PROJECT FINANCE FEASIBILITY STUDY

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CASE DESCRIPTION

A manufacturing company is planning to start production of two products and wants to evaluate what will be the returns for both debt and equity investors in the company based on management estimates of revenue, costs, capex and other financial line items. They have chosen an analyst Mr. Adesh to perform the feasibility analysis and give his recommendations.

Keywords: Finance

CASE SYNOPSIS

This case helps the audience learn how to do feasibility study for a Greenfield production capex project. The focus will be on the making the projections for revenue, cost, capex, dent and other financial items. Project Finance has become a preferred medium of financing large scale capex projects (Estry, 1999). Further, inspite of such large value of project finance across the world the academic research in this area is scant (Esty, 2004). But project finance projects also see large bad loans and hence at times requires induction of state backing via guarantees (Srivastava, 2019).

The case also illustrates how to do feasibility analysis by computing IRR and MOIC. The main learning's will be that the audience will be able to learn the building of a financial model in a spreadsheet right from scratch.

Teaching Objectives

1. To understand how different sections in a project financial model built in a spreadsheet
2. Building projected income statement
3. Building projected balance sheet
4. Building projected cash flow statement
5. Compute Internal rate of return (IRR)
6. Compute Money on Invested Capital (MOIC)

INTRODUCTION

Tanay Manufacturing Ltd. started its operations to manufacture two products A & B on 1st April 2012 with an authorized capital of INR 1.5 million (150,000 shares of INR 10 each). The 4 promoters of the company contributed INR 400,000 each for 20,000 shares issued to each one of them. In addition to the contributed capital, Tanay Manufacturing Ltd. raised INR 12,00,000 @14% per annum from State Bank on 1st April 2012. The management and bank has agreed into a contract where Tanay Manufacturing Ltd. is exempted from making any payments of debt in the first year of operations. The terms of loan require the company to repay minimum of 20% of the outstanding debt (at the start of the year), starting from its second year of operations.

For manufacturing the two products, Tanay Manufacturing Ltd. spent INR 21,00,000 for buying two machines on the second day of the year 2012. The annual maintenance capex in the middle of the year is estimated to be INR 100,000 for 2nd and 3rd year and INR 120,000 for year 4th and 5th. Depreciation is chargeable @12% of the yearly

written down value.

Tanay Manufacturing Ltd. is expecting to achieve a capacity utilization ratio of 40% & 35% for Product A and B, while 70% of the available goods are expected to be sold in year 2012-2013.

The yearly Indirect expenses (rent, salaries, office exp. etc.) are estimated be INR 11,60,000 for the first year of operations.

The goods are sold on credit and the company is expecting to recover the receipts from debtors in 35 days in the initial year, which gradually is expected to come down to 31 by the 5th year of the operations. On the other hand, Tanay Manufacturing Ltd. takes about 60 days to make payments to creditors (from whom Raw material is purchased to manufacture products). The success of any business depends on good working capital management (Ammons & Gosman, 2012).

Tanay Manufacturing Ltd. has plans to give dividends to shareholders @30% of profits available to common stockholders in any year when net margin is above 10%.

Product A (Assumptions)

- Production Capacity of 100,000 Units, with utilization ratio of 40%, 52%, 55%, 58% and 62% for year 1, 2, 3, 4, 5 respectively
- Sales of 70%, 75%, 80%, 85% and 85% of total available units for sale
- Selling price of INR 100 per unit is expected to grow @8%
- Raw material costs INR 35 per unit, labor expenses @ INR 20 per unit; expected growth of 5% and 10% respectively

Product B (Assumptions)

- Production Capacity of 50,000 Units, with utilization ratio of 35%, 44%, 47%, 51% and 55% for year 1, 2, 3, 4, 5 respectively
- Sales of 70%, 75%, 80%, 80% and 80% of total available units for sale
- Selling price of INR 50 per unit is expected to grow @10%
- Raw material costs INR 15 per unit, labor expenses @ INR 14 per unit; expected growth of 5% and 10% respectively

Others:

- SG&A to grow @15% for year 2 and 3 and 12% for year 4 & 5
- Tax @ 30%
- Creditors days to come down to 55 in year 4 and 50 in year 5
- Outstanding expenses account for 1.25 months
- Interest to be computed on average balance of opening and closing debt

For any new business to be successful, it is critical to evaluate the accounting issues (Kampschroeder, Ludwig, Murray, & Padmanabhan, 2008; Kunz & Dow III, 2015).

The company hires a seasoned financial analyst – Mr. Adesh to build a financial model on the feasibility of the project and advise the company. Mr. Adesh plans to build the following elements in the financial model

1. Using the information above finish the General Assumptions, Transaction Assumptions, Operating Assumptions, Working Capital Assumptions and Capex Assumptions.

2. Complete the Income Statement, Balance Sheet and Cash Flow Statement. If required simultaneously work on the other schedules – Capex, Debt etc.
3. Finally calculate the following to evaluate the metrics of judging the project for equity owners and for all the suppliers of capital.
    a) Project IRR
    b) Project MOIC (multiple on invested capital)
    c) Equity IRR
    d) Equity MOIC (multiple on invested capital)

Target group

This case can be used in a finance course on "Financial Modeling" in an undergraduate or MBA program. It will make the students understand the importance of using spreadsheets in conducting project finance feasibility study.

Questions for discussion

1. How is depreciation computed?

Ans: The depreciation is calculated with full rate on growth capex and opening value. Further, the maintenance capex is charged at half rate

2. How is working capital computed?

Ans: The debtors are based on projections of number of receivable days. The accounts payable are computed based on number of payable days.

3. What is different between free cash flows?

Ans: Free cash flows are available for both debt and equity. The free cash flow to equity is only available for equity holders.

4. What is MOIC?

Ans: MOIC refers to the factor between total cash inflows and total cash outflows.

Analysis of data

Both the returns analysis–MOIC and IRR conclude that the project will be beneficial for the company and should be undertaken.

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