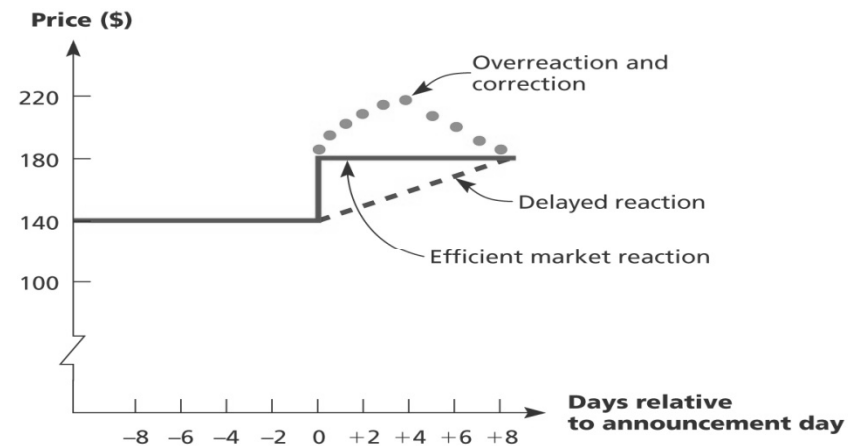


8. Efficient Markets

- Efficiency – how well do markets incorporate new information?
 - Weak form and Chartism (“technical” analysis”)
 - Semi-strong - accounting-based analysis and multivariate regressions
 - Strong form – Mutual fund managers
- Anomalies – Statistical Evidence Against Efficiency
 - Reversals, Momentum, Fads
 - Div Yields and Earnings Yields predict market returns
 - Size, Book-to-Market, Earnings drift, crashes and bubbles.

Efficient Markets

- Efficient markets – do markets incorporate available data into current prices?
 - If prices are slow to incorporate new information, markets are not efficient, and you could use new information to forecast these future prices changes.
 - Ex:
- Weak form efficiency - prices reflect information from past prices.
- Semi-strong efficiency - prices reflect all publicly available information.
- Strong-form efficiency - prices reflect all information, public and private
- Empirical tests – conducted by thousands of researchers / professionals
 - “Beating the market” – means positive “risk-adjusted” returns
 - Selection bias issue – .

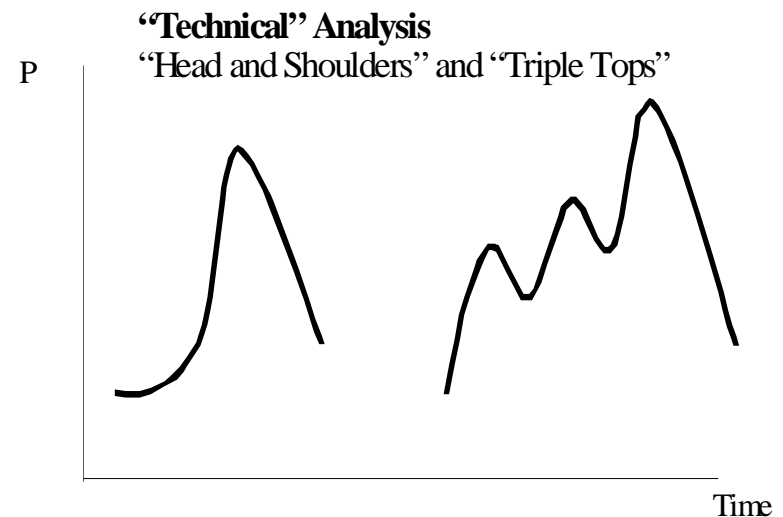


EMH: Weak Form

- Weak form – If markets are weak form efficient then
 - you cannot earn excess returns by using past prices to forecast future prices.
 - technical analysis will not earn abnormal profits.
 - prices changes are random (returns “martingale” $r_{i,t} = \alpha + r_{i,t-1} + e_i$)

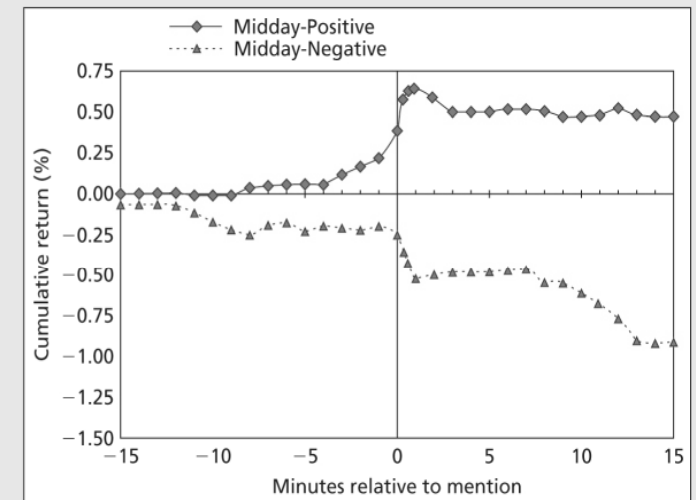
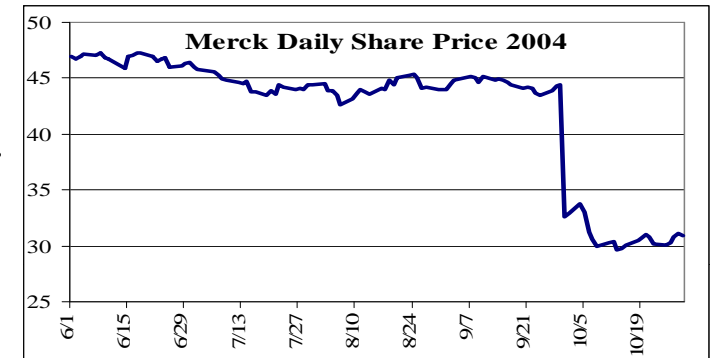
- Technical analysis – belief that stock prices display certain tendencies or shapes.
 - Dow Theory - Primary (long), Secondary (interm) and Tertiary (daily) trends
 - Head and shoulders, triple tops, butterfly, Momentum, Buying on dips
 - Resistance and Support –

- Logically, there should be no simple rule that will earn abnormal returns
 -



EMH: Semi-strong form

- Semi-strong – If markets are semi-strong-form efficient, then
 - you cannot earn abnormal returns by using public information to forecast prices.
 - prices should quickly adjust to all new info (earnings, accounting data, etc).
- Do markets react quickly?
 - Merck pulls Vioxx in 9/30/04 before mkt opens.
 - Vioxx creates 11% of Merck's \$22.5B revenue.
 - Potential lawsuits of \$10B+.
- Squawk box – stocks critiqued on CNBC TV show
 -
- Moral: Stock prices react quickly to new info.



EMH: Strong Form

- Strong form – If markets are strong-form efficient, then
 - you cannot forecast stock prices with any information, either public or private.
 - We know its not true literally -- e.g., for company insiders.
 - Who else might be well informed?
- How about professional money mgrs?
 - About half beat market, on avg, each year,
 - Style investing may explain much
 - WSJ “dart” contests (1990-2002):

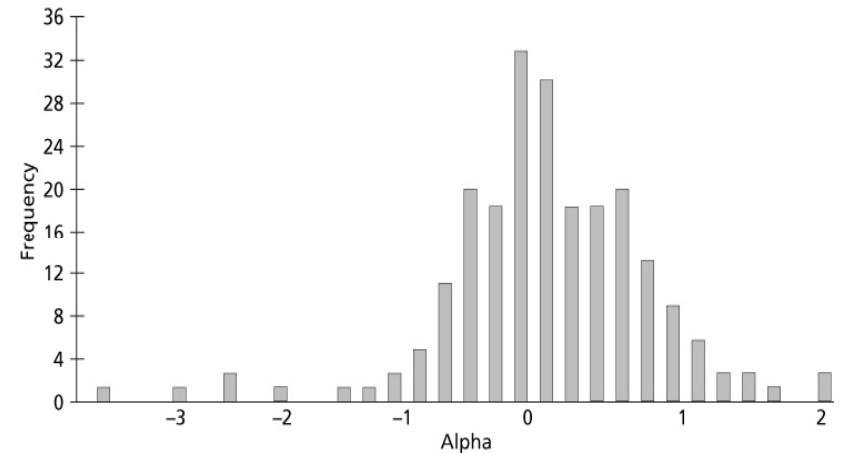
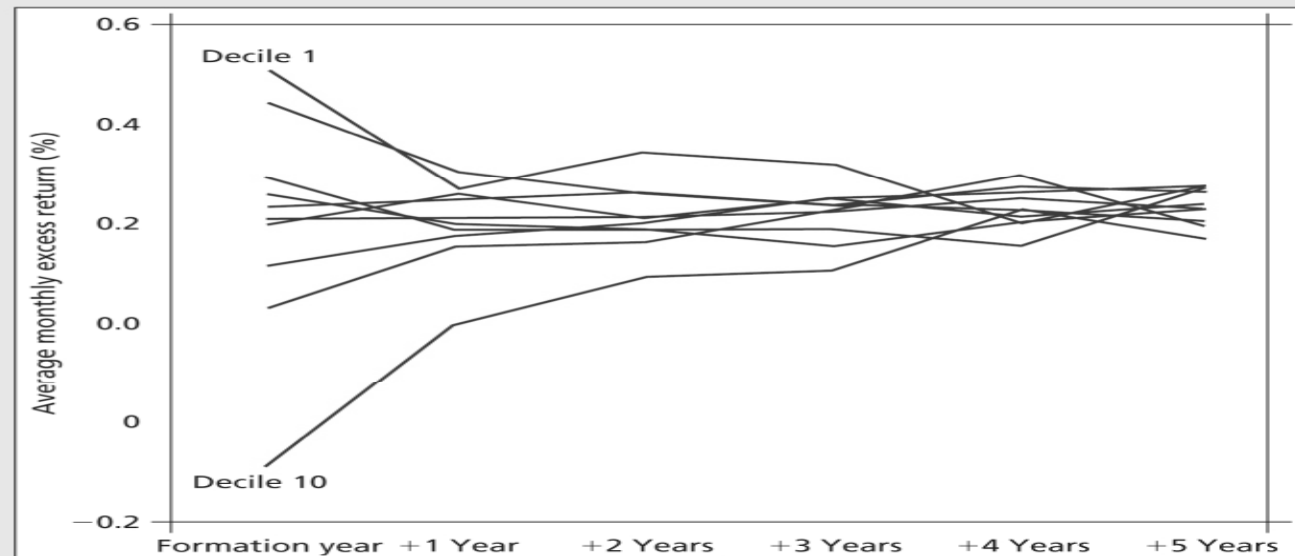


FIGURE 8.8

Persistence of mutual fund performance. Performance over time of mutual fund groups ranked by initial year performance

Source: Mark M. Carhart, "On Persistence in Mutual Fund Performance," *Journal of Finance* 52 (March 1997), pp. 57–82. Reprinted by permission of the publisher, Blackwell Publishing, Inc.

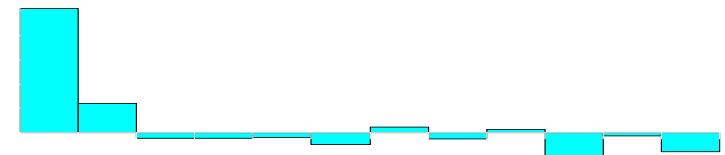
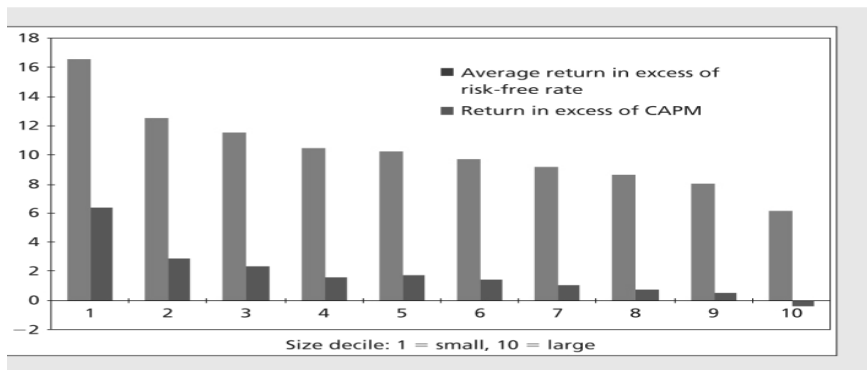


Anomalies – Evidence Against Efficiency ⁶

- Anomalies – in this sense, are facts that are difficult to reconcile with efficient mkts.
 - If we can predict (risk adjusted) market returns, then markets are not “efficient”.
- Possible violations of weak-form efficiency
 - Reversals (short horizon) – winners under-perform over 1-3 months.
 - Momentum (interm horizon) – winners outperform over 3-12 mo.
 - Fads (long horizon) – winners under-perform (mean reversion).
 - Crashes and bubbles - 1999-00 tech bubble and 1987 crash
 - .
- Predictors of broad market (Or time-varying risk premia?)
 - Div yield and earnings yield may predict market returns.
 - Credit spreads may predict bond returns.
- Possible violations of semi-strong form efficiency
 - P/E effect - Low P/E portfolios have higher returns (Basu 77 83)
 - Small firm (in Jan) – small firms outperform, Jan 1-15 (Banz 81 Keim 83).
 - B/M ratios – high B/M portfolios earn high returns (indep of beta).
 - Post earnings announcement drift – prices slow to adjust to earnings.
 - Mutual funds amending name (but not nec strategy) attract extra dollars.

Anomalies: Size Effect 1926-2005

- Small firm Anomaly – small firms tend to outperform, Jan 1-15
 - Tax loss selling/repurchase? Worst have greatest bounce but no Dec effect.
 - Why not arbitrage? – .



- Earnings Announce – prices should react quickly after announcements, but drift.
- Book to market -

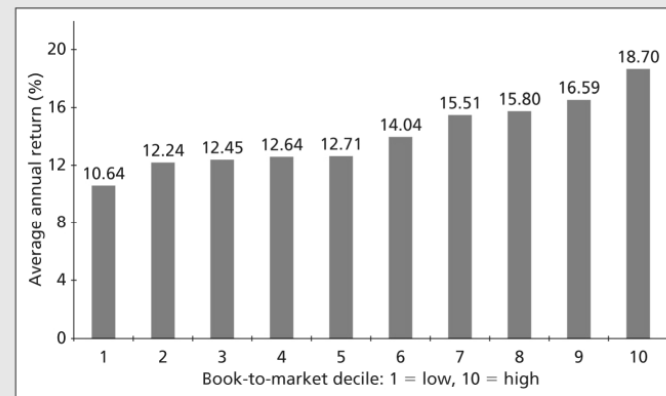
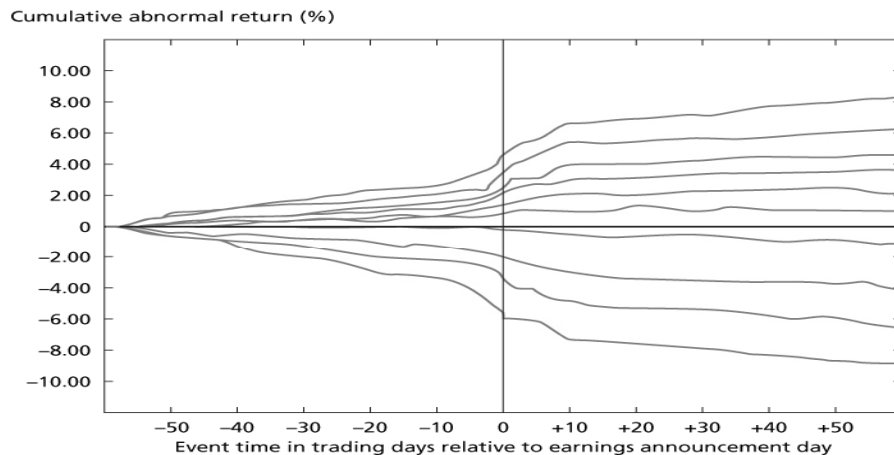


FIGURE 8.4

Average annual return as a function of the book-to-market ratio, 1963–2005.

Source: Web site of Prof. Kenneth French, http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

Anomalies: Evidence Against Efficiency?

- Email: 10/17 at 7:21pm:
hi Imogene i hope this is your email. I was glad to meet you the other day. I expect you was excited about New York. So much so much happening all the time, lots of great opportunities. And speaking of opportunities, the deal I was speaking you about yesterday included a company called Tex-Homa (TXHE).
- It's already heading up, but the big info isn't even out yet, so there's still time. I have got this shares already and made 2000. I suggest you to do the same today. Hope this helps you out. I'll see you this weekend. Yours Imogene Sapp

- **Price and Volume Graphed Below**



Tips for the Savvy Investor from Efficient Markets

- More support for “passive” investment strategies
 - Note: But what would happen if everyone was a “passive” investor?
- Low cost, low commission diversified portfolios should do reasonably well..
 - That is, “picking” investments can still be “fun”.
 - If you are diversified, you shouldn’t do too much damage.
- Role for investment advice
 - Portfolio allocation / risk profile; Tax and estate planning; Diversification
- Do not pay a lot for dubious investment advice.
 - If someone knew of a mis-priced stock, they shouldn’t tell you.
 - Rare to consistently beat mkt (requires uncommon and exceptional analysis).
 - Casual efforts to pick stocks not likely to add value
 - Serious and uncommon analyses likely required for differential insight.