CHAPTER – III
MEASUREMENT OF PRODUCTIVITY

3.1 INTRODUCTION

An improvement in productivity is considered to be vital to achieve several corporate objectives. Measurement of productivity therefore provides an important tool to identify areas for corrective actions towards planning, redeployment of resources and other management controls to achieve better performance. It provides measures for comparisons between the performance and the non-performance, between the performance in one period and the performance in another or between the organization or plants of an organization.

This chapter deals with various types of productivity such as materials, labour, capital, power and fuel. With the help of the secondary data collected from the mill the researcher has tried to measure various types of productivity. For computation of correlation the figures found on the basic table has been rounded off to two digit numbers.

3.2 MEASUREMENT PRODUCTIVITY

1. Physical measurement of productivity can be done easily when a single product is produced. Where a firm produces different products in different units, it is difficult to measure the productivity of the whole company. Product mix may consists of different products, different grades, specifications on qualities and finally in different units like tone, kg, litre etc. in such case, monetary measurements are often used for measuring productivity as follows

   \[ \text{Productivity} = \frac{\text{Value of Production}}{\text{Cost Incurred}} \]

2. Another method of measuring overall productivity is to adopt labour productivity which is expressed in terms of the man or per man-hour. In case of labour, productivity is increased with the elimination of an effective and idle time of work men and motivating people to do things better. Better industrial relations and incentive schemes will also help
in higher productivity. In Marshall’s words, man is “both the end and an agent of production”. Rostas maintains that labour productivity is the most appropriate concept for measuring productivity

\[
\text{Labour productivity} = \frac{\text{output}}{\text{no. of workmen (or) output / direct labour hours}}
\]

(or) \[\frac{\text{output}}{\text{direct labour cost}}\]

3. Other methods of measurement are indicated below:

a) Machine Productivity = Output / Machine hour

b) Raw materials productivity = Output / quantity of materials (or) Output / cost of materials consumed.

c) Capital productivity = Output / capital employed

Fabricants points out that “indexes of productivity based on the comparison of output with the input of both labour and tangible capital are better measure of efficiency than those based on labour input or capital input alone”.

3.3 MEASUREMENT OF INPUT

Measurement of input also is difficult as it comprises of a number of different factors such as material, labour, and services. In such a case each input factor is measured as follows:

<table>
<thead>
<tr>
<th>Factors</th>
<th>Unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Physical units of quantity, weight, volume, or monetary value of materials</td>
</tr>
<tr>
<td>Labour</td>
<td>Man-hour, man-shift, man-day, man-month, or man-year or direct labour cost</td>
</tr>
<tr>
<td>Services</td>
<td>Machine hour, KWH, Labour hour, Capacity percentage etc.</td>
</tr>
</tbody>
</table>
3.4 OVERALL PRODUCTIVITY

Return on capital employed = Profit / Capital employed

It is broken into two measurements

Profit/sales and sales/capital employed

But this measurement is associated with changes in price level of various products and manufacturing cycle i.e., time from the stage of raw materials to the sale of finished goods.

Measurement of productivity provides information as to the level attained, rate of growth and utilization of resources. It also permits comparisons at various levels. Productivity measurement thus forms a basis for planning, evaluating and taking appropriate measures for improving productivity at various levels, contributing to more rapid economic growth.

3.5 IMPROVEMENT OF PRODUCTIVITY

Production planning and control (PPC), inventory control, cost control, budgetary control, market research, operations research, preventive maintenance, inter-firm comparison, organization and methods and good management – all these aim at improvement of productivity

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3.6 MATERIAL PRODUCTIVITY

The material productivity in manufacturing unit is a vital factor in ensuring a high level of effectiveness and efficiency. It is because raw materials and bought out components costs usually constitute a high proportion of the total cost of sales of most manufacturing organizations.

The measurement of materials productivity is the difference in weight between what is input to a process and what is eventually sent to a customer. Percentage should be calculated both for individual operations and for each production line being studied. Improving material productivity is one of the most direct and important ways to enhancing added value.

Material is the primary input in any manufacturing concern. In the most structure of majority undertaking its share is more than sixty per cent. Productivity of materials refers to the higher output for a given unit of raw material. The unit of raw material may be either in kilogram or volume in number.

\[
\text{Output} \quad \text{Materials Productivity} = \frac{\text{Output}}{\text{Materials}}
\]

Technically, productivity can be improved either by increasing the output for a given unit of raw materials.

Standard consumption of raw materials should be determined on the basis of engineering measurements, past history and standard consumption as decided by the industry or by a competitor in the same industry. A raw material productivity report should be prepared periodically, preferably quarterly.
3.7 PRODUCTIVITY OF LABOUR

Another important and essential input in any manufacturing enterprise is labour. The measurement of productivity is a complex issue due to the fact that productivity depends on many factors such as training, degree of skill of the workers, better working conditions, high degree of morale, sophisticated tools and the like.

However, a simple average labour productivity rate can be calculated as under:

\[
\text{Productivity of the worker} = \frac{\text{Output}}{\text{Number of workers}}
\]

It should be compared with the similar rate in similar units in the industry. Just as the raw material productivity report, a labour productivity report should also be prepared periodically.

In case of labour, productivity is increased with the elimination of ineffective and idle time of workmen and by motivating people to do things better.\(^3\)

Salaries and wages are given to the workers for the units produced by them. There are two types of payment of wage rate system.

1. Time rate system
2. Piece rate system

Under the time rate system wages are paid to the workers for the standard hours worked under the piece rate system wages are paid to the workers for the units produced.

Here the wages paid are compared with production to ascertain productivity per rupee of wage.

The formula for calculating productivity per rupee of wage is as follows:

\[
\text{Productivity per rupee of wage} = \frac{\text{Production}}{\text{Wages}}
\]
3.8 PRODUCTIVITY OF CAPITAL

Capital productivity may be described as the arithmetic ratio between the amount produced and the amount of capital used in the course of production. To measure productivity we have to think in terms of time since it is the output of goods or services from a machine or from a worker in a given time, which is used in calculating productivity.

One of the major problems facing the financial manager of a company is to take decision on its capital requirement from time to time. Production decisions are short term decisions but capital investment in a company will be based on the expectation of the net yield from using an additional unit of capital after deducting the cost of raising that capital. The economic usefulness of capital is measured by its marginal efficiency or by the rate of return over cost.

Production decisions are short term decisions we can not estimate the capital requirement exactly. Therefore, a prudent financial manager will use a judicial combination of both debt and equity capital.

According to Gerestenberg, capital structure refers to the make up of a firm’s capitalization in other words, it represents the mix of different sources of long term funds (such as equity shares, preference shares long term loans retained earnings etc.,) in the total capitalization of the company.

The working capital is required to run the business. Here the concept of net working capital has been taken for the analysis. It is arrived by deducting current assets from current liabilities.

Productivity per rupee of working capital is measured as follows:

\[
\text{Productivity per rupee of working capital} = \frac{\text{Production}}{\text{Working capital}}
\]
3.9 PRODUCTIVITY OF POWER AND FUEL

Power and fuel is the resource which contributes for production. The expenditure on power and fuel is compared with production. It helps the researcher to find out productivity per rupee of power and fuel. There may be power cut in a year. At that time generators are used. The formula to find out productivity per rupee of power and fuel is as under,

\[
\text{Productivity per rupee of power and fuel} = \frac{\text{Production}}{\text{Power and fuel}}
\]

3.10 MINIMISING WASTAGE

The term productivity also means avoidance of wastage. Elimination of wastage will lead to higher output. The waste may be in case of material or time wasted on non productive work.

The waste may be defined as the ineffective use of a) Time i.e., idle time or overtime b) money c) materials d) skills-mental or physical e) equipment, machines and tools f) space and land g) man power h) foreign exchange i) management.

Lower the wastage higher the productivity and vice versa. Productivity is war on waste and inefficiency. The following techniques are used for locating areas of waste.
1. Work study
2. Job evaluation
3. Value analysis and cost reduction
4. Pert / CPM
5. Operation research
6. Market research
7. Statistical quality control
8. Ergonomics
9. Inventory control
The problem of industrial in-efficiency is also related to the structure of the economy. How the structure of the economy and the dependence of the manufacturing sector on foreign technology have resulted in a near stagnation in demand for industrial goods, excess capacities – and technical and managerial in-efficiencies has been discussed by Shetty (1978).

Further studies by BICP (1988), revealed that Indian Industries suffered from inefficient use of resource, thereby, leading to high cost economy mainly because of the small size of domestic plants, and their relatively high capital costs due either to delays during project implementation or high incidence of duties on imported capital goods even on items where there was no domestic production, inappropriate investment decisions and cascading impact of taxes and duties. The same study also revealed that as the degree of indigenization increased because of the present phased manufacturing programme (PMP), the domestic cost expressed in terms of rupees per marginal dollar saved also increased.

Productivity is not a matter of logic but is due to the inner drive which in turn is caused by morale, perceptions and attitudes of the workmen.

Productivity is a ratio of results produced to efforts put in. In the case of a machine it depends on inherent design capacity. This is not the case in human beings. A man may have all the resources of time, money and energy at his disposal, still he may not be productive if the crucial motivation is absent.

3.11 DECLINING PRODUCTION

In sharp contrast, Japan has taken a realistic and constructive approach to the problem of declining production. The higher productivity of Japanese workers is attributed to the “Japanese” style of management or “Japanese” social culture.
The apparent success of the Japanese management style had led to a situation where concepts such as ‘Quality Circles’, ‘Zero Defect Approach’ and learning the Japanese Manager’s life-style to the extent of copying their eating and drinking habits has become an obsession the world over. There is no ‘Japanese Magic’ underlying their success. If productivity decline in Japan is not yet discernible, the reasons are not different from those which are found in other industrial countries, where, in the wasteland of apathy and callousness, there are tranquil oases of productivity.

The senior should also spend some time, visiting work areas and meeting small groups of employees. There should be a genuine end sustained effort to keep all employees informed of what is happening and to invite and consider their suggestions. Canteen committees, works committees and any similar forum should be encouraged and given due importance. This emphasis on the human factor would improve morale and ensure.

Productivity being a more meaningful index of efficient performance than profitability, calls for serious attention of today’s Managers. In fact, the success of Management is linked with higher productivity. Its importance is also more to the consumers and to the society at large under the conditions of increasing prices and difficult economic situations.

Productivity may be defined as the input output ratio representing efficient use of the input leading relatively to higher output for a given input. Inputs consist of a number of factors such as labour, raw material, plant. The present paper attempts to measure the productivity of each of the above inputs.
3.12 MEASURING OVERALL PRODUCTIVITY

Measurement of overall productivity is very important due to two striking reasons. Firstly output is not the result of any single input. High or Low productivity in an enterprise cannot be attributed to any single input. It is the result of efficient total input management.

Secondly, to obviate the difficulty in measuring the diverse inputs in different units, overall productivity considers the rupee value of all the diverse inputs. A simple average productivity rate can be calculated as under:-

\[
\text{Overall productivity} = \frac{\text{Cost of input} + \text{Value added}}{\text{Cost of input}}
\]

Improvement or drop in productivity can be found out by comparing the input output ratio for different periods. While men materials money and time are inputs, the outputs may be anything measurable like quantity produced or sold, profits earned, cost saved, operations carried out etc. where there is one input material, one process and one output product, the function of measuring productivity is simple and easy. The wastage in input materials during the process can be reduced to improve productivity i.e. input output ratio.

Fuel, steam, gas, electricity etc are consumed at every stage of manufacturing. These are also inputs just like raw materials and stores.

The measurement of scientific productivity is an intricate issue. Meltzer (1956) reported that scientific productivity is a complex phenomenon with a number of inter-related components such as creativity quality, communicability, etc. and concluded, “it would be a formidable task to combine the various components of scientific productivity into a simple meaningful measure”.

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**Total Productivity Measure (TPM):**

Faraday has in his book “Management of Productivity” introduced a method of calculating all inputs in terms of man-years equivalents and this method have been adopted by the Norwegian Productivity Institute (NPI). The total productivity measure (TPM) used by NPI measures output in terms of resource man years, thus:

\[ \text{TPM} = X (a+b+c) \]

Where,

- \( x \) = sales and other incomes,
- \( a \) = Employees man-years;
- \( c \) = Material-man years;
- \( l \) = Cost of labour;
- \( z \) = capital expenditure incurred;
- \( y \) = cost of materials and services;
- \( w \) = Average wages and
- \( L = W_a, \)
- \( z = W_b \) and
- \( x = W_c. \)

Productivity does not refer to the function of production alone. It relates to the right and positive attitudes in thinking. Therefore the principles of productivity are applicable not only to industries but also to all other branches of human activity.

Unless and until the management becomes productivity conscious, focuses its attention an increasing production and productivity with a view to reduce the cost per unit, it would be difficult to survive in the competitive market.
Heavy Accumulation of Inventory

Accumulation of inventory increases the operating cost. The performance of the study unit would have been better if the inventory holding of this unit could be reduced to the level of the average of public enterprises in India.

Old and Absolete Machinery

Almost all the mills including study area taken over by N.T.C. are inherited with old and obsolete machinery requiring immediate replacement. These machines not only affect the efficiency but also the quality of cloth.

Total Factor Productivity (TFP) measurement is an essential ingredient of the growth accounting approach to understanding economic growth phenomenon. Right from its inception, growth accounting has been concerned with the measurement of important magnitudes that try to distinguish between growth in output due to increased employment of inputs, and growth attributable to improvements in technology and efficiency. Unlike the complementary regression approach to testing growth theories, a growth accounting exercise provides a picture of output growth decomposition into the measured contributions attributable to the various inputs employed but not a testable theory of output growth.

The Purpose

The classicists were interested in productivity measurement because they wanted to determine, or explain the distribution of social income among the groups which produce it. They were of the view that share of each factor in a competitive economy is directly related to its marginal productivity. Therefore, labour and capital being chiefly responsible for the total produce were to be rewarded with wages and profits respectively according to their marginal productivity. Secondly, productivity measurement was also deemed to help in measuring the progress of a society over period of time and comparing societies with respect of economic efficiency.
3.13 METHODS OF PRODUCTIVITY MEASUREMENT

There are three alternative methods of productivity measurement which mainly deal with international comparisons.

i. The global method is mainly based on the comparison of the total volume of output and total employment in a given industry of the different countries. It may, however, be adapted for purposes of a single country by taking the volume of output and employment for all industries at the different periods.

ii. The sample method is completely based on the comparison of the performance of a few numbers of selected mills in a particular industry producing identical products under broadly identical conditions.

iii. The net output value method is based on a comparison of the value of net output per head in the two countries, converted into the same monetary unit.

Jean Fourastie advocates the use of both direct and methods is used in the workshop and on the factory floor within a single firm or in a group of firms, while the indirect method is used outside the firm with the help of the general statistical year books of the various countries, monthly or quarterly publications by national or international institutions.

Productivity measurements through direct method are usually ill-adapted to economic and social analysis, because they are to a great extent, too confined to a single undertaking, and too localized in time and space. The indirect method of productivity measurements however, enables us to study the fundamental relationship between increased productivity and social progress. It reveals the position of one particular firm in relation to all other firms in the same sector of the national economy and is useful for economic forecasting also.
Productivity Formulae

The formulae of productivity measurement which have been evolved from time to time, have to serve different types of purposes. The application of a particular formula depends upon the availability of data. Some of these formulae are briefly discussed below:

a) Productivity Formula Based on Economic Unit:

A productivity formula which relates to an economic unit producing a wide range of goods can be put as under:

\[
\frac{\text{Value of Output}}{\text{Value of Input}}
\]

Such an approach, however, bears the least practical utility because neither it is useful for comparison of the productivity of two units or nations, nor it reveals productivity of any individual factor. Since there is likelihood of significant changes in the comparative price levels of the two different countries over a period of time, the results based on this method may provide unsteady picture while attempting for productivity comparisons at the international level.

b) Productivity Formula based on Physical Output:

The formula based on physical output may be adopted for measuring productivity at the industry level. In case of industries manufacturing a single product, the measurement of productivity is simple. Algebraically, productivity is measured by \( q/m \) where \( q \) is quantity or units of output produced and \( m \) is number of man-hours worked. A change in productivity between two periods can, thus, be written as:

\[
\frac{q^1}{m^1} / \frac{q^0}{m^0}
\]

Where suffix is 0 and 1 denote the base year and the current year respectively. But this formula is useful to a limited extent because majority of the industries manufacture
different types of products and there is hardly any industry manufacturing a single product alone. Hence its wider application is doubtful.

c) **Productivity Formula Based on the ‘Price Method’**:

Price method is an indirect method of productivity measurement. Just to illustrate we can assure that value of production is equal to value of factors of production, where the latter includes profits to entrepreneurs also. Hence, I volume of products x I price of products = I volume of factors x I price of factors, where I signifies index. Following this, the productivity index of current year can be calculated by the ration:

\[
\frac{I \text{ volume of products}}{I \text{ volume of factors}} \quad \text{Or} \quad \frac{I \text{ price of factors}}{I \text{ prices of products}}
\]

d) **Productivity Formula Based on the ‘Real Price Method’**:

The Real Price Method rests upon two basic assumptions: first we assume that the variety of manufactured products ‘A’ in an economy is of a specific nature. Secondly, it is also assumed that incomes other than those earned from labour can be disregarded and the incomes earned from the work done previously have been congruently actualized. Under these assumptions the formula ‘Value of Production – Value of Factors’ enables us to write:

\[
\text{Quantity of Products } A \times \text{Price of Product } A = \text{Number of working hours } \times \text{hourly working income},
\]

and hence:

\[
\frac{\text{Quantity of Product } A}{\text{Number of working hours}} = \frac{\text{Hourly earnings from labour}}{\text{Price of product } A}
\]

If we, then, call the ratio of

\[
\frac{\text{Price of product}}{\text{Hourly earning from labour}}
\]
3.14 MAIN LIMITATIONS

Some of the limitations of the above mentioned formulae for productivity measurements are stated below:

In almost all the studies of labour productivity we find that economists in general have treated labour as a homogeneous entity. They have not made any distinction between workers of different skill, aptitude or application. This may be because of lack of data for such classification of labour force employed in most of the industries.

For example, for a manual job, a man’s hour of work will, on an average, represent more labour than a women’s or a child’s hour and, therefore, large quantitative differences may appear in the output of different workers, i.e., adult male, adult female and child labour. In case of non-manual work, differences between individuals are qualitative, as well as, quantitative and attempts have not been made so far to develop any method or formula for measuring these types of differences.

Moreover, the hours of work of skilled workers are not interchangeable, because different jobs require different types of technical competence. The skill of workers will have a direct bearing of labour productivity, and differences in productivity figures due to this factor could be eliminated only if the varying composition in skill, age, etc., of the labour force could be taken into account in the measure of the total man hours worked or of persons employed. Also there are considerable difficulties in obtaining sufficient and reliable data on the number of man hours worked. The statistics for total annual man hours worked by wage earners are only rated and usually fragmentary.

On the other hand, the main difficulty in measuring the output is that of summating the heterogeneous output. The measurement of output in terms of physical units is easier in industries having a simple product structure as cotton textile, cement, sugar, etc.
Poor capacity utilization, outdated technology and machinery, poor maintenance and excess manpower are in existence. Drastic restructuring is required to improve the economic viability of the corporation.

Reasons, utilization of Spindles, Rotors and Looms was lower as compared to the targets mainly due to shortage of working capital fund. About the shortfall in utilization of processing facilities. Government Departments and the Public Sector Undertakings started following the open tender system for their fabric requirements and subsidiary has to compete with the private parties especially those decentralized sector for procurement of orders. The orders from DGS&D and Public Sector Undertakings have declined over a period of time and this adversely affected the Utilization of processing facilities. Other factors which affected the capacity utilization are: fabric production had come down considerably due to stoppage of uneconomic plain looms and automatic loom and there was acute shortage of working capital, which had also decline in production of market yarn due to certain environmental factors and internal factors, there was decline. Supply was more than demand advent of small spinners resulting in depressed market conditions. Supply was more than the demand due to the advent of power looms in cloth segment. Yarn cloth production dependent on capacity utilization and productivity low capacity utilization planned investment modernization did not take place due to uncertainty in funding of projects.

**Capacity Utilization**

To increase capacity utilization, productivity and efficiency by infusing adequate working capital to compensate past cash losses. Production of cheaper cloth required for the people living below the poverty. Corporation was producing cheaper cloth on a larger scale in the earlier years. Recent booming of the power loom industry affected the fortunes of the organized sector mills.
Narrow width looms have been since stopped as part of curtailment of uneconomical activities. Corporation continues to produce fabrics meant for shirting, suiting and sarees for the general public.

Volume of production primarily depended on the level of capacity utilization, the volume of sales depended on the volume of production. Lower capacity utilization, affected the sales volume. Due to vagaries of the textile industry, operates in a buyer’s market, production plan also had to be altered to suit the actual market requirements. In blended yarn, which accounted for 65% of the total market yarn production, prices had declined considerably.

To improve capacity utilization in both the areas of spinning and weaving. Planning to improve productivity and efficiency which would in turn lead to increase in volume of production. Upgrade the product mix taking into account the market demand. Steps such as sales promotion efforts, advertisements, participation in exhibitions etc. were also being taken.

**Profitability of the N.T.C.Mills**

Profitability of N.T.C. Mills in Tamil Nadu and has been adversely affected due to continued hikes in power tariff by the State Government of Tamil Nadu. Apart from high power tariff rates, the State Government has also imposed an additional levy of 20% for power consumed during peak hours (6 hours per day) since 1st April, 1997. Revision of tariff along with additional levy involves an additional expenditure of Rs.5 crores per annum for N.T.C. Supply of electricity to N.T.C. Mills at concessional rates reducing the Excise Duty on High Speed Diesel oil used by the N.T.C. mills to operate their generator sets to meet a part of their power requirements MODVAT facility in this matter, high duties levies would make captive power generation uneconomical.
Corporation is expected to get Rs.120.31 crores from the sale proceeds of surplus land and sale / disinvestment of 4 enviable mills. Pay Capital Gains Tax of about Rs.24.06 crores on the sale value of Rs.120.31 crores as per the provisions of Income Tax Act. Exemption from levy of Capital Gains Tax of Rs.24.06 crores would provide great financial help to the Corporation in implementing its Revival Plan.

### 3.15 MODERNISATION STATUS OF N.T.C. MILLS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name &amp; Location of N.T.C. Mills</th>
<th>Month of Completion</th>
<th>Amount Spent on modernization (Rs. in crores)</th>
<th>Annual Production (L.Kg/L.mt) (2008-09)</th>
<th>Annual Production (Rs.in Crs) (2008-09)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alagappa Textiles, Trichur</td>
<td>Dec-07</td>
<td>17.17</td>
<td>21.24</td>
<td>27.02</td>
</tr>
<tr>
<td>2</td>
<td>Kerala Laxmi Mills, Thrissur</td>
<td>Dec-07</td>
<td>17.97</td>
<td>17.42</td>
<td>21.30</td>
</tr>
<tr>
<td>3</td>
<td>Vijaya Mohini Mills, Trivendrum</td>
<td>Dec-08</td>
<td>18.06</td>
<td>6.65</td>
<td>8.32</td>
</tr>
<tr>
<td>4</td>
<td>Cannanore S&amp;W Mills, Mahe</td>
<td>Mar-09</td>
<td>23.79</td>
<td>4.91</td>
<td>6.24</td>
</tr>
<tr>
<td>5</td>
<td>Podar Mills, Mumbai</td>
<td>Jul-08</td>
<td>32.11</td>
<td>13.69</td>
<td>21.13</td>
</tr>
<tr>
<td>6</td>
<td>Barshi Textile Mills, Barshi</td>
<td>Dec-07</td>
<td>14.34</td>
<td>10.97</td>
<td>13.04</td>
</tr>
<tr>
<td>7</td>
<td>Tata Mills, Mumbai</td>
<td>Jan-09</td>
<td>73.10</td>
<td>12.46/60.26</td>
<td>27.59</td>
</tr>
<tr>
<td>8</td>
<td>India United Mill No.5, Mumbai</td>
<td>Dec-08</td>
<td>27.63</td>
<td>11.88</td>
<td>16.58</td>
</tr>
<tr>
<td>9</td>
<td>Cambodia Mills, Coimbatore</td>
<td>Nov-07</td>
<td>7.61</td>
<td>16.43</td>
<td>22.01</td>
</tr>
<tr>
<td>10</td>
<td>Coimbatore Murugan Mills, Coimbatore</td>
<td>Jun-09</td>
<td>13.04</td>
<td>3.95/87.27</td>
<td>44.03</td>
</tr>
</tbody>
</table>

**17 MILLS COMPLETELY MODERNISED**
<table>
<thead>
<tr>
<th></th>
<th>Company Name</th>
<th>Date</th>
<th>Efficiency</th>
<th>Power</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Pankaja Mills, Coimbatore</td>
<td>Dec-08</td>
<td>16.00</td>
<td>11.93</td>
<td>15.73</td>
</tr>
<tr>
<td>12</td>
<td>Pioneer Spinning Mills, Kamuthakudi</td>
<td>Jul-08</td>
<td>13.03</td>
<td>13.83</td>
<td>16.77</td>
</tr>
<tr>
<td>13</td>
<td>Sri. Ragavilas S.&amp;W Mills, Coimbatore</td>
<td>Apr-09</td>
<td>27.70</td>
<td>16.99</td>
<td>23.25</td>
</tr>
<tr>
<td>14</td>
<td>Kaleeswarar Mills ‘B’ Unit, Kalayarkoil</td>
<td>Jul-08</td>
<td>12.23</td>
<td>15.61</td>
<td>21.22</td>
</tr>
<tr>
<td>15</td>
<td>Arati Cotton Mills, Howrah</td>
<td>Mar-09</td>
<td>46.20</td>
<td>1.43</td>
<td>1.72</td>
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<tr>
<td>16</td>
<td>Burhanpur TaptiMills, Burhanpur</td>
<td>Dec-08</td>
<td>21.59</td>
<td>7.86</td>
<td>8.76</td>
</tr>
<tr>
<td>17</td>
<td>New Bhopal Textile Mills, Bhopal</td>
<td>Dec-08</td>
<td>27.21</td>
<td>8.56</td>
<td>9.87</td>
</tr>
<tr>
<td></td>
<td><strong>1 Mill Under Modernisation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Cannanore S&amp;W Mills, Cannanore</td>
<td></td>
<td>19.88</td>
<td>9.77</td>
<td>12.72</td>
</tr>
<tr>
<td></td>
<td><strong>3 New Green Field Mills being set up by N.T.C.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Minerva Mills, Hassan</td>
<td></td>
<td>18.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Finlay Mills, Achalpur</td>
<td></td>
<td>24.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Rajnagar Mills, Ahmedabad</td>
<td></td>
<td>6.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Udaipur Cotton Mills, Udaipur</td>
<td></td>
<td>Feasibility report under evaluation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 3.16 STATUS OF ISO CERTIFICATION OF MODERNISED N.T.C.MILLS

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Name of Mill</th>
<th>Date of ISO Certification</th>
<th>Awarding Agency</th>
<th>Process Certified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coimbatore Murugan Mills, Coimbatore</td>
<td>November, 2008</td>
<td>TUV Industries Service GmbH TUV Rheinland Group</td>
<td>Manufacture of Cotton, Blended Yarn and Grey Fabric</td>
</tr>
<tr>
<td>3</td>
<td>Barshi Textile Mills, Barshi</td>
<td>25.08.2008</td>
<td>IQ Net and CISQ / RINA</td>
<td>Manufacture of Grey Cotton and Blended Yarns</td>
</tr>
<tr>
<td>4</td>
<td>Kaleeswarar Mills ‘B’ Unit, Kalayarkoil</td>
<td>10.03.2009</td>
<td>Intertek Systems Certification, Mumbai</td>
<td>Manufacture of Cotton and Blended Yarn</td>
</tr>
<tr>
<td>5</td>
<td>Pankaja Mills, Coimbatore</td>
<td>06.04.2009</td>
<td>BSI Management systems, New Delhi</td>
<td>Manufacture and Supply of Cotton and Manmade Fibre Blended Yarn</td>
</tr>
<tr>
<td>6</td>
<td>Alagappa Textiles, Trichur</td>
<td>24.05.2009</td>
<td>BSI India Management System</td>
<td>Manufacture and Supply of single and double combed and carded cotton, manmade staple fibre and blended yarns of various counts.</td>
</tr>
<tr>
<td>7</td>
<td>Podar Mills, Mumbai</td>
<td>10.06.2009</td>
<td>IQ Net and CISQ / RINA</td>
<td>Manufacture &amp; Supply of textile products (yarn)</td>
</tr>
<tr>
<td>8</td>
<td>Tata Mills, Mumbai</td>
<td>23.06.2009</td>
<td>KBS Certification Services</td>
<td>Manufacture &amp; Supply of textile goods</td>
</tr>
</tbody>
</table>
Rise in productivity

Productivity is critical for the long-term competitiveness and profitability of organizations. It can be effectively raised if it is managed holistically and systematically. The Integrated Management of Productivity Activities (IMPACT) framework provides a guide to how this can be done.

Productivity measurement is a prerequisite for improving productivity. As Peter Drucker, who is widely regarded as the pioneer of modern management theory, said:

“Without productivity objectives, a business does not have direction.

Without productivity measurement, a business does not have control.”

Measurement plays an important role in your management of productivity. It helps to determine if your organization is progressing well. It also provides information on how effectively and efficiently your organization manages its resources.

Productivity is the relationship between the quantity of output and the quantity of input used to generate that output. It is basically a measure of the effectiveness and efficiency of your organization in generating output with the resources available.

Productivity is defined as a ratio of output to input:

\[
\text{Productivity} = \frac{\text{OUTPUT}}{\text{INPUT}}
\]

Essentially, productivity measurement is the identification and estimation of the appropriate output and input measures.
3.17 MEASURES OF OUTPUT

Output could be in the form of goods produced or services rendered. Output may be expressed in:

- Physical quantity
- Financial value

Physical Quantity:

At the operational level, where products or services are homogeneous, output can be measured in physical units (e.g. number of customers served, number of books printed). Such measures reflect the physical effectiveness and efficiency of a process, and are not affected by price fluctuations.

Financial value:

At the organization level, output is seldom uniform. It is usually measured in financial value, such as the following:

- Sales
- Production value (i.e. sales minus change in inventory level)
- Value added

3.18 MEASURES OF INPUT

Input comprises the resources used to produce output. The most common forms of input are labour and capital. Labour can be measured in three ways:

Number of hours worked:

This measure reflects the actual amount of input used. It excludes hours paid but not worked (e.g. holidays, paid leave).
**Number of workers engaged:**

This measure is more commonly used, as data on hours worked may not be readily available. Part-timers are converted into their full-time equivalent. An average figure for a period is used, as the number of workers may fluctuate over time.

**Cost of Labour:**

Labour costs include salaries, bonuses, allowances and benefits paid to employees.

**Capital**

Capital refers to physical assets such as machinery and equipment, land and buildings, and inventories that are used by the organization in the production of goods or provision of services. Capital can be measured in physical quantity (e.g. number of machine hours) or in financial value, net of depreciation to account for the reduced efficiency of older assets.

**Labour Productivity**

Labour productivity, defined as value added per worker, is the most common measure of productivity. It reflects the effectiveness and efficiency of labour in the production and sale of the output.

**Capital Productivity**

Capital productivity measures the effectiveness and efficiency of capital in the generation of output. It is defined as value added per dollar of capital. Capital productivity results from improvements in the machinery and equipment used, as well as the skills of the labour using the capital, processes, etc.
3.19 PROFITABILITY AND PRODUCTIVITY

Organizations commonly regard profits as a key measure of their success. Using profits as a measure may be seen to imply that the organization will benefit more if costs such as salaries and depreciation for capital reinvestment are reduced. However, lowering salaries to increase profits tends to lead to conflicts in the relationship between employees and management. Minimizing capital investment often has a negative impact on the efficiency of operations, and eventually affects profits. Therefore, increasing profits by reducing such expenses is only a short-term measure.

The only viable way to increasing profits in a sustainable manner is to increase the economic pie or value added through higher productivity. This can be done with better cooperation from employees, higher investment in capital, and optimal use of capital.

In return for your employee’s efforts, your organization should share the additional wealth generated in the form of higher wages and improved benefits. This will reinforce and encourage them to further improve their performance. To sum up, productivity is key to sustaining profits in the long run.

In an integrated approach to productivity measurement, the various dimensions of an organisation’s operations are linked to show how each of them effects overall performance.

3.20 LABOUR PRODUCTIVITY

Labour productivity (value added per worker) may be broken down into two ratios – sales per employee and value added-to-sales ratio – for a better understanding of the factors that affect it.
A decline in labour productivity could be due to a lower sales per employee ratio as a result of a new competitor, or a lower value added-to-sales ratios as a result of an increase in product costs. The analysis helps management to better decide on the appropriate action to take in order to improve productivity.

In order to measure productivity of a nation or an industry, it is necessary to operationalize the same concept of productivity as in a production unit or a company, yet, the object of modelling is substantially wider and the information more aggregate. The calculations of productivity of a nation or an industry are based on the time series of the SNA, System of National Accounts.

Productivity is considered a key source of economic growth and competitiveness and, as such, is basic statistical information for many international comparisons and country performance assessments. There are different measures of productivity and the choice among them depends either on the purpose of the productivity measurement and/or data availability. One of the most widely used measures of productivity is Gross Domestic Product (GDP) per hour worked. (OECD 2008,11)

Another productivity measure is so called multi factor productivity (MFP) also known as total factor productivity (TFP). It measures the residual growth that cannot be explained by the rate of change in the services of labour, capital and intermediate outputs, and is often interpreted as the contribution to economic growth made by factors such as technical and organizational innovation. (OECD 2008,11)

Productivity measures are key indicators of economic performance and there is strong interest in comparing them internationally. The OECD publishes an annual Compendium of Productivity Indicators that includes both labor and multi-factor measures of productivity. Several statistical offices publish productivity accounting handbooks and manuals with detailed accounting instructions and definitions.
Figure – 3.1

Labour Productivity in Europe

Figure – 3.2

Labour productivity levels in Europe
Comparison of average labor productivity levels between the OECD member states. Productivity is measured as GDP per hour worked. Blue bars = higher than OECD-average productivity. Yellow bars = lower than average.

Labor productivity is the value of goods and services produced in a period of time, divided by the hours of labor used to produce them. In other words labor productivity measures output produced per unit of labor, usually reported as output per hour worked or output per employed person.

3.21 IMPORTANCE OF NATIONAL PRODUCTIVITY GROWTH

Productivity growth is a crucial source of growth in living standards. Productivity growth means more value is added in production and this means more income is available to be distributed.

At a firm or industry level, the benefits of productivity growth can be distributed in a number of different ways:

- To the workforce through better wages and conditions;
- To shareholders and superannuation funds through increased profits and dividend distributions;
- To customers through lower prices;
- To the environment through more stringent environmental protection; and
- To governments through increases in tax payments (which can be used to fund social and environmental programs).

Productivity growth is important to the firm because it means that it can meet its (perhaps growing) obligations to workers, shareholders, and governments (taxes and regulation), and still remain competitive or even improve its competitiveness in the market place.
There are essentially two ways to promote growth in output:

- Bring additional inputs into production; or
- Increase productivity.

Adding more inputs will not increase the income earned per unit of input (unless there are increasing returns to scale). In fact, it is likely to mean lower average wages and lower rates of profit. But, when there is productivity growth, even the existing commitment of resources generates more output and income. Income generated per unit of input increases. Additional resources are also attracted into production and can be profitably employed.

At the national level, productivity growth raises living standards because more real income improves people's ability to purchase goods and services (whether they are necessities or luxuries), enjoy leisure, improve housing and education and contribute to social and environmental programs. Over long periods of time, small differences in rates of productivity growth compound, like interest in a bank account, and can make an enormous difference to a society's prosperity. Nothing contributes more to reduction of poverty, to increases in leisure, and to the country's ability to finance education, public health, environment and the arts’.

3.22 SOURCES OF PRODUCTIVITY GROWTH

The most famous description of the productivity sources is that of Solow's (1957): "I am using the phrase 'technical change' as a shorthand expression for any kind of shift in the production function. Thus slowdowns, speed ups, improvements in the education of the labor force and all sorts of things will appear as 'technical change' ” Since then more specific descriptions of productivity sources have emerged referring to investment, innovations, skills, enterprise and competition (ONS 3, 20).

Drivers of Productivity Growth

There is a general understanding of the main determinants – or “drivers” – of productivity growth. Certain factors are critical for determining productivity growth. The
Office for National Statistics (U.K) identifies five drivers that interact to underlie long-term productivity performance: investment, innovation, skills, enterprise and competition. (ONS 3, 20)

- Investment is in physical capital — machinery, equipment and buildings. The more capital workers have at their disposal, generally the better they are able to do their jobs, producing more and better quality output.

- Innovation is the successful exploitation of new ideas. New ideas can take the form of new technologies, new products or new corporate structures and ways of working. Such innovations can boost productivity, for example as better equipment works faster and more efficiently, or better organisation increases motivation at work.

- Skills are defined as the quantity and quality of labour of different types available in an economy. Skills complement physical capital, and are needed to take advantage of investment in new technologies and organisational structures.

- Enterprise is defined as the seizing of new business opportunities by both start-ups and existing firms. New enterprises compete with existing firms by new ideas and technologies increasing competition. Entrepreneurs are able to combine factors of production and new technologies forcing existing firms to adapt or exit the market.

- Competition improves productivity by creating incentives to innovate and ensures that resources are allocated to the most efficient firms. It also forces existing firms to organise work more effectively through imitations of organizational structures and technology.
**Productivity Improving Technologies**

Productivity is determined by:

- The available technology or know-how for converting resources into outputs desired in an economy; and
- The way in which resources are organized in firms and industries to produce goods and services.

Average productivity can improve as firms move toward the best available technology; plants and firms with poor productivity performance cease operation; and as new technologies become available. Firms can change organisational structures (e.g. core functions and supplier relationships), management systems and work arrangements to take the best advantage of new technologies and changing market opportunities. A nation's average productivity level can also be affected by the movement of resources from low-productivity to high-productivity industries and activities.

With increased pressure from the international or National productivity, growth stems from a complex interaction of factors. As just outlined, some of the most important immediate factors include technological change, organisational change, industry restructuring and resource reallocation, as well as economies of scale and scope. Other factors such as research and development and innovative effort, the development of human capital through education, and incentives from stronger competition promote the search for productivity improvements and the ability to achieve them. Ultimately, many policy, institutional and cultural factors determine a nation's success in improving productivity.

Productivity is one of the main concerns of business management and engineering. Practically all companies have established procedures for collecting, analyzing and reporting the necessary data.
Typically the accounting department has overall responsibility for collecting and organizing and storing the data, but some data normally originates in the various departments.

**Productivity Paradox**

Despite the proliferation of computers, productivity growth was relatively slow from the 1970s through the early 1990s. Although several possible causes for the slowdown have been proposed there is no consensus. The matter is subject to a continuing debate that has grown beyond questioning whether just computers can significantly increase productivity or whether the potential to increase productivity is becoming exhausted.

**Partial Productivity**

Measurement of partial productivity refers to the measurement solutions which do not meet the requirements of total productivity measurement, yet, being practicable as indicators of total productivity. In practice, measurement in production means measures of partial productivity. In that case, the objects of measurement are components of total productivity, and interpreted correctly, these components are indicative of productivity development. The term of partial productivity illustrates well the fact that total productivity is only measured partially – or approximately. In a way, measurements are defective but, by understanding the logic of total productivity, it is possible to interpret correctly the results of partial productivity and to benefit from them in practical situations.
The economic health of a country is most often determined by their labor productivity. Labor productivity is a per-hour measurement of generated output on a per-worker basis. In layman's terms, how much work a worker completes in an average hour. As more and more work is produced in an hour, the overall productivity level increases, which signifies a healthy and expanding economy.

3.23 PRODUCTIVITY DEBATE

One of the key agendas in Australia has always been how to increase productivity in order to maintain sustainable economic growth. Productivity debates come and go, in tandem with the economic situation at a time. Most recently, the debate about Australian productivity has intensified, with a measured decline in productivity in the past years. Extended discussions about this productivity decline will be included in a companyed paper (Productivity Concepts and Policy Directions). Most productivity debates occur in the policy area. They are often fuelled by the media, statistics, research papers and political views. However, public awareness of what productivity is remains poor. In particular, when referring to multifactor productivity, confusions are significant, exacerbated by the complex nature of its measurement.

Productivity thus defined measures the average output against the combined input – average output per unit combined input. Thus productivity is a function of other inputs.

The preponderance of research evidence indicates that there is no strong linkage between satisfaction and productivity. For example a comprehensive meta-analysis of the research literature finds only 17 percent estimate correlation between job satisfaction and productivity. Satisfied workers will not necessarily be the highest producers. There are many possible moderating variables, the most important of which seems to be rewards. If people receive rewards they feel are equitable, they will be satisfies and this is likely to result in greater performance effort. Also, recent research evidence indicates that satisfaction may not
necessarily lead to individual performance improvement but does lead to departmental and organizational level improvements. Finally there are still considerable debate weather satisfaction leads to performance or performance leads to satisfaction.

**FIGURE – 3.3**

**LEARNING CURVE**

Productivity is critical for the long-term competitiveness and profitability of organisations. It can be effectively raised if it is managed holistically and systematically. The Integrated Management of Productivity Activities (IMPACT) framework provides a guide to how this can be done.
**Figure – 3.4**

Productivity Management

**PHASE I**
Establish Productivity Management Function

**PHASE II**
Diagnose

**PHASE III**
Develop Road Map

**PHASE IV**
Implement Measurement System

**PHASE V**
Implement Performance Management System

**FIGURE – 3.5**

INTEGRATED APPROACH TO PRODUCTIVITY MEASUREMENT

1. **Activity indicator**
   - No. of customers / Total no. of staff
   - Sales / Total no. of staff
   - Total floor area / No. of customers

2. **Value added**
   - Value added / Total no. of staff
   - Value added / Sales

3. **Key management indicator**
   - \( \frac{\text{Value added}}{\text{Total no. of staff}} \)
   - \( \frac{\text{Sales}}{\text{Total no. of staff}} \)
   - \( \frac{\text{Sales}}{\text{No. of customers}} \)
   - \( \frac{\text{Sales}}{\text{Total floor area}} \)

4. **Operational indicators**
   - Cost of goods sold / Sales
   - Other expenses / Sales

\[ \text{Value added} = \left( \frac{\text{Sales}}{\text{Total no. of staff}} \right) \times \left( \frac{\text{Sales}}{\text{No. of customers}} \right) \times \left( \frac{\text{Sales}}{\text{Total floor area}} \right) \]

\[ \text{Key management indicator} = \left( \frac{\text{Value added}}{\text{Total no. of staff}} \right) \]

\[ \text{Operational indicators} = \left( \frac{\text{Cost of goods sold}}{\text{Sales}} \right) + \left( \frac{\text{Other expenses}}{\text{Sales}} \right) \]
• Provides a comprehensive picture of the organisation’s performance
• Highlights the relationships among different ratios and units, and allows the organisation to analyse the factors contributing to its productivity performance
• Helps diagnose problem areas and suggests appropriate corrective actions
• Enables the organisation to monitor its performance over time and against the performance of other organisations

Using the example shown in Figure 3.6, labour productivity (value added per worker) may be broken down into two ratios — sales per employee and value added-to-sales ratio — for a better understanding of the factors that affect it.

**FIGURE – 3.6**

**ANALYSIS OF LABOUR PRODUCTIVITY**

![Diagram of Labour Productivity](image)

A decline in labour productivity could be due to a lower sale per employee ratio as a result of a new competitor, or a lower value added-to-sales ratio as a result of an increase in product costs. The analysis helps management to better decide on the appropriate action to take in order to improve productivity.
The productivity measurement task force should first define the objectives of measurement. Productivity measurement is an integral part of productivity management. A dedicated task force should be formed to develop a productivity measurement system. The task force could be led by a member of senior management or a productivity manager, with representatives from different departments and levels who have good knowledge of the organisation’s operations and processes.

At the management level, the objectives are based on the organisation’s overall productivity goals and key productivity levers. Productivity levers are areas or actions that an organisation can focus on to improve productivity significantly. Examples include obtaining higher value from products through service excellence and optimisation of labour through effective deployment of manpower.

Objectives at the organisational and management levels are cascaded down to the objectives of specific functions and individuals. Figure 5.4 shows examples of objectives of the various functions and their relationship with the organisation’s productivity goals.

**FIGURE – 3.7**

**PRODUCTIVITY GOALS AND OBJECTIVES**

<table>
<thead>
<tr>
<th>Organisational level</th>
<th>Increase productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management level</td>
<td>Optimise use of labour</td>
</tr>
<tr>
<td></td>
<td>Human Resources</td>
</tr>
<tr>
<td>Operational level</td>
<td>Recruit the best person</td>
</tr>
</tbody>
</table>
3.24 SYSTEMS APPROACH BASED MODELS

As an approach entirely different from the conventional productivity measurement models, Mason considers productivity as a systems concept. Mason advocates that the exercise of productivity measurement is basically reduced to measure the “level output a system has generated in relation to the input resource consumed during the production process”. The author further recommends that the measure of productivity shall depend upon the type of environment of the system.

Drawing upon the theory of systems environment as advocated by Emery and Trist, mason has detailed out concepts of productivity measurement with each of the four types of environments. For placid randomized environment, the author recommends productivity as a measure of conversion of inputs to outputs. The author terms it as process of flow productivity which can be both measured for outputs as well inputs. For example, bounded output productivity is the ratio of actual output to maximum output. For the third type of environment that is disturbed and reactive, the author refers the productivity as systematic productivity equaling. Actual output/maximum output

3.25 CHRONOLOGICALLY SPEAKING

As briefly mentioned earlier, the subject of productivity, its concept, its advantages and its imperative need to improve upon the performance has attracted a very wide attention from all concerned, be it the economists, politicians, accountants, industrial engineers, labour leaders etc. an extensive literature exists in the form of ‘books, articles, papers and other briefs. A full of bibliography would run into hundreds of titles.

The measurement of productivity is a subject however of relatively interest. Initially, the usual financial Ratios with a few extensions came to be advocated as the ready beckoners of productivity.
These included profits, returns on investment, inventory ratios, debt to equity ratios etc. some of these financial ratios date back to the very beginning of the industrial and as such if it is accepted that financial ratios represent the measures of productivity. It can also be said that since a long time certain measures of productivity have existed. Financial ratios however do not represent the productivity as is understood these days. Financial ratio as best can be understood to project financial performance of a company.

Productivity measurement in real sense is of recent birth. Before tracing the papers of productivity measurement chronologically, two points need clarification. First any exercise on productivity measurement must be considered to provide a system, a methodology whereby the data can be used to arrive at tangible, understandable figures, be they in the form of ratios, indices, aggregates numbers of similar other expressions.

The productivity measurement model so suggested must be possible to apply to another organization in similar context within the specified constraints, in other words, the proposed productivity measurement model should not be such as has been solely developed for one particular use, so as to lose its generality for use elsewhere.

3.26 A CRITICAL OVERVIEW

Each of the models briefly discussed in earlier paras has its merits when seen in the proper perspective. A critical analysis is being made in the following paras not with a view to find faults with the models but with an intention to bring out inadequacies so that a more suitable and appropriate model emerges to measure productivity.

The production function models have assumed that labour and capital form the only or major inputs of a production function. In practice other input variables are also present. For example, the scale of production, technology of methods, tools, manufacturing processes, the product mix, the process cycle, the product quality requirements play important roles.
These factors of inputs are not expressible in the type of mathematical expressions suggested. Models based on production function on indirect model of productivity measurement.

The underlying concept is to express a particular production function in a relationship of an additive or a multiplicative expression at a time period and varied data of input factors. The actual production value achieved can then be compared to obtainable value to provide and index of productivity. This approach can have a validity if it is presumed that the production function shall have the same major input factors at both the periods as well as the relationship of the factors of production shall remain unchanged. In practice, however, it is altogether different. Input factors shall vary depending upon the requirements.

More important the relationships shall undergo radical changes as the same are dependent on product mix, technological requirement, size of operations etc. for example, requirements of large scale production may need high capital intensive facilities so as to change K (as well as KWH in harry Ernst model) with reference to L. similarly, another product mix may make the production function to be highly labour oriented so as to make L as more prominent.

Financial ratios are generally derived from the published books of accounts that is balance sheet and profit & loss statements are meant to serve different objectives that is of providing information about the financial status of the company to shareholders, investors, speculators, Public etc. the data contained does not throw light on as to how well all the resources have been utilized. These show as to how well the company has used funds at its disposal and as to how it stands with reference to deployment of capital in its various activities. At best the financial measures can be said to represent the financial performance of a company.