FUNDAMENTALS OF FINANCE

Cost of Capital

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Chapter Description

- Synopsis

  As for a firm, before deciding on which source of finance to capitalize its operation and expansion plan, cost of capital is a method that could help firm to decide. Beside deciding on which instrument to be issued, WACC would suggest the optimum capital structure to be applied.

- Expected Outcomes

  Students should be able to:

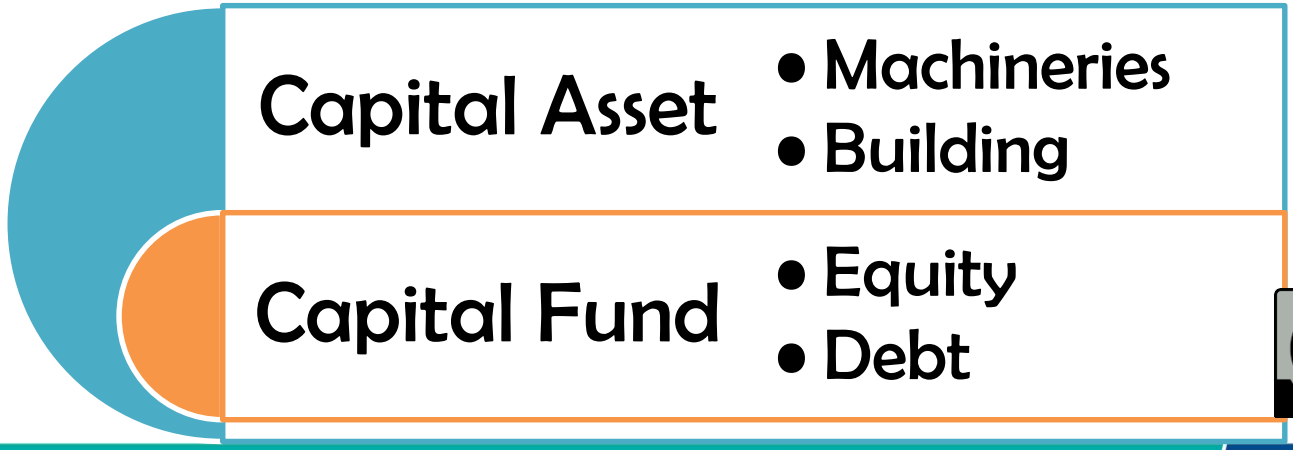
  1. Understand the measurement of cost of capital for each instrument.
  2. Evaluate the best capital structure for a firm.

Content Outline

- Capital
- Capital Fund
  - Debt
  - Equity
- Cost of Capital
- Weighted Average Cost of Capital

Capital

- Capital is an essential need that a firm's should have in each business.
- A firm need a capital to start-up a business and for business expansion.
- Capital can be classified as capital asset and capital fund



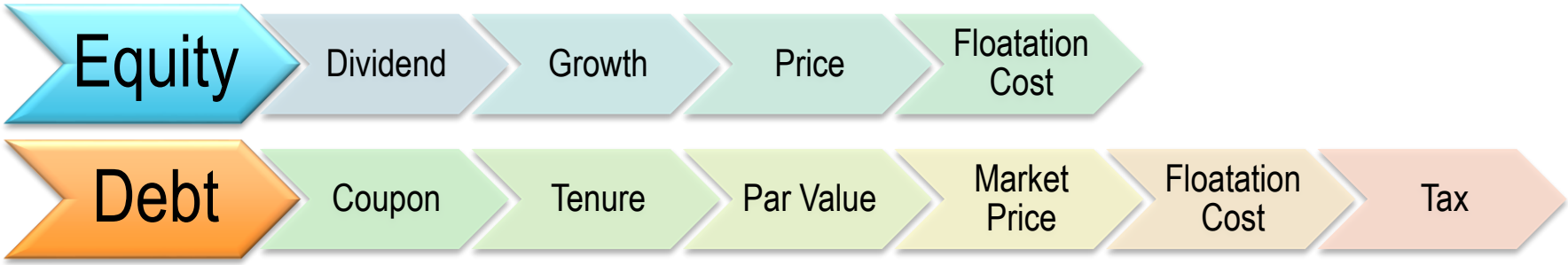
Capital Fund

- This chapter focus on Capital Fund which stands from:

Equity	Debt
• Preferred Stock • Common Stock	• Bond

Cost of Capital

- A firm need to bear cost consequence to capital raising activity. Among the item that would affect cost of capital are:



- The lowest cost of capital is preferable because the excess point above the rate, means the firm starts generate profit.

Cost of capital = Required rate of return

Valuation of Bond

- **Cost of debt before-tax:**

$$YTM = Kdb = \left[Coupon + \frac{(ParValue - (MktPrice - FloatationCost)]}{Years\ to\ Maturity}\right] \Big/ \frac{ParValue + (MktPrice - FloatationCost)}{2}$$

- **Cost of debt after-tax:**

$$Kd = Kdb\ (1 - Tax)$$

Valuation of Bond

- **Value of a bond:**

$$\mathbf{Vb = Coupon\ (PVIFAi,n) + ParValue\ (PVIFi,n)}$$

Rule of thumb: If k% = r% ;

Hence, Vb = PVb

If Vb > PVb ; k% < r%

If Vb < PVb ; k% > r%

Valuation of Preferred Stocks

- **Cost of preferred stocks:**

$$Kps = \frac{\text{Fixed Dividend}}{(\text{Price of ps} - \text{Floatation Cost})}$$

- **Value of preferred stocks:**

$$Vps = \frac{\text{Fixed Dividend}}{\text{Cost of ps}}$$

Valuation of Common Stocks

- **Cost of common stocks:**

$$Kcs = \frac{\text{Future Dividend}}{(\text{Price of cs} - \text{Floatation Cost})} + \text{growth}$$

- **Value of common stocks (Constant Growth):**

$$Vps = \frac{\text{Future Dividend}}{(\text{Cost of cs} - \text{Growth})}$$

Valuation of Common Stocks

- **Cost of common stocks:**

$$P_o = D_1 (PVIF_{k,1}) + D_2 (PVIF_{k,2}) + \ldots D_n (PVIF_{k,n}) + SP_n (PVIF_{k,n})$$

Weighted Cost of Capital

- A financing mix of several long-term source of capital (debt&equity).
- Take into consideration the weightage on capital structure.
- Includes the commitment and issuing cost incurred.

Formula: Weighted Cost of Capital

- Method for optimal capital structure
- Formula:

$$\mathbf{WACC = K = W_dK_d + W_{ps}K_{ps} + W_{cs}K_{cs}}$$

Steps: Weighted Cost of Capital

1. Calculate after-tax cost for each instrument of the capital components
2. Measure the BP, BP=Breaking Fund for instrument/Weight for instrument
3. Compute WACC for each range of financing
4. Prepare MCC schedule in the form of graph

Example of Case: UMP Final Exam Question
BPF2213, June 2017

Globe Berhad has to choose the best project(s) to be enrolled. The options are as follows:

PROJECT	INITIAL INVESTMENT	IRR
Anthurium Resident	RM1,000,000	16%
Amaryllis Shop House	RM900,000	18%
Calatheas Shop Office	RM800,000	14%

Table 1: Initial Investment Cost and the Expected Return of Project

The company's existing capital structure consists of 40% debt, 10% preferred share and 50% common equity. The company has RM 400,000 of retained earnings available for reinvestment purpose.

To finance the new project, the company has decided to issue new bond, preferred stock and common equity. The cost of debt before taxes is 6% for the first RM200,000 and further issuance would incur 9% (before taxes). The company paid RM3 per share as dividend last year and it's current stock price is RM15. The expected growth rate in earnings and dividends is 5%. If new common stocks are issued, there will be floatation cost of 10% of the market price. Preferred shares' after tax cost is 8% for the first RM150,000 and it will be at 12% thereafter. The corporate tax rate applied is 35%.

Conclusion of The Chapter

- Conclusion
  - Preferred Stock and Common Stock are equity security and an alternative for a firm to raise capital.
  - WACC would help firm to evaluate the optimum capital structure.
  - Optimum capital structure could helps the firm to have the least commitment for cost of capital.

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