PRODUCTIVITY, WAGES AND PROFITS IN INDIA'S REGISTERED MANUFACTURING SECTOR: 1981-2011

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DECLARATION

I declare that the dissertation entitled "**Productivity, Wages and Profits in India's Registered Manufacturing Sector: 1981-2011**" submitted by me in partial fulfillment of the requirements for the award of **Master of Philosophy** has not been previously submitted for any other degree of this University or any other university.

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Chapter 1: Introduction

India's registered manufacturing sector[1] witnessed several changes during the period 1981 to 2011. According to the data from the Annual Survey of Industries (ASI), labour productivity (defined as Net Value Added Per Worker at 2004-05 prices[2]) grew at an absolute rate of 490%, from Rs. 0.92 lakh per worker in 1981-82 to 5.41 lakh per worker in 2010-11. In comparison, wage per worker at 2001 prices[3] increased by a mere 36% from Rs. 35,488 to Rs. 48,304 during the same period.

As a result of this staggering gap between labour productivity and real wage per worker growth rates, the Wage Share[4] in Net Value Added (NVA) declined by 19 percentage points to reach 12.3% by 2010-11. Correspondingly, the profit share in NVA rose by 132% during this 30 year period.

It is also interesting to note that there seems to be a close positive correspondence between the changes observed in the registered manufacturing sector's profit share in NVA and that of its profit share in sales (using gross value of output as a proxy for sales) throughout the 30-year period. The hefty rise in the capitalists' share (profits) in Net Value Added was associated with a corresponding increase of 96% in the profit to sales ratio or the margin on profits (in percentage terms).

However, this 30-year period was neither uniform with respect to India's industrial policy nor in terms of the trends observed in these particular variables. With the adoption of a comprehensive set of neo-liberal economic reforms, 1991 marked an important point of departure in terms of a change in India's economic policy outlook. Even though the relaxation on imports of capital equipment and intermediates began during the 1980s, 1991 marked a sharp regime shift with the abolition of industrial licensing and the dilution of the MRTP Act on one hand, and trade liberalisation on

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[1] The registered manufacturing sector corresponds to the sum of the factories that belong to the NIC 1998 2-digit industry divisions 15 to 37 (or NIC-2008 2-digit industry divisions 10 to 33).

[2] Deflated by Wholesale Price Index for Manufactured Products, base year 2004-05.

[3] Deflated by Consumer Price Index for Industrial Workers, base year 2001.

[4] NVA = Total Compensation to employees + Profits + Interest Payments + Rent Payments. However, we are interested in studying the remuneration paid to workers who are directly involved in the manufacturing process. Therefore, we only study the share of wage payments in NVA. Nevertheless, it is important to note that while the extent of change in total compensation to NVA might be different, the trend in both wage share in NVA and total compensation in NVA is almost the same over the 30-year period i.e. even total compensation witnessed a stark decline (24 percentage points) in its share in NVA. For definitions of these concepts, refer to Appendix VI.

the other [Balakrishnan and Babu 2003].

Also, the trends in India's GDP as well as that of its registered manufacturing sector were not the same throughout the post-reform (or post-liberalisation) period. The period between 1991-2001 was one of inconsistent growth and volatile fluctuations in the registered manufacturing sector. However, the period from 2001-2011 was one of high GDP growth (both in the Indian economy as well as the organised manufacturing sector) over a longer period of time.

Therefore, we can classify the 30-year period from 1981-2011 into 3 phases: the immediate pre-reform phase (1981-82 to 1990-91), the first post-reform phase (1990-91 to 2000-01) and the second post-reform phase (2000-01 to 2010-11).

By the end of the third phase (2001-2011), profit share in NVA was at 55.4%. This rise in profit share in NVA was associated with an increase in the profit margin by 4.6 percentage points or 117%. By 2010-11, the profit margin rose to 8.4%.

Clearly, an increase in the degree of monopoly (indicated by a rise in the profit margin) in the registered manufacturing sector has led to an increase the share of profits. On the other hand, an increase in the labour productivity (through the use of capital intensive technologies) as well as a weakening of the bargaining power of workers (due to the neo-liberal reforms) has not only led to almost no improvements in the workers' standard of living (represented by an almost stagnant real wage per worker) but also an absolute decline in the wage share in NVA. Clearly, capital has benefited at the expense of labour in the post-liberalisation era. This dissertation is concerned with examining how generalized this tendency has been across the registered manufacturing sector and with identifying the NIC-2 and 3-digit industries that were primarily responsible for the observed trends.

There have been several studies on the trends in productivity for the registered manufacturing sector on the whole as well as at the NIC-2 digit level in the pre and post-reform periods [Trivedi, Prakash and Sinate 2000, Unel 2003, Unni, Lalitha and Rani 2001], on the relationship between labour productivity, real wages and employment during the pre-reform and post-reform periods [Bhalotra 2002, Balakrishnan and Babu 2003, Trivedi, Lakshmanan, Jain and Gupta 2011], on the changing factor shares (in favour of profits and against wages) in India as well as the world [Roy 2012, Ellis and Smith 2007, Guerriero 2012, International Institute for Labour Studies 2011].

However, we aim to study the changes in labour productivity, real wage per worker, wage share, interest share and profit share in NVA during the pre-reform and post-reform periods (1981-1991, 1991-2001, 1992-1998 and 2001-2011) and the positive relationship between profit share in NVA and profit margin during the post-reform periods (1992-1998 and 2001-2011) at the NIC-2 digit and NIC-3 digit level to discover the reasons behind the trends observed in these variables in the aggregate registered manufacturing sector.

Chapter 2 examines whether the trends observed in labour productivity, real wage per worker and the factor shares in NVA in the registered manufacturing sector (on the whole) during the pre-reform and post-reform periods are a result of a corresponding change across all the 2-digit industries or whether they are caused by extremely striking changes in a small set of 2-digit industries. It also analyses the impact of a shift in the sub-sectoral composition of the manufacturing sector's NVA and employment on the change in these variables.

Chapter 3 conducts a similar analysis for the 2-digit industries that are found to be primarily responsible for the trends observed in the manufacturing sector during the pre-reform and post-reform periods.

Chapter 4 studies whether the 2-digit industries that are found to be principally responsible for the rise in the manufacturing sector's profit share in NVA during the two post-reform periods (1992-1998 and 2001-2011) are also significantly responsible for the increase in the manufacturing sector's profit margin. It also examines the role of a changing structural composition of gross output (as a proxy for sales) in increasing the manufacturing sector's profit margin. Chapter 4 also performs a similar study to examine the existence of a correspondence between the 3-digit industries that play a vital role in increasing their respective 2-digit industry's profit share in NVA in the two post-reform periods (1992-1998 and 2001-2011) and the 3-digit industries that contribute the most to the rise in the profit margin of their respective 2-digit industry.

Chapter 5 briefly summarises the main findings from these chapters and lists the important conclusions from this discussion.

Chapter 2: Labour Productivity, Real Wage Per Worker and Factor Shares in the Registered Manufacturing Sector

Rising labour productivity accompanied by a virtually stagnant (or at best slightly increasing) real wage per worker led to a declining wage share in NVA in the registered manufacturing sector across the 3 periods of 1981-1991, 1991-2001 and 2001-2011. This declining wage share was associated with a rise a in the share of interest payments in NVA during the pre-reform period (1981-91) and the first post-reform period (1991-2001). However, during the second post-reform period (2001-2011), a diminishing wage share as well as interest share led to a sharp rise in the registered manufacturing sector's profit share in NVA. In this chapter, we analyse the sources of these changes in the manufacturing sector. We examine whether the changes that occurred in the organised manufacturing sector's labour productivity, real wage per worker and factor shares in NVA during each of the 3 phases were a result of a corresponding change across all the 2-digit industries or whether they were caused by extremely striking changes in a small set of 2-digit industries. We also analyse the role played by a change in the sub-sectoral composition of aggregate NVA and employment in influencing these trends.

2.1. Data Sources

The Annual Survey of Industries (ASI) is the data source on the registered manufacturing sector in this study. The aggregate registered manufacturing sector is obtained as the sum of the factories that comprise the NIC-1998 2-digit industry divisions 15 to 37 (and NIC-2008 2-digit industry divisions 10 to 33). ASI covers all factories registered under Sections 2m(i) and 2m(ii) of the Factories Act 1948 and all bidi and cigar manufacturing establishments registered under the Bidi and Cigar Workers (Conditions of Employment) Act 1966 i.e. those factories that employ 10 or more workers with power; and those employing 20 or more workers without use of power. The geographical coverage of the survey extends to the entire country except the states of Arunachal Pradesh, Mizoram and the Union Territory of Lakshwadeep (CSO 2011a).

We use the Economic and Political Weekly Research Foundation's (EPWRF) database 'Annual Survey of Industries: 1973-74 to 2003-04 (Volume II)' (for the

period 1981-82 to 2003-04) and the ASI factory sector results published by the Central Statistical Organisation (CSO) on the Ministry of Statistics and Programme Implementation's website (for 2004-05 to 2010-11) (http://mospi.nic.in).

EPWRF's ASI database provides 3 series- NIC-1987 (1973-74 to 1997-98), NIC-1998 (1998-99 to 2003-04) and the EPWRF series (1973-74 to 2003-04). We use the EPWRF series (with NIC-1998 as the chosen industrial classification) for our data analysis as it takes care of the issue of concordance between NIC-1970, NIC-1987 and NIC-1998 and also makes certain necessary adjustments to the ASI data to provide a harmonised series.

ASI adopts 5 different national industrial classifications during our reference period of 1981-2011: NIC-1970 (from 1973-74 to 1988-89), NIC-1987 (1989-90 to 1997-98), NIC-1998 (1988-89 to 2003-04), NIC-2004 (2004-05 to 2007-08) and NIC-2008 (2008-09 to 2010-11). Our data series adheres to NIC-1998 and Appendix I to IV provide the relevant concordance tables between the different classifications. Appendices 1 and 2 reproduce the concordance tables linking NIC-98, NIC-87 and NIC-70, required to obtain the EPWRF Series, while Appendices 3 and 4 summarize our attempts at concordance (based on CSO's suggestions) between NIC-98 and NIC-04, and NIC-98 and NIC-08 respectively. Since we do not have access to tabulated data at the NIC-5 digit level, our attempts at concordance between NIC-98 and NIC-08, and NIC-98 and NIC-04 in case of some industry subgroups are partial at best. Appendices 3 and 4 also make a note of these particular shortcomings.

We construct the Consumer Price Index for Industrial Workers (CPI-IW) series (with a common base year of 2001) to compute the real wage per worker for the different manufacturing sectors.

In order to generate real value added for the different sectors, we use the Wholesale Price Index[5] (WPI). However, it is important to note that while the NIC relies on classifying industries on the basis of *economic activities* and the WPI aims to capture the price movements of different *commodities*, it is difficult to ensure one-on-one correspondence between NIC industry groups and the WPI for a single group or commodity. To partially address this problem, we construct either simple or composite indices (by weighing the different price indices with their relative weights in the WPI)

[5] Available on the Office of Economic Adviser, Ministry of Commerce and Industry, Government of India's website http://eaindustry.nic.in/

that best capture the economic activities of the NIC industry group/sub-group. For example, we construct a composite index of food products, soft drinks and carbonated water, wine industries and malt liquor (with their respective WPI weights) as the deflator for the NIC-98 2-digit industry Food Products and Beverages. Similarly, we build relevant indices for the three different base years (1981-82, 1993-94 and 2004-05) and then splice them to obtain indices with a common base year of 2004-05. Appendix V provides the list of WPI deflators for the different NIC-2 and 3 digit industries.

2.2. Sources of the Trends Observed in Labour Productivity, Real Wage Per Worker and Factor Shares in the Registered Manufacturing Sector

In this dissertation, we examine whether the trends observed in the manufacturing sector's labour productivity, real wage per worker, wage share, interest share and profit share in net value added (during 1981-1991, 1991-2001, 2001-2011) are a generalised phenomenon at the sub-sectoral level (of 2-digit industries) or whether a few specific 2-digit industries are responsible for these changes. We also analyse the contribution of a sub-sectoral shift in the composition of output and employment to these trends.

Since one of the primary objectives of this dissertation is to examine the reasons behind the phenomenal rise in the organised manufacturing sector's profit share in Net Value Added during the second post-liberalisation phase (2001-2011), we choose 2004-2008 as our reference period for selecting the 2-digit industries for our analysis. In order to generate a preliminary list of the NIC-2 digit industries that could be primarily responsible for the observed trends in the registered manufacturing sector, we compute the average net value added and profits for 2004-08 for each industry group. We rank the 2-digit industries based on their relative contribution to the manufacturing sector's NVA and profits and select the ones that account for at least 70% of NVA or profits. Table 1 presents the results of this exercise. The Manufacturing sub-sectors Basic Metals (27), Chemicals and Chemical Products (24), Coke, Refined Petroleum Products and Nuclear Fuel (23), Food Products and Beverages (15), Motor Vehicles, Trailers and Semi-Trailers (34), Textiles (17), Other Non-Metallic Products (26) and Machinery and Equipment n.e.c. (29) together account for 76.2% and 80% of the manufacturing sector's net value

added and profits respectively during 2004-08 and we choose these eight 2-digit industries for further exploration.

Table 1: Percentage Contribution of NIC-98 2-digit Industries to the Registered Manufacturing Sector's Average NVA and Profits (in descending order of NVA) for 2004-08

NIC-98 Code and Description	NVA (%)	Profits (%)
27: Manufacture of Basic Metals	17.2	19.3
24: Manufacture of Chemicals and Chemical Products	14.6	15.0
23: Manufacture of Coke, Refined Petroleum Products and Nuclear Fuel	13.5	20.7
15: Manufacture of Food Products and Beverages	7.9	5.8
34: Manufacture of Motor Vehicles, Trailers and Semi-Trailers	6.2	6.4
29: Manufacture of Machinery and Equipment n.e.c.	5.8	4.9
17: Manufacture of Textiles	5.5	2.0
26: Manufacture of Other Non-Metallic Mineral Products	5.5	5.9
31: Manufacture of Electrical Machinery and Apparatus n.e.c.	4.2	4.2
28: Manufacture of Fabricated Metal Products, Except Machinery and Equipment	3.3	2.7
35: Manufacture of Other Transport Equipment	2.9	3.1
25: Manufacture of Rubber and Plastics Products	2.4	1.7
18: Manufacture of Wearing Apparel; Dressing and Dyeing of Fur	1.7	0.8
16: Manufacture of Tobacco Products	1.6	2.0
32: Manufacture of Radio, Television and Communication Equipment and Apparatus	1.4	1.0
36: Manufacture of Furniture; Manufacturing n.e.c.	1.4	1.0
21: Manufacture of Paper and Paper Products	1.3	0.8
22: Publishing, Printing and Reproduction of Recorded Media	1.3	0.9
33: Manufacture of Medical, Precision and Optical Instruments, Watches and Clocks	0.9	0.9
19: Tanning and Dressing of Leather; Manufacture of Luggage, Handbags, Saddlery, Harness and Footwear	0.6	0.3
30: Manufacture of Office, Accounting and Computing Machinery	0.5	0.5
20: Manufacture of Wood and of Products of Wood and Cork, Except Furniture; Manufacture of Articles of Straw and Plaiting Materials	0.2	0.1
37: Recycling	0.01	0.00
Total Registered Manufacturing	100	100

Table 2: Average NVA Share of Select 2-digit Industries in the Registered Manufacturing Sector, 1981-2011

NIC-98 Code and Description	1981-2011	1981-1991	1991-2001	2001-2011
24: Manufacture of Chemicals and Chemical Products	16.9	14.6	19.6	16.4
27: Manufacture of Basic Metals	12.7	12.3	11.6	14.2
15: Manufacture of Food Products and Beverages	9.8	10.4	10.4	8.5
17: Manufacture of Textiles	9.6	13.4	9.5	5.9
29: Manufacture of Machinery and Equipment n.e.c.	7.2	8.5	6.8	6.4
23: Manufacture of Coke, Refined Petroleum Products and Nuclear Fuel	6.9	4.3	4.6	11.8
26: Manufacture of other Non-Metallic Mineral Products	5.0	4.9	4.7	5.5
34: Manufacture of Motor Vehicles, Trailers and Semi-Trailers	5.0	4.8	4.7	5.6
Rest of the Manufacturing Sector	26.9	26.8	28.0	25.8
Total Registered Manufacturing	100.0	100.0	100.0	100.0

Table 3: Average Employment Share of Select 2-digit Industries in the Registered Manufacturing Sector, 1981-2011

NIC-98 Code and Description	1981-2011	1981-1991	1991-2001	2001-2011
17: Manufacture of Textiles	19.0	22.2	18.4	16.4
15: Manufacture of Food Products and Beverages	16.2	16.5	16.4	15.6
27: Manufacture of Basic Metals	8.1	8.9	7.9	7.4
24: Manufacture of Chemicals and Chemical Products	7.9	7.1	8.4	8.1
26: Manufacture of other Non-Metallic Mineral Products	6.5	6.6	6.0	7.1
29: Manufacture of Machinery and Equipment n.e.c.	5.3	6.0	5.3	4.8
34: Manufacture of Motor Vehicles, Trailers and Semi-Trailers	3.2	2.5	2.9	4.3
23: Manufacture of Coke, Refined Petroleum Products and Nuclear Fuel	0.8	0.7	0.8	1.0
Rest of the Manufacturing Sector	32.9	29.5	33.9	35.5
Total Registered Manufacturing	100	100	100	100

It is useful to briefly compare the structural composition of NVA and employment during the pre-reform (1981-1991) and the two post-reform periods

(1991-2001 and 2001-2011) at this juncture and to analyse the role of the selected 2-digit industries during each of the three phases. Tables 2 and 3 provide the average NVA and employment shares of these 8 chosen industries in the manufacturing sector during 1981-2011 and the 3 phases: 1981-1991, 1991-2001 and 2001-2011. During the pre-reform period and the first post-reform phase, Chemicals and Chemical Products (24), Basic Metals (27), Textiles (17) and Food Products and Beverages (15) are the top 4 contributors and together constitute more than 50% of the aggregate manufacturing sector's NVA as well as employment. But while the Chemical and Chemical Products industry gains in its average share in NVA (by 5 percentage points) and employment (by 1.3 percentage points) from 1981-91 to 1991-2001, the Textiles industry's average share in the manufacturing sector's NVA and employment declines by 3.9 and 3.8 percentage points respectively.

However, in the second post-reform phase (2001-2011), while industries 15, 17, 24 and 27 continue to be the top 4 contributors to the manufacturing sector's employment, their combined share in NVA declines to 45%, a drop by 6.2 percentage points. The Coke, Refined Petroleum Products and Nuclear Fuel (23) industry's share in NVA rises to 11.8%, or by 7.2 percentage points (a 150% proportionate rise) between 1991-2001 and 2001-2011, while its average employment share increases by only 0.2 percentage points to 1%.

In order to study the contributions of these 2-digit industries to changes in the registered manufacturing sector's labour productivity, real wage per worker, wage share, interest share and profit share in NVA, we adapt the method used by Bernard and Jones (1996b) for decomposing sector-wide changes in these variables into sub-sectoral gains in the concerned variable and the effect of changes in sub-sectoral employment or NVA shares.

Consider, for example, a change in aggregate labour productivity. We can write the registered manufacturing sector's labour productivity as the sum of the 2-digit industries labour productivity weighted by their respective employment shares in the registered manufacturing sector.

$$y = \sum_{j=1}^{n} y_j . w_j \qquad (1)$$

where y_j and w_j are the j^{th} 2-digit industry's labour productivity and employment share in the registered manufacturing sector, and y is the registered

manufacturing sector's labour productivity.

Using this framework, we can decompose the change in the aggregate registered manufacturing sector's labour productivity (between the two points of time 0 and T) into within-sector and between-sector components as follows:

$$\Delta y = \sum_{j=1}^{n} \Delta y_j . \overline{w_j} + \sum_{j=1}^{n} \Delta w_j . \overline{y_j} \qquad (2)$$

where $\overline{w_j}$ and $\overline{y_j}$ are industry j's average employment share and average labour productivity of the periods 0 and T, and Δw_j and Δy_j are the changes in industry j's employment share and labour productivity between periods 0 and T.

In terms of percentage changes, we get:

$$percent\Delta y = \sum_{j=1}^{n} percent\Delta y_j * \frac{(y_{j,0})}{y_0} * \overline{w_j} + \sum_{j=1}^{n} \Delta w_j * (\frac{\overline{y_j}}{y_0}) * 100 \qquad (3)$$

where $y_{j,0}$ and y_0 are industry j's and the registered manufacturing sector's labour productivity at period 0. We then annualise these percentage changes by T.

The first term on the right hand side is called the Growth Effect (GE) and it represents the contribution of within-subsector labour productivity growth to the total registered manufacturing sector's labour productivity growth, with the average sub-sectoral employment shares for the period as weights. If the employment shares of the 2-digit industries remain constant over the period, this would be the only term. The second term is the Share Effect (SE) and it captures the contribution of between-subsector changes or changing sub-sectoral employment shares (changing sub-sectoral composition) to the registered manufacturing sector's labour productivity growth, with the average sub-sectoral labour productivity for the period as the weights [Bernard and Jones (1996b)]. Needless to say, faster growing industries, both in terms of labour productivity and employment shares, contribute more to the registered manufacturing sector's labour productivity growth.

The term on the left hand side is called the Total Effect (TE) and it refers to the percentage change per annum in the registered manufacturing sector's labour productivity. In other words, the Total Effect (after annualising the percentage changes) equals $[\{((y_T - y_0)/y_0)*100\}/T]$. However, due to the nature of Equation 3, when we calculate the percentage contribution of a sub-sector's Growth Effect (or

Share Effect) to the Total Effect in the registered manufacturing sector's labour productivity, these contributions can be viewed either as the percentage contributions to the absolute change in labour productivity, or the percentage contributions to percentage points change in labour productivity over the period as a whole, or as the percentage contributions to percentage per annum change in labour productivity[6]. Therefore, in the following discussion, these within-subsector and between-subsector changes (in percentage terms) have been interpreted in terms of any of these changes.

Equation 3 can also be used to study the contributions of the different 2-digit industries to the change in manufacturing sector's real wage per worker, wage share, profit share and interest share in NVA during the three phases of 1981-1991, 1991-2001 and 2001-2011. While w_j (the weights) would be the sub-sectoral employment shares when the variable (y) under study is the manufacturing sector's real wage per worker, the weights would be the sub-sectoral NVA shares when the variable under consideration (y) is the manufacturing sector's wage share, profit share or interest share in NVA.

Tables 4, 5, 8, 9 and 12 present the results of this decomposition exercise for the changes in the manufacturing sector's labour productivity, real wage per worker, wage share, profit share and interest share in NVA during the three phases of 1981-1991, 1991-2001 and 2001-2011.

It is important to note that our analysis is only a point-to-point analysis and is therefore, not entirely representative of the changes that occur during the 30 year period. The trends in the variables under study for the 2-digit industries and the manufacturing sector are more complex in nature. Even with these limitations, the phase-wise point-to-point analysis does yield some noteworthy results and helps us better understand the sources of the changes that occur in the manufacturing sector during 1981-2011.

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[6] Consider Equation 3. For instance, if we calculate the percentage contribution of sub-sector j's Growth Effect annualised over total time T i.e. $\frac{\Delta y_j * y_{jo} * \overline{(w_j)} * 100}{y_o * y_{jo} * T}$ to Total Effect annualised over total time T $\frac{\Delta y * 100}{y_0 * T}$, we obtain $\frac{\Delta y_j * \overline{w_j} * 100}{\Delta y}$, which is the same as the percentage contribution of sub-sector j's growth effect to the absolute change (or Δy) in Equation 2.

2.2.1. Pre-Reform Phase (1981-1991)

During the pre-reform phase, the manufacturing sector's labour productivity rose by Rs. 0.85 lakh per worker or at an annual rate of 9.23%. 92% of this labour productivity growth was due to the rise in sub-sectoral labour productivities i.e. the growth effect. All the chosen eight 2-digit industries as well as the rest of the manufacturing sector (as a group) experienced a growth in their respective labour productivities. An increase in the labour productivities of the Chemicals and Chemical Products (24), Food Products and Beverages[7] (15) and Coke, Refined Petroleum Products and Nuclear Fuel (23) industries (the top 3 contributors in terms of growth effect) (weighted by an average of their respective employment share in the manufacturing sector in 1981-82 and 1990-91) together accounted for 43.5% of the total rise in the manufacturing sector's labour productivity growth i.e. had the labour productivity in these sub-sectors not grown during 1981-91, the manufacturing sector's labour productivity in 1990-91 would have been lower by 43.5%.

Also, while the changing sub-sectoral composition played a positive role in enhancing the manufacturing sector's labour productivity i.e. industries with higher labour productivity also gained in their employment shares, the share effect's contribution to the total change in labour productivity was only marginal [Table 4]. At the sub-sectoral level, while Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products and Nuclear Fuel (23) witnessed an increase in their respective employment shares between 1981-82 and 1990-91, the Food Products and Beverages industry's (15) employment share fell. Therefore, in terms of total sub-sectoral contributions (sub-sectoral growth effect plus sub-sectoral share effect), NIC 23, NIC 24 and NIC 15 together contributed 47.4% to the total manufacturing sector's labour productivity growth.

On the other hand, real wage per worker in the manufacturing sector rose by 3.4% per annum, an absolute increase of Rs. 12,069 per worker, and touched Rs. 47,557 per worker by 1990-91. The growth effect was responsible for 94.6% of this rise in real wage per worker and simultaneously, the changing sectoral composition of employment (while positive) did not help raise the manufacturing sector's real wage

[7] A (weighted) increase in the Food Products and Beverages industry's labour productivity plays an important role in raising the manufacturing sector's labour productivity due to this sub-sector's high average share (~20% for 1981-82 and 1990-91) in the manufacturing sector's employment.

per worker by much [Table 5].

Table 4: Sources of Labour Productivity Growth in the Registered Manufacturing Sector, 1981-2011

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest of Manufacturing	Manufacturing (Total)
1981-1991										
Growth Effect (GE)	1.4	0.9	1.2	1.5	0.5	0.8	0.5	0.3	1.5	8.5
Share Effect (SE)	-0.3	-0.2	0.3	0.3	0.1	0.04	-0.04	0.1	0.4	0.7
Sub-sectoral Total (ST)	1.1	0.7	1.5	1.8	0.6	0.8	0.4	0.4	1.9	9.2*
GE as % of Total Effect (TE)	15.2	10.0	12.5	15.9	5.4	8.7	5.0	3.0	16.3	92.0
SE as % of TE	-3.2	-2.1	3.4	3.6	0.8	0.4	-0.5	0.8	4.6	8.0
ST as % of TE	12	7.9	15.9	19.5	6.3	9.1	4.5	3.8	21.0	100.0
1991-2001										
Growth Effect	0.6	0.4	-0.1	1.0	0.4	0.6	0.6	0.1	1.5	5.2
Share Effect	0.1	-0.1	-0.02	0.4	-0.1	-0.3	-0.2	0.1	0.2	0.1
Sub-sectoral Total	0.7	0.3	-0.1	1.4	0.3	0.3	0.4	0.1	1.7	5.3*
GE as % of TE	11.4	8.1	-1.1	18.7	7.5	12.1	10.8	1.2	29.4	98.0
SE as % of TE	1.2	-1.9	-0.3	8.4	-1.3	-5.7	-2.9	1.2	3.4	2.0
ST as % of TE	12.6	6.2	-1.4	27.1	6.2	6.4	7.8	2.4	32.8	100
1992-1998										
Growth Effect	0.8	0.6	-0.8	0.6	0.4	2.5	0.5	0.4	1.5	6.6
Share Effect	-0.01	-0.05	-0.1	0.4	-0.1	-0.4	-0.1	0.1	0.3	-0.1
Sub-sectoral Total	0.8	0.6	-0.9	1.0	0.3	2.2	0.4	0.5	1.8	6.5*
GE as % of TE	11.9	9.4	-12.0	9.7	6.1	38.5	8.2	6.0	23.3	101.3
SE as % of TE	-0.1	-0.7	-2.1	5.6	-2.2	-5.5	-2.2	1.9	4.0	-1.3
ST as % of TE	11.8	8.7	-14.1	15.3	4.0	33	6.0	7.9	27.4	100
2001-2011										
Growth Effect	0.6	0.6	1.0	1.2	0.1	0.8	0.6	0.4	2.9	8.2
Share Effect	-0.3	-0.2	0.1	-0.3	0.2	0.2	0.1	0.4	0.2	0.4
Sub-sectoral Total	0.3	0.4	1.1	0.9	0.3	1.0	0.7	0.8	3.1	8.6*
GE % of TE	6.9	6.8	11.3	14.3	1.5	9.0	7.2	4.4	34.0	95.4
SE % of TE	-3.3	-2.4	1.5	-4.0	2.1	2.2	1.3	4.5	2.7	4.6
ST as % of TE	3.6	4.4	12.7	10.3	3.6	11.2	8.5	9.0	36.7	100

Note: Rows and columns may not sum up exactly due to rounding off.

*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity in the registered manufacturing sector.

Table 5: Sources of Real Wage Per Worker Growth in the Registered Manufacturing Sector, 1981-2011

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest	Manufacturing (Total)
1981-1991										
Growth Effect	0.78	0.50	0.07	0.32	0.09	0.27	0.28	0.15	0.77	3.22
Share Effect	-0.21	-0.33	0.04	0.17	0.06	0.02	-0.04	0.06	0.42	0.18
ST	0.57	0.17	0.11	0.49	0.14	0.30	0.23	0.21	1.18	3.40*
GE as % of TE	22.9	14.7	2.0	9.4	2.5	8.0	8.1	4.4	22.5	94.6
SE as % of TE	-6.2	-9.8	1.1	4.9	1.7	0.7	-1.2	1.8	12.3	5.4
ST as % of TE	16.7	4.9	3.1	14.4	4.2	8.7	6.9	6.2	34.8	100
1991-2001										
Growth Effect	0.08	-0.24	0.11	-0.09	0.08	0.28	0.03	0.01	-0.16	0.09
Share Effect	0.05	-0.16	0.00	0.20	-0.04	-0.21	-0.13	0.07	0.16	-0.07
ST	0.13	-0.4	0.10	0.11	0.04	0.06	-0.10	0.08	0.01	0.02*
GE as % of TE	390.0	-1191.3	523	-455.8	403.9	1364.3	158.1	47.6	-774.0	465.7
SE as % of TE	234.1	-800.5	-16.6	994.7	-217.5	-1061.1	-629.5	323.7	806.9	-365.7
ST as % of TE	624.1	-1991.8	506.4	538.9	186.4	303.2	-471.4	371.2	33.0	100
1992-1998										
Growth Effect	0.01	-0.11	0.07	0.05	0.1	0.75	0.2	0.09	0.39	1.55
Share Effect	-0.01	-0.09	-0.03	0.18	-0.12	-0.20	-0.16	0.12	0.30	-0.00
ST	0.00	-0.21	0.04	0.23	-0.02	0.55	0.04	0.21	0.70	1.55*
GE % of TE	0.7	-7.2	4.5	3.3	6.5	48.5	12.8	5.8	25.2	100.2
SE % of TE	-0.4	-6.1	-1.9	11.8	-8.0	-13.1	-10.0	7.9	19.7	-0.2
ST as % of TE	0.3	-13.3	2.6	15.1	-1.5	35.4	2.8	13.7	44.9	100
2001-2011										
Growth Effect	0.11	-0.14	-0.01	0.00	-0.05	-0.21	-0.06	-0.12	0.33	-0.16
Share Effect	-0.23	-0.27	0.03	-0.14	0.13	0.14	0.07	0.39	0.17	0.29
ST	-0.12	-0.41	0.02	-0.14	0.08	-0.07	0.01	0.27	0.49	0.12*
GE as % of TE	88.2	-116.5	-9.1	-3.0	-40.5	-170.8	-51.7	-99.3	268.2	-134.6
SE as % of TE	-186.9	-219.1	23.9	-114.2	107.0	113.3	56.9	317.8	136.0	234.6
ST as % of TE	-98.8	-335.6	14.8	-117.2	66.5	-57.5	5.2	218.4	404.2	100

Note: Rows and columns may not sum up exactly due to rounding off. ST is the sub-sectoral total.

*This is the Total Effect (TE) and it equals the annual percentage change in Real Wage Per Worker in the registered manufacturing sector. Rest refers to the remaining 2-digit industries.

All the eight chosen 2-digit industries as well as the rest of the manufacturing sector (as a group) witnessed growth in their respective real wage per worker during this phase. Food Products and Beverages (15), Textiles (17) and Chemicals and

Chemical Products (24) were the top 3 sub-sectors in terms of their sub-sectoral increases in real wage per worker and together accounted for 47% of the increase in the manufacturing sector's real wage per worker. However, both Food Products and Beverages (15) and Textiles (17) registered a significant fall in their respective employment shares (weighted by the average real wage per worker) and in effect, the top 3 industries in terms of the total sub-sectoral contributions were different. Due to the change in the sectoral composition of employment, Food Products and Beverages (15), Chemical and Chemical Products (24) and Basic Metals (27) were the top 3 contributors in terms of total sub-sectoral contributions and contributed 39.8% to the rise in the manufacturing sector's real wage per worker, i.e. had they not witnessed a growth in their respective real wage per workers as well as a change in their respective employment shares, the manufacturing sector's real wage per worker would have only risen by 60.2% of Rs. 12,069 (the total rise).

While both labour productivity and real wage per worker increased for all the sub-sectors during this phase, the growth in real wage per worker lagged behind the growth in labour productivity. Tables 6 and 7 present the annual and average annual growth rates of labour productivity and real wage per worker for the period 1981-1991.

Table 6: Annual Growth Rates of Labour Productivity and Real Wage Per Worker, 1981-2011

Industry	1981-1991		1991-2001		2001-2011	
	Labour Productivity	Real Wage Per Worker	Labour Productivity	Real Wage Per Worker	Labour Productivity	Real Wage Per Worker
15	17.2	11.0	5.8	0.8	5.5	1.1
17	9.3	2.0	6.3	-1.2	6.4	-0.9
23	20.5	6.7	0.2	7.3	13.2	-0.4
24	10.8	3.5	4.9	-0.8	5.6	0.0
26	14.4	1.9	8.0	2.0	1.6	-0.9
27	5.2	2.1	5.6	2.6	4.5	-1.6
29	6.6	3.5	10.3	0.5	8.0	-0.9
34	6.1	3.4	4.4	0.2	5.5	-1.6
Rest of Manufacturing	6.2	2.7	7.1	-0.5	10.0	1.1
Total Manufacturing	10.1	3.4	5.8	0.0	7.5	0.1

Table 7: Average Annual Growth Rates of Labour Productivity and Real Wage Per Worker, 1981-2011

Industry	1981-1991		1991-2001		2001-2011	
	Labour Productivity	Real Wage Per Worker	Labour Productivity	Real Wage Per Worker	Labour Productivity	Real Wage Per Worker
15	13.1	8.9	5.5	0.9	5.5	1.2
17	8.0	2.1	6.4	-1.2	5.9	-1.0
23	21.7	6.2	7.4	7.3	11.6	0.1
24	8.7	3.4	5.6	-0.8	5.0	0.0
26	10.6	2.1	7.8	2.1	4.0	-0.8
27	5.9	2.4	6.2	3.3	6.4	-1.5
29	5.9	3.6	8.2	0.6	6.9	-0.8
34	5.6	3.5	5.6	0.5	6.1	-1.8
Rest of Manufacturing	6.3	2.8	6.4	-0.4	7.9	1.2
Total Manufacturing	8.1	3.4	5.3	0.1	6.3	0.2

While the average annual growth rate of the manufacturing sector's labour productivity was 2.3 times its real wage per worker growth rate, the gap between labour productivity and real wage per worker growth rates was much higher for sub-sectors Coke, Refined Petroleum Products and Nuclear Fuel (23), Other Non-Metallic Mineral Products (26), Textiles (17) and Chemicals and Chemical Products (24).

As a result, wage share in NVA fell by 6.3 percentage points during this phase [Figure 1]. Within-subsector changes were responsible for 85% of the per annum percentage fall in wage share and the changing sub-sectoral composition of NVA further compounded the decline in the manufacturing sector's wage share by contributing 15%.

Wage share in NVA fell across the 2-digit industries and wage-share decline in Textiles (17), Basic Metals (27) and Other Non-Metallic Mineral Products (26) together constituted 42.1% of the manufacturing sector's wage-share decline. The decline in the Textiles industry's (17) NVA share, weighted by its average wage-share contributed 26.5% to the manufacturing sector's wage share decline. As for the sub-sectoral totals, the textiles industry (17) and basic metals (27) contributed 52.3% to

the decline in the manufacturing sector's wage share in NVA [Table 8].

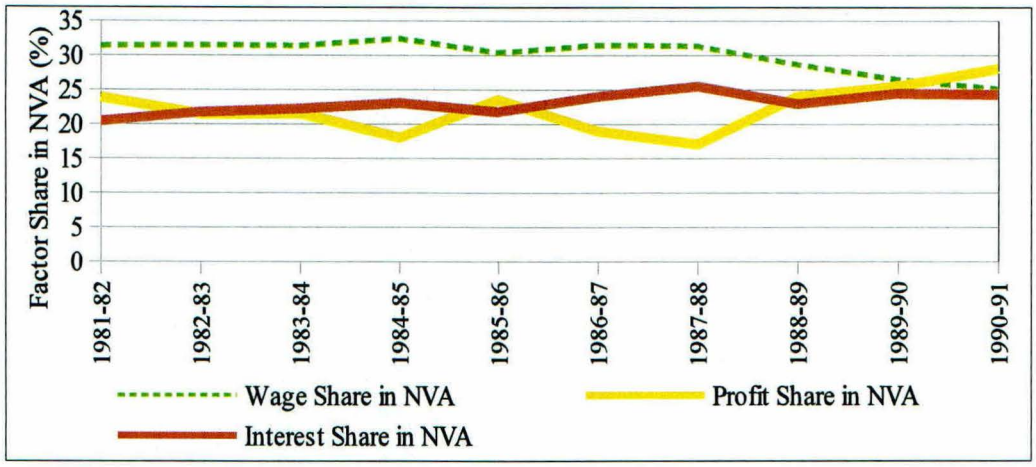
Table 8: Sources of Wage Share in NVA Decline in the Registered Manufacturing Sector, 1981-2011

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest	Manufacturing (Total)
1981-1991										
Growth Effect (GE)	-0.08	-0.45	-0.03	-0.04	-0.19	-0.21	-0.03	-0.01	-0.7	-1.7
Share Effect (SE)	0.10	-0.53	0.06	-0.01	0.10	-0.14	-0.15	-0.03	0.30	-0.3
Sub-sectoral Total (ST)	0.03	-0.98	0.03	-0.06	-0.09	-0.34	-0.18	-0.04	-0.37	-2.0*
GE as % of Total Effect	3.8	22.4	1.6	2.2	9.5	10.3	1.7	0.4	33.2	85.0
SE as % of TE	-5.1	26.5	-3.0	0.5	-5.0	6.8	7.4	1.5	-14.7	15.0
ST as % of TE	-1.3	48.9	-1.4	2.8	4.4	17.1	9.1	1.9	18.4	100
1991-2001										
Growth Effect	-0.22	-0.22	0.05	-0.50	-0.08	0.09	-0.19	0.05	-0.58	-1.6
Share Effect	0.10	-0.54	0.00	0.37	0.02	-0.29	-0.04	-0.09	-0.02	-0.5
Sub-sectoral Total	-0.12	-0.76	0.05	-0.13	-0.06	-0.20	-0.24	-0.04	-0.60	-2.1*
GE as % of TE	10.4	10.3	-2.2	24.0	3.8	-4.3	9.2	-2.5	27.9	76.5
SE as % of TE	-4.9	25.9	-0.1	-17.9	-0.9	14.0	2.1	4.5	0.8	23.5
ST as % of TE	5.5	36.2	-2.3	6.1	2.9	9.7	11.3	1.9	28.7	100
1992-1998										
Growth Effect	-0.56	-0.65	0.24	-0.19	-0.17	-0.53	-0.05	-0.20	-0.20	-2.3
Share Effect	0.20	-0.21	-0.26	0.00	-0.01	0.62	-0.17	0.17	-0.30	0.0
Sub-sectoral Total	-0.37	-0.86	-0.02	-0.19	-0.18	0.09	-0.23	0.01	-0.50	-2.3*
GE as % of TE	25.1	28.7	-10.6	8.4	7.5	23.6	2.4	7.3	8.9	101.1
SE as % of TE	-8.8	9.4	11.6	0.2	0.6	-27.5	7.7	-7.8	13.5	-1.1
ST as % of TE	16.2	38.1	1.0	8.6	8.0	-3.9	10.1	-0.5	22.3	100
2001-2011										
Growth Effect	-0.22	-0.40	-0.27	-0.18	-0.08	-0.71	-0.27	-0.21	-0.73	-3.1
Share Effect	-0.24	-0.42	0.20	-0.29	-0.03	0.25	0.05	0.20	0.08	-0.2
Sub-sectoral Total	-0.46	-0.82	-0.08	-0.47	-0.11	-0.46	-0.22	-0.01	-0.65	-3.3*
GE as % of TE	6.8	12.3	8.4	5.4	2.4	21.7	8.2	6.5	22.4	94.1
SE as % of TE	7.2	12.8	-6.1	8.9	0.8	-7.6	-1.5	-6.1	-2.5	5.9
ST as % of TE	14.0	25.1	2.3	14.3	3.2	14.1	6.7	0.4	19.9	100

Note: Rows and columns may not sum up exactly due to rounding off.

*This is the Total Effect (TE) and it equals the annual percentage change in wage share in NVA in the registered manufacturing sector. Rest refers to the remaining 2-digit industries.

Figure 1: Factor Shares in NVA in Registered Manufacturing, 1981-1991



Interest share in NVA for the registered manufacturing sector also underwent a significant change in this phase and rose by 4 percentage points, a proportionate rise of 1.94% per annum. Within-subsector changes in interest share in NVA constituted 106.3% of this per annum rise. On the other hand, the shift in the sub-sectoral composition of NVA (or share effect) contributed a negative 6.3% to the rise in aggregate interest share in NVA. In other words, the share effect contributed 6.3% in preventing a further increase in the registered manufacturing sector's interest share in NVA. [Table 9].

However, the rise of interest share in NVA did not hold true for all the sub-sectors. While 6 out of the 8 selected 2-digit industries as well as the rest of the manufacturing sector (as a group) witnessed a rise in their respective interest shares out of NVA, Coke, Refined Petroleum Products and Nuclear Fuel (23) and Food Products and Beverages (15) experienced a decline in their interest shares in NVA. The rise in the interest shares of Basic Metals (27), Chemical and Chemical Products (24) and Textiles (17) together accounted for 70.3% of the rise in the manufacturing sector's interest share in NVA.

Table 10 presents the average interest rates for the 3 phases as well as the absolute changes between the beginning and end point of each phase. It is important to note that while interest shares out of NVA declined for Food Products and Beverages (15) and Coke, Refined Petroleum Products and Nuclear Fuel (23), the interest rate[8] fell only in case of the latter. All other 2-digit industries as well as the remaining manufacturing sector (as a group) and the manufacturing sector witnessed a

[8] Interest rate for industry j during period t is defined as industry j's average interest payments for periods t and t-1 divided by its average outstanding loans for periods t and t-1.

rise in averaged interest rates charged between 1981-82 and 1990-91.

Table 9: Sources of Interest Share in NVA Growth/Decline in the Registered Manufacturing Sector, 1981-2011

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest	Manufacturing (Total)
1981-1991										
Growth Effect (GE)	-0.1	0.3	-0.2	0.5	0.3	0.5	0.1	0.1	0.5	2.1
Share Effect (SE)	0.1	-0.4	0.1	-0.03	0.1	-0.2	-0.2	-0.03	0.3	-0.1
Sub-sectoral Total (ST)	0.02	-0.1	-0.1	0.5	0.4	0.3	-0.05	0.1	0.8	1.9*
GE as % of TE	-6.4	16.7	-8.8	25.6	14.8	28	5.2	6.5	24.5	106.3
SE as % of TE	7.5	-20.3	5.3	-1.4	7.2	-11	-7.8	-1.5	15.8	-6.3
ST as % of TE	1.1	-3.6	-3.5	24.2	22.0	17.0	-2.6	5.0	40.3	100
1991-2001										
Growth Effect	0.4	0.7	0.2	-0.4	0.03	1.0	0.1	0.2	-0.2	2.0
Share Effect	0.1	-0.5	0.0	0.8	0.03	-0.5	-0.04	-0.1	-0.02	-0.1
Sub-sectoral Total	0.6	0.2	0.2	0.4	0.1	0.4	0.02	0.1	-0.2	1.9*
GE as % of TE	23.8	37.7	8.9	-23.0	1.6	51.3	3.4	11.6	-8.7	106.8
SE as % of TE	7.2	-25.7	0.1	45.6	1.8	-27.7	-2.2	-4.9	-0.9	-6.8
ST as % of TE	31.0	12.1	9.0	22.6	3.4	23.6	1.3	6.7	-9.5	100
1992-1998										
Growth Effect	-0.2	0.2	0.6	-0.7	0.1	-0.7	-0.3	-0.2	-0.3	-1.6
Share Effect	0.2	-0.2	-0.4	-0.01	-0.02	1.0	-0.1	0.1	-0.2	0.4
Sub-sectoral Total	0.04	0.0	0.2	-0.7	0.05	0.2	-0.4	-0.1	-0.5	-1.2*
GE as % of TE	15.3	-14.0	-51.3	56.4	-5.4	61.0	25.5	16.8	26.2	130.6
SE as % of TE	-18.8	13.7	33.8	0.7	1.5	-80.0	10.7	-11.2	19.0	-30.6
ST as % of TE	-3.5	-0.3	-17.5	57.1	-3.9	-18.9	36.1	5.6	45.3	100
2001-2011										
Growth Effect	-0.4	-0.5	-0.2	-1.0	-0.3	-1.1	-0.3	-0.3	-0.9	-5.1
Share Effect	-0.3	-0.3	0.2	-0.4	-0.03	0.3	0.03	0.1	0.05	-0.2
Sub-sectoral Total	-0.6	-0.8	-0.05	-1.4	-0.3	-0.8	-0.3	-0.2	-0.8	-5.3*
GE as % of TE	7.1	9.1	4.6	18.7	5.8	21.2	5.8	6.2	16.9	95.4
SE as % of TE	4.8	5.4	-3.7	7.4	0.5	-6.1	-0.6	-2.2	-0.9	4.6
ST as % of TE	11.9	14.5	0.9	26.1	6.3	15.1	5.2	3.9	16.0	100

Note: Rows and columns may not sum up exactly due to rounding off. ST is the sub-sectoral total.

*This is the Total Effect (TE) and it equals the annual percentage change in interest share in NVA in the registered manufacturing sector. Rest refers to the remaining 2-digit industries.

Table 10: Interest Rate in the Registered Manufacturing Sector, 1981-2011

	1981-1991		1991-2001		1992-1998		2001-2011	
Manufacturing Sub-sector	Average Interest Rate	Absolute Change	Average Interest Rate	Absolute Change	Average Interest Rate	Absolute Change	Average Interest Rate	Absolute Change
15	13.8	2.5	21.5	4.2	22.0	2.2	15.1	-7.5
17	14.0	2.5	17.1	-0.7	16.7	1.1	10.6	-6.1
23	9.7	-7.6	11.7	-0.9	11.3	3.5	12.8	5.8
24	14.0	3.6	16.5	-0.3	16.0	-2.0	12.5	-4.4
26	13.7	6.5	17.0	-2.0	17.0	-1.1	10.4	-6.9
27	14.7	6.4	13.0	-2.0	10.5	-2.1	10.7	-7.2
29	16.3	9.0	22.6	-3.4	23.4	-6.1	13.2	-7.7
34	14.0	2.9	15.7	-4.4	17.2	-4.9	9.2	-3.0
Rest of Manufacturing	14.3	7.9	19.6	-1.6	19.0	-4.5	13.0	-6.4
Total Manufacturing	14.1	4.9	16.8	-1.2	16.0	-2.1	12.0	-5.8

Table 11: Interest Burden in the Registered Manufacturing Sector, 1981-2011

	1981-91		1991-2001		1992-1998		2001-2011	
Manufacturing Sub-sector	Average Interest Burden	Absolute Change	Average Interest Burden	Absolute Change	Average Interest Burden	Absolute Change	Average Interest Burden	Absolute Change
15	2.4	-0.2	2.9	1.1	3.0	0.8	2.4	-1.7
17	4.4	0.9	5.6	2.1	5.3	0.5	3.8	-4.0
23	0.8	-0.5	1.2	0.2	1.1	0.7	0.4	-0.5
24	4.5	1.2	5.2	0.5	5.2	-1.0	2.9	-4.0
26	5.0	5.7	7.2	1.0	6.8	1.2	3.6	-7.5
27	3.7	0.6	5.6	3.5	5.1	0.1	3.2	-4.7
29	4.4	-0.1	4.1	0.9	4.2	0.1	2.1	-3.2
34	3.5	1.0	3.8	0.9	3.3	-1.7	1.4	-3.3
Rest of Manufacturing	3.7	0.6	4.1	0.6	3.9	-0.1	2.1	-2.9
Total Manufacturing	3.5	0.7	4.3	1.2	4.2	0.04	2.3	-3.3

Table 12: Sources of Profit Share in NVA Growth in the Registered Manufacturing Sector, 1981-2011

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest	Manufacturing (Total)
1981-1991										
Growth Effect (GE)	0.3	0.4	0.3	-0.3	0.1	-0.1	-0.01	-0.1	0.7	1.2
Share Effect (SE)	0.1	-0.2	0.6	-0.02	0.1	-0.2	-0.2	-0.1	0.3	0.6
Sub-sectoral Total (ST)	0.4	0.3	0.9	-0.4	0.2	-0.3	-0.2	-0.2	1.0	1.8*
GE as % of TE	15.7	23.9	14.7	-18.8	4.6	-8.5	-0.7	-5.8	40.9	65.9
SE as % of TE	7.5	-9.2	36.9	-1.2	7.7	-11	-11.2	-3.4	17.9	34.1
ST as % of TE	23.2	14.7	51.6	-20.0	12.2	-19.5	-11.9	-9.2	58.8	100
1991-2001										
Growth Effect	-0.3	-0.7	-0.3	1.0	-0.03	-1.1	-0.1	-0.5	0.4	-1.7
Share Effect	0.1	-0.1	0.01	0.8	0.03	-0.1	-0.04	-0.1	-0.02	0.6
Sub-sectoral Total	-0.2	-0.8	-0.3	1.8	-0.01	-1.3	-0.1	-0.5	0.3	-1.1*
GE as % of TE	29.8	65.9	31.1	-97.4	3.3	107.2	8.2	43.8	-33.1	158.8
SE as % of TE	-9.4	4.8	-1.1	-72.0	-2.5	10.3	4.0	5.1	1.8	-58.8
ST as % of TE	20.4	70.7	30.0	-169.4	0.8	117.5	12.3	48.9	-31.2	100
1992-1998										
Growth Effect	1.0	0.3	-1.7	1.6	0.1	3.2	0.5	0.6	0.5	6.1
Share Effect	0.2	0.1	-1.4	-0.01	-0.01	0.8	-0.2	0.2	-0.4	-0.7
Sub-sectoral Total	1.2	0.4	-3.1	1.5	0.1	4.1	0.3	0.8	0.1	5.4*
GE as % of TE	19.1	6.1	-31.6	28.7	1.7	59.6	9.1	11.2	8.5	112.4
SE as % of TE	3.7	1.1	-25.8	-0.2	-0.2	15.5	-3.8	4.2	-7.0	-12.4
ST as % of TE	22.8	7.2	-57.4	28.5	1.5	75.1	5.4	15.4	1.5	100
2001-2011										
Growth Effect	0.8	1.1	0.8	1.4	0.5	2.3	0.8	0.8	2.3	10.7
Share Effect	-0.3	-0.1	1.8	-1.3	-0.1	0.2	0.1	0.2	0.2	0.6
Sub-sectoral Total	0.5	0.9	2.6	0.1	0.4	2.5	0.9	0.9	2.4	11.3*
GE as % of TE	7.0	9.7	7.2	12.3	4.3	20.1	7.2	6.7	20.4	95
SE as % of TE	-3.0	-1.3	15.6	-11.5	-0.5	2.1	0.9	1.3	1.4	5.0
ST as % of TE	4.0	8.4	22.8	0.8	3.8	22.2	8.1	8.1	21.7	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA in the registered manufacturing sector. Rest refers to the remaining 2-digit industries.

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Also, in terms of the interest burden[9], Coke, Refined Petroleum Products and Nuclear Fuel (23) and Machinery and Equipment (29) were the 2 industries that witnessed a fall. However, in both cases, this fall in interest burden is the result of the point-to-point analysis and the average interest burden for 1981-1991 for industries 23 and 29 was 10% and 20% higher than the 1981-82 level [Table 11].

During this phase, the profit share in NVA for the manufacturing sector rose by 4.18 percentage points, at an annual rate of 1.8%. However, the changing sectoral composition of NVA played a bigger role in this instance. While within-subsector changes in profit share in NVA contributed 65.9% of the total manufacturing sector's rising profit share, the effect of changes in sub-sectoral shares in aggregate NVA was responsible for 34.1% of this rise. So, not only did the profit share rise for most 2-digit industries in this phase, the sub-sectoral composition of NVA also shifted in favour of high profit share industries.

However, as a result of the rise in interest shares in NVA in most of the 2-digit industries, even with a fall in wage shares in NVA in all the 2-digit industries, the profit share in NVA did not increase for all the eight chosen 2-digit industries. Chemicals and Chemical Products (24), Basic Metals (27), Motor-Vehicles, Trailers and Semi-Trailers (34) and Machinery and Equipment n.e.c. (29) all witnessed a fall in their profit shares in NVA between 1981-82 and 1990-91. The rise in the profit shares of Textiles (17), Coke, Refined Petroleum Products and Nuclear Fuel (23) and Food Products and Beverages (15) together contributed 54.3% to the manufacturing sector's growth in its profit share. With the substantial increase in industry 23's share in NVA (weighted by its average profit share for 1981-82 and 1990-91), industries 23, 15 and 17 were in effect responsible for raising the manufacturing sector's profit share by 89.5%. However, the remaining 2-digit industries (apart from the chosen 8 industries) also played an important role and together contributed 58.8% in raising the manufacturing sector's profit share.

[9] Interest burden for industry j is defined as the percentage of industry j's interest payments in its sales value (proxied by value of output in our case).

2.2.2. First Post-Reform Phase (1991-2001)

During the first post-reform phase stretching over 1991-2001, labour productivity grew at an annual rate of 5.3% to reach Rs. 2.8 lakh per worker by 2000-01. 98% of this growth was due to within-subsector improvements in labour productivity and while the sub-sectoral composition of employment shifted towards high labour productivity industries, the contribution of this factor to aggregate labour productivity growth in the manufacturing sector as a whole was just 0.11% per annum (or 2% of the total).

As evident from Table 4, labour productivity rose for all the sub-sectors except Coke, Refined Petroleum Products and Nuclear Fuel (23). However, even in case of industry 23, the decline in labour productivity is a result of the point-to-point computation of the growth rate, since labour productivity rose almost every year (both in comparison to 1991 and year-on-year) except for the years 1997-98, 1999-00 and 2000-01. The growth in labour productivity in Chemicals and Chemical Products (24), Basic Metals (27) and Food Products and Beverages (15) together contributed 42.2% to the growth in the manufacturing sector's labour productivity. But while, Chemicals and Chemical Products (24) and Food Products and Beverages (15) gained in their respective employment shares, Basic Metals (27) experienced a decline. Therefore, the total contribution of both growth in sub-sectoral labour productivity and the changing sub-sectoral composition of employment was the highest in case of Chemicals and Chemical Products (24), Food Products and Beverages (15) and Machinery and Equipment n.e.c. (29), which together contributed 47.5% to the total growth in the manufacturing sector's labour productivity.

Even with this continued growth in the manufacturing sector's labour productivity, real wage per worker did not fare too well. Over this phase, the manufacturing sector's real wage per worker grew at a dismal 0.02% per annum (only Rs. 106 in absolute terms). The sub-sectoral growth in real wage per worker, weighted by the average employment shares for 1990-91 and 2000-01, was responsible for 465.7% of this rather meagre growth in the manufacturing sector's real wage per worker [Table 5]. But real wage per worker did not rise in case of all the eight chosen 2-digit industries. Textiles (17), Chemicals and Chemical Products (24) as well as the rest of the manufacturing sector (as a group) witnessed a sharp decline in their

respective values of real wage per worker. In the case of Textiles (17) and Chemicals and Chemical Products (24), real wage per worker fell by Rs. 6532 and Rs. 5829 respectively. On the other hand, growth in the real wage per worker in Basic Metals (27) and Coke, Refined Petroleum Products and Nuclear Fuel (23) contributed 1887% to the small rise in the manufacturing sector's real wage per worker. In the case of NIC 23 and NIC 27, real wage per worker grew by Rs. 69,449 per worker and Rs. 18,468 per worker respectively.

On the other hand, the share effect was responsible for bringing down the total real wage per worker by 365.7% i.e. a shift in the sub-sectoral composition of employment negatively contributed 365.7% to the rise in the registered manufacturing sector's real wage per worker. Therefore, during this phase, the sub-sectoral composition of employment shifted in favour of lower real wage per worker industries. In terms of total sub-sectoral contributions (subsector's growth effect plus share effect), Food Products and Beverages (15) and Chemicals and Chemical Products (24) were the top 2 contributors to the rise in real wage per worker and were together responsible for 1163% of the total rise.

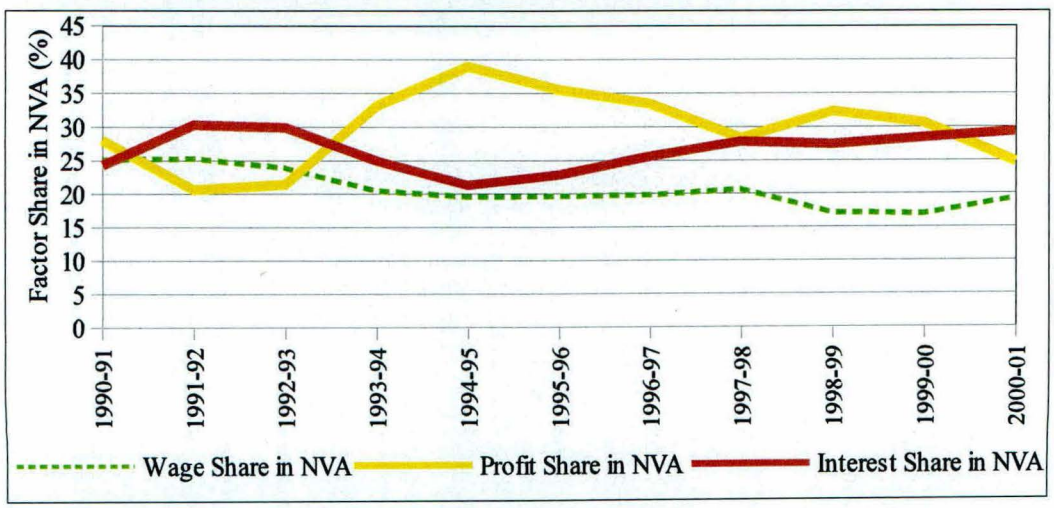
Even with substantial growth in real wage per worker in case of some 2-digit industries, real wage per worker for the eight chosen 2-digit industries lagged behind the corresponding growth in labour productivity. In terms of the point-to-point growth differentials, labour productivity lagged behind real wage per worker only in case of Coke, Refined Petroleum Products and Nuclear Fuel (23) [Table 6]. However, this anomaly vanishes when we consider the average annual growth rates of labour productivity and real wage per worker. In this phase, the manufacturing sector's labour productivity average growth rate was 34 times the average growth of its real wage per worker [Table 7]. Also, while the point-to-point analysis does amplify the difference between increases in labour productivity and real wage per worker (both at the manufacturing and the sub-sectoral level), the trends are the same when we consider the average annual growth rates. Not only do the growth rates in real wage per worker across all the 2-digit industries lag behind their respective labour productivity growth rates, there has also been a widening of this gap during the first post-reform phase vis-à-vis the pre-reform phase of 1981-91.

As a result, the manufacturing sector's wage share in NVA fell by another 5.8 percentage points, at the rate of 2.1% per annum, during this phase. Within-subsector

changes in wage shares were responsible for 76.5% of this decline [Table 8]. At the sub-sectoral level, Coke, Refined Petroleum Products and Nuclear Fuel (23) and Basic Metals (27) witnessed very small increases in their wage shares in NVA, while the rest of the sectors continued to experience falling wage shares. However, it is important to point out that the average wage shares for industries 23 and 27 during this phase were much lower than during 1981-91. While the average wage share for Coke, Refined Petroleum Products and Nuclear Fuel (23) fell from 11.3% during 1981-91 to 8.2% during 1991-2001, the corresponding average wage share for Basic Metals (27) fell from 32.1% to 20.5%. Also, the small rise in the wage shares for both these industries was a result of movements during the last 2 years of this phase i.e. 1999-00 and 2000-01. Therefore, it is safe to say that even at the 2-digit level, wage shares out of NVA continued to fall (on average) during the first post-reform phase as well.

Between-subsectors changes also played a significant role during this phase and contributed 23.5% to the manufacturing sector's wage share decline. The weighted fall in the wage shares in the Chemicals and Chemical Products (24), Food Products and Beverages (15) and Textiles (17) sub-sectors was responsible for dragging down the manufacturing sector's aggregate wage share to the extent of 44.7%. However, in terms of the net sub-sectoral contribution i.e. the sub-sectoral growth effect plus the sub-sectoral share effect, Textiles (17), Machinery and Equipment n.e.c. (29) and Basic Metals (27) were together responsible for 57.1% of the decline in the manufacturing sector's wage share.

Figure 2: Factor Shares in NVA in Registered Manufacturing, 1991-2001



The manufacturing sector's interest share in NVA continued to rise during this phase at 1.9% per annum. The growth effect contributed 106.8% to this rise and the sub-sectoral composition of NVA shifted against high interest share industries (contributing a negative 6.8% to the rise in interest share). At the sub-sectoral level, interest share in NVA rose in the case of all the eight chosen 2-digit industries except for Chemicals and Chemical Products (24) and the rest of the manufacturing sector (as a group) [Table 9]. The (weighted) rise in the interest shares in case of Basic Metals (27), Textiles (17) and Food Products and Beverages (15) contributed 112.9% to the rise in the manufacturing sector's interest share in NVA. In terms of total sub-sectoral contributions, Food Products and Beverages (15) and Basic Metals (27) were responsible for 54.6% of the total rise in interest share.

While the average interest rates were higher for this phase vis-à-vis the pre-reform phase, interest rates started declining from 1993-94 and then fluctuated around the 16% mark for the remaining phase. As a result, in terms of absolute changes, we observe a decline in the interest rate for the manufacturing sector during the first post-reform phase [Table 10]. While higher average interest rates for the first post-reform phase (1991-2001) vis-à-vis the pre-reform phase (1981-1991) holds true for all 2-digit industries except Basic Metals (27), the absolute decline in interest rate level (from 1990-91 to 2000-01) holds true for all 2-digit industries except Food Products and Beverages (15).

It is also important to note that while interest rates might have declined in absolute terms during the first pre-reform phase, the interest burden rose for the manufacturing sector as well as all the eight chosen 2-digit industries and the rest of the manufacturing sector [Table 11].

During 1991-2001, profit shares in the manufacturing sector fell at the rate of 1.07% per annum to 24.8 percentage points. Within-subsector changes in profit shares were responsible for 158.8% of this fall. Chemicals and Chemical Products (24) and the remaining manufacturing sector (as a group) were the only sub-sectors which witnessed a rise in their profit shares. A rise in NIC 24's profit share (weighted by an average of its NVA share in 1990-91 and 2000-01) prevented a further decline in the aggregate profit share of the manufacturing sector by 130.5% [Table 12].

On the other hand, a sub-sectoral shift in the composition of NVA negatively contributed 58.8% to the decline in the registered manufacturing sector's profit share.

In other words, between-subsector changes effectively prevented a further fall in the manufacturing sector's profit share by 58.8% i.e. had the sub-sectoral composition of the manufacturing sector's NVA not undergone any changes during this phase, the aggregate profit share in NVA would have fallen by another 58.8%. The NVA share of Chemicals and Chemical Products (24) also rose substantially during 1991-2001 and as a result, Chemicals and Chemical Products (24) was alone responsible for raising (or preventing a further decline) the manufacturing sector's profit share by 169.4%.

2.2.2.1. An Intra-Period Anomaly

However, the point-to-point analysis for changes in profit share in NVA during 1991-2001 are not entirely representative of this phase. As mentioned earlier, the manufacturing sector witnessed a sharp rise in its profit share out of NVA during 1992-98. The average profit share for this 6 year period was 33.9 percentage points, 4 percentage points higher than the corresponding average for 1991-2001. Therefore, we also need to briefly discuss the changes in wage share, interest share and profit share in NVA for this small (but significant) period of substantial growth (in terms of NVA and profit shares).

During this period, both annual as well as average annual growth rates for real wage per worker lagged behind labour productivity growth rates for the manufacturing sector as a whole, 7 out of 8 of the chosen 2-digit industries as well as the remaining manufacturing sector (as a group). Only Coke, Refined Petroleum Products and Nuclear Fuel (23) witnessed negative labour productivity growth both in absolute terms as well as average growth rates. As a result, labour productivity growth in this instance lagged behind the growth in real wage per worker [Tables 6 and 7]. However, this was because of a strikingly bad year (1997-98) for this particular industry, since even though gross output increased by 5% between 1996-97 and 1997-98, net value added fell by 60%. This resulted in a labour productivity level of Rs. 12.9 lakh per worker which is much lower than the average labour productivity of Rs. 27 lakh per worker for the period 1992-98.

As a result of the continued gap between growth rates of labour productivity and real wage per worker, the wage share in NVA fell for the manufacturing sector as well as all but one sub-sector. Within-subsector changes in wage share were solely responsible (a 101% contribution) for the 3.2 percentage points fall in the

manufacturing sector's wage share. The fall in wage shares in the Food Products and Beverages (15) and Textiles (17) industries contributed 53.7% to the total fall in manufacturing sector's wage share [Table 8]. These 2 industries were also the top 2 contributors in terms of total sub-sectoral contribution and were responsible for 54.3% of the fall in the total wage share.

The interest share in NVA also fell by 2.1 percentage points during 1992-1998 (at an annual rate of 1.1%). The growth effect contributed 130.6% to this net fall in the manufacturing sector's interest share. However, within-subsector changes in interest share were not uniform. While interest share fell for Food Products and Beverages (15), Chemical and Chemical Products (24), Basic Metals (27), Machinery and Equipment n.e.c., Motor Vehicles, Trailers and Semi-Trailers (34) as well as the remaining manufacturing sector, interest share in NVA rose in the case of Textiles (17), Coke, Refined Petroleum Products and Nuclear Fuel (23) and Other Non-Metallic Mineral Products (26) [Table 9]. The (weighted) fall in interest shares for Basic Metals (27) and Chemicals and Chemical Products (24) together contributed 117.5% to the fall in the total manufacturing sector's interest share. Simultaneously, the sub-sectoral shift in composition of NVA contributed -30.6% to the interest share fall i.e. had there been no sub-sectoral compositional shift, interest share for the manufacturing sector would have fallen by another 30.6%. In terms of total sub-sectoral contributions, Chemicals and Chemical Products (24) alone accounted for 57.1% of the total change in interest share.

As a result of the declining wage share and interest share in the manufacturing sector as well as most of the 2-digit industries, profit share in NVA for the manufacturing sector rose at the rate of 5.4% per annum to reach an absolute level of 28.3%[10] (in comparison, during 1991-2001, the manufacturing sector's profit share in NVA declined by 1.1% per annum and reached 24.7% by 2000-01). Within-subsector movements in profit share were responsible for 112.4% of the total rise in manufacturing sector's profit share during 1992-1998 and the sub-sectoral shift in composition of NVA depressed it by 12.4% [Table 12]. At the sub-sectoral level, all

[10] It is important to note that when we choose the period 1993-94 to 1997-98, the manufacturing sector's profit share increases by 12 percentage points (at 11% per annum). However, what is more important for this discussion is that in both periods (1992-1998 and 1993-1998), according to our point-to-point analysis, while the ranking of the top two 2-digit industries (in terms of their growth effect contributions) may vary, Chemicals and Chemical Products (24) and Basic Metals (27) remain the top 2 contributors and together contribute at least 40% to the growth in the manufacturing sector's profit share.

the 2-digit industries except Coke, Refined Petroleum Products and Nuclear Fuel (23) experienced a rise in their respective profit shares. The rise in (weighted) profit shares of Basic Metals (27) and Chemicals and Chemical Products (24) accounted for 88.3% of the total increase in the manufacturing sector's profit share. With the sub-sectoral composition of NVA shifting in favour of basic metals (27), these 2 industries were the top 2 contributors to the growth in the manufacturing sector's profit share even in terms of total sub-sectoral contributions and were responsible for raising the total profit share by 103.6%.

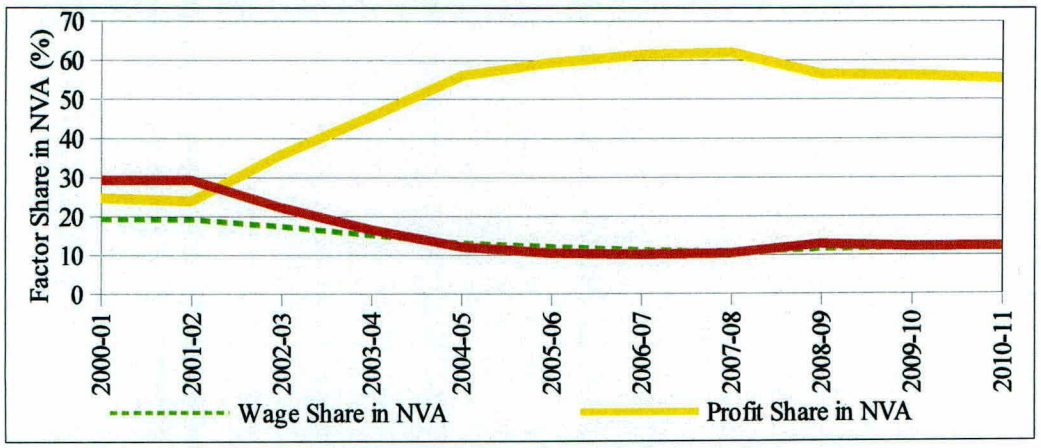
2.2.3. Second Post-Reform Phase (2001-2011)

It was in the second post-reform phase from 2001 to 2011 that the Indian economy experienced a relatively high GDP growth for an extended period of time. In the registered manufacturing sector, labour productivity continued to rise and the manufacturing sector witnessed even higher rates of growth (8.6% per annum) than during the first post-reform phase. The Growth Effect was responsible for 95.4% of the manufacturing sector's labour productivity growth and the corresponding Share Effect played a very minor role. At the sub-sectoral level, all the 2-digit industries witnessed a rise in their respective labour productivity growth rates and the labour productivity growth in Chemicals and Chemical Products (24), Coke, Refined Petroleum Products (23), Basic Metals (27) and Machinery and Equipment (29) together was responsible for 41.8% of the manufacturing sector's labour productivity growth. However, in terms of total effect, while Chemicals and Chemical Products (24), Coke, Refined Petroleum Products (23) and Basic Metals (27) continued to be the top 3 contributors to the manufacturing sector's labour productivity growth, Motor-Vehicles, Trailers and Semi-Trailers (34) took over as the fourth largest contributor. These 4 industries together accounted for 42.8% of total labour productivity growth [Table 4].

While labour productivity continued to grow at remarkable rates, real wage per worker grew at 0.12% per annum (with an absolute increase of just Rs. 641 per worker) during this phase, amounting to a dismal 0.1 percentage point improvement in comparison to the previous period's annual rate of growth. However, we notice an important departure in terms of the respective contributions of within-subsector and between-subsector changes. The Growth Effect in this instance actually dragged down

the real wage per worker by 134.6% and the growth in real wage per worker, no matter how disappointing, was because of a shift in sectoral composition of employment (which contributed 234.6% to the increase) [Table 5]. At the sub-sectoral level, Food Products and Beverages (15) and the remaining manufacturing sector (as a group) were the only 2 industries which observed a rise in real wage per worker and together they were responsible for raising the manufacturing sector's real wage per worker by 356.3%. This result holds true (with a minor adjustment) even in the case of the average growth rates in real wage per worker for the different 2-digit industries i.e. Food Products and Beverages (15), the rest of the manufacturing sector (excluding the 8 chosen 2-digit industries) and Coke, Refined Petroleum Products and Nuclear Fuel (23) were the only sub-sectors that witnessed a positive average growth rate for real wage per worker [Table 7]. However, with a major (weighted) shift in sub-sectoral employment composition in favour of Motor-Vehicles, Trailers and Semi-Trailers (34), Basic Metals, Other Non-metallic Mineral Products (26) and the rest of the manufacturing sector, the sub-sectors responsible for the manufacturing sector's real wage per worker growth were different in terms of total sub-sectoral contributions. Motor-Vehicles, Trailers and Semi-Trailers (34) and the Rest of the Manufacturing Sector contributed 622.6% to the manufacturing sector's real wage per worker growth. However, even in case of Food Products and Beverages (15) and the Rest of the Manufacturing sector, the annual growth rate of labour productivity exceeded the rate of growth of real wage per worker by a huge margin.

Figure 3: Factor Shares in NVA in Registered Manufacturing, 2001-2011



As a result of this gap between labour productivity and real wage per worker growth rates for the manufacturing sector and every 2-digit industry, the manufacturing sector witnessed a sharp decline (an absolute fall of 6.9 percentage points realised at an annual rate of 3.27%) in its wage share in NVA during this phase as well [Figure 3]. Within-subsector changes in wage share were responsible for 94.1% of this fall and the shift in sub-sectoral composition of NVA only played a marginal role (5.9% contribution to the annual percentage decline in wage share). Wage share in NVA fell for each of the 2-digit industries and Basic Metals (27), Textiles (17) and Coke, Refined Petroleum Products and Nuclear Fuel (23) witnessed the highest (weighted) fall in their wage shares and contributed 42.5% to the decline in the manufacturing sector's wage share [Table 8]. However, a shift in the sub-sectoral composition of NVA in favour of Coke, Refined Petroleum Products and Nuclear Fuel (23) and against Chemicals and Chemical Products (24) led to a change in the 2-digit industry rankings in terms of the total sub-sectoral contributions. It is important to note that since we are dealing with a decline in the wage share, an increase in the NVA share of a sub-sector leads to a negative share effect (in terms of percentage contribution), while a reduction in a sub-sector's NVA share generates a positive sub-sectoral share effect (in terms of percentage contribution). Therefore, in terms of total sub-sectoral contributions, Coke, Refined Petroleum Products and Nuclear Fuel (23) did not play any major role. On the other hand, in terms of total sub-sectoral contributions, Textiles (17) and Chemicals and Chemical Products (24) accounted for 39.4% of the manufacturing sector's wage share decline.

The manufacturing sector's interest share in NVA also experienced a major decline. It fell at an annual rate of 5.3% during this phase and by 2010-11, the manufacturing sector's interest payments to NVA ratio fell to 12.2%. Within-subsector movements in interest shares were responsible for 95.4% of this decline [Table 9]. Also, this decline in interest share was a uniform phenomenon at the sub-sectoral level i.e. all the eight chosen 2-digit industries (and the remaining manufacturing sector) witnessed a decline in their respective interest shares. The decline in interest shares in case of Basic Metals (27) and Chemicals and Chemical Products (24), the top 2 contributors, accounted for 39.9% of this decline in the manufacturing sector's interest share. These 2 industries were also the top 2 contributors in terms of the total sub-sectoral contributions.

This decline in the manufacturing sector's interest share in NVA went hand-in-hand with a fall in the average interest rate (between 1991-2001 and 2001-2011) as well as an absolute decline in the interest rate during 2001-2011 [Table 10]. These changes hold true for all the 2-digit industries except Coke, Refined Petroleum Products and Nuclear Fuel (23). In case of industry 23, not only is the average interest rate for the second post-reform phase (12.8%) (2001-2011) greater than that for the first post-reform phase (11.3%) (1991-2001), it also experienced an absolute increase, by 5.8 percentage points, in the interest rate between 2000-01 and 2010-11. This is a result of developments during the last 4 years, 2007-11 when the average interest rate for industry 23 rose to 16.5%. However, the manufacturing sector as well as all the 2-digit industries witnessed a decline in their respective interest burdens (interest payments to sales, in percentage terms) [Table 11].

As a result of the decline in both wage share and interest share, the manufacturing sector's profit share in NVA rose (at an annual rate of 11.3%) by a striking 30.6 percentage points during this phase to the absolute level of 55.4% by 2010-11. The Growth Effect was responsible for 95% of this exceptional increase in the profit share and the role of a shift in sub-sectoral composition of NVA, while positive, was almost insignificant vis-à-vis the role of within-subsector changes in profit share [Table 12]. Also, all the eight chosen 2-digit industries as well as the remaining manufacturing sector (as a group) witnessed a rise in their respective profit shares and the (weighted) growth in profit shares of Basic Metals (27), Chemicals and Chemical Products (24), Textiles (17) and Coke, Refined Petroleum Products and Nuclear Fuel (23) together accounted for 49.4% of the manufacturing sector's profit share growth. However, it is important to note that the remarkable contribution of the Textiles industry in this case is due to the nature of our point-to-point analysis and is not representative of the industry's profit share during the entire phase i.e. since the textiles industry registered losses during 2000-01, its profit share in NVA was also negative, which thereby led to a huge growth in its profit share in our point-to-point analysis[11].

[11] We need to note that even though Basic Metals (27) also reported losses during 2000-01 and 2001-02 (therefore a negative profit to NVA share), this industry still continues to be one of the most important 2-digit industries (in terms of its growth effect) that contributed to the phenomenal rise in the manufacturing sector's profit share. To support this argument, we conducted two other point-to-point decomposition analyses for the manufacturing sector's profit share in NVA. In the first instance, while calculating the 2-digit industries growth effects, we replaced the 2000-01 (the initial profit to NVA share) figures by the average profit share of the previous decade. In the second

In terms of total sub-sectoral contributions, Coke, Refined Petroleum Products and Nuclear Fuel (23) and Chemicals and Chemical Products (24) were the top 2 contributors and together contributed 54.3% to the manufacturing sector's profit share in NVA.

In this chapter, we studied the contribution of both within-subsector and between-subsector movements to the changes observed in the manufacturing sector's labour productivity, real wage per worker, wage share, interest share and profit share in NVA during the three phases of 1981-1991, 1991-2001 (as well as 1992-1998) and 2001-2011. Having presented this analysis, we will now conduct a similar exercise in Chapter 3 for those 2-digit industries that were dominantly responsible for the changes that occurred in the manufacturing sector's wage shares and profit shares during 1981-2011. We plan to do this by studying the 2-digit industries whose profit share (or wage share) grew (or fell) the most (relative to the manufacturing sector) and analysing the role played by within-industry (growth effect) and between industry (share effect) changes in these cases.

However, as we can observe from our analysis, the 2-digit industries that played the most dominant role in dragging down the manufacturing sector's wage share during the 3 phases were different from the 2-digit industries that contributed the most in driving up the manufacturing sector's profit share (due to the role played by interest share changes). Therefore, we need to make a few clarifications regarding our selection of the 2-digit industries for each of the three phases.

During the pre-reform phase from 1981-91, the decline in the manufacturing sector's wage share was the most striking feature in the factor share trends both in absolute terms and in terms of the rate of fall. Therefore, for this phase, we intend to select the top 2-digit industries (from the eight 2-digit industries that we chose from our reference period 2004-08) whose relative wage share decline (i.e. their combined growth effects) contributed at least 40% to the decline in the manufacturing sector's wage share. As a result, we choose Basic Metals (27), Other Non-Metallic Mineral Products n.e.c. (26) and Textiles (17) for further study.

case, we conducted the analysis for the period 2003-11 when all the 2-digit industries (except the textiles industry) had positive profit shares in NVA (and which is in fact the starting point for the spectacular profit share rise in the manufacturing sector). In both the instances, Basic Metals continued to be the second most important 2-digit industry (in terms of growth effect) (the most important industry was the Chemicals and Chemical Products (24)). As an aside, we also observed that the Machinery and Equipment n.e.c. (29) also played a really important role in driving up the manufacturing sector's profit share in NVA.

During the second phase (the first post-reform phase) from 1991-2001, both wage share and profit share underwent significant changes in the manufacturing sector. But, based on our point-to-point analysis, during 1991-2001, the decline in the manufacturing sector's wage share was more prominent. So, for 1991-2001, we choose those 2-digit industries (from the eight 2-digit industries that we selected from our reference period 2004-08) which together contributed at least 40% (in terms of their combined growth effects) to the manufacturing sector's wage share decline.

However, as we pointed out before, the manufacturing sector experienced a significant boom in its profit share during 1992-1998. So, we also conduct a brief analysis of this period at the 2-digit level. For this purpose, we select those 2-digit industries (from the eight 2-digit industries that selected on the basis of our reference period 2004-08) which together contributed (in terms of their combined growth effects) at least 40% to the growth in the manufacturing sector's profit share. So, for 1991-2001, we choose Chemicals and Chemical Products (24), Food Products and Beverages (15) and Textiles (17) for further study. While for 1992-1998, we choose Chemicals and Chemical Products (24) and Basic Metals (27).

During the second post-reform phase (2001-2011), the rising profit share was the most prominent feature in the factor share changes. Therefore, we select the 2-digit industries (from the eight 2-digit industries that we picked on the basis of our reference period 2004-08) that together contributed (in terms of their combined growth effects) at least 40% to this phenomenal rise in the manufacturing sector's profit share. As a result, we choose Coke, Refined Petroleum Products and Nuclear Fuel (23), Chemicals and Chemical Products (24) and Basic Metals (27) for further study.

Chapter 3: Labour Productivity, Real Wage Per Worker and Factor Shares at the NIC 2-digit Level

In this chapter, we aim to study the sources of the changes observed in labour productivity, real wage per worker, wage share, profit share and interest share in a select 2-digit industries during the three phases of 1981-1991, 1991-2001 and 2001-2011.

Similar to the method adopted in Chapter 2, we plan to conduct this analysis by decomposing these changes into their respective Growth Effects (a (weighted) rise or fall in the 3-digit industries' corresponding labour productivity, real wage per worker, wage share, profit share and interest share) and Share Effects (a (weighted) change in the sub-sectoral composition of output and employment). However, before we begin this decomposition analysis, we need to generate a preliminary list of the 3-digit industries that could be responsible for the trends observed at the 2-digit level. We rank the 3-digit industries in terms of their relative contributions to their respective 2-digit industry's average gross output, net value added and profits for the base period 2004-08, and select the 3-digit industries accounting for at least 70% of the total. Table 13 presents the results of this exercise for the 2-digit industries. However, we perform this exercise only for those industries that were found to be dominantly responsible for the growth (or fall) in the manufacturing sector's profit share (or wage share) during any of the three phases.

For the Food Products and Beverages industry (15), Production, Processing and Preservation of Meat, Fish, Fruit Vegetables, Oils and Fats (151), Manufacture of Beverages (155) and Manufacture of Other Food Products (154) are the top three 3-digit industries (for 2004-08) and together contribute 75.1% and 76.5% to industry 15's average NVA and profits [Table 13]. However, it is important to note that there is a sharp divide between the distribution of profits and NVA even on the basis of these preliminary figures. While Production, Processing and Preservation of Meat, Fish, Fruit Vegetables, Oils and Fats (151) is the top contributor to industry 15's NVA (37.1% in comparison to NIC 155's 20.5%), Manufacture of Beverages (155) contributes the most to industry 15's profits (33.5% vis-à-vis industry 151's 21%).

Spinning, Weaving and Finishing of Textiles (171) and Manufacture of Knitted and Crocheted Fabrics and Articles (173) together contribute more than 88.5% and 87.7% to the average NVA and profits in case of the Textiles (17) industry.

Table 13: Percentage Contribution of NIC-98 3-digit Industries to their 2-digit Industries Average NVA and Profits (in descending order of NVA) for 2004-08

NIC 98 Code and Description	NVA (%)	Profits (%)
154: Manufacture of Other Food Products	37.1	21.0
155: Manufacture of Beverages	20.5	33.5
151: Production, Processing and Preservation of Meat, Fish, Fruit Vegetables, Oils and Fats	17.5	22.0
153: Manufacture of Grain Mill Products, Starches and Starch Products, and Prepared Animal Feeds	16.3	15.7
152: Manufacture of Dairy Products	8.6	7.8
171: Spinning, Weaving and Finishing of Textiles	76.7	68.3
172: Manufacture of Other Textiles	11.8	19.4
173: Manufacture of Knitted and Crocheted Fabrics and Articles	11.5	12.4
232: Manufacture of Refined Petroleum Products	96.0	97.1
231: Manufacture of Coke Oven Products	2.7	2.9
233: Processing of Nuclear Fuel	0.0	0.0
242: Manufacture of Other Chemical Products	59.7	61.4
241: Manufacture of Basic Chemicals	39.1	38.7
243: Manufacture of Man-Made Fibres	1.2	-0.1
269: Manufacture of Non-Metallic Mineral Products n.e.c.	93.4	90.9
261: Manufacture of Glass and Glass Products	6.6	9.1
271: Manufacture of Basic Iron and Steel	77.5	77.3
272: Manufacture of Basic Precious and Non-Ferrous Metals	18.3	20.6
273: Casting of Metals	4.2	2.1

For Chemicals and Chemical Products (24), Manufacture of Other Chemical Products (242) and Manufacture of Basic Chemicals (241) are the top two 3-digit industries and they are together responsible for almost 100% of both NVA and Profits. For Coke, Refined Petroleum Products and Nuclear Fuel (23), Other Non-Metallic

Mineral Products (26) and Basic Metals (27) industries, Manufacture of Refined Petroleum Products (232), Manufacture of Non-Metallic Mineral Products n.e.c. (269) and Manufacture of Basic Iron and Steel (271) are responsible for contributing more than 96%, 93% and 77% to their respective 2-digit industry's NVA. The same holds true for their relative contributions to their 2-digit's industry's profits.

Even though the extremely high contribution of a single 3-digit industry in the case of industries 17, 23, 24, 26 and 27 more or less means that the trends observed in labour productivity, real wage per worker and factor shares in these 2-digit industries would be a result of the trends in the dominant 3-digit industry, a decomposition analysis is useful for two reasons. Firstly, we wish to explore whether the decline in wage shares and the growth in the profit shares observed for the 2-digit industries is also observed in each of the constituent 3-digit industries or whether it is a result of the changes in the chosen 3-digit industries only. Secondly, even if there is very little change in the composition of output or employment (at the 3-digit level) during any of the three phases, we aim to analyse not only the extent of a sub-sectoral shift in employment and NVA, but also examine whether the share effect played a positive (or a negative) role in the decline of wage share or the rise of the profit share for the 2-digit industries.

Sources of the Trends Observed in Labour Productivity, Real Wage Per Worker and Factor Shares at the NIC 2-digit Level

3.1. Pre-Reform Phase (1981-1991)

As mentioned in Chapter 2, for the pre-reform phase (1981-1991), we select the 2-digit industries that experienced the highest decline in wage share (relative to the fall in the manufacturing sector's wage share) and thereby contributed more than 40% (in terms of the sum of their respective growth effects) to the decline in the manufacturing sector's wage share. Therefore, we choose Textiles (17), Basic Metals (27) and Other Non-Metallic Mineral Products (26) for further study in this subsection.

Table 14 presents the average NVA and employment share of the 3-digit industries in their respective 2-digit industries. In all 3 cases, a single 3-digit sub-sector contributes more than 85% to its 2-digit industry's average NVA and

employment. These industries are the Spinning, Weaving and Finishing of Textiles (171), Manufacture of Non-Metallic Mineral Products n.e.c. (269) and Basic Iron and Steel (271). While Spinning, Weaving and Finishing of Textiles (171) and Basic Iron and Steel (271)'s share in their respective 2-digit industries, both in terms of employment and NVA, declined over time (in comparison to the 2004-08 figures), Non-Metallic Mineral Products n.e.c. (269) witnessed a rise in its NVA and employment share.

Table 14: Average NVA and Employment Share for the 3-digit industries of NIC-17, 26 and 27, 1981-1991

NIC 98 Code and Description	Average Share in NVA	Average Share in Employment
171: Spinning, Weaving and Finishing of Textiles	94.5	96.0
172: Other Textiles	3.4	2.4
Rest of 17	2.1	1.5
17: Textiles	100	100
269: Non-Metallic Mineral Products n.e.c.	89.5	86.6
Rest of 26	10.5	13.4
26: Other Non-Metallic Mineral Products	100	100
271: Basic Iron and Steel	87.4	87.5
Rest of 27	12.6	12.5
27: Basic Metals	100	100

3.1.1. Textiles (17)

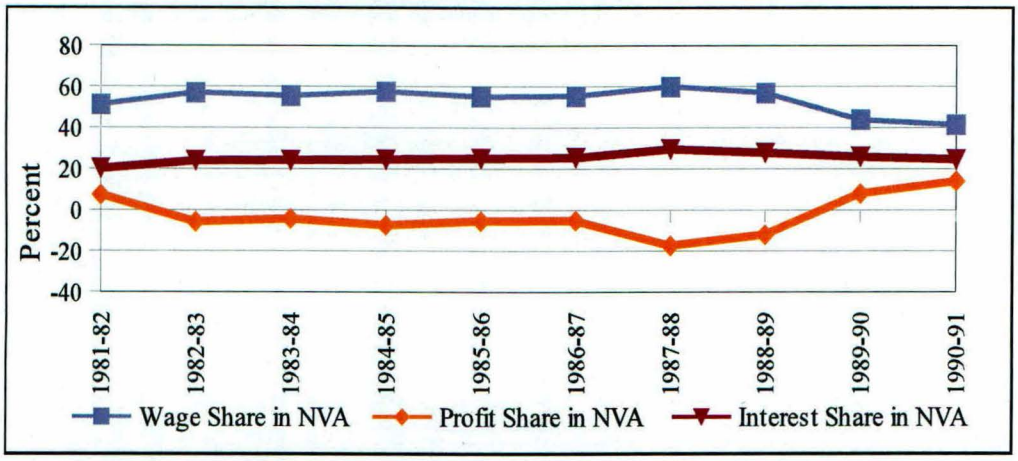
The textiles industry's labour productivity grew at an annual rate of 8.1% and reached an absolute level of Rs. 0.9 lakh per worker by 1990-91. 97.4% of this growth was due to within-subsector changes in labour productivity and the role of a sub-sectoral shift in employment composition was almost insignificant (2.6%).

However, this growth in the labour productivity was not observed across all the 3-digit industries. While both Spinning, Weaving and Finishing of Textiles (171) and Other Textiles (172) contributed positively to the Textiles industry's labour productivity growth, Rest of NIC 17 (or NIC 173: Knitted and Crocheted Fabrics and Articles) witnessed a decline in productivity growth. It is important to note that this

decline in real labour productivity for NIC 173 is true not only in terms of annual labour productivity growth but also the average annual labour productivity growth rate [Table 15]. Also, as expected, the labour productivity growth in NIC 171 was responsible for 102% of the labour productivity growth observed in the Textiles industry i.e. if this subsector's labour productivity had not grown during this period, the labour productivity in NIC 17 would have not registered any growth either.

On the other hand, the textiles industry's real wage per worker grew by only 2% per annum to reach Rs. 50,026 per worker by 1990-91. Within-subsector movements in real wage per worker were responsible for 102.7% of this growth and the sub-sectoral shift in employment composition i.e. the share effect actually contributed towards a decline in real wage per worker. This negative contribution was a result of a decline in the employment share of Spinning, Weaving and Finishing of Textiles (171) in the textiles industry as a whole between 1981-82 and 1990-91.

Figure 4: Factor Shares in NVA in Textiles, 1981-1991



As evident from Table 16, annual as well as average annual growth rates in real wage per worker lagged behind the corresponding growth rates in labour productivity in the case of the two chosen 3-digit industries, while the rest of the textiles industry (as a group) experienced a decline in labour productivity as against a rise in real wage per worker. The annual growth rate of labour productivity for NIC 171 was 4.6 times more than its corresponding real wage per worker growth rate. In the case of NIC 172, the annual growth rate of labour productivity was 2.9 times that of real wage per worker.

Table 15: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Textiles, 1981-1991

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
171	8.22	101.9	-0.21	-2.7	8.03	99.2
172	0.36	4.4	0.05	0.6	0.41	5.0
Rest of 17	-0.72	-8.9	0.37	4.6	-0.34	-4.2
17 (Total)	7.88	97.4	0.21	2.6	8.09*	100
	Real Wage Per Worker					
171	1.94	97.7	-0.17	-8.8	1.76	88.9
172	0.05	2.5	0.02	0.8	0.07	3.4
Rest of 17	0.05	2.4	0.1	5.3	0.15	7.7
17 (Total)	2.04	102.7	-0.05	-2.7	1.98*	100
	Wage Share in NVA					
171	-1.77	94.2	-0.17	9.3	-1.95	103.4
172	-0.04	2.2	0.02	-1.3	-0.02	0.9
Rest of 17	0.02	-0.8	0.07	-3.5	0.08	-4.3
17 (Total)	-1.8	95.6	-0.08	4.4	-1.88*	100
	Interest Share in NVA					
171	2.30	101.9	-0.18	-8.1	2.12	93.8
172	0.07	2.9	0.04	1.9	0.11	4.8
Rest of 17	-0.14	-6.1	0.17	7.5	0.03	1.4
17 (Total)	2.23	98.8	0.03	1.2	2.26*	100.0
	Profit Share in NVA					
171	8.29	88.1	-0.24	-2.6	8.05	85.5
172	0.08	0.9	0.18	1.9	0.26	2.8
Rest of 17	0.34	3.6	0.76	8.1	1.10	11.7
17 (Total)	8.71	92.6	0.70	7.4	9.41*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 17.

As a result of this growing gap between labour productivity growth rate and the rate of growth of real wage per worker at the 3-digit industry level, the wage share in NVA for the textiles industry declined at the rate of 1.9% per annum (an absolute drop of 9.6 percentage points) between 1981-82 and 1990-91. 95.6% of this decline was due to within-subsector changes in wage share and the between-subsector

changes, while positive, did not play any major role [Table 15]. As a result of the gap between labour productivity and real wage per worker growth rates in case of NIC 171 and NIC 172 as well as a decline in labour productivity in case of Rest of NIC 17, both NIC 171 and 172 experienced a decline in wage share, while the Rest of NIC 17 witnessed a slight rise in its wage share. The declining wage share in Spinning, Weaving and Finishing of Textiles (171) alone contributed 94.2% to the Textiles industry's wage share decline.

The textiles industry's interest share in NVA increased at the rate of 2.3% per annum and reached 34.3% by 1990-91. The growth effect contributed 98.8% to this growth and the changing sub-sectoral NVA composition (against NIC 171) did not play a significant role [Table 15]. At the sub-sectoral level, while NIC 171 and 172 experienced an increase in their respective interest shares as well, Rest of NIC 17 witnessed a decline in its interest share. A rise in Spinning, Weaving and Finishing of Textiles' (171) interest share was responsible for 102% of the Textiles industry interest share rise. However, due to its declining share in NVA, its net contribution to the textiles industry interest share growth was 94%.

Table 16: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Textiles, 1981-1991

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
171	9.2	2.0	8.2	2.1	13.9	2.0	5.2	0.7
172	7.3	2.5	10.1	3.2	15.3	9.5	4.5	1.3
Rest of 17	-8.5	4.4	-36.6	4.5	17.9	26.7	3.5	-0.2
17	8.1	2.0	7.5	2.1	14.0	2.5	5.1	0.7

This increase in interest share in case of the Textiles industry, NIC 171, NIC 172 and Rest of NIC 17 (i.e. NIC 173) went hand-in-hand with a corresponding increase in interest rates during the period [Table 15]. While this was associated with a rise in the interest burdens in the case of NIC 17, 171 and 172, NIC 173 actually encountered a decline in its interest burden.

While the textiles industry's profit share in NVA rose at 9.4% per annum, it is important to note that the textiles industry registered losses in 7 out of the 10 years [Figure 4]. Also, out of the 6.8 percentage point rise between 1981-82 and 1990-91, 6.1 percentage points was attained between 1989-90 and 1990-91, and this profit share rise was because of a sharp decline in wage share. This is a result of the trends observed in case of Spinning, Weaving and Finishing of Textiles' (171)[12]. So, during 1981-91, the profit share in NVA for the textiles industry did not undergo any major changes. As a result of the nature of this profit share growth, we refrain from analysing the sources of this growth in this section.

3.1.2. Basic Metals (27)

Figure 5 presents the trends in wage share, profit share and interest share in NVA during 1981-91 for the Basic Metals industry.

Labour productivity grew by 3.9% per annum and reached Rs. 3.1 lakh per worker by 1990-91. 142.4% of this growth was due to within-subsector movements in labour productivity. This growth was observed in both the chosen 3-digit industry of Basic Iron and Steel (271) as well as the remaining 3-digit industries. However, the labour productivity growth in Basic Iron and Steel contributed 127.6% to the Basic Metals industry [Table 17].

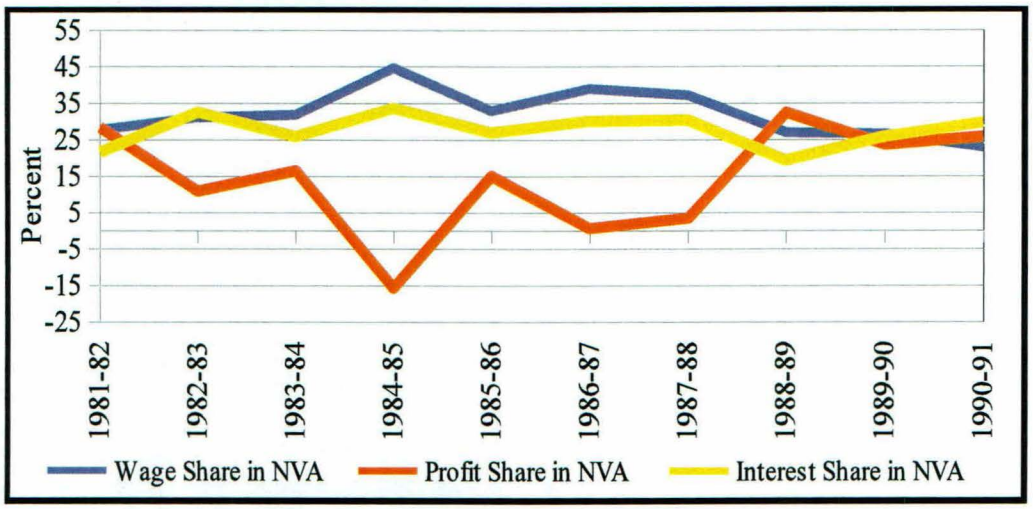
On the other hand, the changing sub-sectoral composition of employment dragged down the Basic Metals industry's labour productivity growth by 42.4%. At the sub-sectoral level, a decline in NIC 271's employment share in NIC 27 (weighted by an average of NIC 27's labour productivity in 1981-82 and 1990-91) prevented a further rise in the Basic Metals industry's labour productivity by 58.4%. Therefore, in terms of total sub-sectoral contribution, NIC 271 contributed 69.3% to the Basic Metals industry's labour productivity growth vis-à-vis the remaining 3-digit industries' contribution of 30.7%.

Real wage per worker rose by 2.1% per annum to reach a level of Rs. 65,700 per worker by 1990-91. 113% of this growth was due to the net growth in real wage per worker at the sub-sectoral level. Growth in real wage per worker in the Basic Iron and Steel (271) industry was responsible for driving up the Basic Metals real wage per

[12] We would like to point out that NIC 172 as well as the Rest of NIC 17 both registered profits in each of the 10 years during 1981-91. However, even in these cases, their respective profit shares did not show any consistent rise.

worker by 113.8% and the remaining 3-digit industries actually witnessed a slight decline in real wage per worker (as a group).

Figure 5: Factor Shares in NVA in Basic Metals, 1981-1991



On the whole, the share effect, while negative, did not play a major role. However, at the sub-sectoral level, the weighted decline in the employment share of Basic Iron and Steel (271) contributed a negative 90.5% to the Basic Metals growth in real wage per worker. In other words, the weighted decline in NIC 271's employment share dragged down NIC 27's real wage per worker by 90.5% . This decline was quite significantly compensated by the rise in the remaining 3-digit industries employment share, weighted by their average real wage per worker in 1981-82 and 1990-91. Therefore, in terms of total sub-sectoral contributions, the remaining 3-digit industries contributed much more (76.8%) to the real wage per worker growth in Basic Metals than the Basic Iron and Steel industry [Table 17].

As evident from Table 18, the annual growth rate of labour productivity exceeded the growth rate (or lack thereof) of real wage per worker in the case of Basic Metals as well the Basic Iron and Steel and the remaining 3-digit industries. As a result, wage share in NVA declined in case of the Basic Metals industry as well as all the 3-digit industries. In the case of Basic Metals, the wage share declined by 1.7% per annum to reach the absolute level of 22.9% by 1990-91. The within-subsector decline in wage shares was responsible for 126% of this decline. At the sub-sectoral level, the decline in wage shares of both NIC 271 as well as the remaining 3-digit industries (as a group) was extremely significant and they contributed 71.3% and 54.6% to the total wage share decline in the Basic Metals industry.

Table 17: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Basic Metals, 1981-1991

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
271	5.02	127.6	-2.29	-58.4	2.72	69.3
Rest of 27	0.58	14.8	0.63	15.9	1.21	30.7
27 (Total)	5.6	142.4	-1.67	-42.4	3.93*	100
	Real Wage Per Worker					
271	23.9	113.8	-19.01	-90.5	4.88	23.2
Rest of 27	-0.16	-0.8	16.28	77.5	16.12	76.8
27 (Total)	23.73	113	-2.73	-13	21.0*	100
	Wage Share in NVA					
271	-1.21	71.3	-1.31	77.3	-2.52	148.7
Rest of 27	-0.93	54.6	1.75	-103.3	0.83	-48.7
27 (Total)	-2.14	126	0.44	-26	-1.7*	100
	Interest Share in NVA					
271	5.01	141.3	-1.44	-40.5	3.58	100.8
Rest of 27	-2.2	-61.9	2.17	61.1	-0.03	-0.8
27 (Total)	2.82	79.4	0.73	20.6	3.55*	100
	Profit Share in NVA					
271	-2.74	300.5	-1.45	159.2	-4.19	459.8
Rest of 27	3.43	-377.2	-0.16	17.4	3.27	-359.8
27 (Total)	0.7	-76.7	-1.61	176.7	-0.91*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 27.

On the other hand, due to the change in the composition of NVA against the Basic Iron and Steel industry, the wage share in Basic Metals rose by 0.44% per annum (or negatively contributed 26% to the decline in the 2-digit industry's wage share decline). So in terms of total sub-sectoral contributions, while the Basic Iron and Steel (271) contributed in lowering the wage share in the Basic Metals industry (by 148.7%), the remaining 3-digit industries contributed in neutralising this decline (by -48.7%).

The Basic Metals industry witnessed a rise in its interest share in NVA at the rate of 3.6% per annum to reach 29.8 percentage points by 1990-91. 79.4% of this

growth was due to the changes in the sub-sectoral interest shares. However, this increase in interest share was not uniform across the sub-sectors. While Basic Iron and Steel (271) witnessed a rise in its interest share (and contributed 141.3% to the total interest share growth), the remaining 3-digit industries (as a group) witnessed a decline in their interest share (and contributed -61.9% to the total interest share growth) [Table 17].

The share effect also played a significant and positive role in the Basic Metals industry's interest share rise. The rise in the NVA share of the remaining 3-digit industries, weighted by their average interest share), contributed 61% to the rise in Basic Metals' interest share. Therefore, in terms of total sub-sectoral contributions, Basic Iron and Steel (271) was responsible for the entire interest share rise in industry 27.

It is important to note that this interest share rise was the result of a rise in interest rates, to the tune of more than 6.4 percentage points, for Basic Metals, Basic Iron and Steel as well as the remaining 3-digit industries (as a group) [Table 18]. However, this increase in the interest rate (as well as interest share) was not accompanied by a rise in the interest burden in case of 'Rest of NIC 27'. While the Basic Metals (27) and Basic Iron and Steel (271) industries observed an increase in their respective interest burdens by 0.8 and 1.3 percentage points between 1981-82 and 1990-91, the remaining 3-digit industries actually observed a decline in their interest burden by 2 percentage points.

Table 18: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Basic Metals, 1981-1991

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
271	5.6	2.9	15.4	6.4	4.6	1.3
Rest of 27	15.9	-0.1	10.9	6.6	3.8	-2.0
27	3.9	2.1	14.7	6.4	4.5	0.8

As a result of the sharp rise in interest shares in Basic Metals and Basic Iron and Steel industries and a corresponding sharp fall in the remaining 3-digit industries, the profit share in NVA declined at the rate of 0.9% per annum to reach 25.8

percentage points by 1990-91. Within-subsector changes helped prevent a further decline in NIC 27's profit share by 77%, i.e. had there been no change in the profit shares of the 3-digit industries, profit share would have fallen at an annual rate of 1.6% instead of 0.9% per annum. The rise in the profit share of the remaining 3-digit industries was responsible for preventing a further fall in the Basic Metals' profit share by 377% [Table 17].

On the other hand, the sub-sectoral shift in NVA composition contributed 177% to the decline in Basic Metals profit share. Therefore, in terms of total sub-sectoral contributions, Basic Iron and Steel was responsible for 460% of the total decline in profit share and the remaining 3-digit industries helped prevent a further decline in this share by 360% [Table 17].

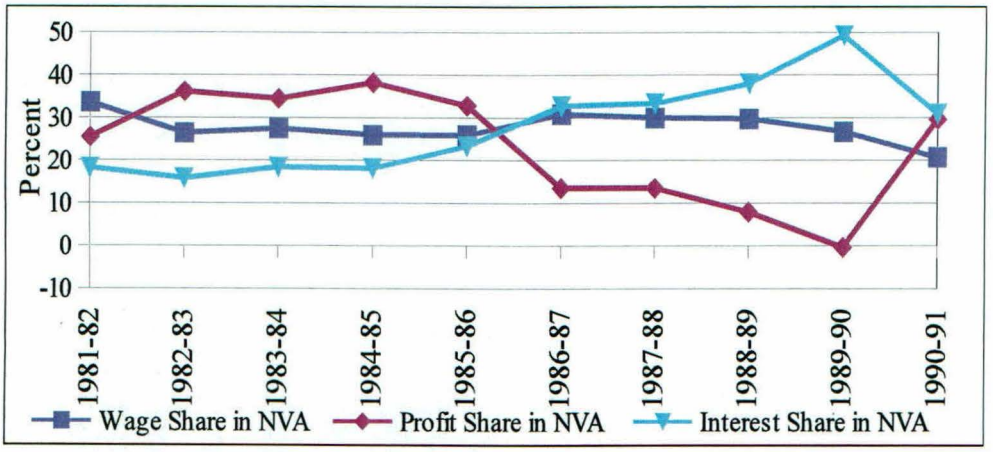
3.1.3. Other Non-Metallic Mineral Products (26)

Labour Productivity rose at an annual rate of 11.9% to reach a level of Rs. 1.4 lakh per worker by 1990-91. 97% of this growth was due to within-subsector changes in labour productivity. At the sub-sectoral level, growth in the labour productivity in case of Non-Metallic Mineral Products n.e.c. (269) contributed 88.6% to the total increase in the 2-digit industry. The sub-sectoral shift in employment composition, while positive, did not play any significant role. Therefore, in terms of total sub-sectoral contributions, Non-Metallic Mineral Products n.e.c. (269) was responsible for 95.6% of the total rise in labour productivity [Table 19].

In comparison, real wage per worker for the Other Non-Metallic Mineral Products (26) industry grew at a dismal rate of 1.9% per annum to attain the level of Rs. 31,368 per worker by 1990-91. Within-subsector changes in real wage per worker were responsible for 103% of this rise. At the sub-sectoral level, both industry 269 and 261 (or Rest of 26) witnessed a rise in their respective real wage per worker and contributed 69% and 34% (in terms of growth effects) to the total rise in real wage per worker. While the share effect did not play a major role in totality, a decline in the employment share of Glass and Glass Products (261) negatively contributed 31.2% to the total rise in real wage per worker for Other Non-Metallic Mineral Products. Therefore, in terms of total sub-sectoral contributions, Non-Metallic Mineral Products n.e.c. (269) was responsible for 97% of the total rise in real wage per worker.

As evident in Table 20, the annual as well as average annual growth rates in real wage per worker lagged behind the corresponding growth rates in labour productivity in the case of both NIC 269 and NIC 261 ('Rest of 26'). As a result, the wage share in NVA for industry 26 as well as industries 261 and 269 fell between 1981-82 and 1990-91. In the case of the Other Non-Metallic Mineral Products industry, the wage share fell to 20.7% at an annual rate of 3.8%. 95.3% of this fall was a result of within-subsector changes in wage shares and the falling wage share in industry 269 contributed 91.2% to the total wage share decline in industry 26. On the other hand, while the total share effect only contributed 4.7% to the total wage share decline in industry 26, the rise in the NVA share of industry 269 reduced this industry's total sub-sectoral contribution to 80%.

Figure 6: Factor Shares in NVA in Other Non-Metallic Mineral Products, 1981-1991



This wage share decline was accompanied by a rise in the interest share at 7% per annum. 100.2% of this growth in the 2-digit industry's interest share was due to the Growth Effect. At the sub-sectoral level, both NIC 269 as well as NIC 261 experienced an increase in their respective interest shares and the interest share growth in NIC 269 contributed 93.6% to the total interest share rise in Other Non-Metallic Mineral Products industry. Also, the shift in the sub-sectoral NVA composition in favour of industry 269 increased this industry's total sub-sectoral contribution to the 2-digit industry's interest share rise to 104.6%.

This increase in interest shares, at the 2-digit and the 3-digit level, was accompanied by a rise in the interest rates (by 6.5 percentage points in case of NIC 26 and NIC 269, and 5.4 percentage points in case of NIC 261) as well as a rise in the

total interest burdens (by 3.3 and 3.6 percentage points in case of NIC 26 and NIC 269, and 1.2 percentage points in case of NIC 261) [Table 20].

Table 19: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Other Non-Metallic Mineral Products, 1981-1991

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
269	10.5	88.6	0.8	7.0	11.4	95.6
Rest of 26	1.0	8.6	-0.5	-4.1	0.5	4.4
26 (Total)	11.6	97.1	0.3	2.9	11.9*	100
	Real Wage Per Worker					
269	1.3	68.8	0.5	28.1	1.8	97
Rest of 26	0.6	34.2	-0.6	-31.2	0.1	3
26 (Total)	1.9	103.1	-0.1	-3.1	1.9*	100
	Wage Share in NVA					
269	-3.5	91.2	0.4	-11.2	-3.1	80
Rest of 26	-0.2	4.1	-0.6	15.9	-0.8	20
26 (Total)	-3.7	95.3	-0.2	4.7	-3.8*	100
	Interest Share in NVA					
269	6.6	93.6	0.8	11	7.4	104.6
Rest of 26	0.5	6.5	-0.8	-11.2	-0.3	-4.6
26 (Total)	7	100.2	0	-0.2	7.0*	100
	Profit Share in NVA					
269	1.3	82.4	0.6	39.6	2	122
Rest of 26	-0.1	-5.3	-0.3	-16.7	-0.4	-22
26 (Total)	1.3	77.1	0.4	22.9	1.6*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 26.

As a result of the sharp fall in wage share and a corresponding increase in the interest share, the profit share for industry 26 rose by 1.6% per annum. However, as is visible in Figure 6, this profit share rise occurred in the last 2 years of 1989-90 and 1990-91 and was a result of a sharp fall in the interest share as well as wage share. 77% of this growth was due to within-subsector changes in profit share. While industry 269 witnessed a rise in its profit share and contributed 82.4% to the total rise

in industry 26's profit share, industry 261 encountered a decline in its profit share and lowered the 2-digit industry's profit share by 5.3%. The share effect played an important role and the shift in NVA composition in favour of industry 269 raised the Other Non-Metallic Mineral Products industry's profit share by 39.6%. Therefore, in terms of total sub-sectoral contributions, while industry 269 helped raise the total profit share by 122%, industry 261 (or Rest of 26) contributed -22% to it [Table 19].

Table 20: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Other Non-Metallic Products, 1981-1991

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
269	11.5	1.5	9.5	1.7	13.8	6.5	6.4	3.6
Rest of 26	10.8	4.6	10.6	4.9	13.2	5.4	5.6	1.2
26	11.9	1.9	9.6	2.1	13.7	6.5	6.3	3.3

In this sub-section, we analysed the sources behind the changes observed in the Textiles (17), Basic Metals and Other Non-Metallic Mineral Products (26) industries. Spinning, Weaving and Finishing of Textiles (171), Basic Iron and Steel (271) and Other Non-Metallic Mineral Products n.e.c. (269) contributed more than 85% to their respective 2-digit industry's average NVA and employment during this phase. Also, the (weighted) increase in labour productivity, real wage per worker and the decline in wage share in NIC 171, NIC 271 and NIC 269 was almost fully responsible for the labour productivity growth, real wage per worker growth, interest share increase and the wage share decline in their respective 2-digit industries. Also, in terms of profit share changes, NIC 171, NIC 269 and NIC 271 were almost wholly responsible for the rise in NIC 17's, NIC 26's profit share and the decline in NIC 27's profit share.

3.2. First Post-Reform Phase (1991-2001)

As explained in Chapter 2, we choose the Chemicals and Chemical Products (24), Food Products and Beverages (15) and Textiles (17) industries for further study for the period 1991-2001. We also conduct a brief analysis for Chemicals and Chemical Products (24) and Basic Metals (27) for the period 1992-1998.

Table 21: Average NVA and Employment Share for the 3-digit industries of NIC-15, 17, 24 and 27, 1991-2001

NIC 98 Code and Description	Average Share in NVA	Average Share in Employment
151: Production, Processing and Preservation of Meat, Fish, Fruit Vegetables, Oils and Fats	17.4	11.9
154: Other Food Products	49.6	55.9
155: Beverages	11.3	5.1
Rest of 15	21.6	27.0
15: Food Products and Beverages	100	100
171: Spinning, Weaving and Finishing of Textiles	89.5	92.3
172: Other Textiles	5.1	3.9
Rest of 17	5.4	3.8
17: Textiles	100	100
241: Basic Chemicals	43.5	28.9
242: Other Chemical Products	49.4	66.3
Rest of 24	7.1	4.8
24: Chemicals and Chemical Products	100	100
271: Basic Iron and Steel	87.5	73.0
Rest of 27	12.5	27.0
27: Basic Metals	100	100

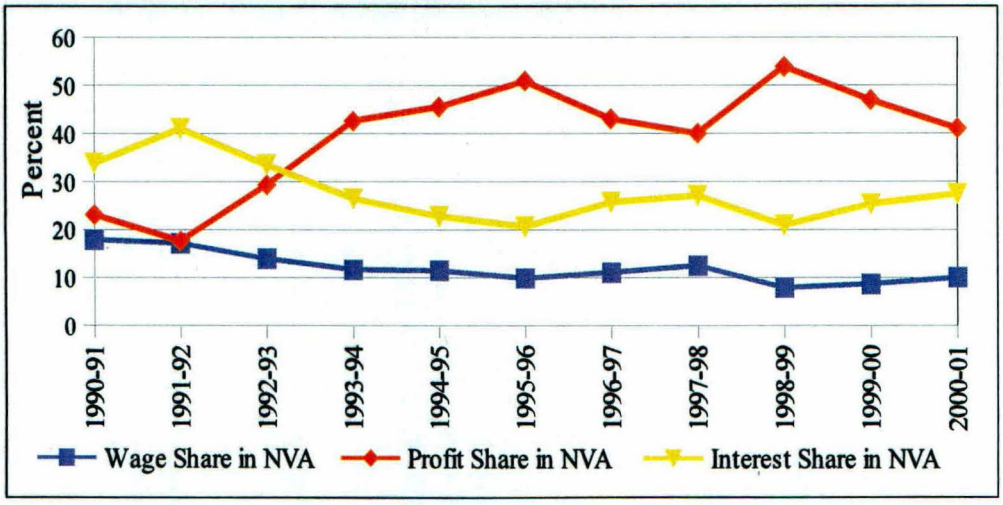
The chosen 3-digit sub-sectors (151, 154 and 155) contributed 78.3% and 72.9% to the average NVA and employment of the Food Products and Beverages industry. Industries 171 and 172 constitute 94.6% and 95.9% of the textiles industry's average NVA and employment respectively. Similarly, the chosen 3-digit industries comprise 92.9% and 96.2% of average NVA and employment in Chemicals and Chemical Products; while 271 contributes 87.5% and 73% to the Basic Metals industry's average NVA and employment [Table 21].

3.2.1. Chemicals and Chemical Products (24)

Figure 7 presents the trends in factor shares for the Chemicals and Chemical Products industry during the period 1991-2001.

Labour Productivity grew at the rate of 5.4% per annum to attain an absolute level of Rs. 6.2 lakh per worker by 2000-01. All the sub-sectors witnessed a rise in their respective labour productivities and within-subsector changes were responsible for 99.6% of this growth. The labour productivity growth in Basic Chemicals (241) (weighted by the average employment share of 1990-91 and 2000-01) alone contributed 60.5% to the total growth in labour productivity [Table 22]. Share effect, while positive, did not play any significant role in raising labour productivity at the 2-digit level.

Figure 7: Factor Shares in NVA in Chemicals and Chemical Products, 1991-2001



On the other hand, real wage per worker declined at an annual rate of 0.8% and by Rs. 5829 in absolute terms. Within-subsector decline in real wage per worker contributed 100% to the total decline and share effects were insignificant. However, at the sub-sectoral level, not all industries witnessed a decline in their respective wages. The Basic Chemicals (241) industry actually witnessed a growth in its real wage per worker, which helped prevent a further decline in Chemicals and Chemical Products industry's real wage with a 47% contribution. The decline in real wage in case of Other Chemical Products (242) was alone responsible for 121% of the total decline in industry 24's real wage.

Table 22: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Chemicals and Chemical Products, 1991-2001

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
241	3.28	60.5	0.06	1.0	3.34	61.5
242	1.39	25.6	-0.02	-0.3	1.37	25.2
Rest of 24	0.73	13.5	-0.01	-0.3	0.72	13.2
24 (Total)	5.4	99.6	0.02	0.4	5.42*	100
	Real Wage Per Worker					
241	0.39	-46.9	0.03	-4.2	0.42	-51.2
242	-0.99	121.0	-0.01	1.7	-1.01	122.7
Rest of 24	-0.21	26.0	-0.02	2.4	-0.23	28.5
24 (Total)	-0.82	100.1	0.00	-0.1	-0.82*	100
	Wage Share in NVA					
241	-1.38	34.9	0.42	-10.6	-0.96	24.3
242	-1.97	49.8	-0.57	14.4	-2.54	64.2
Rest of 24	-0.55	13.9	0.1	-2.5	-0.46	11.5
24 (Total)	-3.91	98.7	-0.05	1.3	-3.96*	100
	Interest Share in NVA					
241	-1.64	95.3	0.78	-45	-0.87	50.3
242	-0.29	17.1	-0.41	23.9	-0.71	41
Rest of 24	-0.22	12.8	0.07	-4.1	-0.15	8.8
24 (Total)	-2.16	125.2	0.43	-25.2	-1.72*	100
	Profit Share in NVA					
241	3.32	46.7	0.67	9.4	3.99	56.2
242	3.03	42.7	-1.17	-16.4	1.86	26.2
Rest of 24	1.16	16.4	0.09	1.2	1.25	17.6
24 (Total)	7.51	105.8	-0.41	-5.8	7.1*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 24.

However, even in the case of Basic Chemicals (241), the annual growth rate of labour productivity's was 7 times that of real wage [Table 23]. As a result, wage share in NVA for the Chemicals and Chemical Products industry as well as all the 3-digit industries declined during this period. The Chemicals and Chemical Products industry's wage share declined at 4% per annum to reach 10.1 percentage points by

2000-01. Within-industry decline in wage shares was responsible for 98.7% of this change and Other Chemical Products (242) was alone responsible for 50% of this total decline. The total share effect did not play a major role in Chemicals and Chemical Products' total wage share decline. However, the sub-sectoral shift in composition of NVA against the Other Chemical Products (242) industry did increase its total sub-sectoral contribution to the total wage share decline to 64.2%.

This decline in wage share was accompanied by a decline in interest share at an annual rate of 1.7% and reached 27.5% by 2000-01. Within-industry changes contributed 125% to this total decline. All the 3-digit industries encountered a decline in their respective interest shares and interest share fall in Basic Chemicals (241) was responsible for 95% of the total decline. Share effect played an important role and negatively contributed to the total decline, i.e. a sub-sectoral shift in NVA composition in favour of Basic Chemicals (241) and Man-Made Fibres (243) industries prevented a further fall in NIC 24's interest share by 25% (or 0.4% per annum). As a result, in terms of total sub-sectoral contributions, Basic Chemicals and Other Chemical Products contributed 50.3% and 41% to the total interest share decline.

Table 23: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Chemicals and Chemical Products, 1991-2001

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
241	7.7	1.1	14.7	0.6	7.6	-2.4
242	2.5	-1.8	20.7	-2.7	4.4	-0.2
Rest of 24	55.2	-2.4	16.6	-0.2	6.6	0.7
24	5.4	-0.8	16.5	-0.3	6.0	-1.0

This interest share decline was associated with a declining interest rate for the Chemicals and Chemical Products industry as well as Other Chemical Products and Rest of NIC 24. However, Basic Chemicals observed a slight rise (0.6 percentage points) in its interest rate. In terms of interest burden, both the chosen 3-digit industries witnessed a decline, while NIC-243 (or Rest of NIC-24) observed a rise by 0.7 percentage points [Table 23].

The declining wage share as well as interest share led to an absolute rise of 18 percentage points (at an annual rate of 7.1%) in the Chemicals and Chemical Products industry's profit share. 105.8% of this growth was a result of within-industry changes in profit shares and at the sub-sectoral level, the chosen 3-digit industries as well as Rest of 24 witnessed a rise in their respective profit shares. While the total share effect did not play a major role in influencing the total rise in profit share, a sub-sectoral shift in NVA composition against Other Chemical Products reduced this industry's total sub-sectoral contribution to 26% and correspondingly, raised the total contribution of Basic Chemicals to 56%.

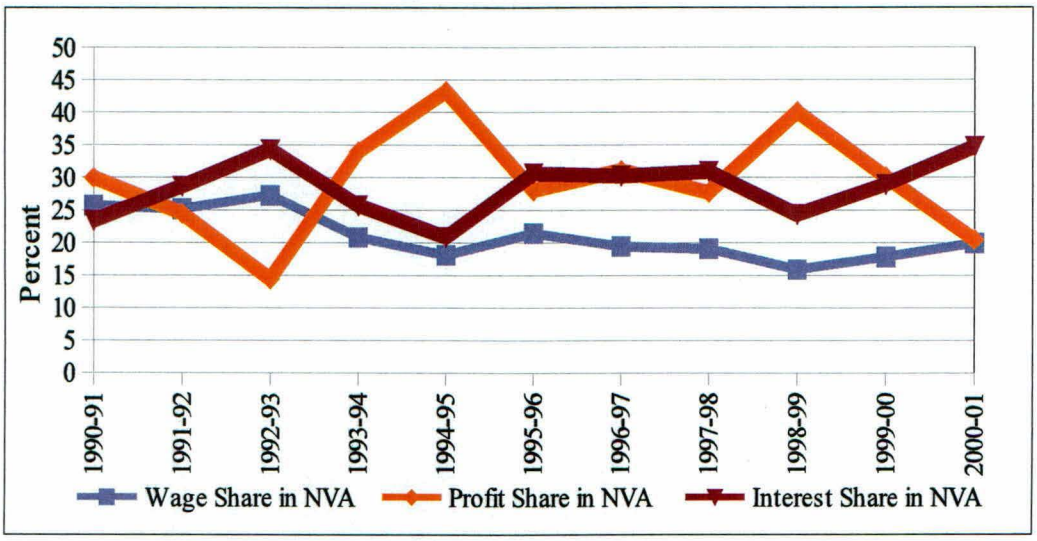
3.2.2. Food Products and Beverages (15)

Labour productivity grew at the rate of 5.5% per annum and reached Rs. 1.8 lakh per worker by the end of this phase. Within-industry changes in labour productivity were responsible for 98% of this growth and all the 3-digit industries witnessed a rise in their respective labour productivities. Interestingly, labour productivity growth in the chosen 3-digit industries was responsible for only 38.4% of the total rise and the labour productivity growth in the remaining 3-digit industries (Dairy Products (152) and Manufacture of Grain Mill Products, Starches and Starch Products, and Prepared Animal Feeds (153)) contributed 59.4% to the 2-digit industry's labour productivity growth. On the other hand, share effect did not play a significant role in raising the total labour productivity. However, a shift in NVA composition in favour of Rest of NIC-15 raised its total sub-sectoral contribution to 65% [Table 24].

Real wage per worker rose at 0.77% per annum and by 2000-01, reached Rs. 31,772. Growth effect contributed 99% to this growth in real wages in the Food Products and Beverages industry. In terms of sub-sectoral contributions, real wage growth in the Manufacture of Other Products (154) was responsible for 50% of the total rise. While share effect played no significant role in totality, at the sub-sectoral level, a major decline in the (weighted) employment share of Manufacture of Other Products (154) and a corresponding rise in the (weighted) employment share of the remaining 3-digit industries (Rest of 15) reduced industry 154's total contribution to 8.7% and raised Rest of 15's contribution to 68.4%.

Even though real wage per worker grew in all the 3-digit industries in NIC 15, labour productivity growth was much higher than that of real wage [Table 25]. As a result, wage share in NVA in the Food Products and Beverages industry declined at an annual rate of 2% and dropped to 20% by 2000-01. 103% of this change was due to a combined decline in the wage shares across the 3-digit industries. A (weighted) decrease in the wage share of Manufacture of Other Food Products (154) was responsible for 50.7% of the total decline. Even in this case, the share effects did not play a major role in terms of influencing the total wage share decline. However, the (weighted) decline in NVA share of Manufacture of Other Food Products during this period contributed 23.4% to the total wage share decline. In effect, the total sub-sectoral contribution of Manufacture of Other Food Products to the 2-digit industry's wage share decline was 74%.

Figure 8: Factor Shares in NVA in Food Products and Beverages, 1991-2001



This wage share decline was accompanied by a 4.4% annual rise in the interest share. Within-industry contributions were responsible for 105% of this growth and a rise in the interest share of Manufacture of Other Food Products (154) alone contributed 99% to the 2-digit industry's interest share increase. Also, while all the chosen 3-digit industries witnessed a rise in their interest shares, the remaining 3-digit industries experienced a decline in their interest share (as a group). Share effect played a negative role in this decline i.e. the changing sub-sectoral NVA composition helped raise the interest share in the Food Products and Beverages industry by 4.8%. Due to a decline in the NVA share of Manufacture of Other Food Products, the total contribution of this industry to the total interest share increase declined to 84%.

Table 24: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Food Products and Beverages, 1991-2001

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
151	0.58	10.6	-0.11	-2.0	0.47	8.6
154	1.25	22.7	-0.33	-5.9	0.93	16.8
155	0.28	5.1	0.25	4.6	0.53	9.7
Rest of 15	3.28	59.4	0.31	5.6	3.58	65
15 (Total)	5.4	97.8	0.12	2.2	5.52*	100
	Real Wage Per Worker					
151	0.04	5.6	-0.06	-7.4	-0.01	-1.8
154	0.38	50.2	-0.32	-41.5	0.07	8.7
155	0.05	6.3	0.14	18.3	0.19	24.6
Rest of 15	0.28	36.7	0.24	31.7	0.52	68.4
15 (Total)	0.76	98.9	0.01	1.1	0.77*	100
	Wage Share in NVA					
151	-0.09	4.4	-0.19	9.5	-0.28	13.9
154	-1.03	50.7	-0.48	23.4	-1.51	74.1
155	-0.09	4.2	0.03	-1.6	-0.05	2.7
Rest of 15	-0.89	43.9	0.7	-34.6	-0.19	9.2
15 (Total)	-2.1	103.2	0.07	-3.2	-2.03*	100
	Interest Share in NVA					
151	0.33	7.5	-0.4	-9	-0.07	-1.5
154	4.39	99	-0.67	-15.1	3.72	83.9
155	0.21	4.7	0.04	1	0.25	5.7
Rest of 15	-0.28	-6.4	0.81	18.3	0.53	11.9
15	4.65	104.8	-0.21	-4.8	4.44*	100
	Profit Share in NVA					
151	-0.32	11.1	-0.43	15.2	-0.75	26.3
154	-3.27	114	-0.26	9.1	-3.53	123.1
155	-0.58	20.3	0.06	-1.9	-0.53	18.4
Rest of 15	1.25	-43.7	0.69	-24.1	1.94	-67.8
15 (Total)	-2.91	101.8	0.05	-1.8	-2.86*	100

Note: Rows and columns may not sum up exactly due to rounding off.

*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 15.

This interest share increase was accompanied by a rise in interest rates (between 1990-91 and 2000-01) in the case of Manufacture of Other Food Products (154) and the remaining 3-digit industries and a fall in interest rates in NIC-151 and NIC-155. However, all the 3-digit industries except Beverages (155) witnessed an absolute rise in their interest burdens [Table 25].

As a result of the rise in interest share, profit share in the Beverages industry fell at the rate of 2.6% per annum between 1990-91 and 2000-01. However, as we can observe from Figure 8, this decline is not representative of the changes in profit share during this phase and is actually a result of the last 2 years. If we consider the period 1992-1998 (1992-93 to 1997-78), this industry's profit share rose by 15.7 percentage points.

Table 25: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Food Products and Beverages, 1991-2001

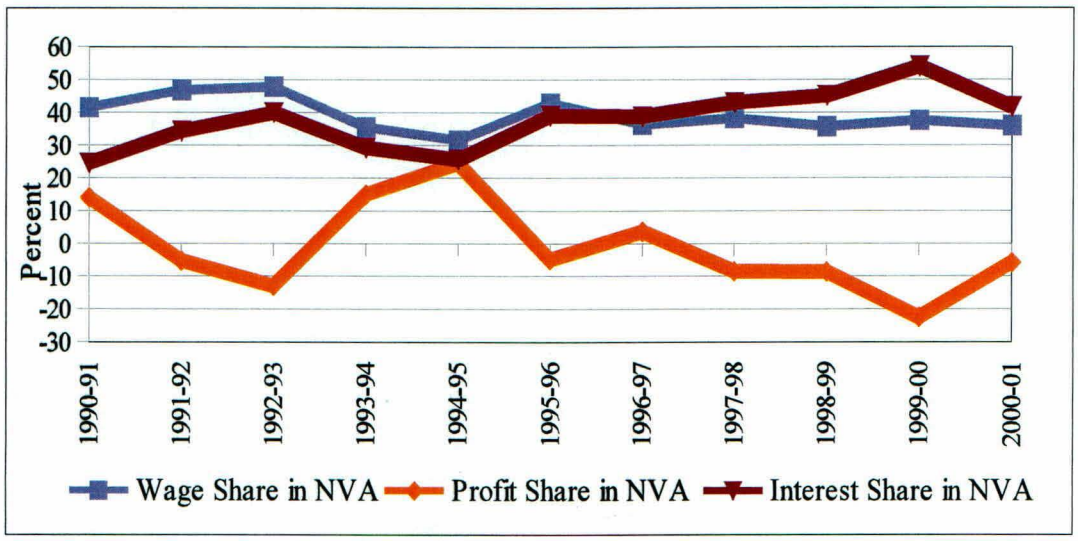
NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
151	3.3	0.4	4.6	0.5	21.5	-1.2	2.2	0.1
154	2.3	0.7	2.9	0.9	23.9	10.2	5.8	3.4
155	2.1	0.6	4.1	0.8	16.9	-9.3	4.0	-0.2
Rest of 15	25.0	1.2	17.0	1.6	18.7	1.6	2.0	0.0
15	5.5	0.8	5.6	0.9	21.5	4.2	3.4	1.1

However, in terms of the point-to-point analysis, the decline in the profit share between 1990-91 and 2000-01 was due to within-industry decline in profit shares (102% contribution). However, Rest of NIC 15 (or NIC 152 and NIC 153) witnessed a rise in their profit share and contributed 43.7% in preventing a further decline in the Food Products and Beverages industry's profit share. A shift in NVA composition in favour of these 3-digit industries also helped prevent a further decline in the 2-digit industry's profit share. Therefore, in terms of total sub-sectoral contribution, Rest of NIC 15 prevented a further decline in NIC 15's profit share by 68%.

3.2.3. Textiles (17)

In the textiles industry, labour productivity grew by 4.4% per annum and reached an absolute level of Rs. 1.3 lakh per worker by 2000-01. This growth was a result of within-industry changes in labour productivity (94% growth effect contribution) and all the 3-digit industries witnessed a rise in their respective labour productivities. Labour productivity growth in Spinning, Weaving and Finishing of Textiles (171) was alone responsible for 75.6% of the total labour productivity growth. However, a shift in employment composition against NIC 171 and in favour of NIC 172 reduced the total contribution of NIC 171 to the labour productivity rise to 56%.

Figure 9: Factor Shares in NVA in Textiles, 1991-2001



On the other hand, the textiles industry as well as all the 3-digit industries witnessed a decline in their respective real wages. In case of the textiles industry, real wage per worker declined by 1.2% per annum and dropped to Rs. 43,495 by 2000-01. This decline was primarily a result of within-subsector declines in real wage per worker and the decrease in real wage in Spinning, Weaving and Finishing of Textiles (171) alone contributed 77% to the total wage decline. Also, a decline in the employment share of NIC 171, weighted by the average of real wages in 1990-91 and 2000-01, contributed 57.5% to the textiles industry's wage decline. In effect, NIC 171 was responsible for 135% of the total wage share decline.

Table 26: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Textiles, 1991-2001

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
171	3.33	75.6	-0.85	-19.3	2.48	56.3
172	0.28	6.4	0.76	17.2	1.04	23.6
Rest of 17	0.52	11.7	0.37	8.4	0.89	20.1
17 (Total)	4.14	93.7	0.28	6.3	4.41*	100
	Real Wage Per Worker					
171	-0.92	77.3	-0.68	57.5	-1.60	134.8
172	-0.06	4.7	0.26	-22.1	0.21	-17.4
Rest of 17	-0.04	3.6	0.25	-21.0	0.21	-17.4
17 (Total)	-1.02	85.6	-0.17	14.4	-1.19*	100
	Wage Share in NVA					
171	-0.61	51.4	-0.99	83.2	-1.60	134.6
172	-0.06	5.3	0.27	-22.6	0.21	-17.3
Rest of 17	-0.07	5.9	0.28	-23.2	0.21	-17.3
17 (Total)	-0.75	62.7	-0.45	37.3	-1.19*	100
	Interest Share in NVA					
171	7.06	110.6	-1.45	-22.7	5.61	87.9
172	-0.07	-1.1	0.47	7.3	0.39	6.2
Rest of 17	-0.02	-0.4	0.40	6.3	0.38	6.0
17 (Total)	6.96	109.1	-0.58	-9.1	6.38*	100.0
	Profit Share in NVA					
171	-16.05	124.7	0.12	-0.9	-15.93	123.8
172	0.34	-2.7	1.21**	-9.4	1.55	-12
Rest of 17	-0.05	0.4	1.56	-12.2	1.52	-11.8
17 (Total)	-15.75	122.4	2.89	-22.4	-12.86*	100

Note: Rows and columns may not sum up exactly due to rounding off.

*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 17.

**The share effect is positive for NIC 171's because of a negative average of the profit shares at 1990-91 and 2000-01 being accompanied by a decline in the NVA share of the 3-digit industry in the textiles industry.

Due to the rising labour productivity being accompanied by a falling real wage in all the 3-digit industries, the textiles industry witnessed a decline in its wage share in NVA at the 2-digit as well as 3-digit level. Within-industry changes in wage share were responsible for 63% of this 5.4 percentage points total wage share decline. Wage share decline in NIC 171, weighted by the average of its NVA share in 1990-91 and 2000-01, contributed 51% to the total wage share decline. Share effects also played an important role and constituted 37% of the total decline. A (weighted) decline in NIC 171's wage share contributed 83% to the total wage share decline and in effect, the total contribution of Spinning, Weaving and Finishing of textiles increased to 135%.

This decline in wage share was accompanied by a rise in the textiles industry's interest share by 6.4% per annum. 109% of this growth was due to within-industry changes in interest share and NIC 171's interest share growth contributed 111% to the rise in the textiles industry's interest share. However, NIC 172 and 173 (or Rest of NIC 17) did not observe a corresponding increase in their interest shares. Also, the decline in NIC 171's NVA share led to a decline in its total contribution (to 88%) the 2-digit industry's interest share decline (via share effects).

However, in terms of interest rate changes, the 2-digit industry as well as all the 3-digit industries witnessed a rise in their interest rates. While in terms of interest burden, the trends were the same as that of interest shares [Table 27]

Table 27: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Textiles, 1991-2001

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
171	3.7	-1.0	5.0	-1.0	16.9	-0.5	6.7	1.0
172	3.4	-1.5	4.6	-1.0	20.3	-3.7	4.8	-0.8
Rest of 17	30.3	-1.3	26.8	0.2	24.3	-20.2	3.1	-0.7
17	4.4	-1.2	5.3	-1.2	17.1	-0.7	6.4	0.7

As observed from Figure 9, profit share in the textiles industry during 1991-2001 was positive only in the years 1993-94 and 1994-95. Between 1990-91 and 2000-01, profit share declined at an annual rate of 12.9%.Within-industry changes in

profit shares contributed 122% to this decline and the profit share decline in NIC 171 was alone responsible for 125% of the total fall. NIC 172 witnessed a rise in its profit share but in terms of growth effect was only responsible for preventing the profit share fall by 2.7%. Share effects played a significant role and prevented a further fall in the textiles industry's profit share by 22%. In terms of total contributions, Spinning, Weaving and Finishing of Textiles (171) was responsible for 124% of the total decline.

In this sub-section, we examined which 3-digit industries were responsible for the changes observed in labour productivity, real wage per worker and factor shares in NVA in the Chemicals and Chemical Products (24), Food Products and Beverages (15) and Textiles (17) industries.

Other Chemical Products (242) contributed ~50% and ~66% to Chemicals and Chemical Products (24) average NVA and employment during 1991-2001. The (weighted) decline in real wage per worker and wage share in NVA in Other Chemical Products (242) majorly contributed to the decline in NIC 24's real wage per worker and wage share. However, Basic Chemicals (241) was significantly responsible for the labour productivity growth, the decline in interest share and the profit share growth observed in the Chemicals and Chemical Products industry.

Other Food Products (154) alone contributed at least 50% to the Food Products and Beverages (15) industry's average NVA and employment during this phase. The (weighted) increase in the real wage per worker and the (weighted) decline in the wage share in NVA in this industry also contributed more than 50% to the NIC-15's real wage per worker growth and wage share decline. However, the (weighted) decline in NIC 154's profit share and rise in its interest share was almost solely responsible (114% contribution) for the profit share decline and interest share increase in NIC 15.

Spinning, Weaving and Finishing of Textiles (171) contributed at least 90% to the average NVA and employment of the Textiles (17) industry in 1991-2001. As expected (on the basis of this high share), the changes (in terms of growth effect as well as total effect) in this 3-digit industry were majorly responsible for the labour productivity growth and the decline in real wage per worker decline, wage share, interest share as well as the profit share in NVA in NIC 17.

An Intra-Period Anomaly

As our point-to-point decomposition analysis for the period 1991-2001 is not entirely representative of the changes that occurred in the first post-liberalisation period (especially the rise in profit share in NVA), we need to analyse the changes in the labour productivity, real wage per worker and factor shares in NVA during this 6-year period (1992-1998) for the 2-digit industries that were primarily responsible for the spectacular increase observed in the manufacturing sector's profit share in NVA.

As noted in Chapter 2, for 1992-1998, we choose those 2-digit industries that contribute at least 40% (in terms of their growth effects) to the total profit share rise in the manufacturing sector. Therefore, we select Chemicals and Chemical Products (24) and Basic Metals (27) for further analysis.

3.2.4. Basic Metals (27)

During the 6-year period from 1992-93 to 1997-98, NIC-27's labour productivity rose by 19.4% per annum and reached Rs. 6.1 lakh per worker by 1997-98. Within-industry changes contributed 105% to this total growth and Basic Iron and Steel's labour productivity growth (271) was responsible for 111% of the total rise. However, according to our point-to-point analysis, the remaining 3-digit industries registered a decline in their labour productivity (as a group). Between-industry changes were responsible for -5.2% of this rise and a shift in employment composition against NIC 271 reduced this 3-digit industry's total contribution to total labour productivity growth to 104.4% [Table 28].

Real wage per worker observed a rise of 8% per annum and by 1997-98, reached Rs. 78,107. All the sub-sectors witnessed a rise in their respective real wages and within-industry changes contributed 102% to the total rise in real wage. Industry 271's real wage growth was in itself responsible for 94% of the total increase in NIC 27's real wage. A (weighted) decline in the employment share of NIC 271 reduced its total contribution to the wage rise in Basic Metals to 84%.

Figure 10: Factor Shares in NVA in Basic Metals, 1992-1998

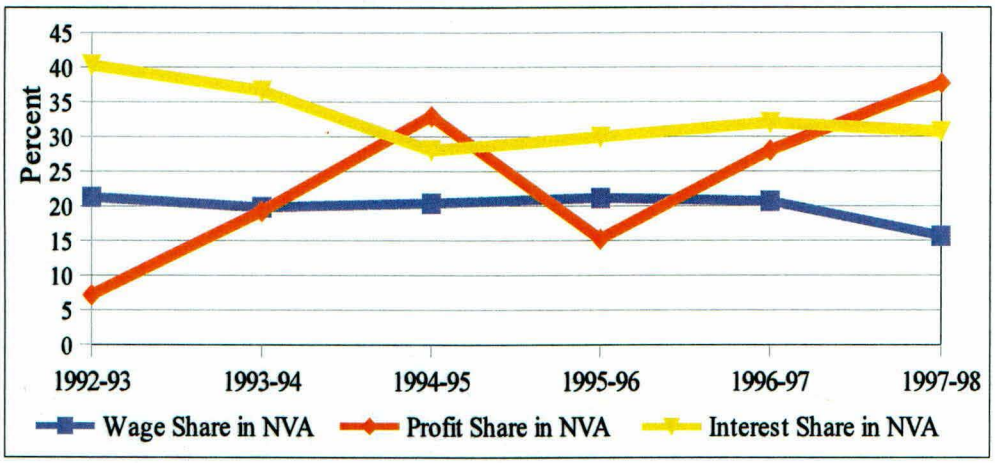


Table 28: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Basic Metals, 1992-1998

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
271	21.52	110.9	-1.26	-6.5	20.26	104.4
Rest of 27	-1.11	-5.7	0.26	1.3	-0.85	-4.4
27 (Total)	20.41	105.2	-1.00	-5.2	19.41*	100
	Real Wage Per Worker					
271	7.47	93.7	-0.8	-10.1	6.67	83.7
Rest of 27	0.64	8.0	0.66	8.3	1.30	16.3
27 (Total)	8.11	101.7	-0.14	-1.7	7.97*	100
	Wage Share in NVA					
271	-4.00	90.9	1.19	-26.9	-2.82	64
Rest of 27	-0.09	2.1	-1.5	34	-1.59	36
27 (Total)	-4.09	92.9	-0.31	7.1	-4.4*	100
	Interest Share in NVA					
271	-4.20	105.6	1.34	-33.6	-2.87	72
Rest of 27	-0.11	2.7	-1.01	25.3	-1.11	28
27 (Total)	-4.31	108.4	0.33	-8.4	-3.98*	100
	Profit Share in NVA					
271	73.44	103.1	4.07	5.7	77.5	108.8
Rest of 27	-1.02	-1.4	-5.23	-7.3	-6.25	-8.8
27 (Total)	72.42	101.6	-1.16	-1.6	71.25*	100

Note: Rows and columns may not sum up exactly due to rounding off.

*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 27.

In terms of average annual growth rates, labour productivity exceeded real wage per worker in case of the 2-digit industry as well as all the 3-digit industries [Table 28]. As a result, wage share in NVA declined in Basic Metals as well as all the 3-digit industries. In case of NIC 27, the wage share declined to 15.6% by 1997-98 (at an annual rate of 4.4%) [Figure 10 and Table 28]. Within-industry changes contributed 93% to this wage share decline and Basic Iron and Steel's (271) wage share decline was responsible for 91% of the total decline. However, a (weighted) rise in the NVA share of NIC 271 (or sub-sectoral share effect) helped prevent a further decline in NIC 27's wage share by 27%. As a result, in terms of total sub-sectoral contributions, NIC 271 was responsible for 64% of the total decline in wage share.

Table 29: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Basic Metals, 1992-1998

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
271	25.8	10.5	22.6	10.9	9.9	-2.8	6.5	1.1
Rest of NIC 27	-7.2	2.2	4.3	3.2	15.8	3.9	4.0	0.01
27	19.4	8.0	17.4	8.5	10.5	-2.1	6.0	0.9

This wage share decline was accompanied by a decline in interest share in case of the 2-digit industry as well as all the 3-digit industries. Within-industry changes were responsible for 108% of the 4% per annum decline in NIC 27's interest share. NIC 271's (weighted) interest share decline alone contributed 106% to the total interest share decline. In this case as well, a shift in NVA composition in favour of NIC 271 prevented a further decline in NIC 27's interest share by 37%. In effect, Basic Iron and Steel (271) was responsible for 72% of the total decline. This decline in interest share was accompanied by a decline in interest rates in case of NIC 27 and NIC 271 and a rise in interest rate in the remaining 3-digit industries (as a group). However, in terms of interest burden, NIC 27 as well as all the 3-digit industries witnessed a rise at the end of this 6-year period [Table 29].

As a result of a decline in wage share as well as interest share, NIC 27 witnessed a boom in its profit share by 71% per annum[13]. The growth effect was responsible for 102% of this growth and the (weighted) profit share rise in NIC 271 contributed 103% to the total profit share increase. However, the remaining 3-digit industries (as a group) witnessed a decline in their profit share during this period. A shift in NVA composition in favour of NIC 271 raised its total contribution to the 2-digit industry's profit share growth to 109% [Table 28].

3.2.5. Chemicals and Chemical Products (24)

Labour productivity in NIC 24 grew at 3% per annum during 1992-1998 and 92% of this growth was due to within-industry changes. The rise in labour productivity in Other Chemical Products (242) contributed 96% to NIC 24's labour productivity rise. However, NIC 241 witnessed a decline in its labour productivity and contributed -14% to the labour productivity growth in NIC 24. Between-industry changes were, on the whole, responsible for 8% of the total labour productivity growth and a negative share effect in case of NIC 242 reduced this sub-sector's total contribution (to NIC 24's labour productivity growth) to 61.4%.

These changes were accompanied by a slight increase in real wage per worker (Rs. 1698) realised at an annual rate of 0.4%. However, between-industry changes contributed 106% to this rise in NIC 24's real wage and the rise in NIC 241's employment share, weighted by the average of this industry's real wage per worker at 1992-93 and 1997-98, contributed 287% to the total rise in real wage. On the other hand, NIC 242 witnessed a decline in its real wage per worker and a fall in its employment share and thus, dragged down NIC 24's real wage by 250% (in terms of total contribution).

As a result, wage share in NVA declined by 1.8% per annum in NIC 24. Within-industry changes constituted 101% of this total decline and NIC 242's wage share decline contribution was 151%. At the sub-sectoral level, while wage shares declined in case of NIC 242 and NIC 243 (or Rest of NIC 24), NIC 241 observed a rise in its wage share and prevented a further fall in NIC 24's wage share by 53%. In

[13] If we consider the period 1993-98, this annual rate of increase becomes 19.3%. Even in this case, growth effect is the main source (99.6%) behind the profit share rise and NIC 271's profit share increase is responsible for 100% of the total rise. Share effects are inconsequential both at the aggregate and the sub-sectoral level.

terms of total sub-sectoral contributions, NIC 242 was responsible for 125% of the total wage share decline.

Table 30: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Chemicals and Chemical Products, 1992-1998

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
241	-0.41	-13.9	1.23	41.5	0.82	27.6
242	2.83	95.7	-1.01	-34.3	1.82	61.4
Rest of 24	0.3	10.2	0.02	0.8	0.33	11.0
24 (Total)	2.72	92.0	0.24	8.0	2.96*	100
	Real Wage Per Worker					
241	0.33	72.9	1.29	286.7	1.62	359.6
242	-0.29	-63.3	-0.84	-186.6	-1.13	-250.0
Rest of 24	-0.07	-15.2	0.03	5.6	-0.04	-9.6
24 (Total)	-0.03	-5.6	0.48	105.6	0.45*	100
	Wage Share in NVA					
241	0.93	-53.3	-0.29	16.3	0.65	-37
242	-2.64	151.0	0.46	-26.3	-2.18	124.7
Rest of 24	-0.06	3.5	-0.15	8.8	-0.21	12.3
24 (Total)	-1.77	101.2	0.02	-1.2	-1.75*	100
	Interest Share in NVA					
241	-2.24	69.8	-0.41	12.7	-2.64	82.5
242	-0.29	9.0	0.29	-9.0	0.0	0.0
Rest of 24	-0.46	14.3	-0.11	3.3	-0.56	17.5
24 (Total)	-2.98	93.0	-0.22	7.0	-3.2*	100
	Profit Share in NVA					
241	1.13	18.6	-0.20	-3.2	0.93	15.4
242	4.39	72.4	0.68	11.1	5.07	83.5
Rest of 24	0.45	7.4	-0.38	-6.3	0.07	1.1
24 (Total)	5.97	98.4	0.10	1.6	6.07*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 24.

Table 31: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Chemicals and Chemical Products, 1992-98

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
241	-1.0	0.8	2.4	1.1	14.6	-1.4	7.5	-3.6
242	5.2	-0.5	5.6	-0.6	20.1	-4.2	4.3	-0.3
Rest of 24	4.5	-0.8	14.2	-0.1	13.2	-4.4	4.4	-2.3
24	3.0	0.5	4	0.6	16	-2	5.8	-1.9

This period also witnessed a 3.2% per annum decline in NIC 24's interest share. 93% of this decline was due to within-industry changes. At the sub-sectoral level, all the 3-digit industries witnessed a corresponding decline in their interest shares and NIC 241's interest share decline contributed 70% to the total decline. Also, due to a fall in its NVA share, NIC 241's total contribution to Chemicals and Chemical Products interest share decline increased to 82.5%. This interest share decline was a result of a corresponding decline in interest rates and interest burdens across all the 3-digit industries [Table 31].

As a result, profit share rose in the 2-digit industry as well as all the 3-digit industries. Growth Effect contributed 98.4% to the 6.1% per annum rise in NIC 24's profit share. NIC 242's profit share rise contributed 72.4% to the total profit share increase. A corresponding rise in NIC 242's NVA share increased its total contribution (to NIC 24's profit share rise) to 83.5%.

In this sub-section, we analysed the changes in labour productivity, real wage per worker and factor shares in Basic Metals (27) and Chemicals and Chemical Products (24) and also found out which 3-digit industries were primarily responsible for the changes observed in these 2-digit industries.

The Basic Iron and Steel (271) industry contributed more than 70% to the average NVA and employment of the Basic Metals (27) industry. The increase in labour productivity, real wage per worker and profit share in NVA as well as the decline in its wage share in NVA and interest share in NVA in this 3-digit industry was

almost solely responsible for the corresponding changes in these variables in NIC 27.

However, in case of Chemicals and Chemical Products (24), both Basic Chemicals (241) and Other Chemical Products (242) were responsible for the changes in these variables. While the (weighted) increase in labour productivity, the (weighted) decline in wage share and the (weighted) increase in profit share in NVA in NIC 242 was almost solely responsible for the labour productivity growth, wage share decline and the profit share growth in NIC 24. On the other hand, a (weighted) rise in NIC 241's real wage per worker, a fall in its interest share and an increase in its wage share not only raised NIC 24's real wage per worker, significantly contributed to the decline in its interest share but also prevented a further decline in its wage share in NVA.

3.3. Second Post-Reform Phase (2001-2011)

The second post-reform phase differed from the first post-reform period (1991-2001) since it was during this second phase that the Indian economy (and the registered manufacturing sector) recorded significantly high GDP growth rates for a longer duration (till the global economic crisis of 2007-08).

Based on the growth effect contributions, we select Basic Metals (27), Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products and Nuclear Fuel (23) for further study. Basic Iron and Steel (271), Basic Chemicals (241) and Other Chemical Products (242), and Refined Petroleum Products (232) are the chosen 3-digit industries. While NIC 232 constitutes 96% of NIC 23's average NVA, its employment contribution is much lower (65%). Similarly, while NIC 242 is the primary 3-digit contributor to NIC 24's NVA and employment, its contribution to employment is greater than its relative contribution to NVA. In case of Basic Metals, Basic Iron and Steel contributes 75% to NVA and 67% to employment during 2001-2011 [Table 32].

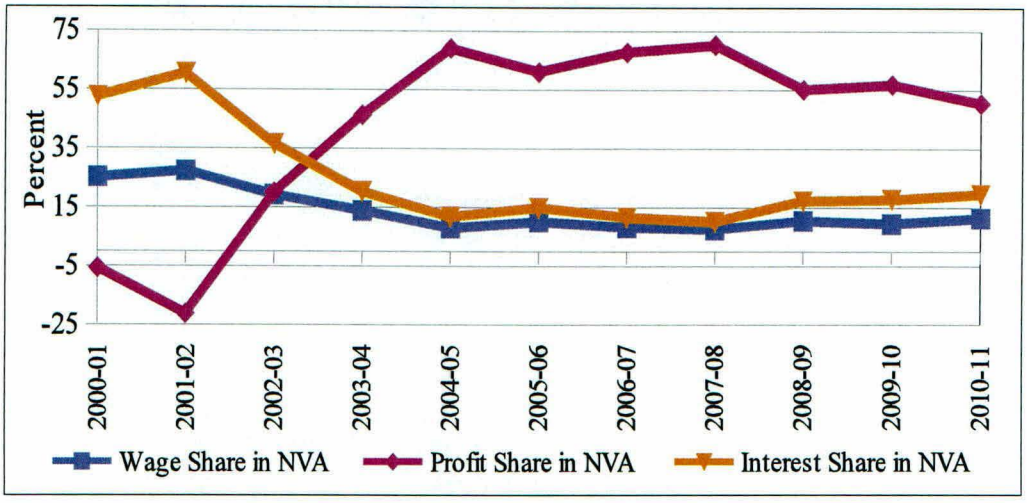
Table 32: Average NVA and Employment Share for the 3-digit industries of NIC-23, 24 and 27, 2001-2011

NIC 98 Code and Description	Average Share in NVA	Average Share in Employment
232: Refined Petroleum Products	96.3	64.7
Rest of 23	3.7	35.3
23: Coke, Refined Petroleum Products and Nuclear Fuel	100	100
241: Basic Chemicals	37.2	25.1
242: Other Chemical Products	60.7	71.6
Rest of 24	2.1	3.4
24: Chemicals and Chemical Products	100	100
271: Basic Iron and Steel	75.1	67.2
Rest of 27	24.9	32.8
27: Basic Metals	100	100

3.3.1. Basic Metals (27)

The Basic Metals industry recorded net losses in 2000-01 and as a result a negative profit share in NVA. Keeping in mind the basis of our decomposition analysis [Refer to Equation 3, Section 2.2] and the fact that a negative profit share at the beginning point of our analysis leads to overinflated growth rates for the 2-digit industry's profit share [Figure 11], we decide to analyse the period 2002-03 to 2010-11 instead of 2001-2011.

Figure 11: Factor Shares in NVA in Basic Metals, 2001-2011



During this 9 year period, labour productivity for the 2-digit industry grew at an annual rate of 1.9% per annum and attained a level of Rs. 7.8 lakh per worker by 2010-11. 95% of this growth was a result of within-industry labour productivity growth. The labour productivity growth in the remaining 3-digit industries (Basic Precious and Non-Ferrous Metals (NIC 272) and Casting of Metals (NIC 273)) was responsible for 69% of the total increase in labour productivity in Basic Metals. In comparison, share effects were not significant and in terms of total contribution, Rest of NIC 27 contributed 64% to total productivity growth [Table 33].

On the other hand, real wage per worker declined at 2.3% per annum (an absolute fall of Rs. 18,279) and declined to Rs. 69,623 by 2010-11. 101% of this growth was a result of within-industry changes in real wage and the decline in real wage in Basic Iron and Steel (NIC 271) was alone responsible for 106% of the total decrease. However, the remaining 3-digit industries witnessed a slight rise in their real wage (as a group) but this rise did not significantly influence the total fall in real wage. Share effects were almost insignificant and as a result, NIC 271 was

responsible for 100% (in terms of total contributions) of the total wage decline.

As a result of this increasing gap between labour productivity and real wage per worker, in terms of annual as well as average annual growth rates, wage share declined by 4.5% per annum and attained an absolute level of 11.4% by 2010-11. Within-industry changes were responsible for 99.9% of this decline and NIC 271's wage share decline alone contributed 86% to the total fall. As is visible, share effects were insignificant.

Table 33: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Basic Metals, 2002-2011

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
271	0.5	26.3	0.18	9.6	0.68	35.9
Rest of 27	1.29	68.6	-0.08	-4.5	1.21	64.1
27 (Total)	1.79	94.9	0.1	5.1	1.88*	100
	Real Wage Per Worker					
271	-2.44	105.8	0.13	-5.7	-2.31	100.1
Rest of 27	0.11	-4.6	-0.11	4.5	0	-0.1
27 (Total)	-2.34	101.3	0.03	-1.3	-2.31*	100
	Wage Share in NVA					
271	-3.85	85.56	0.04	-0.95	-3.81	84.61
Rest of 27	-0.65	14.37	-0.05	1.02	-0.69	15.39
27 (Total)	-4.5	99.93	0	0.07	-4.5*	100
	Interest Share in NVA					
271	-4.91	95.6	0.05	-0.93	-4.86	94.67
Rest of 27	-0.25	4.82	-0.03	0.51	-0.27	5.33
27 (Total)	-5.16	100.42	0.02	-0.42	-5.14*	100
	Profit Share in NVA					
271	15.6	92.1	0.08	0.5	15.68	92.6
Rest of 27	1.37	8.1	-0.13	-0.7	1.25	7.4
27 (Total)	16.97	100.2	-0.04	-0.2	16.93*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 27.

This wage share decline was accompanied by a 5.1% per annum decline in the interest share. Similar to the scenario in wage share decomposition, within-industry changes were responsible for 100.4% of the fall and share effects were inconsequential [Table 33]. Both NIC 271 as well as the remaining 3-digit industries witnessed a decline in their interest shares and NIC 271's interest share decline contributed 96% to the total decline. This interest share fall was not only accompanied by a fall in the interest rates but also a fall in interest burden [Table 34].

Table 34: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Basic Metals, 2002-2011

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
271	0.6	-3.2	4.8	-3.6	9.8	-6.2	2.8	-3.5
Rest of NIC 27	8.8	0.4	12.4	0.6	8.6	-9.4	1.8	-1.5
27	1.9	-2.3	4.9	-2.5	9.4	-7.0	2.6	-3.1

As a result of the declining wage shares and interest shares, profit shares rose across all 3-digit industries. The Basic Metals industry witnessed an annual profit share growth of 17% and by 2010-11, its profit share rose to 50.4%. Growth effect was entirely responsible for this striking rise in profit share and a hike in NIC 271's profit share contributed 92% to the total rise.

3.3.2. Chemicals and Chemical Products (24)

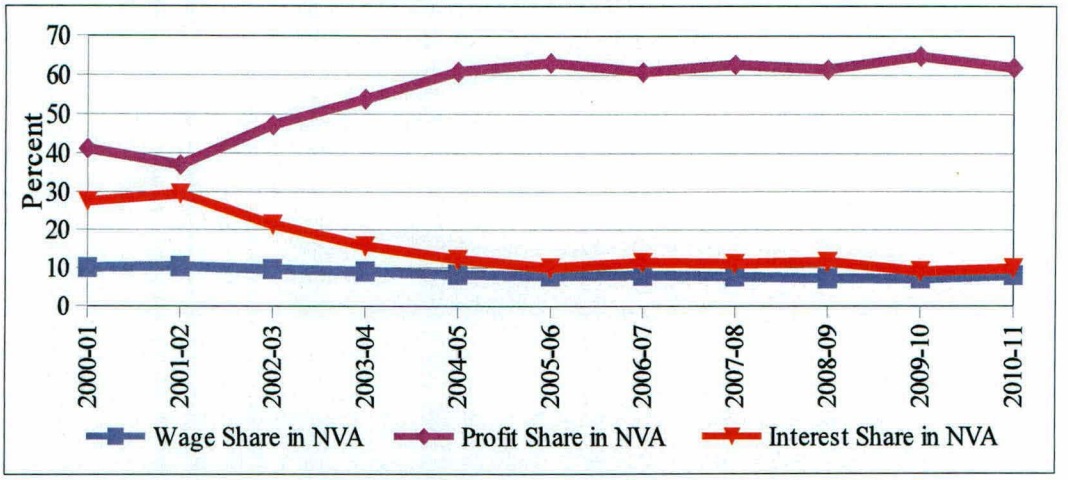
Labour productivity grew at an annual rate of 6.5% and rose to Rs. 10.6 lakh per worker by 2010-11. 110% of this growth was due to within-industry changes in labour productivity and all the 3-digit industries witnessed a rise in their respective labour productivities. (Weighted) labour productivity growth in Other Chemical Products (242) was alone responsible for 79% of this total rise. As a result of the (weighted) decline in industry 241's employment share, the total share effect was responsible for slowing down the labour productivity growth by 10%. In terms of total

sub-sectoral contributions, NIC 242 contributed 91% to the total growth in labour productivity [Table 35].

This labour productivity growth was accompanied by a decline in real wage per worker in Chemicals and Chemical Products at an annual rate of 0.03% (Rs. 226 in absolute terms). While the within-industry changes in real wage helped raise the total real wage by 0.44% per annum (or 1267%), it was only NIC 242 which witnessed a rise in its real wage per worker (it rose by 0.69% per annum relative to the 2-digit industry's real wage in 2000-01). ***Had the real wage remained stagnant in case of NIC-242, the Chemicals and Chemical Products industry's real wage would have fallen by another 1966% or by Rs. 4667 (instead of Rs. 226).***

Share effects played a major role in influencing industry 24's real wage decline and contributed 1366% to the total decline. At the sub-sectoral level, a decline in the employment share of NIC 241, weighted by the average of its real wage in 2000-01 and 2010-11, contributed 2492% to the total wage decline. Therefore, in terms of total contributions, NIC 241 and 242 contributed 2796% and -3659% to the total wage fall respectively.

Figure 12: Factor Shares in NVA in Chemicals and Chemical Products, 2001-11



However, even in case of NIC 242, labour productivity's growth rate far exceeded that of real wage [Table 36]. As a result, wage share in NVA declined in the 2-digit industry as well as all the 3-digit industries. Within-industry changes were responsible for 100.2% of this decline and NIC 242 alone contributed 83.5% to this total decline. While share effects did not play a role at the aggregate level, the shift in NVA composition in favour of NIC 242 and against NIC 241 played a very important

role in influencing the total sub-sectoral contributions. Therefore, in terms of total sub-sectoral contribution, NIC 241 was responsible for 85% of the total wage share fall.

Table 35: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Chemicals and Chemical Products, 2001-2011

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
241	1.72	26.5	-1.21	-18.6	0.51	7.9
242	5.1	78.6	0.8	12.4	5.91	91
Rest of 24	0.33	5.1	-0.26	-4.0	0.07	1.1
24 (Total)	7.16	110.2	-0.66	-10.2	6.49*	100
	Real Wage Per Worker					
241	-0.11	303.2	-0.87	2492.3	-0.98	2795.5
242	0.69	-1966.2	0.59	-1693.1	1.28	-3659.3
Rest of 24	-0.14	396.5	-0.2	567.3	-0.34	963.8
24 (Total)	0.44	-1266.5	-0.48	1366.5	-0.03*	100
	Wage Share in NVA					
241	-0.24	13	-1.35	72.3	-1.59	85.3
242	-1.55	83.5	1.68	-90.2	0.13	-6.7
Rest of 24	-0.07	3.7	-0.33	17.7	-0.4	21.4
24 (Total)	-1.87	100.2	0.00	-0.2	-1.86*	100
	Interest Share in NVA					
241	-3.03	51.8	-1.37	23.5	-4.4	75.4
242	-1.97	33.7	0.92	-15.7	-1.05	18
Rest of 24	-0.23	3.9	-0.15	2.6	-0.39	6.6
24 (Total)	-5.23	89.5	-0.61	10.5	-5.84*	100
	Profit Share in NVA					
241	2.07	45.1	-1.73	-37.6	0.35	7.5
242	2.07	45.0	2.45	53.4	4.52	98.3
Rest of 24	0.18	4.0	-0.45	-9.8	-0.27	-5.8
24 (Total)	4.32	94.0	0.28	6.0	4.60*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 24.

This wage share decline was also accompanied by an interest share decline in the 2-digit industry as well across all 3-digit industries. At the 2-digit level, interest share fell by 5.8% per annum and within-industry changes were responsible for 90% of this fall. NIC 241's corresponding interest share fall was the primary contributor to the total decline and was responsible for 52% of the total fall. Share effects also played an important role at the sub-sectoral level and a shift in NVA composition against NIC 241 increased the industry's total sub-sectoral contribution (to the total interest share decline) to 75%. It is important to note that this interest share decline was not only accompanied by a fall in the interest rates, but also a corresponding reduction in the interest burden in case of the 2-digit industry as well as all the 3-digit industries [Table 36].

Table 36: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Chemicals and Chemical Products, 2001-11

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
241	3.9	-0.3	4.6	-0.1	12.8	-1.6	3.1	-4.0
242	10.7	1.3	8.4	1.4	12.6	-8.3	2.5	-2.1
Rest of 24	7.0	-2.4	470.2	-2.2	12.6	-4.9	2.6	-4.9
24	6.5	-0.03	5.7	-0.01	12.5	-4.4	2.8	-3.3

The declining wage share and interest share led to a huge rise in the profit share in NVA in the 2-digit industry as well as all 3-digit industries. In case of Chemicals and Chemical Products, the profit share rose at an annual rate of 4.6% during 2001-2011 and by 2010-11, it reached an absolute level of 62%. Within-industry changes were responsible for 94% (or 4.3% of the 4.6% per annum rise) of the rise 2-digit industry's profit share. The rise in the profit shares of NIC 241 and 242 contributed 45% each to NIC 24's profit share increase. While share effect contributed only 6% to the total rise in profit share, at the sub-sectoral level, a rise in the NVA share of NIC 242 and a corresponding fall in the share of NIC 241 changed the total contributions of these sub-sectors to 98.3% and 7.5% respectively [Table 35].

3.3.3. Coke, Refined Petroleum Products and Nuclear Fuel (23)

Labour productivity in NIC 23 grew at 15.4% per annum and reached Rs. 56.2 lakh per worker by 2010-11. The Growth Effect was responsible for 83.4% of this increase with the labour productivity growth in Refined Petroleum Products (232) contributing 84% to the total change. A shift in sub-sectoral employment composition in favour of NIC 232 in effect increased its total contribution to labour productivity to 101% [Table 37].

Real wage per worker declined by Rs. 6940 or at an annual rate of 0.4%. Within-industry changes contributed 261% to this decline and the (weighted) real wage decline in NIC 232 alone was responsible for 247%. However, the (weighted) change in sub-sectoral employment composition helped prevent a further decline in the total real wage per worker by 161%. At the sub-sectoral level, an increase in the employment share of NIC 232, weighted by an average of its real wage in 2000-01 and 2010-11, prevented a further decline in NIC 23's real wage by 285% (since we are dealing with a negative total effect (a decline in real wage), an increase in the employment share leads to a negative share effect (in terms of percentage contribution to total effect)). As a result, in terms of total sub-sectoral contributions (sub-sectoral growth effect plus sub-sectoral share effect), NIC 232 helped prevent a further decline in NIC 23's real wage by 38% and Rest of NIC 23 (or NIC 231: Coke Oven Products) was responsible for 138% of the total wage per worker decline.

Figure 13: Factor Shares in NVA in Coke, Refined Petroleum Products and Nuclear Fuel, 2001-2011

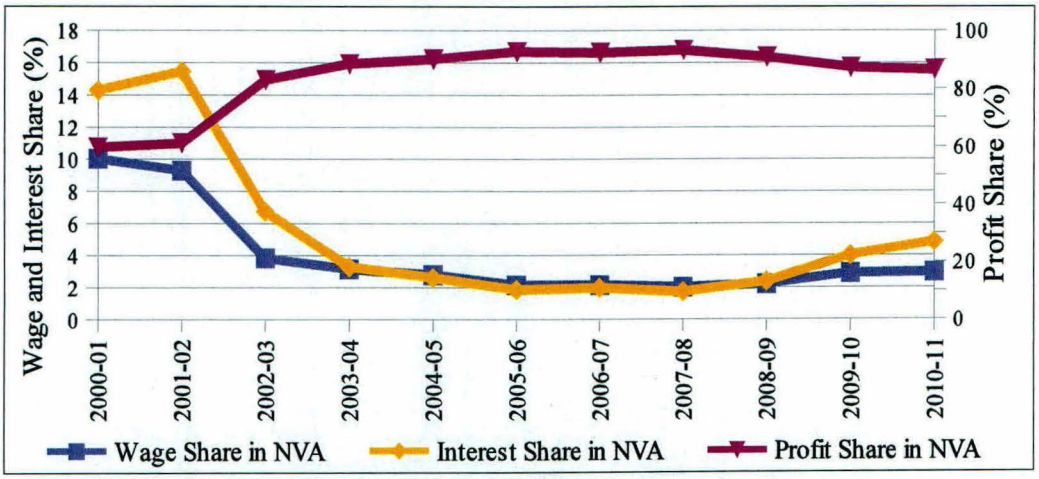


Table 37: Sources of Change in Labour Productivity, Real Wage Per Worker and Factor Shares in Coke, Refined Petroleum Products and Nuclear Fuel, 2001-2011

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Sub-sectoral Total (ST)	ST as a Percentage of Total Effect
	Labour Productivity					
232	12.9	84.0	2.61	17.0	15.51	101
Rest of 23	-0.09	-0.6	-0.06	-0.4	-0.15	-1
23 (Total)	12.81	83.4	2.55	16.6	15.36*	100
	Real Wage Per Worker					
232	-1.00	247.2	1.15	-285.4	0.15	-38.2
Rest of 23	-0.06	13.8	-0.5	124.3	-0.56	138.2
23 (Total)	-1.06	261.1	0.65	-161.1	-0.4*	100
	Wage Share in NVA					
232	-4.77	74.3	-0.01	0.2	-4.79	74.6
Rest of 23	-1.75	27.3	0.12	-1.8	-1.63	25.4
23 (Total)	-6.52	101.6	0.10	-1.6	-6.42*	100
	Interest Share in NVA					
232	-5.52	91.9	-0.02	0.3	-5.53	92.2
Rest of 23	-0.52	8.6	0.05	-0.8	-0.47	7.8
23 (Total)	-6.04	100.5	0.03	-0.5	-6.00*	100
	Profit Share in NVA					
232	3.36	82.3	-0.03	-0.8	3.33	81.5
Rest of 23	0.77	18.8	-0.01	-0.3	0.76	18.5
23 (Total)	4.13	101.1	-0.04	-1.1	4.09*	100

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the labour productivity, real wage per worker or factor shares in NVA in NIC 23.

As a result of the increasing gap between the average annual growth rates of labour productivity and real wage per worker, wage share in NVA declined for the 2-digit industry as well as NIC 232 and NIC 231. Wage share for Coke, Refined Petroleum Products and Nuclear Fuel (23) declined by 6.4% per annum and reached 3% by 2010-11 [Table 37, Figure 13]. Within-industry changes were responsible for 101.6% of this decline and NIC 232's wage share decline alone contributed 74% to the total decline. However, share effects played an insignificant role.

This wage share decline in NIC 23 was accompanied by an interest share fall of 6% per annum and within-industry changes contributed 92% to this fall. The

interest share decline in NIC 232 was alone responsible for 92% of the total interest share decline in NIC 23. Between-industry changes were inconsequential in this case as well. However, this interest share decline across the 3-digit industries was accompanied by a rise in the interest rate in NIC 232 (by 6.1 percentage points) and a fall in the interest rate in NIC 231. On the other hand, NIC 232 witnessed a decline in its interest burden, while NIC 231 experienced a slight rise [Table 38].

Table 38: Labour Productivity and Real Wage Per Worker Growth Rates, Interest Rate and Interest Burden in Coke, Refined Petroleum Products and Nuclear Fuel, 2001-2011

NIC-98 Code and Description	Annual Growth Rate of Labour Productivity	Annual Growth Rate of Wage Per Worker	Average Annual Growth Rate of Labour Productivity	Average Annual Growth Rate of Wage Per Worker	Average Interest Rate	Absolute Change in Interest Rate	Interest Burden	Absolute Change in Interest Burden
232	12.2	-1.2	13.6	0.3	12.8	6.1	0.4	-0.7
Rest of 23	-3.3	-0.3	166.9	0.8	15.7	-7.3	2	0.1
23	15.4	-0.4	14.7	0.1	12.8	5.8	0.5	-0.7

As a result, profit share in NVA rose at the 2-digit level as well as in both the 3-digit industries. In case of NIC 23, profit share rose by 26.8 percentage points, at 4.1% per annum (absolute level of 86.5% in 2010-11). 101% of this growth was due to within-industry changes and NIC 232's profit share rise contributed 82% to the increase in NIC 23's profit share. Also, share effects were inconsequential at both the aggregate as well as the sub-sectoral level.

In this sub-section, we analysed the changes in labour productivity, real wage per worker and factor shares in NVA in the Basic Metals (27), Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products and Nuclear Fuel (23) industries during the second post-reform phase and found out which 3-digit industries contributed the most to these observed changes.

While Basic Iron and Steel (271) contributed more than 65% to the average NVA and employment of NIC 27 during 2001-2011, it was the remaining 3-digit industries that contributed the most to the labour productivity growth in NIC 27. However, the (weighted) decline in NIC 271's real wage per worker, wage share in NVA and interest share in NVA as well as the phenomenal increase in its profit share

in NVA was (almost) solely responsible for the changes observed in NIC 27's real wage per worker, wage share, interest share and profit share in NVA.

Refined Petroleum Products (232) was the 3-digit industry that contributed the most to the average NVA and employment of the Coke, Refined Petroleum Products and Nuclear Fuel (23) industry during 2001-2011. NIC 232 was also the top contributor to NIC 23's labour productivity growth, the decline in real wage per worker, wage share and interest share, as well as the spectacular increase in profit share in NVA and was almost solely responsible for these changes.

However, in case of the Chemicals and Chemical Products (24) industry, both Basic Chemicals (241) and Other Chemical Products (242) played an important role. The (weighted) increase in NIC 242's labour productivity and the (weighted) decline in its real wage per worker as well as a decline in its interest share was significantly responsible for the labour productivity growth, real wage per worker decline and interest share decline in NIC 24. On the other hand, an increase in NIC 241's real wage per worker and a (weighted) decline in its wage share in NVA prevented a further decline in NIC 24's real wage per worker and yet somehow also significantly contributed to the wage share decline in NIC 24. However, the (weighted) increase in NIC 241's as well as NIC 242's profit share contributed equally to the huge growth in NIC 24's profit share.

Chapter 4: Rising Profit Margins and Profit Share in NVA in the Registered Manufacturing Sector

There is a close and positive relationship between the trends observed in the registered manufacturing sector's Profit Share in Net Value Added and that of its Profits to Sales ratio (using Value of Gross Output as a proxy for Sales) during the period 1981-82 to 2010-2011. This correspondence plays an extremely important role during the two post-reform periods (1992-1998 and 2001-2011) where a sharp rise in the organised manufacturing sector's profit to sales ratio (or the profit margin) significantly contributes to an increase in its profit share in NVA. It is important to note that this increase in the capitalist's ability to retain a higher percentage of sales as profit (i.e. a rise in the profit margin) is indicative of a rise in the degree of monopoly[14] or the level of imperfect competition and oligopolistic behaviour in the manufacturing sector. In this chapter, we analyse whether the 2-digit industries that were primarily responsible for the rise in the manufacturing sector's profit share in NVA during the two post-reform periods (1992-1998 and 2001-2011) were also significantly responsible for the increase in the manufacturing sector's profit margin. We also analyse the role played by a changing structural composition of sales (or value of gross output in our case) in raising the profit margin in the manufacturing sector. After conducting this analysis, we perform a similar study to examine the correspondence (if any) between the 3-digit industries that played a vital role in raising their respective 2-digit industry's profit share in NVA in the two post-reform periods (1992-1998 and 2001-2011) and the 3-digit industries that contributed the most to the increase in the profit margin of their respective 2-digit industry.

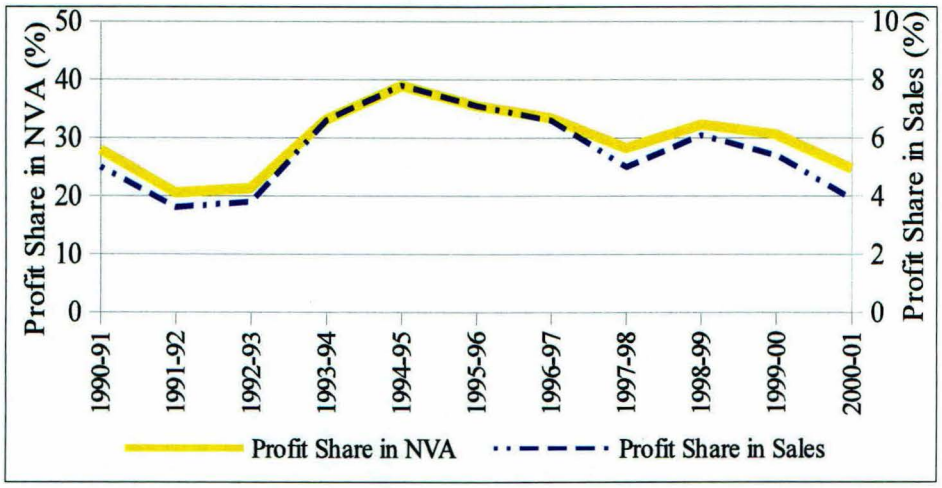
[14] When we use the term 'degree of monopoly', we are simply referring to the level of imperfect competition and oligopolistic behaviour in an industry, and not specifically to Kalecki's(1938) definition or calculation of degree of monopoly.

4.1. The Relationship between a Rise in the Profit Share and the Profit Margin in the Post-Liberalisation Era

4.1.1. First Post-Reform Period (1992-1998)

The organised manufacturing sector's profit share in NVA declined by 3.3 percentage points between 1990-91 and 2000-01 [Figure 14]. However, this observed decline was not representative of the changes in the profit share in NVA during the first pre-reform phase. If we consider the 6-year period from 1992-93 to 1997-98, the profit share in NVA rose by 6.9 percentage points at an annual rate of 5.4%. This increase in profit share was associated with an annual increase of 5.3% in the manufacturing sector's profit margin (calculated as profit divided by the value of gross output, in percentage terms).

Figure 14: Profit Margin and Profit Share in NVA in Registered Manufacturing, 1991-2001



In order to analyse the existence of a correspondence between the sources behind the rise in the manufacturing sector's profit share in NVA and the sources behind the increase in its profit margin during the period 1992-1998, we briefly summarise our main findings (regarding the manufacturing sector's profit share increase) from Chapter 2. Within-subsector changes contributed 112.4% to the rise in the manufacturing sector's profit share, and at the sub-sectoral level, seven out of the eight 2-digit industries (that were chosen using 2004-08 as the reference period) as well as the rest of the manufacturing sector (as a group) witnessed a rise in their respective profit shares.

Table 39: Sources of Increase in Profit Share in NVA and Profit Margin in the Registered Manufacturing Sector, 1992-1998

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest	Manufacturing (Total)
Profit Share in NVA										
Growth Effect (GE)	1.0	0.3	-1.7	1.6	0.1	3.2	0.5	0.6	0.5	6.1
Share Effect (SE)	0.2	0.1	-1.4	-0.01	-0.01	0.8	-0.2	0.2	-0.4	-0.7
Subsectoral Total (ST)	1.2	0.4	-3.1	1.5	0.1	4.1	0.3	0.8	0.1	**5.4***
GE as % of TE	19.1	6.1	-31.6	28.7	1.7	59.6	9.1	11.2	8.5	112.4
SE as % of TE	3.7	1.1	-25.8	-0.2	-0.2	15.5	-3.8	4.2	-7.0	-12.4
ST as % of TE	22.8	7.2	-57.4	28.5	1.5	75.1	5.4	15.4	1.5	100
Profit Share in Sales (or Profit Margin)										
Growth Effect (GE)	1.27	0.42	-2.99	1.09	0.14	4.23	0.47	0.57	0.03	5.22
Share Effect (SE)	-0.04	-0.03	-0.11	0.43	-0.07	-0.19	-0.18	0.26	0.03	0.10
Subsectoral Total (ST)	1.22	0.39	-3.10	1.52	0.08	4.04	0.28	0.83	0.06	**5.32***
GE % of TE	23.8	7.9	-56.2	20.5	2.7	79.5	8.8	10.7	0.5	98.2
SE % of TE	-0.8	-0.5	-2.1	8.0	-1.2	-3.6	-3.4	4.9	0.6	1.8
ST as % of TE	23.0	7.4	-58.3	28.5	1.4	75.9	5.3	15.5	1.1	100.0

Note: Rows and columns may not sum up exactly due to rounding off. Rest refers to the remaining 2-digit industries.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin in the manufacturing sector.

According to our decomposition analysis [Table 39], a rise in the profit shares in Basic Metals (27) and Chemicals and Chemical Products (24) (weighted by an average of their respective NVA shares in 1992-93 and 1997-98) together contributed 88.3% to the increase in the manufacturing sector's profit share in NVA. On the other hand, between-subsector changes ("share effect") contributed a negative 12.4% i.e. a shift in the sub-sectoral composition of NVA prevented a further increase in the manufacturing sector's profit share in NVA by 12.4%. However, even with this negative share effect, at the sub-sectoral level, Basic Metals (27) and Chemicals and Chemical Products (24) still continued to be the top 2 contributors (in terms of total sub-sectoral contributions) to the increase in the manufacturing sector's profit share.

This rise in the manufacturing sector's profit share was associated with a 5.3% per annum increase in the profit margin[15] (1.2 percentage points in absolute terms).

[15] It is important to note that if we instead choose the period from 1993-94 to 1997-98, the manufacturing sector's profit margin increases by 2.8 percentage points (at 14.9% per annum). However, during 1993-1998, a (weighted) rise in the profit margins in the Chemicals and Chemical Products (24) and Basic Metals (27) industries contributes 21.8% and 20.7% to the increase in the

98.2% of this growth was due to within-subsector changes and similar to the profit share scenario, 7 out of the 8 chosen 2-digit industries (selected with 2004-08 as the reference period) as well as the remaining registered manufacturing sector (as a group) experienced an increase in their respective profit margins. At the sub-sectoral level, a rise in the profit margin in the Basic Metals (27) industry (weighted by an average of its gross output share in 1992-93 and 1997-98) contributed 79.5% to the increase in the manufacturing sector's profit margin. While in terms of growth effects, Basic Metals (27) and Food Products and Beverages (15) were the top 2 industries, the Chemicals and Chemical Products (24) industry also played an important role and a rise in its profit margin contributed 20.5% to the manufacturing sector's profit margin increase [Table 39]. Also, in terms of total sub-sectoral contributions (i.e. the sum of a changing profit margin and a changing output share), similar to the profit share scenario, Basic Metals and Chemicals and Chemical Products were the top two 2-digit industries and together were responsible for 104.5% of the growth in the manufacturing sector's profit margin.

4.1.2. Second Post-Reform Phase (2001-2011)

The second post-reform phase was a period of high GDP growth not only for the Indian economy but also the registered manufacturing sector. The organised manufacturing sector witnessed an average (nominal) GDP growth of 16%[16] during this phase and this growth was much more stable when compared to the first pre-reform period (1991-2001).

During this phase, the registered manufacturing sector's profit share in NVA grew at an annual rate of 11.3% and reached 55.4% by 2010-11 [Figure 15]. It is interesting to note that if we instead consider the period from 2000-01 to 2007-08 (before the global economic crisis dampened the high demand and GDP growth in the Indian economy) we observe an annual rate of increase of 19% in the manufacturing sector's profit share in NVA. This phenomenal increase in the manufacturing sector's

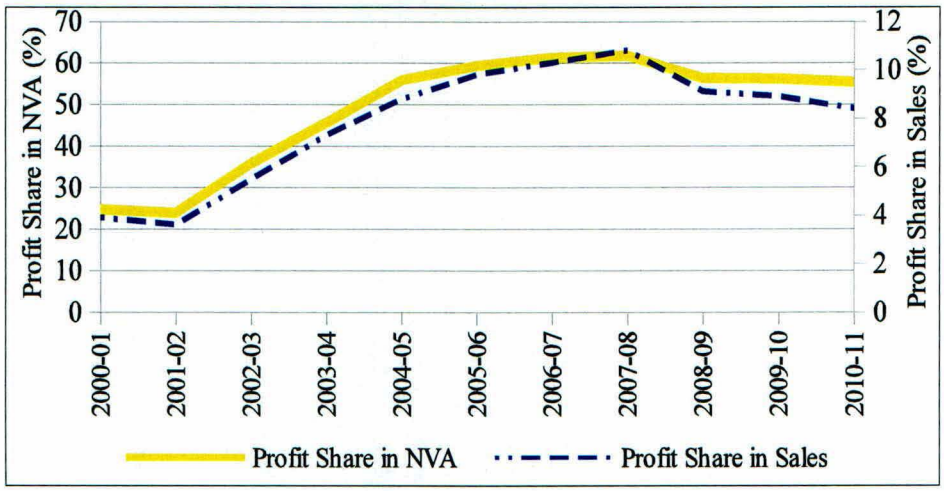
manufacturing sector's profit margin (while Food Products and Beverages growth effect is 14.7%). NIC 24 and NIC 27 are the top 2 contributors in terms of both growth effects and total sub-sectoral contributions (sub-sectoral growth effect plus sub-sectoral share effect). Therefore, in both the periods (1992-1998 and 1993-1998), according to our point-to-point analysis, while the exact contributions of these two 2-digit industries may vary, they remain the top 2 contributors and together contribute at least 40% to the growth in the manufacturing sector's profit margin.

[16] If we instead consider the period from 2002-2011, the manufacturing sector's average GDP growth rate was to the tune of 18%.

profit share in NVA was associated with an even more spectacular rise in the profit margin. Between 2000-01 and 2007-08, the manufacturing sector's profit margin grew by 22.3% per annum and reached 10.8% by 2007-08.

This huge increase in the manufacturing sector's profit share in NVA and its profit margin during 2000-2008 clearly illustrates an increase in the capitalists' ability to retain higher profits as a percentage of sales during a period of high growth (and in effect, high demand) leading to an increase in the degree of monopoly in the manufacturing sector.

Figure 15: Profit Margin and Profit Share in NVA in Registered Manufacturing, 2001-2011



For the purpose of comparison and continuity (with the previous chapters), we will analyse the changes in the period 2001-2011. As we learnt in Chapter 2, 95% of the 30.6 percentage points increase in the manufacturing sector's profit share in NVA was due to within-subsector changes (or the Growth Effect). At the sub-sectoral level, a rise in the profit shares of Basic Metals (27), Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products (23)[17] (weighted by an average of their respective NVA shares in 2000-01 and 2010-11) together contributed 40% to the increase in the manufacturing sector's profit share.

On the other hand, a shift in the sub-sectoral contribution of NVA in favour of NIC 23 and NIC 27 and against NIC 24 led to a change in the total sub-sectoral contributions as well as the rankings of these 2-digit industries in influencing the manufacturing sector's profit share increase. In terms of total sub-sectoral

[17] We explained our decision to discount the contribution of an increase in the textiles industry's profit share to the manufacturing sector's profit share growth.

contributions (sub-sectoral growth effect plus sub-sectoral share effect), Coke, Refined Petroleum Products and Nuclear Fuel (23) and Basic Metals (27) were the top 2 contributors and were together responsible for 45% of the aggregate increase in the manufacturing sector's profit share in NVA [Table 40 and Chapter 2].

Table 40: Sources of Increase in Profit Share in NVA and Profit Margin in the Registered Manufacturing Sector, 2001-2011

Manufacturing Sub-sector	15	17	23	24	26	27	29	34	Rest	Manufacturing (Total)
Profit Share in NVA										
Growth Effect (GE)	0.8	1.1	0.8	1.4	0.5	2.3	0.8	0.8	2.3	10.7
Share Effect (SE)	-0.3	-0.1	1.8	-1.3	-0.1	0.2	0.1	0.2	0.2	0.6
Subsectoral Total (ST)	0.5	0.9	2.6	0.1	0.4	2.5	0.9	0.9	2.4	11.3*
GE as % of TE	7.0	9.7	7.2	12.3	4.3	20.1	7.2	6.7	20.4	95.0
SE as % of TE	-3.0	-1.3	15.6	-11.5	-0.5	2.1	0.9	1.3	1.4	5.0
ST as % of TE	4.0	8.4	22.8	0.8	3.8	22.2	8.1	8.1	21.7	100
Profit Share in Sales (or Profit Margin)										
Growth Effect (GE)	0.65	1.08	1.28	1.57	0.47	2.15	0.72	0.74	2.29	10.94
Share Effect (SE)	-0.24	-0.16	1.17	-1.58	-0.07	0.28	0.15	0.14	-0.02	-0.32
Subsectoral Total (ST)	0.41	0.92	2.45	-0.01	0.40	2.43	0.86	0.88	2.27	10.63*
GE % of TE	6.1	10.2	12.0	14.8	4.4	20.2	6.7	7.0	21.5	103.0
SE % of TE	-2.2	-1.5	11.0	-14.9	-0.7	2.7	1.4	1.3	-0.1	-3.0
ST as % of TE	3.9	8.7	23.1	-0.1	3.7	22.9	8.1	8.3	21.4	100.0

Note: Rows and columns may not sum up exactly due to rounding off. *This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin in the manufacturing sector. Rest refers to the remaining 2-digit industries.

This rise in the profit share in NVA was associated with a corresponding increase in the profit margins in the manufacturing sector as well in each of the 2-digit industries. Within-subsector changes contributed 103% to the 10.6% per annum increase in the manufacturing sector's profit margin. A (weighted) rise in the profit margins of NIC 27, 24 and 23 together contributed 47% to the growth in the manufacturing sector's profit margin.

The share effect did not play a significant role in totality. However, similar to the profit share scenario, a shift in the sub-sectoral composition of gross output in favour of Coke, Refined Petroleum Products and Nuclear Fuel (23) and Basic Metals (27) and against Chemicals and Chemical Products (24) significantly influenced the

increase in the manufacturing sector's profit margin. In effect, in terms of total sub-sectoral contributions, Coke, Refined Petroleum Products and Nuclear Fuel (23) and Basic Metals (27) were responsible for raising the manufacturing sector's profit margin by 46%. As is evident, these two 2-digit industries were also the ones that were primarily responsible for the profit share increase in the manufacturing sector [Table 40].

This perfect match between the 2-digit industries (in terms of both growth effect and total sub-sectoral contributions) that played the most important role in raising the manufacturing sector's profit share and the 2-digit industries that were primarily responsible for raising its profit margin during both the post-liberalisation periods signals an increase in the degree of monopoly in these 2-digit industries in the post-reform era.

In the next section, we conduct a similar analysis for the 2-digit industries that were primarily responsible (in terms of their combined growth effect contributions amounting to at least 40%) for raising the manufacturing sector's profit share in NVA and profit margin. For the period 1992-1998, we choose Basic Metals (27) and Chemicals and Chemical Products (24) and for 2001-2011, we select Basic Metals (27), Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products and Nuclear Fuel (23).

4.2. The Relationship between a Rise in the Profit Share and the Profit Margin in the Post-Liberalisation Era: At the 2-Digit Level

4.2.1. First Post-Reform Period (1992-1998)

In this sub-section, we examine whether the 3-digit industries that were primarily responsible for the increase in the profit shares in the Basic Metals and Chemicals and Chemical Products industries (the top 2 contributors to the rise in the manufacturing sector's profit share in NVA and the rise in profit margin) during the period 1992-1998 also significantly accounted for the corresponding rise in the profit margins in these two 2-digit industries.

4.2.1.1. Basic Metals (27)

As presented in Chapter 3, the profit share in the Basic Metals industry rose at an annual rate of 71%[18] between 1992-93 and 1997-98 and within-industry changes were responsible for 101.6% of this increase. The (weighted) rise in the Basic Iron and Steel (271) industry's profit share in NVA contributed 103% to the total rise in NIC 27's profit share. This increase in NIC 271's profit share was accompanied by an increase in its NVA share and therefore, in terms of total sub-sectoral contribution (sub-sectoral growth effect plus sub-sectoral share effect), NIC 271 was responsible for 109% of the total increase in the Basic Metals industry's profit share. On the other hand, the remaining 3-digit industries (as a group) experienced a decline in their profit share as well as a decline in their NVA share and therefore, in terms of total sub-sectoral contribution, prevented a further rise in NIC 27's profit share by 9%. As is evident, this contribution was almost insignificant in comparison to NIC 27's total sub-sectoral contribution.

The phenomenal increase in NIC 27's profit share was accompanied by a rise in its profit margin at 118% per annum[19]. According to our point-to-point decomposition analysis, all of this 4.7 percentage points increase was due to within-

[18] If we consider the period 1993-98, this annual rate of increase becomes 19.3%. Even in this case, growth effect is the main source (99.6%) behind the profit share rise and NIC 271's profit share increase is responsible for 100% of the total rise. Share effects are inconsequential both at the aggregate and the sub-sectoral level [Chapter 2].

[19] However, for the period 1993-1998, the annual increase in profit margin was 28.3%. Even this case, within-industry changes were responsible for the rise in NIC 27's profit margin (100.1% contribution) and the rise in the profit margin of NIC 271 contributed 99% to the total increase in NIC 27's profit margin. Share effects were inconsequential.

industry changes and a rise in the profit margin in the Basic Iron and Steel (271) industry contributed 100.5% to the increase in NIC 27's profit margin. Though insignificant in terms of the contribution to NIC 27, the remaining 3-digit industries (as a group) witnessed a fall in their profit margin between 1992-93 and 1997-98. On the other hand, share effects or between-industry changes were insignificant [Table 41 and Chapter 3]. As apparent, NIC 271 was the sole contributor to the rise in the Basic Metals industry's profit share as well as profit margin.

Table 41: Sources of Change in Profit Share in NVA and Profit Share in Sales in Basic Metals, 1992-1998

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Subsectoral Total (ST)	ST as a Percentage of Total Effect
	Profit Share in NVA					
271	73.44	103.1	4.07	5.7	77.5	108.8
Rest of 27	-1.02	-1.4	-5.23	-7.3	-6.25	-8.8
27 (Total)	72.42	101.6	-1.16	-1.6	71.25*	100
	Profit Share in Sales					
271	118.47	100.5	0.55	0.5	119.01	100.92
Rest of 27	-0.54	-0.5	-0.55	-0.5	-1.09	-0.92
27 (Total)	117.93	100.0	0.00	0.0	117.93*	100.0

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin of NIC 27.

4.2.1.2. Chemicals and Chemical Products (24)

The Chemicals and Chemical Products industry witnessed an annual increase of 6.1% in its profit share over the period 1992-98, and by 1997-98, its profit share rose to 40%. However, it is remarkable that during the period 1993-97, NIC 24's profit share averaged 46% and in 1995-96, its profit share peaked to 51% [Figure 16].

As noted in Chapter 3, 98.4% of this increase in NIC 24's profit share between 1992-93 and 1997-98 was due to within-industry changes and a (weighted) rise in the profit share of Manufacture of Other Chemical Products (242) was responsible for 72.4% of the total increase in NIC 24's profit share. All the 3-digit industries (in NIC 24) witnessed a rise in their respective profit shares during this period.

Also, a shift in the sub-sectoral composition of NVA in favour of NIC 242

contributed 11.1% to the rise in NIC 24's profit share. Therefore, in terms of total sub-sectoral contribution (sub-sectoral growth effect plus sub-sectoral share effect) NIC 242 contributed 83.5% to NIC 24's profit share increase.

Figure 16: Profit Share in NVA and Profit Margin in Chemicals and Chemical Products, 1992-98

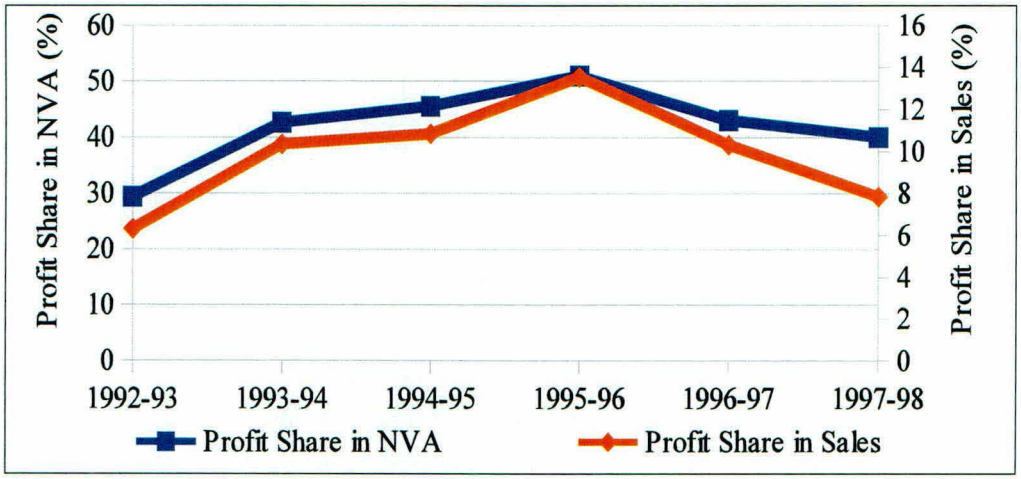


Table 42: Sources of Change in Profit Share in NVA and Profit Share in Sales in Chemicals and Chemical Products, 1992-1998

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Subsectoral Total (ST)	ST as a Percentage of Total Effect
	Profit Share in NVA					
241	1.13	18.6	-0.20	-3.2	0.93	15.4
242	4.39	72.4	0.68	11.1	5.07	83.5
Rest of 24	0.45	7.4	-0.38	-6.3	0.07	1.1
24 (Total)	5.97	98.4	0.10	1.6	6.07*	100
	Profit Share in Sales					
241	0.25	6.1	0.27	6.5	0.51	12.59
242	4.00	97.9	-0.22	-5.4	3.78	92.59
Rest of 24	0.85	20.9	-1.06	-26.1	-0.21	-5.18
24 (Total)	5.10	124.88	-1.02	-24.88	4.08*	100.00

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin in NIC 24.

This rise in NIC 24's profit share was related to an increase in its profit margin. During 1992-1998, the profit margin in Chemicals and Chemical Products increased at 4.1% per annum and by 1997-98 and reached 7.8%. However, similar to the trends in profit share, the profit margin also peaked in 1995-96 and reached 13.5%. As evident in Figure 16, during the period between 1993-94 and 1996-97 (also a high growth period in the Indian economy), NIC 24's profit margin was above 10%.

During 1992-1998, within-industry changes contributed 125% to the hike in NIC 24's profit margin. At the sub-sectoral level, all the 3-digit industries witnessed a rise in their respective profit margins and an increase in NIC 242's profit margin (weighted by an average of its output share in NIC 24 in 1992-93 and in 1997-98) was a major contributor and was responsible for raising NIC 24's profit margin by 98% [Table 42].

On the other hand, a change in the sub-sectoral composition of gross output (our proxy for sales) against NIC 242 and NIC 243 (or Rest of NIC 24) and in favour of NIC 241 negatively contributed to the profit margin increase in NIC 24. In other words, between-industry changes contributed 25% to prevent a further rise in NIC 24's profit margin. In terms of total sub-sectoral contribution (sub-sectoral growth effect plus sub-sectoral share effect), NIC 242 was the primary contributor and was responsible for raising NIC 24's profit margin by 93%.

As noted in Section 4.1, during the 6-year period from 1992-93 to 1997-98 in the first post-reform phase (1991-2001), Basic Metals (27) and Chemicals and Chemical Products (24) were primarily responsible for raising the manufacturing sector's profit share and profit margin. Similarly, at the 3-digit level, Basic Iron and Steel (271) and Other Chemical Products (241) were almost entirely responsible (both in terms of growth effect as well as total sub-sectoral contribution) for the increase in NIC 27 and NIC 24's profit share as well as profit margin. Therefore, a rise in the degree of monopoly in NIC 24 and NIC 27 was a result of an increase in the degree of monopoly in NIC 241 and NIC 271.

4.2.2. Second Post-Reform Phase (2001-2011)

As mentioned before, the second post-reform phase (2001-2011) was one of consistently high GDP growth in the Indian economy as well as the registered manufacturing sector. This high growth was also accompanied by a rise in the manufacturing sector's profit share in NVA and profit margin. A rise in the profit share and profit margin in Basic Metals (27), Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products and Nuclear Fuel (23) contributed at least 40% each to the rise in the manufacturing sector's profit share and profit margin. In this sub-section, we analyse whether the 3-digit industries that were significantly responsible for a rise in the profit share in their respective 2-digit industries were also primarily responsible for the increase in the profit margin in their 2-digit industries.

4.2.2.1. Basic Metals (27)

As noted in Chapter 3, we analyse the period 2002-03 to 2010-2011 in this particular case in order to better represent the changes in profit share in NVA in the Basic Metals industry.

During 2002-2011, NIC 27's profit share in NVA increased at 16.9% per annum and reached 50.4% by 2010-11. Within-industry changes were responsible for 100.2% of this increase. At the sub-sectoral level, all the 3-digit industries experienced an increase in their respective profit shares and a (weighted) rise in the profit share of NIC 271 contributed 92% to the profit share growth in NIC 27. On the other hand, share effects were inconsequential in totality as well as at the sub-sectoral level [Table 43].

This impressive increase in profit share was associated with a corresponding rise in profit margin in NIC 27 as well as its 3-digit industries. During 2002-2011, the profit margin rose at an annual rate of 12.4% and by 2010-11, it reached 6.5%. However, it is also important to note that NIC 24's profit margin averaged 12.7% during 2004-2008 [Figure 17].

Within-industry changes contributed 96.4% to the profit margin increase between 2002-03 and 2010-11, and a rise in the profit margin of NIC 271 was responsible for raising NIC 27's profit margin by 105%. However, unlike the profit share scenario, the remaining 3-digit industries (as a group) witnessed a fall in their profit margin and contributed 8.2% to prevent a further increase in NIC 27's profit

margin. Share Effect, while positive, was almost insignificant and as a result, NIC 271's total sub-sectoral contribution to NIC 27's profit margin growth was 99.6% [Table 43].

Figure 17: Profit Share in NVA and Profit Margin in Basic Metals, 2002-2011

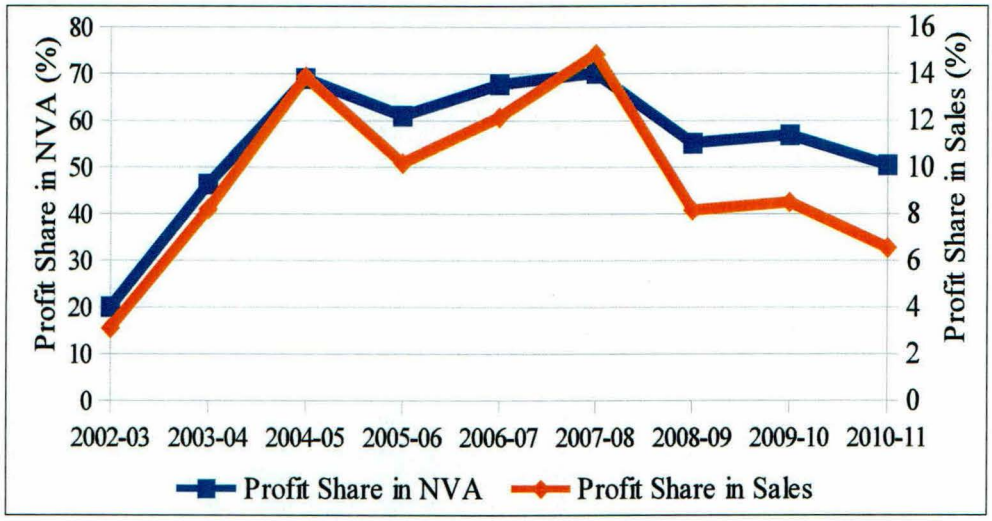


Table 43: Sources of Change in Profit Share in NVA and Profit Share in Sales in Basic Metals, 2002-2011

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Subsectoral Total (ST)	ST as a Percentage of Total Effect
	Profit Share in NVA					
271	15.6	92.1	0.08	0.5	15.68	92.6
Rest of 27	1.37	8.1	-0.13	-0.7	1.25	7.4
27 (Total)	16.97	100.2	-0.04	-0.2	16.93*	100
	Profit Share in Sales					
271	12.94	104.7	-0.62	-5.0	12.32	99.65
Rest of 27	-1.02	-8.2	1.06	8.6	0.04	0.35
27 (Total)	11.92	96.4	0.44	3.6	12.36*	100.0

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin in NIC 27.

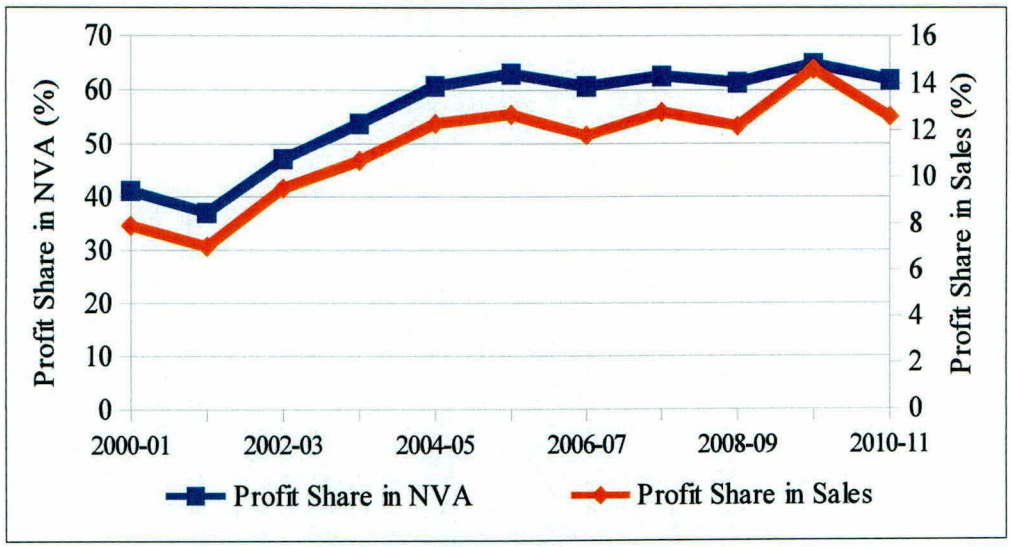
4.2.2.2. Chemicals and Chemical Products (24)

Figure 18 presents the trends in profit share in NVA and profit margin in the Chemicals and Chemical Products (24) industry during 2001-2011.

During the second post-liberalisation phase, the profit share in NVA in the NIC 24 industry grew at 4.6% per annum and reached 62% by 2010-11. Within-industry changes contributed 94% to this increase and all the 3-digit industries experienced a rise in their respective profit shares. Profit shares increases in Basic Chemicals (241) and Other Chemical Products (242) contributed 45% each to the total rise in NIC 24's profit share.

While the total Share Effect did not play a major role in increasing NIC 24's profit share, a shift in the sub-sectoral composition of NVA in favour of Other Chemical Products (242) and against Basic Chemicals (241) significantly influenced the total sub-sectoral contributions of these two 3-digit industries. As a result, NIC 241's total sub-sectoral contribution declined to 7.5%, while NIC 242 contributed 98.3% (sub-sectoral growth effect plus sub-sectoral share effect) to NIC 24's profit share increase [Table 44].

Figure 18: Profit Share in NVA and Profit Margin in Chemicals and Chemical Products, 2001-2011



This increase in profit share was associated with a rise in the profit margin of NIC 24, NIC 241 and NIC 242. NIC 24's profit margin rose by 5.4% per annum during 2001-2011 and was 12.6% in 2010-11. Growth Effect was responsible for 84.6% of this increase. However, unlike the almost similar contributions of NIC 241

and NIC 242's rising profit shares to NIC 24's profit share increase, in this case, NIC 242's rise in profit margin contributed 54.4% to NIC 24's profit margin increase and as a result, NIC 24 was the top contributor in terms of growth effects.

On the other hand, between-industry changes contributed 15.4% to the profit margin increase in NIC 24 and a shift in the sub-sectoral composition of gross output (our proxy for sales) in favour of Other Chemical Products (242) contributed 39.3% to the total rise in NIC 24's profit margin. Therefore, in terms of total sub-sectoral contribution, similar to the profit share scenario, NIC 242 was primarily responsible for the increase in Chemicals and Chemical Products profit margin and contributed 94% to it [Table 44].

Table 44: Sources of Change in Profit Share in NVA and Profit Share in Sales in Chemicals and Chemical Products, 2001-2011

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Subsectoral Total (ST)	ST as a Percentage of Total Effect
	Profit Share in NVA					
241	2.07	45.1	-1.73	-37.6	0.35	7.5
242	2.07	45.0	2.45	53.4	4.52	98.3
Rest of 24	0.18	4.0	-0.45	-9.8	-0.27	-5.8
24 (Total)	4.32	94.0	0.28	6.0	4.60*	100
	Profit Share in Sales					
241	1.66	30.7	-1.07	-19.9	0.58	10.81
242	2.94	54.4	2.12	39.3	5.06	93.71
Rest of 24	-0.03	-0.6	-0.21	-4.0	-0.24	-4.52
24 (Total)	4.57	84.6	0.83	15.4	5.40*	100.00

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin in NIC 24.

4.2.2.3. Coke, Refined Petroleum Products and Nuclear Fuel (23)

During the second post-reform phase (2001-2011), profit share in NVA in Coke, Refined Petroleum Products and Nuclear Fuel (23) increased at 4.1% per annum and was 86.5% in 2010-11. However, it is remarkable that during the period from 2004-05 to 2007-08, NIC 23's profit share averaged 92% [Figure 19].

Figure 19: Profit Share in NVA and Profit Margin in Coke, Refined Petroleum Products and Nuclear Fuel, 2001-2011

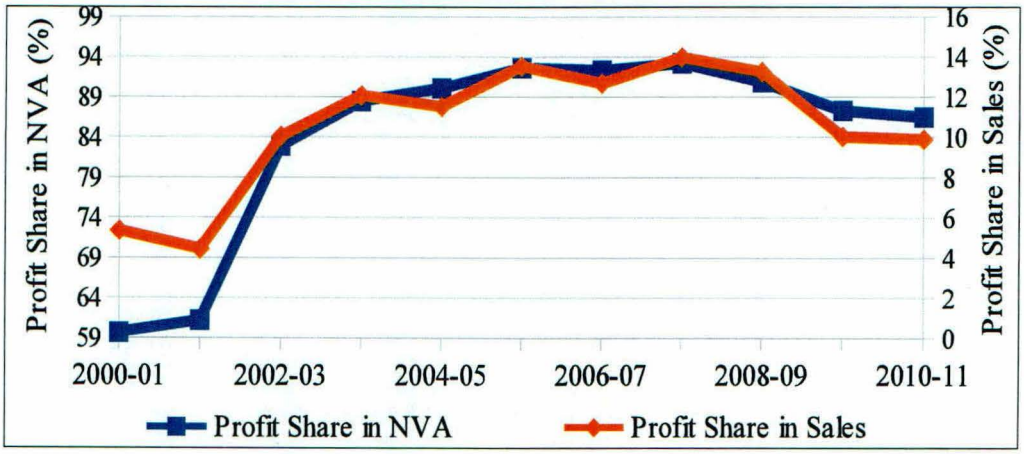


Table 45: Sources of Change in Profit Share in NVA and Profit Share in Sales in Coke, Refined Petroleum Products and Nuclear Fuel, 2001-2011

NIC-98 Code	Growth Effect (GE)	GE as a Percentage of Total Effect	Share Effect (SE)	SE as a Percentage of Total Effect	Subsectoral Total (ST)	ST as a Percentage of Total Effect
	Profit Share in NVA					
232	3.36	82.3	-0.03	-0.8	3.33	81.5
Rest of 23	0.77	18.8	-0.01	-0.3	0.76	18.5
23 (Total)	4.13	101.1	-0.04	-1.1	4.09*	100
	Profit Share in Sales					
232	6.58	85.0	0.33	4.3	6.92	89.24
Rest of 23	0.89	11.5	-0.06	-0.7	0.83	10.76
23 (Total)	7.47	96.4	0.28	3.6	7.75*	100.00

Note: Rows and columns may not sum up exactly due to rounding off.
*This is the Total Effect (TE) and it equals the annual percentage change in the profit share in NVA or the profit margin in NIC 23.

Within-industry changes contributed 101% to the 26.8 percentage points increase in NIC 23's profit share during 2001-2011. At the sub-sectoral level, all its 3-digit industries experienced a rise in their profit shares and an increase in Refined

Petroleum Products (232) profit share contributed 82.3% to NIC 23's total profit share increase. Share effects were inconsequential and as a result, NIC 232 was the primary contributor to NIC 23's profit share increase.

This spectacular increase in profit share was associated with a rise in the profit margins in NIC 23 as well as all its 3-digit industries. During 2001-2011, NIC 23's profit margin increased at 7.8% per annum and reached 9.9% in 2010-11. Within-industry changes were responsible for 96.4% of this increase in profit margin and a rise in NIC 232's profit margin (weighted by an average of its output share in NIC 23 in 2000-01 and 2010-11) contributed 85% to the rise in NIC 23's profit margin. Share effect, while positive, did not play a major role in this case. Therefore, in terms of total sub-sectoral contribution, NIC 232 was primarily responsible for the increase in NIC 23 profit margin.

During the second post-reform phase, Basic Metals (27), Chemicals and Chemical Products (24) and Coke, Refined Petroleum Products and Nuclear Fuel (23) were the top three 2-digit industries (in terms of growth effects) responsible for the spectacular rise in the manufacturing sector's profit share as well as profit margin. In this sub-section, we explored whether a similar correspondence exists between the 3-digit industries that were primarily responsible for a rise in their respective 2-digit industry's profit share and the 3-digit industries that contributed the most to a rise in their respective 2-digit industry's profit margin.

In terms of growth effect contributions, we observed that Basic Iron and Steel (271) and Refined Petroleum Products (232) were the 3-digit industries that were primarily responsible for an increase in their 2-digit industry's profit share as well as profit margin. However, again in terms of growth effect contributions, in case of NIC 24, while both Basic Chemicals (241) and Other Chemical Products (242) were almost equally responsible for increasing NIC 24's profit share, Other Chemical Products (242) was the primary contributor to NIC 24's profit margin increase. Needless to say, a rise in the profit margins of NIC 271, 232, 241 and 242 is symptomatic of a rise in the degree of monopoly in these industries.

However, if we consider the total sub-sectoral contributions (sub-sectoral growth effect plus sub-sectoral share effect), NIC 271, NIC 242 and NIC 232 were the primary contributors to their 2-digit industry's profit share as well as profit margin increase.

Chapter 5: Conclusion

This dissertation analyses trends in labour productivity, real wage per worker and wage, interest and profit shares in NVA in the registered manufacturing sector during the immediate pre-reform phase (1981-1991) and the two post-reform phases (1991-2001 and 2001-2011). It also examines the relationship between the registered manufacturing sector's rising profit share in NVA and the corresponding increase in its profit to sales ratio (or the profit margin) during the post-liberalisation era (1991-2011).

We studied whether the changes observed in these variables were a generalised phenomenon for the registered manufacturing sector or whether these trends were a result of corresponding changes in only a small set of 2-digit industries. We then conducted a similar exploration for the 2-digit industries that were found to be primarily responsible for the changes observed in the registered manufacturing sector's wage share in NVA or profit share in NVA and its profit margin.

As evident from Chapter 2, there were significant differences in the relationship between labour productivity and real wage per worker growth rates during the pre-reform phase and the two post-reform phases. During the immediate pre-reform phase from 1981-82 to 1990-91, both labour productivity and real wage per worker grew by a substantial degree in the registered manufacturing sector. This growth in both labour productivity and real wage per worker was also observed across all 2-digit industries (or the 8 selected 2-digit industries (selected on the basis of their relative contributions to the registered manufacturing sector's average NVA and profits for the reference period 2004-08) as well as the remaining registered manufacturing sector as a group) during the pre-reform phase. It is important to note that this trend of labour productivity growth being accompanied by a rise in the real wage per worker during the pre-reform phase was also true for all the 3-digit industries (selected on the basis of their relative contribution to their respective 2-digit industry's average NVA and profits for 2004-08, as well as the remaining 3-digit industries as a group) in the 2-digit industries of Textiles (NIC-17), Basic Metals (NIC-27) and Other Non-Metallic Mineral Products (NIC-26)[20].

[20] These industries were chosen for further exploration based on their contributions to the wage share decline in the registered manufacturing sector.

On the other hand, while labour productivity continued to grow quite significantly during both the post-liberalisation phases (1991-2001 and 2001-2011), it was a case of near stagnancy for the registered manufacturing sector's real wage per worker. Remarkably, the absolute values of the registered manufacturing sector's real wage per worker during the years from 1994-95 to 1997-98 were greater than during any of the 13 years from 1998-99 to 2010-11.

Also, at the 2-digit level, while most of the eight selected 2-digit industries witnessed small improvements in their respective real wages per worker between 1990-91 and 2000-01 (the first post-reform phase), some 2-digit industries witnessed a decline in their absolute real wage per worker levels. This perverse trend was intensified during the second post-reform phase when the real wage per worker declined in seven out of the eight selected 2-digit industries between 2000-01 and 2010-11.

So, even when the Indian economy as well as the registered manufacturing sector witnessed significantly high rates of growth (in terms of output and GDP) in the post-reform periods, there was (almost) no real improvement in the workers' standard of living (as reflected by the stagnant real wage per worker) in the registered manufacturing sector as well as no improvement in case of most 2-digit industries during the post-liberalisation era.

Even though real wage per worker grew during the immediate pre-reform phase across the registered manufacturing sector (at the 2-digit as well as 3-digit level), this growth rate lagged behind labour productivity growth in every case. As a result, the share of wage payments in NVA declined across the registered manufacturing sector. However, the registered manufacturing sector's wage share in NVA declined by a greater degree during both the post-reform periods. While the wage share in NVA declined by 20% during the pre-reform phase, it fell by 23% and 36% during the first and second post-reform periods respectively.

This wage share decline in the registered manufacturing sector was associated with a simultaneous rise in the profit share in NVA during the pre-reform phase and the second post-reform phase and a decline in the profit share in NVA during the first pre-reform phase (1991-2001). While at first glance, it seems that the first post-reform phase was significantly different from both the immediate pre-liberalisation phase (1981-91) as well as the second post-reform phase (2001-2011) in terms of the trends

in the registered manufacturing sector's profit share in NVA, this difference is a result of huge fluctuations in the manufacturing sector's (as well as the Indian economy's) GDP growth rates as well as a substantial increase in its interest rate (leading to a rise in the share of interest payments in NVA) during the first post-reform phase. During the 6-year period from 1992-93 to 1997-98 in the first post-reform phase (1991-2001), not only did the registered manufacturing sector witness a period of relatively high GDP growth, it also experienced a huge increase (of 7 percentage points) in its profit share in NVA. This extraordinary growth was only further intensified during the second post-reform phase when the profit share in NVA increased by 31 percentage points to reach 55.4% by 2010-11.

In the pre-reform phase, due to a rise in the share of interest payments in NVA, only four out of the eight selected 2-digit industries and the remaining 2-digit industries (as a group) witnessed a rise in their respective profit shares in NVA. However, during the period 1992-1998 in the first post-reform phase, all the eight chosen 2-digit industries[21] as well as the remaining 2-digit industries (as a group) experienced an increase in their respective profit shares in NVA. During the second post-reform phase (2001-2011), which was also a period of high GDP growth for a longer period of time, each of the eight 2-digit industries as well as the remaining 2-digit industries (as a group) witnessed a substantial increase in their respective profit shares in NVA. Interestingly, Basic Metals (NIC-27) and Chemicals and Chemical Products (NIC-24) were the top two contributors to the increase in the registered manufacturing sector's profit share in NVA during 1992-1998 as well as 2001-2011. As noted in Chapter 3, during both these periods, the Basic Iron and Steel (NIC-271) industry was the sole contributor to the spectacular increase in Basic Metals (27) profit share in NVA, while both Basic Chemicals (NIC-241) and Other Chemical Products (NIC-242) significantly contributed to the rise in NIC 24's profit share in NVA.

As mentioned before, both 1992-98 and 2001-2011 were periods of high GDP growth in the Indian economy as well as in its organised manufacturing sector. During

[21] Coke, Refined Petroleum Products and Nuclear Fuel (NIC-23) was the only 2-digit industry which witnessed a decline in its profit share in NVA between 1992-93 and 1997-98. However, as explained in Chapter 2, this anomaly was a result of our point-to-point decomposition analysis (due to the industry facing a strikingly bad year in 1997-98) and was not representative of the trends in this industry's profit share in NVA during the first post-reform period. Therefore, it is safe to say, that during this relatively high-growth period in the first post-reform phase, all the 2-digit industries witnessed a rise in their profit shares in NVA (as well as profit margins).

both these post-reform periods, this remarkable increase in the registered manufacturing sector's profit share in NVA was associated with a similar rise in its profit margin as well. As noted in Chapter 4, an increase in the profit margin is indicative of a rise in the degree of monopoly in the registered manufacturing sector. While the registered manufacturing sector's profit margin grew by 1.2 percentage points during 1992-98, it witnessed a rise of 4.6 percentage points during the second post-reform phase and by 2010-11, the profit to sales ratio had (in percentage terms) touched 8.4%. This close and positive correspondence between the profit share in NVA and the profit margin was also observed at the 2-digit industry level. During the first post-reform period from 1992-93 to 1997-98, similar to the trends in profit share in NVA, the profit margin also increased in seven out of the eight selected 2-digit industries as well as the remaining 2-digit industries (as a group). Similarly, during the second post-liberalisation phase over 2000-01 to 2010-11, profit margin also increased in all the eight 2-digit industries as well as the remaining 2-digit industries (as a group). Also, the same two 2-digit industries (Basic Metals (NIC-27) and Chemicals and Chemical Products (24)) were the top contributors to the profit margin increase in the registered manufacturing sector during both the phases. And at the 3-digit level, Basic Iron and Steel (NIC-271), Basic Chemicals (NIC-241) and Other Chemical Products (NIC-242) contributed the most to their respective 2-digit industry's profit margin increase. So not only did the degree of monopoly rise for the registered manufacturing sector on the whole, but it also increased for all (but one) 2-digit industries.

Therefore, on one hand, capital has benefited at the cost of labour through the adoption of capital intensive technologies across the registered manufacturing sector in the post-liberalisation era. However, this increase in the profit share in NVA (by suppressing wage payments) was also accompanied by a rise in the degree of monopoly (indicated by a substantial increase in the profit margin) throughout the registered manufacturing sector.

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Appendix I: Concordance Between NIC-1998 and NIC-1987 (For Industries Relevant to the Study)

NIC-1998 Code	Relevant NIC-1987 Code (CSO Suggestion)	Relevant NIC-1987 Code (EPWRF Suggestion)	Remarks
1511	200	200	
1512	203	203	
1513	202	202	
1514	210 + 211 + 212	210 + 211 + 212	
1520	201	201	
1531	204	204	
1532	218	218	
1533	217	217	
1541	205	205	
1542	206 + 207	206 + 207	
1543	209	209	
1544 #	213 + 214 + 215 + 219 [NIC-1998 Class 1544 is combined with Class 1549]	Not defined separately in NIC-1987 $	
1549 #	213 + 214 + 215 + 219 [NIC-1998 Class 1549 is combined with 1544]	213 + 214 + 215 + 219	# CSO includes this with 1544 of NIC-1998
1551	220 + 223	220 + 223	
1552	221	221	
1553	222	222	
1554	216 + 224	216 + 224	
1711	231 + 232 + 233 + 234 + 235 + 240 + 241 + 242 + 244 + 245 + 247 + 250 + 251 + 252 + 253 + 254 + 255 + 256	231 + 232 + 233 + 234 + 235 + 240 + 241 + 242 + 244 + 245 + 247 + 250 + 251 + 252 + 253 + 254 + 255 + 256	
1712	236 + 243 + 246 + 248 + 257 + 258 + 259	236 + 243 + 246 + 248 + 257 + 258 + 259	
1721	267 + 268	267 + 268	
1722	263 + 264	263 + 264	
1723	261	261	
1729	262 + 269	262 + 269	
1730	260	260	
2310	318 + 319	318 + 319	
2320	314 + 315 + 316	314 + 315 + 316	

NIC-1998 Code	Relevant NIC-1987 Code (CSO Suggestion)	Relevant NIC-1987 Code (EPWRF Suggestion)	Remarks
2330	317	317	
2411	300	300	
2412	301 [Includes NIC-1998 Class 2421]	301 - 301.4 $	$ does not concur with CSO
2413	302	302	
2421	[Combined with NIC-1998 Class 2412]	301.4 $	$ does not concur with CSO
2422	303	303	
2423	304	304	
2424	305	305	
2429	208 + 307 + 308 + 309	208 + 307 + 308 + 309	
2430	306	306	
2610	321	321	
2691	322 + 323	322 + 323	
2692	320 [Includes NIC-1998 Class 2693]	320.1 $ + 320.2 $	$ does not concur with CSO
2693	[Combined with NIC-1998 Class 2692]	320 - 320.1 $ - 320.2 $	$ does not concur with CSO
2694	324	324	
2695	327 + 329	327 + 329.1 $ + 329.2 $ + 329.3 $ + 329.5 $	$ does not concur with CSO
2696	326	326	
2699	325 + 329	325 + 329.4 $ + 329.6 $ + 329.7 $ + 329.9 $	$ does not concur with CSO
2710	330 + 331 + 332	330 + 331+ 332	
2720	333 + 334 + 335 + 336 + 338 + 339	333 + 334 + 335 + 336 + 338 + 339	
2731	337 [Includes NIC-1998 Class 2732]	337.1 $	$ does not concur with CSO
2732	[Combined with NIC-1998 Class 2731]	$337.20	$ does not concur with CSO
2911	[Combined with NIC-1998 Class 2813]	352.2 $ + 352.3 $ + 352.9 $	$ does not concur with CSO
2912	356 + 391 [Includes NIC-1998 Class 2913, 2914, 2915]	356.2 $	$ does not concur with CSO
2913	[Combined with NIC-1998 Class 2912]	356.3 $	$ does not concur with CSO
2914	[Combined with NIC-1998 Class 2912]	356.4 $	$ does not concur with CSO

NIC-1998 Code	Relevant NIC-1987 Code (CSO Suggestion)	Relevant NIC-1987 Code (EPWRF Suggestion)	Remarks
2915	[Combined with NIC-1998 Class 2912]	356.1 $	$ does not concur with CSO
2919	354 + 359 + 393 + 397 + 399 [Includes NIC-1998 Class 2919, 2923, 2927, 2929]	355 - 355.3 $ + 356.5 $ + 356.6 $ + 356.9 $ + 359.2 $ + 359.5 $ + 359.6 $ + 359.8 $ + 359.9 $	$ does not concur with CSO
2921	350 + 390	350 + 390	
2922	357 + 392	357 + 392	
2923	[Combined with NIC-1998 Class 2919]	354.5 $	$ does not concur with CSO
2924	351	351 - 351.4 $ + 393.1 $	$ does not concur with CSO
2925	353 [Includes NIC-1998 Class 2926]	353 - 353.7 $ +393.2 $ ^	$ does not concur with CSO ^ Included here because of the dominance of machinery for food industry under Class 353 of NIC 1987
2926	[Combined with NIC-1998 Class 2925]	353.7 + 359.1 $ + 359.3 $	$ does not concur with CSO
2927	[Combined with NIC-1998 Class 2919]	359.4	
2929	[Combined with NIC-1998 Class 2919]	351.4 $ + 354 - 354.5 $ + 393 - 393.1 - 393.2 + 399	$ does not concur with CSO
2930	355 + 364 + 388	346.4 $ + 346.5 $ + 346.6 $ + 355.3 $ + 364 +388	$ does not concur with CSO
3410	373 + 374 [Includes NIC-1998 Class 3420, 3430]	373 + 374	
3420	[Combined with NIC-1998 Class 3410]	379 - 379.8 $ - 379.9 $	$ does not concur with CSO
3430	[Combined with NIC-1998 Class 3410]	379.8 $	

Source: Economic and Political Weekly Research Foundation (2007)

Appendix II: Concordance Between NIC-1987 and NIC-1970 (For Industries Relevant to the Study)

NIC87	NIC70
20	20 + 21 + 315
200	200
201	201
202	202
203	203 – 203.4
204	204
205	205
206	206
207	207
208	208
209	209
210	210
211	211 + 315.1
212	315.2 + 203.4
213	212
214	213
215	214
216	215
217	216
218	217
219	219
220	220
221	221
222	222
223	223
224	224
231	233
232	234
233	235
234	236
235	231
236	232
240	240 + 249
241	242
242	241

NIC87	NIC70
243	243
244 + 245	245
246	246
247	247
248	248
250	250
251	NA
252	NA
253	253
254	251
255	268.1
256	253
257	252
258	NA
259	NA
260	260
261	261 + 263.3
262	262
263	263 + 244
264	259 + 268.2
267	266
268	267
269	269
300	310 + 312.3 + 316.1 + 316.7 + 314.7
301	311
301.4	311.4
302	316 – 316.1 – 316.5 – 316.7 – 316.9
303	312 – 212.3
304	313
305	314 – 314.7
306	316.5 + 316.9
307	317
308	318
309	319
314	304
315+316	305
317	NA
318	306
319	307

NIC87	NIC70
320	320
320.1	320.1
320.2	320.2
320.3	320.3
321	321 – 321.5
322	322 + 327
323	323
324	324
325	325
326	326
327	328
329	329
329.1 + 329.2	329.2
329.3	329.1
329.5	329.3
330	330
331	331
332	332
333	333
334	334
335	335
336	336
337	331
338 + 339	339
346	345 + 340.5 + 340.6
350	350
351	351
352.2	352.2
352.3	352.3
352.9	352.9
353	353
353.7	353.5
354	354
354.5	354.5
355	355
355.3	355.3
356.5	356.3
356.2	356.4 + 356.5
356.3	356.6

NIC87	NIC70
359.9	359.9
356.9	356.9
357	357
359.1	359.1 + 359.2
359.2	NA
359.3	359.3
359.5 + 359.6	359.6
363 + 364	363
373 + 374	374
379	379
388	NA
390	NA
392	NA
393	NA
399	NA

Source: Economic and Political Weekly Research Foundation (2007)

Appendix III: Concordance Between NIC-1998 and NIC-2004 (For Industries Relevant to the Study)

NIC-98	NIC-04	Remarks
1511	1511	
1512	1512	
1513	1513(p)	We assume full concordance between NIC-98 and NIC-04 for 1513 since we are unable to further divide it. Therefore, we slightly overestimate 1513 (NIC-98) from 2004-08.
1514	1514	
1520	1520	
1531	1531	
1532	1532	
1533	1533	
1541	1541	
1542	1542	
1543	1543	
1544	1544	
1549	1513(p) + 1549	We ignore 1513(p) since we are unable to further disaggregate it. Therefore, we slightly underestimate sector 1549 (NIC-98) from 2004-08.
1551	1551	
1552	1552	
1553	1553	
1554	1554	
1711	1711 + 1713	
1712	1712 + 1714 + 5260(p)	We ignore 5260(p) since we are unable to further disaggregate it. Therefore, we slightly underestimate sector 1712 (NIC-98) from 2004-08.
1721	1721	
1722	1722 + 1725	
1723	1723	
1729	1724 + 1729	
1730	1730	
2310	2310	
2320	2320	
2330	2330	
2411	2411	
2412	2412	
2413	2413	

NIC-98	NIC-04	Remarks
2421	2421	
2422	2422	
2423	2423	
2424	2424	
2429	2429	
2430	2430	
2610	2610	
2691	2691	
2692	2692	
2693	2693	
2694	2694	
2695	2695	
2696	2696	
2699	2699	
2710	2711 + 2712 + 2713 + 2714 + 2715 + 2716 + 2717 + 2718 + 2719	
2720	2720	
2731	2731	
2732	2732	
2911	2911	
2912	2912	
2913	2913	
2914	2914	
2915	2915	
2919	2919	
2921	2921	
2922	2922	
2923	2923	
2924	2924	
2925	2925	
2926	2926(p)	We assume full concordance between NIC-98 and NIC-04 for 2926 since we are unable to further divide it. Therefore, we slightly overestimate 2926 (NIC-98) from 2004-08.
2927	2927	
2929	2929 + 2926(p)	We ignore 2926(p) since we are unable to further disaggregate it. Therefore, we slightly underestimate sector 2929 (NIC-98) from 2004-08.

NIC-98	NIC-04	Remarks
2930	2930	
3410	3410	
3420	3420	
3430	3430	

Source: CSO (2004)

Appendix IV: Concordance Between NIC-2008 and NIC-1998 (For Industries Relevant to the Study)

NIC-1998 Code	NIC 2008 (CSO's Suggestion)	Our Concordance	Remarks
15	1010 + 1020 + 1030 + 1040 + 1050 + 1061 + 1062 + 1080 + 1071 + 1072 + 1073 + 1074 + 1075 + 1079 + 1101 + 1102(p) + 1103 + 1104 – 2429(p)	1010 + 1020 + 1030 + 1040 + 1050 + 1061 + 1062 + 1080 + 1071 + 1072 + 1073 + 1074 + 1075 + 1079 + 1101 + 1102 + 1103 + 1104	
151	1010 + 1020 + 1030 + 1040 + 1075(p)	1010 + 1020 + 1030 + 1040	
1511	1010	1010	
1512	1020 + 1075(p)	1020	As we are unable to further disaggregate 1075 to get the relevant component, we ignore 1075(p). So, we underestimate 1512.
1513	1030 + 1075(p)	1030	As we are unable to further disaggregate 1075 to get the relevant component, we ignore 1075(p). So, we underestimate 1513.
1514	1040	1040	
152=1520	1050	1050	
153	1061 + 1062 + 1080	1061 + 1062 + 1080	
1531	1061	1061	
1532	1062	1062	
1533	1080	1080	
154	1071 + 1072 + 1073 + 1074 + 1075(p) + 1079 - 2429(p)	1071 + 1072 + 1073 + 1074 + 1079	
1541	1071	1071	
1542	1072	1072	
1543	1073	1073	

NIC-1998 Code	NIC 2008 (CSO's Suggestion)	Our Concordance	Remarks
1544	1074 + 1075(p)	1074	As we are unable to further disaggregate 1075 to get the relevant component, we ignore 1075(p). So, we underestimate 1544.
1549	1079 + 1075(p) – 2429(p)	1079	As we are unable to further disaggregate 2429 and 1075 to get the relevant component, we ignore 2429(p) and 1075(p). So, we either overestimate or underestimate 1549.
155	1101 + 1102(p) + 1103 + 1104	1101 + 1102 + 1103 + 1104	
1551	1101	1101	
1552	1102(p)	1102	As we are unable to further disaggregate 1102 to get the relevant component and because 1102 matches more with 1552 than 0113(p), we ignore 0113(p). So, we overestimate 1552.
1553	1103	1103	
1554	1104	1104	
17	1311 + 1312 + 1313	1311 + 1312 + 1313 + 1392 + 1393 + 1394 + 1399 + 1391 + 1430	
171	1311 + 1312 + 1313	1311 + 1312 + 1313	
1711	1311 + 1312	1311 + 1312	
1712	1313	1313	
172	1392 + 1393 + 1394 + 1399 + 3319(p)	1392 + 1393 + 1394 + 1399	
1721	1392(p) + 3319(p)	1392	As we are unable to further disaggregate 3319 and 1392 to get the relevant components and as 1392 matches more with 1721, we ignore 3319(p) and assume 1721=1392. So, we either overestimate or underestimate 1721.
1722	1393 + 1392(p)	1393	As we are unable to further disaggregate 1392 to get the relevant component and since it matches more with 1721, we ignore 1392(p). Hence, we underestimate 1722.

NIC-1998 Code	NIC 2008 (CSO's Suggestion)	Our Concordance	Remarks
1723	1394 + 3319(p)	1394	As we are unable to further disaggregate 3319 to get the relevant component, we ignore 3319(p). So, we underestimate 1723.
1729	1399	1399	
173=1730	1391 + 1430	1391 + 1430	
23	1910 + 1920(p)	1910 + 1920	
231=2310	1910	1910	
232=2320	1920(p)	1920	As sub-sectors of 1920 match more with 2320 than 1010(p) and 1020(p) and we are unable to further disaggregate 1920 to get the relevant component, we assume 1920 to be equal to 2320. So, we overestimate 2320.
241	2011(p) + 2012 + 2013	2011 + 2012 + 2013	
2411	2011(p)	2011	Since we are unable to further divide 2011 and its sub-sectors match more with 2411 than 2330(p) and 2429(p), we assume 2011 to be equal to 2411. As a result, we overestimate 2411.
2412	2012	2012	
2413	2013	2013	
242	2021 + 2022 + 2023 + 2029 + 2680 + 2100 + 1079(p) + 2011(p)	2021 + 2022 + 2023 + 2029 + 2680 + 2100	
2421	2021	2021	
2422	2022	2022	
2423	2100	2100	
2424	2023	2023	
2429	2029 + 2680 + 1079(p) + 2011(p)	2029 + 2680	Since we are unable to further divide 1079 and 2011 and their sub-sectors match more with 1549 and 2411 than 2429, we ignore 1079(p) and 2011(p). As a result, we underestimate 2429.
243=2430	2030	2030	
261=2610	2310 + 3319(p)	2310	As we are unable to further disaggregate 3319 to get the relevant component, we ignore 3319(p). So, we underestimate 2610.

NIC-1998 Code	NIC 2008 (CSO's Suggestion)	Our Concordance	Remarks
269	2391 + 2392 + 2393 + 2394 + 2395 + 2396 + 2399 + 2392(p) + 3319(p)	2391 + 2392 + 2393 + 2394 + 2395 + 2396 + 2399	
2691	2393 + 2392(p)	2393	As we are unable to further disaggregate 2392 to get the relevant component, we ignore 2392(p). So, we underestimate 2691.
2692	2391	2391	
2693	2392(p)	2392	Since we are unable to further divide 2392 and its sub-sectors match more with 2693 than 2691, we assume 2392 to be equal to 2693. As a result, we overestimate 2693.
2694	2394	2394	
2695	2395	2395	
2696	2396	2396	
2699	2399 + 3319(p)	2399	As we are unable to further disaggregate 3319 to get the relevant component, we ignore 3319(p). So, we underestimate 2699.
271=2710	2410	2410	
272=2720	2420	2420	
273	2431 + 2432	2431 + 2432	
2731	2431	2431	
2732	2432	2432	
291		2811 + 2812 + 2813 + 2814 + 2815 + 2816 + 2819	
2911	2811 + 3312(p) + 3320(p)	2811	As we are unable to further disaggregate 3312 and 3320 to get the relevant components of repair and maintenance and installation of machinery and equipment respectively, we ignore 3312(p) and 3320(p). So, we underestimate 2911.
2912	2812 + 2813 + 3312(p) + 3320(p)	2812 + 2813	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2912.

NIC-1998 Code	NIC 2008 (CSO's Suggestion)	Our Concordance	Remarks
2913	2814 + 3312(p)	2814	As we are unable to further disaggregate 3312 to get the relevant component, we ignore 3312(p). So, we underestimate 2913.
2914	2815 + 3312(p) + 3320(p)	2815	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2914.
2915	2816 + 3312(p) + 3320(p)	2816	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2915.
2919	2819 + 3312(p) + 3320(p)	2819	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2919.
292	2520 + 2818 + 2821 + 2822 + 2823 + 2824 + 2825 + 2826 + 2829 + 3040 + 3311(p) + 3312(p) + 3320(p)	2520 + 2818 + 2821 + 2822 + 2823 + 2824 + 2825 + 2826 + 2829 + 3040	
2921	2821 + 3312(p) + 3320(p)	2821	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2921.
2922	2818 + 2822 + 3312(p) + 3320(p)	2818 + 2822	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2922.
2923	2823 + 3312(p) + 3320(p)	2823	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2923.
2924	2824 + 3312(p) + 3320(p)	2824	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2924.

NIC-1998 Code	NIC 2008 (CSO's Suggestion)	Our Concordance	Remarks
2925	2825 + 3312(p) + 3320(p)	2825	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2925.
2926	2826 + 3312(p) + 3320(p)	2826	As we are unable to further disaggregate 3312 and 3320 to get the relevant components, we ignore 3312(p) and 3320(p). So, we underestimate 2926.
2927	2520 + 3040 + 3311(p)	2520 + 3040	As we are unable to further disaggregate 3311 to get the relevant component, we ignore 3311(p). So, we underestimate 2927.
2929	2829 + 2593(p) + 3311(p) + 3312(p) + 3320(p)	2829	As we are unable to further disaggregate 3311, 3312 and 3320 to get the relevant components, we ignore 3311(p), 3312(p) and 3320(p). So, we underestimate 2929.
293=2930	2750	2750	
34	2910 + 2920 + 2930 + 3311(p)	2910 + 2920 + 2930	
341=3410	2910	2910	
342=3420	2920 + 3311(p)	2920	As we are unable to further disaggregate 3311 to get the relevant component, we ignore 3311(p). So, we underestimate 3420.
343=3430	2930	2930	

Source: CSO (2008) and Author's Deductions

Appendix V: NVA Deflators Using Wholesale Price Index

NIC 98 Code	Industry Description	Identical Commodity/Group in WPI in 1981-82 Series	Identical Commodity/Group in WPI in 1993-94 Series	Identical Commodity/Group in WPI in 2004-05 Series
15	**Manufacture of Food Products and Beverages**	**Food Products + Wine Industries + Malt Liquor + Soft Drinks and Carbonated Water**	**Food Products + Wine Industries + Malt Liquor + Soft Drinks and Carbonated Water**	**Food Products + Wine Industries + Malt Liquor + Soft Drinks and Carbonated Water**
151	Production, Processing and Preservation of Meat, Fish, Fruit Vegetables, Oils and Fats	Egg, Fish and Meat + Canning and Preserving and Processing of Fish + Canning and Preserving of Fruits and Vegetables + Fruits and Vegetables + Edible Oils + Oilcakes	Egg, Fish and Meat + Fruits and Vegetables + Canning, Preserving and Processing of Fish + Edible Oils + Oilcakes	Egg, Fish and Meat + Canning and Preserving and Processing of Food + Fruits and Vegetables + Edible Oils + Oilcakes
154	Manufacture of Other Food Products	Bakery Products + Sugar, Khandsari and Gur + Cocoa, Chocolate and Sugar Confectionery + (Other Food Products n.e.c – Maize Starch – Glucose and Dextrose) + Tea and Coffee Processing	Bakery Products + Sugar, Khandsari and Gur + Cocoa, Chocolate and Sugar Confectionery + Malted Food + Tea and Coffee Processing	Bakery Products + Sugar, Khandsari and Gur + Tea and Coffee Processing + (Other Food Products – Gola(Cattle Feed))
155	Manufacture of Beverages	Wine Industries + Malt Liquor + Soft Drinks and Carbonated Water	Wine Industries + Malt Liquor + Soft Drinks and Carbonated Water	Wine Industries + Malt Liquor + Soft Drinks and Carbonated Water
17	**Manufacture of Textiles**	**Textiles**	**Textiles**	**Textiles**
171	Spinning, Weaving and Finishing of Textiles	Cotton Textiles + Woollen Textiles + Man Made Textiles + Jute, Hemp and Mesta Textiles	Cotton Textiles + Woollen Textiles + Man Made Textiles + Jute, Hemp and Mesta Textiles	Cotton Textiles + Woollen Textiles + Man Made Textiles + Jute, Hemp and Mesta Textiles
172	Manufacture of Other Textiles	Manufacture of Textiles n.e.c.	Other Misc. Textiles	Other Misc. Textiles

NIC 98 Code	Industry Description	Identical Commodity/Group in WPI in 1981-82 Series	Identical Commodity/Group in WPI in 1993-94 Series	Identical Commodity/Group in WPI in 2004-05 Series
23	**Manufacture of Coke, Refined Petroleum Products and Nuclear Fuel**	**Coke + Mineral Oils**	**Coke + Mineral Oils**	**Coke + Mineral Oils**
232	Manufacture of Refined Petroleum Products	Mineral Oils	Mineral Oils	Mineral Oils
24	**Manufacture of Chemicals and Chemical Products**	**Chemical And Chemical Products**	**Chemical And Chemical Products**	**Chemical And Chemical Products**
241	Manufacture of Basic Chemicals	Basic Heavy Inorganic Chemicals + Basic Heavy Organic Chemicals + Fertilizers + Dyestuffs and Indigo	Basic Heavy Inorganic Chemicals + Basic Heavy Organic Chemicals + Fertilizers + Dyestuffs and Indigo	Basic Inorganic Chemicals + Basic Organic Chemicals + Fertilizers + Polymers Including Synthetic Rubber + Dyestuffs and Indigo
242	Manufacture of Other Chemical Products	Pesticides + Paints, Varnishes and Lacquers + Drugs and Medicines + Perfumes, Cosmetics, Toiletries etc. + Matches, Explosives, Inedible Oils etc. + Manufacture of Common Salt	Pesticides + Paints, Varnishes and Lacquers + Drugs and Medicines + Perfumes, Cosmetics, Toiletries etc. + Matches, Explosives, Other Chemicals n.e.c. + Manufacture of Common Salt	Pesticides + Paints, Varnishes and Lacquers + Drugs and Medicines + Perfumes, Cosmetics, Toiletries etc. + Matches, Explosives & Other Chemicals + Manufacture of Common Salt
26	**Manufacture of Other Non-Metallic Mineral Products**	**Non-Metallic Mineral Products**	**Non-Metallic Mineral Products**	**Non-Metallic Mineral Products**
269	Manufacture of Non-Metallic Mineral Products n.e.c.	Non-Metallic Mineral Products – Glass, Earthenware, Chinaware and Their Products	Non-Metallic Mineral Products – Glass, Earthenware, Chinaware and their Products	Non-Metallic Mineral Products – Glass, Earthenware, Chinaware and their Products
27	**Manufacture of Basic Metals**	**Basic Metals, Alloys & Metal Products**	**Basic Metals Alloys & Metals Products**	**Basic Metals Alloys & Metals Products**

NIC 98 Code	Industry Description	Identical Commodity/Group in WPI in 1981-82 Series	Identical Commodity/Group in WPI in 1993-94 Series	Identical Commodity/Group in WPI in 2004-05 Series
271	Manufacture of Basic Iron and Steel	Iron and Steel + Ferro Alloys	Iron and Steel + Ferro Alloys	Ferrous Metals
29	**Manufacture of Machinery and Equipment n.e.c.**	**Non-Electrical Machinery and Parts + Electrical Apparatus, Appliances & Parts**	**Non-Electrical Machinery and Parts + Electrical Apparatus and Appliances**	**Industrial Machinery+ Non-Electrical Machinery + Electrical Apparatus and Appliances + Air Conditioner and Refrigerators + Agricultural Machinery and Implements + Construction Machinery + Machine Tools**
34	**Manufacture of Motor Vehicles, Trailers and Semi-Trailers**	**Transport Equipment and Parts**	**Transport Equipment and Parts**	**Transport Equipment and Parts**

Appendix VI: Definitions

We reproduce the definitions (of some important concepts that are relevant to this study) as provided by CSO (2011a) and used in the Annual Survey of Industries.

"Depreciation: Depreciation is consumption of fixed capital by the factory due to wear and tear and obsolescence during the accounting year and is taken as provided by the factory owner, or if not provided by the factory this is estimated on the basis of cost of installation and working life of the fixed assets.

Finished Goods: Finished Goods are those, which are manufactured by the factory for sale. Finished goods should conform to a prescribed standard.

Gross Output: Gross output is defined to include the ex-factory value, (i.e., exclusive of taxes, duties, etc. on sale and inclusive of subsidies etc., if any) of products and by-products manufactured during the accounting year, and the net value of the semi-finished goods, work-in-process, (represents the excess/deficit of value of semi-finished goods or work-in-process at the end of the accounting year over that of the beginning of the year plus net balance of semi-finished fixed assets on factory's capital account) and also the receipts for industrial and non-industrial services rendered to others, value of semi-finished goods of last year sold in the current year, sale value of goods sold in the same condition as purchased and value of electricity generated and sold.

Industrial Services: Any services taken or rendered from one to another unit resulting in increase in the value of material during the manufacturing process are industrial services.

Net Value Added: This is the increment to the value of goods and services that is contributed by the factory and is obtained by deducting the value of total inputs and depreciation from gross value of output.

Net Value of Semi-Finished Goods: It represents the excess/deficit of value of semi-finished goods and/or goods-in-process at the end of the accounting year over that at the beginning of year.

Non-Industrial Services: All such services which do not have a direct bearing on the manufacturing process but are needed by any manufacturing unit are called non-industrial services, say, transport.

Outstanding Loans: Outstanding loans represent all loans, whether short-term

or long-term, whether interest bearing or not, outstanding according to the books of the factory as on the closing day of accounting year.

Products: These are defined to include the ex-factory value (i.e. exclusive of taxes, duties etc. on sale and inclusive of subsidies etc., if any) of all products and by-products, excluding intermediate products, that have been completed during the accounting year for sale whether actually sold during the accounting year or entered into books. Also include fixed assets produced by the factory for its own use.

Wages: Wages are defined to include all remuneration capable of being expressed in monetary terms and also payable/paid more or less regularly in each pay period to workers (defined above) as compensation for work done during the accounting year. It includes:

(i) Direct wages and salary (i.e. basic wages/salaries, payment of overtime, dearness, compensatory, house rent and other allowances);

(ii) Remuneration for period not worked (i.e. basic wages), salaries and allowances payable for leave period, paid holidays, lay-off payments and compensation for unemployment (if not paid from source other than employers);

(iii) Bonus and ex-gratia payment paid both at regular and less frequent intervals (i.e., incentive bonuses and good attendance bonuses, production bonuses, profit sharing bonuses, festival or year end bonuses etc.).

It excludes lay-off payments and compensation for employment except where such payments are for this purpose, i.e., payments not made by the employer. It excludes employer's contribution to old age benefits and other social security charges, direct expenditure on maternity benefits and crèches and other group benefit in kind and travelling and other expenditure incurred for business purposes and reimbursed by the employer. The wages are expressed in terms of gross value, i.e., before deductions for fines, damages, taxes, provident fund, employee's state insurance contribution etc. Benefits in kind (perquisites) of individual nature are only included.

Emoluments: These are defined in the same way as wages but paid to all employees plus imputed value of benefits in kind i.e. the net cost to the employers on those goods and services provided to employees free of charge or at markedly reduced cost which are clearly and primarily of benefit to the employees as consumers. It includes profit sharing, festival and other bonuses and ex-gratia payments paid at less frequent intervals (i.e. other than bonus paid more or less regularly for each period).

Benefits in kind include supplies or services rendered such as housing, medical, education and recreation facilities. Personal insurance, income tax, house rent allowance, conveyance etc. for payment by the factory also is included in the emoluments.

Supplements to Emoluments: These include: (i) employer's contribution to old age benefits, i.e., provident fund, pension, gratuity, etc.; (ii) employer's contribution towards other social security charges such as Employees' State Insurance, compensation for work injuries, occupational diseases, maternity benefits, retrenchment and lay-off benefits etc.; and (iii) group benefits like direct expenditure on maternity, crèches, canteen facilities, educational, cultural and recreational facilities and grant to trade unions, co-operative stores etc. meant for employees.

Compensation of Employees: Compensation of employees is the total of emoluments and supplement to emoluments. " Source: CSO (2011a)