Key In-Class Discussion Questions
Mishkin Chapter 7: Part A (pp.147-152)

• 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
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 $S$,
  \[
  \text{Current Market Value of } S = \text{Present Value of its Expected Future Cash Flow}
  \]

- **One-Period Valuation Model for Common Stocks**
  - $P_1 = \text{Expected stock market price at beginning of period 1}$
  - $k_e = \text{“Required return on investments in equity”}$
  - $P_0 = \text{Stock market price at beginning of current period 0}$

  \[
  P_0 = \frac{Div_1}{(1 + k_e)} + \frac{P_1}{(1 + k_e)} 
  \]

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

  (Compare Mishkin, Equ.(1), Ch7, p. 148)
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, 149)

- \( D_t = \) Expected dividend payment at beginning of period \( t \):

\[
P_0 = \frac{D_1}{(1 + k_e)^1} + \frac{D_2}{(1 + k_e)^2} + \ldots + \frac{D_n}{(1 + k_e)^n} + \frac{P_n}{(1 + k_e)^n} \quad (2)
\]

where the last term of the equation is assumed to approach 0 as \( n \to \infty \) (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, 149-150)

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

\[
P_0 = \frac{D_0 \times (1+g)^1}{(1+k_e)^1} + \frac{D_0 \times (1+g)^2}{(1+k_e)^2} + \ldots + \frac{D_0 \times (1+g)^\infty}{(1+k_e)^\infty}
\]  

(4)

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

\[
P_0 = \frac{D_0 \times (1 + g)}{(k_e - g)} = \frac{D_1}{(k_e - g)}
\]  

(5)

* See Mishkin, page 150, footnote 1
Gordon Growth Model…Continued

Equation (5) allows us to estimate the 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 \textit{LOWER} if:

1. Current dividend $D_0$ is \textit{lower};

2. Or the expected dividend growth rate $g$ is \textit{lower};

3. Or the required return on equity $k_e$ is \textit{larger}. 

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Application: Effects of September 11 Terrorist Attacks on Stock Prices

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: Effects of Enron Scandal on Stock Prices

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: Monetary Policy and Stock Prices (Mishkin Ch7, p. 151-152)

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 $g$. 
Application: The Subprime Financial Crisis and the Stock Market (Mishkin 152)

- Financial crisis that started in August 2007 led to one of the worst bear markets in 50 years.

- Downward revision of growth prospects: ↓g.

- Increased uncertainty: ↑ke

- Gordon model predicts a drop in stock prices (as occurred in 2007-2008).
Basic Concepts

Mishkin Chapter 7: Part A (pp. 147-152)

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. 147-152)

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