REVIEW OF LITERATURE

Many studies on productivity trends in Indian manufacturing sector have been carried out over the last few decades. Apart from studies of total manufacturing there have been many studies of industrial industries too. In all these studies the major trends in productivity have been examined and compared on all India or on state level.

S.S. Mehta has examined the trend in productivity for 27 industries for the period 1953-65. He has constructed partial and total factor productivity for these 27 industries. In his study, he found that labour productivity has increased significantly in industries like vegetable oils, chemicals, glass etc. and insignificantly in matches, iron etc. In most of the industries the trend of capital productivity is on decline. Over all efficiency in modern industries like bicycles, electric fans, glass and glass were etc. has been fairly satisfactory whereas it has declined in the traditional industries like cotton textiles, jute, matches, sugar. Mehta, study suggests that analysis at the industry level are necessary because they reveal the differential performance of individual industries.¹

¹ Mehta, S.S. "Productivity, Production function and technical change in some Indian Industries, Thesis Submitted to Gujrat University, Sardar Patel Institute of Economics and Social Science Research, Ahmadabad, 1976."
In another study Hajara concluded that between 1947-58 growth of productivity in some of the industries in question not lag behind the rise in wages. In some particular industry e.g., cotton textile growth of productivity is low, while in others, e.g., jute and sugar productivity growth is much higher.²

In another study "Chio Lim" stated that" by increasing the efficiency and effectiveness of your factors of production you can increase production and through the formula mentioned above accordingly reduce your per unit cost, or slow down it increases. To work your factors of production better, I have recommended on exercise in capacity management, which can be summarised as follows.

- Measure your capacity based on existing resources.
- Measure the utilization your present study.
- Examine ways you can utilize on scale down unused capacity.
- Prepare a business plan.

• Right size your capacity to fifth your business plans with the view of generating profit.\(^3\)

In some particular industry like cement industry, many challenges lie ahead, increase in productivity is imperative in order to raise the standard of living and also to make the Indian exports globally competitive. From their study K. Chidambaran and S. Muthukrishnan found that the overall productivity from (1990-91 to 2001-02), selling, Distribution and Administration productivity from (1990-91 to 2001-02) and Labour productivity from (1990-91 to 2001-02) is higher in Madras Cements than of India Cement. From the above study, we can generally state that, cement industry will have to devise strategies for economizing the use of inputs and curtailing costs so as to remain competitive in the global trading environment. The Madras Cements limited, which is favourite of many counts, shall go for further excellence in improving its productivity while maintaining its existing stronghold area. The Indian Cements which posses good Infrastructure shall take a look into the areas where they are

\(^3\) Lim, Chio, "Controlling cost through capacity management, 1997."
very weak and should rise up to meet the challenges posed by various factors.\textsuperscript{4}

A Tata Services study on productivity trends in Indian manufacturing in the pre-and post-reform eras shows that the private sector has performed better than the public sector, and the private sector giants have done even better.

The study takes a holistic look at the growth of productivity parameters in four sectors: the all-India factory sector (Public + Private): Private manufacturing Industry: the top 50 private manufacturing companies and six major manufacturing companies of the tata group (Tata steel, Tata motors, Tata chemicals Rallis, Voltas and Titan).

The all India factory sector study has been based on the annual survey of industries (ASI), which covers 1,31,558 factories in the public and private sectors. In this study they found that, in terms of average annual growth of TFP, the post-reform performance of the tata group zoomed ahead to 4.37 percent, from 1.80 percent during the pre-reform years, compared to a marginal increase from 0.68 to 0.97 percent for the all India factory sector.

In the case of contribution of TFP to real output growth, the numbers for the Tata companies increased from 33.02 percent during the pre-reform years to 75.30 percent during the post reform period, as against 8.97 and 12.43 percent, respectively, for the ASI sector.

In partial productivity they found that the partial productivity performance of the private sector has been better then the all-India factory sector during the post-reform period. For instance, during 1993-94 to 2001-02, capital productivity increased at an annual average rate of 2.65 percent in the all-India factory sector. The growth rate for the private manufacturing sector was higher of 3.98 percent, and the top 50 private companies registered even higher growth of 6.87 percent. In the case of the Tata panel, the growth rate was 5.53 percent.5

The B.S. research bureau studied the business performance of the B.S. 1000 companies from the point of view of productivity.

Labour productivity has always been sector specific-high labour-intensive sectors like technology, engineering, 

and telecom and steel shows lower labour productivity, as these industries are labour as well as capital intensive.

In their study, they found that, ONGC's labour productivity increased to Rs. 20.73 crore worth of net sales per Rs. 1 lakh spent on its employees from Rs. 16.29 lakh in 2001-2002.

Tata steels labour productivity was higher at Rs, 6.03 lakh than SAIL's Rs. 4.58 lakh per Rs. 1 lakh spent on salaries and wages of employees.

Reliance industries labour productivity of Rs. 92.66 lakh in 2002-2003 is higher than Indian Oil Corporation's (IOC) Rs. 62.36 lakh. This is because Reliance has a more modern refinery than IOC.6

Chincharkar's study of seven major industries and also the whole manufacturing sector based on CMI and ASI statistics identified three phases in relation between the movement of wages and productivity. In the first phase 1946-50 real earnings increased faster then productivity, in the second phase 1951-58, wages lagged behind productivity and in the third phase the two moved almost together, though real earnings had a slight edge over productivity increase. Since

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6 Business Performance of B.S. Companies. www.steelrx.com
the author has thus avoided a direct comparison, the problem of comparability between the two courses does not arise.\textsuperscript{7}

In another study, Hejara Concluded that between 1947-58 growth of productivity in some of the industries in question did not lag behind the rise in wages.\textsuperscript{8}

In some particular industry e.g., cotton textiles (Papola, T.S.) wages seem to have increased faster than productivity while in others, e.g. Jute and Sugar (Roy, Bina)\textsuperscript{9} productivity rise has exceeded the wage rise. The same conclusion is of the study of the Bombay Engineering Industry for period (1950-64) (Raisikan)\textsuperscript{10}, that productivity has increased more than wages.

Ramanathan's study of the Cement Industry (1950-64) examines that wage rates have gone up more than labour productivity, where as profit rates have remained stationary in spite of increase in capital productivity.\textsuperscript{11}

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\textsuperscript{7} Chinechankar, P.Y., Wages and Productivity in Indian Industries, Commerce Pamphlets (15), Bombay, 1969.
\textsuperscript{9} Roy, Bina, Wages and Cost of living of Jute and Sugar Workers in India, Arthavij in assa, Sept. 1962.
\end{flushleft}
Most of the studies (Benerjee, P.; Poleper, S.A.) have identified that wages lagged behind productivity, which has been corroborated by the National Commission on labour. At the macro level wages and productivity are found to be generally correlated.\textsuperscript{12}

A look into the process of fixation and revision of wages in industries suggested that it is not necessary that the result of wage-productivity casual relationship. It has been often brought out that wage incentive can be used as an effective tool for rising both productivity and earnings (Sinha, V.B.\textsuperscript{13} and Suri, G.K.\textsuperscript{14}).

The number of studies on productivity growth and technological change in India is vast by now. Indian researches have studied the subject in a variety of context and with differing motives.

In a study conducted by S.S. Mehta found that in the period of 1953-64 the capital productivity of Iron and steel industry was -22.8 while the labour productivity was -5.2. In the same study, they found that the total factor productivity


measured by Solow index was – 6.3 percent per annum, measured by Kendrick index the decline is at whopping 22.9% per annum.\textsuperscript{15}

A study conducted by Goldar in 1986, he found that in the period 1960-70, the capital productivity of Iron and steel industry was – 3.23 and labour productivity was .96. Goldar estimated – 1.66 percent per annum of total factor productivity growth.\textsuperscript{16}

In the same period CSO done a survey, they found the same Direction of TFP growth with -0.74, which was supported by Goldar, in terms of direction of change, though numerical magnitude differ slightly.\textsuperscript{17}

In 1991 I.J. Ahluwalia done a study covering the period of 1959-85, they found that the capital productivity in Iron and Steel Industry was – 2.8 while the labour productivity was .10, on the other hand the TFP growth was -1.60% per annum increased by Translog Index.\textsuperscript{18}

\textsuperscript{15} Mehta, S.S., Productivity, production function and technical change. Concept Publishing Co., New Delhi, 1980.
\textsuperscript{17} Ahluwalia, I.J., Productivity and growth in India Manufacturing, Oxford University Press, Delhi-1991.
\textsuperscript{18} CSO, Wages and Productivity in Selected Industries, 1960 to 1977, Ministry of Planning, Govt. of India, October, 1981.
A study conducted by A Kumari in Public Sector Steel plants. She found that in the period of 1971-87, both of productivity partial as well of total factor productivity are negative, the capital productivity was -2.54, labour productivity was -0.74 and the TFP Growth was -1.2% per annum measured by Translog Index.\(^\text{19}\)

Pradhan done a study in 1998 covering four different time periods, they found that in 1963-92 the TFP Growth was -2.09, in 1963-71 the TFP Growth was -4.00, in 1972-81 the TFP Growth was 1.49 and in 1982-92 the TFP Growth was -2.40% per annum measured by Translog Index.\(^\text{20}\)

In his study, Sumit K. Majumdar examined productivity trends in Indian industry for the period 1950-51 to 1992-93 and for the sub periods, 1960-61 to 1992-93, 1970-71 to 1992-93 and 1980-81 to 1992-1993. Productivity is measured using a linear programming based technique called data envelopment analysis. The results shows that in the decade of the 1950s industrial efficiency was relatively high, however in the 1960s and 1970s, there was severe retrogression in efficiency patterns. These patterns began


reversing themselves only in 1980's while efficiency in the 1980s was no better than it had been in the 1950's; data indicate that Indian industry has reached its highest efficiency potential throughout the 1990s. Thus providing some evidence that the reforms, seems to be working.\textsuperscript{21}

There is a lot of comparative research have been conducted on Macro Level. But unfortunately there is no work has been done on the comparative study of SAIL and TISCO. However, they are the largest producer of steel in Public Sector and Private Sector in our country. So we have selected, SAIL and TISCO for the comparative study.

\footnote{Majumdar, Sumit K., 'Fall and Rise of Productivity in Industry, Has Economic Liberalisation Had an Impact? Economic and Political Weekly, November 30, 1996.}