

The Stock Market  
Chapter 7: Part A (pp. 151-156)

**Modified Notes from F. Mishkin  
Eighth Edition**

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# Key In-Class Discussion Questions

## Mishkin Chapter 7: Part A (pp.151-156)

- What distinguishes fundamental from behavioral models of stock market pricing?
- Form and interpretation of the one-period valuation model for common stocks and its generalized version
- Are price bubbles ruled out by the one-period valuation model? The generalized valuation model?
- Under what conditions does the Gordon Growth Model make empirical sense?
- Applications of the Gordon Growth Model (9/11, Enron scandals, monetary policy effects)

# Alternative Views of Stock Market Pricing

**1. Fundamental Finance View:** Stock prices are largely determined by the true financial conditions of firms, as reflected in their price/earnings ratios, capitalization, R&D prospects, etc.

**2. Behavioral Finance View:** Stock prices are strongly affected by market psychology: e.g.,

- “irrational exuberance” or pessimism;
- “beauty contest” guesses about the most attractive stocks to buy based on what other people are buying or selling (fads, herd following, ...).

# Fundamental View of Stock Valuation

- **Basic Principle of Finance (Fundamental View)**

For any security S,

Current Market Value of S = Present Value of its Expected Future Cash Flow

- **One-Period Valuation Model for Common Stocks**

- $P_1$  = Expected stock market price at beginning of period 1

- $k_e$  = “*Required return on investments in equity*”

- $P_0$  = Stock market price at beginning of current period 0

$$P_0 = \frac{Div_1}{(1 + k_e)} + \frac{P_1}{(1 + k_e)} \quad (1)$$

- $Div_1$  = Expected dividend at the beginning of period 1 (or equivalently, at the end of period 0)

(Compare Mishkin, Ch7, p. 152)

## Fundamental View of Stock Valuation...Continued

**Equation (1) reflects view that the current market price  $P_0$  is an *equilibrium* market price:**

- 1. Right side of (1)** is what investors are willing to pay for the stock, given their current desires and beliefs.
- 2.** If right side of (1) were **greater** than the current market price, investors would increase their demand for the stock and thus bid up this market price.
- 3.** If right side of (1) were **less than** current market price, investors would reduce their demand for the stock, thus causing this market price to fall.

## Generalized Dividend Valuation Model: Fundamental View (Mishkin, Ch7, 153)

- $D_t$  = Expected dividend payment at beginning of period  $t$ :

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \dots + \frac{D_n}{(1+k_e)^n} + \frac{P_n}{(1+k_e)^n} \quad (2)$$

where the last term of the equation is assumed to approach 0 as  $n \rightarrow \infty$  (no “price bubble”).

- Thus, the Generalized Dividend Valuation Model is

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+k_e)^t} \quad (3)$$

## Gordon Growth Model (Mish Ch7,153-154)

- Suppose dividends are expected to grow at a constant rate  $g$ :  $D_{t+1} = [1+g]D_t$  for all  $t \geq 0$ , where  $0 =$  current period. Then equation (3) can be written as

$$P_0 = \frac{D_0 \times (1+g)^1}{(1+k_e)^1} + \frac{D_0 \times (1+g)^2}{(1+k_e)^2} + \dots + \frac{D_0 \times (1+g)^\infty}{(1+k_e)^\infty} \quad (4)$$

- Assuming  $g$  is less than the required return on equity  $k_e$ , equation (4) can be equivalently expressed as\*

$$P_0 = \frac{D_0 \times (1+g)}{(k_e - g)} = \frac{D_1}{(k_e - g)} \quad (5)$$

\* See Mishkin, page 154, footnote 1

## Gordon Growth Model...Continued

**Equation (5) allows us to estimate current equilibrium stock price  $P_0$  based on:**

- 1.** The known dividend  $D_0$  at the beginning of the current period 0;
- 2.** The expected constant dividend growth rate  $g$ , which must be estimated or assumed;
- 3.** The required return on equity  $k_e$ , which must also be estimated or assumed.

## Gordon Growth Model...Continued

**Does equation (5) make sense? It predicts current stock price  $P_0$  will be *LOWER* if:**

- 1. Current dividend  $D_0$  is lower;**
- 2. Or the expected dividend growth rate  $g$  is lower;**
- 3. Or the required return on equity  $k_e$  is larger.**

## Application 1: Effects of September 11 Terrorist Attacks on Stock Prices (Mishkin Ch7, p. 156)

**Gordon Growth Model predicts two ways in which such attacks affected stock prices:**

1. Fears led to downward revision of the growth prospects for U.S. companies and hence a **lower** expected dividend growth rate  $g$ .
2. Increased uncertainty led to a **larger** required return on investment  $k_e$ .
3. As predicted by the Gordon Growth Model, these two effects of the 9/11 attacks were followed by a **drop** in stock market prices.

## Application 2: Effects of Enron Scandal on Stock Prices (Mishkin Ch7, p. 156)

**Gordon Growth Model predicts two ways in which this scandal affected stock prices:**

1. Doubts regarding formerly optimistic forecasts of company earnings and dividend growth led to a **lower** expected dividend growth rate  $g$ .
2. Increased uncertainty over quality of accounting information led to **larger** required return on investment  $k_e$
3. As predicted by the Gordon Growth Model, these two effects of the scandal were followed by a **drop** in stock market prices.

## Application 3: Monetary Policy and Stock Prices (Mishkin Ch7, p. 155-156)

**Gordon Growth Model predicts that monetary policy will affect stock prices in two ways:**

1. Monetary policy directly affects bond return rates, which represent *opportunity costs* for stock investors (alternative possibilities), and thus  $k_e$ ;
2. Monetary policy affects the growth rate of the economy as a whole, which tends to be *positively correlated* with the expected dividend growth rate  $g$ .

# Basic Concepts

Mishkin Chapter 7: Part A (pp. 151-156)

## **Basic Concepts:**

- Fundamental approach to stock market pricing
- Behavioral approach to stock market pricing
- Required return on investments in equity
- One-period valuation model for common stocks
- Generalized dividend valuation model for common stocks
- Price bubble
- Gordon Growth Model

# Key Issues

Mishkin Chapter 7: Part A (pp. 151-156)

## **Key Issues:**

- Comparing and contrasting fundamental vs. behavioral approaches to stock market pricing
- Fundamental models of stock valuation (one-period and multiple period)
- Form and interpretation of the Gordon Growth Model
- Applications of the Gordon Growth Model