerwork goods, sewing and knitting machine and other household utensils and durables n.e.c.)	100.00	98.71	92.25	83.71
Retail sale via e-commerce		100.00	100.00	85.19
Rail transport	100.00	100.00	100.00	99.08
Other land transport	100.00	97.67	75.34	71.71
Transport via pipeline	100.00	100.00	87.97	88.50
Water transport	90.81	93.05	83.88	71.03
Sea and coastal water transport	100.00	95.99	60.88	66.25
Air transport		100.00	97.87	94.10
Warehousing and storage	99.73	98.35	93.43	92.01
Support activities for transportation	100.00	98.59	72.78	41.22
Service activities incidental to water transportation	100.00	100.00	78.17	61.21
Activities related to air transport of passengers, animals or freight		100.00	99.95	99.80
Cargo handling	100.00	99.94	97.15	88.09
Activities of movers and packers			100.00	100.00
Courier activities	100.00	99.76	75.29	78.28
Hotels and Motels, inns, resorts providing short term lodging facilities, short stay accomodation, bars and restaurants; includes accommodation in house boats	78.50	83.60	77.23	61.34
Motion picture, video and television programme production activities	100.00	98.68	90.04	90.78
Programming and Broadcasting Activities	100.00	98.68	88.34	86.57

Telecommunications	100.00	99.83	96.65	89.49
Activities of the cable operators		99.02	75.71	63.39
Activities of maintaining and operating pageing, cellular and other telecommunication networks	100.00	100.00	96.21	89.88
Activities of other wireless telecommunications activities	100.00	86.48	63.12	74.65
Other telecommunications activities		96.13	69.50	57.19
Providing software support and maintenance to the clients		51.78	50.91	53.42
On shore Extraction of natural gas			100.00	
Data processing activities including report writing and information activities	100.00	97.81	69.27	48.06
Monetary intermediation of commercial banks, saving banks. postal savings bank and discount houses	45.98	32.83	30.45	41.30
Activities of specialized institutions granting credit for house purchases that also take deposits			97.71	89.44
Trusts, funds and other financial vehicles	64.05	49.56	59.21	67.39
Financial leasing	71.62	59.20	69.02	75.10
Other credit granting		89.40	80.49	67.90
Other financial service activities, except insurance and pension funding activities, n.e.c.	99.90	93.67	57.48	59.22
Activities auxiliary to financial service activities	100.00	96.52	89.97	76.06
Management of mutual funds		100.00	99.20	85.04
Real estate activities on a fee or contract basis			100.00	99.30
Management consultancy activities	85.51	55.92	60.79	33.88
Architectural and engineering activities and related technical consultancy	93.51	69.02	50.50	41.21
Scientific research and Development	100.00	100.00	86.13	71.64
Advertising	100.00	90.52	64.17	47.54
Market research and public opinion polling		100.00	99.42	95.95
Business brokerage activities		100.00	96.38	99.98
Rental and leasing activities	52.23	27.95	38.04	28.26
Activities of employment placement agencies	100.00	100.00	88.79	74.34
Travel agencies	100.00	99.60	85.96	83.25
Security and investigation activities		100.00	82.09	78.84
Activities of call centres		99.22	93.48	91.59
Organization of conventions and trade shows		100.00	94.86	95.73
Other business support service activities n.e.c.	100.00	99.77	76.59	66.77
General public service activities n.e.c.		100.00	85.19	80.12
Education		100.00	85.34	70.86
Primary education (education at the first level)			100.00	100.00
Higher education in science, commerce, humanity and fine arts leading to a			99.57	99.50

university degree or equivalent				
Higher education in engineering / other technical courses leading to a university degree or equivalent	100.00	99.44	69.82	44.11
Academic tutoring services		100.00	100.00	
Hospital activities	100.00	72.84	45.07	39.26
Medical practice activities		100.00	98.41	87.67
Dental practice activities		100.00	100.00	100.00
Other human health activities n.e.c. (including independent ambulance activities)			96.90	90.56
Creative, arts and entertainment activities		100.00	96.24	95.87
Other amusement and recreation activities n.e.c.		95.10	71.37	70.24
Activities of business and employers membership organisations		100.00	90.20	
Activities of other membership organizations n.e.c.	100.00	99.69	88.50	92.45
Repair of other personal and household goods n.e.c.		99.77	91.67	74.09

Table 3-2A Educational level across service subsectors: 2011-12 (usual principal status + subsidiary status)

Subsector	Share in service sector employment	Illiterate Workers	Graduate and above workers
Wholesale & retail trade	22.12	11.26	14.91
Transportation & Storage	14.96	13.86	9.95
Accomodation & food services	5.65	18.04	7.74
Information & Communication	4.41	0.80	68.00
Financial & Insurance Activities	4.14	0.59	68.59
Real Estate Activities	0.31	5.84	40.08
Professional, scientific & technical activities	1.90	1.72	51.58
Administrative & support service	5.09	22.44	19.53
Public Administration	10.13	5.75	38.56
Education	16.14	2.54	62.75
Human, health & social work	4.14	5.33	31.69
Arts, entertainment and recreation	0.76	14.49	12.89
Other service activities	5.27	27.92	4.73
Activities of households	5.00	37.78	2.23

Source: Author's computation, NSSO 68th round

Table 3-3A Illiterates, graduates (and above) and skilled workers as a percentage of the workers in different services sectors: 2015-16 (usual principal status + subsidiary status)

Subsector	Share in service sector	Illiterate Workers	Graduate and	Total number of

	employment		above workers	professional, technical, executive and managerial workers
Wholesale & retail trade	19.17	4.76	16.78	4.43
Transportation & Storage	16.16	6.17	9.91	3.28
Accomodation & food services	4.19	8.61	9.87	3.95
Information & Communication	3.71	0.96	66.83	57.01
Financial & Insurance Activities	4.51	0.67	62.88	31.18
Real Estate Activities	0.27	1.65	55.89	59.63
Professional, scientific & technical activities	3.18	1.18	66.06	65.39
Administrative & support service	8.33	7.91	24.89	8.68
Public Administration	8.23	2.29	37.31	14.74
Education	20.81	2.40	60.65	84.85
Human, health & social work	4.70	2.71	35.26	67.08
Arts, entertainment and recreation	0.55	13.45	18.54	44.45
Other service activities	3.31	16.84	8.28	14.99
Activities of households	2.90	29.97	3.65	4.51

Source: Author's computation, Labour bureau survey 2015-16

Table 3-4A Corporate Tax Rates around the world (%) 2017

	Central government			Sub-central government corporate income tax rate	Combined corporate income tax rate
	Corporate income tax rate	Corporate income tax rate exclusive of surtax	Corporate income tax rate less deductions for sub-national taxes		
Country					
Australia	30.0	..	30.0	..	30.0
Austria	25.0	..	25.0	..	25.0
Belgium	33.0	33.0	34.0	..	34.0
Canada	15.0	..	15.0	11.7	26.7
Chile	25.0	..	25.0	..	25.0
Czech Republic	19.0	..	19.0	..	19.0

Denmark		22.0	..	22.0	..	22.0
Estonia		20.0	..	20.0	..	20.0
Finland		20.0	..	20.0	..	20.0
France		44.4	33.3	44.4	..	44.4
Germany		15.8	15.0	15.8	14.0	29.8
Greece		29.0	..	29.0	..	29.0
Hungary		9.0	..	9.0	..	9.0
Iceland		20.0	..	20.0	..	20.0
Ireland		12.5	..	12.5	..	12.5
Israel		24.0	..	24.0	0.0	24.0
Italy		24.0	..	23.9	3.9	27.8
Japan		23.4	..	22.6	7.4	30.0
Korea		22.0	..	22.0	2.2	24.2
Latvia		15.0	..	15.0	..	15.0
Lithuania		15.0	..	15.0	..	15.0
Luxembourg		20.3	19.0	20.3	6.8	27.1
Mexico		30.0	..	30.0	..	30.0
Netherlands		25.0	..	25.0	..	25.0
New Zealand		28.0	..	28.0	..	28.0
Norway		24.0	..	24.0	..	24.0
Poland		19.0	..	19.0	..	19.0
Portugal		28.0	21.0	28.0	1.5	29.5
Slovak Republic		21.0	..	21.0	..	21.0
Slovenia		19.0	..	19.0	..	19.0
Spain		25.0	..	25.0	..	25.0
Sweden		22.0	..	22.0	..	22.0
Switzerland		8.5	..	6.7	14.4	21.1
Turkey		20.0	..	20.0	..	20.0
United Kingdom		19.0	..	19.0	..	19.0
United States		35.0	..	32.9	6.0	38.9
Non-OECD Economies	Andorra	10.0	..	10.0	..	10.0
	Angola	30.0	..	30.0	..	30.0
	Anguilla	0.0	..	0.0	..	0.0
	Argentina	35.0	..	35.0	..	35.0
	Bahamas	0.0	..	0.0	..	0.0
	Bahrain	0.0	..	0.0	..	0.0
	Barbados	25.0	..	25.0	..	25.0
	Bermuda	0.0	..	0.0	..	0.0
	Botswana	22.0	..	22.0	..	22.0
	Brazil	34.0	..	34.0	..	34.0
	British	0.0	..	0.0	..	0.0

	Virgin Islands					
	Brunei Darussalam	18.5	..	18.5	..	18.5
	Bulgaria	10.0	..	10.0	..	10.0
	Burkina Faso	27.5	..	27.5	..	27.5
	Cayman Islands	0.0	..	0.0	..	0.0
	China (People's Republic of)	25.0	..	25.0	..	25.0
	Democratic Republic of the Congo	35.0	..	35.0	..	35.0
	Côte d'Ivoire	25.0	..	25.0	..	25.0
	Croatia	18.0	..	18.0	..	18.0
	Curacao	22.0	..	22.0	..	22.0
	Egypt	22.5	..	22.5	..	22.5
	Gabon	30.0	..	30.0	..	30.0
	Hong Kong, China	16.5	..	16.5	..	16.5
	India	47.9	30.0	47.9	..	47.9
	Indonesia	25.0	..	25.0	..	25.0
	Guernsey	0.0	..	0.0	..	0.0
	Isle of Man	0.0	..	0.0	..	0.0
	Jamaica	25.0	..	25.0	..	25.0
	Jersey	0.0	..	0.0	..	0.0
	Kenya	30.0	..	30.0	..	30.0
	Liberia	25.0	..	25.0	..	25.0
	Liechtenstein	12.5	..	12.5	..	12.5
	Macau, China	12.0	..	12.0	..	12.0
	Malaysia	24.0	..	24.0	..	24.0
	Maldives	15.0	..	15.0	..	15.0
	Malta	35.0	..	35.0	..	35.0
	Mauritius	15.0	..	15.0	..	15.0
	Monaco	33.3	..	33.3	..	33.3
	Montserrat	30.0	..	30.0	..	30.0
	Nigeria	30.0	..	30.0	..	30.0
	Oman	15.0	..	15.0	..	15.0
	Panama	25.0	..	25.0	..	25.0

	Paraguay	10.0	..	10.0	..	10.0
	Peru	29.5	..	29.5	..	29.5
	Romania	16.0	..	16.0	..	16.0
	Russia	20.0	..	20.0	..	20.0
	Saint Vincent and the Grenadines	32.5	..	32.5	..	32.5
	Saudi Arabia	0.0	..	0.0	..	0.0
	Senegal	32.5	..	32.5	..	32.5
	Serbia	15.0	..	15.0	..	15.0
	Seychelles	30.0	..	30.0	..	30.0
	Singapore	17.0	..	17.0	..	17.0
	South Africa	28.0	..	28.0	..	28.0
	Thailand	20.0	..	20.0	..	20.0
	Turks and Caicos Islands	0.0	..	0.0	..	0.0
	United Arab Emirates	0.0	..	0.0	..	0.0
	Uruguay	25.0	..	25.0	..	25.0
	Viet Nam	20.0	..	20.0	..	20.0

Source: OECD.Stat

4. Chapter - Assessment of India's Agricultural Sector

4.1 Introduction

The real wage stagnation and the large labour reserve, have contributed to a rise in the surplus incomes. Patnaik (2011) discusses that the current divergence is a consequence of a combination of two important trends. Firstly, there has been a drastic slowing down of the expansion of material production, especially in the agriculture and allied activities, and in particular, the foodgrains have seen falling per capita output. This is a consequence of the state induced agrarian crisis. Second, the country has witnessed an asymmetric pattern of growth, favouring a speedy expansion of services. This lopsided growth has caused a boom in the construction, hospitality, and real estate sector attacking the property of small peasants. Mazumdar (2016) states that the conditions for a strong wage-depressing tendency in the Indian economy and high informalisation and casualisation of work were set up among other things by the onset of a deep-rooted agrarian crisis since the mid-1990s. Stagnation in agriculture, heightening production and marketing risks in a liberalized trade and market regime, weak institutional presence, and limited alternatives to earning livelihood led to this crisis. Small and marginal farmers were impacted the most, as institutional support to farming weakened, public investment in agriculture declined substantially. Absence of cost-reducing technologies and rising input prices reduced returns frtom cultivation. Since a large fraction of the agriculture-dependent population was hit by a fall in profitability and an increasing burden of debt, more and more people were driven out of that agriculture to seek work in alternative activities. Though much of India's working population remains rural, there has been a pretty steep decline in the share of the agricultural sector in total employment since 1991. The push out of agriculture has meant the swelling of an already vast labour reserve which the expansion process in non-agricultural sectors could draw on without raising the wage levels.

Situation assessment survey of agricultural households (2013) surveyed 90.2 million agricultural households, constituting about 57.8% of the total rural households of India. The survey reports

that the extent of land possessed, determines the principal source of income for an agricultural household, the marginal farmers (possessing <0.01 ha of land) depending mainly on wage work and livestock. The share of non-farm business income in the average monthly income decreased with an increase in land possession. The report indicates that the majority of the farmers sell their produce to local traders, and a very small proportion are selling through Mandi. Again, a very small proportion of farmers are aware of Minimum Support Price, and even those who are aware are not able to sell at MSP as they are not selling to the procurement agencies. On risk mitigation front also farmers are not doing well as crop insurance adoption is very minimal mostly due to lack of awareness. Large land classes receive substantially higher incomes than marginal farmers, rural workers, and other poorer sections. They own and use modern agricultural machinery and inputs. Also, they make substantial investments in agricultural production. They can diversify agricultural production and cultivate high-value crops.

The drivers of disparity in the agriculture sector could depend on:

- Inequality in access to land and other productive assets.
- A large pool is available as cheap labour.
- Mechanization.
- Inability to cope with rising input prices and farmer indebtedness.
- Participation of the poor households limited to unskilled and semi-skilled wage employment.
- Declining public investment and policy unresponsiveness

As discussed earlier in chapter 1, in the agriculture sector, the process of exploitation may be conveyed through the following equation:

$$\pi = pq - (c(q) + F)$$

Where $\pi = profit$

p = Minimum Support Price

q = Agriculture output

$c(q)$ = Input Costs

F = Fixed Costs

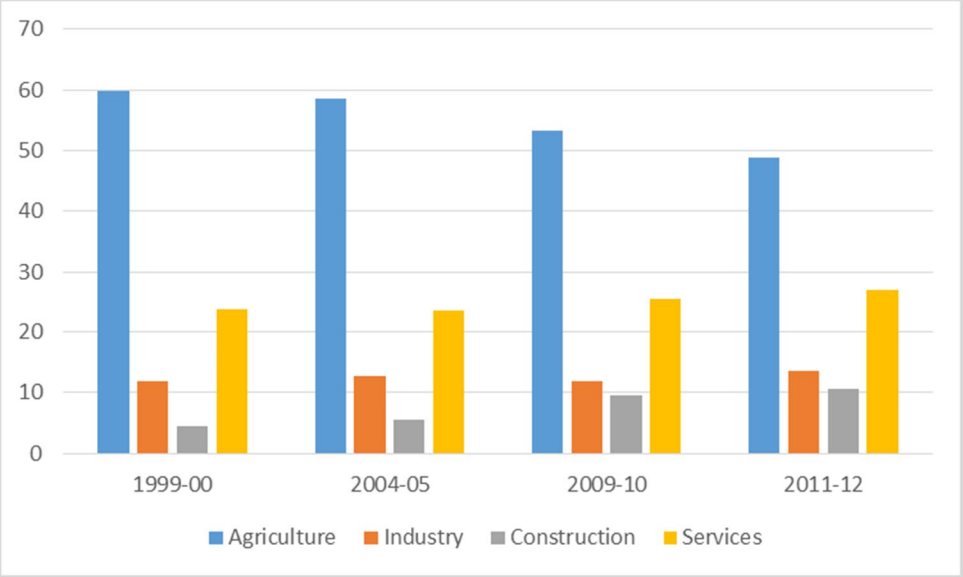
The variables listed above vary as per the size class of land, in other words, wealthy farmers may be able to afford better farming equipment, irrigation practices and better quality of inputs, while the poor and marginal farmers have to resort to outdated implements, the inefficient grade of inputs which impacts the productivity. The ability to sell at minimum support prices, availability of credit, coverage under crop insurance, awareness about new inputs, and technology depends on the wealth of the farming household. Impoverishment keeps the households in a poverty trap.

The chapter addresses each of the issues listed above. What follows is an analysis of the status of India's agriculture sector.

4.2 Status of Agriculture in India

Data from National Accounts Statistics shows that the contribution of agriculture and allied activities to GDP was roughly 42% in 1981; this fell to 31% in 1993. In 2010, the share dropped further to 17.7%. According to 2016-17 estimates, the share of this sector in GVA is about 18%. Figure 4-1 below displays the sectoral share of employment across various NSSO rounds. Agriculture's share in employment in the survey year 2011-12 stood at 48.9%, which shows that agriculture still happens to employ the largest fraction of the country's labour force. Table 4-1 presents information on the share of workers engaged in agriculture since the 32nd round on employment and unemployment survey in 1977-78 to the most recent periodic labour force survey in 2017-18. Abysmal contribution to GDP along with a large fraction of workers engaged points at the low productivity levels that the sector struggles with.

Figure 4-24 Sectoral Share in Employment (%)



Source: NSSO Various Rounds

Table 4-23 Share of workers (usual status: ps+ss) in Agriculture sector during 1977-78 (NSS 32nd round) to 2017-18 (PLFS)

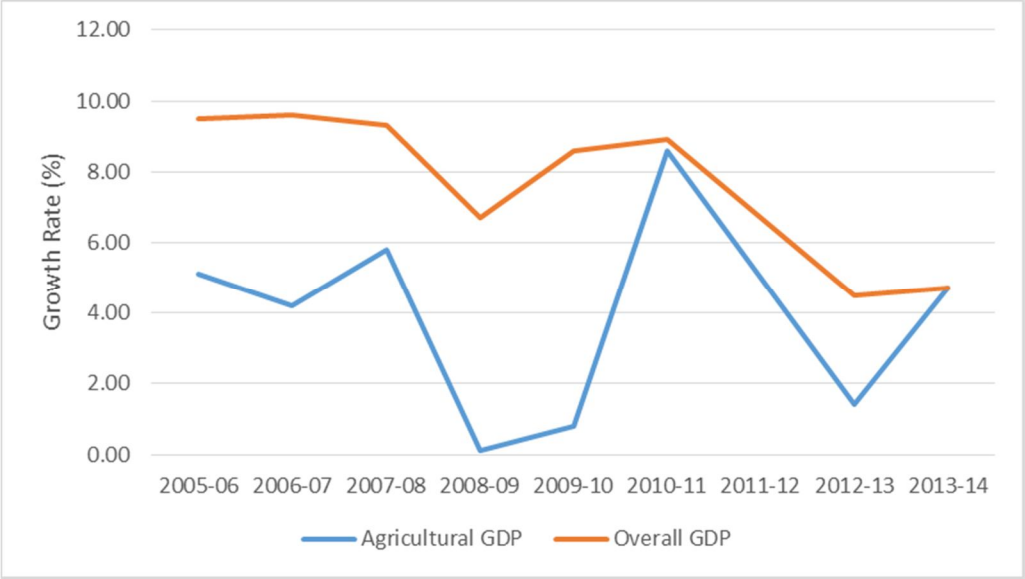
Category of Worker	32nd	38th	43rd	50th	55th	61st	66th	68th	PLFS
	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10	2011-12	2017-18
Rural Male	80.6	77.5	74.5	74.1	71.4	66.5	62.8	59.4	55
Rural Female	88.1	87.5	84.7	86.2	85.4	83.3	79.4	74.9	73.2
Urban Male	10.6	10.3	9.1	9	6.6	6.1	6	5.6	5.4
Urban Female	31.9	31	29.4	24.7	17.7	18.1	13.9	10.9	9.1

Source: Periodic Labour Force Survey (July 2017-June 2018), Ministry of Statistics and Programme Implementation, National Statistical Office, May 2019

The Indian agriculture sector has shown signs of stagnation. Growth in area, production, and yields have suffered; in fact, there are signs of retarded growth in the recent period. The literature points towards multiple reasons behind this deceleration, prominent ones being: i) inadequate irrigation cover; ii) improper adoption of technology; iii) unbalanced use of inputs; iv) decline in public investment; and v) weakness in credit delivery system.

The agriculture sector in India has witnessed an erratic pattern of growth figures 4-2 & 4-3 reflect this volatility[22].

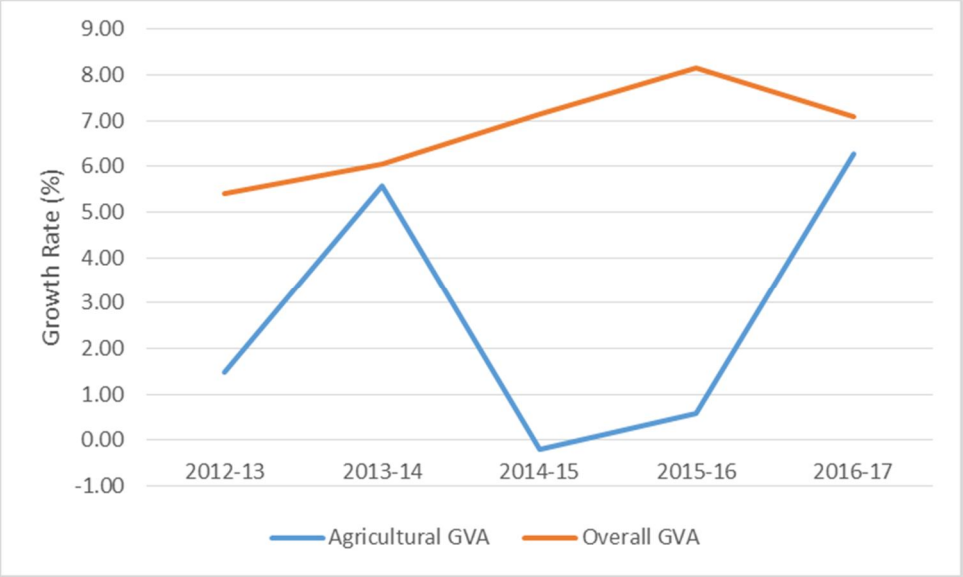
Figure 4-25 Agricultural GDP Growth Rate at Constant (2004-05) Prices



Source: National Accounts Statistics, Ministry of Statistics and Programme Implementation

[22] The CSO has recently revised the methodology for calculating national accounts aggregates to facilitate international comparability and the ease of understanding the analysis. The base year for national accounts has been revised from 2004-05 to 2011-12. As per the new series, data on the Gross Value Added (GVA, earlier referred as Gross Domestic Product) at 2011-12 basic prices is shared.

Figure 4-26 Agricultural GVA Growth Rate at Constant (2011-12) Prices



Source: National Accounts Statistics, Ministry of Statistics and Programme Implementation

Table 4-2 gives data on the compound annual growth rate of the area, production & yield for foodgrains, non-foodgrains, and all principal crops. The data indicates that agricultural production has been moving at snail's pace, making farming a non-lucrative option.

Table 4-24 CAGR (%) Area, Production, Yield

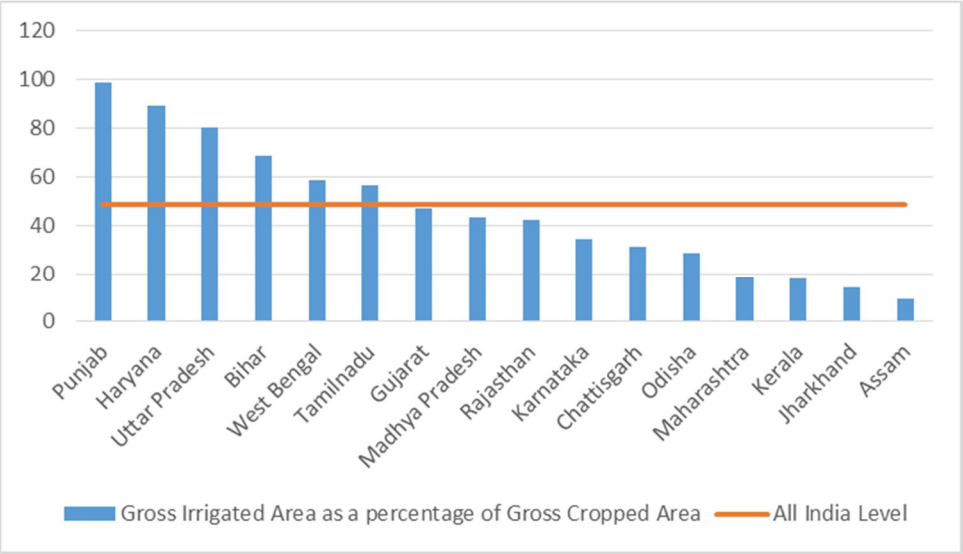
Year	Foodgrains			Non-Foodgrains			All Principal Crops		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
1980-81 to 1989-90	0.00	0.03	0.03	0.02	0.05	0.03	0.00	0.04	0.03
1990-91 to 1999-00	0.00	0.02	0.02	0.01	0.02	0.01	0.00	0.02	0.01
2000-01 to 2009-10	0.00	0.01	0.02	0.01	0.03	0.02	0.01	0.02	0.02
2010-11 to 2015-16	-0.01	0.00	0.01	-0.02	-0.02	0.00	-0.01	-0.01	0.01

Source: Ministry of Agriculture

Agriculture in India, till date is dependent on the vagaries of monsoon, explaining the volatility and low productivity. Crop productivity depends heavily on **irrigation.** As per the data, for the year 2014-15, gross irrigated area as a percentage of the total cropped area stood at 48.6 percent

at the all-India level More than half of the total cropped area still remains unirrigated. There is significant variation in the irrigation cover across states. In the northern states, the irrigation coverage is quite high, for instance in Punjab and Haryana it is 98.7% and 89.1% respectively. On the other hand, the irrigation cover falls below the all India level for a large number of states, namely; Maharashtra, Kerala, Jharkhand, Assam.

Figure 4-27 Gross Irrigated Area as a percentage of Gross Cropped Area (%)



Source: Commission for Agricultural Costs and Prices

Agricultural mechanization can certainly bring about improvement in production and productivity, efficiency in input use. However, agricultural mechanization in India is still in nascent stage. The inability of small and marginal farmers to afford high valued farm implements and the unwillingness of commercial banks to offer credit for agricultural equipment is a big hurdle in the process of raising mechanization level.

Table 4-3 shows the trends in the use of farm machinery and other related factors. The data suggests that the use of tractors for farm operations has increased considerably. However, the performance on other fronts has not been great. The status of mechanization in agriculture in India varies for different activities, although the overall level of mechanisation is about 40-45%, as compared to 90% in developed countries.

Table 4-25 Change in use of farm machinery and related factors of Indian Agriculture., 1960-2012

Item	Unit	1960	1970	1980	1990	2000	2010	2012/13
Agricultural Land (net cropped area)	million ha	133	140	140	143	143	142	140
Irrigated area	%	18.32	23.04	28.84	34.03	41.11	44.99	47.62
Cropping intensity	%	115	118	123	130	133	136	139
Grain yield	kg/ha	700	860	1000	1300	1600	1950	2130
Nutrient use (N, P & K)	kg/ha	2	13.61	31.95	67.55	90.12	142.35	131.36
No. of irrigation pumps	Million	0.4	3.3	6.2	12.9	19.5	28	52.8
No. of draft animals	Million	80	83	73	71	60	50	48
Agricultural labour	Million	131.1	125.7	148	185.3	234.1	263.1	-
Total no. of tractors	1000	37	146	531	1150	2633	5005	5811
Tractors per 1000 ha of net crop area	no./1000 ha	0.3	1	3.8	8.1	18.6	35.4	41.5
Crop area per tractor	Ha	3594	959	264	124	54	28	24
No. of power tillers	1000	-	9.6	16.2	32.3	114.7	259.2	312.7
Approximate share of area plowed by tractors*	%	-	3	10	20	40	80	90

Source: Singh (2015)

*Note: *Power tillers are available and used mainly in Kerala, West Bengal, Karnataka, Odisha, and the northeastern hill states. Figures are highly crude estimates based on back-of-the-envelope calculations, as follows. About 90 percent of land preparation in India today is done by four-wheeled tractors, which number about 6 million, and a smaller number of two-wheeled tractors (CSAM and UNESCAP 2016). Therefore, it may be reasonable to assume that, in 2000, with 2.6 million tractors, about 40 percent of the area was prepared by tractors. Figures for earlier years were then estimated proportionally based on the number of tractors in the country. Importantly, these figures may potentially be higher, with some studies, such as that of Ugwuishiwu and Onwualu (2009), suggesting that the share might have been as high as 60 percent in 1994. — = data not available; K = potassium; N = nitrogen; P = phosphorus.*

Unequal access to **productive inputs** and unbalanced use is also detrimental to agriculture growth. The average size of landholding in the Indian farm sector is 1.03 ha, and nearly 70% of the households have less than 1 hectare of land. This suggests that access to land as input is highly unequal. Size of the landholding does impact the productivity of the land. Marginal and small farmers often fall back on traditional farm practices and conventional inputs, while the large land classes can afford to use better implements and have access to technology.

Availability of quality seeds is critical for achieving better productivity levels. However, the lack of quality seeds continues to be one of the greatest impediments to raise the productivity level in many crops. Therefore, adequate production and effective distribution of quality seeds is essential to realize higher yields.

Table 4-26 Production/Availability of Breeder, Foundation and Certified Seeds (MT) and Growth in Production (%)

Year	Breeder Seeds		Foundation Seeds		Certified/Quality Seeds	
	Production	Growth	Production	Growth	Production	Growth
2013-14	8229		174307		3473130	
2014-15	8621	4.76	157616	-9.58	3517664	1.28
2015-16	9036	4.81	149542	-5.12	3435248	-2.34
2016-17	11071.44	22.53	220907	47.72	3802904	10.70
2017-18	11232.75	1.46	195415	-11.54	4194111	10.29

Source: Ministry of Agriculture & Farmers Welfare

Table 4-4 shows that the production of seeds suffers from fluctuations; there is a need to ensure a sustained increase in the production, timely availability, and effective distribution of seeds to the farmers.

As per the report on Price Policy for Kharif crops (2018), all-India availability of hybrid seeds rose fromf nearly 200thousand tonnes in 2011-12 to 260 thousand tonnes in 2015-16. During the same period, the requirement of seeds also rose, requirement being less than the availability. Despite the overall increase in availability of seeds, there is a substantial variation in requirement and availability over time, across regions & crops.

Fertilizers are an important input for agricultural production, but sub-optimal use of fertilizers and imbalanced nutrient ratio N, P, and K may negatively impact the soil fertility over time. As far as the N, P, K ratio is concerned, it has traditionally been in favour of Urea due to distorted pricing policy and far away from the ideal level of 4:2:1. N, P, K ratio has improved to 6.7:2.7:1 on account of reduction in N and P usage after touching a high of 8.1:3.2:1 in 2012-13[23]. Although there is a visible improvement in N, P, K ratio at all-India level but variations at the state level persist, the data is shown in table 4-5.

Table 4-27 N, P, K Ratio for Major States

States	2014-15	2015-16	2016-17
Haryana	41.1:9.9:1	49.4:12.3:1	26.5:6.8:1
Madhya Pradesh	24:10.7:1	20.4:8.5:1	17.2:7.4:1
Uttar Pradesh	14:3.5:1	12:4.6:1	13.5:5.8:1
Rajasthan	68.6:17.6:1	76.4:20.3:1	88.9:23.6:1
Punjab	50.5:14.2:1	19.7:6.6:1	53.9:15.7:1
Andhra Pradesh	5.3:2.2:1	5.3:2.7:1	4:1.9:1
Maharashtra	3:1.5:1	2.6:1.9:1	3:1.8:1
Karnataka	2.9:1.3:1	3.9:2:1	2.8:1.9:1
West Bengal	2.5:1.3:1	2.6:1.5:1	2.6:1.5:1

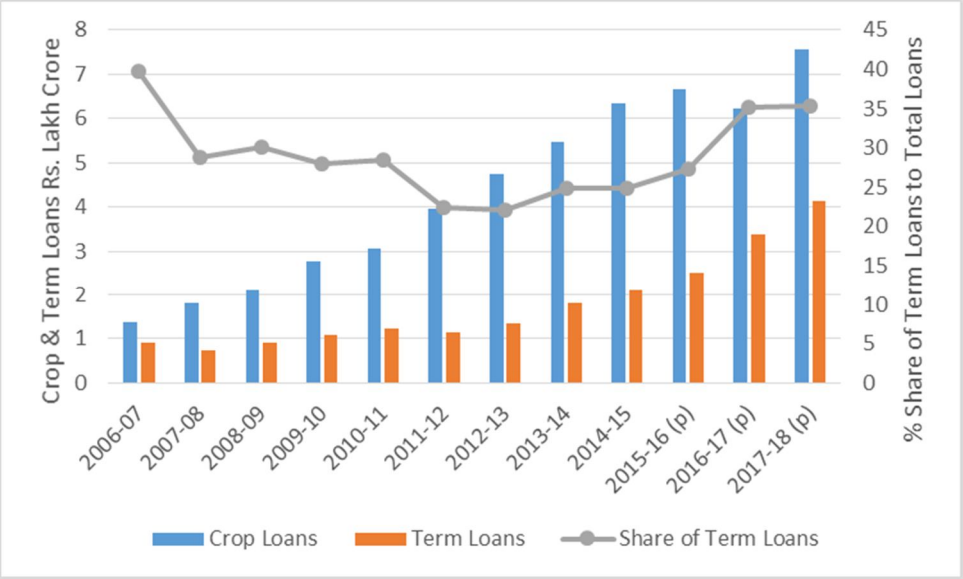
Source: Replies to CACP questionnaire by various States

As discussed later in the chapter in detail, **public investment** and expenditure on agriculture in India have grown slowly. Revival of India's agricultural growth requires a far greater thrust to public spending. As per the recent estimates gross fixed capital formation in agriculture is as

[23] Government has taken steps to check diversion of highly subsidized urea towards non-agricultural purposes. One such step was the introduction of the policy of 100 percent neem coating of indigenously produced urea and imported urea w.e.f 1st September, 2015 and 1st December, 2015, respectively. Consumption of fertilizers mainly N, witnessed a decline during 2015-16 and 2016-17 due to reduced fertilizer demand owing to low rainfall. An assessment of AeFDS (Aadhaar enabled Fertilizer Distribution System) Pilot by Micro Save for NITI Aayog has reported that neem coating of Urea and improved fertilizer distribution system through AeFDS has reduced diversion of Urea.

low as 13% of the GDP of the sector. Not just the public sector but the private sector investment in agriculture has been following a downward trend.

Figure 4-28 Trends in Institutional Credit to Agricultural Sector and Share of Term Loans in total Agricultural Credit



Source: NABARD

The flow of **institutional credit** has increased overtime. However, a large proportion of marginal and small farmers who need credit assistance the most depend on non-institutional credit. The institutional credit is available as short term loans; primarily crop loans which can be utilized to purchase farm inputs, machinery, etc. and term loans used for agricultural investment. It has been emphasized that the share of term loans needs to be improved to promote investment in agriculture. It is said that public investment crowds in private investment, therefore providing long term credit in the agriculture sector may boost private investment as well. Efforts are also needed to step up loan facilities to tenant farmers as they are often deprived of institutional finance due to the absence of collateral. Moreover, a lower share of cooperatives and RRBs in total credit disbursement is also an area of concern as these are primary sources of short and medium-term credit to small and marginal farmers due to deep penetration of these institutions in rural areas.

The Indian agricultural sector is a low productivity sector. The agrarian crisis has impacted the livelihood of millions of farmers. Strong policy measures and timely action is imperative for the revival of agriculture and to check the distress.

What follows is a discussion of the drivers of disparity in the agricultural sector listed earlier.

4.3 Inequality in access to land and other productive assets

Table 4-6 summarizes the distribution of total land possessed as per size class of land owned. As per the data, about 40% of the farmer households fall in the marginal and small farmer category (<0.01 and 0.01 – 0.40). These households depend on leased in land for farming practices. Apart from these two classes, for the highest land owning class (category 10.00 +) 21.49% of the total land possessed is leased in. Greater dependence on leased land pushes the small farmers into debt.

Table 4-28 Distribution of Total Land Possessed as per Size Class of Land Owned (2013)

Size class of land owned	Land Owned	Land Leased In	Land Neither Owned Nor Leased In	Land Leased Out	Distribution of Households
<0.01	2.54	86.66	10.87	0.06	3.87
0.01 - 0.40	59.01	38.93	3.15	1.09	35.26
0.41 - 1.00	90.81	9.75	1.18	1.74	30.49
1.01 - 2.00	94.63	6.79	0.57	2.00	15.68
2.01 - 4.00	96.19	5.84	0.54	2.57	8.30
4.01 - 10.00	100.00	4.41	0.51	5.25	3.12
10.00 +	77.27	21.49	5.18	3.94	0.34
all sizes	89.75	11.53	1.31	2.59	100.00

Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013)

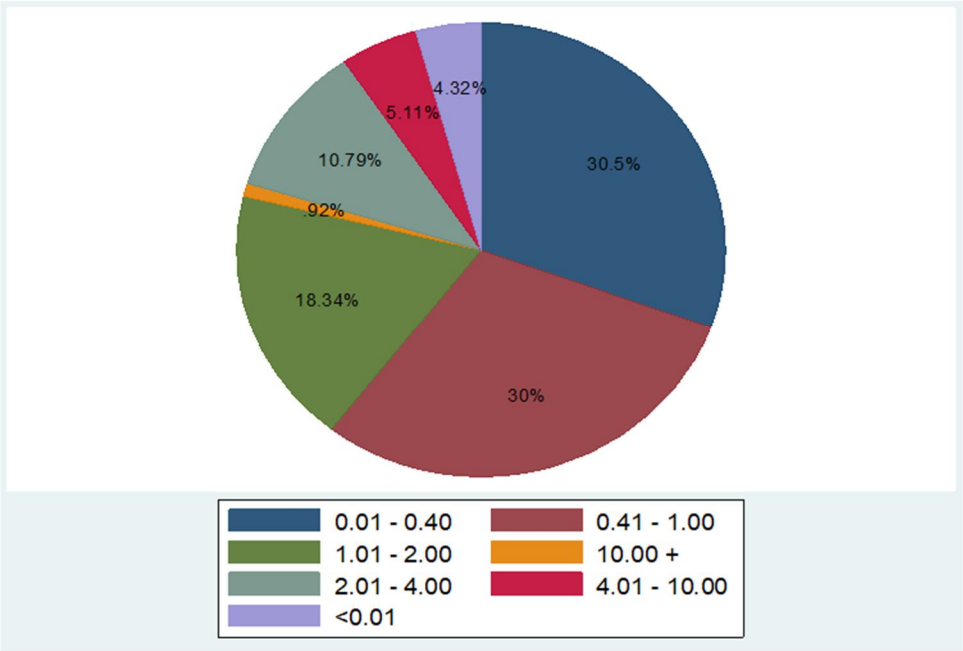
Table 4-1A in the appendix shows the distribution of total land possessed for each class as per land possession. The two tables paint a different picture for the farming households.

Land possessed =Land owned + Land Leased In + Land Neither Owned nor Leased in – Land Leased Out

A household could fall in the size class <0.01 of land possessed, even it owns enough land but chooses to lease out most of it rather than cultivating it. Land ownership and Land possession are alternative criteria and the corresponding results will differ.

As per the unit level data, situation assessment survey (2013), roughly 4% of the rural households owned less than 0.01 hectare of land. 35% and 30% of the households belonged to the category: 0.01-0.40 and 0.41-1.00 hectare of land respectively. About 16% held more than 1 but less than 2 hectares, 8% possessed land more than 2 but less than 4 hectares, 3% fell in the land size class of 4.00-10.00, and about 0.34% held more than 10 hectares of land. The data is shown in table 4-6.

Figure 4-29 Distribution of farmer households as per the size of land owned (2003)



Source: Author's Computation, Situation Assessment Survey (2003)

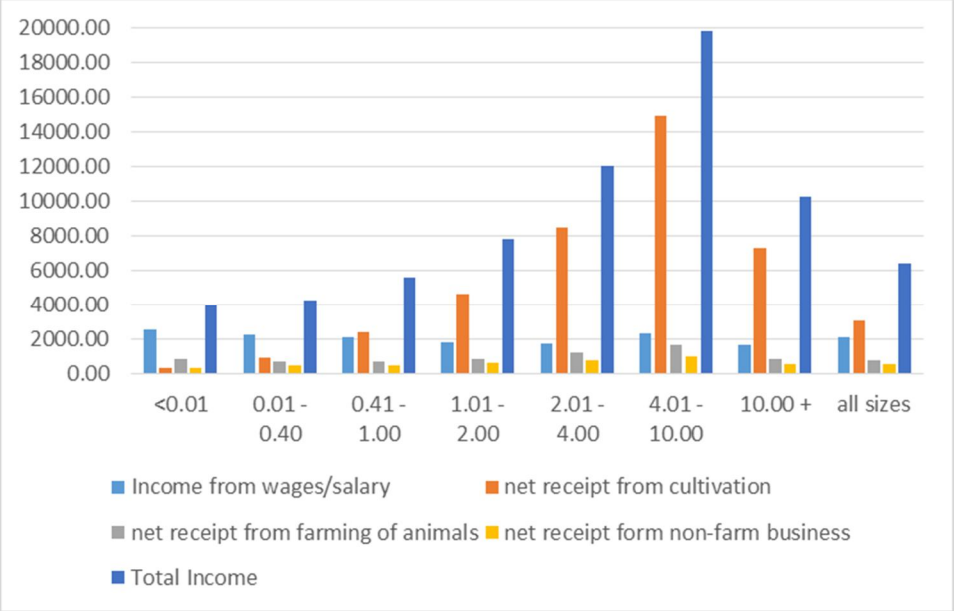
Figure 4-7 shows the distribution of households as per the size of land-ownership, a comparison between the data for the year 2003 and 2013 suggests that the landholdings have become smaller and fragmented. The principal source of income also differs across size classes. Distribution of farming households is shown in the table below. It is clear, that the small farming classes, depend to a great extent on wage work and livestock rearing, since the returns from cultivation are low. On the other hand dependence on agriculture grows with larger operational holdings. The data for the year 2003 is shown in table 4-2A, in the appendix

Table 4-7 Principal source of income as per size class of land owned (2013)

Size class of land owned (ha)	Cultivation	Livestock	Other agricultural activity	non-agricultural enterprises	wage/salaried employment	Others*
< 0.01	22.03	15.51	2.61	8.16	46.70	4.99
0.01 - 0.40	46.27	4.55	1.22	7.01	32.47	8.47
0.41 - 1.00	70.71	2.44	0.80	3.58	18.43	4.03
1.01 - 2.00	82.13	2.27	0.74	3.34	9.38	2.13
2.01 - 4.00	85.59	2.33	1.41	2.04	6.56	2.08
4.01 - 10.00	84.45	2.83	0.38	1.50	7.13	3.71
10.00 +	85.03	6.97	1.98	2.22	2.78	1.04
all sizes	63.66	3.65	1.06	4.70	21.84	5.09

Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013)

Figure 4-30 Average monthly income from different sources per agricultural household as per size class of land owned (Rs.)- 2013



Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013)

Figure 4-7 displays that the net receipts from cultivation are positively related to the size of the land. While the marginal and small farmers depend on wage work, livestock and non-farm business for livelihood, the land rich classes churn out revenue from cultivation, making possession of land an

important factor impacting returns from agriculture. The dependence of marginal and small farmers is often distress induced.

This implies that greater farm sizes can stimulate income, making possession of land an exceedingly important factor for better income. Unfortunately, the average size of landholding is 1.03 ha, and nearly 70% of the households have less than 1 hectare of land. Landholdings have become increasingly fragmented over the years. This could be due to rising population pressure and subdivision within families. Naturally, a large fraction of households has to depend on non-farm activities to support income.

Table 4-8 Regression Result on net receipts from cultivation per month (dependent variable)

	(Year-2013)	(Year-2003&2013)
	Net_receipt_cultivation	Net_receipt_cultivation
Land_Owned	3373.965***	966.186***
	(41.473)	(9.826)
scheduled_tribe	-1682.823***	-570.076***
	(209.873)	(55.912)
scheduled_caste	-1634.246***	-788.218***
	(238.252)	(58.890)
Other_backward_class	-1195.343***	-569.905***
	(173.674)	(44.887)
Constant	1315.834***	968.353***
	(150.193)	(37.476)
N	34580.000	78381.000
r2	0.169	0.119
Adj r2	0.169	0.119

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013) & 59th Round, Situation Assessment Survey (2003)

Table 4-8 reports the results of a simple OLS regression with net receipts from cultivation per month as the dependent variable and land owned (ha) and dummies for various social groups. The first regression is performed only for the year 2013, while the second regression uses data from both the surveys 2003 & 2013. The results confirm that the net receipts from cultivation

depend positively on land ownership. Scheduled tribes, scheduled castes & other backward classes suffer due to the social group they belong to.

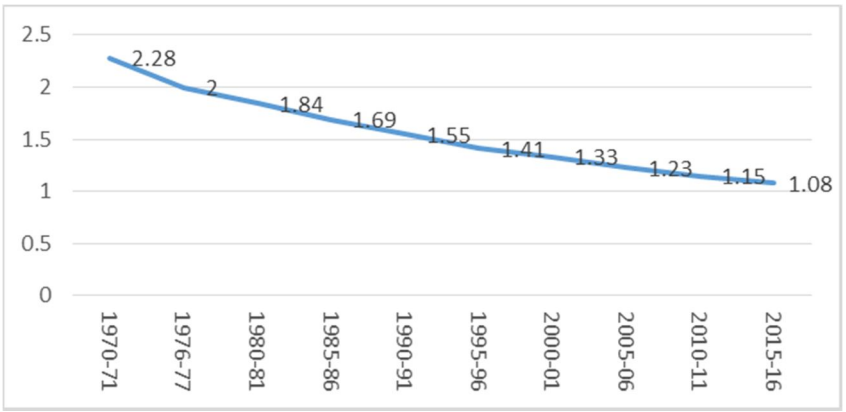
The average size of operated landholdings has been falling, shown in figure 4-8. The data on average landholdings across size groups confirms that the size of landholdings have either remained almost unchanged or have fallen across the farmer size groups. Land holdings in the marginal category constitute 68.5 percent of the operational holdings in the country as of 2015-16. In terms of area operated, the share of marginal holdings is 24%. Small and marginal holdings together, constitute 86 percent in terms of number of operational holdings and 47 percent of the operated area in the country. Thus, over the period, the marginal category has emerged as a distinct and dominant class by itself as far as the share in total number of operational holdings is concerned, with the average size of land holding dwindling to a mere 0.38 ha, which definitely makes farming infeasible.

Table 4-9 Average size of operated landholdings across size groups (in ha)

Size Groups	1970-71	1976-77	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11	2015-16
Marginal	0.4	0.39	0.39	0.39	0.39	0.4	0.4	0.38	0.39	0.38
Small	1.44	1.42	1.44	1.43	1.43	1.42	1.42	1.38	1.42	1.41
Semi-Medium	2.81	2.78	2.78	2.77	2.76	2.73	2.72	2.68	2.71	2.7
Medium	6.08	6.04	6.02	5.96	5.9	5.84	5.81	5.74	5.76	5.72
Large	18.1	17.57	17.41	17.21	17.33	17.2	17.12	17.08	17.38	17.1

Source: Agriculture census

Figure 4-8 Average size of operated landholdings



Source: Agriculture census

Figure 4-8 shows that the average size of operated landholdings has fallen from 2.28 ha in 1970-71 to 1.08 ha in 2015-16. Table 9 gives data on households with and without cultivable land. The proportion of households without land has gone up.

Table 4-9 Percentage Distribution of Rural and Agricultural Labour Households With & Without Cultivated Land

	1983	1987-88	1993-94	1999-00	2004-05	2009-10	2011-12
Households without cultivable land	55.9	52.2	57	57.3	62.1	63.63	69.25
Households with some land	44.1	47.8	53	42.7	37.9	36.37	30.75

Source: Rural Labour Enquiry and calculations from NSS 68th Round

Farm land is being grabbed for speculative investment, for speculative urban sprawl, for mines and factories, for highways and expressways. This land is being put in use mainly for housing projects or commercial use. Moreover, there has been acquisition of agricultural land in the name of special economic zones (SEZ) and industrial corridors. The following table has been adapted from Chakravorty (2013). Table 4-10 reveals instances of forced acquisition of farm land, poor compensation. The farmers continue to fight for their livelihood.

Table 4-10 A few examples of contested acquisitions

Location	Project Type	Key Issue	Area	Key Institution	Source
Andhra Pradesh: Gopannalli Village	IT Complex	Resistance and Litigation based on livelihood and compensation	450 acres	State Government	TOI, 19 March 2006
Andhra Pradesh: Polepally	SEZ	Farmers protest forcible acquisition; very low payment (18-50K/acre against 20 Lakh/acre	1000 acres	State Government	Business Standard, 14 April 2009

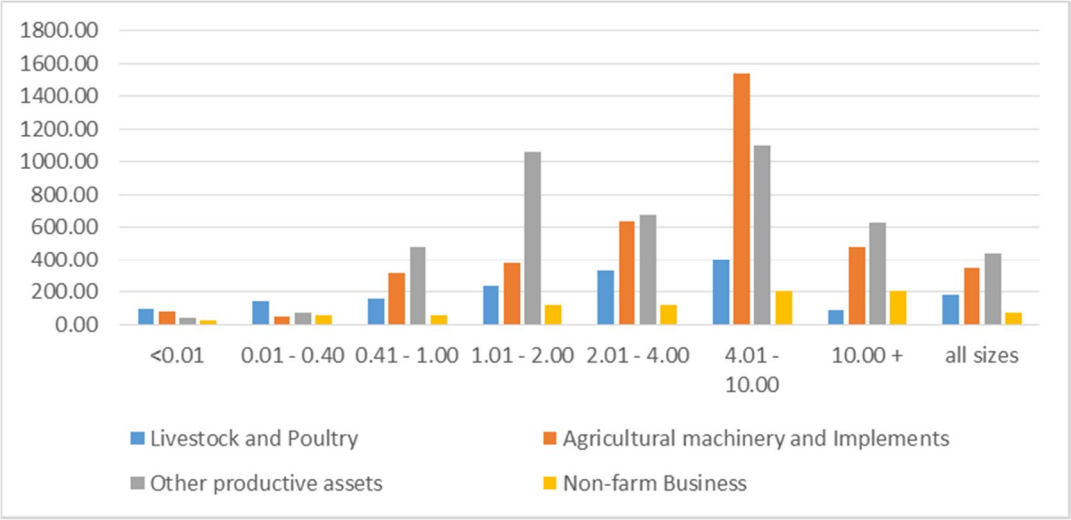
		'market price')			
Andhra Pradesh: Rajaiahpet Village	Port for aluminium plant	Farmers, fishermen, vendors, toddy-tappers unwilling to give up land	210 acres in 2 villages	Anrak Aluminium	Hindu, Patnaik, 25 August 2010
Chattisgarh: Naya Raipur	New Town (Capital)	Farmers want more compensation; 5.9 Lakh/acre offered; 25-30 Lakh/acre demanded	20,000 acres	State Government	Indian Express, 28 January 2008
Goa: Navelim	Sewage treatment plant	Farmers fight 'land grab'; other (less productive) land available	33 acres	State Government	TOI, 3 January 2011
Goa: Navelim	Highway widening	Destroy lifestyle; poor compensation (Rs. 32,000 per acre)	Many Parcels	NHAI	TOI, 26 October 2010
Gujarat (rural, south)	Power lines	Farmers want more compenstion (one-time crop loss value being offered)	Many Parcels	Power Grid Corporation of India Ltd.	TOI, 17 November 2010
Haryana: Manesar	Industrial zoning	Farmers unwilling to give up fertile land; no more industrial needed in Manesar	1810 acres	State Government	TOI, Roy Chowdhury, 31 January 2011
Maharashtra: Jaitapur	Nuclear Power Plant	Absolute refusal based on livelihood & land dependenchy; very low price offered (1.5 lakh/acre)	2300 acres	State Government	MTB, Snehal, 4 July 2010
Tamil Nadu:	Port	Farmers want more	4000	Railway	TOI, Samdani, 21

Machilipatnam		compensation; 10 lakh/acre vs 3 lakh/acre offered	acres	administration, Navayuga Engineering Company Ltd.	October 2010
Uttar Pradesh: Unnao	3 SEZs	Farmers want more compensation; 7.2 lakh/acre offered, 19.2 lakh/acre demanded, plus 1 job per family	1200 acres	UP State Industrial Development Corp.	Hindu, 6 November 2007
West Bengal: Burdwan	Steel Plant expansion	Farmer agitation successfully raised price from 6.5-8.5 lakh/acre to 8.5-12.5 lakh/acre	305 acres	Indian Iron & Steel Co.	Telegraph, 27 October 2008

Source: Chakravorty (2013)

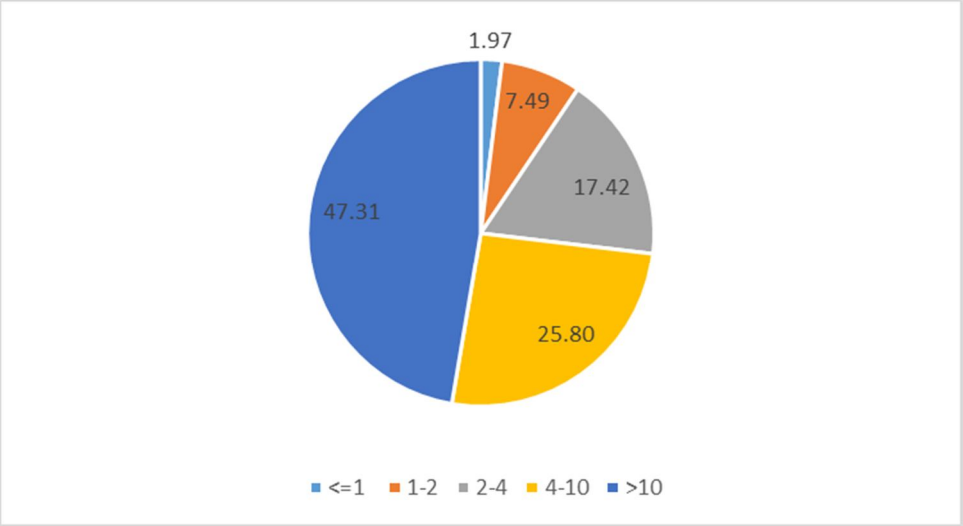
Situation assessment survey also collects information from the rural households on the expenditure they incur on farm and non-farm productive assets. Figure 4-9 displays the negligible levels of average monthly expenditure made by the marginal and small farmers in farm activity. Size classes at the bottom cannot afford the basic agricultural machinery and implements.

Figure 4-9 Average monthly expenditure incurred by the households on productive assets (Rs.) as per size class of land owned (2013)



Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013)

Figure 4-10 Percentage share of Fixed Capital Expenditure in Farm Business as per Landholding Size (ha), 2012-13



Source: All India Debt and Investment Survey, 2012-13

Table 4-11 Inequality in Asset Ownership in Rural India

Asset Group	Average Per Capita value			Annual Growth Rate			Gini Coefficient by Asset Group		
	1991	2002	2012	1991-2002	2002-12	1991-2012	1991	2002	2012
Land	13075.29	16968.58	42309.59	2.71	14.93	10.65	0.70	0.71	0.76
Livestock	687.98	565.30	939.02	-1.62	6.61	1.74	0.64	0.70	0.72
Agricultural machinery	454.83	531.31	256.19	1.53	-5.18	-2.08	0.90	0.91	0.87
Buildings	4355.26	6316.78	12314.56	4.09	9.49	8.70	0.59	0.58	0.59
Non-farm assets	64.71	93.65	144.23	4.07	5.40	5.85	0.98	0.97	0.97
Transport	245.83	371.65	1235.21	4.65	23.24	19.17	0.88	0.91	0.90
Shares	16.09	22.52	43.16	3.63	9.17	8.01	0.98	0.99	0.99

Deposits	243.00	577.36	963.18	12.51	6.68	14.11	0.96	0.92	0.88
Amount receivable	11.50	26.12	74.42	11.56	18.49	26.05	0.99	0.99	0.99
Total assets	19154.50	25473.28	58279.57	3.00	12.88	9.73	0.62	0.63	0.67
Loans payable	362.62	761.45	1860.54	10.00	14.43	19.67	0.90	0.90	0.89
Net worth	18791.88	24711.83	56419.03	2.86	12.83	9.53	0.62	0.63	0.68

Source: Anand & Thampi (2016)

Table 4-11 has been taken from Anand & Thampi (2016). The data in the table utilizes information collected in the All India Debt Investment Survey. The study reports an increase in inequality in the ownership of land, livestock, buildings in rural areas. Inequality in the ownership of agricultural machinery, non-farm assets, transport is also very high.

Extreme inequality in the ownership of land and other productive assets explains the unequal returns to different class sizes from cultivation.

4.4 Large pool of labour

As per the census documents, the share of cultivators in the total working population has fallen from 42% to 24.6%. At the same time, the proportion of agricultural labourers has gone up from 26.3% to nearly 30%. This is indicative of the fact that the pool of agricultural labour is growing.

Marginal workers are those who participate in any productive activity for less than 6 months, so that activity is more or less subsidiary for them. The share of marginal workers has risen in the case of both cultivators and agricultural labour. The pool of agricultural labourers has grown, with a high share of workers on marginal status. Also, it is interesting to note that around the same time, non-agricultural workforce (household industry and other workers) saw a big jump in the 2001 census, making a leap of 61.7% since 1991. Saha & Verick (2016) state that during the period 1999-2000 to 2011-12, the percentage of rural workers in the non-farm activities (as principal status workers) has risen from 25.1% to 37.21%, for subsidiary status workers, the share has risen from 15% to 40%. So there is a movement out of cultivation towards agricultural labour and non-agricultural activity.

Table 4-12 Distribution of total workforce across main and marginal status and industrial categories (million)

Year	Total Workers				Main Workers				Marginal Workers			
	CL	AL	HHI	Others	CL	AL	HHI	Others	CL	AL	HHI	Others
1981	102.8	64.4	8.6	68.8	92.5	55.5	7.7	66.8	10.3	8.9	0.9	2
1991	124.7	86	7.6	95.9	110.7	74.6	6.8	93.8	14	11.4	0.8	2.1
2001	127.6	107.4	16.4	151	103.2	63.4	12.2	133.4	24.4	44	4.2	17.7
2011	118.7	144.3	18.3	200.4	95.8	86.2	12.3	168.1	22.9	58.2	6	32.3

Source: Census Documents

Table 4-13 Marginalization of the agricultural workforce (%)

Year	Cultivators		Agricultural Labourers	
	Main Workers	Marginal Workers	Main Workers	Marginal Workers
1981	89.98	10.02	86.18	13.82
1991	88.77	11.23	86.74	13.26
2001	80.88	19.12	59.03	40.97
2011	80.71	19.29	59.74	40.33

Source: Census Documents

Table 4-14 Structure of rural employment (UPSS) (%)

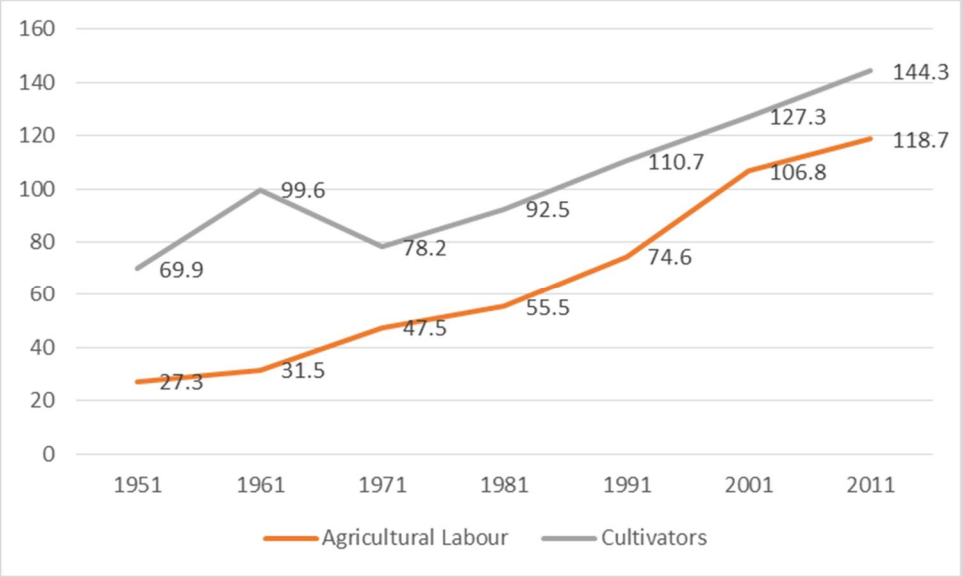
Sector/Industry	1983			1993-94			2004-05			2011-12		
	Male	Female	Person	Male	Female	Person	Male	Female	Person	Male	Female	Person
Agricultural and allied activities	77.7	87.7	81.5	74	86.2	78.4	66.5	83.3	72.7	59.4	74.9	64.1
Mining and quarrying	0.6	0.3	0.5	0.7	0.4	0.6	0.6	0.3	0.5	0.5	0.3	0.5
Manufacturing	7	6.4	6.8	7	7.1	7	7.9	8.4	8.1	8.2	9.8	8.7
Electricity, gas and water supply	0.2	0	0.2	0.3	0	0.2	0.2	0	0.2	0.3	0.1	0.2
Construction	2.3	0.7	1.7	3.2	0.8	2.3	6.8	1.5	4.9	13	6.6	11.1
Trade, hotels and restaurants	4.4	2	3.5	5.5	2.1	4.3	8.3	2.5	6.2	8.5	3	6.8
Transport, storage and communication	1.7	0.1	1.1	2.2	0.1	1.4	3.8	0.2	2.5	4.2	0.1	2.9
Other services	6.1	2.8	4.9	7.1	3.4	5.7	5.8	3.9	5.1	5.9	5.2	5.7
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Employment and unemployment situation in India, Various rounds NSSO, Amarendra reddy (2014)

Data in table 4-14 shows that the swelling pool of non-farm labour has made inroads to other sectors of activity. Construction has witnessed the maximum rise in rural employment, mining, and quarrying, trade, hotels and restaurants also account a high proportion of rural employment.

The data suggests a movement out of farming practices in favour of alternative non-farm occupations. Agricultural labourers are growing, and at the same time, non-farm workers have grown.

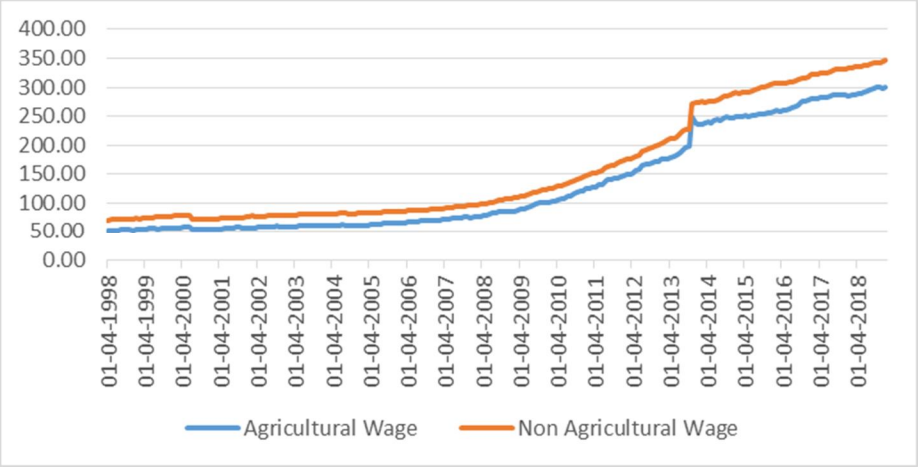
Figure 4-11 Agricultural Labour and Cultivators (million)



Source: Census, various years

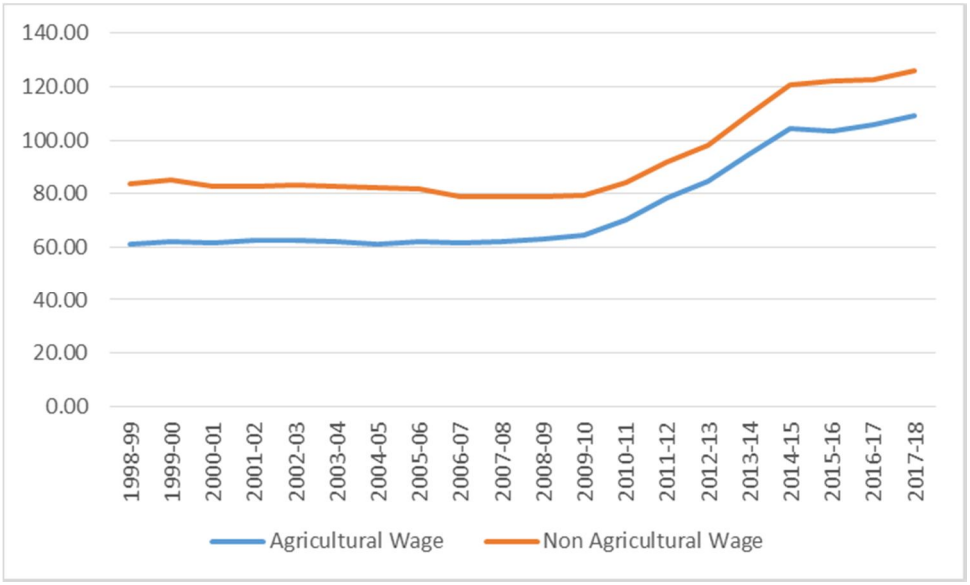
Reserve bank of India reports data collected by labour bureau on the average daily wage rates for different agricultural and non-agricultural occupations for men. The agricultural occupations include: ploughing, sowing, weeding, transplanting, harvesting, winnowing, threshing, picking, welldigging, herdsman, cane crushing. The non-agricultural occupations include: carpenter, blacksmith, cobbler, mason, tractor driver, sweeper and unskilled labourers. Figure 4-12 below shows the monthly agricultural and non-agricultural wages. The series show a spike in the month of November, 2013, because the data had some new occupational categories added and a few old ones dropped.

Figure 4-12 Agricultural and Non-agricultural wages –Men (Rs.)



Source: Reserve Bank of India

Figure 4-13 Real Agricultural and non-agricultural wages (Rs.)



Source: Reserve Bank of India

Average annual agricultural and non-agricultural wages are expressed in real terms, and the trend is shown in figure 4-13. The non-agricultural wages have always been higher than the agricultural wages. However, the difference in average wage rates prevailing in non-agricultural and agricultural activities is very small. Higher wage rates prevailing in locally available non-agricultural works, could act as a strong pull factor for the agricultural labour. Skill required in agriculture is negligible, labour tends to easily adapt skills for these non-farm activities, since

skill requirement in these activities is not very high. Agricultural jobs are seasonal so the labour is alspo on the lookout for options where they could be employed for a longer duration. There could be other factors at work causing movement out of agricultural work.

Literature highlights the "push" and "pull" factors which could have caused this movement. High level of inequality in the rural India with respect to access to land, productive assets and inputs has been reckoned as a strong push factor. Thomas & Jayesh (2016) discuss that the agriculture sector is overcrowded, in fact in certain states like Uttar Pradesh, Bihar, West Bengal, the net sown area per unit of agricultural population has reached low levels.

As discussed in section 4.1, productivity levels in Indian agriculture are low. Ramachandran and Rawal (2010) show that a significant proportion of cultivator households in selected villages in Maharashtra and Andhra Pradesh earned negative incomes from crop production in 2005–6. Cases have been documented where cultivators had to leave their land fallow and quit farming owing to rising input costs, falling harvest prices, and lack of information on alternative crop-cultivation. Public investment in irrigation and agricultural research has declined from the 1990s onwards. Erratic climatic patterns add to the risk. There are rising instances reported from different regions of the country of farmland being forcibly acquired for commercial and industrial purposes. The intensified pressure on workers compels them to move out of the agricultural sector. Singh (2013) states that it is difficult for the small farmers to compete with the large land classes for limited resources available for farming, at the same time the non-farm activities are relatively profitable and riskfree. The medium and small farmers are much more vulnerable to crop failure, therefore it is important for them to diversify their sources of income. Farm activity is becoming less attractive, therefore people are migrating non-farm sector within the rural areas and to urban centers. Not just the public investment, even the private investment, undertaken by households has seen a fall in agriculture.

Among the pull factors, growth in the availability of construction jobs in rural areas is a major reason why the agriculture workforce is getting absorbed in the non-farm employment. Thomas (2015) argues that increase in the availability of educational institutions in the rural areas could explain the fall in the number of people employed in agriculture. He goes on to show how the

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), launched by the Government in the mid-2000s, has improved employment outcomes in rural India and has also given a substantial boost to rural wages. In 2011–12, 6.7 million casual workers were engaged in public works in the country, of whom 2.9 million workers were employed through the MGNREGA. Thomas (2014) showed that casual employment in public works accounted for 69 per cent of the incremental non-agricultural employment for rural females in the country between 2004–5 and 2011–12.

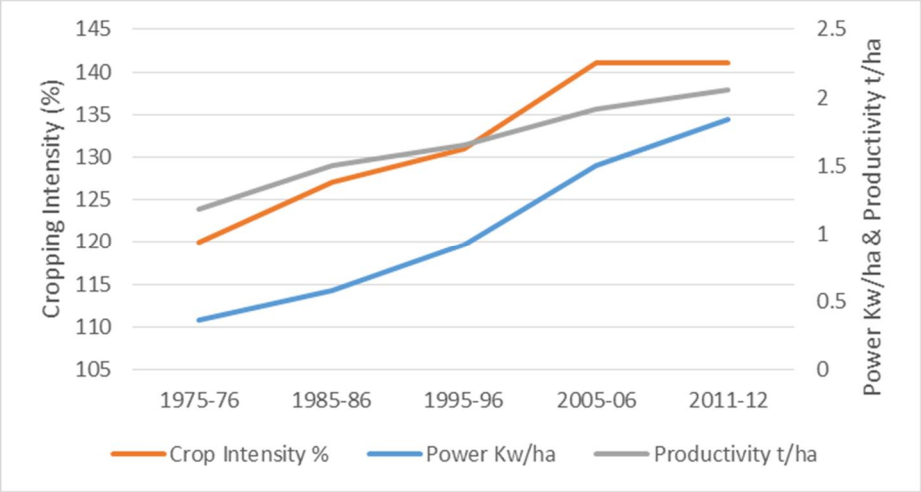
All of this suggests that a large pool of labour exists in the agriculture sector, for the non-farm sector to draw on. The movement could be because of distress in agriculture and relatively better conditions in the non-farm activities.

4.5 Mechanization

Mechanization has great advantages. Primary economic benefit of mechanization is the improved yield, as discussed earlier in this chapter, Indian agriculture is in a state of crisis and improvement in yields will go a long way in pulling thie sector out of this crisis.. Water scarcity, as well as ensuring need to ensure food security in the country calls for innovation and advancement in agricultural technology and ensuring greater adoption of mechanization.

Studies have shown a positive relationship between farm mechanization (farm power availability) and farm yield. Farm mechanization brings about input savings and lowers the cost of cultivation. The adoption of farm machinery and technology has significantly contributed to improving the cropping intensity, and farm produce during the last 40 years as shown in figure 4-14.

Figure 4-14 Farm Power Availability productivity and Cropping Intensity in India (1975- 2012)



Source: State of Indian Agriculture 2015-16, Ministry of Agriculture & Farmers Welfare

The status of mechanisation in agriculture in India varies for different activities, although the overall level of mechanisation is about 40-45%, as compared to 90% in developed countries. The highest level of mechanisation (60%-70%) is observed in harvesting and threshing activities, soil working and seed bed preparation (40%) and irrigation (37%). The level of mechanization in plant protection is 34%. The lowest level of mechanisation is found in seeding and planting.

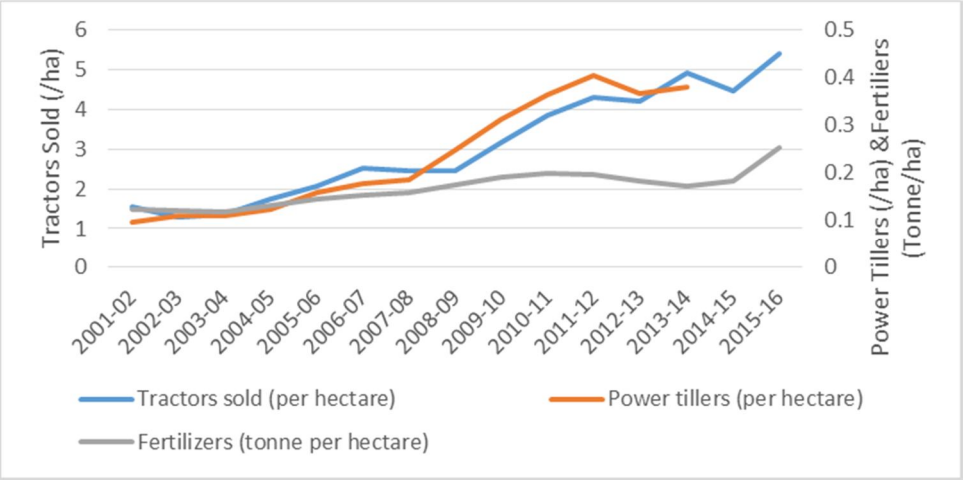
Table 4-15 Level of mechanisation in percent, by crop and value-chain process (%)

Crop	Seedbed Preparation	Sowing/Planting/Transplanting	Weed and pest control	Harvesting and threshing
Paddy	85-90	5-10	80-90	70-80
Wheat	90-95	80-90	70-80	80-90
Potato	90-95	80-90	80-90	70-80
Cotton	90-95	50-60	50-60	0
Maize	90-95	80-90	70-80	50-60
Gram	90-95	50-60	60-70	30-40
Sorghum	80-90	30-50	60-70	20-30
Millets	80-90	30-40	60-70	20-30
Oilseeds	80-90	30-40	60-80	20-30

Sunflower	80-90	40-50	80-90	60-70
Fodder Crop	80-90	20-40	80-90	10-20
Vegetable Crop	70-80	5-10	80-90	<1
Horticulture Crop	60-70	30-40	40-50	<1

Source: Country presentation paper, Agricultural Machinery Manufacturers Association (AMMA) India, October 2014

Figure 4-15 Status of agricultural inputs in India



Source: Databook on Agriculture 2018

The important agriculture inputs are penetrating the farming sector but there is inequality in usage.

Table 4-16 Agricultural implements per operational holding (2011-12)

Size class	Wooden Plough	Mould board plough	Pumpsets	Power tiller	Tractor	Cane crusher	Sprinklers
Marginal	0.37	0.15	0.36	0.05	0.44	0.01	0.01
Small	0.47	0.24	0.40	0.07	0.43	0.02	0.04
Semi-Medium	0.46	0.25	0.45	0.07	0.44	0.02	0.05

Medium	0.40	0.21	0.49	0.07	0.54	0.02	0.06
Large	0.32	0.14	0.48	0.07	0.67	0.03	0.06
All size groups	0.40	0.18	0.38	0.06	0.44	0.02	0.02

Source: Input Survey 2011-12

In a total of 138.11 million operational holdings estimated by Input Survey 2011-12 in the country, holdings using different kinds of agriculture implements/machinery were ploughs (wooden/steel) (39.8 percent), tractor-drawn mould board plough (17.6 percent), pumpsets (diesel/electric) (38.3 percent), power tiller (5.8 percent), power tractor (44.3 percent), cane crusher (animal/power) (1.5 percent), and sprinklers (2.5 percent). The proportion of holdings using tractor was the highest (67.0 percent) in large holdings followed by medium (54.5percent), semi-medium (44.1 percent), marginal (43.8 percent) and small (42.7 percent).

Number of cattle per 100 number of operational holders in marginal, small, semi-medium, medium and large was estimated at 118.9, 181.7, 207.7, 249.2 and 321.14 respectively against 146 for 'all size groups'. Further, number of buffaloes per 100 of corresponding number of operational holders at All India level in marginal, small, semi-medium, medium and large was estimated at 51.7, 86.7, 116.7, 156.6 and 214.6 respectively against 70 for 'all size groups'. Here also it is evident that the livestock ownership rises with the size class.

Table 4-17 Distribution of number of livestock per 100 operational holders in each Major Size Groups (2011-12)

Size class	Cattle	Buffalo
Marginal	118.9	51.7
Small	181.7	86.7
Semi-Medium	207.7	116.7
Medium	249.2	156.6
Large	321.4	214.6
All size groups	146	70

Source: Input Survey 2011-12

Table 4-18 Usage of Inputs-Fertilizers by Major Size Groups (All Crops) operational holdings (2011-12)

Size class	Fertilisers	Farm Yard Manures	Pesticides
Marginal	77.70	23.79	39.77
Small	78.37	22.90	44.49
Semi-Medium	77.72	20.36	45.19
Medium	74.06	17.30	45.62
Large	63.17	14.03	44.01
All size groups	75.88	20.62	43.67

Source: Input Survey 2011-12

The marginal farmers depend more on farm yard manures, the use of manure declines with higher size class. Dependence on pesticides is higher for large landholdings.

Table 4-19 Estimated number of operational holdings using certified seeds for agricultural purpose (2011-12)

Size class	Certified seeds	Notified seeds	Hybrid seeds	Foundation programme
Marginal	35.49	24.64	8.27	2.97
Small	46.92	31.46	12.71	4.11
Semi-Medium	48.97	32.58	13.44	4.84
Medium	47.34	31.41	13.58	4.97
Large	37.67	26.55	12.80	3.78
All size groups	39.41	26.96	9.84	3.45

Source: Input Survey 2011-12

The Input Survey 2011-12 reports that, 39.41 percent of operational holdings used certified seeds, while 26.96 percent used seed of notified variety. Out of total operational holding, only 9.84 percent used hybrid seeds and 3.45 percent carried out foundation programme of seeds. About 30%-35% of the total seeds available are produced by private and public sector companies. farm bred seeds account for the remaining seeds. While farmers can always develop certain varieties of seeds from the crops harvested on their land, high-yielding varieties

of seeds have to be purchased from the market and these varieties are usually unaffordable for the marginal and small farmers to afford.

This section highlights that adoption of technology and improved farming inputs can help improve productivity and bring about efficiency gains. However, like the other important resources like land and other productive assets, access to technology also varies across ownership classes, marginal and small farmers bearing the brunt of this unequal access.

4.6 Inability to cope with rising input prices and Farmer indebtedness

Srivastava et al. (2017) look at the data on cost of cultivation and returns from cultivation. They find that the cost of cultivation rose steeply 2007-08 onwards, growth in output of the major field crops has remained inadequate to offset the rising COC leading to a downward trend in the average net returns from the crop cultivation. In real terms, the net returns received by the farmers in 2014-15 were even less than the returns which they received ten years back in 2005-06.

Table 4-20 Changing structure of cost of cultivation

Year	Share in Cost of Cultivation							Rs./ha
	Seed	Fertilizer	Labour	Animal	Machine	Insecticides	Others	Cost (A1 + FL)
1990-91	10	12	39	14	7	2	16	3737
2002-03	8	11	42	12	10	2	15	9768
2007-08	9	11	41	9	13	2	15	14856
2014-15	8	11	47	5	14	2	15	34232

Source: Srivastava et al. (2017)

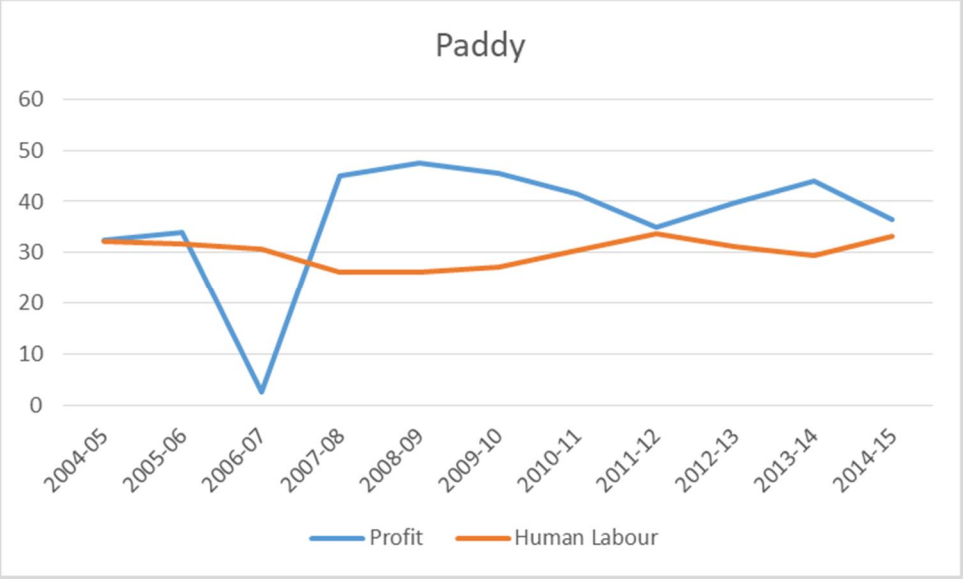
Table 4-21 Contribution of factors in average cost inflation in India

Year	Contribution in Cost Inflation							Cost inflation
	Seed	Fertilizer	Labour	Animal	Machine	Insecticides	Others	
1990-02	7	11	46	10	11	3	11	10

2002-07	12	8	34	8	21	3	20	6
2007-14	7	9	53	2	16	2	5	13
Overall	9	10	46	5	15	3	12	10

Source: Srivastava et al. (2017)

The decomposition of cost inflation among various factors revealed that labour alone contributed 53 per cent to the increase in cost of cultivation during 2007-08 to 2014-15. The labour cost was followed by cost on machine, fertilizer, seed, insecticides, and animal labour with their respective contribution of 16 percent, 9 percent, 7 per cent, 2percent and 2 per cent. Thus, the evidence revealed that labour cost is the predominant source of cost inflation. However, the data on costs and returns for major crops Paddy and wheat suggests, that the profits are higher than the share of the human labour in total produce.



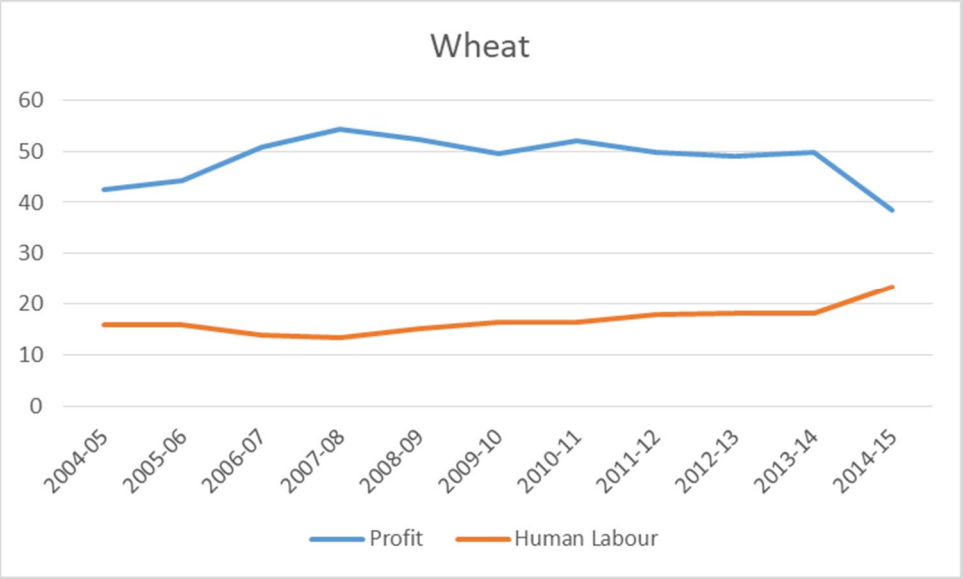


Table 4-22 Ratio of average monthly income from different sources in 2013 to the average monthly income from different sources in 2003 (major states only)

Size class of land owned (ha)	Income from wages/salary	net receipt from cultivation	net receipt from farming of animals	net receipt form non-farm business	Total Income
<0.01	1.01	0.34	3.4	0.63	1.13
0.01 - 0.40	1.07	1.09	2.78	0.67	1.1
0.41 - 1.00	1.26	1.4	2.61	1.08	1.38
1.01 - 2.00	1.23	1.5	3.31	1.61	1.52
2.01 - 4.00	1.26	1.54	5.39	1.23	1.59
4.01 - 10.00	1.81	1.76	7.88	1.33	1.85
10.00 +	1.23	2.06	3.58	1.32	2.02
all sizes	1.22	1.32	3.21	1	1.34

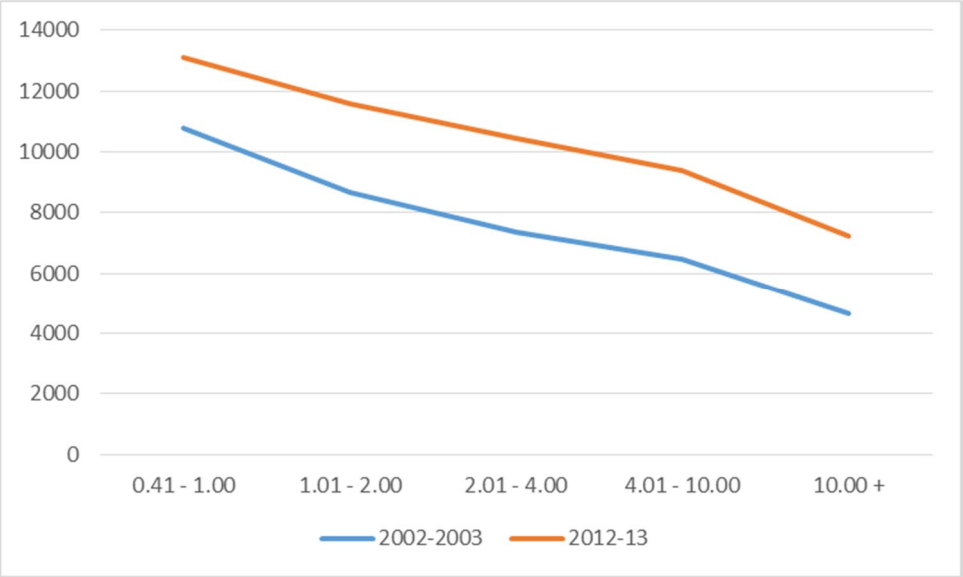
Source: Chakravarty et al.(2016)

Table 4-22 shows the ratio of average monthly income from different sources in 2013 to average monthly income in 2003 for major states. The data suggests that there has not been

much improvement in the incomes of the marginal & small farmers. The only alternative where, these farmers have experienced better returns is farming of animals.

The unit level data from the two situation assessment surveys reveals that the cost disadvantage is disproportionately borne by the marginal farmers.

Figure 4-16 Cost of Cultivation per ha across different size classes as per land owned (Rs.)



Source: Author's Computation, Situational Assessment Survey (2003) & (2013)

Cost per hectare for other important inputs are shown in the appendix, figure 4-1A.

Table 4-23 Ratio of input costs in the year 2013 to the input costs in 2003

Size class of land owned	Seeds	Plant Protection Chemicals	Fertilizer /manure	Irrigation	Minor repair/maintenance of machinery and equipment	Interest	Lease rent for land	Labour (human)	Other	Total
<0.01	0.73	1.67	1.21	0.36	1.22	1.70	1.03	0.98	0.26	1.05
0.01 - 0.40	1.24	2.00	1.81	0.80	2.50	4.93	1.46	2.01	0.51	1.74
0.41 - 1.00	0.85	1.32	1.24	0.42	1.19	1.00	1.20	1.22	0.42	1.22
1.01 - 2.00	1.00	1.36	1.44	0.28	1.35	1.34	1.87	1.26	0.37	1.33

2.01 - 4.00	1.11	1.41	1.55	0.22	1.41	1.60	1.77	1.34	0.37	1.42
4.01 - 10.00	1.13	1.68	1.47	0.14	1.50	2.12	3.55	1.30	0.32	1.45
10.00 +	1.17	1.61	1.79	0.16	1.76	1.28	1.02	1.30	0.31	1.56
all sizes	0.94	1.83	1.50	0.54	1.69	2.57	1.26	1.39	0.39	1.37

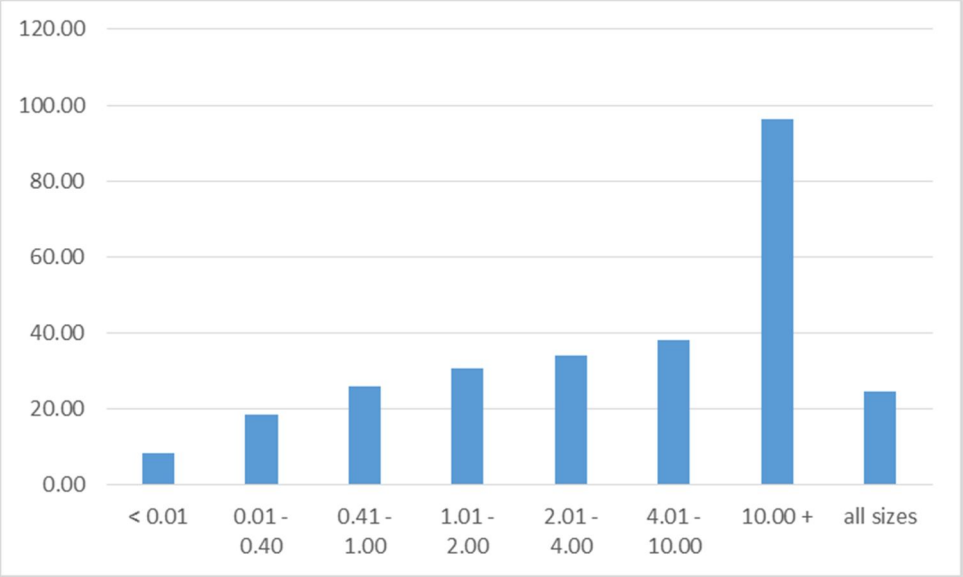
Source: Author's Computation, Situational Assessment Survey (2003) & (2013)

Table 4-23 shares ratio of cost per hectare of inputs so as to analyse how these costs have changed in 2013 vis-à-vis 2003. It is interesting to note that for the small farmers falling into the size class category (0.01-0.40 ha), the input ratio is higher than the overall ratio for all sizes.

A major problem in India is the volatility in agricultural prices; existing literature highlights that farmers face tremendous price volatility. This volatility impacts farmer's income. Government fixes support price (Minimum Support Price) of essential commodities. It also procures a few crops like paddy and wheat to provide some security of returns to farmers and to bring price stability in the market. The policy is argued to suffer from several problems, there is regional and crop bias and is more successful in states where procurement operations are undertaken.

The percentage of marginal farmer households aware about minimum support prices was 8.3 as of 2013, the awareness is higher amongst the larger land classes, with nearly 96% of the households belonging to the largest land owning class being aware about MSP. Minimum Support Prices are an important component of agriculture price policy in India. The scheme provides the floor price for farm produce and also makes food grains available for buffer stock and PDS. MSP is expected to ensure price security to the farmer and motivate them to diversify the crops. But the survey results show that a very small proportion of marginal farmers are aware about minimum support prices which definitely impacts the rates of procurement. Also, even if the farmers are aware about the MSP, they might not have sold to procurement agency. A couple of reasons cited in the survey are: non-availability of procurement agency, no local purchaser, and better market price over MSP, poor quality of crop and crop already pre-pledged.

Figure 4-17 Awareness about MSP (%) (2013)

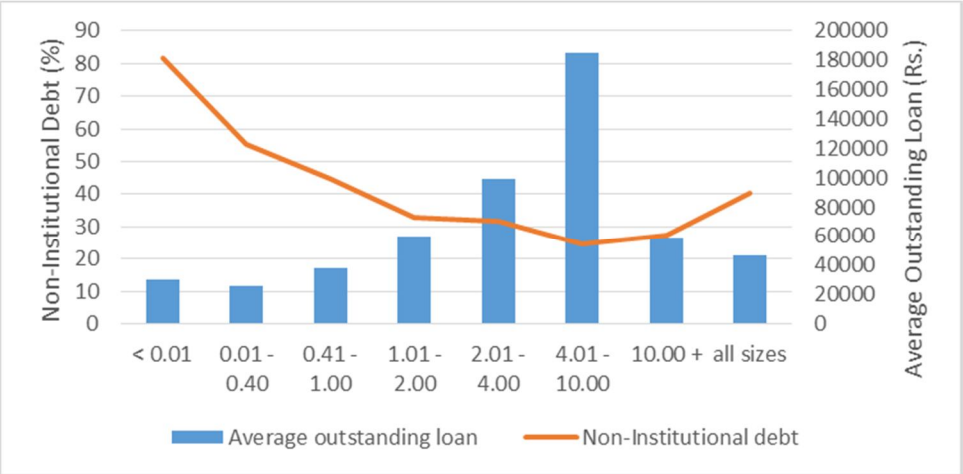


Source: Author's Computation, Situational Assessment Survey (2013)

Indian farmers are confronted with low productivity, high price volatility, climate risks, rising input costs. Since a majority of the farmers depend on small and fragmented land holdings, they are highly vulnerable and prone to these risks. These are also the reasons behind rising indebtedness of the indian farmers.

As per the survey (2013) about 52% of agricultural households were indebted and the average outstanding loan per agricultural household was Rs. 47,000. Nearly 63% of these indebted households had upto or less than 1 hectare of land.

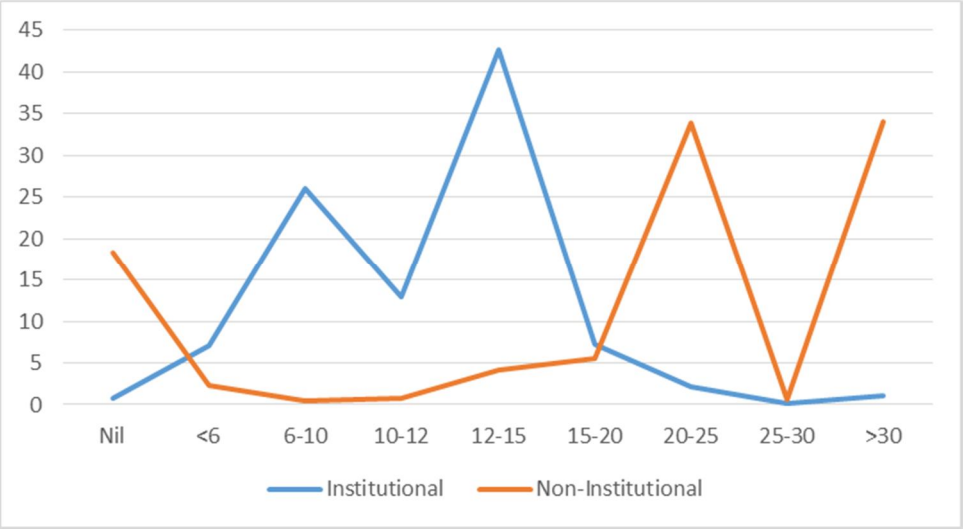
Figure 4-18 Indebtedness of Farmers (2013)



Source: Author's Computation, Situational Assessment Survey (2013)

At all India level, about 60 percent of the outstanding loans were taken from institutional sources which included Government agencies, banks and Co-operative society. Among the noninstitutional sources, money lenders had the major share in terms of outstanding loans. Share of loans nfrom institutional sources, is higher for large land classes. For small size classes the dependence on non-institutional sources is higher.

Figure 4-19 Percentage distribution of amount of outstanding cash debt by rate of interest for institutional and non-institutional agencies: all-India (2013)



Source: AIDIS (2013)

The All India Debt and Investment Survey (2013) collects data on outstanding cash debt by rate of interest for institutional and non-institutional agencies. The data shows that a high proportion of outstanding cash debt extended by the non-institutional sources is being charged at high interest rates. Nearly 34% of the outstanding cash debt is being charged at 20-25% interest rate and another 34% at a rate higher than 30% by the non-institutional agencies. On the other hand, for the institutional sources, the interest rate hovers around 12-15%. All this signals to acute rural distress, a better policy framework is needed to address the agrarian challenges.

4.7 Participation of the poor households limited to unskilled and semi-skilled wage employment

Skill measured on the basis of educational attainment is abysmally low for the farmers of the country. 38% of the farming population is illiterate and only 2% of it is graduate. The situation is worse for marginal and small farmers. The educational situation improves with higher size classes but only marginally. Looking at the average education levels, the medium size class seems to have done the best. The table suggests that the farmers in India have barely achieved the level of literacy that to without formal schooling. Widespread illiteracy is a major impediment to the spread of technology, extension services and information/awareness about improved farming practices and facilities meant for farmers.

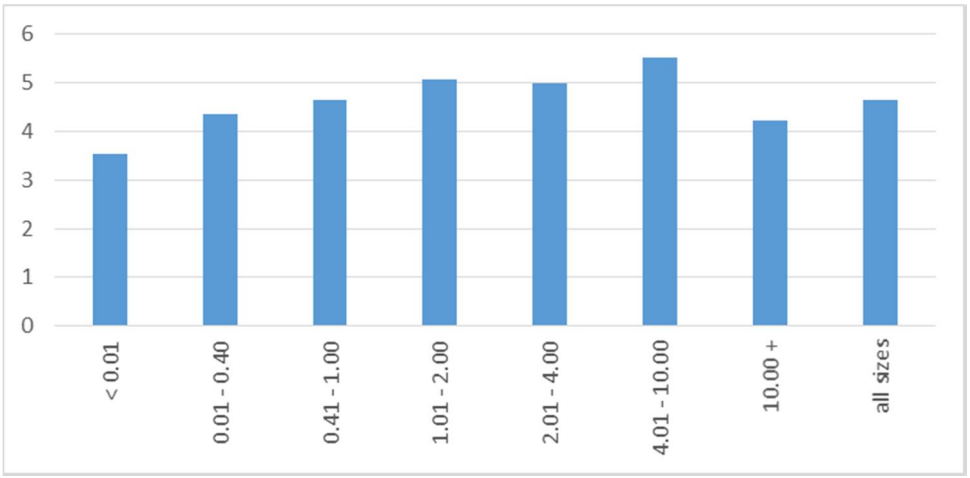
Rate of formal training in agriculture is 0.74%, the lowest rate prevailing for marginal size class and highest for the large landholders.

Table 4-24 Education levels among farming households, size class of land owned (2013)

Size class of land owned (ha)	Illiterate	Literate below primary	Primary	Middle	Secondary	Higher Secondary	Diploma/Certificate Course	Graduate	Postgraduate and above
< 0.01	51.46	16.47	14.54	11.40	4.07	1.26	0.02	0.62	0.16
0.01 - 0.40	40.76	18.06	12.24	14.07	8.01	4.60	0.24	1.46	0.56
0.41 - 1.00	38.34	16.54	13.14	13.89	8.69	6.49	0.49	2.10	0.32
1.01 - 2.00	33.25	17.56	12.04	13.63	10.72	8.07	0.42	3.02	1.29
2.01 - 4.00	35.36	15.74	11.62	13.89	11.75	7.11	0.79	2.97	0.76
4.01 - 10.00	30.56	12.44	11.26	16.58	14.27	8.71	0.53	3.50	2.15
10.00 +	42.58	16.88	18.37	10.89	4.60	3.96	0.24	2.27	0.20
all sizes	38.33	17.01	12.54	13.95	9.05	5.97	0.39	2.10	0.66

Source: Situational Assessment Survey (2013)

Figure 4-20 Mean Education Level of different size classes (2013)



Source: Situational Assessment Survey (2013)

Table 4-25 Formal Training in Agriculture (%) 2013

Size class of land owned (ha)	Formal Training in Agriculture
< 0.01	0.26
0.01 - 0.40	0.41
0.41 - 1.00	0.61
1.01 - 2.00	1.30
2.01 - 4.00	1.32
4.01 - 10.00	1.28
10.00 +	2.13
all sizes	0.74

Source: Situational Assessment Survey (2013)

The following table represents information for the workers involved in the farm and non-farm employment in the rural sector. These workers could be employed in the household enterprise, working as a regular salaried employed or employed as a casual labour in public works.

Table 4-26 Status of farm and non farm employment in rural sector (Principal Status) 2013

Sector	Employment % (Principal Status)	Mean Wage (Rs.)	Mean Education level
Agriculture, forestry and fishing	72.84	1881.70	4.49
Mining and Quarrying	0.22	5758.40	5.43

Manufacturing	3.88	3183.85	4.82
Electricity, gas, steam and air conditioning supply	0.28	7200.00	8.37
Water supply; sewerage, waste management and remediation activities	0.05	4710.00	8.64
Construction	13.80	2195.73	4.35
Wholesale and retail trade; repair of motor vehicles and motorcycles	2.88	4936.73	7.93
Transportation and storage	1.37	6360.55	7.06
Accommodation and Food service activities	0.25	3182.77	4.02
Information and communication	0.10	8811.99	11.68
Financial and insurance activities	0.29	7938.27	9.30
Professional, scientific and technical activities	0.14	5791.93	11.12
Administrative and support service activities	0.22	8256.47	8.86
Public administration and defence; compulsory social security	0.68	9780.94	8.76
Education	1.99	8337.45	10.49
Human health and social work activities	0.15	11245.94	7.96
Arts, entertainment and recreation	0.07	2722.65	7.62
Other service activities	0.54	2696.97	6.92
Activities of households as employers; undifferentiated goods- and services producing activities of households for own use	0.06	2508.85	5.50

Source: Author's Computation Situational Assessment Survey (2013)

As is evident from the table, agriculture work is the least remunerative, there are other sectors like construction and accommodation and food service activities which have a lower mean education level, yet offering better return. Naturally this serves as an enticing factor to move out of agrticultural work. Table 4-3A in the appendix gives information on the codes corresponding to different levels of education. As the table reveals, 73% of the workers in rural sector are engaged in agriculture and the next sector after agriculture which employs the

largest proportion of workers is construction. Construction pays better relatively and does not require great skill or high education level. Manufacturing follows construction, again the skill requirements are low.

4.8 Declining public investment and policy unresponsiveness

Public investment and expenditure on agriculture in India have grown slowly. Revival of India's agricultural growth requires a greater impetus to public spending.

Table 4-27 Public and Private Sector Expenditure in Agriculture

Year	Gfcf publicsector(%)	Gfcf privtesector(%)	Gfcf agriculture (%)
1960-61 to 1964-65	2	2.9	5
1965-66 to 1969-70	1.8	3.5	5.4
1970-71 to 1974-75	2.2	4	6.2
1975-76 to 1979-80	3.6	6.1	9.7
1980-81 to 1984-85	3.7	4.6	8.5
1985-86 to 1989-90	3.1	5	8.2
1990-91 to 1994-95	2.2	5.4	7.6
1995-96 to 1999-2000	1.9	6.1	8.1
2000-01	1.8	9	10.8
2001-02	2.1	11.1	13.1
2002-03	2	11.7	13.6
2003-04	2.3	9.7	12
2004-05	2.9	10.6	13.5
2005-06	3.3	10.9	14.1
2006-07	3.5	10.2	13.8
2007-08	3.3	11.3	14.6
2008-09	3.2	14.3	17.5
2009-10	3.2	17.3	16.8
2011-12	2.37	15.45	17.82
2012-13	2.37	13.48	15.84
2013-14	2.10	14.55	16.65
2014-15	2.25	13.09	15.34
2015-16	2.35	10.28	12.63
2016-17	2.59	10.76	13.35

Source: R. Ramkumar (2012) & MOSPI

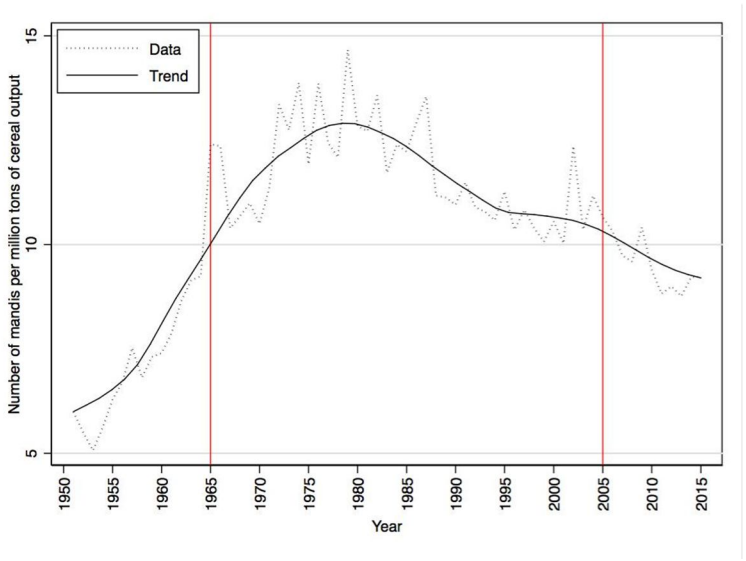
As per the recent estimates gross fixed capital formation in agriculture is as low as 13% of the GDP of the sector. Not just the public sector but the private sector investment in agriculture has been following a downward trend.

Policies targeted at agriculture include, programs to increase irrigated area, improve soil health, promote agro-processing, and cover production risk. The others include managing prices and marketing channels, making farm inputs available at subsidized rates, providing research and extension services, regulating trade policy. However, the findings reported in the previous sections point to acute agrarian distress.

OECD (2018) report on review of Agricultural Policies in India discusses the inadequacy and informality of agriculture markets in India. The report highlights that the marketing chain for agricultural commodities in India involves the co-existence of regulated and non-regulated markets[24].

[24] Most of the small and marginal farmers participate in rural primary markets (haats). Small villages (population less than 500) hold few haats (only 1.6%); majority of haats (47.9%) are in big villages, with a population of over 5 000. Nearly two thirds of haats are at a distance of 16 km, 23% are at a distance of 6 to 15 km and 9% within a distance of 1 to 5 km. Farmers with larger surpluses or smaller traders generally purchase surpluses from other small farmers and carry along with their produce to the assembling markets. Mandis, generally located in district headquarters or important production centres, attract potential buyers and traders who assemble the produce. Procurement by various government agencies can take place through these markets. So there is a long chain of middlemen between the small and marginal farmers and the final markets.

Figure 4-21 Number of Mandis per unit of cereal output



Source: Chatterjee & Kapur (2016)

Chatterjee & Kapur (2016) state that there is a severe lack of local market hubs where India's dominant small farmers could sell their produce. The investment in market infrastructure is inadequate relative to production as shown in figure above. They also discuss how this market infrastructure varies considerably across states, both by volume of production and proximity to production sites.

Under the price support scheme, Food Corporation of India and its agencies at the state level procure whatever food grains offered by farmers at specified centers at the Minimum Support Price plus any applicable bonus. Procurement takes place within a stipulated procurement period specified for each state. Procured grains should conform prescribed quality benchmarks, otherwise they are not accepted. Also the price support procurement operates effrectively only for a few crops and in a few states, so there is a regional and crop bias. Procurement at MSP involves only a small share of producers. Out of 90.2 million agricultural households in India, 18.7 million reported sales of paddy in July-December 2012 (Government of India, 2015; Government of India, 2016). Of those who reported sales of paddy, only 32.2% were aware of any MSP, 25.1% were aware of any procurement agency, and 13.5% actually sold anything to a procurement agency. Among those households which sold paddy to a procurement agency,

only 27% of their sales were at the MSP. Also there is disparity in terms of awareness on MSP, in certain states like Punjab and Haryana, most of the farmers are aware about the minimum support prices and procurement, while there are others like, Maharashtra and West Bengal where the farmers suffer from lack of information.

Table 4-28 Percentage of paddy output by farm size sold to various actors (2013)

Farm Size	Local Private	Mandi	Government	Input Dealers	Processors
0-2	55.44	20.19	11.17	8.72	1.62
2-5	41.89	28.92	5.54	19.44	2.44
5-10	29.58	34.77	6.52	27.46	0.51
>10	14.51	50.43	3.76	15.38	0.65

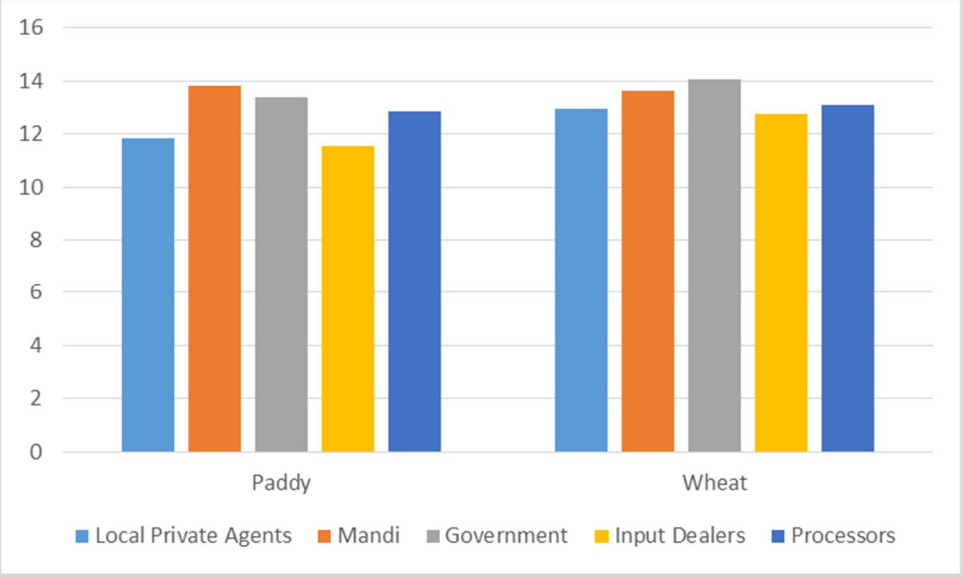
Source: NSS Situation Assessment Survey of Agricultural Households (2013).

Table 4-29 Percentage of wheat output by farm size sold to various actors (2013)

Farm Size	Local Private	Mandi	Government	Input Dealers	Processors
0-2	41.4	38.71	11.01	8.1	0.41
2-5	25.23	49.97	5.02	19.42	0.24
5-10	16.68	45.68	7.36	29.8	0.3
>10	6.07	40.45	1.67	51.77	0.08

Source: NSS Situation Assessment Survey of Agricultural Households (2013).

Figure 4-22 Rate per kg offered for Paddy & Wheat by different agencies (2013)

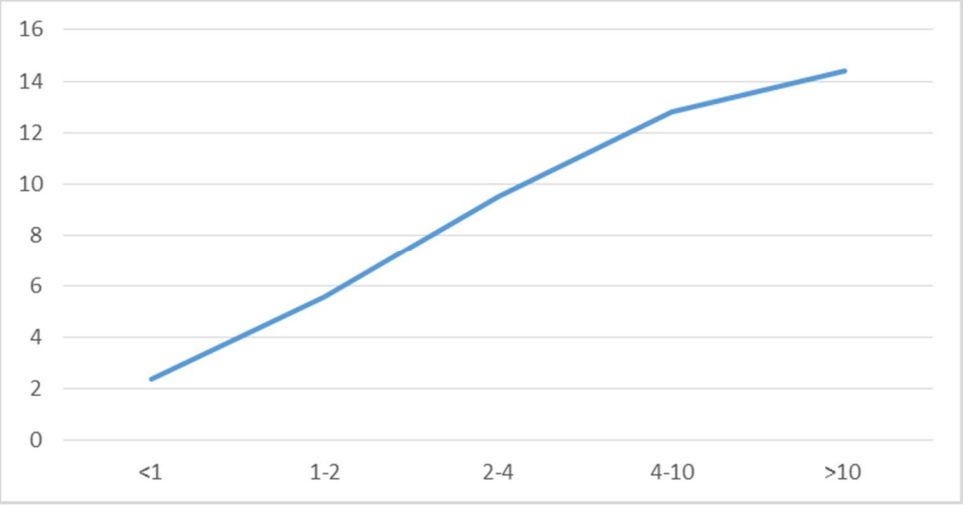


Source: Author's computation, NSS Situation Assessment Survey of Agricultural Households (2013).

Tables 4-28 & 4-29 show that the small farmers end up selling a large fraction of their produce to the local agents, who usually offer a lower price compared to mandis where the large farm classes sell and get a better price for their produce.

Several crop insurance schemes have been and are being implemented under the responsibility of the central government through the National Agricultural Insurance Scheme (NAIS). A very small segment of agricultural households insured their crops against possible crop loss as per the situation assessment survey (2012). Among the reasons for not insuring the crops, lack of awareness is the most prominent one.

Figure 4-23 Proportion of Farmers with Crop Insurance (%) as per farm size (ha) 2013



Source: NSS Situation Assessment Survey of Agricultural Households (2013).

Crop insurance levels are very low among the small class sizes, however, even for the largest size class, the proportion of farmers insuring crops is about 14%. Rao (2017) finds that about 57% of the farmers who did not opt for crop insurance in 2002-03, were unaware of crop insurance and this percentage has risen to 61% in the year 2012-13. Therefore, while ensuring increased availability of insurance facilities to the farmers, the policy should also focus on making the farmers aware about the schemes and their benefits.

4.9 Conclusion

The chapter presents an assessment of the Indian agriculture sector and explores the situation of the agents involved in this sector. Agriculture sector in India is said to be in a state of crisis perennially. The chapter draws data on the characteristics of farmers and agricultural labour from a variety of sources. The findings confirm that marginal and small farmers are facing acute distress. Returns from agriculture depend to a great extent on the ownership of land, access to productive assets, mechanization, investment in inputs, machinery and technology, which the small farmers are seldom able to afford. Abysmal returns from farming practices, indebtedness, landgrab, pushes these classes to diversify into activities like livestock rearing, wage labour in farm and non-farm business. The push and pull factors have made agriculture less attractive causing a movement towards non-agricultural activites. There exists a large pool of labour in the agriculture sector, for the non-agriculture sector to draw on without creating a pressure on wages, fuelling the profit spiral in the economy.

APPENDIX C

Table 4-1A Distribution of Total Land Possessed as per Size Class of Land Possessed (%)

Size class of land possessed	Land Owned	Land Leased In	Land Neither Owned Nor Leased In	Land Leased Out	Distribution of households
<0.01	734.09	4.94	1.43	640.46	2.65
0.01 - 0.40	99.62	14.26	1.04	14.92	32.38
0.41 - 1.00	90.71	10.01	1.95	2.67	32.39
1.01 - 2.00	91.18	8.73	1.57	1.48	16.79
2.01 - 4.00	96.19	5.84	0.54	2.57	8.99
4.01 - 10.00	85.53	14.66	0.74	0.93	3.54
10.00 +	76.47	22.46	1.64	0.56	0.40
all sizes	89.75	11.53	1.31	2.59	100.00

Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013)

Table 4-2A Distribution of Total Land Possessed as per Size Class of Land Possessed (%) (2003)

Size class of land owned (ha)	Cultivation	Farming other than cultivation	Other agricultural activity	Wage/salaried employment	Non-agricultural enterprises
< 0.01	22.97	8.99	10.60	45.24	12.19
0.01 - 0.40	42.13	3.98	5.82	35.06	13.01
0.41 - 1.00	69.03	2.44	3.08	19.86	5.60
1.01 - 2.00	78.59	2.30	2.33	13.68	3.10
2.01 - 4.00	86.34	1.85	0.99	8.78	2.05
4.01 - 10.00	89.10	2.50	0.68	5.85	1.87
10.00 +	63.93	5.86	6.46	20.06	3.69
all sizes	63.34	3.11	3.80	22.79	6.95

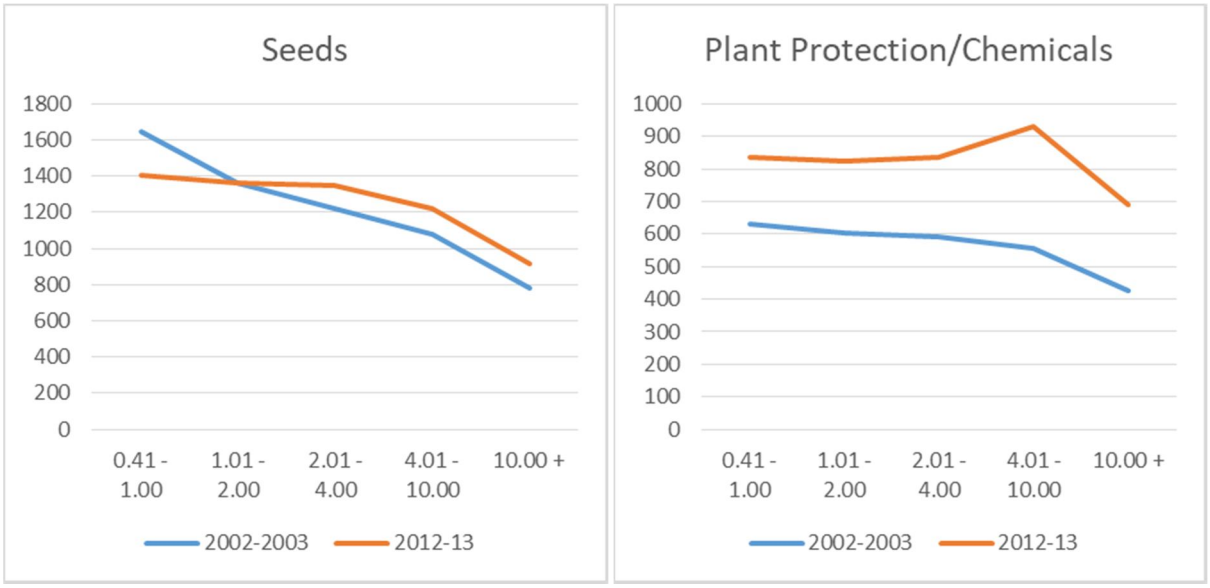
Source: Author's Computation, NSS 70th Round, Situation Assessment Survey (2013)

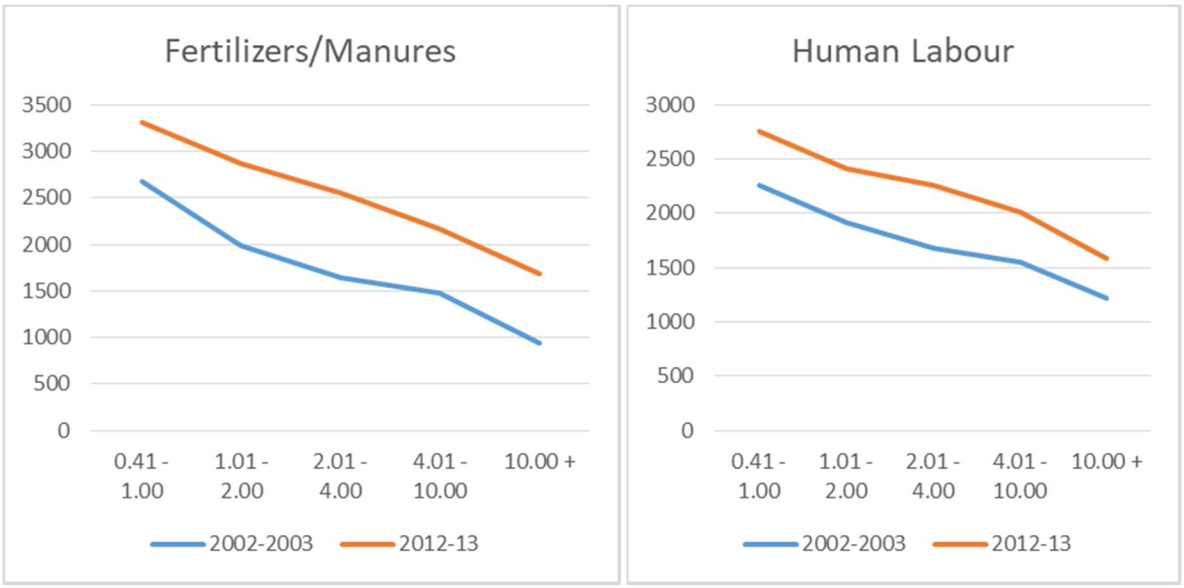
Table 4-3A General Education Code as per the Situation Assessment Survey

Level of Education	***Code***
Not Literate	*1*
Literate without formal schooling: through EGS/NFEC/AEC	*2*
Through TLC	*3*
Others	*4*
Literate with formal schooling: below primary	*5*
Primary	*6*
Middle	*7*
Secondary	*8*
Higher secondary	*10*
Diploma/certificate course	*11*
Graduate	*12*
Postgraduate and above	*13*

Source: Situation Assessment Survey (2013)

Figure 4-1 A Cost curves for important inputs (per ha) as per land owned





Source: Author's Computation, Situational Assessment Survey (2003) & (2013)

Conclusion

In the recent years, the interest in understanding the trends in inequality and exploring its multiple dimensions has grown, across the globe. “Leaving no one behind” is the central premise of the 2030 Agenda for sustainable development. Worldwide, the economists and thinkers are trying to identify the important drivers of inequality. Piketty (2014), Atkinson (2015), Karabarbounis and Neiman (2013), Stiglitz (2012), Dabla-Norris (2015) and many more attempt to address different aspects of inequality and have made a significant contribution to the discourse on inequality.

Analyzing the nature of inequality, various forms that it manifests itself in, is crucial. Its role in worsening the existing levels of poverty, standards of living is extremely important especially in a country like India, where growth has not reduced the degree of inequality and impoverishment.

In India, people suffer from ever rising economic inequality: this dimension of inequality often presents itself in terms of unequal consumption patterns, acute disparity in incomes, and skewed distribution of wealth. Needless to say, economic inequality inhibits the capacity of individuals in many ways. The fraction of nation lying at the bottom of the economic ladder is seldom able to achieve a decent quality of life, at the same time most of the benefits of growth get cornered by the privileged class. Inequality on the grounds of caste, gender, region, religion hurts the marginalized classes harder.

This research study focusses on a particular facet of inequality. The mainstay of this research work is to examine, the trends in profit and wage share for India. While a rich literature exists on different dimensions of inequality around the globe, the research work on India’s inequality has been limited due to lack of comparable long-term data and also due to differences in the economic and social structures. This study focuses on the skewed distribution of factor shares, spanning manufacturing, services and the agriculture sector. Along with an exploration of

trends, the study also identifies key drivers of disparity in each of these sectors and attempts a detailed analysis of these factors. The study has important findings for the three sectors.

Manufacturing Sector

The organized manufacturing sector in India, exhibits a diverging trend between the profit and wage share. The data shows that this divergence has grown sharper 2001-02 onwards. The real productivity in organized manufacturing has risen at a high rate, leaving both earnings of the employees & wages to the workers, trailing behind. This indicates that the capitalists have successfully pocketed the gains in productivity in terms of growing profits. So, there is evidence of rising vertical inequality where the rich are getting richer, while the poor are being marginalized further. At same time the wage inequality has been on a rise, a comparison of real earnings with real wage reveals that even though real earnings haven't grown in tandem with real productivity, it is the workers who have suffered while the other employees have seen their remuneration rise.

The data at three digit industry level confirms that most of the manufacturing industries have experienced a fall in the wage share. Key factors behind these trends are: increased mechanization, compression of wages amidst rising input costs, rising price-cost margin, informalization and contractualization, declining union labour strength as well as ineffective implementation of labour laws and employment programs.

An analysis of growth of real productivity and real wage at the three digit industry level, reveals that the productivity in most of the manufacturing industries has grown at a higher rate than the real wage. Rising mechanization and adoption of technology can explain the growth in productivity. Capital intensity has been on the rise not just in the capital-intensive industries but also the labour-intensive industries; this raises questions about the ability of the manufacturing sector to create jobs. Increasing adoption of machinery and improvement in technology has given way to a change in the composition of the workforce, resultantly the demand for high skilled workers has grown and so have their earnings, reflected in a rise in the skill premium. This skill-biased technical change has been causing a rise in wage inequality.

As discussed in chapter 2, there could be a compression of wages amidst rising input costs (indigenous or imported). The wage cost to input cost at the three digit industry level has declined for most of the manufacturing subsectors. Data reveals that while the wage and fuel cost of the manufacturing sector has declined consistently and expenditure on indigenous materials also declined, with a rise and fall around 2010-11, during the period 2000-01 to 2014-15, expenditure on the imported material has risen all through. There is empirical evidence supporting the fact that while the quantity of material imported by the manufacturing sector fluctuates with the import prices and the exchange rate, the raw-material purchased within the country has grown in quantity even when the prices have risen. The contraction in the wage share, as well as a fall in fuel expenditure, has created room for maintaining the material requirement.

Mark-ups or price-cost margin represents the capitalist's claim on the output. Mark-ups may rise if the market becomes concentrated. A regression exercise with price-cost margin as the dependent variable and four firm concentration ratio as the explanatory variable reveals that for the period 1998 to 2013, a positive relationship exists between the markup and the concentration ratio. Diagrammatic analysis of the price cost margins at the industry level suggests that the price-cost margins have risen in the Indian manufacturing sector.

The share of contract workers in the total persons engages has risen for the manufacturing sector as a whole as well as at the three digit industry level. Greater dependence on contractual employment as well as increasing informalization of regular formal work has reduced the wage burden of the firms offering them greater flexibility with workers.

Data on union density, mandays lost due to strikes, lockouts and industrial disputes shows that the working class strength in the manufacturing sector has declined, which has impacted their bargaining power. Poor implementation of pro-worker laws, weak regulatory institutions as well ineffective employment progammes have failed to help the working class.

The econometric exercise identifies the impact of each of these factors on the wage share shows that the rising share of contract workers, rising ratio of managerial and supervisory earnings to wages of workers and rising capital intensity can significantly explain the drop in the wage share. However, the impact of other factors on the falling wage share cannot be discounted.

Service Sector

The trends in operating surplus (profit share) and compensation to employees differs across service industries. The data from National Accounts Statistics and KLEMS database, helps identify the service industries where operating surplus is on a rise. Banking and Financial Services, Real Estate, Ownership of Dwellings and Business services have shown an unambiguous rise in the operating surplus.

The Indian service sector is characterized by heterogeneity. The quality of employment, wages, type of contracts, human skill, technological advancement etc. vary across service-subsectors. The disparity in the service sector may depend on a variety of factors. Informal employment, difference in educational attainment/skills/training, technological advancement have implications for wage inequality among workers. Close association of certain sectors with the state may usher in "economic rents", such sectors are rent-thick. Most of the service industries like Information technology, retail, restaurant, media, construction, telecom, entertainment, banking and financial services either depend on the state for licenses or are knowledge based. This means that the firms in such sectors have an exclusive right over the knowledge or technology developed by them, which could generate high profits. Rising capital intensity, declining corporate tax rates may also boost the profit share. Degree of engagement of sectors in international trade could also influence distribution of factor incomes.

The chapter extends empirical evidence that the number of billionaires in the knowledge-based service industries as well as other subsectors like construction, telecom, financial services which depend on state for licenses, have grown overtime. The wealth of these billionaires has also been growing, which is an evidence to growing profits in the service sector.

A regression, to assess the impact of formal employment on earnings suggests that the formal nature of employment considerably improves the earnings. The other explanatory variables included in the model are; employment in the organized sector, sector of work (rural/urban), gender, level of education, age and total no. of days worked in a week. Employment in the organized sector offers better wages but the improvement isn't much. The regression results also support the fact that higher education levels are associated with higher wages.

However, the size of organised sector and formal employment are low in certain subsectors like: Wholesale and retail trade, Transportation and storage, Accomodation and food services. These sectors employ a substantial chunk of labour. Also the educational and skill requirements in these sectors are low, which is reflected in the low wages they offer. On the other hand well-paying sectors like information and communication, financial and insurance services aren't contributing much to employment. These sectors offer better quality of employment and demand high skilled employees.

Capital intensity has been worked out for each of the service industries. Trade, Hotels & restaurants and other services which include education, community and recreational services have a low capital intensity. Transportation & storage, financial services can be placed at medium level of capital intensity. Post & telecommunication and business services (owing to real estate), public admin & defence are highly capital intensive. The sectors that are low on capital intensity, i.e. Trade, Hotels & restaurants and other services rely heavily on unskilled and semi-skilled labour. Sectors like post & telecommunication and financial services experience a positive interaction of technology complementarity and labour skill.

Data on corporate tax rates shows that effective tax rate is quite high for wholesale & retail trade, bar& restaurants, warehousing and support activities for transportation as well as courier activities. These sectors involve a high fraction of labour force. The statutory corporate tax rate in India is one of the highest in the world. However the effective tax rates are lower, owing to tax breaks and exemptions. The tax liability across companies is unevenly distributed. This is primarily due to the various tax preferences in the Statute. The effective tax rate is lower for companies with higher profits.

To judge the impact of international integration on the wages in the service sector, a regression exercise has been done for the period 2010-2017. The dependent variable is remuneration to total expenditure, independent variables are: profit to sales ratio, exports to sales ratio, debt to equity ratio, cost of raw materials to expenditure, interest paid to expenditure. As per the data, compensation to employees for the service sector is positively related to the export earnings of the industry. However greater the export earnings higher is the share of remuneration in the

total expenditure. Therefore, the service sector all the other factors discussed except for international integration seem to be working in favour of raising profits and exacerbating wage inequality.

Agriculture Sector

In the case of agriculture sector, I go beyond just looking at the wage share. I look more intensively at the determinants of unequal distribution on income across land sizes. Studying the agriculture sector is important, all the other research studies stop at the analysis of manufacturing and services sector, for which tax data is available. Since such data doesn't exist for agriculture, the research looks at various variables which bring out the disparity in this sector and explain growing inequality in the economy as a whole. Findings confirm that marginal and small farmers are facing acute distress. Returns from agriculture depend to a great extent on the ownership of land, access to productive assets, mechanization, investment in inputs, machinery and technology, which the small farmers are seldom able to afford. Abysmal returns from farming practices, indebtedness, landgrab, pushes these classes to diversify into activities like livestock rearing, wage labour in farm and non-farm business. The push and pull factors have made agriculture less attractive causing a movement towards non-agricultural activites. There exists a large pool of labour in the agriculture sector, for the non-agriculture sector to draw on without creating a pressure on wages, fuelling the profit spiral in the economy.

The Indian agriculture sector is a low productivity sector. The agrarian crisis has impacted the livelihood of millions of farmers. The situational assessment survey shows that the small and marginal farmers have an unequal access to land and productive inputs, needed for farming. The net receipts from cultivation are positively related to the size of the land. While the marginal and small farmers depend on wage work, livestock and non-farm business for livelihood, the land rich classes churn out revenue from cultivation, making possession of land an important factor impacting returns from agriculture.

Analysis also shows that the adoption of technology and improved farming inputs can help improve productivity and bring about efficiency gains. However, like the other important resources like land and other productive assets, access to technology also varies across ownership classes, marginal and small farmers bearing the brunt of this unequal access.

The unit level data from the two situation assessment surveys (2003 & 2013) reveals that the input costs in agriculture have gone up. Cost disadvantage is disproportionately borne by the marginal farmers. The small peasants face rising cost pressure as well as volatility in prices. Majority of them do not sell their crops at minimum support prices. Indian farmers are confronted with low productivity, high price volatility, climate risks, rising input costs. Since a majority of the farmers depend on small and fragmented land holdings, they are highly vulnerable and prone to these risks. These are also the reasons behind rising indebtedness of the indian farmers.

Skill measured on the basis of educational attainment is abysmally low for the farmers of the country. 38% of the farming population is illiterate and only 2% of it is graduate. The situation is worse for marginal and small farmers. Widespread illiteracy is a major impediment to the spread of technology, extension services and information/awareness about improved farming practices and facilities meant for farmers.

Falling public investment in Indian agriculture and failure of the state in reaching out to the farmers who need assistance the most has worsened the conditions in this sector.

Suggestions

The research confirms that the key sectors in the Indian economy suffer from tendencies that support concentration of riches in the hands of the wealthy. The workers and the marginal sections have been experiencing falling returns. This calls for active support by the state in terms of effective initiatives to generate quality employment.

It is imperative to strengthen the agriculture sector so as to reduce the prevailing distress. This can be achieved by raising the public investment and ensuring strong institution support in terms of insurance services, availability of credit, infrastructure development, better market mediation and availability of subsidized quality inputs. A lot of effort needs to be made in making the farmers aware about the facilities that they can utilize.

Initiatives needs to be undertaken in the services and manufacturing industries to generate formal employment. This could be done by switching to labour-intensive production strategies of production wherever possible. Stronger pro-worker regulation and effective implementation is needed to curtail the spread of non-standard forms of employment. At the same time, steps are needed in the direction of skill development of India's labour force. The skills of the workers should also match the skill requirement of the industries, this mismatch has also added to the unemployment problem.

APPENDIX D

NIC 2004	Name of the industry
151	Production, processing and preservation of meat, fish, fruit vegetables, oils and fats
152	Manufacture of dairy product [production of raw milk is classified in class 0121]
153	Manufacture of grain mill products, starches and starch products, and prepared animal feeds
154	Manufacture of other food products
155	Manufacture of beverages
160	Manufacture of tobacco products [tobacco related products are also included while preliminary processing of tobacco leaves is classified in class 0111]
171	Spinning, weaving and finishing of textiles.
172	Manufacture of other textiles
173	Manufacture of knitted and crocheted fabrics and articles
181	Manufacture of wearing apparel, except fur apparel [this class includes manufacture of wearing apparel made of material not made in the same unit.
182	Dressing and dyeing of fur; manufacture of articles of fur
191	Tanning and dressing of leather, manufacture of luggage handbags, saddlery & harness.

192	Manufacture of footwear
201	Saw milling and planing of wood
202	Manufacture of products of wood, cork, straw and plaiting materials
210	Manufacture of paper and paper product
221	Publishing [This group includes publishing whether or not connected with printing. Publishing involves financial, technical, artistic, legal and marketing activities, among others but not predominantly]
222	Printing and service activities related to printing
223	Reproduction of recorded media [This class includes reproduction of records, audio, video and computer tapes from master copies, reproduction of floppy, hard
231	Manufacture of coke oven products [This class includes the operation of coke ovens chiefly for the production of coke or semi -coke from hard coal and lignite, retort carbon and residual products such as coal tar or pitch. Agglomeration of coke. Distillation of coal tar is classified in class 2411.]
232	Manufacture of refined petroleum products
233	Processing of nuclear fuel [includes extraction of uranium metal from pitchblende or other uranium bearing ores; manufacture of alloys, dispersions or mixtures ofnatural uranium or its compounds; manufacture of enriched uranium and itscompounds; plutonium and its compounds; uranium depleted in U 235 and its compounds; other radioactive elements, isotopes or compounds; and, nonirradiated fuel elements for use in nuclear reactors]
241	Manufacture of basic chemicals

242	Manufacture of other chemical products
243	Manufacture of man-made fibers [This class includes manufacture of artificial or synthetic filament and non-filament fibers.]
251	Manufacture of rubber products
252	Manufacture of plastic products
269	Manufacture of non-metallic mineral products n.e.c.
271	Manufacture of Basic Iron & Steel
272	Manufacture of basic precious and non-ferrous metals
273	Casting of metals [This group includes casting finished or semi-finished products producing a variety of goods, all characteristic of other activity classes]
281	Manufacture of structural metal products, tanks, reservoirs and steam generators
289	Manufacture of other fabricated metal products; metal working service activities
291	Manufacture of general purpose machinery
292	Manufacture of special purpose machinery
293	Manufacture of domestic appliances, n.e.c.
300	Manufacture of office, accounting and computing machinery
311	Manufacture of electric motors, generators and transformers
312	Manufacture of electricity distribution and control apparatus [electrical apparatus for switching or protecting electrical circuits (e.g. switches, fuses, voltage limiters, surge suppressors, junction boxes etc.) for a

	voltage exceeding 1000 volts; similar apparatus (including relays, sockets etc.) for a voltage not exceeding 1000 volts; boards, panels, consoles, cabinets and other bases equipped with two or more of the above apparatus for electricity control or distribution of electricity including power capacitors.]
313	Manufacture of insulated wire and cable [insulated (including enamelled oranodized) wire, cable (including coaxial cable) and other insulated conductors; insulated strip as is used in large capacity machines or control equipment; and optical fibre cables]
314	Manufacture of accumulators, primary cells and primary batteries
315	Manufacture of electric lamps and lighting equipment
319	Manufacture of other electrical equip ment n.e.c.
321	Manufacture of electronic valves and tubes and other electronic components
322	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
323	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods
331	Manufacture of medical appliances and instruments and appliances for measuring, checking, testing, navigating and other purposes except optical instruments
332	Manufacture of optical instruments and photographic equipment
333	Manufacture of watches and clocks
341	Manufacture of motor vehicles

342	Manufacture of bodies (coach work) for motor vehicles; manufacture of trailers and semi-trailers
343	Manufacture of parts and accessories for motor vehicles and their engines [brakes, gear boxes, axles, road wheels, suspension shock absorbers, radiators, silencers, exhaust pipes, steering wheels, steering columns and steering boxes and other parts and accessories n.e.c.]
351	Building and repair of ships & boats
352	Manufacture of railway and tramway locomotives and rolling stock
353	Manufacture of aircraft and spacecraft
359	Manufacture of transport equipment n.e.c.
361	Manufacture of furniture
369	Manufacturing n.e.c.
371	Recycling of metal waste and scrap [from rejected aluminum, utensil, containers and other used metallic items etc. Collection of metal waste and scrap for recycling is included in 51498.]
372	Recycling of non-metal waste and scrap [from old new papers, rejected glassarticles and used non-metallic items etc. Collection of non-metal waste and scrap for recycling is included in 51498.]

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