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Lecture 20b
Sources and Costs of Borrowed Funds

Learning Objectives

- Define various sources of capital and the costs of those funds to the firm

Sources of Capital

- There are three sources of capital available to a firm:
  - Money generated from the firm's operation
  - Borrowed money
  - Money from selling stock

Money Generated from the Firm's Operations

- A major source of capital investment money is retained profits from the firm's operations.
  - Industrial firms retain about half of their profits and pay out the rest to shareholders.
- Firms also generate money equal to the annual depreciation of their capital assets.
  - Even a firm that earns zero profit will still generate money from operations equal to its depreciation charges.

Operating revenue (OR) = Operating cost (OC) + Before-tax cash flow (BTCF)

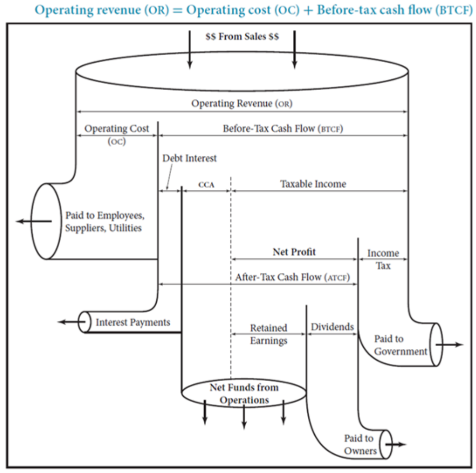

FIGURE 12-2 The operations cash flow pipeline.

Potential External Sources of Money

- External sources of money
  - Bank loans
  - Bonds
  - Issue new stock
- Balance of sources
- Decisions makers and priorities

Cost of Funds

- Cost of Borrowed Money
  - As we learned earlier, one factor that will affect a firm's MARR is the cost of borrowing money.
- Cost of Capital
  - The money a firm uses is drawn from the firm's overall capitalization.
  - This is also called the weighted average cost of capital (WACC).

Cost of Capital: WACC

- Different sources of capital may have different "weights" in terms of the amount of capital AND have different corresponding "rates of return" (costs) associated with them.
- weighted average cost of capital:
  WACC = (fraction of total capital)(ROR) + (fraction of total capital)(ROR) + (fraction of total capital)(ROR)
- "after-tax" WACC for tax deductible items:
  After-tax interest cost = (Before-tax interest cost)(1 – Tax rate)

Cost of Capital: Problem

A profitable corporation has raised $150 million dollars for funding various projects. The various funding sources and the payments are as shown below.

Source of Capital	Amount Raised	Interest Rate
Milan Bank	$15M	9.0%
Chemical Bank	$18M	8.5%
Common Stock	$37M	7.0%
Preferred Stock	$20M	10.0%
Bonds	$60M	6.0% (effective annual)

If the corporation pays 40% income tax, calculate the after-tax cost of capital.

Cost of Capital: Problem, cont'd

Solution

After-Tax Interest Rates:

Milan Bank:	= 0.09(1 – 0.40) = 5.4%
Chemical Bank:	= 0.085(1 – 0.40) = 5.1%
Bonds:	= 0.06(1 – 0.40) = 3.6 %
Stocks: no tax breaks apply.	= 7%, 10%

After tax interest cost = (0.054(15) + 0.051(18) + 0.036(60) + 0.07(37) + 0.10 (20) = \$8.478 M

Weighted Average Cost of Capital =
= (\$8.478M/\$150M) × 100 % = **5.65%**