
“Feasibility Study of Capital Budgeting on Aluminium Casting Plant (Start Up)”

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ABSTRACT

Purpose of this paper is to find out the whether the project is feasible to invest or not. This paper will show the capital budgeting decision and practise with respect to the small business Start up of Aluminium Casting Plant. While large firms rely on the discounting cash flow analysis, many small firms evaluate projects using the payback period or by the owner’s gut feeling. Not only the pay-back period but this paper will also show the Estimated Profitability Statement, Repayment schedule of the loan, Internal Rate of Return, Net Present Value of the Cash Flows. Strategic models like SWOT analysis and Michal Porter’s Five Forces theory are used to analyse the Indian Aluminium Industry in the best possible way.

Key Words: Capital Budgeting, Profitability Statement, IRR, NPV, Porter’s five Forces Theory

1 Introduction :

Aluminium industry is one of the leading segments of the Indian economy and is expected to play a significant role in its future growth. Apart from its potentially large, growing market. India is endowed with large deposits of high quality bauxite ore, resources for power generation (coal) and formidable pool of manpower – both skilled and unskilled. Indian aluminium industry is forging ahead with rapid expansion in both Primary metal and downstream sectors. With the Indian economy projected to be amongst the top five in the world by 2020, the overall consumption of aluminium in India is projected to be about 5 million tonnes by 2015, and 10 million tonnes by 2020. Major sectors contributing to Indian aluminium consumption growth, namely, electrical (power), building and construction, packaging and transportation, are expected to grow in double digits during the next decade with this India is likely to achieve a per capita aluminium consumption of about 10kg per annum.

2 Literature review

Petry and Sprow’s (1993) study of 151 firms listed in the 1990 Business Week 1,000 firms indicates that about 60 per cent of the firms use the traditional payback period either as a primary or as a secondary method for capital budgeting decisions. Ninety per cent of the firms use NPV and IRR either as a primary or as a secondary capital budgeting decision methodology. Most of the financial managers indicated that either they had not heard of the problems of IRR (multiple rates of return, NPV and IRR conflict) or such problems rarely occurred.

Colin Drury and Mike Tayles (1996) has focused a light on some of unresolved issues on capital budgeting in UK and examined the impact of company size on the use of financial appraisal techniques. They conducted a postal questionnaire survey which can provide an overview of current management accounting practices in UK companies. They mailed their questionnaire to 866 business units and a total 303 usable responses were received (a response rate of 35%). Their survey findings in respect of the 46 largest organizations indicated that 63% always used IRR, 50% always used NPV and 30% always used the payback method. The sample included in this survey included responses from a wide range of organizations of different size. Most of organizations used a combination of

appraisal techniques. 86% of those organizations that 'often' or 'always' used the unadjusted payback method combined it with a discounting method. The survey findings also indicate that non discounting methods continue to be used by both smaller and larger organizations. The survey also sought to ascertain the approaches that were used for dealing with project risk. Sensitivity analysis was 'often' or 'always' used by 82% of the larger organizations compared with 30% for the smaller organizations. The survey findings suggest that theoretically sound capital budgeting techniques are more likely to be used by larger organizations rather than by smaller organizations. The impact of company size on the use of investment appraisal techniques has been examined and the survey findings suggest that many firms appear to deal with inflation incorrectly when appraising capital investments. This survey has provided useful attention-directing information by identifying topics that require most in-depth research. They have suggested that in order to understand more fully the role that financial criteria play in the capital investment decision-making process, future studies should widen the scope beyond economic rationality and examine the broader political and social roles that financial information plays within organizations in the investment decision-making process.

Anand Manoj (2002) surveyed 81 CFOs of India to find out their corporate finance practices vis-à-vis capital budgeting decisions, cost of capital, capital structure, and dividend policy decisions. It analyzed the responses by the firm characteristics like firm size, profitability, leverage, P/E ratio, CFO's education, and the sector. The analysis reveals that practitioners do use the basic corporate finance tools that the professional institutes and business schools have taught for years to a great extent. It is also observed that the corporate finance practices vary with firm size. As per his findings, the firms use DCF techniques more than before. They use multiple criteria in their project choice decisions. 85% of the respondents consider IRR as a very important/important project choice. About 65% of the respondents always or almost always use NPV. The PBP method is also popular. Large firms are significantly more likely to use NPV than small firms. Small firms are more likely to use PBP method than large firms. High growth firms are more likely to use IRR than the low growth firms. The sensitivity analysis and scenario analysis are most widely used techniques for assessing the project risk.

Gupta Sanjeev, Batra Roopali and Sharma Manisha (2007) has made an attempt to explore which capital budgeting techniques is used by industries in Punjab, and the influence of factors such as size of capital budget, age and nature of the company, and education and experience of the CEO in capital budgeting decisions. They conducted a primary survey of 32 companies in Punjab. Almost one-third of the companies had capital budget exceeding Rs. 100mn. Majority of the sample companies still use non-discounted cash flow techniques like PBP and ARR. Only a few companies use DCF, and among them very negligible number use NPV technique to evaluate a new project. The most preferred discount rate is WACC. The most popular risk incorporating technique is 'Shorter PBP. Many companies feel that CEO education and experience play an important role in selecting the capital budgeting technique. Further, The study did not find any significant relationship between the size of capital budget and capital budgeting methods adopted. Similarly, though at some instances it appears that young companies prefer DCF techniques than the older ones, the same is not true in case of NPV method. Thus, age of the company also does not influence the selection of the capital budgeting technique. Similarly no significant relationship could be established between the nature of industry and investment evaluation techniques.

2.1 Major Players in India Aluminium Production Sector

Aluminium production industry in India is mainly dominated by about five firms that account for the majority of the country's metal production including Hindustan Aluminium Company (HINDALCO), National Aluminium Company (NALCO), Bharat Aluminium Company (BALCO), MALCO and INDAL.

HINDALCO: Hindalco is the largest firm in the Indian aluminium industry holding more than 39% of market share. This is a flagship unit of the Aditya Birla Group with its aluminium plant at located at Renukoot in Uttar Pradesh. The firm manufactures a number of aluminium products making up a market share of 42% in the primary aluminium segment, 20% in extrusions and 63% in rolled products, while 31% of the products are in the wheels and 44% in foils segments.

Sterlite Industries is one another giant in the arena comprising two wings namely BALCO and MALCO.

BALCO is a partly integrated firm, MALCO is a completely integrated producer of aluminium. Sterlite company holds a market share of about 32%.

NALCO is yet another leading producer of the aluminium metal in India. Government of India has purchased a stake of about 87.15% in this firm. NALCO's aluminium refinery unit is situated at Damanjodi. In addition, the firm also has a smelter unit at Angul, Orissa. At present, NALCO is focussed on a capex project aimed at increasing the volume of its production from 345,000 tonnes to 460,000 tonnes.

The list of aluminium companies in India includes Hindalco, Hindustan Zinc, Jindal Stainless, Kennametal, India, Nalco, Malco, Ratnamani Metals, Sujana Metal Products, Balco and Indal.

3 Industry Analysis

Michael Porter's Five Forces Model

As described by Michael Porter, like other industry, Indian Aluminium Industry is also influenced by five forces which are explained by this model below:

Bargaining Power of Suppliers:

Most domestic players operate integrated plants. Bargaining power is limited in case of power purchase, as Government is the only supplier. However, increasing usage of captive power plants (CPP) will help to rationalize power costs to a certain extent in the long term.

Bargaining Power of customers:

Being a commodity, customers enjoy relatively high bargaining power as prices are determined on demand and supply.

Threat of Competition:

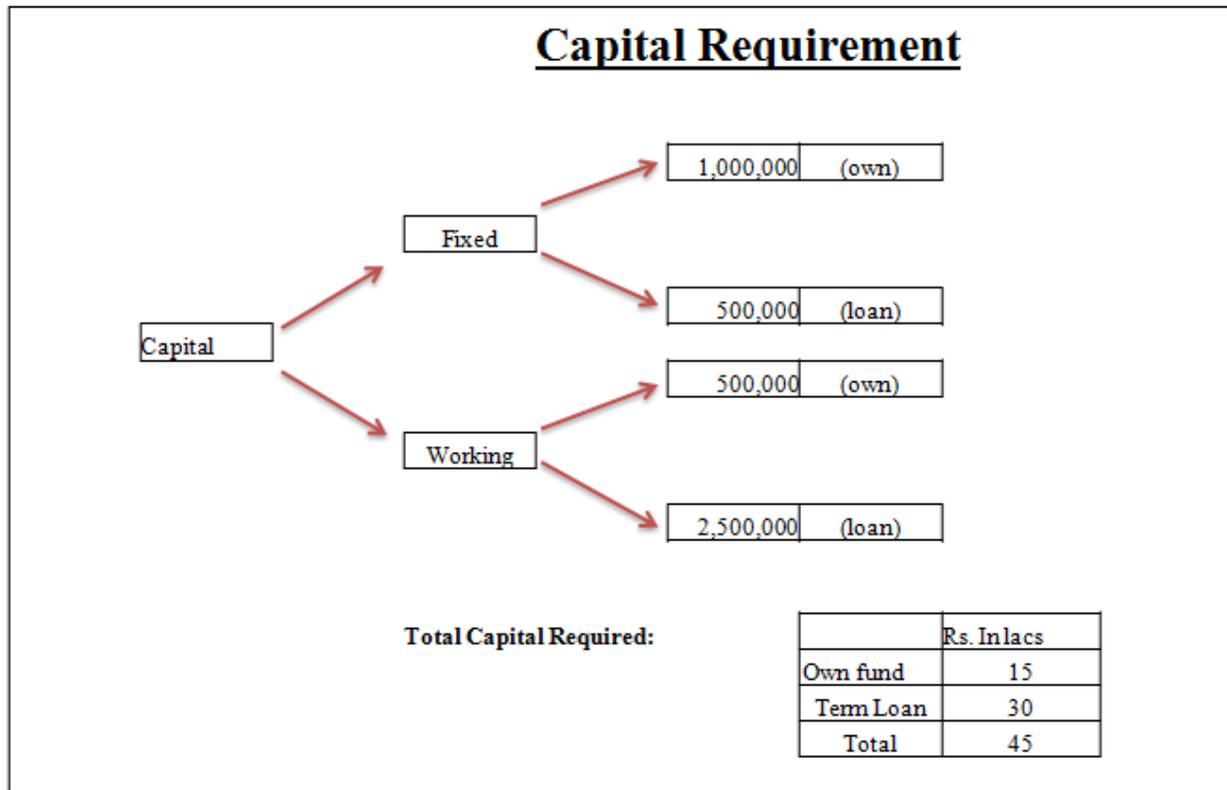
Competition is primarily on quality and price, as being a commodity, differentiation is difficult. However, the recent spate of consolidation has reduced the competitive pressure in the industry. Further, increasing value addition to aluminium products has helped some companies protect themselves from the high volatilities witnessed in this industry.

Barriers to entry:

Large economies of scale. Consequently, high capital costs, time to set up, scarcity of Power, Government factors, land problems, geographical factors etc are some of the barriers to entry.

Threat of Substitute Products:

Aluminium is comparatively cheaper, lighter and durable as compared to other metals. Demand for aluminium is estimated to grow at 6%-8%, per annum in view of the low per capita income consumption in India. Also the demand for the metal is expected to pick up as the scenario improves for user industries, like power, infrastructure and transportation. But copper can replace aluminium in electrical applications; magnesium, titanium and steel can substitute for aluminium in structural and ground transportation uses. Composite wood and steel can substitute for aluminium in construction. Glass, plastics, papers and steel can substitute for aluminium in packaging.



Computation of Net Present Value & IRR				
Sr. No.	Particulars	cash flow	PV factor @ 16%	PV @ 16%
1	project cost (excluding working capital)			
2	cash profit for year 1	1188542.524	0.862068966	1024605.624
3	cash profit for year 2	1381490.524	0.743162901	1026672.506
4	cash profit for year 3	1589795.824	0.640657674	1018514.894
5	cash profit for year 4	1815584.779	0.552291098	1002731.311
6	cash profit for year 5	2061107.786	0.476113015	981320.243
7	cash profit for year 6	2328764.976	0.410442255	955823.5473
8	cash profit for year 7	2621132.486	0.35382953	927434.0752
Total				6937102.2

Total investment	Present vale	NPV
Rs. 4,500,000	Rs. 6,937,102	Rs. 2,437,102

Profitability index 1.541578267

At 30.3829 % future cash flows are equal to total investment

4 Interpretation:

- The tenure for repayment of loan was 7yrs, which was duly met.
- The Internal Rate of Return is 30.3829% at which future cash flows are equal to investment.
- The Profitability index is 1.54 which is quite economical to go ahead with the project.
- The standard profitability index ranges from 1-2.
- The Net Present Value after 7yrs is Positive.

5 Conclusion

- In Aluminium Industry, demand is enormous, consumers are wealthy, and profitability is evident: it seems a lot of companies should be rushing to enter the aluminium sector, yet the situation is not as simple as it may seem.
- Finally the rising price for substitute metals, such as zinc and copper stimulate a direct increase of demand for aluminium in the power, transportation and construction sectors in particular.
- It is feasible to do capital budgeting for this project, as the returns are positive and there is average growth rate of 6-8% globally.

6 References

- <http://www.indianmirror.com/indian-industries/aluminium.html>
- www.slideshare.net
- <http://www.aluminiumleader.com/economics/>
- <http://www.journalamme.org>
- <http://www.aluminum.org/resources/industry-standards>
- <http://www.aluminiumtoday.com/>
- <http://www.alucast.co.in/alucast-journal.html>
- <http://www.aluminium-middleeast.com/Portal/exhibitors/international-aluminium-journal.aspx>