

Net cash flow task 2



Net Cash Flow Task A Task A, which needs to be completed in order to do the questions in Task B, was completed using MS-Excel. The results are shown in Schedule - I.

Task B

1. Correct Net cash flow for Year 2 if depreciation = 0

Q. 1. Identify what the correct net cash flow for the second year would be if all cash expenses were as described in the scenario but there were no depreciation expense.

a. Explain the impact of depreciation on net cash flow for the second year.

Answer: Net Income after taxes for year 2 = 259, 000

Depreciation expense considered = 330, 000

If depreciation = 0, additional tax at marginal rate of 30% on the additional income of 330, 000 = $0.3 \times 330,000 = 99,000$

Net Income after taxes would become $259,000 - 99,000 = 160,000$

Net cash flow = $160,000 + 330,000 = 490,000$

a) Depreciation is a non-cash charge and as such has no impact on the cash flow by itself. However, the net income for the year is calculated by charging depreciation along with other cash expenses, and this figure of net income is used for calculating income tax liability. If the depreciation for the second year becomes zero, the net income for tax purposes goes up correspondingly, resulting in higher tax payment and lower cash flow.

2. Recommendation of appropriate action based on NPV

Q. 2: Based upon your NPV analysis in part A2, make a recommendation to Person K regarding what decision to make.

a. Explain why this is an appropriate action.

Answer: The Net present Value at a discount rate of 12% is 136, 233. The

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action recommended is that Person K should not invest in this project.

a) Explanation for the recommendation: The Net Present value is positive at the cost of capital to the company, and hence qualifies for investment.

However, the Net Present Value is very low. There are two reasons why Person K should not invest in a project with such a low NPV. The first is that other projects are likely to be available in the market that can give a higher NPV. Investing in this project has an opportunity cost equal to the return obtainable from those projects. Secondly, such a low NPV would leave little room for risks, and would be extremely sensitive. For example, if the expected sales fall by 10%, the project might show a negative NPV. Hence it is not advisable to invest in this project.

3. Recommendation based on IRR

Q 3: Based upon your IRR analysis in part A3, make a recommendation to Person K regarding what decision to make.

a. Explain why this is an appropriate action.

Answer: The IRR for the project is 13.31%, which is higher than the cost of capital by 1.31%. For reasons similar to those advanced in the case of recommendation based on NPV above, the recommendation is that Person K should not invest in this project

a) Rationale for recommendation: The IRR for the project is 13.31%, which is just marginally higher than the cost of capital. If Person K had an unlimited amount of money to invest, this project would qualify for investment.

However, in a situation where there is a limited amount of capital to be invested, the returns should be maximized, and investing in low yielding projects would deprive Person K of the opportunity to invest in alternative high yielding projects. Secondly, the sensitivity of the project to variations in

the assumptions would be very high, and small changes in the assumption would upset the entire calculation.

4. Why Accounting rate of Return is different from the Internal Rate of return

Q. 4: Explain why the accounting rate of return on this project is different from the internal rate of return for the same capital investment.

Answer: Internal Rate of Return is the rate at which the Net Present Value becomes equal to 0. Accounting Rate of Return is the average net income from the project divided by the investment. Conceptually the two figures are very different. Internal rate of Return considers the actual cash flows, including the initial investment, whereas Accounting Rate of Return considers the Profit for each period after charging depreciation on the assets procured with the initial investment. Secondly, Internal Rate of Return considers the time value of the cash flows, whereas Accounting Rate of Return ignores the time value altogether and considers only the absolute figure.

5. Relative Significance of Unadjusted payback

Q. 5: Explain the relative significance of the unadjusted payback period in this decision situation.

Answer: Unadjusted payback is a very rough measure that can only act as a quick guide rather than as a rigorous method of calculating the returns. The unadjusted payback period of 4 years and 9 months shows that the entire investment would be recovered in the fifth year. Since the expected project life is 8 years, this indicates a comfortable situation. However, since this method ignores the time value of money and considers accounting profit rather than actual cash flows, it is less reliable. Based only on the unadjusted payback period, one might come to the conclusion that the project is worth

investing in, whereas a consideration of NPV and IRR show otherwise.

6. Using weighted average cost of capital in NPV

Q. 6: Explain how the weighted average cost of capital should be used in capital budgeting analysis when utilizing the NPV method.

Answer: The weighted average cost of capital is used as the discounting factor to arrive at the Net present Value of the project. If the Net Present Value at a discounting rate equal to the cost of capital to the company is positive, it indicates that the project is generating more than the minimum required return, which is represented by the cost of capital.

7. Using weighted average cost of capital with IRR

Q. 7: Explain how the weighted average cost of capital should be used in capital budgeting analysis when utilizing the IRR method.

Answer: The Internal rate of return is a rate akin to the cost of capital. Hence, unlike in the case of NPV, in this case, the cost of capital cannot be used to compute the IRR. However, once the IRR is computed, it can be compared with the cost of capital. If the IRR is higher than the cost of capital, the project is viable, because it is earning more than the minimum required rate of return.

Schedule – I

Excel working Sheet

Person K

Net Cash Flow per Year

Years 1-3

Years 4-6

Years 7-8

Expected annual cash receipts from sales

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3, 200, 000

3, 600, 000

3, 800, 000

Expected annual costs of new product

Cash expenses

2, 500, 000

2, 800, 000

3, 200, 000

Depreciation expense

330, 000

330, 000

330, 000

Income before taxes

370, 000

470, 000

270, 000

Income tax at 30% marginal rate

111, 000

141, 000

81, 000

Net income

259, 000

329, 000

189, 000

Net cash flow per year

589, 000

659,000

519,000

Net Present Value:

Present

Cash Flows

PV Factors

Value

Year 1

589,000

0.8929

525,918

Year 2

589,000

0.7972

469,551

Year 3

589,000

0.7118

419,250

Year 4

659,000

0.6355

418,795

Year 5

659,000

0.5674

373, 917

Year 6

659, 000

0. 5066

333, 849

Year 7

519, 000

0. 4523

234, 744

Year 8

519, 000

0. 4039

209, 624

Working Capital return

210, 000

0. 4039

84, 819

Salvage return

60, 000

0. 4039

24, 234

Remodeling cost

(120, 000)

0. 4039

(48, 468)

Total

3, 046, 233

Investment

(2, 910, 000)

Net Present Value

136, 233

Internal Rate of Return:

Cash Flows

Investment

(2, 910, 000)

Year 1

589, 000

Year 2

589, 000

Year 3

589, 000

Year 4

659, 000

Year 5

659, 000

Year 6

659, 000

Year 7

519, 000

Year 8 + Working Capital + Salvage - Remodeling

669, 000

Internal Rate of Return using Excel

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13. 310%

Accounting Rate of Return

21. 19%

Payback Period:

Net

Remaining

Cash Flow

Investment

Investment

2910000

2910000

Year 1

589000

2321000

Year 2

589000

1732000

Year 3

589000

1143000

Year 4

659000

484000

Year 5

659000

-175000

Payback period is

4 Years, 9 Months

References

Investopedia (2009). Accounting Rate of Return. Retrieved on May 13, 2009 from <http://www.investopedia.com/terms/a/arr.asp>