Equity

Market Efficiency

Exam Focus

- Why is efficiency important
  - How efficient is a market?
    - Theory and practice
    - Can we "beat the market"?
- Understanding "price anomalies"
  - How this links to behavioral finance

What Are Efficient Capital Markets?

Efficient in this context means **informational efficiency:** security prices quickly and fully reflect available information in a statistical sense.

Prices are efficient with respect to a particular information set if investors **cannot** use that information to **earn positive abnormal (risk-adjusted) returns on average** (i.e., cannot "beat the market").

Efficient Market Hypothesis (Fama, 1970)

Form	Market Prices Reflect			How Do You Beat the Market?
	Past market data (prices and volumes)	Public information	Private information	
Weak form	√			No value in technical analysis (using past price and volume data)
Semistrong	√	√		Inside information
Strong form	√	√	√	No one can beat the market

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Market vs. Intrinsic Value

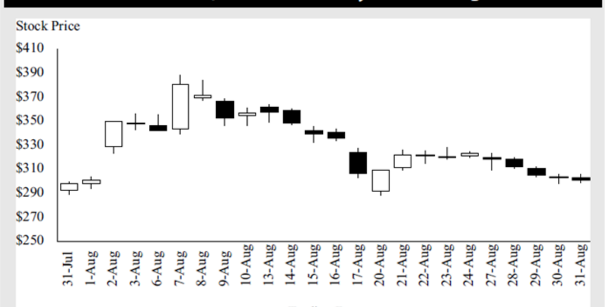
- Intrinsic value is the value that rational investors would place on an asset with full knowledge of its characteristics.
- Active investors seek to find assets where IV ≠ MV to earn excess return.
- Passive investors earn a fair risk-adjusted return but do not aim to beat the market.
- On average, active funds underperform the market, after fees.

Test of Efficiency

- Weak form
  - Test for patterns and results of specific trading rules
  - Evidence indicates developed markets are weak form efficient
- Semistrong
  - Event studies check reaction to news
  - Evidence suggests developed markets may be semistrong efficient
- Strong form
  - Test whether trading on inside information generates excess returns
  - Evidence is consistent with markets not being strong form efficient

Illustration of Impact of News

Exhibit 2: Price of Tesla, Inc. Stock: 31 July 2018–31 August 2018



- 1 Aug—After the market closes, Tesla reports smaller-than-expected cash burn for their most recent quarter.
- 2 Aug—Elon Musk notifies the Tesla BoD that he wants to take the company private. This is not public information at this point.
- 7 Aug—Before the market opens, the FT reports that a Saudi fund has a $2bn investment in Tesla. Musk tweets, “Am considering taking Tesla private at $420. Funding secured.”
- 24 Aug—Musk announces that he no longer intends on taking Tesla private.

Pricing Anomalies

- Observed inefficiencies that may lead to consistent mispricing . . . (or not)
- Can be categorized into:

Time Series

- Calendar
- Momentum
- Overreaction

Cross-Sectional

- Size
- Value

Other

- Closed-ended inv. fund discounts
- IPO pricing
- Earnings surprises

Impact of Behavioral Biases

- Investors may not consider all information and may not act rationally
- If the market as a whole does not move rationally, mispricings may occur—for example, from:
  - Loss aversion (rather than risk aversion)
  - Herding
  - Overconfidence
  - Information cascades