MSCI 261 Midterm Review 2 (Chpt. 6-9)

Depreciation

- **Market value**: value at which an asset can be sold in a market (usually estimated)
- **Book value**: value calculated for accounting purposes, using a depreciation model
- **Scrap value**: value at the end of an asset's physical life (when it's broken up for its parts)
- **Salavage value**: value at the end of an asset's useful life (when it's sold)
- **Straight-line depreciation**: linear diminishment of book value

$$D_{sl}(n) = \frac{P-S}{N} = \text{amount of depreciation in period } n$$

$$BV_{sl}(n) = P - nD_{sl} = \text{book value at the end of period } n$$

  - P = current market value/purchase price
  - S = salvage value after N periods
  - N = # of periods in useful life
- **Declining-balance depreciation**: proportional diminishment of book value

$$D_{db}(n) = d \cdot BV_{db}(n-1) = \text{amount of depreciation in period } n$$

$$BV_{db}(n) = P(1-d)^n = \text{book value at the end of period } n$$

$$d = \sqrt[N]{\frac{S}{P}} = \text{depreciation rate, given } P\text{, } S\text{, and } N$$

Financial Accounting

- **Balance sheet**: snapshot of a firm's financial position at a point in time
  - (Current assets + long-term assets) = (Current liabilities + long-term liabilities) + (Owner's equity)
- **Income statement**: summary of a firm's revenues and expenses over an accounting period
  - Income before taxes = Revenues − expenses
  - Net income = Income before taxes − taxes
- Liquidity ratios: ability of a firm to meet its current liability obligations
  - **Working capital** = Current assets - Current liabilities
  - **Current ratio/Working capital ratio** = $\dfrac{\text{Current assets}}{\text{Current liabilities}}$
  - **Acid-test ratio/quick ratio** = $\dfrac{\text{Quick assets}}{\text{Current liabilities}}$
    - Quick assets = Current assets − Inventories − Prepaid items
- Leverage/debt-management ratios: how much a firm relies on debt for its operations

    - **Equity ratio** $= \dfrac{\text{Owner's equity}}{\text{Total assets}}$
- Efficiency/asset-management ratios: how efficiently a firm uses its assets
    - **Inventory-turnover ratio** $= \dfrac{\text{Sales}}{\text{Inventories}}$
- Profitability ratios: how productively a firm employs its assets to produce profit
    - **Return-on-assets ratio** $= \dfrac{\text{Net income (before extraordinary items)}}{\text{Total assets}}$
    - **Return-on-equity ratio** $= \dfrac{\text{Net income (before extraordinary items)}}{\text{Total equity}}$

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