# Efficient Capital Markets

Do security prices reflect the effect of all information?

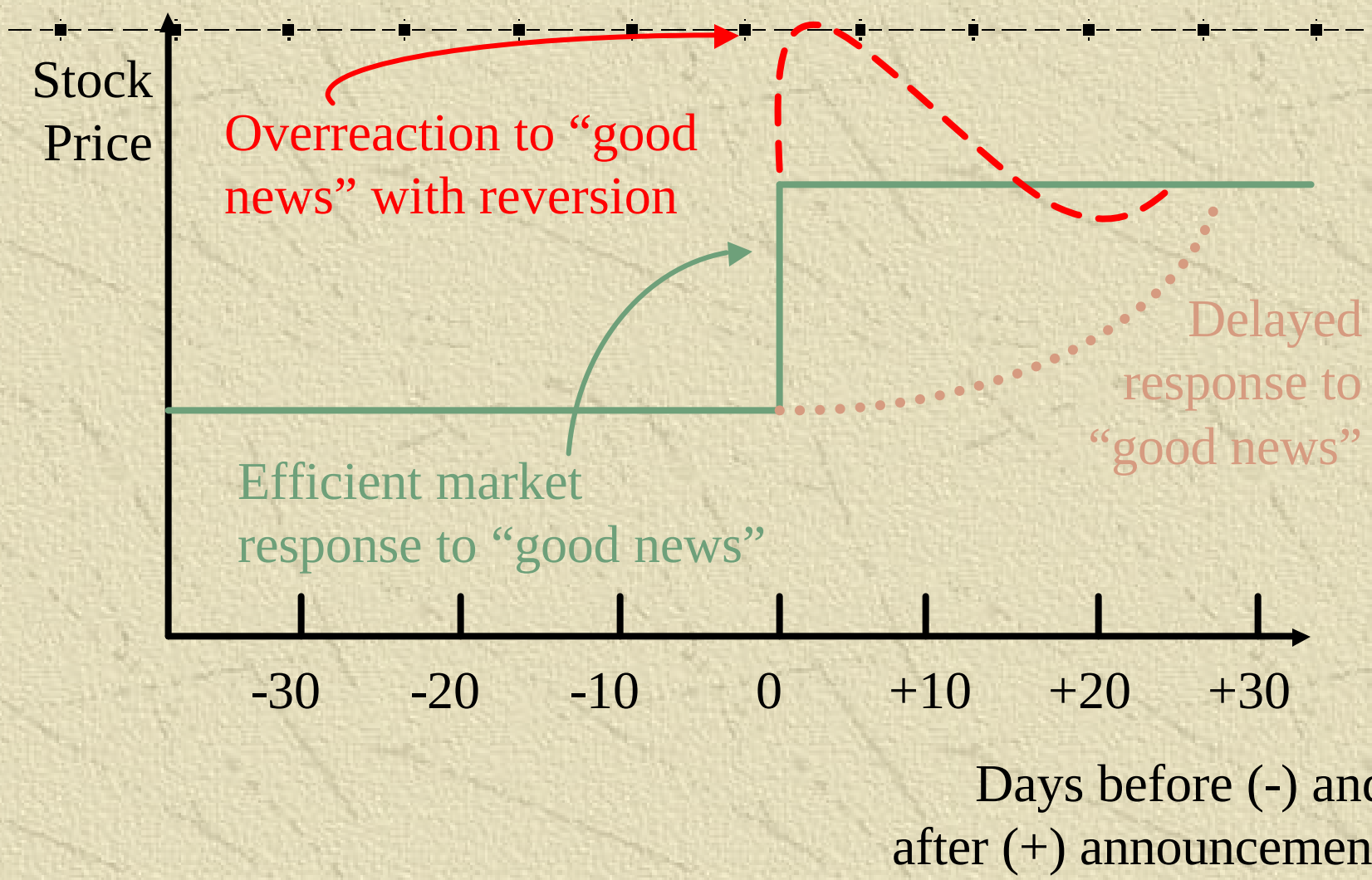
# What is meant by efficiency?

- Efficient Capital Markets:
  - security prices adjust rapidly to the arrival of new information
    - *Efficient Markets Hypothesis (EMH)*

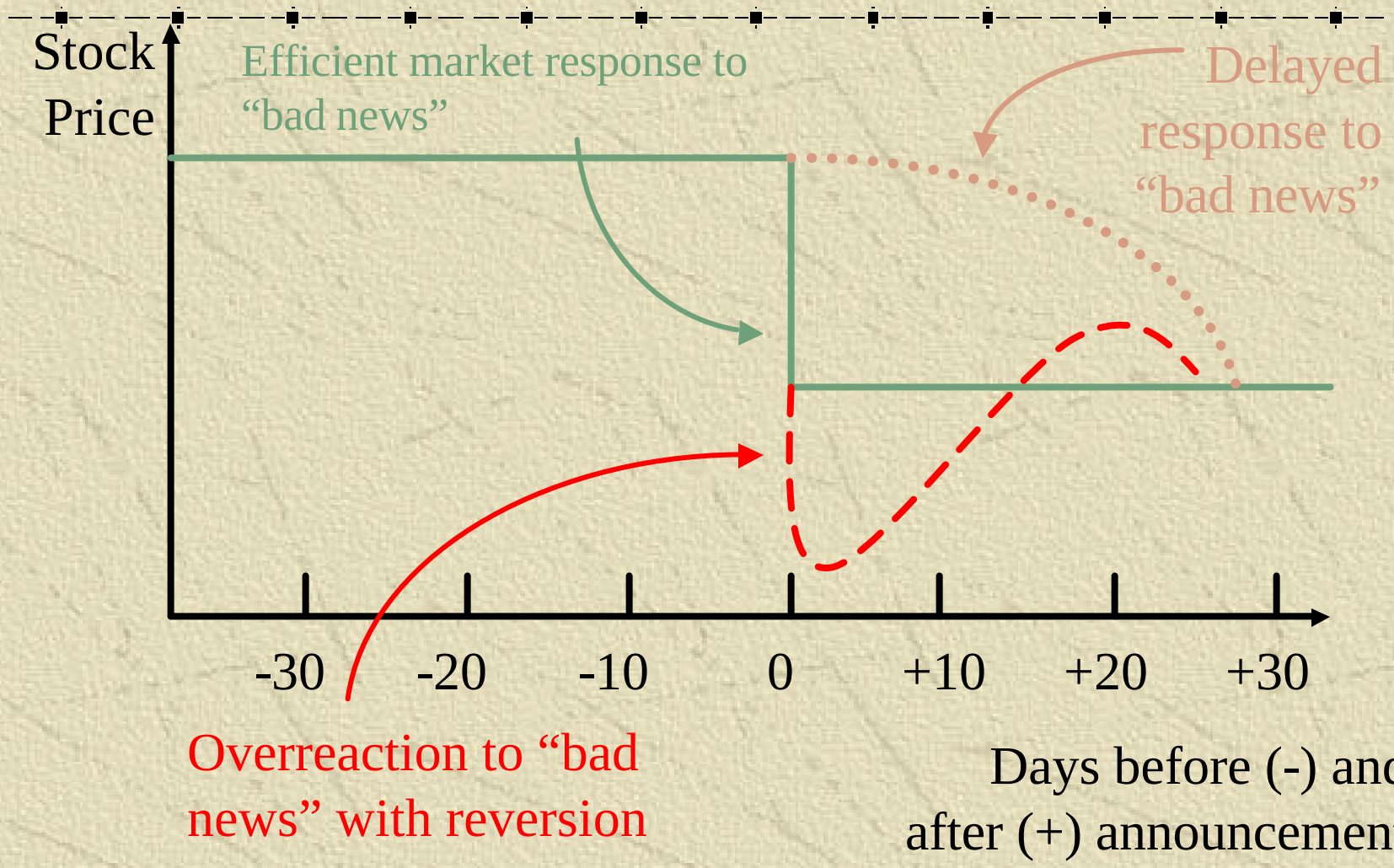
# Market Efficiency-- Continued

- Why should we expect mkts. to be efficient?
  - There are a large # of profit-maximizing participants that analyze & value securities
  - New information comes to the mkt. randomly
  - Prices adjust rapidly to reflect the new information
- Price adjustments are imperfect, yet unbiased.

# Reaction of S.P. to New Info. in Efficient and Inefficient Markets



# Reaction of S.P. to New Info. in Efficient and Inefficient Markets



# Three Forms of Efficient-Market Hypothesis (EMH)

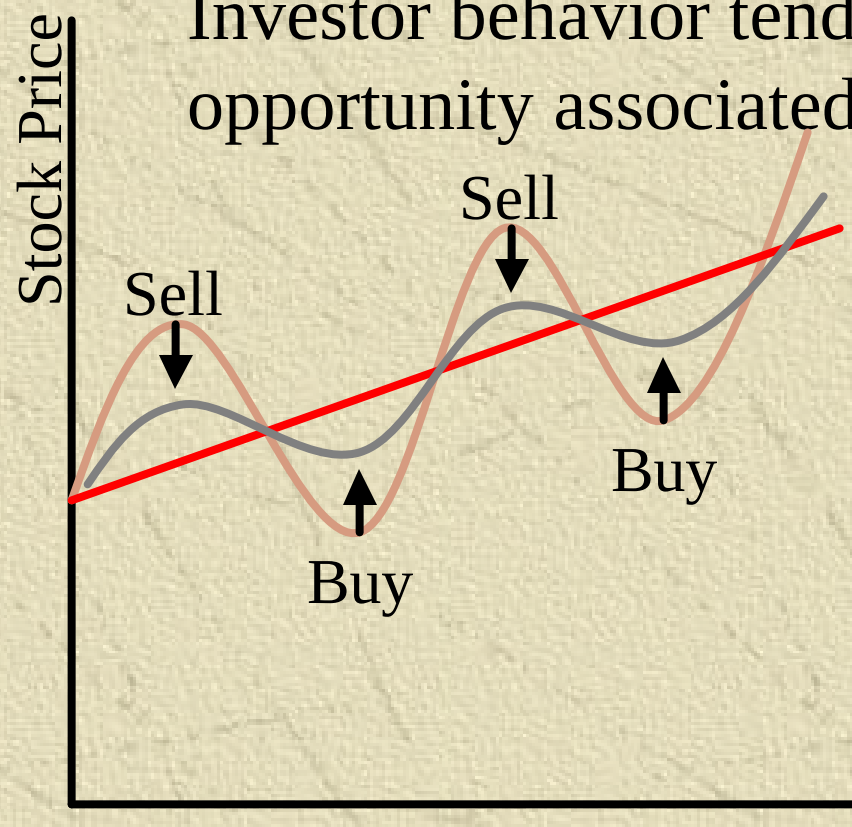
- Weak Form Efficient Market
  - Prices reflect information set of past prices
  - Random Walk
- Semi-strong Form Efficient Market
  - Prices reflect publicly available information
- Strong Form Efficient Market
  - Prices reflect all information relevant to a stock

# Efficient-market hypothesis (EMH)-- weak-form

- Current S.P. fully reflect all *security-market information. e.g.*,
  - historical prices, odd-lot trading.....
  - rates of returns are *independent* over time
  - past stock price patterns *cannot* be used to make *extraordinary profits*
- Technical Analysis is contrary to weak form of EMH

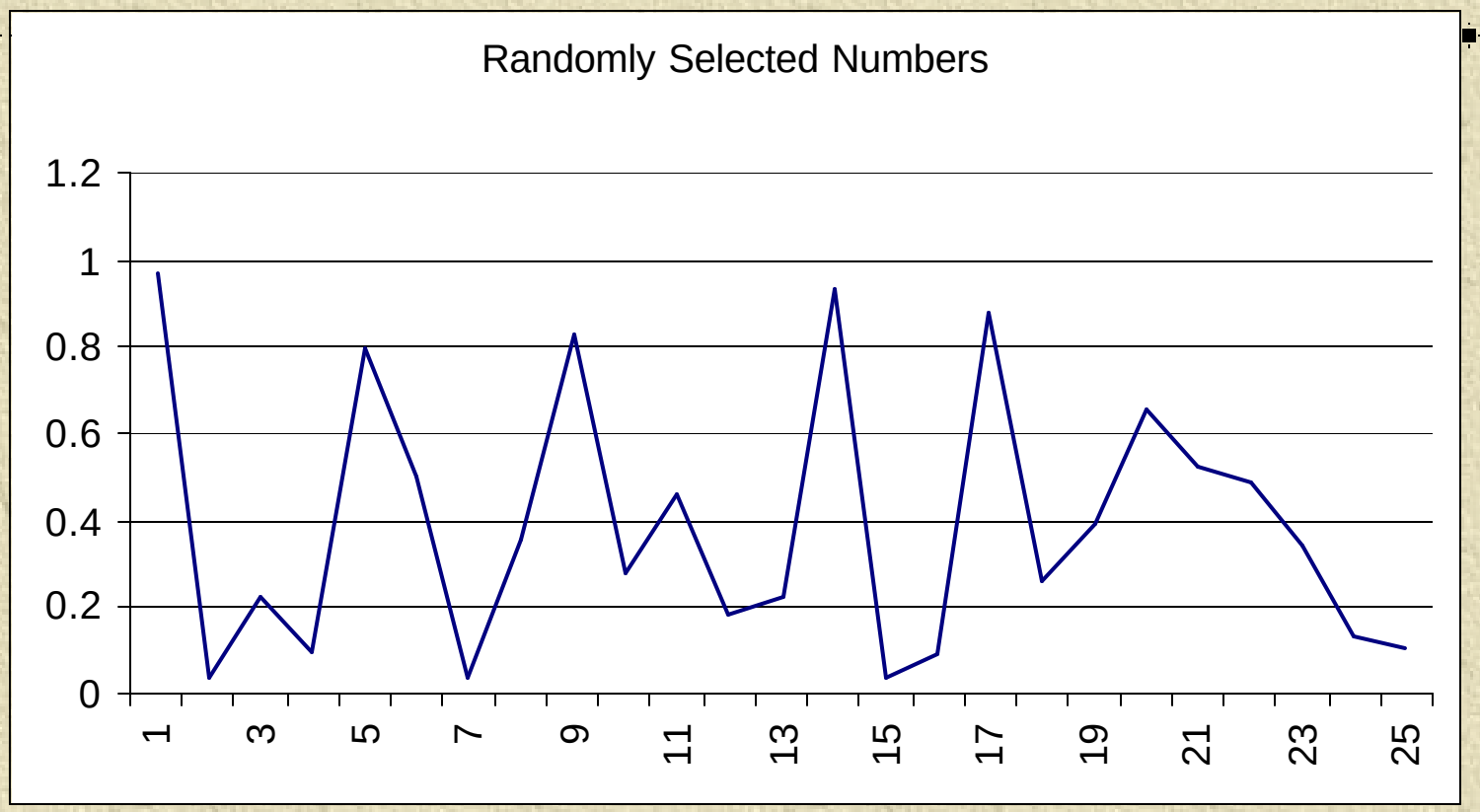
# Why Technical Analysis Fails

Investor behavior tends to eliminate any profit opportunity associated with stock price patterns.




If it were possible to make big money simply by finding “the pattern” in the stock price movements, everyone would do it and the profits would be competed away.

# What Pattern Do You See?




Random Stock Price Changes (**Random Walk**) Support Weak Form Efficiency

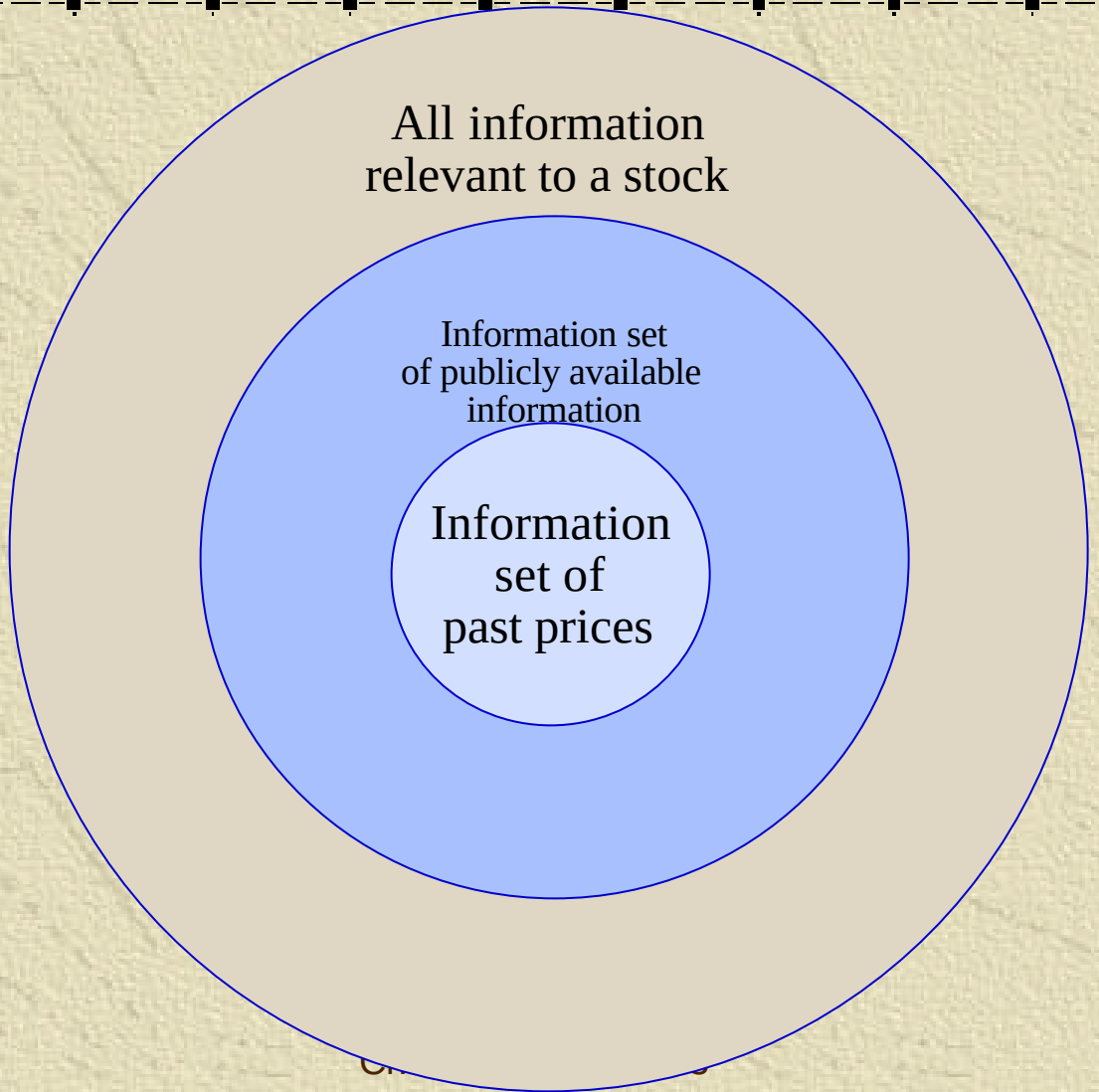
# Efficient-market hypothesis (EMH)-- semi-strong Form

- Current S.P. fully reflect all *public information. e.g.*,
  - earnings/dividends information, div. yield....
  - encompasses the weak-form EMH
  - trading decisions made based on new info. *after it is public* should not derive *extraordinary* profits

# Efficient-market hypothesis (EMH)-- strong Form

- Current S.P. fully reflect all *private or public information. e.g.*,
  - insider information
  - encompasses semi-strong form EMH
  - trading decisions based on any information, *private or public*, should not derive *extraordinary* profits!

# Relationship among Three Different Information Sets



# Tests & results of alternative EMH

- Weak-form: filter rules
  - Small filters yield above-average profits--BEFORE taking account of trading commissions.
  - SUPPORT weak-form EMH
- Semi-strong form
  - most studies support the semi-strong form of EMH

# Implications for Corporate Finance

- Accounting choices should not affect stock prices
  - unless, of course, it affected firm's cash flows
- In efficient markets, firm's decision to issue new stock should not affect current S.P.
  - Reality: some temporary price-pressure

# What the EMH Does and Does NOT Say

- Investors can throw darts to select stocks.
  - This is almost, but not quite, true.
  - An investor must still decide how risky a portfolio he wants based on risk aversion and the level of expected return.
- Prices are random or uncaused.
  - Prices reflect information.
  - The price CHANGE is driven by *new* information, which by definition arrives randomly-- thus, the "**Random Walk.**"
  - Therefore, financial managers cannot "time" stock and bond sales.