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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
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- Garg Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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CORPORATE SOCIAL PERFORMANCE THROUGH VALUE ADDED REPORTING - A CASE STUDY OF HINDUSTAN PETROLEUM CORPORATION LTD.

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ABSTRACT

The primary objective of financial management of any business enterprise is the maximization of shareholders' wealth. But there has been a considerable interest among other stakeholders like employees, government, supplier and the general public who are looking at the performance of an enterprise from a broader socio-economic perspective. This increasing interest among the other stakeholders made the management to redesign the corporate objectives as well as the reporting practices. One of the important contributions of a business enterprise to the society and to improve the standard of living of the society is the value addition through its business operations. Therefore, for measuring and reporting the socio-economic objectives of the business, the value added reporting has emerged as a new reporting measure of corporate performance. Value added is an important measure of corporate performance rather than conventional measure based on traditional financial accounting. It can be particularly useful for highlighting employees' oriented approach which will allow more fruitful and objective assessment of business enterprises in terms of productivity and profitability. This paper makes an attempt to make an empirical study of Hindustan Petroleum Corporation Ltd. (HPCL) for measuring the performance from 1999-2000 to 2009-10 through generation of value added, application of value added, various ratios relating to value added reporting and with the help of some statistical techniques. The analysis of this study clearly signifies that the management of the company has not only improved its profitability but has also fulfilled its responsibility towards the society at large.

KEYWORDS

Value Added, Value Added Reporting, Generation and Application of Value Added and Value Added Ratios.

INTRODUCTION

Value added is an important measure to judge the performance of an enterprise. It indicates the net wealth created by the firm during a specific period of time. No enterprises can survive and grow, if it fails to generate wealth. An enterprise may exist without profit, but cannot survive without adding value. Value added is meaningful measure of corporate performance than conventional measures based on traditional financial accounting information. It can be particularly useful for highlighting employees' oriented approach which will allow more fruitful and objective assessment of business enterprises in terms of productivity and profitability. The value added is a basic and broad standard comprises investment made by shareholders, debentures holders, creditors and specialized financial institutions. If such investment does not create wealth or does not add value for the stakeholders, it indicates the misuse of public funds. Therefore the concept of value added has a direct relationship with the concept of social responsibility of the business. Value added can be particularly useful to management in comparing the performance of business within group or companies' performance with its industry as a whole. Financial reporting has traditionally concentrated on the needs of shareholders and creditors but value added statement is important for stakeholders as well as employees point of view (*Singh, 2008*).

PURPOSE OF THE STUDY

This study is based on the following objectives:

1. To understand the conceptual framework of the value added reporting.
2. To assess the performance of the selected company with the help of generation of value added, application or distribution of value added as well as the value added ratios.
3. To examine how value added reporting is better measure as compared to traditional technique of reporting.
4. To recommend some suggestions for the implementation of value added in the selected company.

DATA SOURCE AND METHODOLOGY OF THE STUDY

The study is mainly based on secondary sources of information. The required data have been collected from published Annual Reports of the Hindustan Petroleum Corporation Ltd. (HPCL) and also from the published Annual Reports of the Public Enterprise Survey by the Ministry of Heavy Industries & Public Enterprises, Govt. of India over the period of eleven years i.e. 1999-2000 to 2009-10. For collecting relevant data for the purpose of conducting this study internet surfing has also been made for obtaining the requisite and latest information. Editing, classification and tabulation of the financial data collected from the above mentioned sources have been done as per requirement of the study. For the analysis of value added reporting data are analyzed with the help of value added statement and some ratios based on such value added statement. In order to assess the behavior of the data simple statistical techniques i.e. Mean, Coefficient of Correlation, Growth Rate and Regression Analysis has been used and also statistical test like 't'-test has been applied in the appropriate places.

PROFILE OF THE COMPANY

HPCL was incorporated on 5th July, 1952 under the Companies Act, 1913 as Standard Vacuum Refinery Co. of India Ltd. It was renamed as ESSO Standard Refining Co. of India Ltd. in 1962 under Companies Act 1956. Through the Lube India and ESSO Standard Refinery Co. of India Ltd. Amalgamation Order, 1974, it was changed to the present name Hindustan Petroleum Corporation Limited and after nationalization, ESSO undertakings were vested in it. In the year 1976, Caltex and in 1979, Kosangas Co. Ltd. were also merged with HPCL. The main objective of the company is to delight customers by superior understanding and fulfilling their stated and latent needs with innovative product and services in the petroleum sector as also to be highest performer in rate of growth and return on investment by working faster than its competitors in the most cost effective way. HPCL is a Schedule – 'A' / Navaratna PSE in Petroleum sector under the administrative control of M/o Petroleum and Natural Gas with 51.11% shareholding by the Government of India. Its Registered and Corporate Offices are at Mumbai, Maharashtra. It is engaged in crude oil refining and marketing of petroleum products. It has two refineries at Mumbai in Maharashtra, and

Visakhapatnam in Andhra Pradesh. The company also owns three multi-products cross country pipelines viz., Mumbai-Pune-Solapur pipeline; Visakh-Vijaywada-Secunderabad pipeline and Mundra-Delhi pipeline. The company has 9 joint ventures in the field of exploration & production, refining and marketing with shareholding ranging from 16.95% to 50%. The turnover of Rs. 131,802.65 crore in the 2008-09 but it came down to Rs. 114,888.63 crore in 2009-10 i.e 12.83% decreased as compared to the year 2008-09. Its overall ranking position of all the CPSEs was 3rd during 2009-10 on the basis of net sales. The value added by HPCL during 2009-10 was Rs. 7,588.25 crore while it was Rs. 6,867.83 crore in the year 2008-09 followed by a gradual increase of 10.50% over the year 2008-09.

HYPOTHESIS OF THE STUDY

The following three hypotheses are studied for this study:

1. Whether the generations of value added and application of value added are even and similar during the study period.
2. Whether there is any significant relationship between the amount of value addition and the amount of sales.
3. Whether the Value Added Reporting is better method for measuring the corporate performance of the selected company during the last 11 years.

LIMITATIONS OF THE STUDY

The study has the following limitations:

1. This study is a micro-nature based research work on the selected company
2. This study is based on 11 years (i.e. from 1999-2000 to 2009-10) financial and social performance of the selected company.
3. In order to analyze the financial data, data's are grouped and sub-grouped as per the requirement.

RATIONALE OF THE STUDY

Value Added Reporting is a part of corporate social reporting which shows the value addition made by firm during a specific period of time and their distribution among different stakeholders i.e. employees, Government, providers of capital and retained by the firm himself for the development and expansion activities of the firm. According to the company's act 1956, financial statements are prepared by every firm to find out their operating profit along with their disposal. But it will make a significant discloser about the creation of wealth (i.e. value addition) because financial statements are prepared only for the interest of shareholders and creditors, not for the interest of the society i.e. for social wealth creation point of view. As the norms of disclosure and transparency of the accounting process increases their importance has been increases especially after globalization and WTO agreements, now it become necessary for both the society and the employees' point of view. Therefore, a new reporting statement i.e. value added statement will need to prepare to show the generation of wealth by the firm and their application into different stakeholders. Considering the significance of the measure of value added reporting techniques, the increasing number of enterprises in Western Countries are presenting the value added statement in their annual reports. But this practice has yet to be set in India. Presentation of value added statement in annual reports is neither statutory nor obligatory for companies in India. Now for better discloser and transparency of accounting process some companies have started presenting the value added statement in their annual reports.

CONCEPTUAL FRAMEWORK OF VALUE ADDED REPORTING

a) CONCEPT OF VALUE ADDITION

The concept of 'value addition' basically comes from the very manufacturing process wherein the firm's raw materials are converted into finished goods. A manufacturing firm begins with a certain quantum of raw materials, and then engages itself in a conversion process to yield a product with new utility and market value which is different from the original cost of materials. The excess of such market value over the cost of materials is defined as 'value added' (Chakraborty, 1979). However in practice, materials in value added calculations include all items purchased from outside and actually processed. Thus, power, fuel and stores are the other items that are added to materials before deducting the latter from the sale value. Therefore, the value added by a firm during a period can be stated as follows:

Value Added = Sales (net of excise duty) – Cost of items bought from outside and processed.

But in a period of zero sales with high production, the above equation would show a 'negative value added figure'. So, we may take 'value of production' instead of 'actual sales value'. Therefore, the value added may be calculated in the following way:

Value Added = Value of production – Cost of materials, power etc.

The Annual Survey of Industries (ASI) defines "value added as that part of the value of the products which is created in the factory and is computed by deducting the gross value of input from the gross ex-factory value of output" (C.S.O., 1966). Symbolically, it can be expresses as follows:

Value Added (VA) = (Gross ex-factory value of output) − (Gross value of Input)

Where,

Output = Aggregate value of products + work done for customers + Sales value of goods sold in the same condition as bought ± stock of semi-finished goods and

Input = Gross value of materials, fuel etc, work done by other concerns for the firm, non-industrial services bought, depreciation and purchase value of goods sold in the same condition as bought.

But the generally accepted definition of value added is that "the difference between what a company is paid for its products and the cost of bought-in materials and services". In other words, it is an excess of turnover plus income from services over the cost of bought-in materials and cost of services. Simply, it is the difference between the sales revenue and the cost of purchase of materials and services. It also represents the total return of the firm earned by all providers of capital plus employees and government. It includes earnings and the return to shareholders plus other components as the returns to other stakeholders, government, bondholders and employees.

b) CONCEPT OF VALUE ADDED REPORTING

The primary objective of any business enterprise is the maximization of shareholders' wealth. In order to change the objective of maximization of shareholders' wealth to other objectives of the firm, the business enterprises are now being evaluated in terms of their contribution to the welfare of the society. One of the important contributions of a business enterprise to the society and to improve the standard of living of the society is the value addition through its business operations. Realizing this new requirement, the corporate reporting practices have changed to reflect the performance of the company in terms of creation of value in a given society. Therefore, for measuring and reporting the socio-economic objectives of the business, the value added reporting has emerged as a new reporting measure of corporate performance in addition to the traditional financial reporting practices.

c) OBJECTIVES OF VALUE ADDED REPORTING

The following are the objectives of preparing and reporting of value added:

1. To disclose the amount of value addition made by a firm during a specific period of time.
2. To evaluate the performance of a firm through the generation of value added.
3. To show the different patterns of distribution of value added by different stakeholders i.e. employees, providers of capital, government and the owners.
4. To help the government to collect huge revenues by levying taxes on value added by the enterprises rather than on the net profits (Aravanan, 2005).

d) VALUE ADDED STATEMENT (VAS)

The formal recognition of the Value Added Statement(VAS) was first made in a discussion document entitled "The Corporate Report" which was published by the Accounting Standards Steering Committee of the UK in 1975 (*Basu, 1992*). According to the Corporate Report, the value added statement is to be prepared on the assumption that the business is a partnership which is made up of the employees, providers of capital, government and the enterprise itself. The statement is designed to disclose how much wealth (i.e. value) the enterprise has generated as a result of the joint efforts of its partners (*ASSC, 1975*). David

Pendril defines it as "The statement which shows the income of the company as an entity and how that is divided between the people who have contributed to its creation" (*Pendril, 1977*). In India, value added statement is a voluntary corporate supplementary statement, which provides the information in such a manner that would easily be understood by a layman and that shows a broad measure of performance of a corporate entity. The ASC report is concerned with the specification of income attributable to employees, government, and the providers of capital. It is thus, an extension of the income Statement, regarding the earnings of profits in business as a cooperative effort (*Rao, 2001*). The following are the definition of VAS has been defined by different authors:

Value Added Statement may be defined as a statement which shows the size of the 'value added cake' and how the 'cake' has been divided amongst the various stakeholders (Sizer, 1979).

Value Added Statement may be defined as the performance of an organization to what extent the enterprise has added value during a particular period to the providers of capital, employees, government and reinvestment of the growth and expansion (Agarwal, 1993).

Value Added Statement is a report which shows the amount and the sources of value added during some specified period of time. In other words, it is also described as extra wealth created by selling goods and services to the customers. So it is entitled as 'wealth generated and distributed' (Rao, 1999).

e) ASSUMPTIONS OF VAS

The assumptions underlying the preparation of value added statement, as may be envisaged, are mentioned as follows:

1. VAS is not a substitute but a supplement to the profit and loss account.
2. VAS is based on items and figures obtained in the profit and loss account and the accounting concept remain the same in the preparation of VAS.
3. It is different from profit and loss account to the extent, the latter contains the non-value added debits and credits like provisions, non-trading losses, appropriations as well as non-trading incomes like profit on sale of scrap, interest on securities, dividend etc. (*Nandi, 2005*).

f) FAVOURABLE ASPECTS VALUE ADDED REPORTING

In order to evaluate the performance of corporate sector, the value added reporting is a new method and concept in Indian corporate reporting. Its significance not only for external purposes but it is also equally important for internal purpose. The following are the favourable aspects of value added reporting:

1. Value Added Statement provides a better way of describing the performance of business undertakings in terms of labour productivity and capital productivity. Labour productivity can be measured in terms of value added per employee in order to help in wage settlement and the capital productivity can be measured in terms of value added per rupee of capital employed to find out the effective utilization of capital employed in the business.
2. The preparation of VAS is most important from the view point of Nation, as in the contribution made by a firm to the wealth of nation is to be measured in terms of value added by it.
3. The optimize added value is more meaningful than optimize profit because added value determines reward for employees as well as providers of loan capital. Therefore, VAS is very much useful for the company to introduce "productivity incentive schemes based on added value".
4. It leads to an improvement in the team spirit in the company.
5. At present, the both Central and various State Governments use VAS to determine and collect tax on value addition by an enterprise in its process of production.

g) UNFAVOURABLE ASPECTS OF VALUE ADDED REPORTING

The value added reporting system has the following drawbacks:

1. One of the important limitations of VAS is that its presence in the corporate annual report may lead to information overload and confusion. An ordinary employee reading his company's corporate annual report may no be able to match the Value Added Statement with earnings statement. Similarly, a non-accountant employee or shareholder reading the annual report of his company, may get confused if he observes that the value added was rising while earnings were falling and more so if value added was positive but earning were negative.
2. Although profit is a part of value added, the maximization of value added does not necessarily lead to maximization of profit. A business enterprise can maximize value added by adopting a number of inefficient policies but it cannot maximize profits in such a way.
3. Value Added Statements can be used as a supplementary to financial statements. These statements cannot be used in place of Traditional financial statements. These are not published in a standard format. Sometimes the calculation of value added statements is complicated because such calculation is also based on historical values and therefore, it may be misleading.
4. The inclusion of VAS in the Annual Report of a company involves extra cost and work. So it may create delay in annual reporting.
5. Retained earnings are shown as the fund for future expansion of the company and it implies that every one of the team have a claim on it. But in reality, it does not hold good.

h) FORM OF VALUE ADDED REPORTING STATEMENT

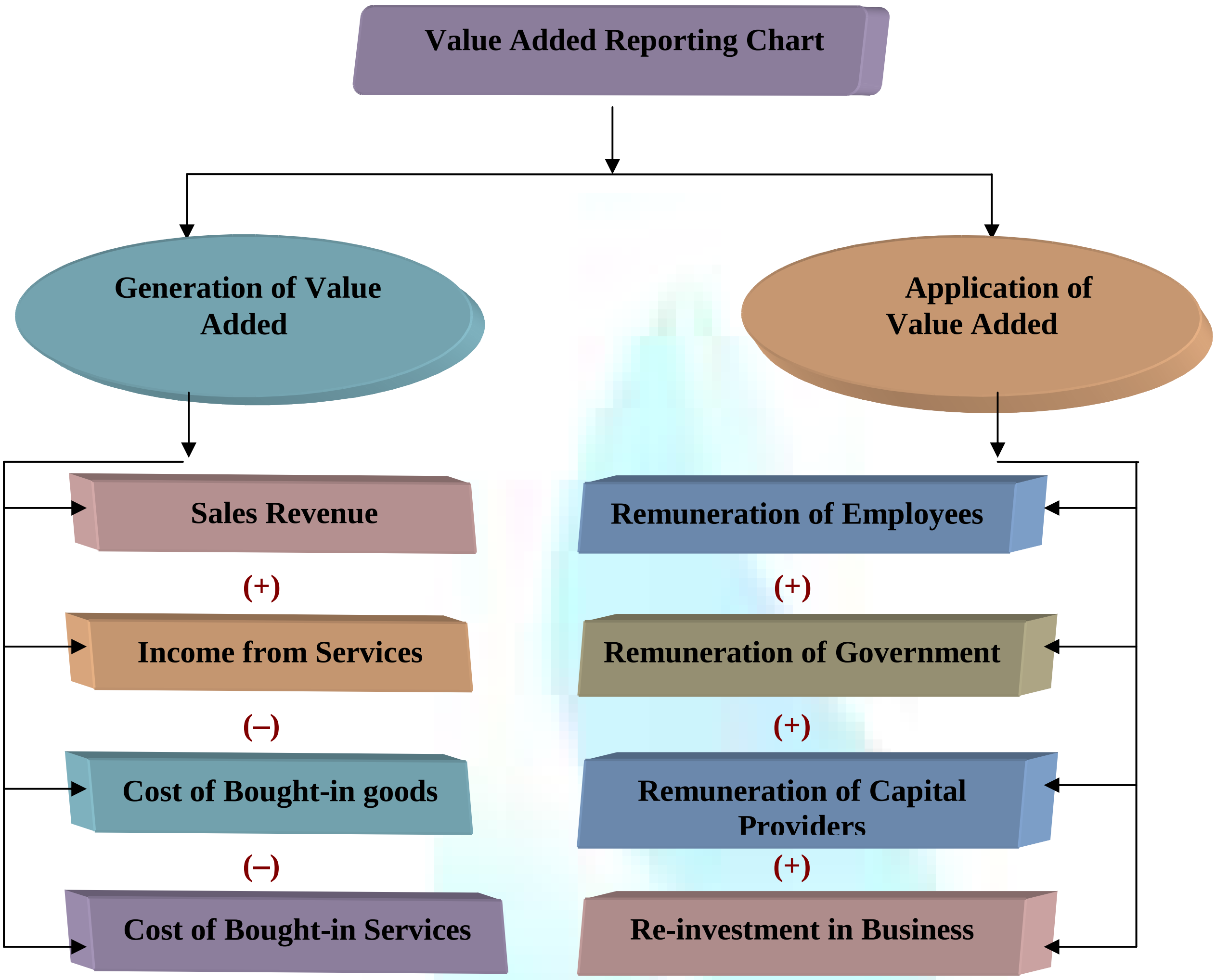
In case of value added reporting, the accounting procedure will be divided into two parts. (1) Generation of Value Added and (2) Application of Value Added.

1) GENERATION OF VALUE ADDED

The generation of value added may be regarded as the excess of sales revenue (SR) plus income from services (IS) over the cost of bought-in-goods & services from outsiders (CBGS). It may be shown in equation form: VA = (SR + IS) – (CBGS). Here sales revenue means net of sales returns, rebates, trade discount, commission and brokerage etc. but gross of excise duty and sale tax because excise duty and sales tax are to be recovered from customers; income from services includes the services rendered by a company which consists of dividend from subsidiary company, rent, compensation, royalty, interest and other income etc., cost of bought-in-goods includes raw materials, semi finished goods, stores and spares, power, fuel and water, damage and shortage in goods, repairs and maintenance and packaging materials and exclude cost of self-generated power and cost of bought in services include repairs and maintenance, power and fuel, advertising and publicity, postage, telephone & telegram, printing & stationery, audit fees, rent & rates, traveling expenses, legal charges, carriage outwards, entertainment expenses etc.

2) APPLICATION OF VALUE ADDED

The application value added is the aggregate amount of remuneration of all the stakeholders i.e. remuneration of Employees (RE), remuneration of Government (RG), remuneration of capital providers (RCP) and the amount re-invested in the business (RIB). It can be written as VA = (RE + RG + RCP + RIB). Here remuneration of employees includes the amount of salaries and wages, payment of bonus, contribution to provident fund, ESI and other benefits, staff welfare expenses, payment of gratuity, director's remuneration etc., remuneration of government includes the amount of excise duty, customs duty, local taxes, sales tax, octroi duty, rates and taxes, other direct taxes (e.g. income tax, wealth tax) etc. In some cases amount of export incentives, subsidies received, refund of any duty or taxes like duty draw backs, excess of provision of taxes are granted by the government and are deducted from Government's share. Providers of capital include the parties from whom the firm borrows money in the form of debentures or in the form of equity share capital and preference share capital. Interest is paid to debenture holders while dividends are paid to shareholders. Amount re-invested in business includes the amount transfer to various types of reserves, statutory or non-statutory including retention, and depreciation. Both the generation of value added and the application of value added can be shown in the chart given below.



NOTE: There are two debatable items regarding their treatment while computing the generation and application of value added. These items are discussed below:

i) NON-VALUE ADDED ITEMS: Non-value added items refer to expenses incurred and income earned which are not directly related with the business unit. In case of preparing Profit and Loss Account the non-value added items are to be included but to prepare the Value Added Statement, the non-value added items are to be adjusted with the net value added. The non-value added items are classified into two parts: Non-value added Debit items and Non-value added Credit items.

a) Non-value added debit items include Loss on sale of Assets, Provision for doubtful debts, Prior period charges, Preliminary expenses written off, Donations and like nature of expenditure, Previous Years' Charges (Dr), Miscellaneous Expenses etc. and

b) Non-value added credit items include Profit on sale of Assets, Interest on securities and deposits, Dividend on trade investments, Previous Years' Charges (Cr), Proceeds from sale of scrap etc. There are four alternative ways for treating the above non-value added debit items and credit items. At the time of preparing the value added statement the 4th alternative is applied by many business units. These four alternatives are:

1. The amount of non-value added credit items is deducted from sales volume.
2. The amount of non-value added debit items is added with the bought-in-materials and services.
3. The amount of all debit items and credit items are mutually adjusted.
4. The amount of all debit items and credit items are treated separately and adjusted with net value added finally.

ii) DEPRECIATION: In respect of depreciation the following three alternative treatments are possible:

1. To show it in the application of value added under the head either 'retained profit' or 'growth and expansion';
2. To include it under the Bought-in-services and ascertaining directly the net value added;
3. To deduct from the gross value added separately.

The third method distinctly specifies the amount of depreciation and helps to establish direct linkage with gross value added in order to find out net value added.

FINDINGS OF THE STUDY

ANALYSIS OF VALUE ADDED REPORTING

Value added statement is new concept in Indian corporate environment for financial reporting. A typical statement of added value is prepared as routine part of management information system. The value added statement is largely a rearrangement of information contained in income statement. That rearrangement provides a better means of understanding an enterprises contribution to the society. Value added statement of HPCL revels that way by which the company has generated value added for the various segment of the society.

i) GENERATION OF VALUE ADDED

The generation of value added and the disposal of value added are shown in Table-1. It is found from Table-1 that the amount of sales and income from operations have increased throughout the study period (i.e. from Rs. 33830 crore in the year 1999-2000 to Rs. 131802 crore in the year 2008-09) excepting in the years 2001-02 and 2009-10 respectively. The value of gross output also increased from Rs. 36127 crore in the year 1999-2000 to 129966 crore in the year 2008-09 showing a growth of 100% to 359.75%. The sales indices show a growth of 100% to 389.69% during the period under study. The total value addition is significantly increases from Rs. 2127 crore in the year 1999-2000 to Rs. 5815 crore in the year 2009-10 with some fluctuation and the value added indices have reached 273.39% in 2009-10 from the base year 1999-2000 (takes as 100%). The fluctuation in the amount of value added is mainly due to both fluctuations in the value of output and also the cost of bought in goods and services over the years.

ii) APPLICATION OF VALUE ADDED

Application of value added is very important for the view point of social objective. Under application of Value added major segments are payment to employees, payment to government, payment to capital provider and amount which are retained by the company.

a) PAYMENT TO EMPLOYEES: It is observed from Table-1 that the amount of contribution to employees gradually increases from Rs. 400 crore in 1999-2000 to to Rs. 1617 crore in the year 2009-10 with the exception of the year 2005-06 but the percentage of contribution to employees based on total value added is highest in the year 2005-06 (i.e. 35.78%) then is followed by 2009-10 (27.81%), 2007-08 (24.42%) and the lowest percentage of contribution is computed at 13.53% in the year 2003-04.

b) PAYMENT TO GOVERNMENT: It is found from Table-1 that out of total disposal of value added the contribution to government made by HPCL was 10.11% in 1999-2000 and then it gradually increased and reached at 25.55% in 2003-04. During the last six years of the study period the contribution for the government is very low but in the last year it increased up to 14.17%.

c) PAYMENT TO PROVIDERS OF CAPITAL: It is observed from Table-1 that in case of interest paid to money-lenders, the interest liability has been fluctuating in respect of both amount and percentage of total disposal of value added. The highest amount of Rs. 2084 crore paid in the year 2008-09 showing 42.43% of total value added. This fluctuating trend in terms of percentage of total value addition indicates that the company cannot redeem the long-term loans significantly and also it doesn't indicate the good sign of liquidity and solvency. So far as the shareholders point of view, the amount of dividend also fluctuated throughout the study period. Initially the percentage of dividend based on total disposal of value addition vary from 15.28% to 18.75% but in the last four three years it was very low. It clearly indicates that the profits are not available for the shareholders due to interest liability increases during the last four years of the study period.

d) REINVESTMENT IN BUSINESS: It includes retained earnings and depreciation. The retained earnings are very much important for growth and expansion of business. From table-1 it is found that retained earnings shows a fluctuating trend over the periods under study with highest amount of Rs. 1061 crore in the year 2003-04. It is also found that the depreciation has marked a rising trend throughout the study period. It was Rs. 304 crore in 1999-2000 which increases continuously and reached up to Rs. 1168 crore in the last year of the study period. But the percentage of depreciation based on total value addition is fluctuated from 14.41% to 38.50%. As the amount of depreciation increases it clearly indicates a good sign of liquidity. But from the view point of percentage of depreciation with respect to total value addition it shows a significant contribution by the company towards the society.

TABLE-1: VALUE ADDED STATEMENT OF HPCL FOR THE PERIOD FROM 1999-2000 TO 2009-10 (Amount in Crore Rupees)

Particulars	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
A. Generation of Value Added											
Sales/Income for Operation	33830	48505	44458	54165	57511	65218	76920	96918	112098	131802	114890
*Sales Indices**	(100)	(143.38)	(131.42)	(160.11)	(170.00)	(192.78)	(227.37)	(286.49)	(331.36)	(389.60)	(339.61)
Add: Increase/(Decrease) in Stock	2297	-368	-258	1188	357	35	1408	245	2359	-1,836	3250
Gross Output	36127	48137	44200	55353	57868	65253	78328	97163	114457	129966	118140
*Gross output Indices**	(100)	(133.24)	(122.35)	(153.22)	(160.18)	(180.62)	(216.81)	(268.95)	(316.82)	(359.75)	(327.01)
Less: Cost of Bought in Material & Services purchased from Outsiders											
i) R/M Consumption	28527	40247	35296	44531	45496	54529	67940	83036	100627	114830	101185
ii) Other Costs	5473	5221	6303	7136	8160	7630	8596	10302	10234	10224	11140
Value Added	2127	2669	2601	3686	4212	3094	1792	3825	3596	4912	5815
*Value Added Indices**	(100)	(125.48)	(122.28)	(173.3)	(198.03)	(145.46)	(84.25)	(179.83)	(169.06)	(230.94)	(273.39)
B. Application of Value Added**											
1. Payment to Employees	400	528	553	546	570	712	641	730	871	1135	1617
	(18.81)	(19.78)	(21.26)	(14.81)	(13.53)	(23.01)	(35.78)	(19.08)	(24.42)	(23.11)	(27.81)
2. Payment to Government (Income Tax/Fringe Benefit Tax)	215	232	435	875	1076	363	-121	396	-26	137	824
	(10.11)	(8.69)	(16.72)	(23.74)	(25.55)	(11.73)	(-6.75)	(10.35)	(-0.72)	(2.79)	(14.17)
3. Payment to Providers of Capital:											
i) Interest on Borrowing	150	387	295	153	56	82	176	423	766	2084	904
	(7.05)	(14.50)	(11.35)	(4.15)	(1.33)	(2.65)	(9.82)	(11.06)	(21.30)	(42.43)	(15.55)
ii) Dividend	325	374	339	757	842	580	116	709	119	208	474
	(15.28)	(14.01)	(13.03)	(20.54)	(19.99)	(18.75)	(6.47)	(18.54)	(3.31)	(4.23)	(8.15)
4. Reinvestment in Business:											
i) Retained Profit	733	714	449	780	1061	697	290	863	1016	367	828
	(34.46)	(26.75)	(17.26)	(21.16)	(25.19)	(22.53)	(16.18)	(22.56)	(28.85)	(7.47)	(14.24)
ii) Depreciation	304	434	530	575	607	660	690	704	850	981	1168
	(14.29)	(16.27)	(20.38)	(15.60)	(14.41)	(21.33)	(38.50)	(18.41)	(23.64)	(19.97)	(20.08)
Value Added	2127	2669	2601	3686	4212	3094	1792	3825	3596	4912	5815
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Source: Computed and Compiled on the basis of information available in Annual Reports of HPCL from 1999-2000 to 2009-10.

Note: i) * In case of Sales, Gross Output and Total Value Added, figures in brackets indicate the year wise indices based on the year 1999-2000 and

ii) ** In case of Application of Value Added, figures in brackets indicate the percentage distribution of disposal of value added.

ANALYSIS OF TREND (TIME SERIES ANALYSIS)

By using the time series data from Value Added Statement of HPCL relating to total Value Added we can fit a straight line trend equation with the help of least square method then from the straight trend line equation of total Value Added we can determine the estimated amount of total Value Added (i.e. Trend Values) for the given points of time (i.e. past period) and also for future time points simply by putting the x-values correspond to the different time points (either past or future periods). The trend values relating to total Value Added on different given points of time are depicted in Table-2 and Table-3 respectively.

The fitted trend line equation of total Value Added is:

$y = 3484.45 + 256.86x$ ……………………. *(1)*

From the above equation total Value Added figures can easily be determined for any future periods. Now if we want to know the total Value Added for the year 2011-2012. Then we can calculate the estimated amount of Value Added ($y_{11\text{-}12}$)= Rs. (3484.45 + 256.86 × 7) crore = Rs. 5282.47 crore by putting x=7 in equation-1 from which we can forecast about employees' share, dividend payable to shareholders, interest payable to lenders, and retained earnings & depreciation reinvested in business unit for further growth and expansion in future. This analysis gives us the idea about the future contribution by the business unit towards different stakeholders of the company and also targeted profit of the company in future.

TABLE - 2: TREND VALUES OF VALUE ADDED OF HPCL FOR THE PERIOD FROM 1999-2000 TO 2009-2010

Years	x- values	Value Added (y)	x^2	xy	Trend Values
1999-00	-5	2127	25	-10635	2200.15
2000-01	-4	2669	16	-10676	2457.01
2001-02	-3	2601	9	-7803	2713.87
2002-03	-2	3686	4	-7372	2970.73
2003-04	-1	4212	1	-4212	3227.59
2004-05	0	3094	0	0	3484.45
2005-06	1	1792	1	1792	3741.31
2006-07	2	3825	4	7650	3998.17
2007-08	3	3596	9	10788	4255.03
2008-09	4	4912	16	19648	4511.89
2009-10	5	5815	25	29075	4768.75
	$\sum x = 0$	**$\sum y = 38329$**	**$\sum x^2 = 110$**	**$\sum xy = 28255$**	----

Source: *Table-1*

ANALYSIS OF CORRELATION AND REGRESSION

The coefficient of correlation between Sales (x) and Value Added (y) is calculated at 0.691 (from Table-3) that shows a moderate degree of correlation between sales and value addition. This coefficient of correlation is statistically significant or not, Student -'t' test has been applied by taking the following two hypotheses: Null Hypothesis (H_0) that there is no significant relationship between sales and value added *(p = 0)* and Alternative Hypothesis (H_1) that there is significant relationship between sales and value addition *(p ≠ 0)*.

Here the calculated value of 't' is greater than the tabulated values of 't'. Hence we reject the null hypothesis that means there is significant correlation between sales and value addition during the study period.

Based on the data compiled in Table-1, we are interested to make regression analysis to find out the relationship between Value Addition and the amount of Sales. For this purpose we construct Table-3 in which necessary calculations are made. On the basis of the calculations contained in Table-3 the following regression equation is found with the help of least square method: y = 1562.815 **–** 0.02528x [i.e. Regression equation of VA (y) on the amount of Sales (x)]

From the above equation it is found that the regression coefficient is negative (i.e. -0.02528) which indicates that for one rupee increase in sales the amount of value addition is decreased by Rs. 0.02528. With the help of above regression equation the estimated amount of Value Addition have computed and shown in Table-3. From the estimated Value Addition figure it is observed that there is a clear decreasing trend of value addition with the increase in amount of sales.

TABLE-3: REGRESSION EQUATION OF VALUE ADDED (Y) ON SALES (X) DURING 1999-2000 TO 2009-10

Years	Value Added (y)	Sales (x)	x^2	xy	y_e = (1562.815 –0.02528x)
1999-00	2127	33830	1144468900	71956410	707.59
2000-01	2669	48505	2352735025	129459845	336.61
2001-02	2601	44458	1976513764	115635258	438.92
2002-03	3686	54165	2933847225	199652190	193.52
2003-04	4212	57511	3307515121	242236332	108.94
2004-05	3094	65218	4253387524	201784492	-85.90
2005-06	1792	76920	5916686400	137840640	-381.72
2006-07	3825	96918	9393098724	370711350	-887.27
2007-08	3596	112098	12565961604	403104408	-1271.02
2008-09	4912	131802	17371767204	647411424	-1769.14
2009-10	5815	114890	13199712100	668085350	-1341.60
	$\sum y = 38329$	**$\sum x = 836315$**	**$\sum x^2 = 74415693591$**	**$\sum xy = 3187877699$**	----

Source: *Table-1*

Note: *i) Correlation co-efficient between sales and value added is 0.691,*

ii) Calculated value of 't' = 3.963

iii) Formula for calculating the value of 't' = $\frac{r \times \sqrt{(n-2)}}{\sqrt{(1-r^2)}}$ with (n – 2) d. f.

iv) Tabulated values of 't' at 1% and 5% level of significance with (11-2) d. f. are $t_{0.01}$ = 3.25 and $t_{0.05}$ = 2.26 respectively for both-tailed test.

ANALYSIS OF VALUE ADDED RATIOS

Ratio analysis is one of the important tools for measuring the financial performance but traditional ratios are not relevant for the analysis of value addition by the company. Therefore, some value added ratios are considered for appraising the performance and for judging the productivity of HPCL and also to signify the value added reporting in modern era. The ratios which have been selected are discussed below. All these ratios are computed on the basis of data available from 1999-2000 to 2009-10 and are shown in Table-4.

i) ***GROSS MARGIN RATIO:*** This ratio is calculated to identify the earnings capacity of the company instead of gross profit ratio. It is ascertained by dividing the amount of value addition by the amount of sales. Greater the ratio more will be the efficiency of an enterprise to add value through sales. It is observed from Table-4 that gross margin ratio marked a fluctuating trend during the study period. It ranges from 2.33% in 2005-06 to 7.32% in the year 2003-04. On an average, it is computed at 4.98% which reflects that the value addition will be significant especially in the first five years and also the last year of the study period and in the remaining years company's earnings capacity will not be effective.

ii) ***CAPITAL PRODUCTIVITY RATIO:*** It reflects the efficiency of capital utilization in generating the quantum of value added. The main purpose of computing this ratio is to find out how much value is added per rupee of capital employed. The higher the ratio, the better will be the capital productivity of business unit and greater wealth creation in terms of value added. This ratio is recognized more significant than traditional ratio of 'Net Profit to Capital Employed' as an index managerial efficiency. It is calculated dividing value added by the capital employed (Nandi, 2010). From Table-4 it is found that capital productivity ratio of the company has almost an increasing trend over the study period. the capital productivity of HPCL has been increasing from 19.54% in 1999-2000 to 45.90% in the year 2007-08 and thereafter it decreased up to 31.86%. It indicates the efficient utilization of capital for the generation of value added. Overall average of capital productivity is 27.66%. It reveals that during first half of the study period, this ratio is less than the average whereas in the second half of the study period it is more than the average of this ratio.

iii) ***LABOUR PRODUCTIVITY RATIO:*** This ratio expresses the relationship between the amount of value added and the number of employees. It indicates value generated per employee and labour productivity. When the ratio becomes high, it signifies that the enterprise is highly efficient in terms of labour productivity and is highly effective in manpower management. As compared to traditional ways of computing labour productivity employees would attach much importance to this ratio as they are better indicators of their efficiency and effectiveness. One of the significant uses of the concept of value added is its incorporation in company incentive schemes or bonus schemes. Table-4 exhibits that the labour producitivity ratio of HPCL registered an upward trend throughout the study period with some fluctuations. It is 0.18 crore per employee in 1999-2000 that increased up to 0.38 crore per employee in 2003-04. Then it started decreasing up to 2005-06 and thereafter it increases up to 0.52 crore per employee in the last year of the study with average of 0.31 crore per employee. This increasing trend indicates that the efficiency of the company has increased considerably over time in terms of labour productivity.

iv) ***STOCK TURNOVER RATIO:*** It indicates the operating efficiency of the company. It is calculated by dividing the amount of gross output by the year end value of stock. Higher the ratio, more will the operating capacity of the firm and vice-versa. It is highlighted from Table-4 that the stock turnover ratio of the company has been fluctuated from 9.39 times to 14.78 times with average of 11.45 times. This fluctuating trend in stock turnover ratio suggests that the operating efficiency of the company has not been satisfactory during the period under study.

v) ***FIXED ASSETS TURNOVER RATIO:*** This ratio expresses the relationship between the amount of value addition and the amount of fixed assets. It is computed by dividing the amount of value added by the amount of fixed assets. It indicates how effectively the operating assets are being employed in generating the value added. Greater the ratio, higher will be the efficiency of the enterprise in terms of capital productivity. It is seen from Table-4 that the fixed assets turnover ratio marked a fluctuating trend. It varied from 13.29% in 2005-06 to 36.41% in the year 2003-04 with average of 25.38% during the study period. It is seen that during the first five years of the study period this ratio is more than the average of this ratio which clearly indicates that the utilization of operating assets to increase the value addition is better and in the remaining years of the study period the operating assets are not effectively utilized for generating the value added.

vi) ***RATE OF INVESTMENT:*** It is one of the most important value added based ratios which show utilization of capital expenditure per employees. It expresses greater availability of capital resource per employees. It is computed by dividing the amount of capital expenditure by the number of employees worked in financial years. It is observed from Table-4 that the rate of investment for the first five years is very low as compared to the remaining years of the study period. The average rate of investment during the study period is computed at 0.18 crore per employee. The study of rate of investment reveals that the availability of capital resources per employee in the second half of the study period is far better than the first half of the study period for the development and expansion of activities.

TABLE - 4: VALUE ADDED RATIOS OF HPCL FOR THE PERIOD FROM 1999-2000 TO 2009-10

Years	Gross Margin Ratio (%)	Capital Productivity Ratio (%)	Labour Productivity Ratio (Rs. Crore per Employee)	Stock Turnover Ratio (in times)	Fixed Assets Turnover Ratio (%)	Rate of Investment Ratio (Rs. Crore per Employee)
1999-00	6.29	19.54	0.18	11.13	25.23	0.13
2000-01	5.50	19.68	0.23	13.92	29.12	0.09
2001-02	5.85	19.97	0.23	12.19	25.39	0.07
2002-03	6.81	18.25	0.33	10.81	34.27	0.05
2003-04	7.32	21.89	0.38	10.71	36.41	0.08
2004-05	4.74	27.60	0.29	11.48	25.07	0.13
2005-06	2.33	31.76	0.17	10.03	13.29	0.25
2006-07	3.95	33.07	0.35	12.00	24.46	0.38
2007-08	3.21	45.90	0.33	9.52	18.38	0.28
2008-09	3.73	34.79	0.44	14.78	24.31	0.21
2009-10	5.06	31.86	0.52	9.39	23.27	0.33
Mean	**4.98**	**27.66**	**0.31**	**11.45**	**25.38**	**0.18**

Source: *Computed and Compiled from Annual Report of HPCL from 1999-2000 to 2009-10*

Our first hypothesis that the generation of value added and application of value added are even and similar during the study will not be proved, because as per table-1 during the study period generation of value added varies from 100% (base year) to 273.39% due to changes in the various segment of sales revenue and cost of brought in material and services. The main reason is behind that the company increases their production and lunch new product in global market as well as outsourcing of human resources which will increases the cost of production especially in last five years. Our second hypothesis that there is significant relationship between the amount of value addition and the amount of sales revenue is proved true. Our last hypothesis that value added reporting is better method of reporting will be proved by table-1 because in simple income statement will not able to show generation and application of value added towards society, government, employees and reinvestment point of view but value added statement shows it in a better way, even in value added ratios are also support our hypostasis.

CONCLUSION

Based on the above analysis it may be concluded that the generation of value addition made by HPCL has increased continuously with slight fluctuation during the study period only due to increase in sales revenue and operational efficiency. So far as the disposal of value added is concerned it is found that the payment to the employees has been increases significantly that indicates social contribution by the company in way of excise duty, custom duty and other taxes. Interest liability has been fluctuated regularly which indicates that the company's liquidity position and management of long-term debt has not been quite sound. But from the view point of shareholders, it is found that the dividend policy adopted by the company was not satisfactory throughout the study period. The company's re-investment in business in the form of retained earnings and depreciation was sufficient over the study period. On the basis of above interpretation it can be concluded that the management of HPCL has served to the society about 66.68% of total value added has been distributed among the employees, Government, financial institutions, banker and shareholders and the remaining 33.32% of the total value added is re-invested in the form of retained earnings and depreciation that is an appropriate amount of investment for the development, growth and expansion of the business. The analysis of study clearly signifies that the management of the company has not only improved its profitability but has also fulfilled its responsibility towards the society at large.

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