Fundamentals of Corporate Finance

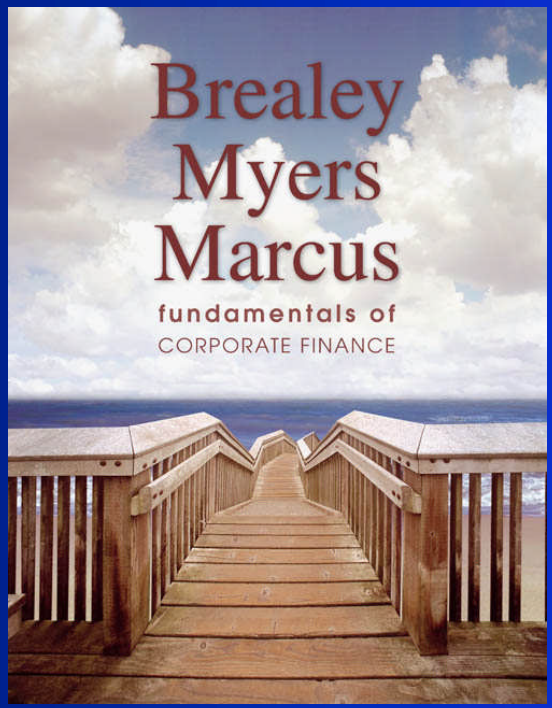
Fifth Edition

Slides by

Matthew Will

Chapter 6

Valuing Stocks



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Topics Covered

- Stocks and the Stock Market
- Book Values, Liquidation Values and Market Values
- Valuing Common Stocks
- Simplifying the Dividend Discount Model
- Growth Stocks and Income Stocks
- There are no free lunches on Wall Street
- Market Anomilies and Behavioral Finance

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Stocks & Stock Market

Primary Market - Place where the sale of new stock first occurs.

Initial Public Offering (IPO) - First offering of stock to the general public.

Seasoned Issue - Sale of new shares by a firm that has already been through an IPO

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Stocks & Stock Market

Common Stock - Ownership shares in a publicly held corporation.

Secondary Market - market in which already issued securities are traded by investors.

Dividend - Periodic cash distribution from the firm to the shareholders.

P/E Ratio - Price per share divided by earnings per share.

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Stocks & Stock Market

Book Value - Net worth of the firm according to the balance sheet.

Liquidation Value - Net proceeds that would be realized by selling the firm's assets and paying off its creditors.

Market Value Balance Sheet - Financial statement that uses market value of assets and liabilities.

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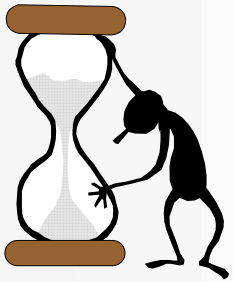
Valuing Common Stocks

Expected Return - The percentage yield that an investor forecasts from a specific investment over a set period of time. Sometimes called the holding period return (HPR).



$$\text{Expected Return} = r = \frac{Div_1 + P_1 - P_0}{P_0}$$

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Valuing Common Stocks

The formula can be broken into two parts.

Dividend Yield + Capital Appreciation

$$\text{Expected Return} = r = \frac{Div_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

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Valuing Common Stocks

Dividend Discount Model - Computation of today's stock price which states that share value equals the present value of all expected future dividends.

$$P_0 = \frac{Div_1}{(1+r)^1} + \frac{Div_2}{(1+r)^2} + \ldots + \frac{Div_H + P_H}{(1+r)^H}$$

H - Time horizon for your investment.

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Valuing Common Stocks

Example

Current forecasts are for XYZ Company to pay dividends of $3, $3.24, and $3.50 over the next three years, respectively. At the end of three years you anticipate selling your stock at a market price of $94.48. What is the price of the stock given a 12% expected return?

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Valuing Common Stocks

Example

Current forecasts are for XYZ Company to pay dividends of $3, $3.24, and $3.50 over the next three years, respectively. At the end of three years you anticipate selling your stock at a market price of $94.48. What is the price of the stock given a 12% expected return?

$$PV = \frac{3.00}{(1+.12)^1} + \frac{3.24}{(1+.12)^2} + \frac{3.50+94.48}{(1+.12)^3}$$

$$PV = \$75.00$$

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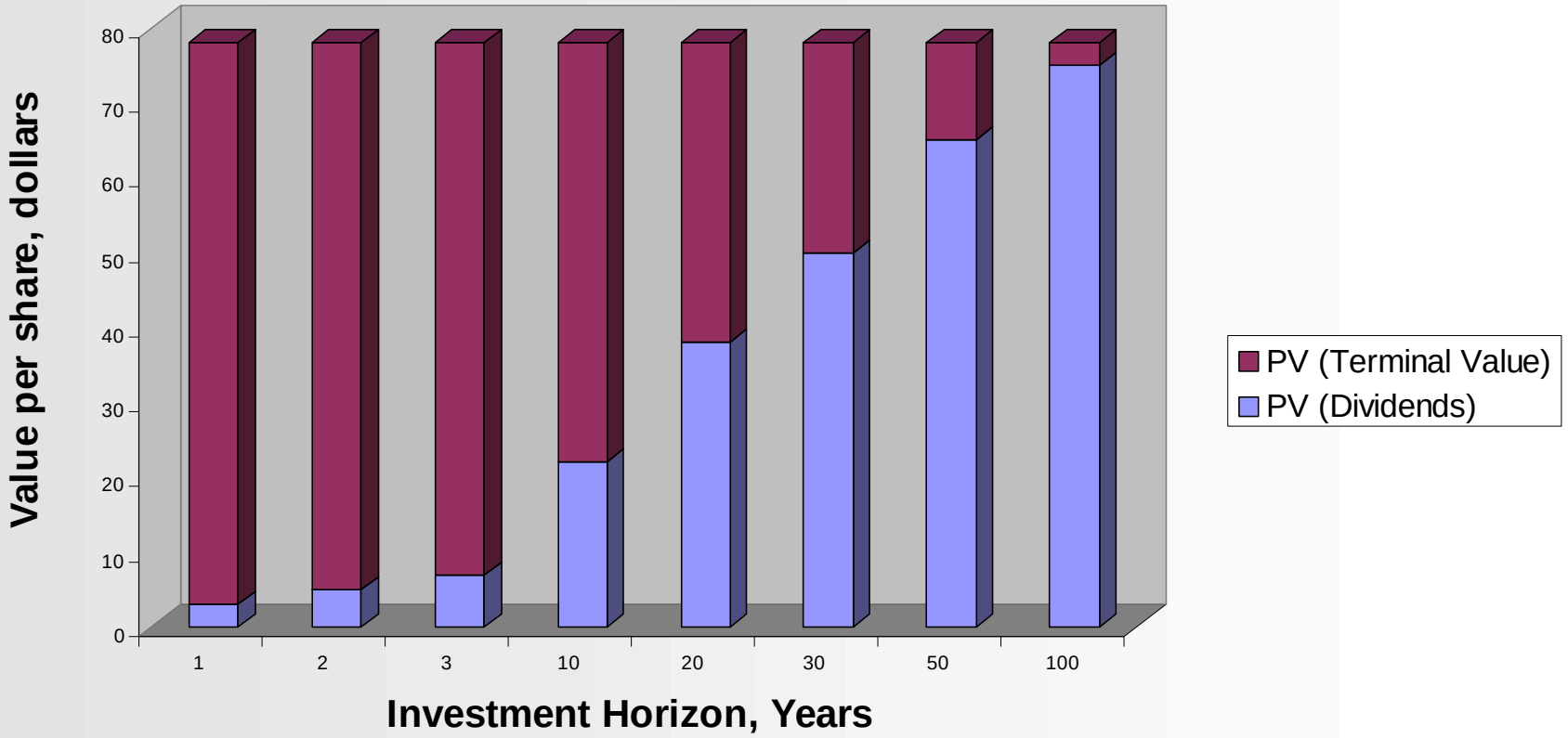
Blue Skies Value



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Valuing Common Stocks

If we forecast no growth, and plan to hold out stock indefinitely, we will then value the stock as a **PERPETUITY**.

$$Perpetuity = P_0 = \frac{Div_1}{r} or \frac{EPS_1}{r}$$

Assumes all earnings are paid to shareholders.

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Valuing Common Stocks

Constant Growth DDM - A version of the dividend growth model in which dividends grow at a constant rate *(Gordon Growth Model)*.

$$P_0 = \frac{Div_1}{r - g}$$

Given any combination of variables in the equation, you can solve for the unknown variable.

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Valuing Common Stocks

Example

What is the value of a stock that expects to pay a $3.00 dividend next year, and then increase the dividend at a rate of 8% per year, indefinitely? Assume a 12% expected return.

$$P_0 = \frac{Div_1}{r - g} = \frac{\$3.00}{.12 - .08} = \$75.00$$

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Valuing Common Stocks

Example- continued

If the same stock is selling for $100 in the stock market, what might the market be assuming about the growth in dividends?

$$\$100 = \frac{\$3.00}{.12 - g}$$

$$g = .09$$

Answer

The market is assuming the dividend will grow at 9% per year, indefinitely.

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Valuing Common Stocks

- If a firm elects to pay a lower dividend, and reinvest the funds, the stock price may increase because future dividends may be higher.

Payout Ratio - Fraction of earnings paid out as dividends

Plowback Ratio - Fraction of earnings retained by the firm.

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Valuing Common Stocks

Growth can be derived from applying the return on equity to the percentage of earnings plowed back into operations.

g = return on equity X plowback ratio

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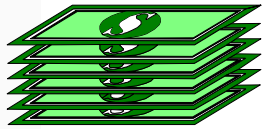
Valuing Common Stocks

Example

Our company forecasts to pay a $5.00 dividend next year, which represents 100% of its earnings. This will provide investors with a 12% expected return. Instead, we decide to plow back 40% of the earnings at the firm's current return on equity of 20%. What is the value of the stock before and after the plowback decision?



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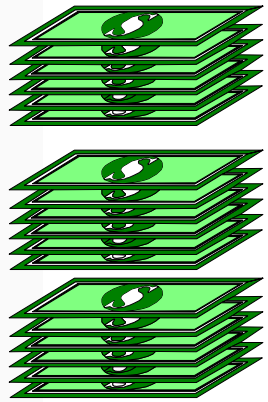
Valuing Common Stocks

Example

Our company forecasts to pay a $5.00 dividend next year, which represents 100% of its earnings. This will provide investors with a 12% expected return. Instead, we decide to blow back 40% of the earnings at the firm's current return on equity of 20%. What is the value of the stock before and after the plowback decision?



No Growth

$$P_0 = \frac{5}{.12} = \$41.67$$

With Growth

$$g = .20 \times .40 = .08$$

$$P_0 = \frac{3}{.12 - .08} = \$75.00$$

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Valuing Common Stocks

Example - continued

If the company did not plowback some earnings, the stock price would remain at $41.67. With the plowback, the price rose to $75.00.

The difference between these two numbers (75.00-41.67=33.33) is called the Present Value of Growth Opportunities (PVGO).

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Valuing Common Stocks

Present Value of Growth Opportunities (PVGO) - Net present value of a firm's future investments.

Sustainable Growth Rate - Steady rate at which a firm can grow: plowback ratio X return on equity.

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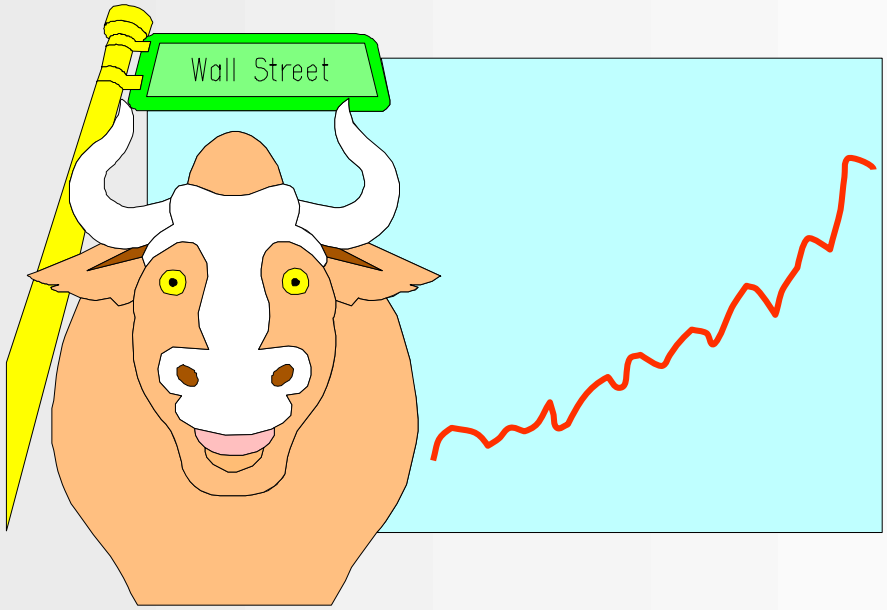
No Free Lunches

- **Technical Analysts**
  - Forecast stock prices based on the watching the fluctuations in historical prices (thus "***wiggle watchers***")



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No Free Lunches

Scatter Plot of NYSE Composite Index over two successive weeks.

Where's the pattern?

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Random Walk Theory

- The movement of stock prices from day to day DO NOT reflect any pattern.
- Statistically speaking, the movement of stock prices is random *(skewed positive over the long term).*

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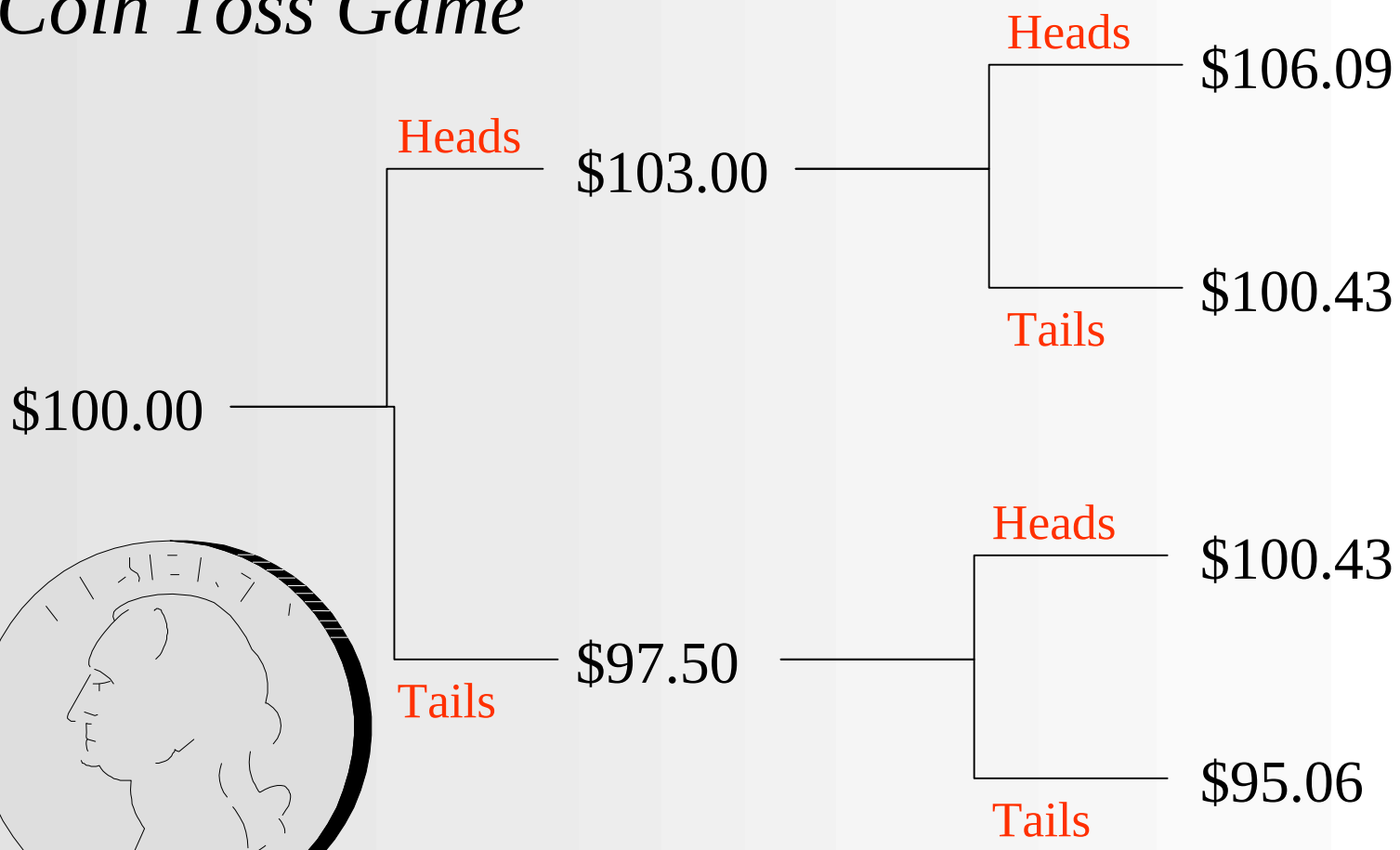
Random Walk Theory

Coin Toss Game



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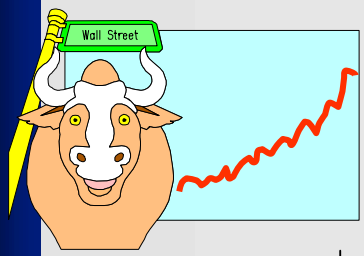
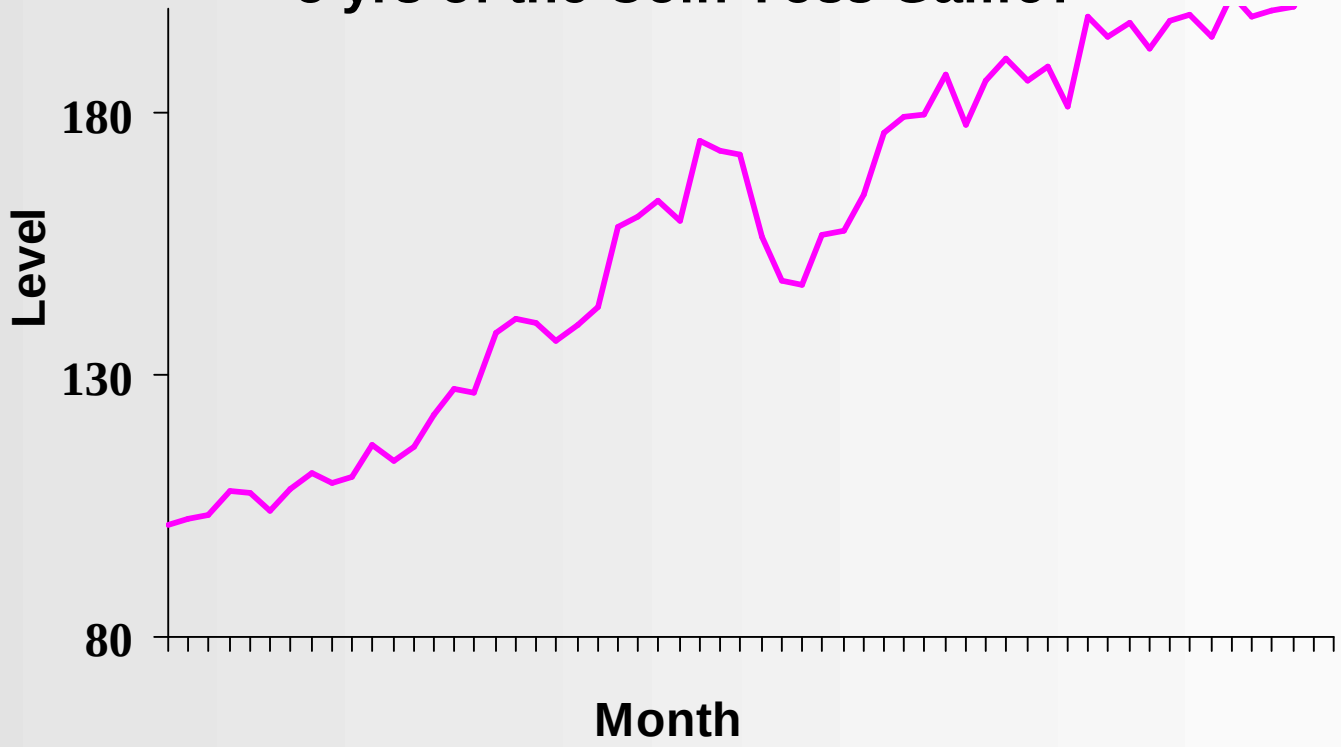
Random Walk Theory



S&P 500 Five Year Trend?
or
5 yrs of the Coin Toss Game?



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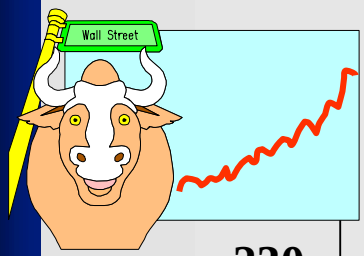
Random Walk Theory



S&P 500 Five Year Trend?
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5 yrs of the Coin Toss Game?

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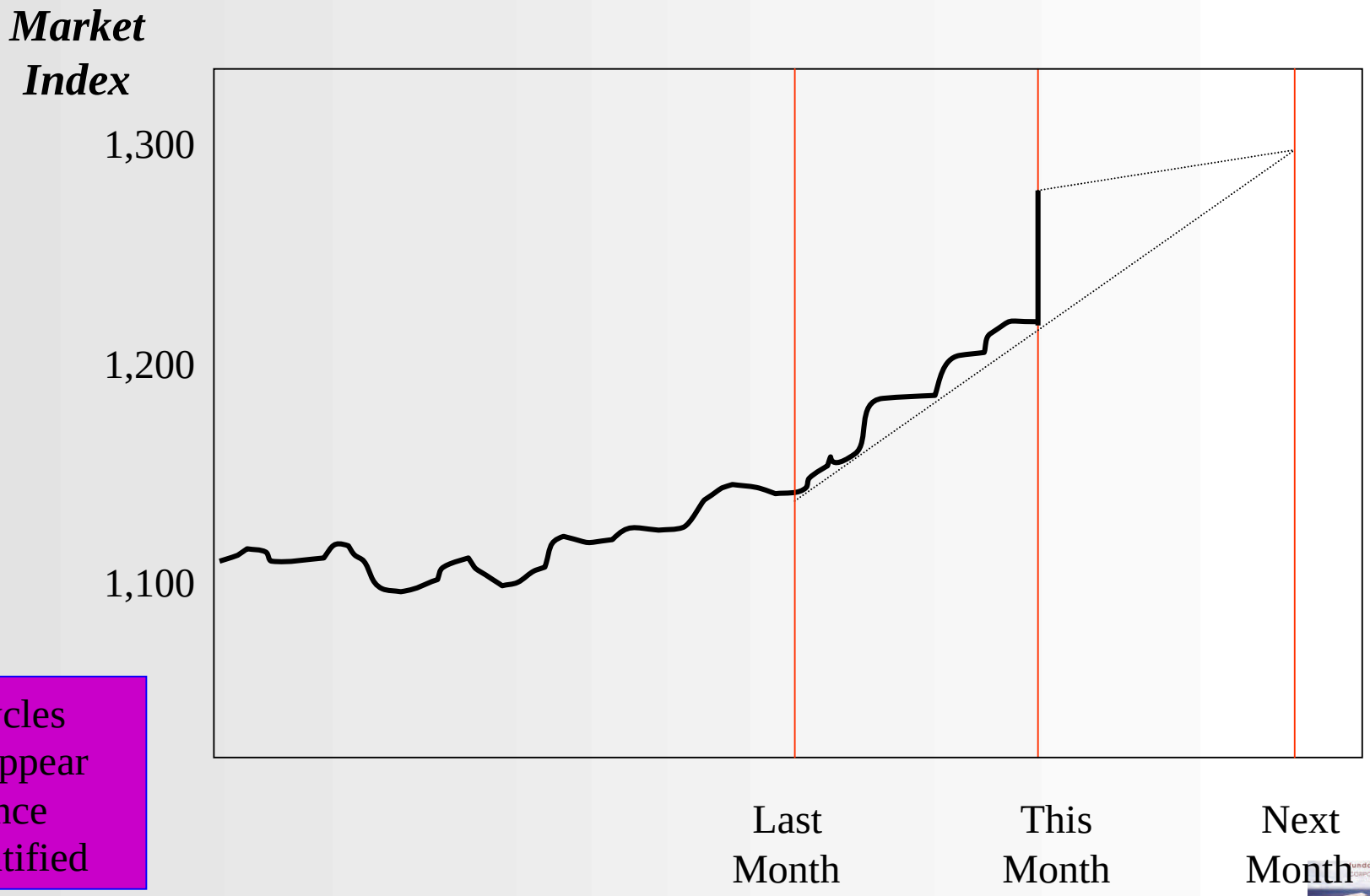
Random Walk Theory



Cycles disappear once identified

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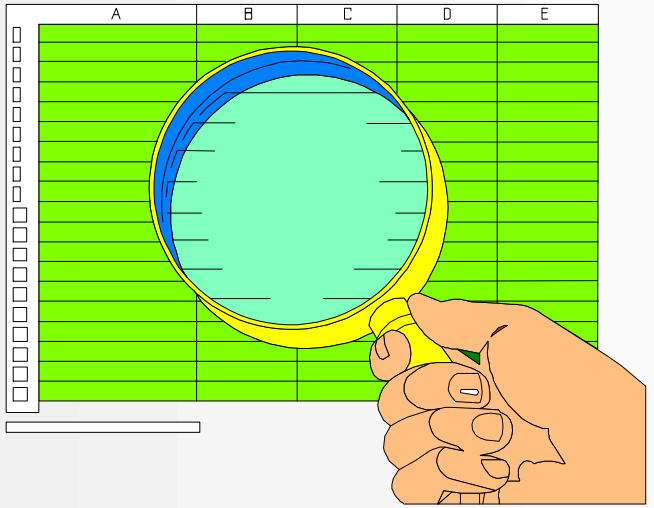
Another Tool

- **Fundamental Analysts**
  - Research the value of stocks using NPV and other measurements of cash flow



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Efficient Market Theory

- Weak Form Efficiency
  - Market prices reflect all historical information
- Semi-Strong Form Efficiency
  - Market prices reflect all publicly available information
- Strong Form Efficiency
  - Market prices reflect all information, both public and private

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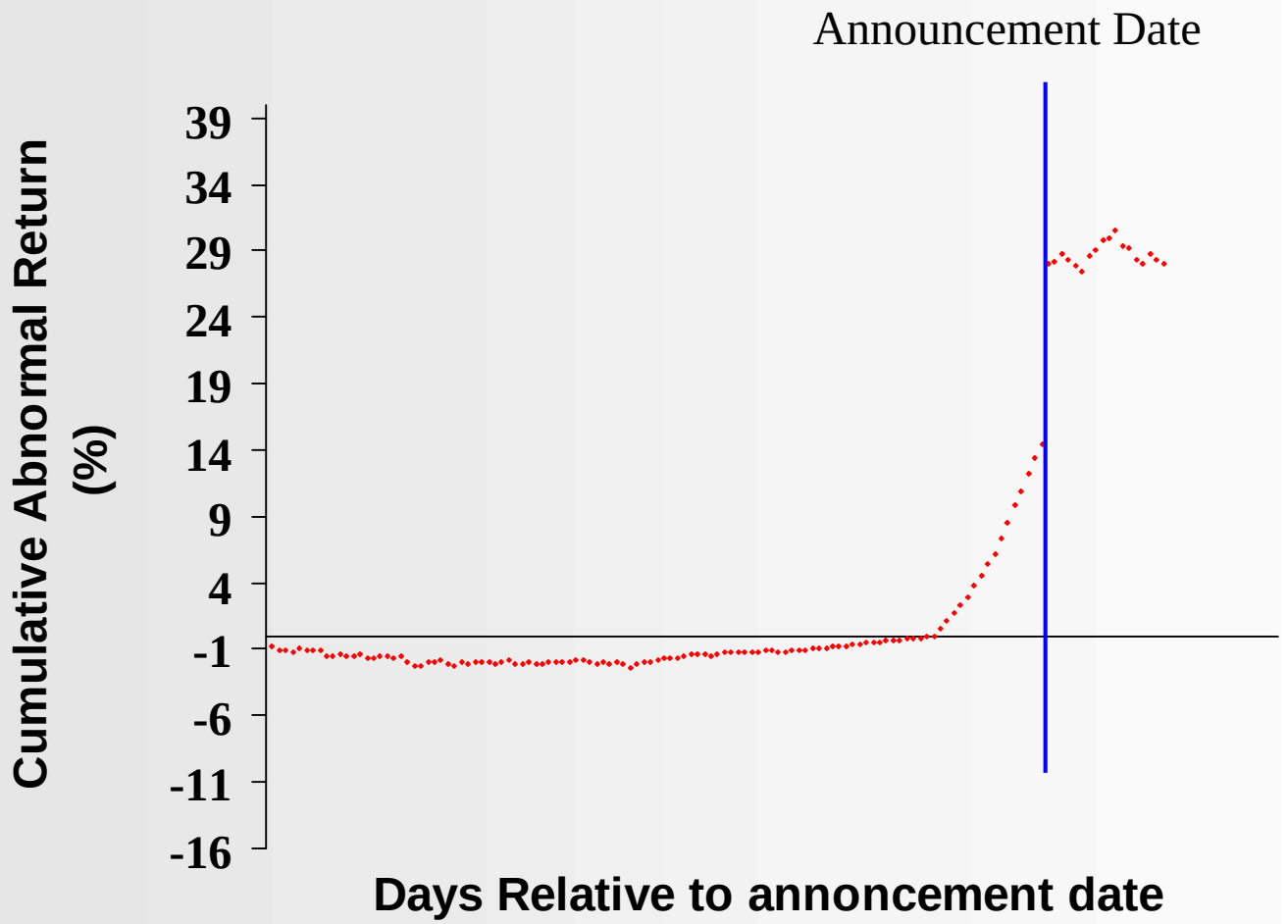
Efficient Market Theory



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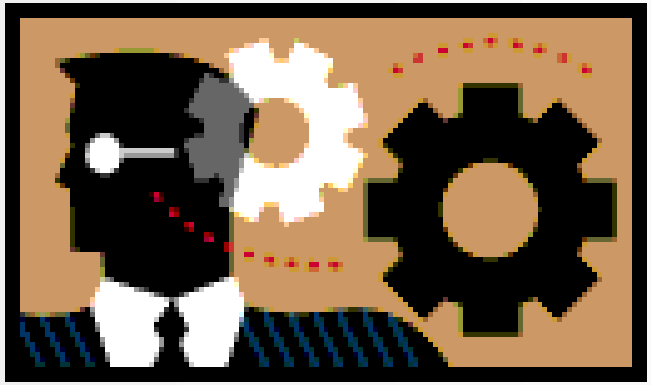
Behavioral Finance

- Attitudes towards risk
- Beliefs about probabilities



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