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ESTIMATION OF LONG RUN ELASTICITY PARAMETERS: AN ANALYSIS OF INDIA'S ORGANISED MANUFACTURING SECTOR

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ABSTRACT

Theoretical and empirical problems relating to employment and income distribution largely depend upon the estimation of technical substitutability between capital and labour. Using Constant Elasticity of Substitution (CES) Production Function, this study analyses the post liberalization period (1990-91 to 2019-20) to determine the extent to which capital and labour inputs can be substituted for each other in the Organised Manufacturing Sector of India. Growth Rates, returns to Scale and Employment Elasticity were also calculated to provide a comprehensive overview of the organised manufacturing sector's capacity to provide gainful employment. Using ordinary least squares regression method, the results of our exercise revealed that there exists a possibility to substitute the abundant labour force for scarce capital input in the sector, indicating that the labour absorption capacity of the sector is fair.

KEYWORDS: Organised Manufacturing, Annual Survey of Industries, Returns to Scale, Elasticity of Substitution, Elasticity of Employment.

JEL Code: J01, J21, J23, J24, L60.

1. INTRODUCTION

The prospect of India emerging as a global superpower in the next decade has been a topic of intense debate (Mahapatra, 2018), with various studies pointing out numerous challenges like increasing Gross Domestic Production (GDP), value satisfaction, attracting more Foreign Direct Investment, increasing trade openness (Thomas, Kugler, & Tammen, 2021), lack of infrastructure, neglected primary to higher education, poor governance (Gey, Jobelius, & Tenbusch, 2007) weak social figures, fairly narrow global impact, dearth of strategic culture (Lunev & Shavlay, 2021) among many others. However, the key parameter almost all the studies have consistently alluded to is the double-edged sword of the growing population dividend of India, wherein it rightfully presents itself as both a challenge and an opportunity.

India has been facing the daunting challenge of employment generation and lopsided structural transformation, primarily due to the nation moving from agriculture to services led growth, leapfrogging the manufacturing sector (Kapoor, 2015) which is evident from the share of manufacturing being stuck between 14.7% to 16.7% of GDP, from FY05 to FY20 with just 24% of the labour force employed in the industrial sector as of 2019-20. Another aspect affecting the growth of manufacturing sector is share of output and jobs in the unorganised manufacturing sector, plagued with poorer pay and working conditions as compared to the organised manufacturing sector which also boasts of higher capital formation and labour productivity levels than the former.

Nevertheless, due to a higher rate of capital accumulation in the organised manufacturing sector of India, calculating the elasticity of substitution (to analyse the extent to which the capital input can be substituted for labour input) becomes non-negotiable. However, (Mazumdar & Sarkar, 2004) and (Upender, 1998) and (Mazumdar & Sarkar, 2007) stated that the sector has also notoriously been dominated by low employment elasticity (sensitivity of employment to output growth), therefore, this should also be taken into account while trying to assess the capacity of the organised manufacturing sector to generate decent employment opportunities in the future. (Goldar, Pradhan, & Sharma, 2013) argued that the flexibility of factors of production to adjust in response to changes in factor prices is dependent on high levels of elasticity of substitution, wherein, the factor with higher productivity/faster growth can be substituted for the factor with lower productivity/slower growth. Also, when the elasticity of substitution is high, there is greater similarity between capital and labour in the production function leading to slow set diminishing returns, thereby, the growth rate of income per capita increases with elasticity of substitution (Grandville, 1989). Consequently, there have been many studies around the world, where nationwide elasticity of substitution has been calculated. (Balistreri, McDaniel, & Wong, 2003) perpetuated the idea that elasticity of substitution between capital and labour can determine the distributional impacts of a policy shift in general equilibrium while providing long and short run substitution elasticities for 28 industries of the U.S. Economy. (Harrasova, 2020) calculated elasticity of substitution for United Kingdom and Scotland finding aggregate elasticity 0.94 and 1.3 respectively. He also calculated rates of factor-augmenting technical progress finding technical change to be capital-biased. (Mallick, 2012) estimated the elasticity of substitution value for almost 90 countries ranging from 0.03 to 2.18 using direct estimation of the normalized CES production function, wherein major developing countries like India, China, Brazil, Argentina, Mexico, Thailand, Indonesia etc. registered elasticity of substitution as 0.515, 0.548, 0.126, 0.112, 0.087, 0.197, 1.139 respectively.

Various estimates for elasticity of substitution between capital and labour have also been calculated for manufacturing industries of India. (Banerjee, 1973) estimated the elasticity of substitution through CES production function for five Indian industries, namely Cotton Textile, Jute Textile, Sugar, Paper and Bicycle finding the resultant value to be significantly different than one. (Dhananjayan & Muthulakshmi, 1989) used CES production function on Annual Survey of Industries (ASI) data for the years 1973-74 to 1979-80 and found the value of elasticity of substitution for 2-digit manufacturing industries to be more than zero but less than one. (Goldar, Pradhan, & Sharma, 2013) used SURE method to estimate elasticity of substitution based on SMAC functions, wherein, the estimate elasticity of substitution was commonly less than one for 22 (2 digit) manufacturing industries of India.

Employment elasticity for the manufacturing sector of India has also been studied in detail. (Mazumdar & Sarkar, 2004) estimated employment elasticity in Indian manufacturing and discovered three distinguished periods of large variations. The first period, from 1974 to 1980, the second from 1980 to 1986 and a third from 1986 to 1996 experienced an elasticity close to one, negative ('jobless growth'), and a period where both employment and output grew respectively. (Upender, 2006) tried to investigate the employment elasticity of the Indian economy from 1982-83 to 1999-00, wherein the results indicated that the output elasticity of employment in industries of private and public organized sector was significantly positive and negative respectively. (Mazumdar & Sarkar, 2007) used ASI data over the period 1976-2002 to estimate employment elasticity in organized manufacturing in India and found three factors namely domestic real exchange rate (DRER), trend in the share of wages and trade-off between employment increase and real wage increase important in determining employment elasticity.

Contextually the manufacturing sector can become the backbone of Indian economy and balance employment generation, economic growth, and environmental sustainability (NITIE, 2022), to which end, many scholars have tried to calculate elasticity parameters in the short run, however, long run elasticity parameters for the organised manufacturing sector are yet to be estimated. This makes it imperative to undertake a study, with a view to generate empirical information for policymakers by estimating the returns to scale, elasticity of substitution and employment elasticity in the organised manufacturing sector of India using time series data by ordinary least squares method in the post economic reform period.

2. METHODOLOGY

The study focuses on computing returns to scale, elasticity of substitution and employment elasticity in the organised manufacturing sector of India by employing national level data from Annual Survey of Industries for the past thirty years (1990-91 to 2019-20) to better understand further scope of employment opportunities in the sector. The variables used in this study are gross value added (V), total persons employed (L), fixed capital (K), capital labour ratio (K/L), average wage (W/L), labour productivity (V/L) and time (T). In order to realize the objective of the present study, we employ the following methods:

Growth Rates

A compound interest formula can be written as:

$$Y_t = Y_0(1+r)^t$$

where r is the compounded over time, i.e., rate of growth of Y.

Taking log on both sides,

$$\log Y_t = \log Y_0 + t\log(1+r)$$

Wherein,

$$\beta_1 = \log Y_0$$
$$\beta_2 = \log(1 + r)$$

We can also write,

$$\log Y_t = \beta_1 + \beta_2 t$$

Adding the error term,

$$\log Y_t = \beta_1 + \beta_2 t + u_t$$

This is a semi log or log linear model which can be used to estimate growth rate (Gujarati & Porter, 2009).

Returns to Scale

In the present study, the returns to scale are calculated using the variable form of Cobb Douglas production function (Unrestricted/non- constant returns to scale form):

$$V = aL^{b_1}K^{b_2}e^{ut}$$

Taking log on both sides,

$$\log V = \log a + b_1 \log L + b_2 \log K$$

Wherein, $b_1 + b_2$ gives the returns to scale, which need not equal one (Upender, 1998).

Elasticity of Substitution

A CES production function is defined as:

$$V = A(\delta K^{-\rho} + (1-\delta)L^{-\rho})^{\frac{-1}{\rho}}$$

Where,
V = Gross Value Added;
K, L = Capital and Labour Inputs;
A = Efficiency Parameter, A>0;
δ = Distribution Parameter, 0< δ<1;
ρ = extent of substitution between labour and capital, ρ ≥1;
σ = elasticity of substitution, $\sigma = 1/1 + \rho$;
However, under the perfectly competitive conditions of marginal productivity theory,

Average Wage = $MP_L = \frac{dV}{dL} = \left(\frac{1-\sigma}{A^{\rho}}\right)\left(\frac{V}{L}\right)^{1+\rho} = \frac{W}{L}$

Therefore,

$\left(\frac{V}{L}\right)^{1+\rho} = \left(\frac{A^{\rho}}{1-\sigma}\,\frac{W}{L}\right)$;

$\frac{V}{L} = (\frac{A^{\rho}}{1-\sigma}\,\frac{W}{L})^{1/1+\rho}$;

Where, $\frac{A^{\rho}}{1-\sigma}$ = a constant

$\left(\frac{V}{L}\right) = a\left(\frac{W}{L}\right)^{\sigma}$;

Taking log on both sides,

$\log\left(\frac{V}{L}\right) = \log a + \sigma \log\left(\frac{W}{L}\right)$

The coefficient of $\frac{W}{L}$ produces the estimate of elasticity of substitution, σ (Upender, 1996).

Elasticity of Employment

Elasticity of Employment is the ratio of relative change in employment (E) and the relative change in output (Y).

$$\frac{\left(\frac{E_t - E_{t-1}}{E_{t-1}}\right)}{\left(\frac{Y_t - Y_{t-1}}{Y_{t-1}}\right)}$$

Which can lend itself to an econometric model:

$$e_t = \beta_1 + \beta_2 \gamma_t + \varepsilon_t t$$

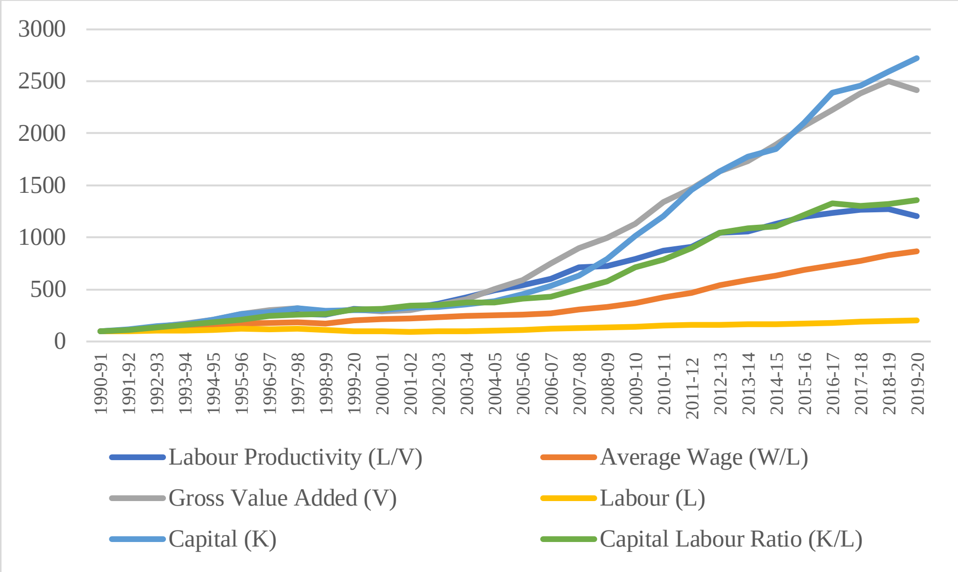
Or

$$\log E_t = \beta_1 + \beta_2 \log \gamma_t + \varepsilon_t$$

The coefficient of γ_t gives the employment elasticity (Ramoni-Perazzi & Orlandoni-Merli, 2019).

3. RESULTS AND DISCUSSION

Figure 1: Indexed Trends in Labour Productivity, Average Wage, Gross Value Added, Fixed Capital, Total Persons Employed and Capital Labour Ratio in the Organized Manufacturing Sector of India (1990-91 to 2019-20)



Source: Authors calculation from ASI data, Government of India.

The figure above displays the Indexed Trends (1990-91=1) in variables considered in the study. Indexing normalizes data to a common starting point, to make it convenient to observe the relative change of variables with respect to each other over time. In our study, the following formula has been used to create an indexed trend, with the starting point chosen as 100.

$$\widehat{X_t} = \left(\frac{X_t}{X_0}\right).100$$

Where X_t is the data value, where t =1990-91, 1991-92……2019-20. X_0 is the data value in the initial time period, 1990-91 and $\widehat{X_t}$ is the new indexed value of the variable.
(Figure 1) indicates that the Gross Value Added for the organised manufacturing sector has grown the most followed by fixed capital. However, number of workers employed, and average wage have barely improved over the study period, essentially remaining stagnant when compared to other factors. Whereas the capital labour ratio and labour productivity have closely followed each other. The corresponding table of data values have been attached in Appendix I.

Growth Rates
The following tables represent growth rates calculated for all the major variables considered in the study.

Table 1: Growth Rate in Total Persons Employed in Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log L = 15.8061 + 0.0239$ T	
Std. Err.	(0.0027)
T value	(8.788)
Pr(>|t|)	1.54e-09 ***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1	
Multiple R-squared: 0.7339, Adjusted R-squared: 0.7244	
F-statistic: 77.22 on 1 and 28 DF, p-value: 1.539e-09	
Source: Authors calculation from ASI data, Government of India.	

Table 2: Growth Rate in Fixed Capital in Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log K = 16.3869 + 0.1138$ T	
Std. Err.	(0.0039)

T value	(29.13)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.9681, Adjusted R-squared: 0.9669	
F-statistic: 848.8 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Table 3: Growth Rate in Gross Value Added in Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log V = 15.6578 + 0.1139\, T$	
Std. Err.	(0.0034)
T value	(32.61)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.9744, Adjusted R-squared: 0.9734	
F-statistic: 1064 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Table 4: Growth Rate in Wage Rate in Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log W/L = -1.9056 + 0.0734\, T$	
Std. Err.	(0.0019)
T value	(38.14)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.9811, Adjusted R-squared: 0.9804	
F-statistic: 1454 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Table 5: Growth Rate in Labour Productivity in Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log V/L = -0.1482 + 0.0900\, T$	
Std. Err.	(0.0029)
T value	(30.281)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.9704, Adjusted R-squared: 0.9693	
F-statistic: 916.9 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Table 6: Growth Rate in Capital Labour Ratio in Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log K/L = 0.5808 + 0.0899\, T$	
Std. Err.	(0.0024)
T value	(37.30)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.9803, Adjusted R-squared: 0.9796	
F-statistic: 1391 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Over the thirty-year period (1990-91 to 2019-20), Labour Force increased by 2.39 percent whereas the Fixed Capital increased by 11.38 percent in the organised manufacturing sector of India. One the other hand, Gross Value Added, Average Wage, Labour Productivity and Capital Labour Ratio grew at 11.39, 7.34, 9 and 8.9 percent respectively.

Returns to Scale

The returns to scale were calculated (Table 7) using the aforementioned form of Cobb Douglas Production Function revealing a decreasing returns to scale ($b_1 + b_2$ = 1.0857-0.4303 = 0.6554), which show that the organised manufacturing sector of India has been employing capital and labour inputs beyond the optimum scale of production. Elasticity of output with respect to capital is found to be positive and statistically significant at 0.01 per cent level whereas the elasticity of output with respect to labour is found to be negative and statistically significant at 10 per cent level. Similar results were found by (Upender, 1996), who rightfully pointed out the absurdity of negative returns to scale for labour input, arguing that no rational firm would employ labour beyond a point where it leads to a decrease in total value added.

However, the growth rates estimated for capital and value added correspond to the returns displayed by the capital input. This points to increased capital intensity of production in the organised manufacturing sector, which was tested by calculating the elasticity of output with respect to capital labour ratio (Table 8) which was positive and statistically significant at 0.01 per cent, indicating that the sector is indeed capital intensive.

Table 7: Estimation of Unrestricted Cobb Douglas Production Function for Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log V = 4.6787 + 1.0857 \log K - 0.4303 \log L$		
Std. Err.	(0.0546)	(0.2262)
T value	(19.878)	(-1.902)
Pr(>|t|)	<2e-16 ***	0.0679 .
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1		
Multiple R-squared: 0.987, Adjusted R-squared: 0.986		
F-statistic: 1023 on 2 and 27 DF, p-value: < 2.2e-16		

Source: Authors calculation from ASI data, Government of India.

Table 8: Estimation of Elasticity of Output with respect to Capital Labour Ratio for Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log V = 14.9386 + 1.2589 \log K/L$	
Std. Err.	(0.0336)
T value	(37.44)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1	
Multiple R-squared: 0.9804, Adjusted R-squared: 0.9797	
F-statistic: 1401 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Elasticity of Substitution

The following table represents the value of elasticity of labour productivity with respect to average wage, which was found to be positive and statistically significant at 0.01 per cent level.

Table 9: Estimation of CES Production Function for Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log V/L = 2.1661 + 1.1974 \log W/L$	
Std. Err.	(0.0553)
T value	(21.63)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1	
Multiple R-squared: 0.9435, Adjusted R-squared: 0.9415	
F-statistic: 467.9 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Therefore, the estimated elasticity of substitution = σ = 1.1974

Hence, substitution possibilities exist between capital and labour as the marginal productivity of labour with respect to marginal/average wage is considerably high and a profit maximising firm under perfectly competitive conditions can substitute abundant labour force for scarce capital input until marginal productivity of labour is equal to marginal/average wage.

Elasticity of Employment

Table 10: Estimation of Employment Elasticity of Output in the Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log L = 12.4152 + 0.2158 \log V$	
Std. Err.	(0.0206)
T value	(10.47)
Pr(>|t|)	3.48e-11 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.7964, Adjusted R-squared: 0.7892	
F-statistic: 109.6 on 1 and 28 DF, p-value: 3.483e-11	

Source: Authors calculation from ASI data, Government of India.

Table 11: Elasticity of Capital Labour Ratio with respect to Average Wage in the Organised Manufacturing Sector of India: 1990-91 to 2019-20

$\log K/L = 2.1661 + 1.1974 \log W/L$	
Std. Err.	(0.0294)
T value	(41.31)
Pr(>|t|)	<2e-16 ***
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1	
Multiple R-squared: 0.9839, Adjusted R-squared: 0.9833	
F-statistic: 1707 on 1 and 28 DF, p-value: < 2.2e-16	

Source: Authors calculation from ASI data, Government of India.

Our analysis revealed a positive and statistically significant relationship showing that for 10 percent increase in gross value added, employment would increase by 2.15 percent (Table 10). Similar results were also observed by (Upender, 1998). Our study also revealed that the average wage is positively related to capital labour ratio, at 0.01 per cent significance level (Table 11), reflecting that an increase of one per cent in average wage would increase capital labour ratio 1.19 percent. Indicating that the demand for labour is negatively related to increase in average wage.

4. CONCLUSION

Putting together all the results, our analysis revealed that the organised manufacturing sector of India has the capacity to absorb surplus labour and create viable opportunities for the growing population of the nation. Historically, the Indian manufacturing sector has failed to execute the basic assumption of a development strategy, i.e., the growth of output spearheading employment generation (Dhananjayan & Muthulakshmi, 1989). Hence technical change should have been centred towards creating labour intensive industries, such has not been the case for organised manufacturing. The in formalisation of the organised economy along with the massive presence of the unorganised sector has resulted in lowly productive jobs in India (Kapoor, 2015). Although the sector presents massive possibilities to employ the semi-skilled workers, the sector has traditionally presented low employment elasticity (Mazumdar & Sarkar, 2004). Therefore, the current exercise was undertaken to better understand the realm of possibilities that exist in the face of increasing unemployment rates over a period of economic growth (post liberalisation period). Our analysis revealed that the gross value added has been more responsive to capital employed in the organised manufacturing sector of India and the sector is capital intensive yielding decreasing returns to scale. The elasticity of labour productivity with respect to average wage was found to be significantly more than one, hinting to strong substitution possibility between labour and capital until marginal productivity of labour equals average wage. Even the employment elasticity of output in the sector was found to be positive and significant, however, average wage and capital labour ratio are positively related indicating that an increase in average wage would reduce demand for labour. Therefore, there is exists a need to re-direct the India’s organised manufacturing sector towards labour intensive mode of production.

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APPENDIX I

Data Values of Variables Considered in the Study *(Value Figures in Rs. Lakh, and Others in Number)*

Years	Labour (L)	Capital (K) (Rs. Lakh)	Wage (W) (Rs. Lakh)	Gross Value Added (V) (Rs. Lakh)	Average Wage (W/L) (Rs. Lakh)	Labour Productivity (V/L) (Rs. Lakh)	Capital Labour Ratio (K/L) (Rs. Lakh)
1990-91	8279403	13364756	1319205	6157753	0.16	0.74	1.61
1991-92	8319563	15190240	1358263	6616782	0.16	0.80	1.83
1992-93	8835952	19287139	1683112	8567098	0.19	0.97	2.18
1993-94	8837716	22441333	1759741	10488907	0.20	1.19	2.54
1994-95	9227097	27764512	2201946	12719229	0.24	1.38	3.01
1995-96	10222169	34846773	2797035	16302305	0.27	1.59	3.41
1996-97	9536282	38004439	2655459	18489354	0.28	1.94	3.99
1997-98	10073485	42308227	2978167	19823745	0.30	1.97	4.20
1998-99	9172836	39115145	2482648	17372692	0.27	1.89	4.26
1999-20	8172836	40186473	2630427	18857371	0.32	2.31	4.92

2000-01	7987780	39960422	2767074	17835034	0.35	2.23	5.00
2001-02	7750366	43196013	2743824	18322914	0.35	2.36	5.57
2002-03	7935948	44475938	2968905	21437562	0.37	2.70	5.60
2003-04	7870081	47333140	3047777	24777726	0.39	3.15	6.01
2004-05	8453624	51306925	3363505	30962010	0.40	3.66	6.07
2005-06	9111680	60694028	3766366	36469705	0.41	4.00	6.66
2006-07	10328434	71513139	4429135	46018006	0.43	4.46	6.92
2007-08	10452535	84513209	5103023	55275622	0.49	5.29	8.09
2008-09	11327485	105596614	5977184	61131148	0.53	5.40	9.32
2009-10	11792055	135218367	6894071	69718259	0.58	5.91	11.47
2010-11	12694853	160700652	8564552	82513335	0.67	6.50	12.66
2011-12	13430483	194955088	10001913	90520894	0.74	6.74	14.52
2012-13	12950025	218026022	11089620	100727950	0.86	7.78	16.84
2013-14	13538114	237371903	12649644	106511164	0.93	7.87	17.53
2014-15	13881386	247445461	14048488	116470249	1.01	8.39	17.83
2015-16	14299710	280964722	15600116	127327968	1.09	8.90	19.65
2016-17	14911189	319038649	17353716	136805049	1.16	9.17	21.40
2017-18	15614619	328588927	19280066	146697042	1.23	9.39	21.04
2018-19	16280211	346606975	21576035	153801928	1.33	9.45	21.29
2019-20	16624291	364135165	22890520	148574513	1.38	8.94	21.90

Source: Annual Survey of Industries, Various Issues.