CAPITAL PRODUCTIVITY IN STEEL COMPANIES

MEASUREMENT OF CAPITAL INPUT:-

Capital input relates to the services of fixed and working capital. Fixed capital includes factory land, building, plant and equipment whereas inventory and cash holding are known as working capital. While the importance of working capital to industrial productivity cannot be denied, it has far less bearing on productivity than fixed investment. For this reason our measure is restricted to the stock of fixed capital only.

Available data on the current book value of fixed capital is an aggregation of the various items acquired in different years in the past valued at the than prevailing prices and adjusted for depreciation over the period of their service. To bring the entire stock at constant base period prices raise problem of adjustment, which requires age composition of the item and relevant series of historical prices. "The gross output capacity of various types of machinery tends to fall with age, and the repair and maintenance charges rise so that the
contribution to met revenue falls even more.¹ The depreciated real value of stock would be meaningful, if the rate of depreciation allowed for correspond to the decline in the real product yielding capacity of various items in the stock. But, in India the depreciation is based on certain arbitrary accounting procedures imposed by the income tax authorities for assessing taxable capacity.

For this reason gross rather than net block of fixed capital is felt a better measure of its basic capacity to contribute to production in the present study, capital has been obtained as follows:

\[ K_t = K_0 + \sum I_t \]

Where

- \( K_t \) = Capital at t period of time
- \( K_0 \) = Capital of Benchmark year
- \( I_t \) = Investment in t period of time

\[ I_t = (\beta_t - \beta_{t-1} + D_t) / P_t \times 100 \]

Where

- \( \beta_t \) = Gross fixed capital at t period of time
- \( \beta_{t-1} \) = Gross fixed capital at t-1 period of time
- \( D_t \) = Depreciation in t period of time
- \( P_t \) = Whole sale price Index of machine and Machinery tools

PRODUCTIVITY TRENDS:-

In this section, an attempt has been made to measure, analyse and compare capital productivity by the ratio of gross value added (at constant price) to capital input. In this section, we compare capital productivity in public sector and private sector steel companies i.e. SAIL and TISCO.

In 1990-91, capital productivity of SAIL was 14.134, while the capital productivity of TISCO was 37.466.

In 1991-92, the situation became adverse the capital productivity of SAIL became down to 12.176 with a negative growth of 13.85 percent. In 1991-92 capital productivity of TISCO became 33.628 with a negative growth of 10.24 percent.

In 1992-93, the situation was again adverse for SAIL, capital productivity became 10.474 with a negative growth of 13.97 percent in TISCO capital productivity became 25.087 with a negative growth of 25.39 percent in year 1992-93.

In 1993-94, the capital productivity of SAIL decrease again, and it came to 8.657 from 10.474 in 1992-93 with a negative growth rate of 17.35 percent of capital productivity, while the capital productivity of TISCO became 20.057 with a negative growth of 20.05 percent of capital productivity. All of this was because of heavy investment in both of the
sectors', public and private or in other words, SAIL and TISCO.

In **1994-95**, the capital productivity of SAIL was 8.302 and the capital productivity of TISCO was 17.791, the growth rate of capital productivity of SAIL was −4.09 percentage and the growth rate of capital productivity of TISCO was −11.30 percent.

In **1995-96**, the picture has not been changed, there was again a decrease in the capital productivity of SAIL, it became 7.566 with a decrease of 8.85 percent in the year 1995-96.

In TISCO the picture has been changed, there was a improvement in the capital productivity of TISCO, it became 18.645 with an increase of 4.80 percent growth rate of capital productivity. This was due to increase in gross value added of TISCO and decrease in capital input of TISCO.

In **1996-97**, the capital productivity of SAIL and TISCO came down to 5.927 and 16.976 respectively. The growth rate of capital productivity of SAIL was −21.66 percent, and the growth rate of capital productivity of TISCO was −8.95 percent for the year 1996-97.
In 1997-98, capital productivity of SAIL was 5.278 with the growth rate of –10.95 percent of capital productivity. In TISCO, capital productivity was 14.543 with the growth rate of –14.33 percent of capital productivity.

In 1998-99, the gross value added of SAIL came down. Because of that, the growth at capital productivity of SAIL became lowest in the period of our study. In the year 1998-99 the capital productivity of SAIL was 3.786 and the growth of capital productivity was –28.25 percent, lowest in our study. The capital productivity of TISCO in this period was 11.809 with the negative growth rate of 18.79 percent for the period of 1998-99.

In 1999-2000, there was a reform in both sectors public and private, in other words SAIL and TISCO, the capital productivity of SAIL was now 3.712 with the decrease of –1.96 percent change in capital productivity. This was –28.25 percent in the period of 1998-99.

In TISCO, the capital productivity for the period of 1999-2000 was 11.518 with the decrease of –2.47 percent growth of capital productivity. It is the lowest decrease in capital productivity throughout our study.
In **2000-01** this period, there was a reform in the capital productivity of SAIL. In this period it became 4.004 with the growth rate of 7.86 percent of capital productivity. In TISCO, the capital productivity for the same period was 10.859 with the negative growth of 5.72 percent of capital productivity.

**2001-02**, in this period, there was a huge investment in SAIL, but gross value added (at constant price) was decrease. That's why the capital productivity of SAIL came down. In this period it became 3.099 with the highest negative growth rate of –22.58, in the period of our study. The capital productivity of TISCO was 9.477 for this period and the percentage change in capital productivity was –12.72 percent for the year 2001-02.

**2002-03**, in this year, there was considerable improvement in gross value added of both the companies namely SAIL and TISCO, because of that, the capital productivity of SAIL and TISCO was rising. In the period of 2002-03, the capital productivity of SAIL became 3.565 with the growth rate of 15.03 percent. While in TISCO, there was also in improvement in capital productivity. In this period, it became 10.920 with the growth rate of 15.22 percent for the period 2002-03.
2003-04, in this period there was no change in the picture, the performance of the value addition was also better in this period. Because of that, the capital productivity of the both sectors, public and private was increased. In this year 2003-04 the capital productivity of public sector steel company (SAIL) became 4.666, with the any time high rate of growth of capital productivity of 30.87 percent in the period 2003-04. While the capital productivity of TISCO was 11.880, with the positive growth rate of 8.79 percent of capital productivity for the period 2003-04.