Cost of capital, weighted avareage cost, cash flow, marginal cost

Cost of capital Cost of capital The relationship between risk and return to investors determines when and where to invest. To the risk averse investors, they prefer low returns with lower risks while the risk takers would invest in high-risk securities with high returns (Chandra, 2008). In most cases, probability of getting high returns is associated with high risks. This relationship also makes the investor be aware of their risk tolerance which improves on the investment approach. The relationship further explains that the risk takers will always ignore the risk involved and concentrate on returns on the investment.

Annual Discount Rate

13%

Initial investment

-20000

-20000

1st year Return

10000

0. 885

8850

2nd year Return

8000

0. 783

6264

3rd year Return

9000

0. 693

6237

4th year

8600

0. 613

5271. 8

Net Present Value(NPV)

6662. 8

Calculation of IRR

Cash inflows

10000

8000

9000

8600

total= 35600

35600/4= 8900

20000/8900= 2. 2472

Year

cash flow

22% PVIF

Present value

1

10000

1. 22

12200

2

8000

1. 488

11904

3

9000

1. 816

16344

4

8600

2. 215

19049

Present value of inflows

59497

PVIF 12%

1

10000

1. 12

11200

2

8000

1. 254

10032

3

9000

1. 405

12645

4

8600

1. 574

13536. 4

Present value of inflows

47413. 4

59497

22%

59497

22%

47413. 4

12%

40000

Cost

12083. 6

19497

22%+19497/12083. 6(10%)= 22%+1. 61351(10%)= 22%+16. 13%= 38.

13%

3). Weighted average cost of capital refers to the average rate return a firm expects to reward its investors through bonds or equity. The weighted average cost of capital entails the entire rate of return that is utilized by the firm to determine viability of a company. The weights of both equity and debt financing are combined to determine weighted average cost of capital. Weighted average cost of capital= (weight of equity *cost of equity) +

(weight of debt * cost of debt)

Weighted average cost of equity= (0. 45*0. 6) + (0. 2*1. 06) = 0. 482 = 48.

2%

Weighted average cost of debt = (0. 35*0. 09) = 0. 0315 = 3. 15%

Weighted average cost of capital = 48. 2 + 3. 15 = 51. 35

= 51. 35%

4).

5). Project X

Initial investment -20000

YearCash flowPVIF at discount rate 14%

1 100000. 8778770

2 80000. 7696152

3 90000. 6756075

4 8600 0. 5925091. 2 +

NPV6088. 2

Project Y

Initial investment-40000

Year cash flowPVIF at discount rate of 14%

1 200000. 87717540

2130000. 769 9997

3140000. 675 9450

4160000. 5929472 +

NPV 6459

Profitability index= PV of future cash flows

Initial investment

Project X= 26088. 2Project Y= 46459

20000 40000

= 1. 30441 = 1. 16148

Using the net present value, project y is more viable than x since it yields

higher returns. This is contrary to profitability index approach which

indicates that project x is more viable than y with a higher ratio of 1. 3044.

6).

a). E(X) = x1p1 + x2p2 + x3p3 + . . . + xnpn.

= (30*0. 10) + (50*0. 20) + (75*0. 40) + (90*0. 30)

= 70

b). Standard deviation is a measure of the amount of variation of values from

the average.

Standard deviation = Square root of the expected value

Therefore square root of 70

= 8. 3666

This value is high which indicates that the data points are spread out over a

large range.

References

Chandra, P. (2008). Financial management: Theory and practice. New Delhi:

Tata McGraw-Hill Pub.