Investment analysis

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Definition

- Corporate finance:

    "Increase the value of the company for the shareholders"

- *Application:*

    – *investment decision*

    – *To Invest = buying fixed assets*

    – *Compare alternatives*

Investment

- Time and risk
    - Expenses today
    - Revenues (perhaps) tomorrow

- Balance sheet:
    - Assets: FA increases//Fl. A decreases (treasury)
    - Liabilities: financing (OF/Debts)

Investment Hermès Ltd

- Actual value of investment: 12700

- Yearly generated CF: 5720

- Should we do the investment?

- Different methods:
  - Payback period
  - IRR
  - Net actual value
  - Profitability index (PI)

1/ Payback period

- TVP = Initial investment/CF

- 12 700/5720 = 2,2 year

- Inconvenients:
  - What happens afterwards ?
  - Length = arbitrary
  - CFs are not actualised

- Advantages:
  - Easy method
  - Used quite a lot

Internal rate of return

- IRR

- Return where actuak value of expected CIFs equals the present value of expected COFs.

- $BI = \dfrac{CF1}{1+r} + \dfrac{CF2}{(1+r)^2} + \dfrac{CF3}{(1+r)^3} + \dots = \dfrac{\Sigma CFn}{(1+r)^n}$

- Annuity

Internal rate of return (2)

- Annuity = what is the actual value of an amount that I get every year?

- CF 5720//Inv. 12070

- 12070 = ann. factor x 5720

- See annuity tables

- 2,1427   37% 2,1058   38%

- Cutoff rate of hurdle rate

Internal Rate of Return (3)

- Inconvenient of method:
    - Difficult to calculate
    - How to fix cut-off rate

- Advantages:
    - Easy to compare projects
    - Actualisation of returns

3. Net actual value

- Ex ante fixed minimum return (v)

- COF ≥ CIF: not invest

- NAV = $\Sigma CIF/(1 + v)^n - \Sigma COF/(1 + v)^n$

- Suppose 40%: 5720 x ann. Factor (2,0352)

- CIF − COF: 11641 − 12070 = negative

- Inconvenient:
    - As complicated as IRR
    - Difficult to compare alternatives
    - How to fix v?

4. Profitability index

- Variation on same topic

- $PI = \dfrac{\Sigma CIF/(1 + v)^n}{\Sigma COF/(1 + v)^n}$

- If $PI \geq 1$ then invest

- Inconvenient: idem NAV

- Exercise: calculate PI with required return of 35%.

Case : Ltd Hermès

- Turnover: year n +1: 200 M; thereafter 250 M

- Financing proposition bank:
  - 1st phase: 3700 K; 5 years
  - 2nd phase: 8000 K; 8 years (not 10)

- Evaluate investment following different methods

- Make exercises 5 & 6