FINANCIAL PERFORMANCE EFFICIENCY OF SELECT CEMENT COMPANIES IN TAMIL NADU

Dr.V.Sarangarajan1 Dr.A.Ananth2 Dr.S.A.Lourthuraj3
1Director, Christhuraj Institute of Management, Panjappur, Trichy- 620 012
2HOD,Dept.of Management Studies, C.K.College of Engg. & Technology, Cuddalore – 03
3Asst. Professor, Jamal Institute of Management, Jamal Mohammed College, Trichy – 20

ABSTRACT

In this research the authors make use of cement industry in Tamil Nadu to find out the overall financial performance efficiency. Ten years data has been employed in this study from 1996-97 to 2005-2006. To find out the overall financial performance efficiency the authors employed Data Envelopment Analysis (DEA) with the support of KonSI DEA Analysis for Benchmarking Software Professional Version. The authors found that the cement industry performance was good in Tamil Nadu during 1997, 1998 and 2004, rest of the years the industry should improve their financial performance. The authors conclude that the Cement companies in Tamil Nadu have to consolidate in order to become strong, vibrant and also they have to concentrate on export market besides maintaining a good Supply Chain Management (SCM) strategy. The company has adopted strategic policy of keeping the debt obligation at lower levels to reduce the cost of finance.

KEY WORDS: DEA, Financial Performance, Cement Industry, Shareholder’s Wealth, and Strategic finance

I INTRODUCTION

Although India is the second largest cement producer in the world, it is way behind China, where the capacity is more than five times larger. The industry provides direct employment to 70000 people and has the capability to create huge indirect employment downstream. It has a high rate of excise duty and accounts for 5% of total excise collection. The industry has been modernizing and some units can now boast of having the state-of-art technology plants with energy consumption comparable with the best in the world. Achievement of growth and targets for the cement industry is crucially dependent on various inputs such as limestone, coal, power, and transportation of limestone. Coal continues to be
the main fuel for the cement industry and will remain so in the near future. At present, 60% of coal requirement of the cement industry is met through linkages and fuel supply agreements, while the remaining requirement is met from open-market purchases, import, and use of petroleum coke. The production of cement is a continuous process requiring uninterrupted power supply. Since the availability and quality of grid power supply continue to be a problem, the use of captive power has been increasing. Most of the cement units have installed captive power generation to the extent of 60% to 100% of their requirement. Cement is a low-value and high-volume commodity mainly concentrated near limestone deposits available in a few States. The main input coal is also available in a few States. In view of this, long leads of movement both for inputs and outputs are required and the railways remain the only economical mode for such transportation (Source Eleventh Five year Plan 2007-2012). In this research paper the authors make use of Data Envelopment Analysis (DEA) to measure the financial performance of select cement companies in Tamilnadu.

II REVIEW OF PREVIOUS STUDIES

National Council of Applied Economic Research (NCAER) (1978) attempted to examine the financial structure to evaluate its capabilities to generate funds needed for under taking the desired expansion during eighties. The study has shown that the poor profitability and low rate of dividend declaration place a serious limitation on its capacity to raise funds. The declining profits are due to cost escalation.

Goel V.K. and Nair N.K (1978) have observed that the rate of growth of capital has been alarmingly low during the period under analysis. The profitability has registered a declining trend. Over the years, the role of external sources of finance has been assuming significance indicative of continuous depletion of internal sources.

Kaura, M.N and Bala Subramanian (1979) examine ten cement units during 1972 to 1977 shows that the financial strength of the units evidenced by liquidity, profitability and financial structure ratios has declined. The non availability of funds has affected the modernization of plants and periodic rehabilitation of the kilns. Besides, the bottlenecks in supply of raw materials and power and non remunerative prices have reduced the capacity utilization, profits and cash flows. The profitability and liquidity position in many units have been affected adversely because of the inadequate supply of raw materials, railway wagons and power.

Nagarajrao B.S and Chandar K (1980) assessed the financial efficiency of cement companies over the period 1970-71 to 1977-78. The profitability of select companies has been found to have declined from 1970-71 to 1974-75 on account of inflation, ever rising manufacturing cost of cement, continuous fall in capacity utilization due to shortage of coal, oil, wagons and drastic power cut.

Kumar B. Das (1987) has made an assessment of the financial efficiency of the cement Industry. He has observed that net fixed assets as a percentage of total assets decreased from 53.5 percent in 1970-71 to 44.04 percent in 1977-78. Current liabilities have increased faster than the current assets. Liquidity Ratio which is the index of functional strength has made a decline during the study period. The Debt Asset ratio has decreased over the period. But the Debt Equity ratio has slightly increased while net worth operating capital ratio has decreased over the years.
Canagavally.R (2000) examined the measures of the performance in terms of size, growth, profitability and risk of the companies before and after merger. That dissertation also investigated the share prices of sample companies in response to the announcement of merger.

Surjit Kaur (2002) examined the M & A activity in India during the post liberalization period. The study tested the usefulness of selected financial ratios to predict corporate takeovers in India.

Manandhar and Tang (2002) incorporated intangible aspects, e.g. the internal service quality, into DEA. They considered internal service quality, operating efficiency and profitability as dimensions of performance.

Alovsat Muslumov (2005) concluded that the privatization was associated with a declining value added and shareholders’ profitability in Turkish cement industry. A decline in the value added and shareholders’ profitability were mainly caused by the decrease in return on assets. The decline in the return on asset was traced to declining asset productivity. These results are not consistent with previous cross-sectional privatization studies and a number of country studies.

Jayant Sathaye (2005) the study revealed that, the Indian cement industry has grown rapidly over the past few decades and there have been significant investments in new cement kilns and associated production equipment. This has led to a situation where India’s cement industry in made up of both some of the world’s most energy-inefficient plants as well as some of the world’s best practice facilities. The challenge for the Indian cement industry is to modernize or phase out the older, inefficient plants while acquiring the best possible cement production technology as production inevitably expands in the coming decades.

Hiral Shah and Heinz Telser(2006) revealed that the Indian cement plants, which are technical, advanced, manned by skilled personnel, and supported by an increasing consumption, are operating at close to the maximum rated capacities. Furthermore, the annual growth figures of seven to eight percent are expected to prevail in the coming years. In view of the enormous growth potential for domestic consumption, India will be a strategic target for international cement companies.

Indira Hirway and Amita shah (2006) concluded that the issue of the industrial policy in India presents another example of the constraints of the market and the need for state interventions. Though one cannot reject the role of the market (as an efficient allocator of resources), private enterprise for competitive efficiency and incentives and the efficient management of the macro economy in promoting development, one cannot also undermine the role of the state in directing the path of (industrial) development.

Kulansizoglu (2007) concluded that the cement industry has gradually become more competitive over time since the sign of parameter of time trend in their supply equation is negative and the parameter itself, although small in absolute value, is statistically significant. The competition Authority dummy turned out to be statistically in-significant even when they assume that it might have a logged impact. These results are contrary to apriority
expectations and show that the introduction of competition policy has not made the cement industry more competitive despite all the investigations and monetary penalties.

C.T. Samluther (2007) has concluded that the management of risk has always been an integral part of any business and has gained momentum in recent years due to globalization and liberalization. This paper highlights how the company has achieved adequate liquidity, risk minimization and profit maximization.

Portela and Thanassoulis (2007) analyzed the three dimensions of branch performance: Usage of new transaction channels, efficiency in increasing sales and customer base and generating profits. Relations between operational and profit efficiencies and also transactional and operational efficiencies were identified. Comparison of different dimensions allows us to see superior and inferior branches. They found positive links between operational and profit efficiency and also between transactional and operational efficiency. Service quality is positively related with operational and profit efficiency.

Zubairi (2007) found a significant negative correlation between size and the usage of certain methods in a survey based study on “capital budgeting practices”

Giokas (2008) also studied the efficiency of 44 branches in Greece by searching three perspectives: Efficiency in managing the economic record of the branches (production efficiency), efficiency in meeting the demand for transactions with customers (transaction efficiency) and efficiency in generating profits (profit efficiency). All models indicated that there is a scope for substantial efficiency improvements and again all models identified essentially the same worst performing branches.

Gaganis et al. (2009), in first stage, examined the profit efficiency, the effect of risk factor (loan loss provisions) on profit efficiency and the Total Factor Productivity (TFP) change. In the second stage they analyzed the impact of some internal and external parameters, such as personnel, income per capita, loans to total assets ratio, loans to deposit ratio, return on assets, on efficiency.

Mathuva (2009) examined the influence of working capital management components on corporate profitability by using a sample of 30 firms listed on the Nairobi Stock Exchange (NSE) for the periods 1993 to 2008. He used Pearson and Spearman’s correlations, the pooled ordinary least square (OLS), and the fixed effects regression models to conduct data analysis. The key findings of his study were that: i) there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers (accounts collection period) and profitability, ii) there exists a highly significant positive relationship between the period taken to convert inventories into sales (the inventory conversion period) and profitability, and iii) there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and profitability.

Mazhar and Nasr (2010) examined the capital structure decisions among the firms registered on Islamabad Stock Exchange and concluded that all determinants: tangibility, size, growth rate, tax provision, and profitability are significantly related with the leverage whether positively or negatively. Moreover, government owned and private companies of Pakistan use different patterns of financing, and that government owned companies employ higher levels of debt as compared to private companies.
S. Chandrakumarmangalam and P. Govindasamy (2010) investigate the relationship between the leverage (financial leverage, operating leverage and combined leverage) and the earning per share, and this study also explains the relationship between the Debt equity ratio and Earning per Share and how effectively the firm be able debt financing, the results suggest that the leverage and profitability and growth are related and the leverage is having impact on the profitability of the firm.

Chakraborty (2010) employed two performance measures, including ratio of profit before interest, tax and depreciation to total assets and ratio of cash flows to total assets and two leverage measures, including ratio of total borrowing to assets and ratio of liability and equity, and reported a negative relation between these ones.

Mistry Dharmendra S (2011) found that Liquidity is closely related with the profitability of the Indian Cement Industry as compared to the Total Assets, Inventory Turnover Ratio, Debt-Equity Ratio and Operating Expenses Ratio.

Hajihassani (2012) presented A Comparison of Financial Performance in Cement Sector in Iran. This study presents comparison of financial performance for the period 2006–2009 by using financial ratios and measures of cement companies working in Iran. Financial ratios are divided into three main categories and measures including two indicators. This work concludes that the performance of cement companies on the basis of profitability ratio is different than on the basis of liquidity ratio, leverage financial.

III METHODOLOGY

Hence, pooled data collection is used to assess the impact of regulation on financial performance of cement companies in Tamil Nadu over the time horizon viz., 1996-97 to 2005-06. The design of the study is based on financial data, which are published. The secondary data is considered as the most appropriate research design to the measure the dimensional effects of the performance of the cement industry in Tamil Nadu. The study, to conduct empirical analysis, collected secondary data in the form of published documents from various sources viz.; companies published annual reports and other journals. Due to non-accessibility of sensitive company data, the effect of window dressing could not be ascertained. However, data was accepted as these were frequently inspected by SEBI and Institute of Charted Accountants of India. The study, it was felt, will be useful if the random sample drawn from the population of cement industry in the state of Tamil Nadu. In this study, the authors have chosen four cement companies for evaluating the financial performance which are India Cements Limited (ICL), Dalmia Cement (Bharat) Limited (DCL), Madras Cements Limited (MCL) and Chettinadu Cement Corporation Limited (CCCL). Data analyzed and experimented using non-parametric econometric Data Envelopment Analysis (DEA) programming approach for Scale efficiency.

IV RESULTS AND DISCUSSION

DEA measures efficiency of a Decision Making Unit (DMU) by maximizing the ratio of weighted outputs over weighted inputs. This ratio is normalized according to best practical peers and efficiency is calculated to be between 0 and 1, as 1 representing efficient unit. Table I and Figure I reveal the efficiency score of ICL. The authors found that the efficient
years (1996, 2000, 2004 and 2005) have scores one. The value 0.4499 is the inefficient score of the year 2002 means that its output can simultaneously be increased by a factor of 122.22%. From the Data Envelopment Analysis the conclusion drawn that the ICL has efficiently utilized their Total Cost, Total Sales, Total Debt, Total Asset, Non Business Income, and profit to maximize shareholders fund except during the years 1997-1999 and 2001-2003.

Table I: Financial Performance Efficiency Score of India Cements Limited (ICL) Dalmia Cement (Bharat) Limited (DCL), Madras Cements Limited (MCL), Chettinadu Cement Corporation Limited (CCCL) and Sample Total of cement industry in Tamil Nadu.

<table>
<thead>
<tr>
<th>Year/Company</th>
<th>India Cements</th>
<th>Dalmia Cements</th>
<th>Madras Cements</th>
<th>Chettinadu Cements</th>
<th>Sample Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.3083</td>
<td>0.7714</td>
</tr>
<tr>
<td>1997</td>
<td>0.9375</td>
<td>0.8670</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
</tr>
<tr>
<td>1998</td>
<td>0.6614</td>
<td>0.8993</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
</tr>
<tr>
<td>1999</td>
<td>0.5778</td>
<td>0.9283</td>
<td>1.0000</td>
<td>0.2528</td>
<td>0.5855</td>
</tr>
<tr>
<td>2000</td>
<td>1.0000</td>
<td>0.9259</td>
<td>1.0000</td>
<td>0.2884</td>
<td>0.6451</td>
</tr>
<tr>
<td>2001</td>
<td>0.6120</td>
<td>0.9434</td>
<td>0.9853</td>
<td>0.2899</td>
<td>0.6296</td>
</tr>
<tr>
<td>2002</td>
<td>0.4499</td>
<td>1.0000</td>
<td>0.7248</td>
<td>1.0000</td>
<td>0.6111</td>
</tr>
<tr>
<td>2003</td>
<td>0.9968</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.6640</td>
</tr>
<tr>
<td>2004</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.6602</td>
<td>1.0000</td>
<td>1.0000</td>
</tr>
<tr>
<td>2005</td>
<td>1.0000</td>
<td>0.8941</td>
<td>0.6856</td>
<td>0.9181</td>
<td>0.7497</td>
</tr>
</tbody>
</table>

Inputs: Total Cost, Total Sales, Total Debt, Total Assets, Income, profit before tax
Output: shareholders fund
Model: Output oriented model
Scale: Constant returns- to-Scale

Source: Published Annual Reports of the companies and KonSI DEA Analysis for Benchmarking Software Professional Version.

Table I and Figure II reveal the efficiency score of DCL. The efficient years (1996, 2002, 2003 and 2004) have scores one. The value 0.8670 is the inefficient score of the year 1997 means that its output can simultaneously be increased by a factor of 15.30%. From the Data Envelopment Analysis the conclusion drawn that the DCL has efficiently utilized their Total Cost, Total Sales, Total Debt, Total Asset, Non Business Income, and profit to maximize shareholders fund except during the years 1997-2001 and 2005.
Figure I: Financial Performance efficiency score of India Cements Limited

Source: Published Annual Reports of the companies, KonSI DEA Analysis for Benchmarking Software Professional Version.

Figure II: Financial Performance efficiency score of Dalmia Cements Bharat Limited

Source: Published Annual Reports of the companies, KonSI DEA Analysis for Benchmarking Software Professional Version.

Table I and Figure III reveal the efficiency score of MCL. The efficient years (1996 – 2000 and 2003) have scores one. The value 0.6602 is the inefficient score of the year 2004 means that its output can simultaneously be increased by a factor of 51.46%. From the Data
Envelopment Analysis the conclusion drawn that the MCL has efficiently utilized their Total Cost, Total Sales, Total Debt, Total Asset, Non Business Income, and profit to maximize shareholders fund except during the years 2001, 2002, 2004 and 2005.

**Figure III: Financial Performance efficiency score of Madras Cements Limited**

![Efficiency Scores](image)

**Source:** Published Annual Reports of the companies, KonSI DEA Analysis for Benchmarking Software Professional Version.

Table I and figure IV reveal the overall efficiency score of CCCL. The efficient years (1997, 1998 and 2002-2004) have scores one. The value 0.2528 is the inefficient score of the year 1999 means that its output can simultaneously be increased by a factor of i.e. 295.57%. From the Data Envelopment Analysis the conclusion drawn that the CCCL has efficiently utilized their Total Cost, Total Sales, Total Debt, Total Asset, Non Business Income, and profit to maximize shareholders fund except during the years 1996, 1999-2001 and 2005.

**Figure IV: Financial Performance efficiency score of Chettinadu Cement Corporation Limited**

![Efficiency Scores](image)
Table I and figure V reveal the overall financial performance efficiency score of sample total of cement industry in Tamil Nadu. The efficient years (1997, 1998 and 2004) have scores one. The value 0.5855 is the inefficient score of the year 1999 means that its output can simultaneously be increased by a factor of i.e. 70.79%. Overall financial performance of the
cement industry in Tamil Nadu is far from satisfactory except in the years 1996, 1999 – 2003 and 2005.

V CONCLUSION

At the individual firm level Madras Cement is the most efficient firm as far as overall performance through maximization of shareholder wealth is concerned. The authors found that the cement industry performance was good in Tamil Nadu during 1997, 1998 and 2004 rest of the years the industry should improve their financial performance. The authors conclude that the Cement companies in Tamil Nadu have to consolidate in order to become strong, vibrant and also they have to concentrate on export market besides maintaining a good Supply Chain Management (SCM) strategy.

REFERENCES


25. Dr.V.Sarangarajan And Dr. S.A.Lourthuraj, “Asset Management Efficiency Of Selected Cement Companies In Tamil Nadu” International Journal of Management (IJM), Volume 4, Issue 1, 2013, pp. 175 - 182, Published by IAEME

26. Dr.V.Sarangarajan, Dr. S.A.Lourthuraj And Dr. A. Ananth, “Capital Structure Efficiency Of Cement Industry In Tamil Nadu” International Journal of Management (IJM), Volume 4, Issue 1, 2013, pp. 190 - 196, Published by IAEME