Economics 173A and Management 183

Financial Markets

Stocks

(equity analysis)
Common Stock
Common Stocks

- Equity Securities (as opposed to Debt Securities, i.e. Bonds).
- Variable Cash Flows, *if* cash flows at all.
- Low current income compared to other investment alternatives
- Return is most often via a *Capital Gain*.
- Maturity determined by the investor.
- The security’s maturity is expected to be infinite.
Common Stocks

- Stockholders are *residual* owners of the firm.
- Stockholders own the firm’s earnings.
- Earnings drive stock prices.

Best Case Scenario

- A steady stream of dividends “increasing” annually.
- Stock price “appreciates” over time due growth in firm’s earnings.
Common Stocks

- Provide opportunity for higher returns than other investments
- Over past 50 years, stocks averaged 11% and high-grade corporate bonds averaged 6%
- Good inflation hedge since returns typically exceed the rate of inflation
- Easy to buy and sell stocks
- Price and market information is easy to find in financial media
- Unit cost per share of stock is low enough to encourage ownership
Market Performance

- **Routine Decline**: a drop of 5% or more in one of the major market indexes, like the Dow Jones Industrial Average (DJIA)

- **Correction**: a drop of 10% or more in one of the major market indexes

- **Bear Market**: a drop of 20% or more in one of the major market indexes
• **Stock Returns:**

  Dividend Yield

  \[
  DY = \frac{ttm \text{ Dividend}}{current \text{ Stock Price}}
  \]

  changes daily; taxable when realized

  Capital Gain = \frac{(P1 - P0)}{P0}

  taxable when realized
• **Stock Returns:**

Capital gains and dividend income:

- Over past 50 years, stock returns have ranged from +48.28% in 1954 to -21.45% in 1974
- Stock returns over past 50 years have averaged around 11%
- For the almost six years from 1998 mid-'03, the DJIA averaged 1.7% return per year.
### Returns in 2015 (as of August 14, 2015)

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<tr>
<th>Index</th>
<th>Close</th>
<th>YTD</th>
<th>YTD %</th>
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<tbody>
<tr>
<td>DJIA</td>
<td>17,477</td>
<td>-104</td>
<td>-194 bps</td>
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<td>NASDAQ</td>
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<tr>
<td>International</td>
<td>1,841</td>
<td>+ 66</td>
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<tr>
<td>10-year bond</td>
<td>2.20%</td>
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<tr>
<td>30-year T-bond</td>
<td>2.84%</td>
<td>+ 9 bps</td>
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• History

In 1975 (I graduated from college) and the Dow was at 500

In 1987 (I was teaching economics at Barnard college) and in October (*Black Monday*) the DOW fell 580 points to about 1800

Today (5/2/16) it is at 17,800

What is the AHPR on 1975-2016?
Want is the AHPR on 1987-2016?
• Returns in 2014:

<table>
<thead>
<tr>
<th>Index</th>
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<th>Net Change</th>
<th>% Change</th>
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<td>10-year bond</td>
<td>2.18%</td>
<td>+0.08%</td>
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<td>-0.85%</td>
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<tr>
<td>30-year T-bond</td>
<td>2.77%</td>
<td>+0.01%</td>
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<td>-1.20%</td>
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• **Returns in 2013:**

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<td>+0.98%</td>
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Risk

- Stocks are subject to many different kinds of risk:
  - Business risk - firm specific
  - Financial risk - firm specific
  - Market risk - systematic
  - Event risk - firm & market

- Difficult to predict stock prices, especially over short periods of time.
- Expect wide swings in firm profits.
- The stock market (in general) affects individual stock prices (guilt by association).
Company Life Cycle
Growth Stages

Life Cycle Perspective

Growth & Development Cycles reflecting the vitality of a Sector, Industry, or a Company over time.

- **Initial development**: industry and/or company is new and risks are very high

- **Rapid expansion**: product acceptance is growing and Growth investors become very interested

- **Mature growth**: expansion comes from growth in the economy and returns are more predictable so Value investors take positions

- **Stability or decline**: demand for product is stable or diminishing. Growth investors flee; Value investors may remain.
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<td>5. Health Care</td>
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<td>8. Materials</td>
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Share Values

• **Par Value**: the stated, or face, value of a stock
  – Mainly an accounting & legal term. Not useful to investors

• **Book Value** $P_B$: the amount of stockholders’ equity divided by shares outstanding

• **Market Price** $P_M$: the current price of the stock in the stock market

• **Intrinsic Value** $V_0$: what a fully informed investor would pay; the expected long-term value
Firm Value

• **Book Value**: the amount of stockholders’ equity
  – The difference between the company’s assets minus the company’s liabilities and preferred stock

• **Market Capitalization**: the current *price* of the stock in the stock market *x* number of *shares* outstanding

• **Enterprise Value**: the firm’s total value (all stakeholders) – market capitalization *plus* debt, minority interest, preferred shares *minus* total cash (good PE or M&A analysts subtract only excess cash).
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Dividends

- Dividend income is one of the two basic sources of return to investors.
- Dividend income is more predictable than capital gains, so preferred by investors seeking lower risk.
- Dividends are taxed at maximum 15% tax rate, same as capital gains.
- Dividends tend to increase over time as companies’ earnings grow; increases average 3-5% per year.
- Dividends represent the return of part of the profit of the company to the owners, the stockholders.
• **Dividend Payout Ratio**: the portion of earnings per share (EPS) that a firm pays out as dividends:

  - Companies are not required to pay dividends
  - Some companies have high EPS, but reinvest all money back into company

\[
\text{Dividend payout ratio} = \frac{\text{Dividends per share}}{\text{Earnings per share}}
\]
## Key Dates for Dividends

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- **Declaration date**: June 3
- **Date of record**: June 16
- **Ex-dividend date**: June 18
- **Payment date**: June 30
Dividends and Dividend Yield

- **Dividend Yield**: a measure to relate dividends to share price on a percentage basis:
  
  - Indicates the rate of current income earned on the investment dollar
  
  - Convenient method to compare income return to other investment alternatives

\[
\text{Dividend yield} = \frac{\text{Annual dividends received per share}}{\text{Current market price of the stock}}
\]
Types of Stock

• **Blue Chip Stocks**: financially strong, high-quality stocks with long and stable records of earnings and dividends
  – Companies are leaders in their industries
  – Relatively lower risk due to financial stability of company
  – Popular with investing public looking for steady growth potential, perhaps dividend income
  – Provide shelter during unsettled markets
  – Examples: Wal-Mart, Proctor & Gamble, Microsoft, United Parcel Service, Pfizer and 3M Company
Types of Stock (cont’d)

• **Income Stocks**: stocks with long and sustained records of paying higher-than-average dividends
  – Dividends tend to increase over time (unlike interest payments on bonds)
  – Some companies pay high dividends because they offer limited growth potential
  – Examples: Verizon, Conagra Foods, Pitney Bowes, Wrigley, Nordstrom
Types of Stock (cont’d)

- **Growth Stocks**: stocks that experience high rates of growth in operations and earnings
  - High rate of growth in earnings > market
  - Higher price appreciation (due to increasing earnings)
  - Riskier investment because price will fall if earnings growth cannot be maintained
  - Typically pay little or no dividends
  - Examples: Lowe’s, Harley-Davidson, Starbucks, Apple
Types of Stock (cont’d)

• **Cyclical Stocks**: stocks whose earnings and overall market performance are closely linked to the general state of the economy
  – Stock price tends to move with the business cycle
  – Tend to do well when economy is growing, poorly in slowing economy
  – Best for investors willing to move in and out of market as economy changes
  – Examples: Caterpillar, Maytag Corp.
Types of Stock (cont’d)

• **Defensive Stocks**: stocks that tend to hold their value, and even do well, when the economy starts to falter

  – Stock price remains stable or increases when general economy is slowing

  – Products are staples that people use in good times and bad times, such as electricity, beverages, foods and drugs

  – Best for aggressive investors looking for “parking place” during slow economy

  – Examples: Proctor & Gamble, WD-40, Walmart
Equity Investment Strategies

- Capital Preservation
- Value
- Income
- Growth
- Momentum
- Aggressive
- Speculative
Strategies

• **Current Income**
  – Stocks that have high dividend yields
  – Firms with stability of revenues and costs.
  – Some dividend-paying stocks may be preferable to bonds because dividend levels tend to increase over time
  – Dividend income is supplement to capital gains - *think about/contrast bond capital gains(losses).*
Strategies

• **Quality Long-Term Growth**
  - Investors buy high-quality growth stocks, mid-cap stocks and tech stocks
  - Capital gains are primary goal
  - Higher level of risk due to emphasis on capital gains, i.e. increasing share prices
  - Significant trading of stocks may occur over time
  - Diversification is used to spread risk
Strategies

• **Aggressive Stock Management**
  
  – High-quality growth stocks, blue chip stocks, mid-cap stocks, tech stocks and cyclical stocks
  
  – Capital gains are primary goal
  
  – High level of risk due to emphasis on capital gains
  
  – Investors aggressively trade in and out of stocks, often holding for short periods
  
  – Timing the market is key element
  
  – Time consuming to manage
Strategies

• Speculation and Short-Term Trading
  – “day trading”
  – Small-cap stocks and new tech stocks
  – Capital gains are primary goal
  – High risk due to emphasis on capital gains in short time period
  – Trade in-and-out of stocks, often holding for extremely short periods
  – Looking for “big score” on unknown stock, upside surprises
  – Time consuming & high trading costs
Long-run v. Short-run

• The Changing Paradigm.

  – In long run, earnings are the most important factor in determining stock value.

  – In the short run, however, changes in market sentiment and consumer confidence are equally if not more important.
The Role of Information

- Do security prices reflect information? Or what?
  - Global news – economic and political
  - Domestic news
  - Industry news - trends
  - Firm news – marketing, products, management.
The Price to Earning Ratio

The *price-earnings ratio (P/E)* is computed by dividing the current stock price by the firm’s earnings per share.

Two types:

1. Backward looking: The *trailing* PE, using TTM or four quarters past earnings.
2. Forward looking: The *forward* PE, usually the next twelve months forecasted (by someone) earnings.

In both cases, static measures.
METRICS
Price to Earnings

– Growth stocks tend to have higher PE ratios than mature company stocks
– Comparisons:

Pick the Top 5 and Bottom 5 DOW stocks by P/E
METRICS
Price to *Earning’s Growth*

- The P/E ratio divided by the company’s growth rate of its earnings for a specified time period.

\[
P/E \text{ ratio} \div \text{Annual EPS Growth}
\]

- The PEG ratio brings the *earnings growth rate* into the valuation process.
- A more complete picture than the P/E ratio.
- Although a high P/E ratio may indicate the attractiveness of a stock ...
- factoring in the company's growth rate can tell a different story.
Price to Earning’s Growth

- The lower the PEG ratio, the more the stock *may* be undervalued given its earnings performance.

A broad rule of thumb is that a PEG ratio below one is desirable. *Why?*
Price to Earning’s Growth Company 1

Calculating the PEG

ABC Industries has a P/E of 20 times earnings. Call it a $20 stock, i.e. $1 of current earnings.

The consensus of all the analysts covering the stock is that ABC has an anticipated earnings growth of 10%.

\[
\frac{20 \ (= 20 \times \$1 \text{ earnings})}{10 \ (= \text{n \% anticipated earnings growth})} = \frac{20}{10} = 2.00
\]
Price to Earning’s Growth Company 2

Calculating the PEG

XYZ Industries has a P/E of 20 times earnings. Call it a $20 stock, i.e. $1 of current earnings.

The consensus of all the analysts covering the stock is that ABC has an anticipated earnings growth of 50% over the next five years.

\[
\frac{20 \text{ (= } 20 \times \$1 \text{ earnings})}{50 \text{ (= n \% anticipated earnings growth)}} = \frac{20}{50} = 0.40
\]
Price to Earning’s Growth Comparison

*For each $1 of earnings this year,* ABC Company should have $1.10 of earnings next year, while XYZ Company should have $1.50 of earnings next year.

If the equity markets are stable, then P/E’s ought to be the same for both companies, i.e. 20x earnings.

- ABC stock should sell for $22 per share
  \[20 \times 1.10 = 22\]
- XYZ stock should sell for $30 per share
  \[20 \times 1.50 = 30\]
Price to Earning’s Growth
Rule of Thumb

A fair price to pay for a stock is at a P/E equal to its “long-term” growth rate.
Analytical Factors: Growth Rates

• Choosing a Growth Rate

  – Financial analysts typically calculate a number of growth rates using different ways to determine a likely range for the metric.
  – Recent data may be more reliable than data from the more distant past.
  – Company statements regarding company targets may be considered too.
  – Other analysts – Zacks, First Call, I/B/E/S
  – Whisper Number -- thewhispernumber.com