# Case study – american chemical corp

Education

The past performance of ACC as seen from the financial statements for the period 1974-79 is characterized by a high degree of variability. The overall situation has been very good with profit to net asset ratio (average 54. 3%) going as high as 84. 2% and 90% in 1977 and 1978, before dropping to 66. 4% in 1979. Barring the year 1975, the ratio has also shown a consistently increasing trend. In absolute terms the operating profit has shown substantial increases between the years 1976 and 1978.

Except for 1976, when the company's performance ahs dipped as a result of general market conditions, the company has shown reasonably good growth in sales, both in terms of quantity and amount. Costs have been under control and in some cases have declined over the years. Hence the past performance of ACC has been good but has shown a high degree of variability. This indicates that although the company has been performing well, the risk associated with it is also high.

## Competitive environment of ACC at the time

In 1979, there were a dozen companies producing sodium chlorate. Apart from large, diversified chemical companies, these also included a few paper and pulp companies that had backward integrated into production of sodium chlorate. The total existing capacity was 455, 000 tons, and another 75, 000 tons were being added by way of new plants being put up. Over the years, sales of sodium chlorate had increased 220, 000 tons in 1970 to 435, 000 tons in 1979 (expected figure), representing an increase of 97. 7%.

Durng the same period capacity grew from 270, 000 tons to 455, 000 tons, representing an increase of 68. 5%. This lag in the increase in capacity, compared to the increase in sales, has augured well for the companies

manufacturing this chemical, and resulted in substantial price increases from $129 per ton in 1970 to $413 in 1979. Thus the market and competitiveenvironmentwere quite favorable to the manufacturers at this time. Rising costs were a matter of concern with the cost of electricity, one of the major inputs, registering steady increases over the years.

This placed companies such as American that were using older technologies and graphite electrodes at a disadvantage compared to newer plants that used metal electrodes.

## Beta for Collinsville plant and ACC

The equity beta for ACC and Collinsville plant was 1. 20. This is the levered beta. In 1978, debt was 39% of the total capitalization, while common and preferred stock accounted for 69%. The debt-equity ratio was 0. 565. Hence, the unlevered beta was 1. 2/1. 565 = 0. 77.

## Cost of equity for evaluating cash flows of Collinsville plant project

The Collinsville plant of American Chemical Corporation is into production of Sodium Chlorate. It might not be possible to locate companies that produce only sodium chlorate, as companies that produce sodium chlorate are either manufacturers of other chemicals or of paper. Comparing the cost of equity with other chemical manufacturers might not necessarily be representative. The best course would therefore be to compare the cost of equity of the Collinsville plant with other manufacturers of Sodium Chlorate.

Since all these manufacturers produce other products along with Sodium Chlorate, the values may not be exact fits, but should be representative enough to provide a basis for evaluation.

Hence the interest rate for American Chemical's bond should be slightly higher than this. The actual rate being paid by Dixon is 11. 25%, which appears to be appropriate. The rest of the loan financing is also done at the rate of 11. 25%. Hence the actual cost of debt capital for Dixon for the Collinsville plant = 11. 25%. Although the purchase of the Collinsville plant is to done entirely with debt capital, it would not be appropriate to treat the cost of capital for the plant as the same as cost of debt capital, because the capital structure of the company as a whole needs to be considered.

Debt-to–total capital ratio after acquisition of Collinsville plant = 47% Hence WACC for the Collinsville plant = 0. 47 x 11. 25 + 0. 53 x 19 = 15. 4%, which may be rounded off to 15%.

**Incremental cash flows associated with the acquisition of Collinsville plant without laminate technology**

Using the same assumptions made in the preparation of the pro forma financial statements by Dixon for the years 1980-1984as the basis, projections for a further period of five years were made to obtain expected incomes for a period of ten years, which is the estimated life of the plant.

The cash flow has been arrived at by adding back depreciation, which is a non-cash charge, to the net incomes to arrive at the cash flow each year. Incremental cash flows and NPV associated with investment in laminatetechnologyDixon will get the laminate technology as part of the agreement for sale of the Collinsville plant, and hence no extra cash flow will be involved for the acquisition of the technology. However, Dixon will have to bear the cost of installation, which will amount to $2. 25 million. This will be depreciated over a period of ten years.

There will be a one time cash outflow of $2. 25 million at the beginning of the installation. As against this, there will be recurring benefits in the form of savings in graphite and power consumption over the life of the project, which is ten years. The incremental cash flow that will accrue on an annual basis will involve no cash outflow, as the incremental cash flow is in the form of pure savings. The savings will consist of complete elimination of graphite costs and a saving of 15-20% in power. Taking a conservative view, 15% power savings are considered for the cash flow projections.