Mod 4 ca fin 301

XXXXXX Number: XXXX XXXXX XXXXX XXXXX of XXXXXX XX – XX - 2010

Investment Appraisal

Part 1: Capital Budgeting and Practice Problems:

a. The Net Present Value for the project at the various discount levels are presented below:

Year

Cash Flow

Discount (0%)

PV

Discount (4%)

PV

0

-$(500, 000)

1

-$(500, 000)

1. 0000

-$(500, 000)

1

$100, 000

1

$100, 000

0. 9615

$96, 154

2

$110, 000

1

$110, 000

0. 9246

$101, 701

3

$550, 000

1

$550, 000

0. 8890

$488, 948

NPV @ 0%

$260, 000

NPV @ 4%

$186, 803

Year

Cash Flow

Discount (8%)

PV

Discount (10%)

PV

0

-$(500, 000)

1. 0000

-$(500, 000)

1. 0000

-$(500, 000)

1

$100, 000

0. 9259

$92, 593

0. 9091

$90, 909

2

$110, 000

0. 8573

$94, 307

0. 8264

$90, 909

3

$550, 000

0. 7938

$436, 608

0. 7513

$413, 223

NPV @ 8%

$123, 508

NPV @ 10%

$95, 041

The IRR for the project is estimated as follows:

Year

Cash Flow

0

-$(500, 000)

1

$100, 000

2

$110, 000

3

$550, 000

IRR

18%

The graph indicates that the NPV of the project decreases as the discount rate increases and vice versa. The graph crosses the horizontal axis at almost 18% (same as IRR – Discount Rate when the NPV of the project is zero).

b. The Net Present Value for the project at the various discount levels are presented below:

Year

Cash Flow

Discount (0%)

PV

Discount (4%)

PV

0

-$(615, 000)

1

-$(615, 000)

1. 0000

-$(615, 000)

1

$141, 000

1

$141, 000

0. 9615

$135, 577

2

$300, 000

1

$300, 000

0. 9246

$277, 367

3

$300, 000

1

$300, 000

0. 8890

$266, 699

NPV @ 0%

$126, 000

NPV @ 4%

$64, 643

Year

Cash Flow

Discount (8%)

PV

Discount (12%)

PV

0

-$(615, 000)

1. 0000

-$(615, 000)

1. 0000

-$(615, 000)

1

$141, 000

0. 9259

$130, 556

0. 8929

$125, 893

2

$300, 000

0. 8573

$257, 202

0. 7972

$239, 158

3

$300, 000

0. 7938

$238, 150

0. 7118

$213, 534

NPV @ 8%

$10, 907

NPV @ 12%

-$(36, 415)

The IRR for the project is estimated as follows:

Year

Cash Flow

0

-$(615, 000)

1

$141, 000

2

$300, 000

3

$300, 000

IRR

9%

The graph indicates that the NPV is the highest when the discount rate is 0% and starts to decrease as the discount rate increases. It crosses the horizontal axis at 9% and is negative when for discount rates above 9%.

c. Profitability Index= 0. 97

Initial Investment= $ 3. 2 million

Net Present Value= Initial Investment * PI

= $ 3. 2 million * 0. 97

= $ 3. 104 million

Part 2: IRR vs. NPV:

Net Present Value enables us to understand the possible profits a company would earn if a certain project is taken up. It provides results that are simple to comprehend. This is a very useful method for comparing projects of the same size mostly least cost situations. NPV enables the comparison of various rates of interest and also helps analyses what the earning would be if another project were taken up (Weston and Copeland, 1988). The main drawback in this method is that it does not take into account the profitability of a project. This is accomplished by computing profitability index (PI) for the projects and taking the decision accordingly. Hence it is essential that both NPV and PI are computed in order to be able to arrive at a profitable and most rational decision (Burke and Wilks).

Internal rate of return on the other hand can be used to assess risk in all projects and it has an intuitive appeal. This method basis its calculations on the cash flows rather than on earnings. However it is not possible to have an accurate solution using this method since one project can have more than one IRR, with very extensive and complicated calculation (Lefly).

Works Cited

Burke, L. and C Wilks. Management Accounting – Decision Management. 4th edn: CIMA Publishing, 2007.

Lefly, F. " Modified Internal Rate of Return: Will it replace IRR?" Management Accounting 75. 1 (1997).