

Chapter 13: Investor Behavior and Capital Market Efficiency

Note: Only responsible for sections 13.1 through 13.6

Fundamental question: **Is the market portfolio efficient?**

13.1 Competition and Capital Markets

A. Identifying a Stock's Alpha

=> **if new information arrives and prices don't change, securities will fall off the securities market line (SML)**

=> difference between expected return and required return (from SML) equals:

$$\alpha_s = E[R_s] - r_s \quad (13.2)$$

where:

$$\begin{aligned} r_s &= \text{required return on } s \\ &= r_f + \beta_s \times (E(R_{Mkt}) - r_f) \end{aligned} \quad (13.1)$$

Note: This is same as 12.1 and 10.11.

B. Profiting from Non-Zero Alpha Stocks

=> investors rushing to buy positive alpha stocks and sell negative alpha stocks will drive the alphas to zero

1) **price of positive alpha stocks will rise as investors buy them**

=> **as price rises, expected return (and alpha) drop**

2) **price of negative alpha stocks will fall as investors sell (or short-sell) them**

=> **as prices fall, expected return (and alpha) rises**

Note: It is possible that prices will correct before trading occurs

=> no one will be willing to sell positive alpha stocks or buy negative alpha stocks.

Key question: **How quickly does this correction occur?**

13.2 Information and Rational Expectations

A. Informed vs. Uninformed Investors

=> **informed investors will have to take advantage of uninformed investors that don't simply buy and hold market index funds**

B. Rational Expectations

Rational expectations: all investors correctly interpret and use their own information as well as information that can be inferred from market prices or the trades of others.

=> for any investors to earn positive alphas, other investors must:

1. **not have rational expectations so that mistakenly believe will earn positive alphas when actually earning negative alphas, or**
2. **care about something besides expected return and volatility**

13.3 The Behavior of Individual Investors

A. Underdiversification and Portfolio Biases

=> evidence suggests that households are not well diversified:

1. **hold few stocks**
2. **holdings often concentrated in same industry or are geographically close**
3. **hold stock in company work for**

B. Excessive Trading and Overconfidence

=> the market portfolio is passive and requires little rebalancing

=> stocks trade more often than CAPM suggests and individuals are particularly prone to active trading

Note: returns reduced by transaction costs

Reasons:

1. overconfidence bias: **individuals tend to overestimate their knowledge and ability**

=> **trading seems to increase with overconfidence**

=> **men tend to be more overconfident and tend to trade more**

2. sensation seeking: **some individuals seek novel and risk-taking experiences**

=> such risk-seeking individuals tend to trade more

C. Individual Behavior and Market Prices

=> to make market inefficient, behavior of uninformed investors must be correlated

=> otherwise cancel out

13.4 Systematic Trading Biases

A. Hanging on to Losers and the Disposition Effect

Disposition effect: **investors tend to hang on to losers and sell winners**

Possible explanations:

=> investors seem to take more risk in face of possible loss

=> investors reluctant to admit a mistake by taking a loss

Downside of behavior:

=> higher taxes: **selling winners creates taxable income but selling losers would reduce taxable income**

=> **losing stocks tend to underperform winners over the next year**

B. Investor Attention, Mood, and Experience

1. investors tend to buy stocks that have been in the news

=> advertising, high trading volume, extreme (positive or negative) returns

2. investors affected by mood

=> stock returns higher when sunny in New York City

=> stock returns worse in countries that lose world cup

3. investors put too much weight on own experience

=> people who grew up when stock returns high tend to invest more in stocks

C. Herd Behavior

Herd behavior: **tendency of investors to make similar trading errors as imitate other investors**

=> leads to correlation between trading behavior by investors

Reasons:

1. trying to follow lead of better-informed investors
2. individuals don't want to underperform peers
3. professionals don't want to stray too far from peers

D. Implications of Behavioral Biases

=> might be possible for sophisticated investors to profit from these biases

13.5 The Efficiency of the Market Portfolio

Conditions for sophisticated investors to profit from mistakes by biases:

1. **significant enough to move prices**
2. limited competition to exploit mispricing

A. Trading on News or Recommendations

1. Takeovers: **price jumps enough at announcement that alpha gone**
2. Stock Recommendations: **stocks seem to overreact to buy recommendations (despite activity by short sellers)**
=> no overreaction if news at same time

B. The Performance of Fund Managers

- => on average, fund managers earn positive alphas before transaction costs
- => **after transaction costs, average fund has negative alphas**
- => **positive alphas for funds in one year tend to not be repeated**

Reason: investors flock to good managers, but the more money a manager has to manage, the harder it is to find good opportunities

C. The Winners and Losers

- => **most individual investors should hold the market**
- => **professionals may earning extra return, but little of it is passed on to investors**

13.6 Style-Based Techniques and the Market Efficiency Debate

A. Size Effects

1. Excess Return and Market Capitalization

- => **small cap stocks have higher betas but have positive alphas**
- => alphas for individual portfolios insignificantly different from zero
- => joint test of whether all 10 portfolios have zero alphas rejected

2. Excess Return and Book-to-Market Ratio

Growth stocks: **low book to market ratio**

Value stocks: **high book to market ratio**

=> **value stocks tend to have higher betas but positive alphas**

=> alphas of individual portfolios insignificantly different from zero

=> joint test of whether all 10 portfolios have zero alphas rejected

3. Size effects and Empirical Evidence

Basic idea: **securities with positive alphas will tend to have lower prices other things equal.**

=> **on average, low value securities (high book to market) should provide positive alphas**

B. Momentum

=> **best performing stocks over prior 6-12 months have positive alphas over the next 3 – 12 months.**

C. Implications of Positive-Alpha Trading Strategies

Two possibilities:

1. CAPM correct, but investors ignoring opportunities to earn extra return without extra risk

=> unaware of opportunities or costs exceed benefits

2. Market portfolio is not efficient so that beta with respect to market does not capture risk

a. Proxy error: **market is efficient, but proxies we use (like S&P500) are not.**

b. Behavioral biases: **biases push investors to hold inefficient portfolios**

c. Alternative Risk Preferences and Non-tradable Wealth: **investors may choose inefficient portfolios because care about risks other than volatility of their traded portfolio. For example, they may also care about the risk of their human capital**

Note: Section 13.7 (which we are skipping) derives models with more than one source of risk