Lesson 7A – Sources of Capital

Chapter 9

Sources of Capital

- Internal: Money generated from the firm's operations
  - Retained from profits

Sources of Capital

- Internal: Money generated from the firm's operations
  - Retained from profits
- External: Money raised from sources outside the firm
  - Short term debt: Bank loans, credit cards, lines of credit
  - Long term debt: Bonds, banks, pension funds, mortgages
  - Permanent, One-time: Issue new stock (selling equity)

Sources of Capital

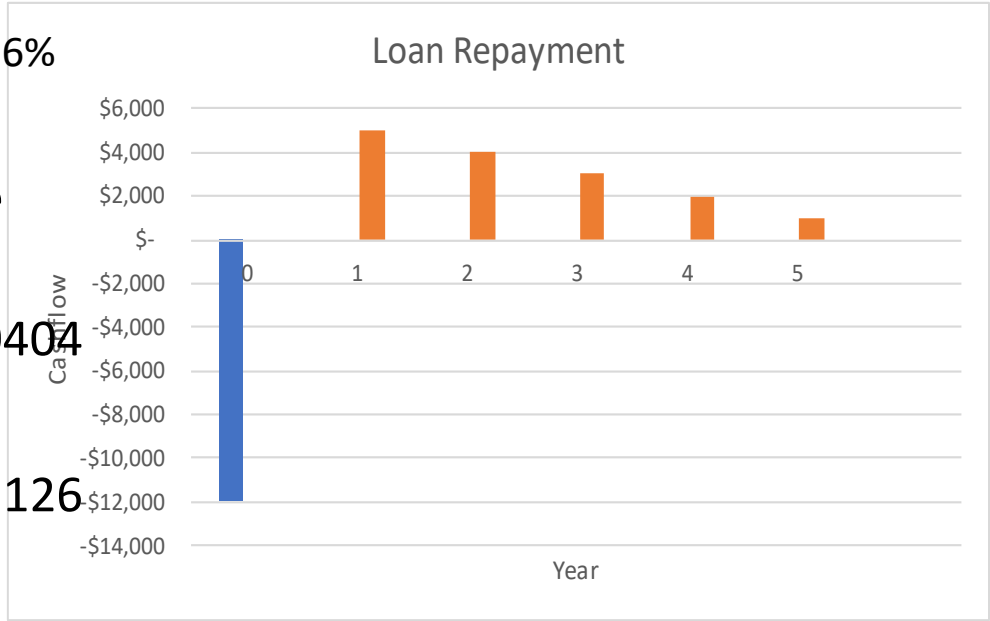
- Internal: Money generated from the firm's operations
  - Retained from profits
- External: Money raised from sources outside the firm
  - Short term debt: Bank loans, credit cards, lines of credit
  - Long term debt: Bonds, banks, pension funds, mortgages
  - Permanent, One-time: Issue new stock (selling equity)
- The mix of externally provided funds is the capital structure. It depends on the needs of the firm and the decisions of its managers.

Sources of Capital

- Manufacturing plastic toys – should we buy a new mold?
  - Cost of mold: $12,000
  - Estimated toy revenue: $5,000 in first year, decreasing $1,000 for five years
  - Pay for mold
    - Option A: Bank loan: 18%
    - Option B:Finance with tool and die maker: 6%
- A: P = A(P/A, i, n) + G(P/G, i, n) where
  - A = $5000, G = -$1000, I = 18%, n = 5
  - P = $5000(3.127) + -$1000(5.231) = $10404
- B: Same as A, but i = 6%
  - P = $5000(4.212) + -$1000(7.934) = $13126

Sources of Capital

- Manufacturing plastic toys – should we buy a new mold?
  - Cost of mold: $12,000
  - Estimated toy revenue: $5,000 in first year, decreasing $1,000 for five years
  - Pay for mold
    - Option A: Bank loan: 18%
    - Option B:Finance with tool and die maker: 6%
- A: P = A(P/A, i, n) + G(P/G, i, n) where
  - A = $5000, G = -$1000, I = 18%, n = 5
  - P = $5000(3.127) + -$1000(5.231) = $10404
- B: Same as A, but i = 6%
  - P = $5000(4.212) + -$1000(7.934) = $13126



Cost of Funds (Debt)

- The cost of debt is the rate of return the debt market requires.
  - The cost of debt reflects the market's assessment of the level of risk associated with the firm being able to service its debt.
- It is determined by matching the market value of the debt to its future cash flows (interest payments plus repayment of debt principal).
- The cost of debt is often approximately equal to the rate of interest the firm is paying on the debt.
- The cost of borrowed money also fluctuates with inflation.

Cost of Funds (Equity)

- The cost of equity is the rate of return that investors require on the shares of a firm.
  - The cost of equity reflects the market's assessment of the level of risk associated with the firm being able to provide returns in the form of dividends and/or increases in the price of shares.
- It is determined by matching the market value of the shares to their future cash flows (dividend payments plus possible sale of the shares at a future date).

Cost of Funds (Risk & Rate of Return)

- Risk is measured by the uncertainty of the firm's cash flows.
- A firm's overall cost of capital is the weighted average of the rates of return required by the providers of all funds.
- Since different sources of capital may have different "weights" in terms of the amount of capital and also have different corresponding "rates of return" associated with them, the weighted average cost of capital is:
- WACC = (fraction of total capital)(ROR) + (fraction of total capital)(ROR) + (fraction of total capital)(ROR)

. . . For each source of capital

- To calculate the "after-tax" WACC for tax deductible items:

After-tax interest cost = (Before-tax interest cost)(1 – Tax rate)

Investment Opportunities

- A firm may have a broad range of investment opportunities.

∴ Investments need to be selected systematically.

- Want to ensure that all the selected projects are better than the best rejected project
- Best rejected project is called the:

  Opportunity cost = Cost of best opportunity foregone

  = Rate of return on the best rejected project

Opportunity Cost of Capital

	Capital available:		$1,250		
Project Number	Cost	Estimated ROR	Select Project	Total Capital Invested	Rejected Project's ROR
2	$50	35%	Yes	$50	
4	$100	30%	Yes	$150	
3	$50	29%	Yes	$200	
5	$200	25%	Yes	$400	
1	$150	22%	Yes	$550	
6	$100	18%	Yes	$650	
8	$250	16%	Yes	$900	
9	$300	15%	Yes	$1,200	
7	$200	13%	No	$1,200	13%
11	$400	12%	No	$1,200	12%
10	$300	10%	No	$1,200	10%
12	$1,200	8%	No	$1,200	8%
				Opportunity cost	13%

Choosing an Interest Rate

- Minimum Attractive Rate of Return (MARR)
  - A lower boundary for MARR must be the cost of the money invested in a project.
  - MARR should not be less than the cost of capital.
  - MARR should not be less than the rate of return on the best opportunity foregone.
- MARR should be equal to the largest of:
  - Cost of borrowed money
  - Cost of capital
  - Opportunity cost

MARR

- MARR may be adjusted based on perceived risk.
  - Higher risk may require a higher MARR to determine the validity of an alternative.
- Companies under a normal level of risk have typical MARR rates of 12%–14%.
- However, much higher rates are common for different industries, such as technology start-ups short of capital or petroleum industry