

# CHAPTER 12

## Equity Financing

- **Equity financing**
  - **Key features**
  - **Valuation**
- **The investment banking process**
- **Market equilibrium and efficiency**
- **The risk/return trade-off**

## Introduction

- In the last chapter, we discussed long-term debt financing.
- The other major source of long-term capital is **equity financing**.
  - In **for-profit (investor owned) businesses**, equity is supplied by owners.
  - In **not-for-profit (NFP) businesses**, “equity” (sometimes called *fund capital*) is supplied by “the community.”

## Equity in For-Profit Businesses

- For-profit businesses are usually organized as:
  - Proprietorships
  - Partnerships
  - Corporations
  - Hybrid forms
- We will assume the *corporate form* in our discussion, so we will focus on stockholders (shareholders) as owners.

## Stockholders' Rights and Privileges

- **First and foremost, stockholders have a claim on the residual earnings (net income) of the business.**
  - **Net income “belongs” to shareholders.**
  - **Some portion may be paid out as dividends.**
- **Control of the firm**
- **Preemptive right**

## Types of Common Stock

- Most firms issue only one type of common stock, but some firms use multiple types, called **classified stock**.
- Generally called **Class A** and **Class B**, but these classifications do *not* have standard meanings.
- An example is a corporation with *both founders' shares* and *regular shares*.

## The Market for Common Stock

- **Privately held** stock is normally held by founders and managers and is *not* traded in an organized market.
- **Publicly held** stock is traded:
  - In the over-the-counter (OTC) market (NASDAQ).
  - On stock exchanges (**listed** stock).
    - Regional exchanges
    - American Stock Exchange (AMEX)
    - New York Stock Exchange (NYSE)

## Stock Market Transactions

- **Initial public offerings (IPOs)** occur when shares of a *privately held* company are sold to the public for the first time. (The company “goes public.”)
- The **primary market** is used when *new (additional)* shares are sold by publicly owned companies.
- Share sales between *individuals* take place in the **secondary market**. The company receives no capital from these transactions.

## Methods Used by Corporations to Sell New (Non-IPO) Shares of Common Stock

- **Rights offering**
- **Public offering**
- **Private placement**
- **Employee stock purchase plan**
- **Dividend reinvestment plan (DRIP)**
- **Direct purchase plan**

## Regulation of Securities Markets

- Markets are regulated by the **SEC**, the **Federal Reserve Board**, and **state commissions**.
- Key features of regulation:
  - New issues must be **registered**
  - Investors must be given a **prospectus**
- Goals of regulation:
  - Ensure investors have accurate information
  - Prevent market manipulation
  - Reduce insiders' advantage

## The Investment Banking Process

- **Investment banks** (such as *Merrill Lynch* and *Goldman Sachs*) assist businesses in issuing securities.
- The procedures followed when businesses (including NFP) issue new securities is called the **investment banking process**.
- ? What securities do NFPs issue?

## Key Decisions

- **Selection of an investment banker**
- **Size of issue**
- **Type (types) of security (securities)**
- **Contractual basis with banker**
  - **Best efforts**
  - **Underwritten issue**
- **Investment banker's compensation**
- **Offering price**

## Equity in Not-for-Profit Businesses

- **NFP businesses must have “equity” capital, but it is not supplied by stockholders.**
- ***Start-up equity* comes from:**
  - Religious organizations
  - Governmental entities
- ***Ongoing equity* comes from:**
  - Profits
  - Contributions
  - Grants

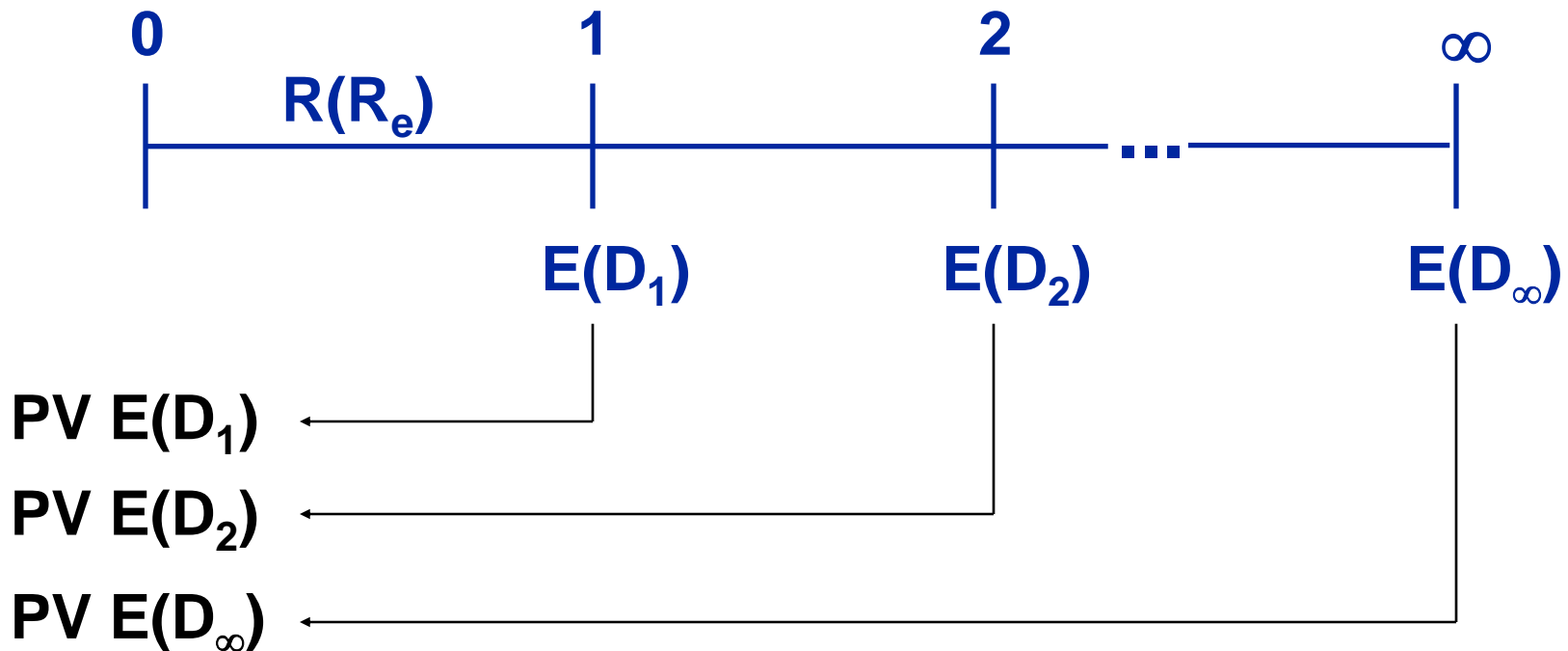
## Common Stock Valuation

- For valuation, for-profit companies can be classified into three categories:
  - **Start-up businesses**, which can be valued (roughly) by *option pricing models*.
  - **Young businesses**, which can be valued on the basis of their *expected operating cash flows*.
  - **Mature businesses**, which can be valued on the basis of their *expected dividend stream*. We will illustrate the dividend valuation model here.

## Common Stock Valuation (Cont.)

- In the **dividend valuation model**, the value of a share of stock is the present value of the expected cash flow stream *to shareholders*.
  - In general, this stream consists of **dividends** and a future **selling price**.
  - But, regardless of the holding period, a share of stock can be valued solely on the basis of its future dividend stream.
- ? Why?

# Dividend Valuation Model



---

**Value** =  $E(P_0)$

---

? What's the problem in implementing this model?

## Constant Growth Model

If dividends are expected to grow at a ***constant rate forever***, then the general stock valuation model can be simplified to this form:

$$\begin{aligned} E(P_0) &= \frac{E(D_1)}{R(R_e) - E(g)} \\ &= \frac{D_0 \times [1 + E(g)]}{R(R_e) - E(g)} \end{aligned}$$

## Constant Growth Model (Cont.)

- $E(P_0)$  is the **value** of the stock. ( $P_0$  is the current price.)
  - $E(g)$  is the expected constant dividend growth rate.
  - $R(R_e)$  is the stock's required rate of return.
  - $D_0$  is the last dividend paid (assumed to be paid yesterday).
  - $E(D_1)$  is the next expected dividend (assumed to be received in one year).
- ? Which of the above input variables are most uncertain?

## Constant Growth Model (Cont.)

- **Four assumptions are necessary for this constant growth model:**
  - $E(g_1) = E(g_2) = E(g_N) = E(g)$ .
  - $R(R_e) > E(g)$ .
  - The last dividend was just paid yesterday.
  - Dividends are paid annually.
- ? **Are these assumptions realistic?**

**Assume  $b = 1.5$ ,  $R_F = 7\%$ , and  $R(R_M) = 13\%$ . What is the required rate of return on the stock?**

**Use the *Security Market Line (SML)* to calculate  $R(R_e)$ :**

$$\begin{aligned} R(R_e) &= R_F + [R(R_M) - R_F] \times b \\ &= 7\% + (13\% - 7\%) \times 1.5 \\ &= 7\% + (6\% \times 1.5) \\ &= \mathbf{16.0\%}. \end{aligned}$$

**If  $D_0 = \$1.82$  and  $E(g) = 10\%$ ,  
what is the stock's value?**

$$\begin{aligned} E(P_0) &= \frac{D_0 \times [1 + E(g)]}{R(R_e) - E(g)} \\ &= \frac{\$1.82 \times 1.10}{0.16 - 0.10} \\ &= \frac{\$2.00}{0.06} = \mathbf{\$33.33.} \end{aligned}$$

## Constant Growth Model (Cont.)

- Dividend growth is caused primarily by:
  - Inflation
  - Earnings retention
- Note that the model can be used when  $E(g) = 0$  (zero growth) or when growth is negative.
- ? What happens to the constant growth model when  $E(g) = 0$ ?

## Rate of Return Form of the Constant Growth Model

The constant growth model can be rearranged as follows:

$$\begin{aligned} E(R_e) &= \frac{E(D_1)}{P_0} + E(g) \\ &= \frac{D_0 \times [1 + E(g)]}{P_0} + E(g). \end{aligned}$$

If  $P_0 = \$33.33$ ,  $E(D_1) = \$2.00$ , and  $E(g) = 10\%$ , what is the stock's expected rate of return?

$$\begin{aligned} E(R_e) &= \frac{E(D_1)}{P_0} + E(g) \\ &= \frac{\$2.00}{\$33.33} + 10.0\% \\ &= 6.0\% + 10.0\% = \mathbf{16.0\%}. \end{aligned}$$

**What is the expected stock price  
(value) at the end of Year 1?**

$$\begin{aligned} E(P_1) &= \frac{D_1 \times [1 + E(g)]}{R(R_e) - E(g)} \\ &= \frac{\$2.00 \times 1.10}{0.16 - 0.10} \\ &= \frac{\$2.20}{0.06} = \$36.67. \end{aligned}$$

**Find the dividend yield, capital gains yield, and total return expected during the first year of stock ownership.**

$$\text{DY} = \frac{E(D_1)}{P_0} = \frac{\$2.00}{\$33.33} = 6.0\%.$$

$$\text{CGY} = \frac{\$36.67 - \$33.33}{\$33.33} = 10.0\%.$$

$$\begin{aligned} \text{Total return} &= \text{DY} + \text{CGY} \\ &= 6.0\% + 10.0\% = 16.0\%. \end{aligned}$$

## Constant Growth Stock Conditions

- The dividend is expected to grow at a *constant rate forever*.
- The stock price is expected to grow at the *same rate*.
- The expected dividend yield is *constant* over time.
- The expected capital gains yield is a *constant* equal to the *growth rate*.

## Nonconstant Growth Model

- Clearly, most “real world” dividend-paying stocks do *not* exhibit constant growth.
- A somewhat more complicated model is required to value such stocks.
- However, because of the uncertainties in the inputs required for stock valuation, the constant growth model is useful for many mature firms.

## Security Market Equilibrium

- Investors will buy a security when its:
  - Expected rate of return exceeds the required rate of return.
  - Value exceeds the current price.
- In equilibrium:
  - $E(R_e) = R(R_e)$ .
  - $P_0 = E(P_0)$ .
- In *efficient markets*, buying and selling actions continuously move security prices toward equilibrium.

## Informational Efficiency

- A market is **informationally efficient** if:
  - Relevant information about asset values can be easily obtained at low cost.
  - The market contains many buyers and sellers who act on the information.
- The theory of market efficiency has profound implications for both investors and businesses.

## Implications of Market Efficiency

- Prices reflect all *publicly available* information.
- *Investors* should not expect to “beat the market.”
  - In the short run, expect to earn average returns for the risk assumed.
  - In the long run, expect to earn returns that are commensurate with the risk assumed.
- *Managers* with no **private (inside) information** should not question the “correctness” of securities prices (or interest rates).

## Why might the major stock and bond markets be efficient?

- Major financial firms, such as *Merrill Lynch*, *Fidelity Investments*, and *Prudential Insurance*, have *thousands* of well-qualified analysts with immediate access to information along with *billions* of dollars to invest.
- Thus, new information is almost instantaneously reflected in current prices.

## What markets are efficient?

- In general, the markets for the stocks and bonds of *large companies* and for *Treasury securities* are efficient.
- However, there is evidence that “pockets of inefficiency” exist and that “emotional excesses” can distort values.
- The markets for **real assets** (real estate, MRIs, and so on) are *not* efficient.
- ? What evidence supports stock market efficiency?

## Risk/Return Trade-Off

- In *efficient markets*, the only way to obtain a higher return is to assume *more risk*.
- Consider the following investment alternatives:
  - The stock of Health Management Associates (HMA).
  - The bonds of HMA.
- ? Which offers the higher expected rate of return? Why?

## Conclusion

- This concludes our discussion of *Chapter 12* (Equity Financing).
- Although not all concepts were discussed in class, you are responsible for all of the material in the text.
- ? Do you have any questions?