

Capital budgeting

Finance



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Capital budgeting Capital budgeting EEC calculation for NPV, IRR, and Pay
Back for the investment opportunity YEAR CASHFLOW

RATE OF DISCOUNTING= 14%=(1+r)⁻ⁿ

NPV

0

(\$2, 000, 000)

1

(\$2, 000, 000)

1

\$500, 000

0. 8772

438600

2

\$500, 000

0. 7695

384750

3

\$500, 000

0. 675

337500

4

\$500, 000

0. 5921

296050

5

\$500, 000

0. 5194

259700

6

\$500, 000

0. 4556

227800

7

\$500, 000

0. 3996

199800

8

\$500, 000

0. 3506

175300

9

\$500, 000

0. 3075

153750

10

\$500, 000

0. 2697

134850

NPV=\$607730

IRR CALCULATION

Internal Rate of Return= NPV÷Initial investment

IRR=\$607730÷\$2000, 000

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IRR= 0.30

IRR= 30% Percent

Calculating

payback for the investment opportunity

PAY BACK= INITIAL INVESTMENT ÷ CASHFLOW PER PERIOD

PAY BACK= \$2000000 ÷ \$500,000

PAY BACK= 4 Years

Pay Back= 4 Years

Based on the calculations above EEC should acquire the supplier because the net present value is positive. This means that EEC will generate wealth from the project. In addition, the positive NPV obtained from the calculations above indicate that if EEC carry out the project it will be profitable (Arthur, 2014).

Of the three techniques namely; NPV, IRR, and payback period, the most useful tool to use in project valuation is the NPV. Unlike IRR and Payback techniques, the NPV is a very accurate tool that helps to determine if the project will be profitable to the organization or not. In addition, NPV approach provides a clear indication on how the profits will be obtained, unlike IRR and payback approaches. Therefore, the NPV is the most useful tool in project valuation (Arthur, 2014).

Of the three techniques (NPV, IRR, and payback period, the least useful tool to use is the IRR, because discount rate has an inverse relationship with NPV. When NPV continues to increase, the anticipated future cash flows become less valuable and hence making IRR least useful tool to use in project valuation. On the other hand, payback approach is the second least useful tool to use after IRR. The Payback period indicate how long the cash flow

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obtained from the project will recover the initial capital outlay. In addition, the payback period fails to indicate the amount of cash flow to be generated from the project. However, it is the simplest method of calculating project forecast (Arthur, 2014).

The answer would not be the same because a negative NPV will be obtained when cost of capital increases from 14% to 25%. It means that as the cost of the capital increase the return obtained from the project decreases significantly up to a negative (Peterson & Fabozzi, 2002). Such decrease makes the project un-profitable and, therefore, it is advisable for the EEC not to invest when cost of capital increases to 25%.

If EEC did not save an even cash flow of \$500, 000 per year, the answer would be the same. The least amount of investment that would make this investment attractive to EEC is \$100, 000. From the above scenario, the EEC would be willing to pay the supplier \$2000, 000.

MEMO

To: EEC President

From:

Date:

Subject: CAPITAL BUDGETING

(a) EECs cost of capital increases

The president of EEC should be aware that if the cost of capital increases as discussed above, the underlying effect is a negative NPV. It means that the project will be no longer profitable to the company (Arthur, 2014).

(b) The expected savings are less than \$500, 000 per year

If the expected savings are less than \$500, 000 per annum, it will be difficult for the ECC to pay its supplier a capital of \$2000, 000, and hence, the project

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will not yield any benefit to the EEC (Arthur, 2014).

(c) EEC must pay more than \$2 million for the supplier

If EEC must pay more than \$2,000,000 the project will generate a negative NPV. Such project should not be undertaken, as it will lead to loss to the company (Arthur, 2014).

References

Arthur., P. (2014). An Introduction to Capital Budgeting. Retrieved: Peterson, P. P., & Fabozzi, F. J. (2002). Capital Budgeting: Theory and Practice. Hoboken: John Wiley & Sons.