

Capital Budgeting

Investment normally requires an upfront cash outflow and it produces a series of cash outflow. For example, if you invest Rs. 100,000 to buy a 10-year bond at 8%, it produces Rs. 8000 interest cash inflow every year for 10 years and then Rs. 100000 principal cash inflow at the end of 10 years. Similarly, if a firm invests Rs. 100 million in a setting up a plant to produce automobile component, the project would generate cash inflow for the next 10 to 15 years. It is important to assess the financial viability of the projects before accepting the project. In this chapter, we discuss how to assess the financial viability of any investment proposal.

Project Life-cycle

A typical project life cycle is (a) identification of project, (b) technical feasibility (c) commercial feasibility (d) financial feasibility (e) project implementation and (f) project post-audit analysis. In the first stage, managers across the organization identify projects they want to undertake in their departments. These projects could be replacement of an existing equipment or adding a new equipment to improve the productivity of their units or sending their employees for training or introducing a new product. Managers would be normally busy around the budget time in identification of the projects and submit them to budget authority. These projects are included in capital budgeting and assessed as a part of budgeting exercise. Finance department of most organizations would disallow any new project, which are not approved in the budget unless the project is of critical nature. Once the sponsor of the project identifies the project, she/he will collect technical data related to the project and assess technical feasibility. For example, if a manufacturer of chemicals wants to enter into mosquito coils, the first think to

be checked is whether the company has technical capability to produce the coil. If it doesn't have internal technical capability, then it should look for consultants or technical collaborators who can help them in executing the project. Once the technical feasibility is established, the project sponsor should check whether there is adequate demand for the product. The process of assessing the demand at different price points is called commercial feasibility. If a project is just replacing an existing equipment, there is no detailed technical and commercial viability but just collection of technical feature of the equipment and assessing its compatibility with other equipment. Using the information collected during technical feasibility and commercial feasibility, the project sponsor or finance department prepares cash flow projection and assess the financial feasibility. The question answered at this stage is whether the project generate adequate return more than the cost at which we undertake the project. Once the project is financially viable and adequate funds are available to take up the project, the project gets the approval and the sponsor starts implementing the project. Project actual cost needs to be continuously monitored to ensure there is project cost escalation. Most project fail mainly due to substantial escalation in the project cost. In the entire project life cycle, project execution is most critical stage. After few years of execution of the project and once cash flows start flowing from the project, a detailed post-audit project note is prepared. The purpose is learning from the past experience and such experience is useful for executing future projects.

Capital Budgeting Techniques

Project sponsor requires three input to assess the financial feasibility of the project. The first one is estimation of project cash flows which include initial investment in the project and periodical cash inflows from the project. The sponsor also requires

what should be minimum required rate of return so that she/he can compare the project return with the minimum required rate of return. Finally, the project sponsor would require a decision rule. The decision rule depends on capital budgeting technique. We start our discussion with decision rule, the easiest one among the three. Most organizations use one of the discounted cash flow techniques (DCF) which is an extension of our previous discussion on Time Value of Money. The three widely used DCF techniques are (a) Net Present Value (NPV), (b) Internal Rate of Return (IRR) and (c) Profitability Index (PI). A Capital Budgeting decision rule should satisfy the following criteria:

- Must consider all of the project's cash flows.
- Must consider the Time Value of Money
- Must always lead to the correct decision when choosing among Mutually Exclusive Projects.

Project Classifications

Capital Budgeting projects are classified as either **Independent Projects** or **Mutually Exclusive Projects**.

An **Independent Project** is a project whose cash flows are not affected by the accept/reject decision for other projects. Thus, all **Independent Projects** which meet the Capital Budgeting criterion should be accepted.

Mutually Exclusive Projects are a set of projects from which at most one will be accepted. For example, a set of projects which are to accomplish the same task. Thus, when choosing between "Mutually Exclusive Projects" more than one project may satisfy the Capital Budgeting criterion. However, only one, *i.e.*, the best project can be accepted.

Payback Period

The Payback Period in simple terms is the time required to recover the investments in the project. Since the projects come with some inherent risk, the first thing most project investors would worry is preserving capital. How long will it take for me to take back my money invested in the project is a usual question asked by the providers of funds. While we can appreciate such question from a small entrepreneurs, even very large organizations use payback period while assessing projects. The use of the Payback Period as a Capital Budgeting decision rule specifies that all *independent* projects with a Payback Period less than ***hurdle payback period*** should be accepted. When choosing among *mutually exclusive* projects, among the projects whose payback period is lower than hurdle payback period, the project with the quickest payback is preferred. The challenge is defining the hurdle payback period.

The calculation of the Payback Period is fairly simple. Consider project A has the following cash flows over its five year life.

Year	Cash Flow
0	-3000
1	1000
2	1500
3	2000
4	2000
5	500

To begin the calculation of the Payback Period for project A, let's add an additional column called Cumulative Cash Flow:

Year	Cash Flow	Cumulative Cash Flow
0	-3000	-3000
1	1000	-2000
2	1500	-500
3	2000	1500
4	2000	3500
5	500	4000

The cumulative cash flow turns positive year 3. Thus the payback period is somewhere between year 2 and year 3. If we assume, the third year cash flow of Rs. 2000 is distributed uniformly, we can say by the end of first quarter, the cumulative cash flow turns zero and hence the payback period is two-years and One-quarter or 2.25 years. If we add two more columns, the first one is computing discounted cash flow and the last column for cumulative discounted cash flows, we can compute discounted payback period.

Year	Cash Flow	Cumulative Cash Flow	Present Value @ 15%	Cumulative Present Value
0	-3000	-3000	-3000.00	-3000.00
1	1000	-2000	869.57	-2130.43
2	1500	-500	1134.22	-996.22
3	2000	1500	1315.03	318.81
4	2000	3500	1143.51	1462.32
5	500	4000	248.59	1710.91

The discounted payback period is between year 2 and year 3. Assuming the present value of the cash flows of third year are uniformly distributed throughout the year, the discounted payback period is 2.75 years.

Net Present Value

The Net Present Value (NPV) of a Capital Budgeting project indicates the expected impact of the project on the value of the firm. Projects with a positive NPV are expected to increase the value of the firm. Thus, the NPV decision rule specifies that all *independent* projects with a positive NPV should be accepted. When choosing among *mutually exclusive* projects, the project with the largest (positive) NPV should be selected. The NPV is calculated as the present value of the project's cash inflows minus the present value of the project's cash outflows. This relationship is expressed by the following formula:

$$NPV = \sum_{t=0}^T \frac{CF_t}{(1+r)^t} = CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_T}{(1+r)^T}$$

where

- CF_t = the cash flow at time t and
- r = the cost of capital¹.

For the project details used earlier for the payback period, let us compute the NPV of the project.

Year	Cash Flow	Present Value @ 15%
0	-3000	-3000.00
1	1000	869.57
2	1500	1134.22
3	2000	1315.03
4	2000	1143.51
5	500	248.59
Net Present Value (NPV)		1710.91

¹ The firm's **Cost of Capital** is the discount rate which should be used in Capital Budgeting. The **Cost of Capital** reflects the firm's cost of obtaining capital to invest in long term assets. Thus it reflects a weighted average of the firm's cost of debt, cost of preferred stock, and cost of common stock.

The NPV of the project is positive and hence the project is financially viable.

Exercise: Find the NPV for the following Capital Budgeting project.

Year	Cash Flow
0	-2000
1	200
2	400
3	600
4	800
5	1000
Cost of Capital	14%

Internal Rate of Return

The Internal Rate of Return (IRR) of a Capital Budgeting project is the discount rate at which the Net Present Value (NPV) of a project equals zero. The IRR decision rule specifies that all *independent* projects with an IRR greater than the cost of capital should be accepted. When choosing among *mutually exclusive* projects, the project with the highest IRR should be selected (as long as the IRR is greater than the cost of capital).

$$NPV = 0 = \sum_{t=0}^T \frac{CF_t}{(1 + IRR)^t} = CF_0 + \frac{CF_1}{(1 + IRR)^1} + \frac{CF_2}{(1 + IRR)^2} + \dots + \frac{CF_T}{(1 + IRR)^T}$$

where

- CF_t = the cash flow at time t and

The determination of the IRR for a project, generally, involves trial and error or a numerical technique. Excel would be handy in computing the IRR [Excel Function: =IRR(Project cash flow range)]. For the previous example used for payback period and NPV, let us compute IRR.

Year	Cash Flow	Present Value @ 15%
0	-3000	-3000.00
1	1000	869.57
2	1500	1134.22
3	2000	1315.03
4	2000	1143.51
5	500	248.59
Net Present Value (NPV)		1710.91
Internal Rate of Return (IRR)		36.60%

The IRR of the project is 36.60% and it is more than discount rate or cost of capital and hence the project is financially viable.

Exercise: Find the IRR of the project given below

Year	Cash Flow
0	-2000
1	200
2	400
3	600
4	800
5	1000
Cost of Capital	14%

Profitability Index

Profitability Index is the ratio of present value of cash inflow to present value of cash outflow. Some users also use the ratio of net present value to project cash outflow. If profitability index value is more than 1, it means the present value of project cash inflow is more than present value of project cash outflow. The index is useful when the firm has limited capital for capital budget but several projects compete whose value is more than available capital. Under this situation, all

projects are ranked on profitability index and accepted up to a point where capital is available. For the illustrative project that we have been using, profitability index is $4711/3000 = 1.57$.

Summary

Capital Budgeting is an extremely important aspect of a firm's financial management. Although capital assets usually comprise a smaller percentage of a firm's total assets than do current assets, capital assets are long-term. Therefore, a firm that makes a mistake in its capital budgeting process has to live with that mistake for a long period of time. In capital budgeting, the emphasis is on cash flows – those cash flows at acquisition and every year thereafter for economic life of the project. Remember in capital budgeting what is important is cash flow, not profits. The cash flows at acquisition are called net investment and those every year after are termed net cash flows. There are a number of capital budgeting techniques and we have discussed three important techniques namely, payback period, net present value and internal rate of return.

Financial Feasibility Study of New Stores: Capital Budgeting Exercise

Mr. Manoj Dalal is currently a Retail Stores Manager of a large Jewellery Store in Ahmadabad drawing a salary of Rs. 50000 per month. He joined the company 30 years back when he was 21 as a salesman for a salary of Rs. 400 per month. Manoj has a pleasant personality and understands the needs of the customers of different types. For some customers, he advice them to buy gold as investment and for others, he explains intricate design of a jewel to sell the product. Not only he has the reputation of turning a walk-in customer into sales but also stretch their purchase to maximum limit. For example, if someone enters the shop with an intention of buying a gold jewel weighing 40 grams, the person invariably ends up in buying 60 grams of gold jewel. He is always with full of statistics to show how some of his clients who purchased gold some 10 years back earned 500% return (Table 1 and Figure 1). Gold was selling at Rs. 4500 per 10 gram in 2001 and by 2010, it touched Rs. 20000 per gram. Sometime he would say if you don't purchase now, probably you may have to settle down one-fifth of gold than what you can buy now for your daughter when she is ready for marriage. Though he has become Stores Manager, many old customers still come to him for advice. Following his own advice to others, Manoj started investing in gold in small quantities, particularly all his performance incentives/commission and accumulated about 5000 grams of gold over the last three decades. The current market value of his gold saving is about Rs. 130 lakhs.

Through a common friend who is active in stock market investments and build up a decent wealth over the years, he came to know that a large retail gold jewellery company is looking for opening a showroom in one of the upcoming market area in Ahmadabad under franchise model. His friend Mr. Dharshan Mehta came up with a proposal of taking up the franchise and asked Manoj whether he would be interested in joining as a partner for this venture. Manoj was thinking about starting his own retail unit for sometime as he sees considerable interest among the people of different kinds in buying gold and gold jewellery. Dharshan was telling sometime back that he read report of World Gold Council which states India is one of the largest buyers of gold, particularly gold jewellery and expects the trend to continue in the future with increase in per capita income. In one of the weekends, both friends were discussing and wondering why the demand for financial assets and gold always increase with the increase in their prices unlike other commodities. Manoj was not sure whether to leave the job and take risk of joining in the partnership to start a new venture. Since he is not able to take a decision, he explained his dilemma to his friend but willing to examine the proposal with additional details before taking a final call. Dharshan agreed to get additional details on the franchise so that both can examine whether it is profitable to invest money in the new venture. Dharshan brought the following details from the Retail Company:

- | | | | |
|------------------|---|-----|-----------|
| (1) Investments: | (1) Deposit with company for taking gold jewels | Rs. | 300 lakhs |
| | (2) Shop Furnishing and Interiors | | 250 lakhs |
| (2) Inventory: | The company will supply inventory worth of Rs. 300 lakhs without insisting any additional security and any purchase over and above will be on cash basis or providing bank guarantee. | | |
| (3) Shop: | The shop with 5000 sq. ft. will be rented in the market area. The shop owner demands an advance of Rs. 50 lakhs (interest-free) and Rs. 3 lakhs as monthly rent including maintenance cost (Rent works out Rs. 60 per sq. ft per month). They will enter into 10 years lease agreement with a condition that the rent will increase at the rate of 5% per year. | | |

The company is responsible for bringing out new designs and promoting the brand at national level by spending about 5% of national sales. The company also assures that there will not be any new shop (either company owned or franchise owned) within the radius of 10 KM.

Before working out the profitability of the new business, they decided to see the feasibility of raising the required capital to the tune of Rs. 600 lakhs. Manoj expressed his ability to bring about Rs. 100 lakhs for the new business. Dharshan will invest about Rs. 300 lakhs and he is confident of bringing few more financial partners to make up the remaining Rs. 200 lakhs. They also decided not to borrow money initially to avoid additional financial risk to the business. Manoj has agreed to work as a full time employee of the shop with a monthly salary of Rs. 50000 plus a commission of 0.5% of the sales. All partners agree not to take any dividend for the first three years and invest the

profit earned for additional working capital. Having completed tentative financing plan for the venture, they started working sales and cost estimates. Based on Manoj's experience, they made the following estimates for the first year operation:

1. Number of days the shop is open for public: 350 or 50 weeks
2. Number of customers walk-in to the shop: 300 customers per week
3. Conversion Ratio (customers actually buying): 30%
4. Average ticket size Rs. 20000
5. From year 2 to year 10, they expect an increase in walk-in at the rate of 10% growth per year, 2% increase in conversion ratio per year, an increase of 5% per year in average ticket size. All growth rates given above are assumed at constant growth rate.
6. The gross margin is expected to be 22%

Manoj also estimated the following expenses on annual basis:

Sl.No.	Expense Head	Expense for Year 1	Remarks
1	Rent	Rs. 36 lakhs	Rent will increase at the rate of 5% per year
2	Salary (including Manoj's salary & commission)	Rs. 30 lakhs	Salary for the year is equal to 3.33% of sales of the year multiplied by 1.10 (to account for 10% inflation)
3	Power and Fuel	Rs. 7 lakhs	Fixed cost with 10% increase for inflation
4	Repairs & Maintenance	Rs. 3 lakhs	10% increase very year + Rs. 50 lakhs towards refurbishing the stores
5	Advertisement	Rs. 10 lakhs	Rs. 10 lakhs fixed + 1% of incremental sales
6	Loyalty program	Rs. 5 lakhs	0.5 % of sales from Year 2 to 10
7	Sales OH - Freight	Rs. 7 lakhs	1 % of sales from Year 2 to 10
8	Others	Rs. 3 lakhs	0.5 % of sales from Year to 2 to 10
9	Depreciation	Rs. 25 lakhs	10% of Stores Furniture and Fittings
10	Income Tax		30% of Profit Before Tax

Working capital: The business will invest initially a deposit of Rs. 300 lakhs with the company and reinvest all cash flows back into the business to take care of additional working capital need when the sales increase from year 2. They plan to remit the net cash flow after setting aside the cash for estimate monthly expenses on weekly basis to the company to take fresh stock of jewels and other articles. All sales are expected to on cash or credit card basis. In the first stage of analysis, they decide to ignore the additional working capital required for credit card sales. It is also assumed that Rs. 300 lakhs worth of inventory is adequate for managing the first year estimated sales. They assumed inventory turnover ratio of 3 times in estimating the working capital need.

Expected Return: They set 15% as minimum expected return to venture into the business considering the risk involved in the business.

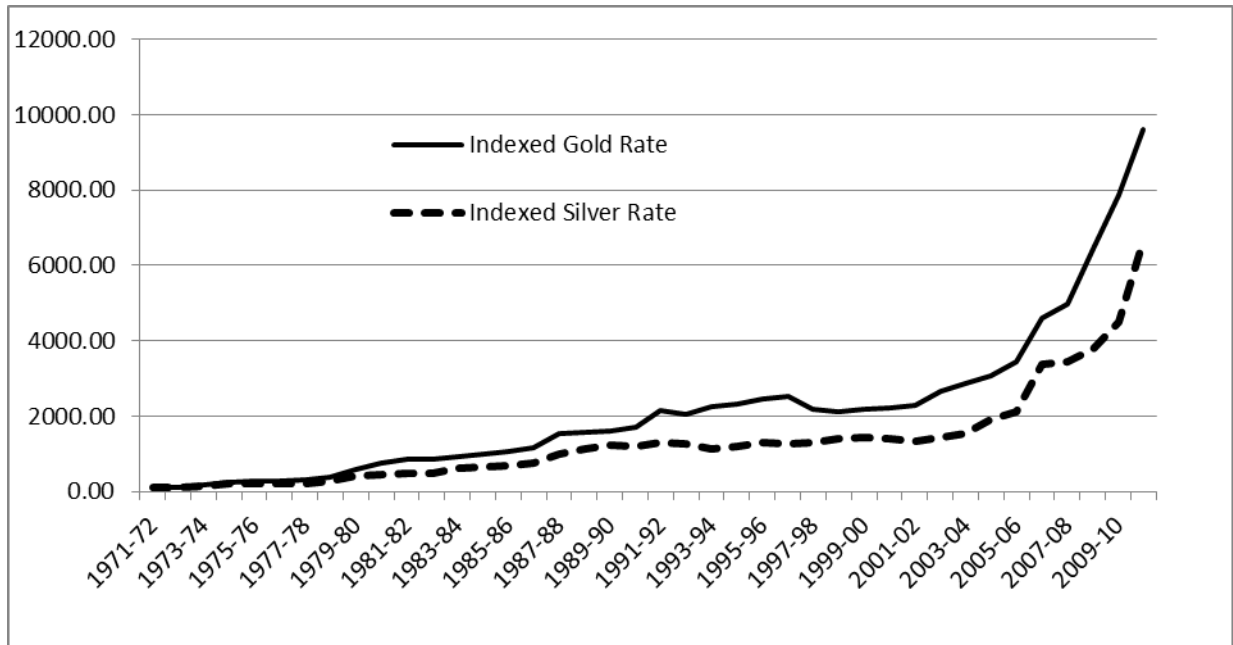
Requirement: You are required to help Mr. Manoj Dalal and Mr. Dharshan Mehta by working out profitability of the business and financial viability of the proposed new store.

Table 1 : Gold and Silver Price per 10 grams in India

Year	Gold	Silver	Indexed Gold Rate	Indexed Silver Rate	Gold Return	Silver Return
1971-72	200.16	5.61	100.00	100.00		
1972-73	242.57	5.54	121.19	98.73	21.19%	-1.27%
1973-74	369.33	7.99	184.52	142.34	52.26%	44.16%
1974-75	519.19	11.22	259.39	199.95	40.58%	40.47%
1975-76	545.21	11.72	272.39	208.72	5.01%	4.39%
1976-77	549.82	12.48	274.69	222.30	0.85%	6.51%
1977-78	637.93	12.41	318.71	220.99	16.03%	-0.59%
1978-79	791.22	15.01	395.29	267.38	24.03%	20.99%
1979-80	1158.75	23.01	578.91	409.96	46.45%	53.32%
1980-81	1522.44	26.18	760.61	466.31	31.39%	13.74%
1981-82	1719.17	26.36	858.90	469.59	12.92%	0.70%
1982-83	1722.54	27.98	860.58	498.50	0.20%	6.16%
1983-84	1858.47	35.06	928.49	624.53	7.89%	25.28%
1984-85	1983.92	35.94	991.17	640.17	6.75%	2.50%
1985-86	2125.47	39.18	1061.89	698.03	7.13%	9.04%
1986-87	2323.49	42.47	1160.82	756.59	9.32%	8.39%
1987-88	3082.43	55.39	1539.98	986.70	32.66%	30.41%
1988-89	3175.22	63.67	1586.34	1134.19	3.01%	14.95%
1989-90	3229.33	68.42	1613.37	1218.83	1.70%	7.46%
1990-91	3451.52	67.61	1724.38	1204.38	6.88%	-1.19%
1991-92	4297.63	73.32	2147.10	1306.21	24.51%	8.45%
1992-93	4103.66	70.78	2050.19	1260.96	-4.51%	-3.46%
1993-94	4531.87	63.48	2264.12	1130.87	10.43%	-10.32%
1994-95	4667.24	66.92	2331.75	1192.18	2.99%	5.42%
1995-96	4957.60	72.21	2476.82	1286.27	6.22%	7.89%
1996-97	5070.71	71.65	2533.33	1276.40	2.28%	-0.77%
1997-98	4347.07	73.52	2171.80	1309.75	-14.27%	2.61%
1998-99	4268.00	78.55	2132.29	1399.31	-1.82%	6.84%
1999-00	4393.56	80.67	2195.02	1437.06	2.94%	2.70%
2000-01	4473.60	78.68	2235.01	1401.69	1.82%	-2.46%
2001-02	4579.12	74.47	2287.73	1326.66	2.36%	-5.35%
2002-03	5332.36	79.91	2664.05	1423.45	16.45%	7.30%
2003-04	5718.95	87.22	2857.19	1553.74	7.25%	9.15%
2004-05	6145.38	106.81	3070.23	1902.70	7.46%	22.46%
2005-06	6900.56	118.29	3447.52	2107.21	12.29%	10.75%
2006-07	9240.32	190.57	4616.47	3394.78	33.91%	61.10%
2007-08	9995.62	194.27	4993.81	3460.84	8.17%	1.95%
2008-09	12889.74	212.48	6439.72	3785.08	28.95%	9.37%
2009-10	15756.09	253.21	7871.75	4510.68	22.24%	19.17%
2010-11	19227.08	372.90	9605.86	6642.83	22.03%	47.27%
2011-12	29397.00	630.00	14687.00	11222.94	52.89%	68.95%
Mean Return					14.27%	13.86%
Median Return					8.03%	7.68%
Average Compound Rate of Return (40 years)					13.29%	12.53%

Source: <http://www.rbi.org.in/scripts/PublicationsView.aspx?id=13629>

Figure 1: Growth Rate in Gold and Silver during 1971-2011



Capital Investment Appraisal - Exercise

The economic boom around the world in the last three years brought a fortune for your company too. From an average net income of Rs. 10 million per year prevailing during the last few years till 2002, your company has been posting a net income of Rs. 40 million every year for the last three years (2003, 2004 and 2005). Since your company has not made any major change in the dividend policy during this period and paying just Rs. 2 million as dividend, your company is now holding a huge cash reserve worth of Rs. 150 million (including cash reserve of earlier years prior to 2003). The amount (Rs. 150 million) is now lying in a government investment yielding a tax-free return of 6% per year. One of the agenda of the last Board meeting was to discuss on how to use the cash reserve and hence you as Chief Financial Officer was invite to attend the meeting. The following issues were discussed during the meeting:

- (a) One of the Board members felt that the company should expand the existing line of business by doubling the present capacity -from 5 million ton to 10 million. The project would cost Rs. 500 million and the member felt that in addition to internal surplus of Rs. 150 million, the company can raise another Rs. 100 million through fresh equity issue and balance through 10-year borrowings at the rate of 10% per year. While interest is payable at the end of every year, the principal is repayable at the end of 10 years. The project also has a life of 10 years. The project would yield a profit before interest, depreciation and taxes of Rs. 80 million in the first year, Rs. 100 million in the second year and Rs. 150 million from year 3 to year 10. However, there is some uncertainty in running the project at full capacity. It is estimated that the probability of running the project at 100% capacity is only 0.70. If the project fails to run at 100% capacity, it would run at 40% capacity during the entire 10 years. The revenue and expenditure are based on real values and the estimated inflation during this period is 4% per year.
- (b) In view of the above uncertainty in operating the project at its full capacity, another Board member supported the expansion project in principle but felt that it would be better to expand the project in stages. In stage 1, expand the project by adding another 2 million and then add another 3 million if the stage 1 of the project is successful. Stage 1 of the project would cost Rs. 200 million and Stage-2 of the project would cost Rs. 400 million in year 3 if stage 1 is successful. The profit before depreciation, interest and taxes (PBDIT) would be proportionate to the size of the project. That is for 2 million plant, the PBDIT of year 1 and 2 would be Rs. 32 million and Rs. 40 million respectively and then Rs. 60 million per year from year 3 to 10. If the firm implements stage 2 at the end of year 3, then the revenue from year 4 to 10 would be Rs. 150 million per year. The stage 1 of the project will be funded through internal reserve of Rs. 150 million plus a loan at 10% of Rs. 50 million. The stage 2 of the project would be funded through a fresh equity of Rs.200 million and balance of Rs. 200 million through 10% loan. The period of the loan is 10 years and the interest rate is expected to remain at the same level. There is a 70% probability of stage-1 project turns successful.

- (c) The third Board member suggested diversification from the existing manufacturing business to hotel venture in view of booming tourism and business travel industry. The project would cost Rs. 800 million, which may be funded as follows: internal reserves of Rs. 150 million, fresh equity of Rs. 250 million and a 30-year loan of Rs. 400 million at 10% interest. The project is expected to earn an average profit before depreciation, interest and taxes of Rs. 100 million per year on real terms for the next 30 years.
- (d) The fourth Board member, who is representing a bank, which has given loans to the existing projects, is of the view not to venture into any new project and stay with 6% investments. He believes that a 6% risk-free interest would be far better than risky investments suggested by other members.
- (e) The fifth Board member representing a large government-owned pension fund wants you to distribute the surplus reserve as special dividend since the pension fund is considering in investing the amount in a few infrastructure projects since the government is putting pressure on the pension fund to invest in infrastructure projects. This Board member is of the view that all expansion ideas are to retain the capital inside the firm and none of the project would offer a positive net present value to investors after considering the risk involved in the projects. He also dismissed the idea of continuing the government bond investments saying that it is not the objective of the company.

The Chairman of the Board wanted you to evaluate the proposals and prepare a note after taking into consideration the risk associated with the ventures and financial risk associated with funding pattern and submit the same to the next Board meeting along with your recommendation. In the last one week, you have examined the issue and compiled following additional details:

- (i) For the last 10 years, the company is following a debt to total capital policy of 30% and the current suggestion of 50% would increase the financial risk. However, the estimate of 10% interest is reasonable at 50% debt to total capital ratio.
- (ii) The risk-free rate of interest is expected to be 6% and average market risk-premium for the last 10 years (major stock index return less risk-free rate) was 8%.
- (iii) The beta of the debt instruments issued by similar firms is 0.50 when the debt to total capital is in the range of 30% to 50%.
- (iv) The beta of the equity shares of the company based on last five-year data is 1.40.
- (v) The beta of a hotel stock with a debt to total capital of 40% is 1.20. The beta of the debt of the hotel industry is also expected to be 0.50 when the debt to total capital rate is between 30% to 50%.

- (vi) The firm currently enjoys zero-tax status and is expected to enjoy the same in the future irrespective of new venture.
- (vii) The company generally ignores salvage value at the end of the project life and also funds all incremental working capital requirements through short-term liabilities, primarily sundry creditors. The company rounds off all cost of capital estimates.

You are required to examine each alternative by computing the net present value wherever applicable and prepare a note to Board with support workings.