



# Investment Philosophies

Aswath Damodaran  
[www.damodaran.com](http://www.damodaran.com)

# What is an investment philosophy?

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- An investment philosophy is a coherent way of thinking about markets, how they work (and sometimes do not) and the types of mistakes that you believe consistently underlie investor behavior.
- An investment strategy is much narrower. It is a way of putting into practice an investment philosophy.
- For lack of a better term, an investment philosophy is a set of core beliefs that you can go back to in order to generate new strategies when old ones do not work.

## Ingredients of an Investment Philosophy

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- Step 1: All investment philosophies begin with a view about how human beings learn (or fail to learn). Underlying every philosophy, therefore is a view of human frailty - that they learn too slowly, learn too fast, tend to crowd behavior etc....
- Step 2: From step 1, you generate a view about markets behave and perhaps where they fail.... Your views on market efficiency or inefficiency are the foundations for your investment philosophy.
- Step 3: This step is tactical. You take your views about how investors behave and markets work (or fail to work) and try to devise strategies that reflect your beliefs.

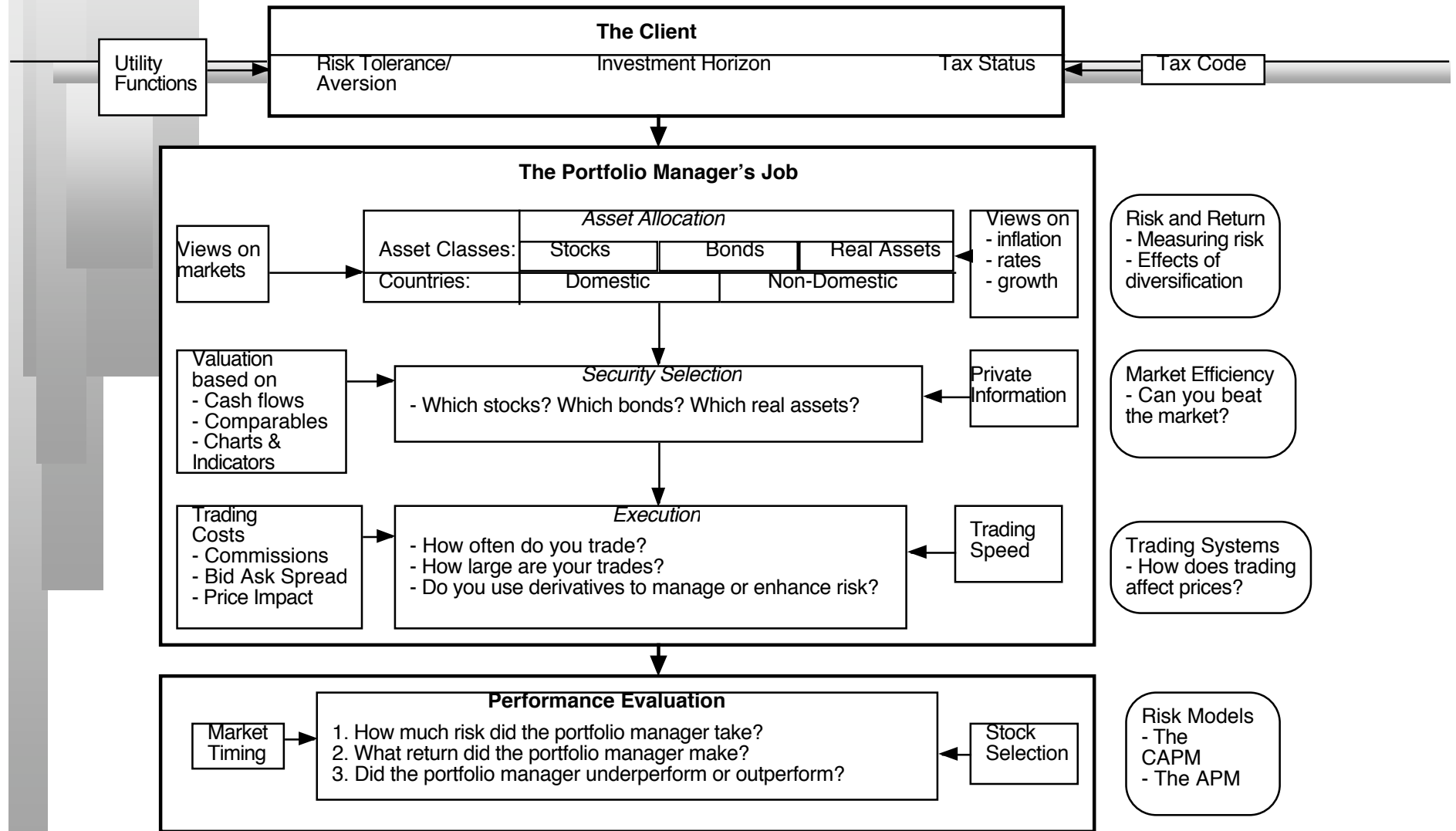
## Why do you need an investment philosophy?

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If you do not have an investment philosophy, you will find yourself:

1. Lacking a rudder or a core set of beliefs, you will be easy prey for charlatans and pretenders, with each one claiming to have found the magic strategy that beats the market.
2. Switching from strategy to strategy, you will have to change your portfolio, resulting in high transactions costs and you will pay more in taxes.
3. With a strategy that may not be appropriate for you, given your objectives, risk aversion and personal characteristics. In addition to having a portfolio that under performs the market, you are likely to find yourself with an ulcer or worse.

Figure 1.1: The Investment Process



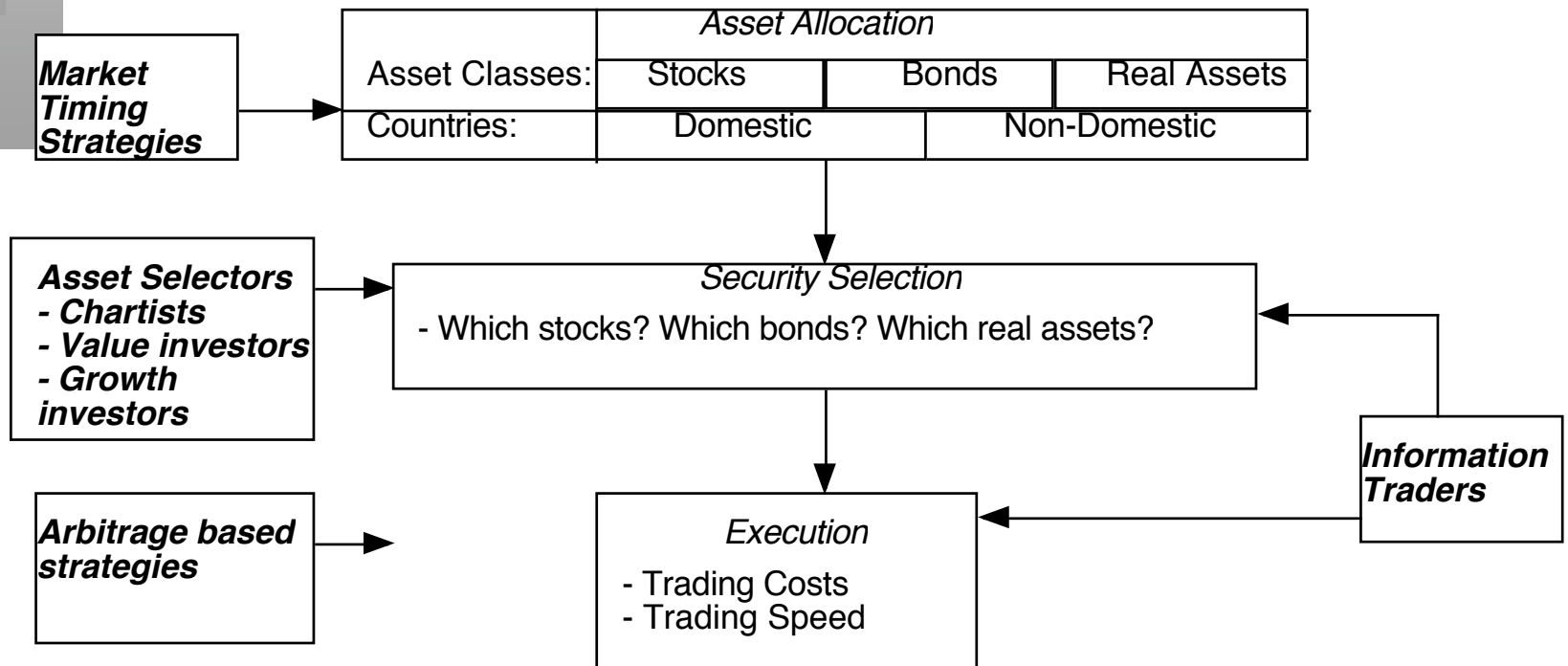
## Categorizing Investment Philosophies

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- *Market Timing versus Asset Selection:* With market timing, you bet on the movement of entire markets - financial as well as real assets. With asset selection, you focus on picking good investments within each market.
- *Activist Investing versus Passive Investing:* With passive investing, you take positions in companies and hope that the market corrects its mistakes. With activist investing, you play a role (or provide the catalyst) in correcting market mistakes.
- *Time Horizon:* Some philosophies require that you invest for long time periods. Others are based upon short holding periods.

# Investment Philosophies in Context

*Figure 1.2: Investment Philosophies*

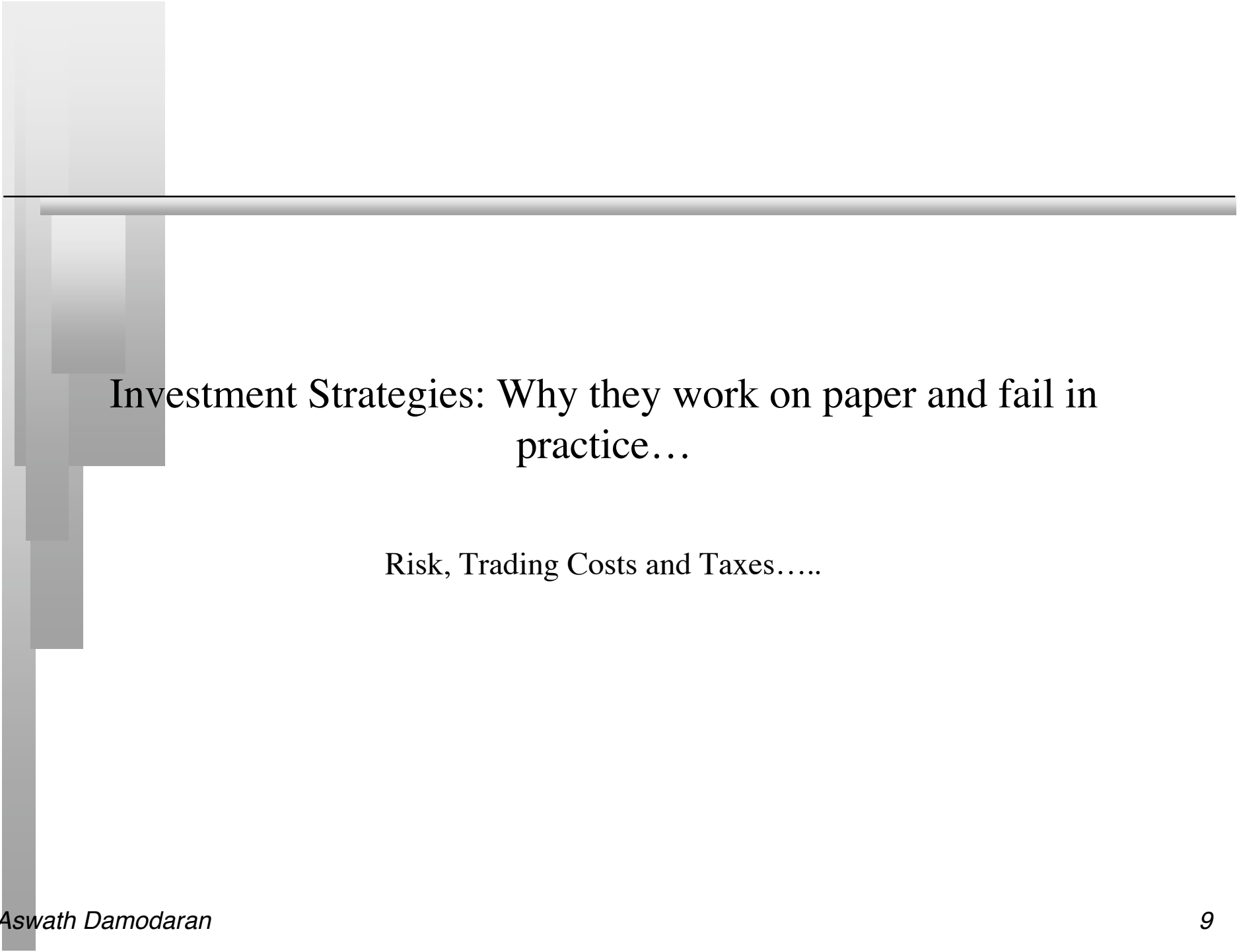


# Developing an Investment Philosophy

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- Step 1: Understand the fundamentals of risk and valuation
- Step 2: Develop a point of view about how markets work and where they might break down
- Step 3: Find the philosophy that provides the best fit for you, given your
  - Risk aversion
  - Time Horizon
  - Portfolio Size
  - Tax Status





## Investment Strategies: Why they work on paper and fail in practice...

Risk, Trading Costs and Taxes.....

## We don't have a good grasp of risk...

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- Risk, in traditional terms, is viewed as a 'negative'. Webster's dictionary, for instance, defines risk as "exposing to danger or hazard". The Chinese symbols for risk, reproduced below, give a much better description of risk

危機

- The first symbol is the symbol for "danger", while the second is the symbol for "opportunity", making risk a mix of danger and opportunity.

## We under estimate trading costs...

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- *Brokerage Cost*: This is the most explicit of the costs that any investor pays but it is by far the smallest component.
- *Bid-Ask Spread*: The spread between the price at which you can buy an asset (the dealer's ask price) and the price at which you can sell the same asset at the same point in time (the dealer's bid price).
- *Price Impact*: The price impact that an investor can create by trading on an asset, pushing the price up when buying the asset and pushing it down while selling.
- *Opportunity Cost*: There is the opportunity cost associated with waiting to trade. While being a patient trader may reduce the previous two components of trading cost, the waiting can cost profits both on trades that are made and in terms of trades that would have been profitable if made instantaneously but which became unprofitable as a result of the waiting.

## Round-Trip Costs (including Price Impact) as a Function of Market Cap and Trade Size

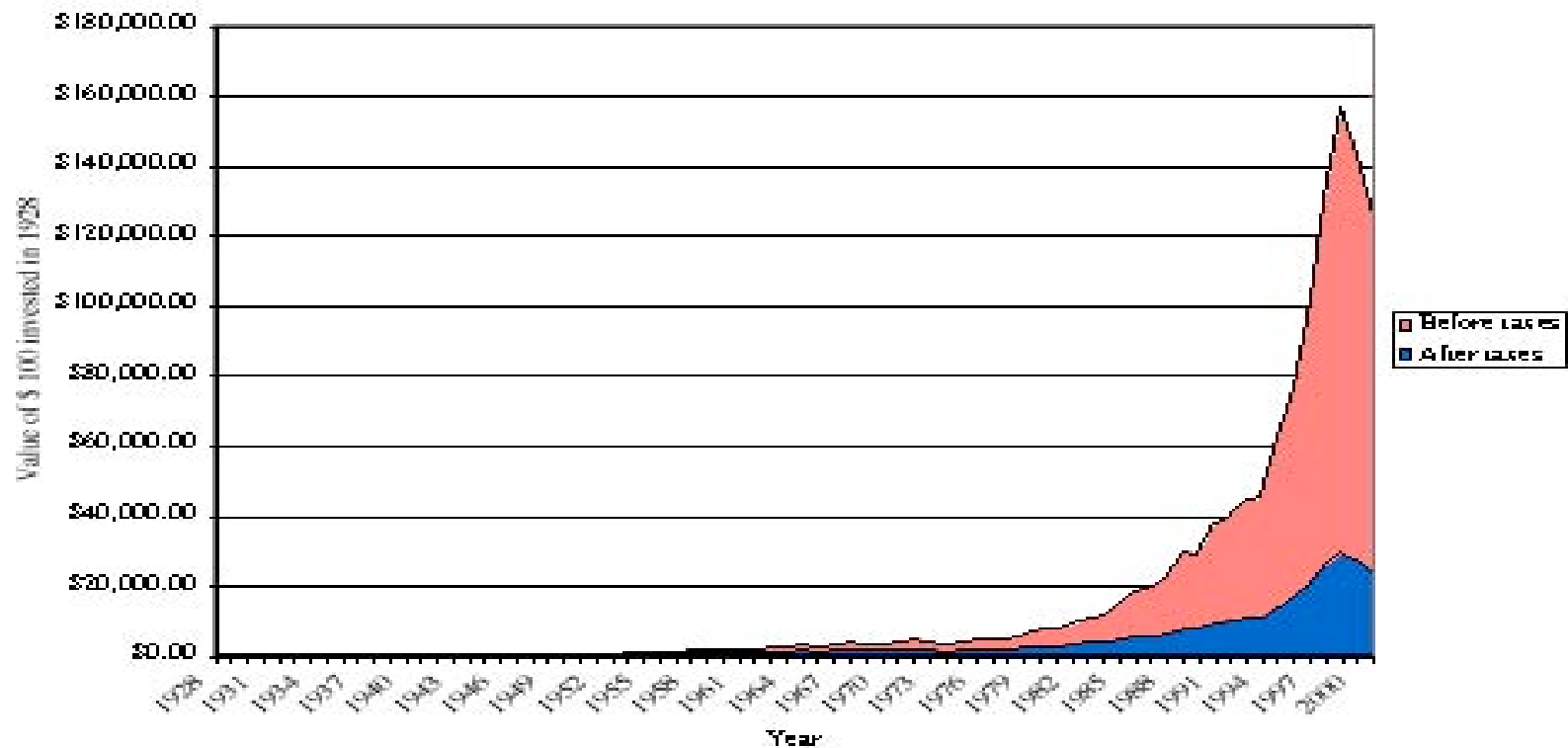
	<i>Dollar Value of Block (\$ thousands)</i>								
<i>Sector</i>	5	25	250	500	1000	2500	5000	10000	20000
Smallest	17.30%	27.30%	43.80%						
2	8.90%	12.00%	23.80%	33.40%					
3	5.00%	7.60%	18.80%	25.90%	30.00%				
4	4.30%	5.80%	9.60%	16.90%	25.40%	31.50%			
5	2.80%	3.90%	5.90%	8.10%	11.50%	15.70%	25.70%		
6	1.80%	2.10%	3.20%	4.40%	5.60%	7.90%	11.00%	16.20%	
7	1.90%	2.00%	3.10%	4.00%	5.60%	7.70%	10.40%	14.30%	20.00%
8	1.90%	1.90%	2.70%	3.30%	4.60%	6.20%	8.90%	13.60%	18.10%
Largest	1.10%	1.20%	1.30%	1.71%	2.10%	2.80%	4.10%	5.90%	8.00%

## The Overall Cost of Trading: Small Cap versus Large Cap Stocks

<i>Market Capitalization</i>	<i>Implicit Cost</i>	<i>Explicit Cost</i>	<i>Total Trading Costs (NYSE)</i>	<i>Total Trading Costs (NASDAQ)</i>
Smallest	2.71%	1.09%	3.80%	5.76%
2	1.62%	0.71%	2.33%	3.25%
3	1.13%	0.54%	1.67%	2.10%
4	0.69%	0.40%	1.09%	1.36%
Largest	0.28%	0.28%	0.31%	0.40%

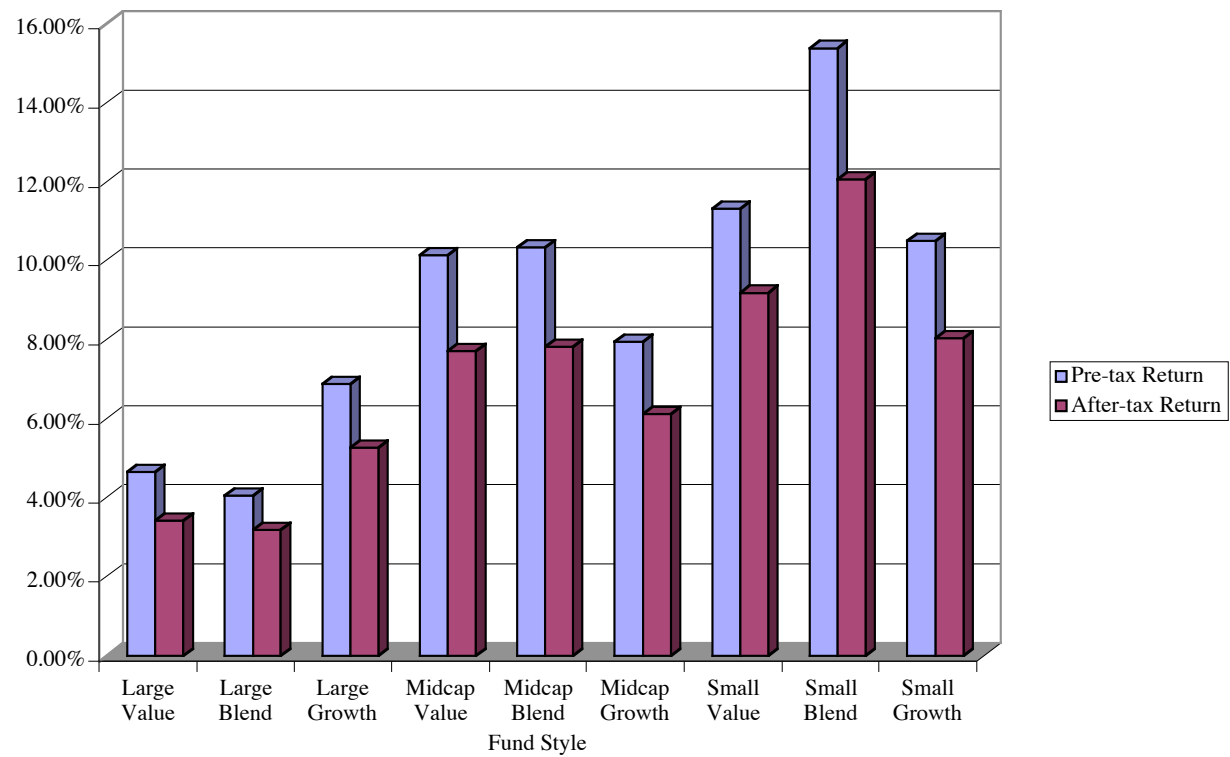
## We ignore taxes: Stock Returns before and after taxes

*Figure 5.7: Value of \$ 100 invested in Stocks: Before and After Taxes*



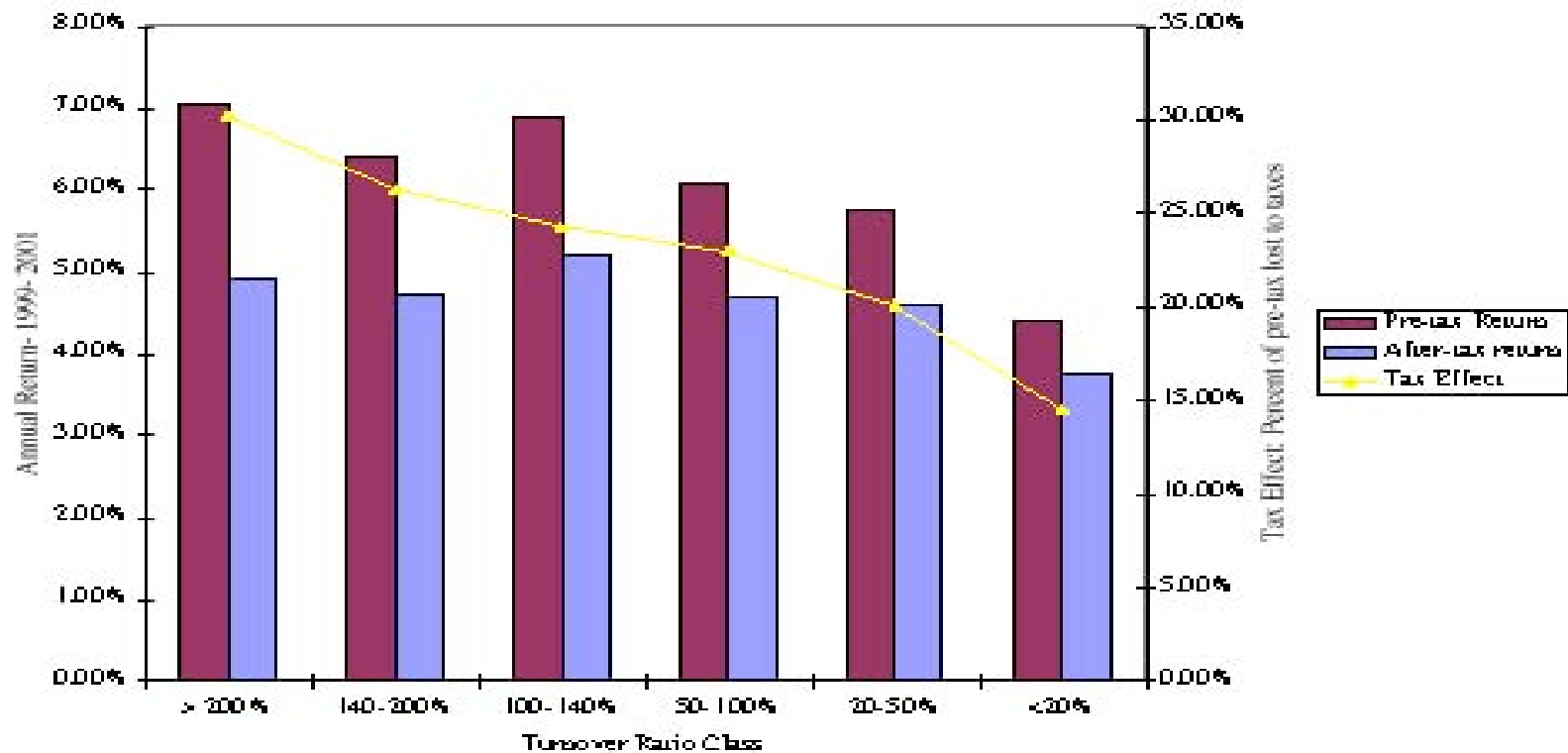
# Mutual Fund Returns: The Tax Effect

Figure 5.10: Pre-tax and After-tax Returns at U.S. equity mutual funds- 1999-2001



# Tax Effect and Turnover Ratios

Figure 5.11: Tax Effect and Turnover Ratio: U.S. Mutual Funds- 1999-2001







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# Market Timing

Aswath Damodaran

## The Payoff to Market Timing

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- In a 1986 article, a group of researchers raised the shackles of many an active portfolio manager by estimating that as much as 93.6% of the variation in quarterly performance at professionally managed portfolios could be explained by the mix of stocks, bonds and cash at these portfolios.
- In a different study in 1992, Shilling examined the effect on your annual returns of being able to stay out of the market during bad months. He concluded that an investor who would have missed the 50 weakest months of the market between 1946 and 1991 would have seen his annual returns almost double from 11.2% to 19%.
- Ibbotson examined the relative importance of asset allocation and security selection of 94 balanced mutual funds and 58 pension funds, all of which had to make both asset allocation and security selection decisions. Using ten years of data through 1998, Ibbotson finds that about 40% of the differences in returns across funds can be explained by their asset allocation decisions and 60% by security selection.

## The Cost of Market Timing

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- In the process of switching from stocks to cash and back, you may miss the best years of the market. In his article on market timing in 1975, Bill Sharpe suggested that unless you can tell a good year from a bad year 7 times out of 10, you should not try market timing. This result is confirmed by Chua, Woodward and To, who use Monte Carlo simulations on the Canadian market and confirm you have to be right 70-80% of the time to break even from market timing.
- These studies do not consider the additional transactions costs that inevitably flow from market timing strategies, since you will trade far more extensively with these strategies. At the limit, a stock/cash switching strategy will mean that you will have to liquidate your entire equity portfolio if you decide to switch into cash and start from scratch again the next time you want to be in stocks.
- A market timing strategy will also increase your potential tax liabilities. You will have to pay capital gains taxes when you sell your stocks, and over your lifetime as an investor, you will pay far more in taxes.

## Market Timing Approaches

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- Non-financial indicators
- Technical indicators such as price charts and trading volume.
- Mean reversion indicators, where stocks and bonds are viewed as mispriced if they trade outside what is viewed as a normal range.
- Macro economic variables, such as the level of interest rates or the state of the economy.
- Fundamentals such as earnings, cashflows and growth.

# 1. Non-financial Indicators

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- Spurious indicators that may seem to be correlated with the market but have no rational basis. Almost all spurious indicators can be explained by chance.
- Feel good indicators that measure how happy are feeling - presumably, happier individuals will bid up higher stock prices. These indicators tend to be contemporaneous rather than leading indicators.
- Hype indicators that measure whether there is a stock price bubble. Detecting what is abnormal can be tricky and hype can sometimes feed on itself before markets correct.

## 2. Technical Indicators

### ■ Past prices

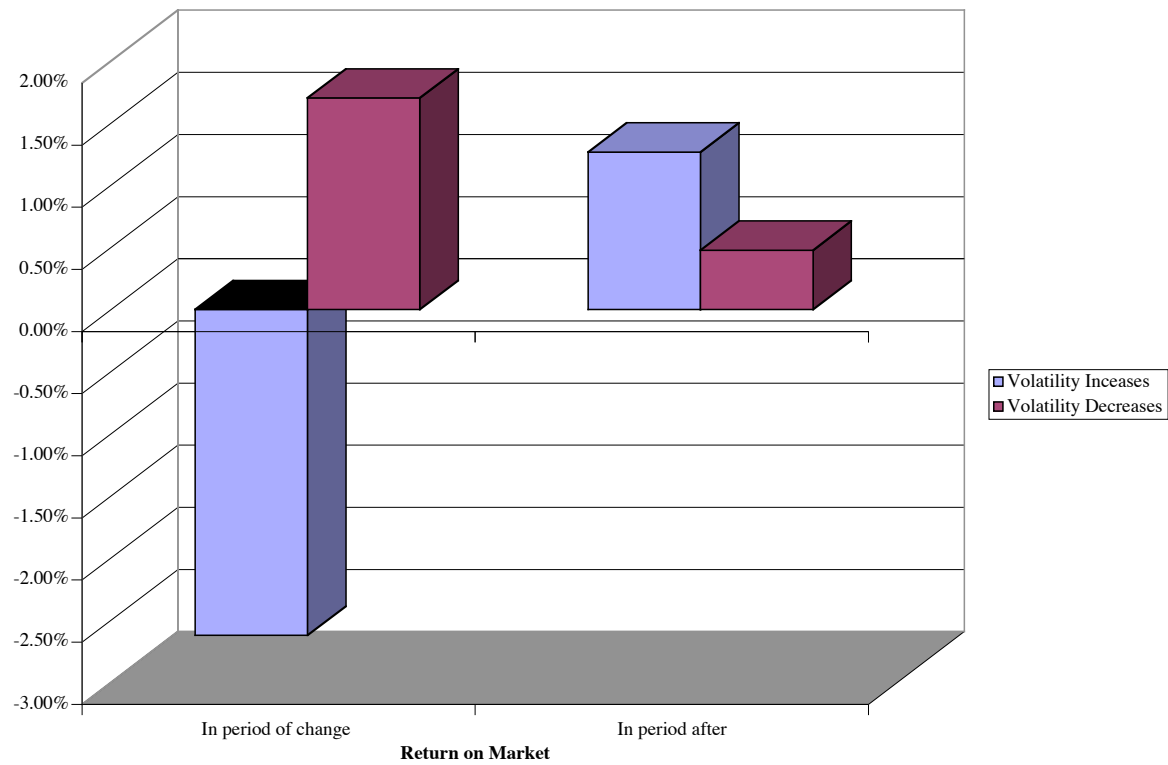
- Sell after two good years.. Or is it.... Buy after two good years...

<i>Priors</i>	<i>Number of occurrences</i>	<i>% of positive returns</i>	<i>Average return</i>
After two down years	19	57.90%	2.95%
After one down year	30	60.00%	7.76%
After one up year	30	83.33%	10.92%
After two up years	51	50.98%	2.79%

- The January Indicator: As January goes, so goes the year... or does it? According to Yale Hirsch, it works 88% of the time. If you exclude January, it works only 50% of the time...
- Trading Volume: Market up movements accompanied by heavy volume: Is it a buying opportunity or is it a selling opportunity?
- Market Volatility: High stock price volatility accompanied by low stock returns but followed by high stock returns.

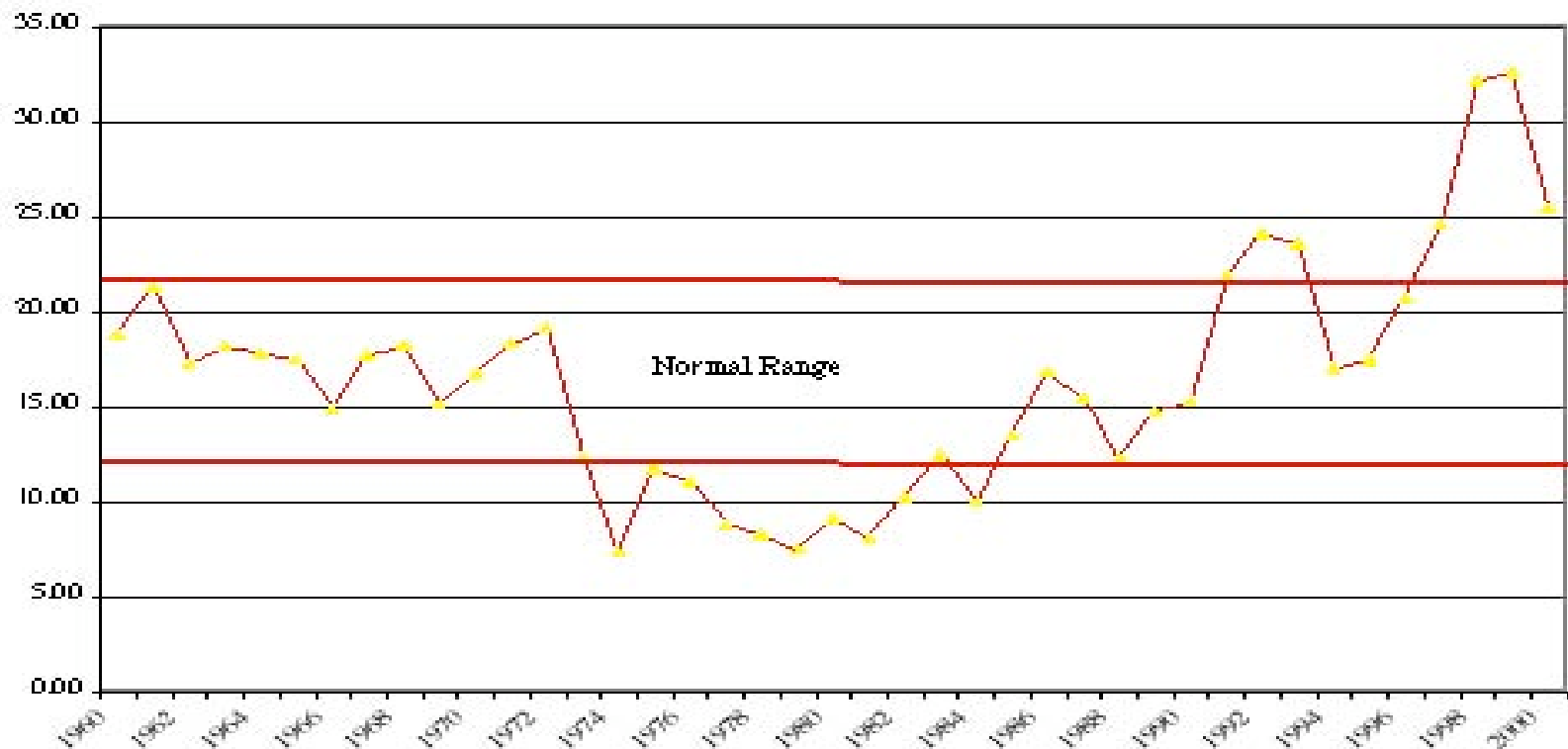
# Stock Returns and Volatility

Figure 12.1: Returns around volatility changes



### 3. Mean Reversion Measures: A Normal Range of PE Ratios?

Figure 12.2: PE Ratio for S&P 500: 1960-2001





## 4. Fundamentals

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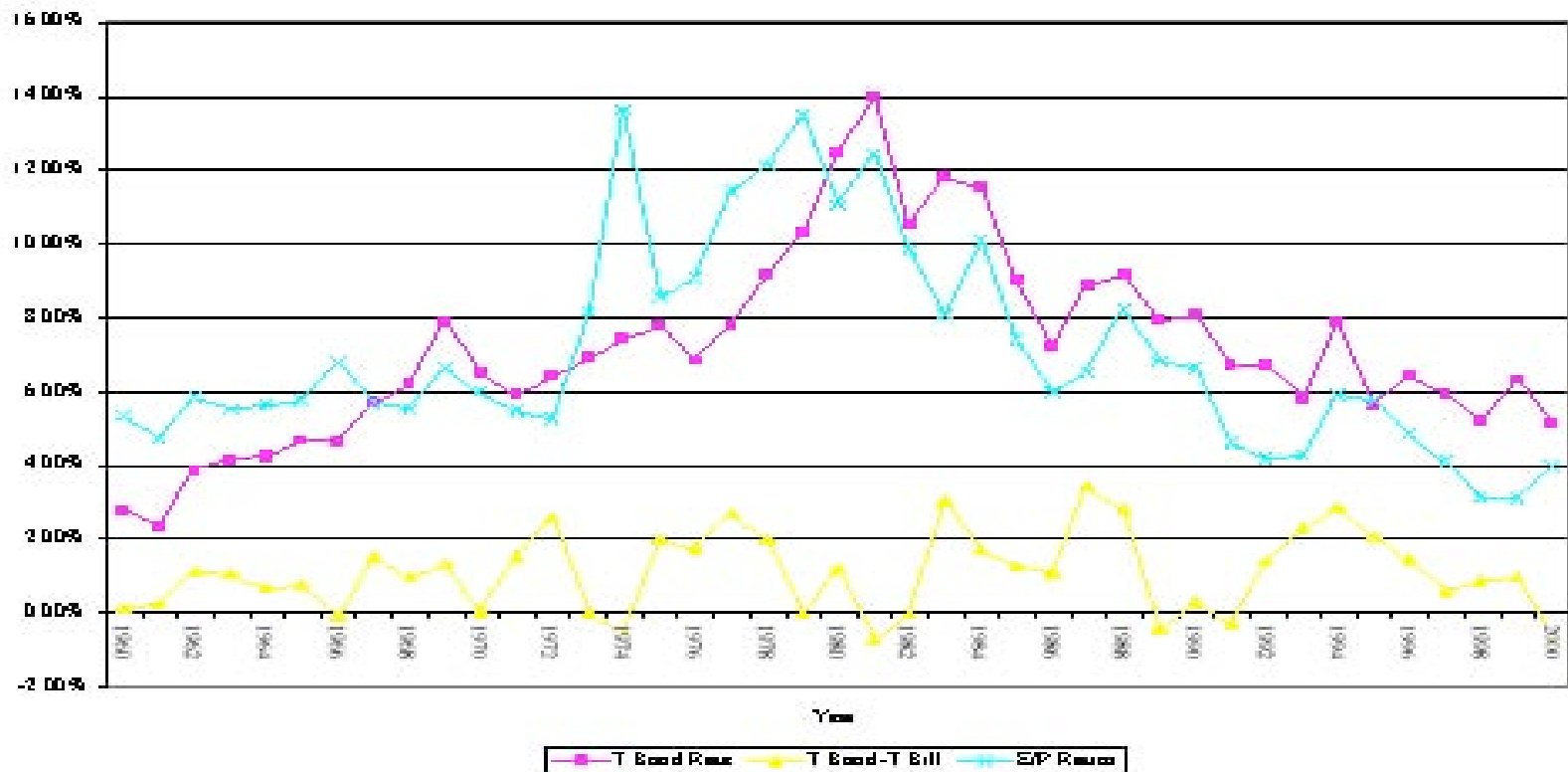
- The simplest way to use fundamentals is to focus on macroeconomic variables such as interest rates, inflation and GNP growth and devise investing rules based upon the levels or changes in macro economic variables.
- *Intrinsic valuation models*: Just as you value individual companies, you can value the entire market.
- *Relative valuation models*: You can value markets relative to how they were priced in prior periods or relative to other markets.
- While there are some studies that show promise in all of these, they are all very noisy indicators...

## An Example: Buy when the earnings yield is high, relative to the T.Bond rate..

<i>Earnings yield - T.Bond Rate (at beginning of year)</i>	<i>Number of years</i>	<i>Stock Return during the year</i>			
		<i>Average</i>	<i>Standard Deviation</i>	<i>Maximum</i>	<i>Minimum</i>
> 2%	8	11.33%	16.89%	31.55%	-11.81%
1 -2%	5	-0.38%	20.38%	18.89%	-29.72%
0-1%	2	19.71%	0.79%	20.26%	19.15%
-1-0%	6	11.21%	12.93%	27.25%	-11.36%
-2-1%	15	9.81%	17.33%	34.11%	-17.37%
< -2%	5	3.04%	8.40%	12.40%	-10.14%

## Another Example: Comparisons across Time

Figure 12.3. S&P 500, Treasury Yield, T-Bond rate and Yield spread



## More on the time comparison...

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- This strong positive relationship between E/P ratios and T.Bond rates is evidenced by the correlation of 0.6854 between the two variables. In addition, there is evidence that the term structure also affects the E/P ratio.
- In the following regression, we regress E/P ratios against the level of T.Bond rates and the yield spread (T.Bond - T.Bill rate), using data from 1960 to 2000.

$$\begin{array}{rcccc} \text{E/P} = & 0.0188 & + & 0.7762 & \text{T.Bond Rate} & - & 0.4066 & (\text{T.Bond Rate} - \text{T.Bill Rate}) & R^2 = 0.495 \\ & (1.93) & & (6.08) & & & (-1.37) & & \end{array}$$

- Other things remaining equal, this regression suggests that
  - Every 1% increase in the T.Bond rate increases the E/P ratio by 0.7762%. This is not surprising but it quantifies the impact that higher interest rates have on the PE ratio.
  - Every 1% increase in the difference between T.Bond and T.Bill rates reduces the E/P ratio by 0.4066%. Flatter or negative sloping term yield curves seem to correspond to lower PE ratios and upwards sloping yield curves to higher PE ratios.

## Using the Regression to gauge the market...

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- We can use the regression to predict E/P ratio at the beginning of 2001, with the T.Bill rate at 4.9% and the T.Bond rate at 5.1%.

$$\begin{aligned} E/P_{2000} &= 0.0188 + 0.7762 (0.051) - 0.4066 (0.051-0.049) \\ &= 0.0599 \text{ or } 5.99\% \end{aligned}$$

$$PE_{2000} = \frac{1}{E/P_{2000}} = \frac{1}{0.0599} = 16.69$$

- Since the S&P 500 was trading at a multiple of 25 times earnings in early 2001, this would have indicated an over valued market.

## To be a successful market timer...

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- This approach has two limitations:
  - Since you are basing your analysis by looking at the past, you are assuming that there has not been a significant shift in the underlying relationship. As Wall Street would put it, paradigm shifts wreak havoc on these models.
  - Even if you assume that the past is prologue and that there will be reversion back to historic norms, you do not control this part of the process..
- How can you improve your odds of success?
  - You can try to incorporate into your analysis those variables that reflect the shifts that you believe have occurred in markets.
  - You can have a longer time horizon, since you improve your odds on convergence.

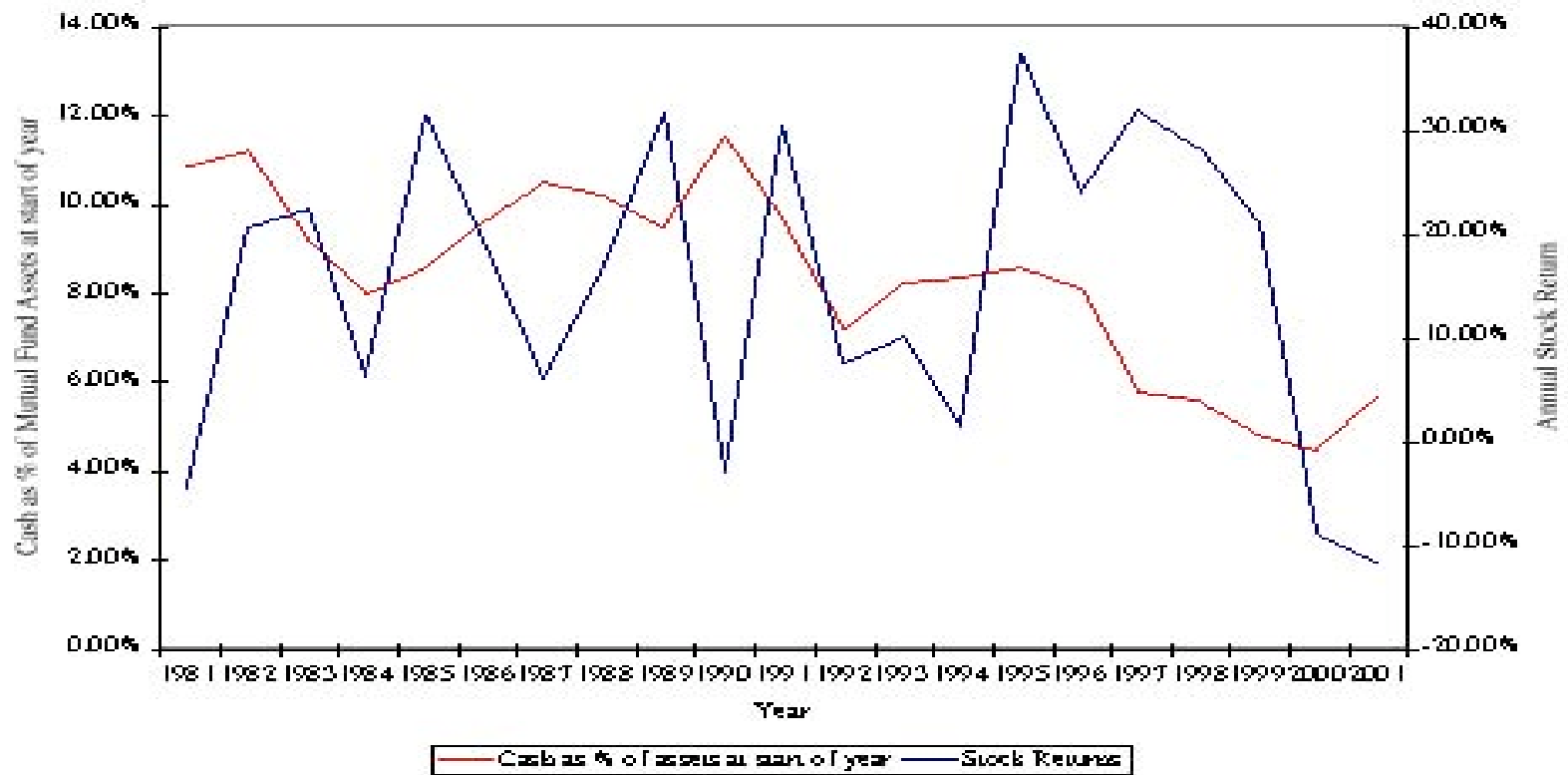
## The Evidence on Market Timing

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- Mutual Fund Managers constantly try to time markets by changing the amount of cash that they hold in the fund. If they are bullish, the cash balances decrease. If they are bearish, the cash balances increase.
- Investment Newsletters often take bullish or bearish views about the market.
- Market Strategists at investment banks make their forecasts for the overall market.

# 1. Mutual Fund Cash Positions

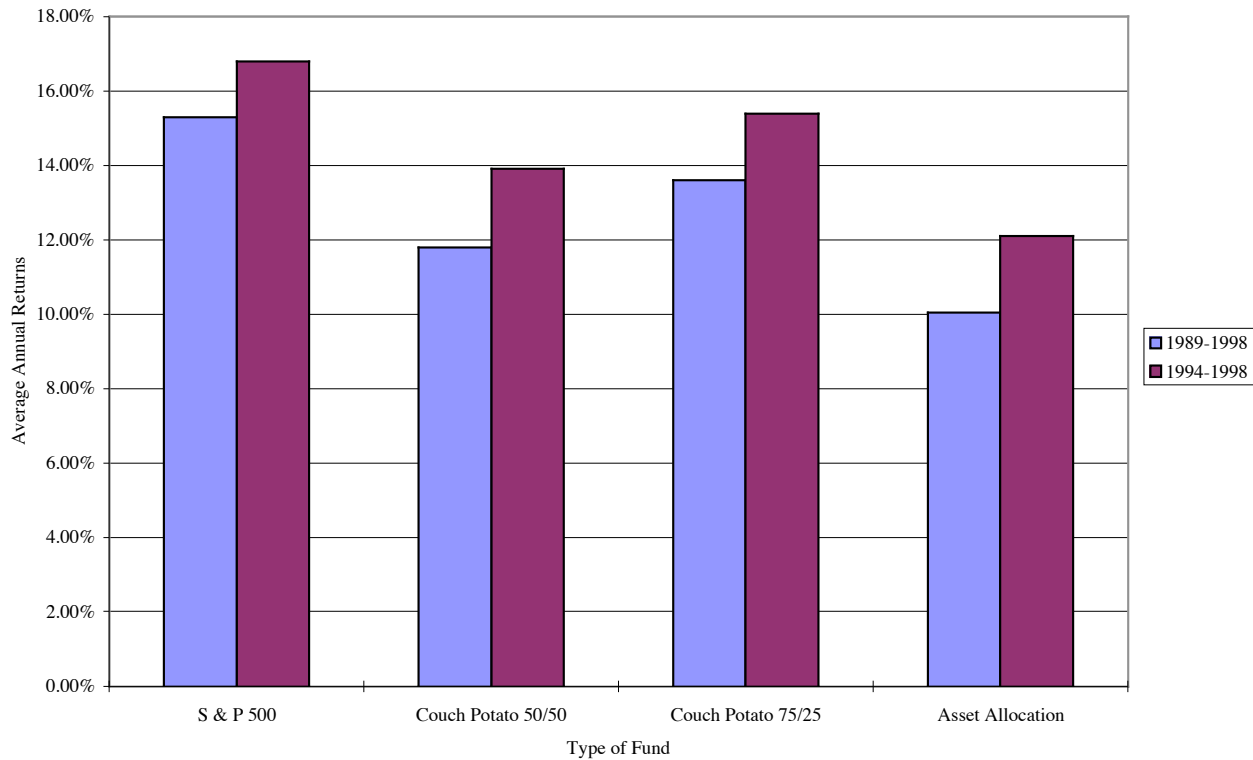
Figure 12.6: Mutual Fund Cash Holdings and Stock Returns





# Tactical Asset Allocation Funds: Are they better at market timing?

*Performance of Unsophisticated Strategies versus Asset Allocation Funds*



## 2. Investment Newsletters

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- Campbell and Harvey (1996) examined the market timing abilities of investment newsletters by examining the stock/cash mixes recommended in 237 newsletters from 1980 to 1992.
  - If investment newsletters are good market timers, you should expect to see the proportion allocated to stocks increase prior to the stock market going up. When the returns earned on the mixes recommended in these newsletters is compared to a buy and hold strategy, 183 of the 237 newsletters (77%) delivered lower returns than the buy and hold strategy.
  - One measure of the ineffectuality of the market timing recommendations of these investment newsletters lies in the fact that while equity weights increased 58% of the time before market upturns, they also increased by 53% before market downturns.
  - There is some evidence of continuity in performance, but the evidence is much stronger for negative performance than for positive. In other words, investment newsletters that give bad advice on market timing are more likely to continue to give bad advice than are newsletters that gave good advice to continue giving good advice.

## Some hope? Professional Market Timers

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- Professional market timers provide explicit timing recommendations only to their clients, who then adjust their portfolios accordingly - shifting money into stocks if they are bullish and out of stocks if they are bearish.
- A study by Chance and Hemler (2001) looked at 30 professional market timers who were monitored by MoniResearch Corporation, a service monitors the performance of such advisors, and found evidence of market timing ability.
- It should be noted that the timing calls were both short term and frequent. One market timer had a total of 303 timing signals between 1989 and 1994, and there were, on average, about 15 signals per year across all 30 market timers. Notwithstanding the high transactions costs associated with following these timing signals, following their recommendations would have generated excess returns for investors.

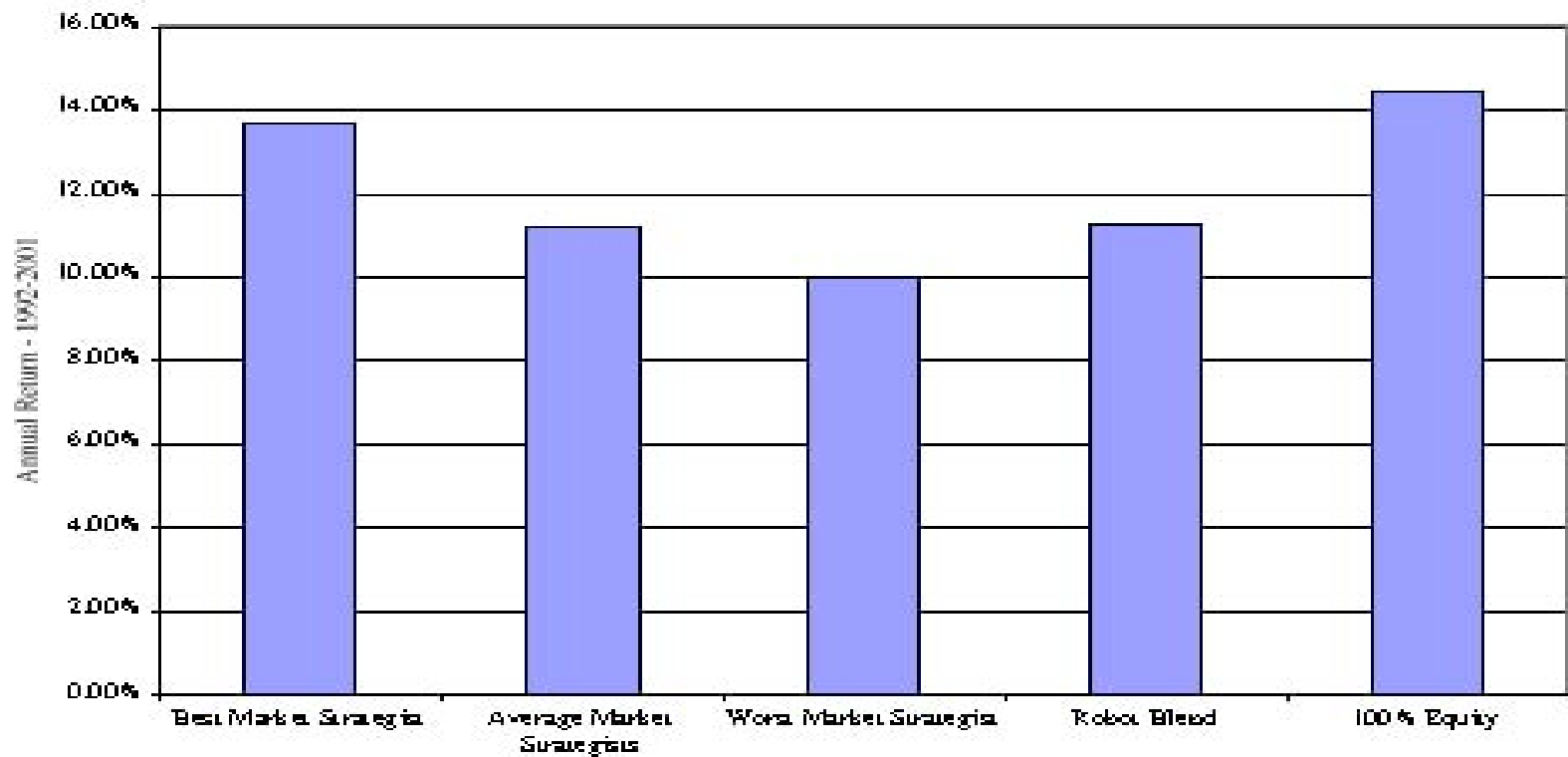
### 3. Market Strategists provide timing advice...

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<i>Firm</i>	<i>Strategist</i>	<i>Stocks</i>	<i>Bonds</i>	<i>Cash</i>
A.G. Edwards	Mark Keller	65%	20%	15%
Banc of America	Tom McManus	55%	40%	5%
Bear Stearns & Co.	Liz MacKay	65%	30%	5%
CIBC World Markets	Subodh Kumar	75%	20%	2%
Credit Suisse	Tom Galvin	70%	20%	10%
Goldman Sach & Co.	Abby Joseph Cohen	75%	22%	0%
J.P. Morgan	Douglas Cliggott	50%	25%	25%
Legg Mason	Richard Cripps	60%	40%	0%
Lehman Brothers	Jeffrey Applegate	80%	10%	10%
Merrill Lynch & Co.	Richard Bernstein	50%	30%	20%
Morgan Stanley	Steve Galbraith	70%	25%	5%
Prudential	Edward Yardeni	70%	30%	0%
Raymond James	Jeffrey Saut	65%	15%	10%
Salomon Smith	John Manley	75%	20%	5%
UBS Warburg	Edward Kerschner	80%	20%	0%
Wachovia	Rod Smyth	75%	15%	0%

## But how good is it?

*Annual Returns from Market Strategists' Misses: 1992-2001*



## Market Timing Strategies

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- Asset Allocation: Adjust your mix of assets, allocating more than you normally would (given your time horizon and risk preferences) to markets that you believe are under valued and less than you normally would to markets that are overvalued.
- Style Switching: Switch investment styles and strategies to reflect expected market performance.
- Sector Rotation: Shift your funds within the equity market from sector to sector, depending upon your expectations of future economic and market growth.
- Market Speculation: Speculate on market direction, using either financial leverage (debt) or derivatives to magnify profits.

## Connecting Market Timing to Security Selection

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- You can be both a market timer and security selector. The same beliefs about markets that led you to become a security selector may also lead you to become a market timer. In fact, there are many investors who combine asset allocation and security selection in a coherent investment strategy.
- There are, however, two caveats to an investment philosophy that includes this combination.
  - To the extent that you have differing skills as a market timer and as a security selector, you have to gauge where your differential advantage lies, since you have limited time and resources to direct towards your task of building a portfolio.
  - You may find that your attempts at market timing are under cutting your asset selection and that your overall returns suffer as a consequence. If this is the case, you should abandon market timing and focus exclusively on security selection.



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# Charting and Technical Analysis

Aswath Damodaran



# The Random Walk Hypothesis

## Information

All information about the firm is publicly available and traded on.

New information comes out about the firm.

## Current

## Next period

## Market Expectations

Investors form unbiased expectations about the future

Since expectations are unbiased, there is a 50% chance of good or bad news.

## Price Assessment

Stock price is an unbiased estimate of the value of the stock.

The price changes in accordance with the information. If it contains good (bad) news, relative to expectations, the stock price will increase (decrease).

## Implications for Investors

No approach or model will allow us to identify under or over valued assets.

Reflecting the 50/50 chance of the news being good or bad, there is an equal probability of a price increase and a price decrease.

## The Basis for Price Patterns

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n *Price changes themselves may provide information to markets.* Thus, the fact that a stock has gone up strongly the last four days may be viewed as good news by investors, making it more likely that the price will go up today than down.

n *Investors are not always rational in the way they set expectations.* These irrationalities may lead to expectations being set too low for some assets at some times and too high for other assets at other times. Thus, the next piece of information is more likely to contain good news for the first asset and bad news for the second.

## The Empirical Evidence on Price Patterns

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- Investors have used **price charts and price patterns** as tools for predicting future price movements for as long as there have been financial markets.
- The first studies of market efficiency focused on the **relationship between price changes over time**, to see if in fact such predictions were feasible.
- Evidence can be classified into two classes
  - studies that focus on **short-term** (intraday, daily and weekly price movements) price behavior and
  - research that examines **long-term** (annual and five-year returns) price movements.

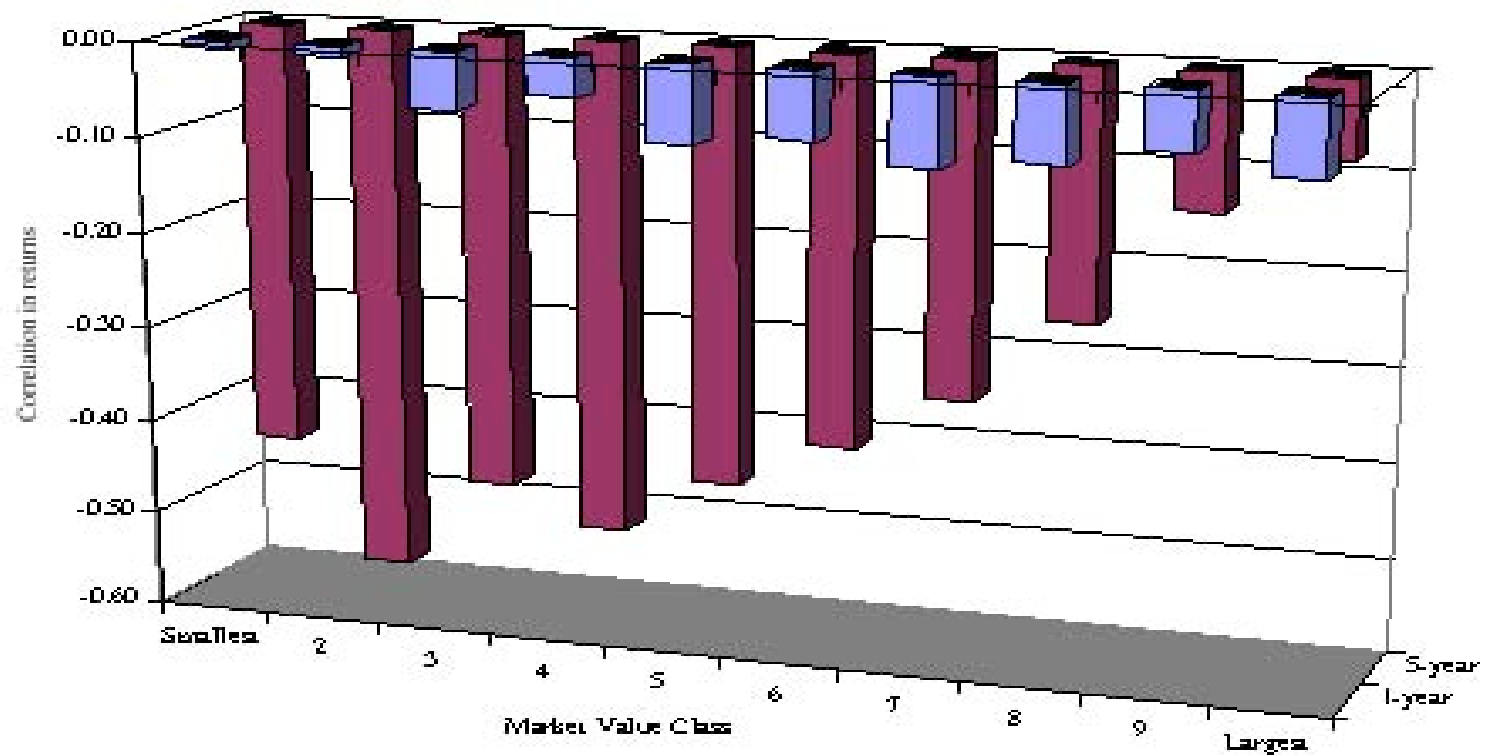
## Short Term Serial Correlation: Evidence

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- **Serial correlations in most markets is small.** While there may be statistical significance associated with these correlations, it is unlikely that there is enough correlation to generate excess returns.
- The serial correlation in short period returns is also **affected by price measurement issues** and the market micro-structure characteristics.
- **Non-trading** in some of the components of the index can create a **carry-over effect** from the prior time period, this can result in **positive serial correlation** in the index returns.
- The **bid-ask spread** creates a bias in the opposite direction, if transactions prices are used to compute returns, since prices have a equal chance of ending up at the bid or the ask price. The bounce that this induces in prices will result in **negative serial correlations** in returns.  
Bid-Ask Spread =  $-\sqrt{2}$  (Serial Covariance in returns)  
where the serial covariance in returns measures the covariance between return changes in consecutive time periods.

## Long Term Serial Correlation: Evidence

Figure 7.2: One year and Five year Correlations: Market Value Class: 1941-1985



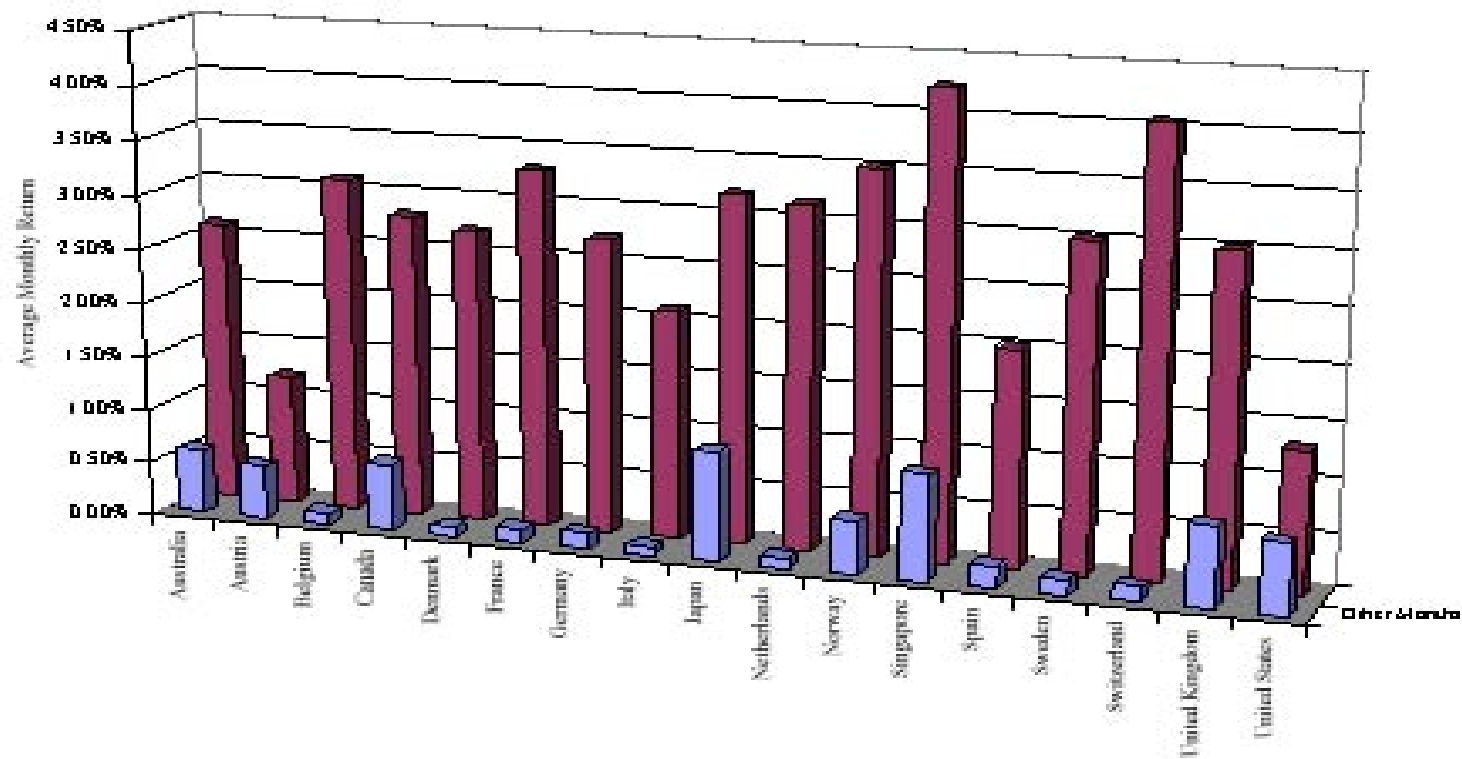
## Seasonal and Temporal Effects on Prices

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- Empirical studies indicate a variety of seasonal and temporal irregularities in stock prices. Among them are:
  - The January Effect: Stocks, on average, tend to do much better in January than in any other month of the year.
  - The Weekend Effect: Stocks, on average, seem to do much worse on Mondays than on any other day of the week.
  - The Mid-day Swoon: Stocks, on average, tend to do much worse in the middle of the trading day than at the beginning and end of the day.
- While these empirical irregularities provide for interesting conversation, **it is not clear that any of them can be exploited to earn excess returns.**

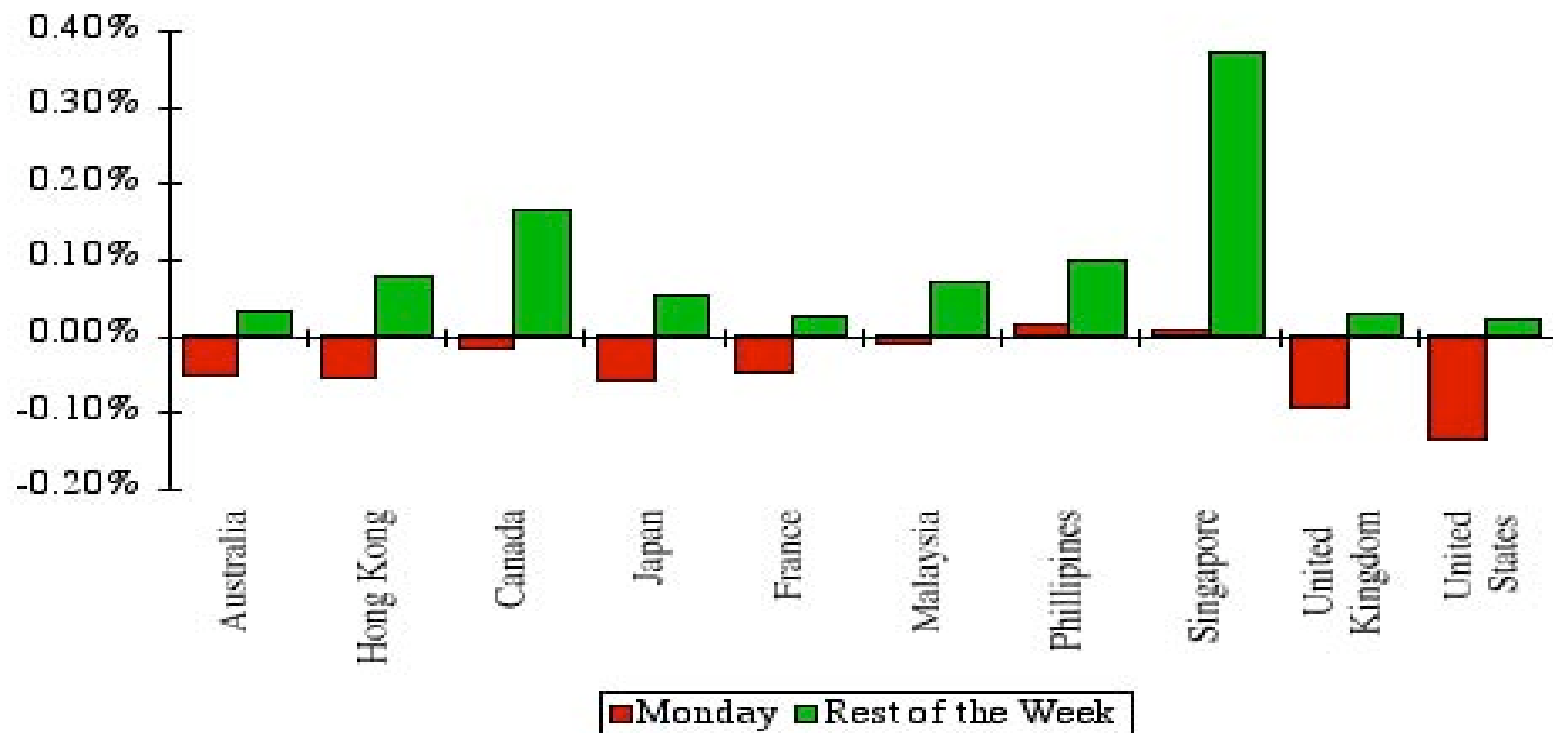
# Returns in January vs Other Months - Major Financial Markets

Figure 7.5: The International January Effect



## The Weekend Effect in International Markets

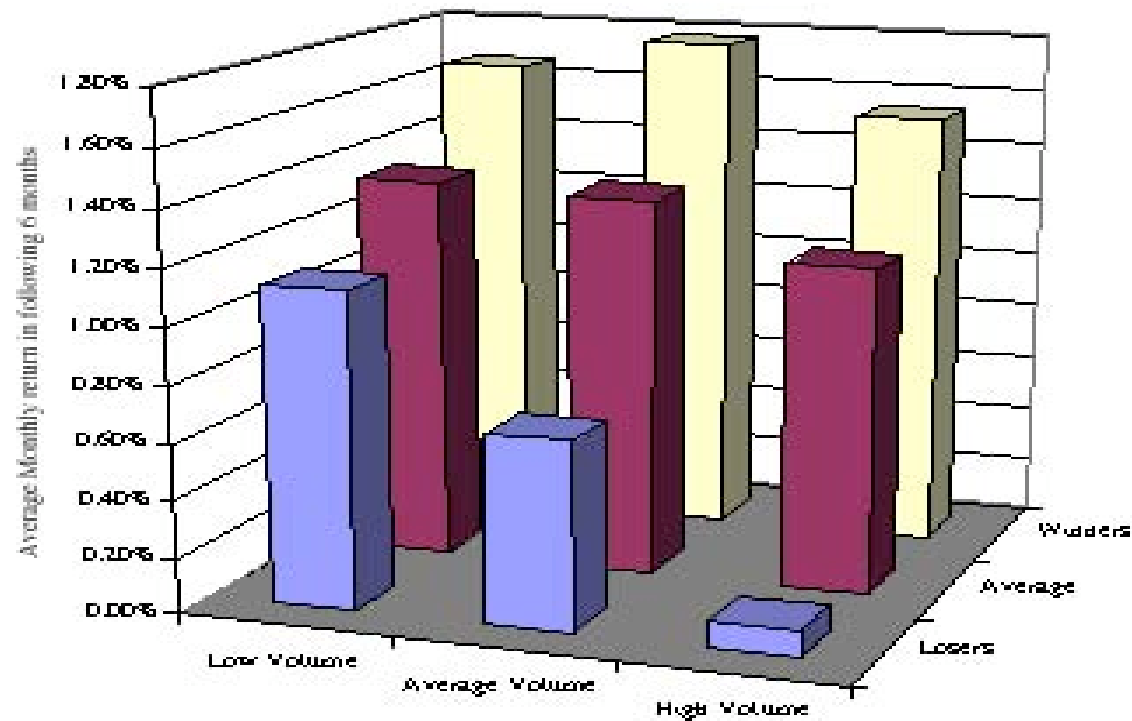
Figure 7.7: Weekend Effect in International Markets





# There is an interrelationship between volume and price changes...

Figure 23: Volume and Price Involvement - NYSE and AMEX stocks - 1965-95



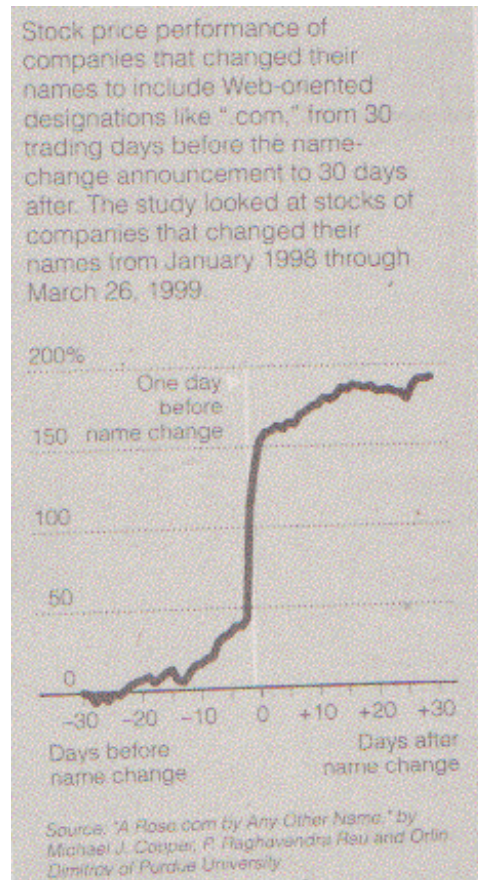
Source: Lee and Swaminathan

## Are investors rational?

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- Historians who have examined the behavior of financial markets over time have challenged the **assumption of rationality** that underlies much of efficient market theory.
- They point out to the frequency with **speculative bubbles have formed in financial markets**, as investors buy into fads or get-rich-quick schemes, and the crashes with these bubbles have ended, and suggest that there is nothing to prevent the recurrence of this phenomenon in today's financial markets. There is some evidence in the literature of irrationality on the part of market players.

## A Sobering Thought for Believers in Rationality

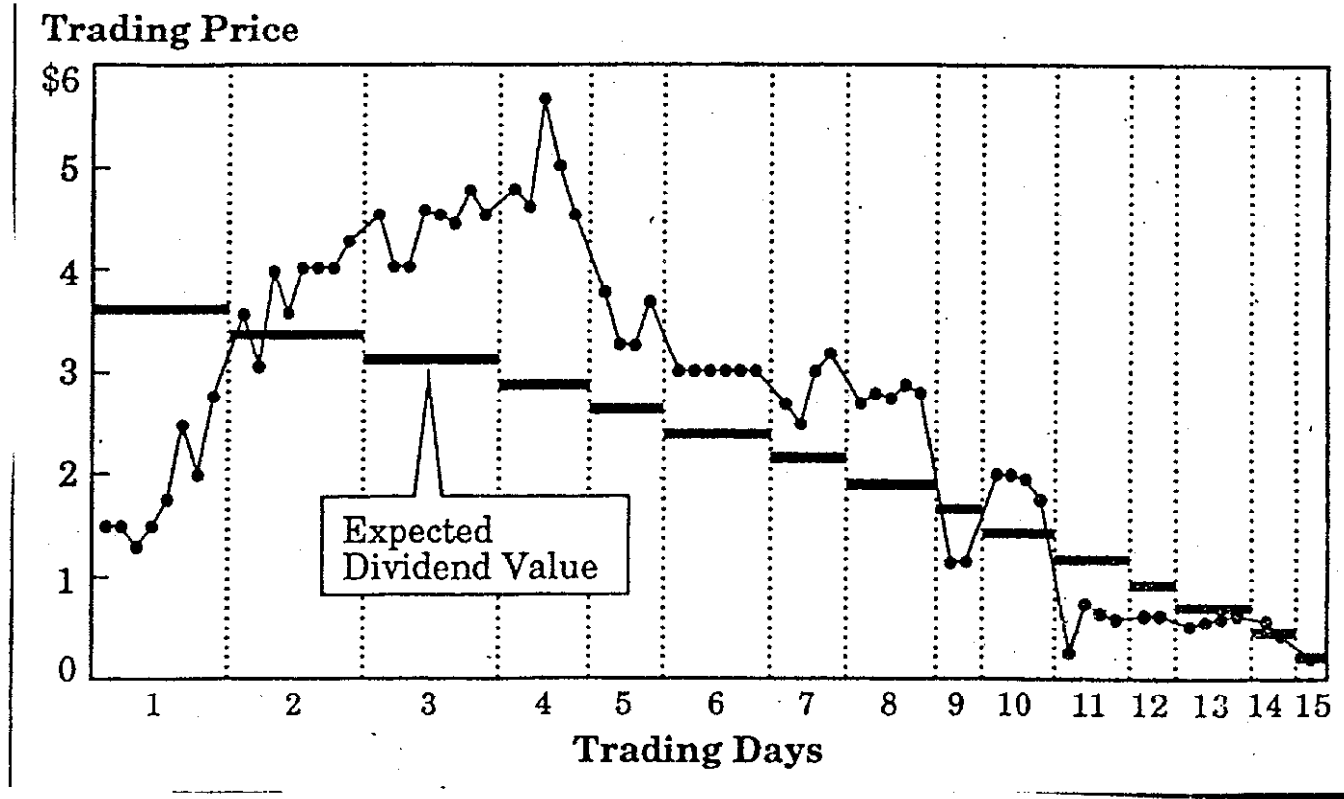


## a. Experimental Studies of Rationality

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- While most **experimental studies** suggest that traders are rational, there are some examples of irrational behavior in some of these studies.
- One such study was done at the University of Arizona. In an experimental study, traders were told that a **payout** would be declared after each trading day, determined randomly from four possibilities - **zero, eight, 28 or 60 cents**. The average payout was 24 cents. Thus the share's expected value on the first trading day of a fifteen day experiment was **\$3.60** ( $24 \times 15$ ), the second day was \$3.36 .... The traders were allowed to trade each day. The results of 60 such experiments is summarized in the following graph.

# Trading Price by Trading Day



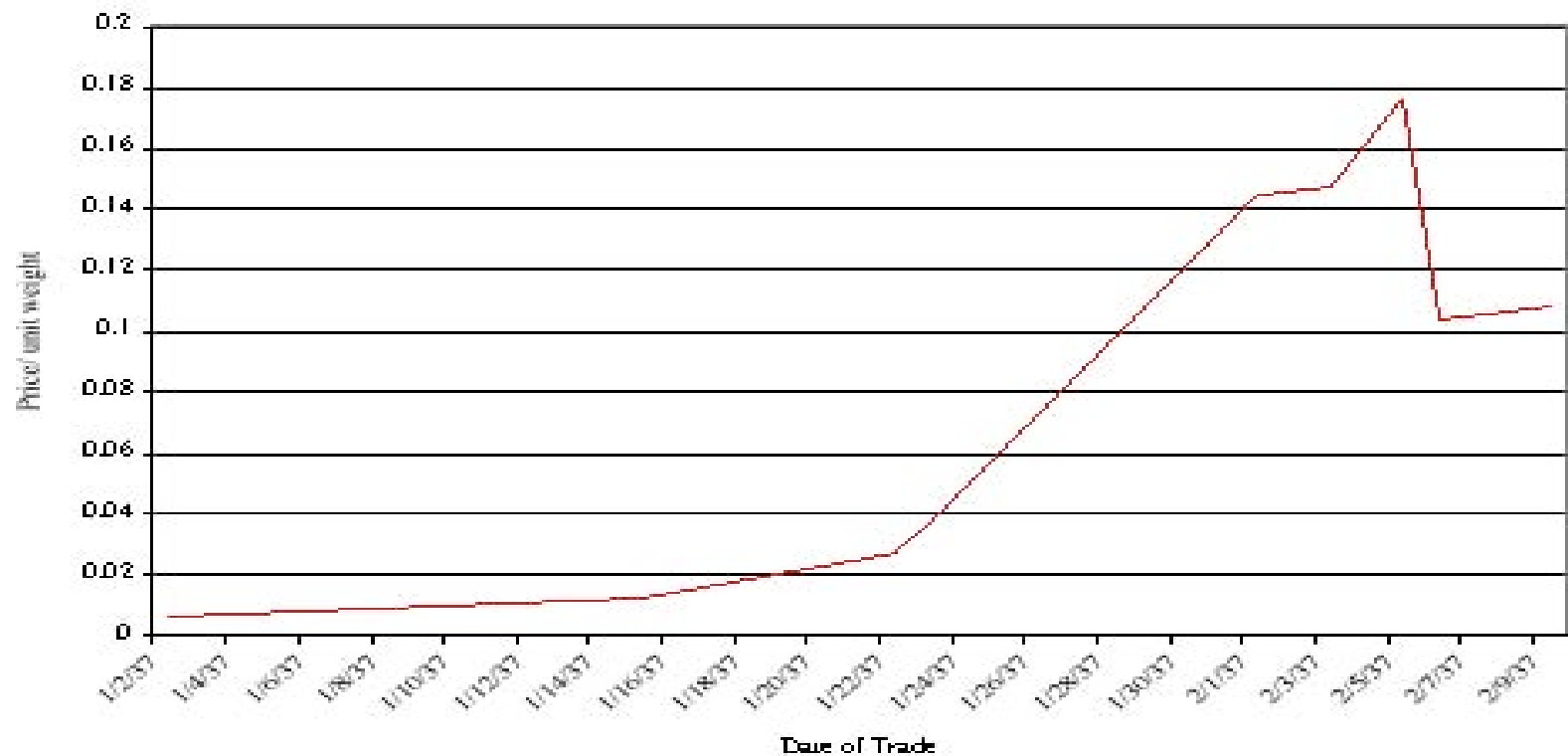
## Results of Experimental Study

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- There is clear evidence here of a '**speculative bubble**' forming during periods 3 to 5, where prices exceed expected values significantly,
- The **bubble ultimately bursts**, and prices approach expected value by the end of the period.
- If this is feasible in a simple market, where every investor obtains the same information, it is **clearly feasible in real financial markets**, where there is much more differential information and much greater uncertainty about expected value.
- Some of the experiments were run with **students**, and some with **Tucson businessmen**, with 'real world' experience. The results were similar for both groups.
- Furthermore, when **price curbs** of 15 cents were introduced, the **booms lasted even longer** because traders knew that prices would not fall by more than 15 cents in a period. Thus, the notion that price limits can control speculative bubbles seems misguided.

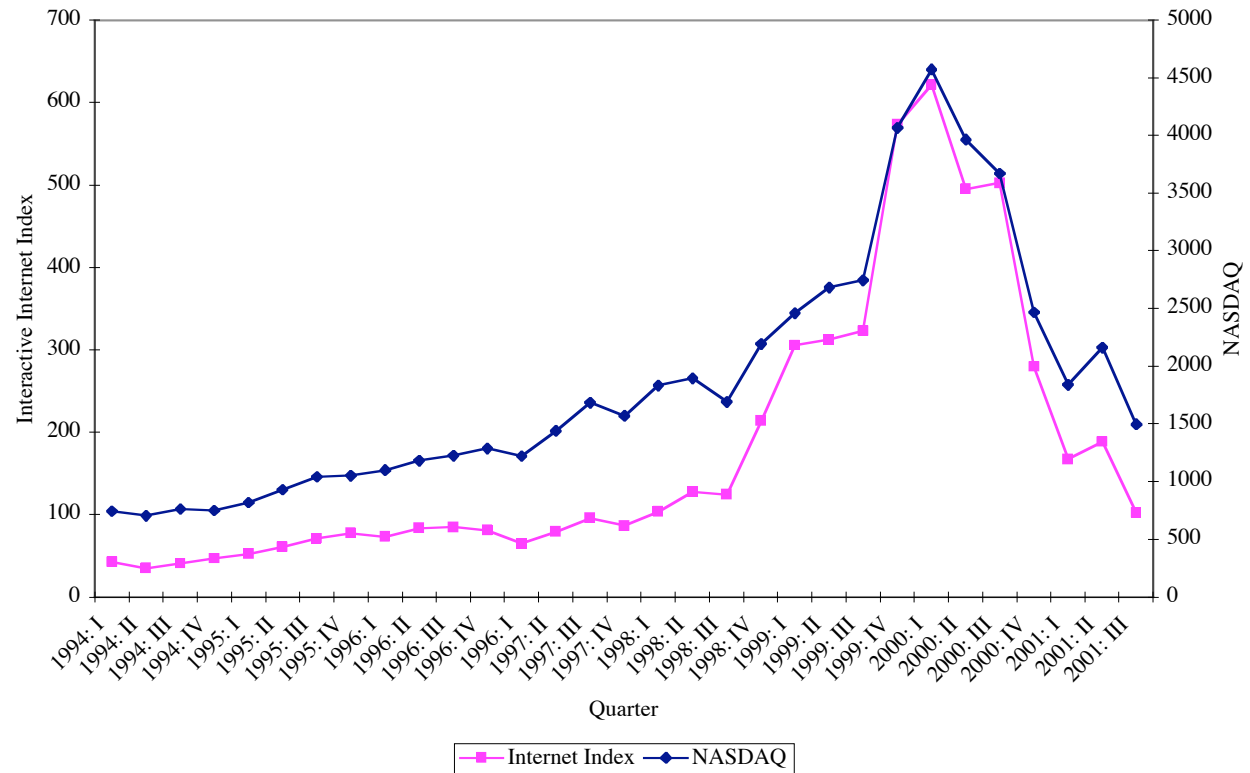
## b. A Real Bubble?

Figure 7.11: Price of a Tulip Bulb (Dutch) - January - February 1637



# What about this bubble?

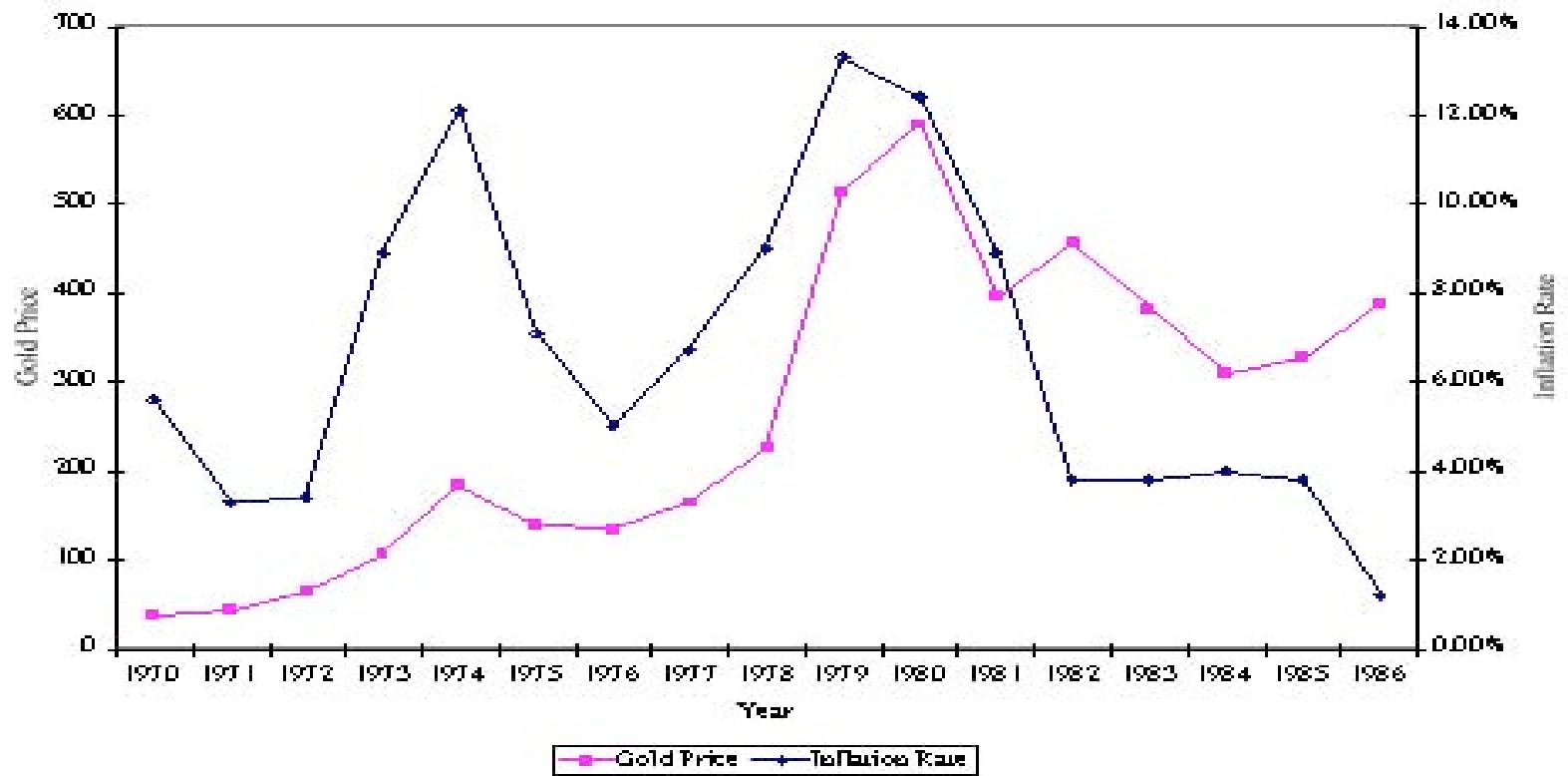
Figure 7.12: The Tech Boom





# Or this one?

Figure 7.13: Gold Prices: 1970-86



# I. Markets overreact: The Contrarian Indicators

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Basis: Research in experimental psychology suggests that people tend to overreact to unexpected and dramatic news events. In revising their beliefs, individuals tend to overweight recent information and underweight prior data.

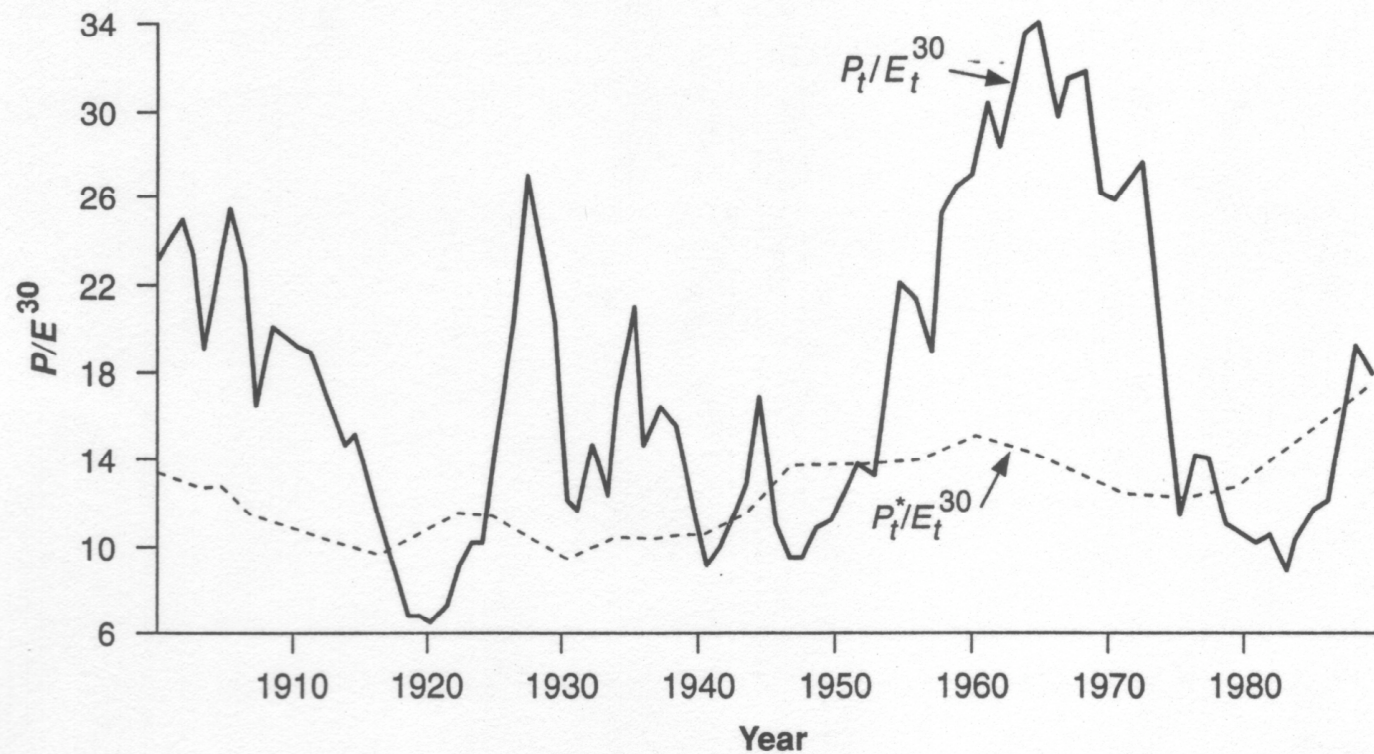
Empirical evidence: If markets overreact then

- (1) Extreme movements in stock prices will be followed by subsequent price movements in the opposite direction.
- (2) The more extreme the price adjustment, the greater will be the subsequent adjustment

## Trading Rules

1. Odd-lot trading: The odd-lot rule gives us an indication of what the man on the street thinks about the stock
2. Mutual Fund Cash positions: Historically, the argument goes, mutual fund cash positions have been greatest at the bottom of a bear market and lowest at the peak of a bull market.
3. Investment Advisory opinion: This is the ratio of advisory services that are bearish. When this ratio reaches the threshold (eg 60%) the contrarian starts buying.

## II. Detecting shifts in Demand & Supply: The Lessons in Price Patterns



### III. Market learn slowly: The Momentum Investors

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Basis: The argument here is that markets learn slowly. Thus, investors who are a little quicker than the market in assimilating and understanding information will earn excess returns. In addition, if markets learn slowly, there will be price drifts (i.e., prices will move up or down over extended periods) and technical analysis can detect these drifts and take advantage of them.

The Evidence: There is evidence, albeit mild, that prices do drift after significant news announcements. For instance, following up on price changes after large earnings surprises provides the following evidence.

#### Trading Rules

1. Relative Strength: In both prices and volume
2. Trend Lines

## IV. Following the Smart Investors: The Followers

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Basis: This approach is the flip side of the contrarian approach. Instead of assuming that investors, on average, are likely to be wrong, you assume that they are right. To make this assumption more palatable, you do not look at all investors but only at the smartest investors, who presumably know more than the rest of us.

Evidence: Some informed investors (insiders especially) do trade ahead of price movements.

Trading Rules:

1. Ratio of insider buying to selling
2. Short Sales by Specialists

## V. Markets are controlled by external forces: The Mystics

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The Elliot Wave: Elliot's theory is that the market moves in waves of various sizes, from those encompassing only individual trades to those lasting centuries, perhaps longer. "By classifying these waves and counting the various classifications it is possible to determine the relative positions of the market at all times". "There can be no bull or bear markets of one, seven or nine waves, for example.

The Dow Theory:" The market is always considered as having three movements, all going at the same time. The first is the narrow movement (daily fluctuations) from day to day. The second is the short swing (secondary movements) running from two weeks to a month and the third is the main movement (primary trends) covering at least four years in its duration.

## To be a successful chartist, you need to..

---

- Understand investor behavior: If you decide to use a charting pattern or technical indicator, you need to be aware of the investor behavior that gives rise to its success. You can modify or abandon the indicator if the underlying behavior changes.
- Test the indicator: It is important that you back-test your indicator to ensure that it delivers the returns that are promised. In running these tests, you should pay particular attention to the volatility in performance over time and how sensitive the returns are to holding periods.
- Trade quickly: The excess returns on many of the strategies seem to depend upon timely trading. In other words, to succeed at some of these strategies, you may need to monitor prices continuously, looking for the patterns that would trigger trading.
- Be disciplined: Building on the theme of time horizons, success at charting can be very sensitive to how long you hold an investment.
- Control trading costs: The strategies that come from technical indicators are generally short-term strategies that require frequent and timely trading. Not surprisingly, these strategies also generate large trading costs that can very quickly eat into any excess returns you may have.



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# Small Cap and Growth Investing

Aswath Damodaran



## Who is a growth investor?

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- *The Conventional definition:* An investor who buys high price earnings ratio stocks or high price to book ratio stocks.
- *The Generic definition:* An investor who buys growth companies where the value of growth potential is being under estimated. In other words, both value and growth investors want to buy under valued stocks. The difference lies mostly in where they think they can find these bargains and what they view as their strengths.

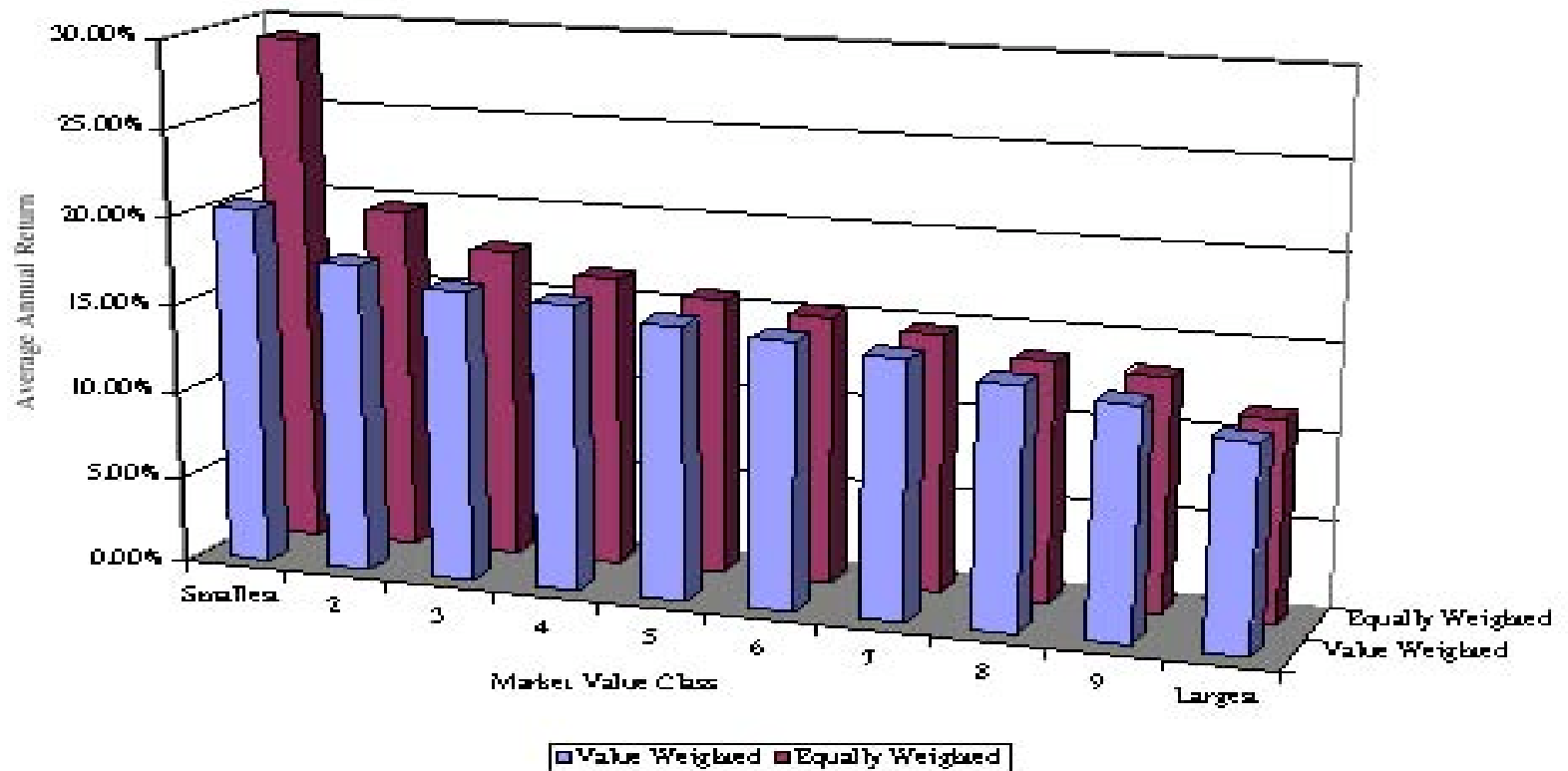
## The many faces of growth investing

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- *The Small Cap investor:* The simplest form of growth investing is to buy smaller companies in terms of market cap, expecting these companies to be both high growth companies and also expecting the market to under estimate the value of growth in these companies.
- *The IPO investor:* Presumably, stocks that make initial public offerings tend to be smaller, higher growth companies.
- *The Passive Screener:* Like the passive value screener, a growth screener can use screens - low PE ratios relative to expected growth, earnings momentum - to pick stocks.
- *The Activist Growth investor:* These investors take positions in young growth companies (even before they go public) and play an active role not only in how these companies are managed but in how and when to take them public.

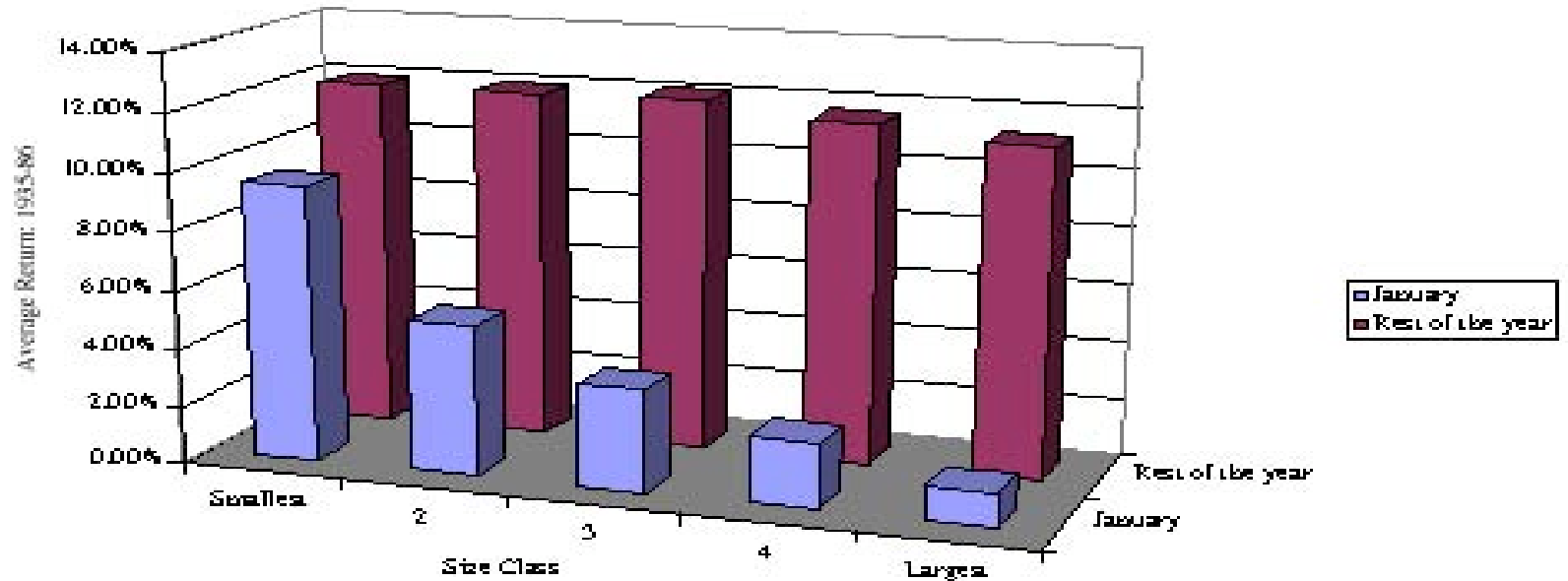
# I. Small Cap Investing

Figure 9.1: Annual Returns by Market Value Class - 1927 - 2001



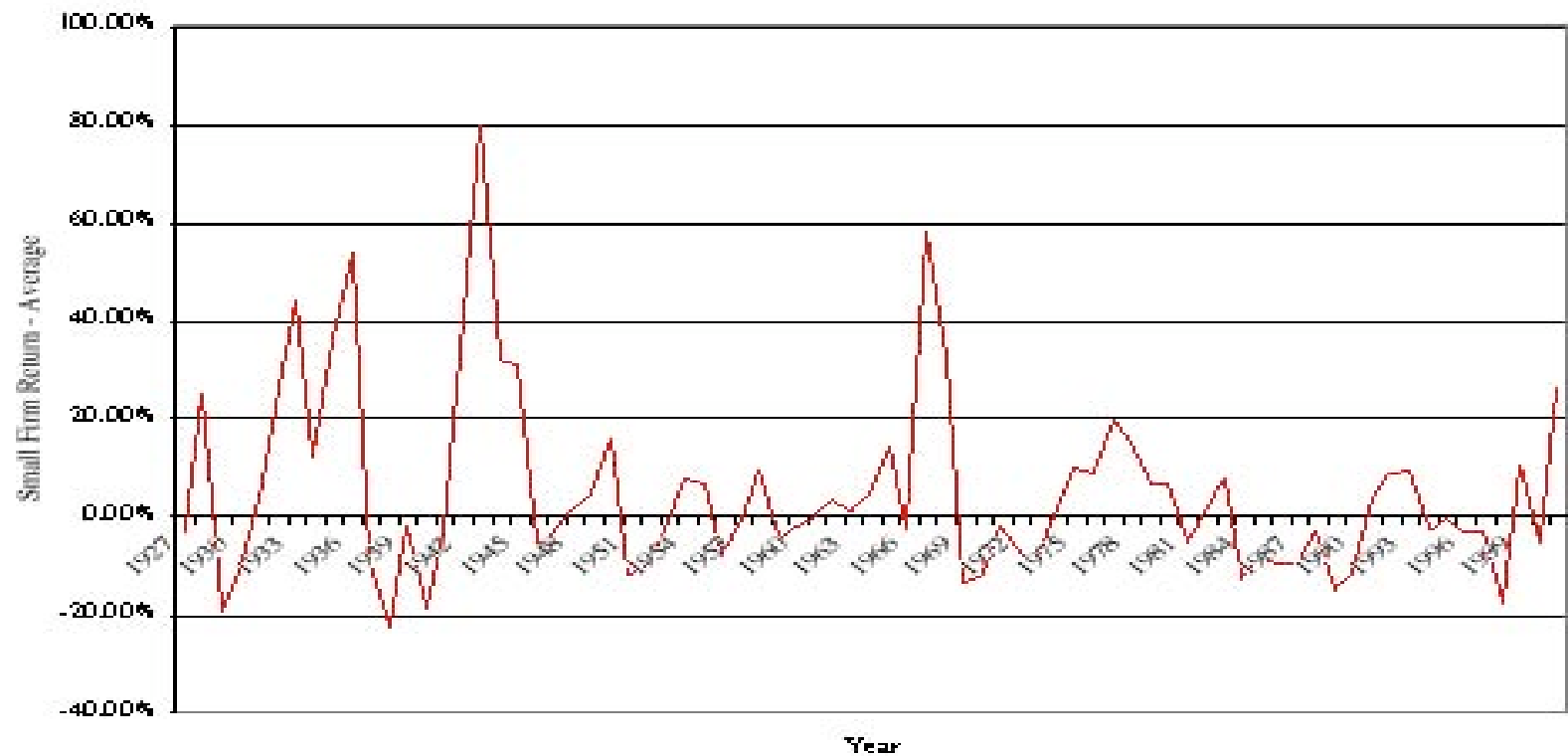
## The Size and January Effects

*Figure 9.4: The Small Firm Effect in January*



## Small Firm Effect Over Time

*Figure 9.2: Small Firm Premium over time- 1927-2001*



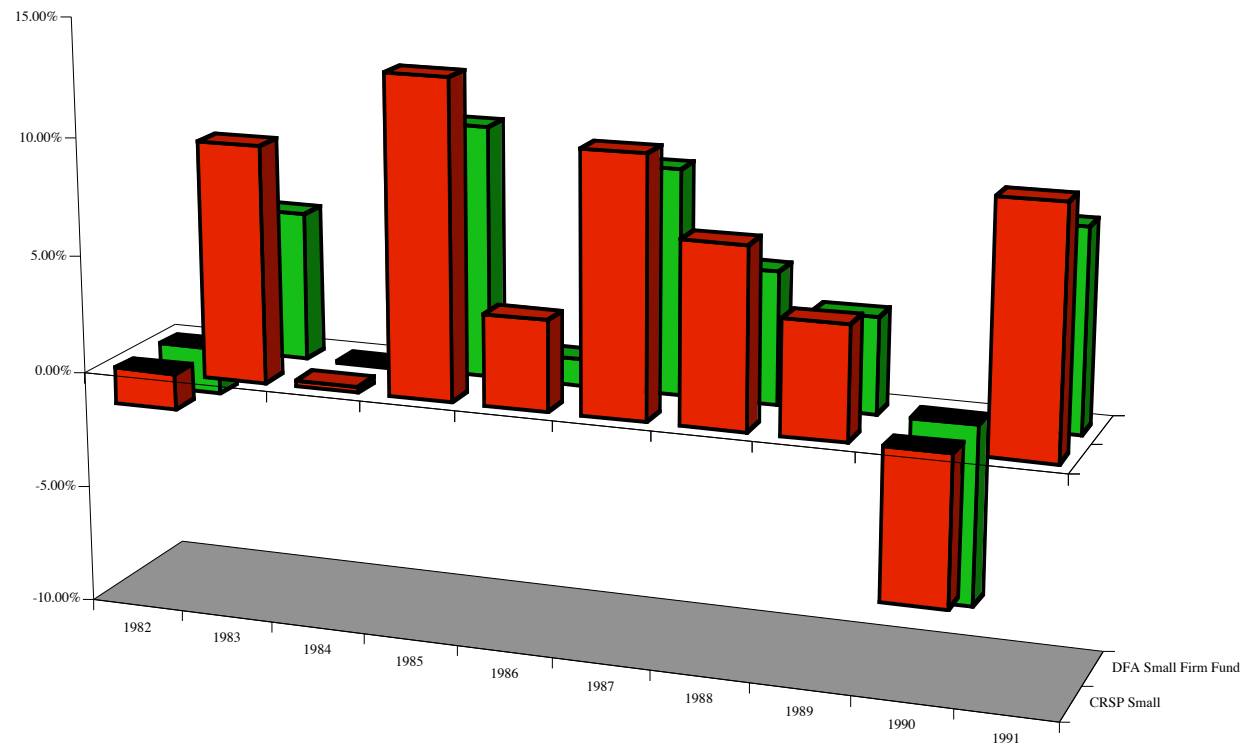
## Has the small firm premium disappeared?

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- The small stock premium has largely disappeared since 1981. Whether this is a long term shift in the small stock premium or just a temporary dip is still being debated.
- Jeremy Siegel notes in his book on the long term performance of stocks that the small stock premium can be almost entirely attributed to the performance of small stocks in the 1970s. Since this was a decade with high inflation, could the small stock premium have something to do with inflation?

# Difficulties in Replicating Small Firm Effect

Figure 9.5: Returns on CRSP Small Stocks versus DFA Small Stock Fund



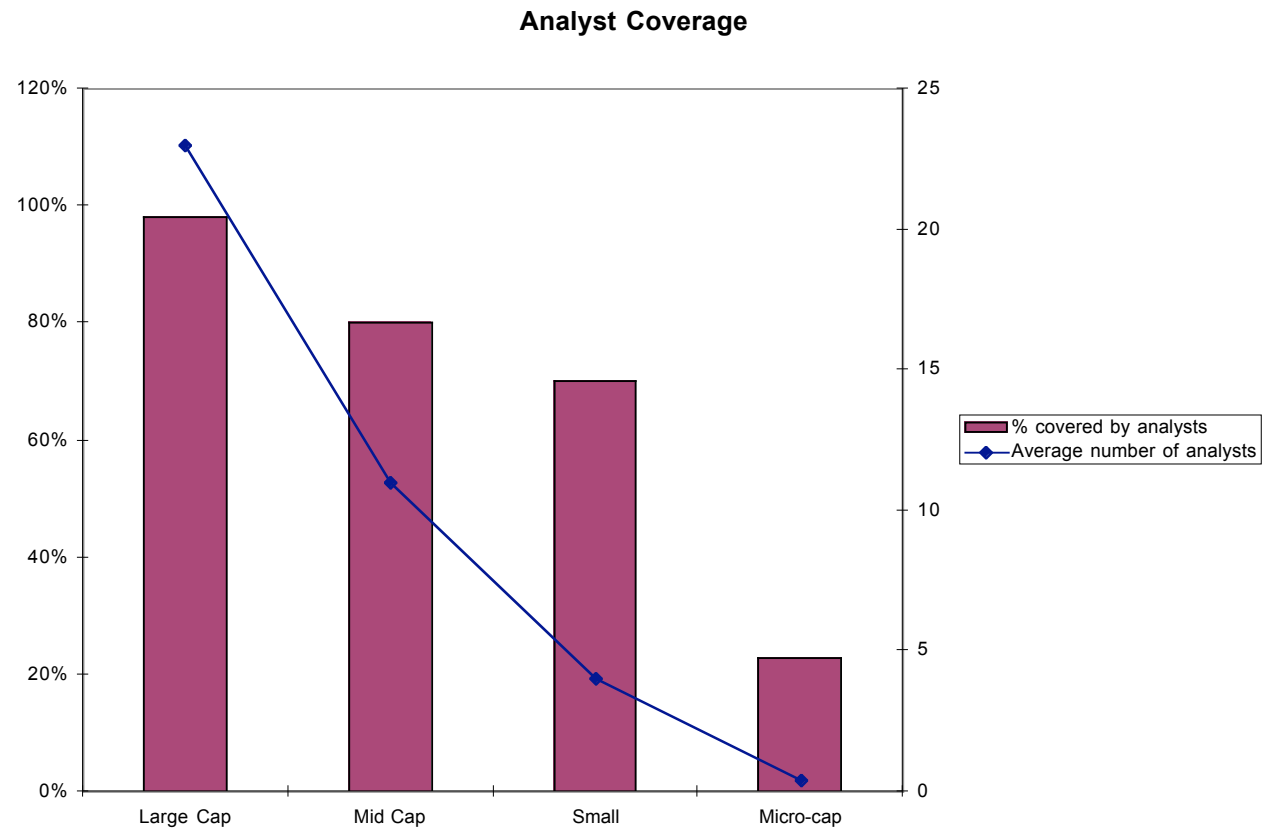
## Risk Models and the Size Effect

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- **The capital asset pricing model may not be the right model for risk**, and betas under estimate the true risk of small stocks. Thus, the small firm premium is really a measure of the failure of beta to capture risk. The additional risk associated with small stocks may come from several sources.
  - First, the **estimation risk** associated with estimates of beta for small firms is much greater than the estimation risk associated with beta estimates for larger firms. The small firm premium may be a reward for this additional estimation risk.
  - Second, there may be additional risk in investing in small stocks because **far less information** is available on these stocks. In fact, studies indicate that stocks that are neglected by analysts and institutional investors earn an excess return that parallels the small firm premium.



## There is less analyst coverage of small firms



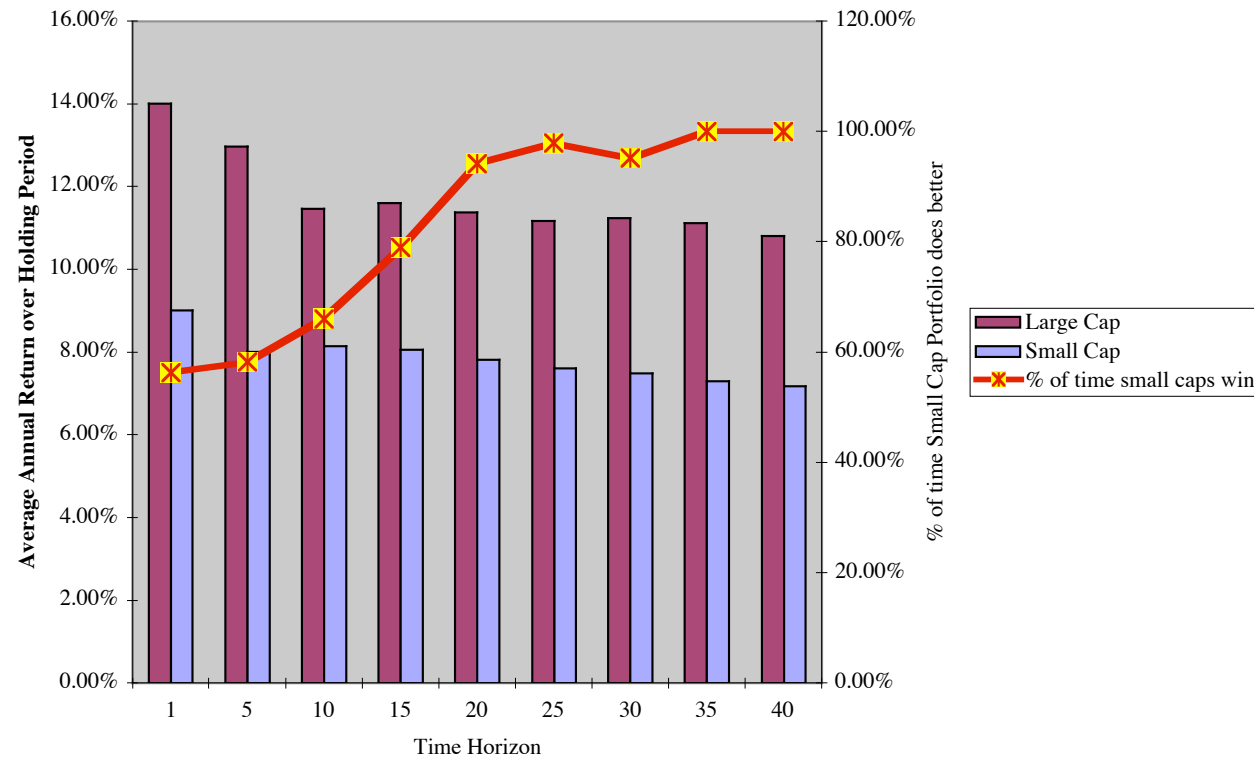
## To be a successful small cap investor...

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- The importance of discipline and diversification become even greater, if you are a small cap investor. Since small cap stocks tend to be concentrated in a few sectors, you will need a much larger portfolio to be diversified with small cap stocks. In addition, diversification should also reduce the impact of estimation risk and some information risk.
- When investing in small cap stocks, the responsibility for due diligence will often fall on your shoulders as an investor, since there are often no analysts following the company. You may have to go beyond the financial statements and scour other sources (local newspapers, the firm's customers and competitors) to find relevant information about the company.
- Have a long time horizon.

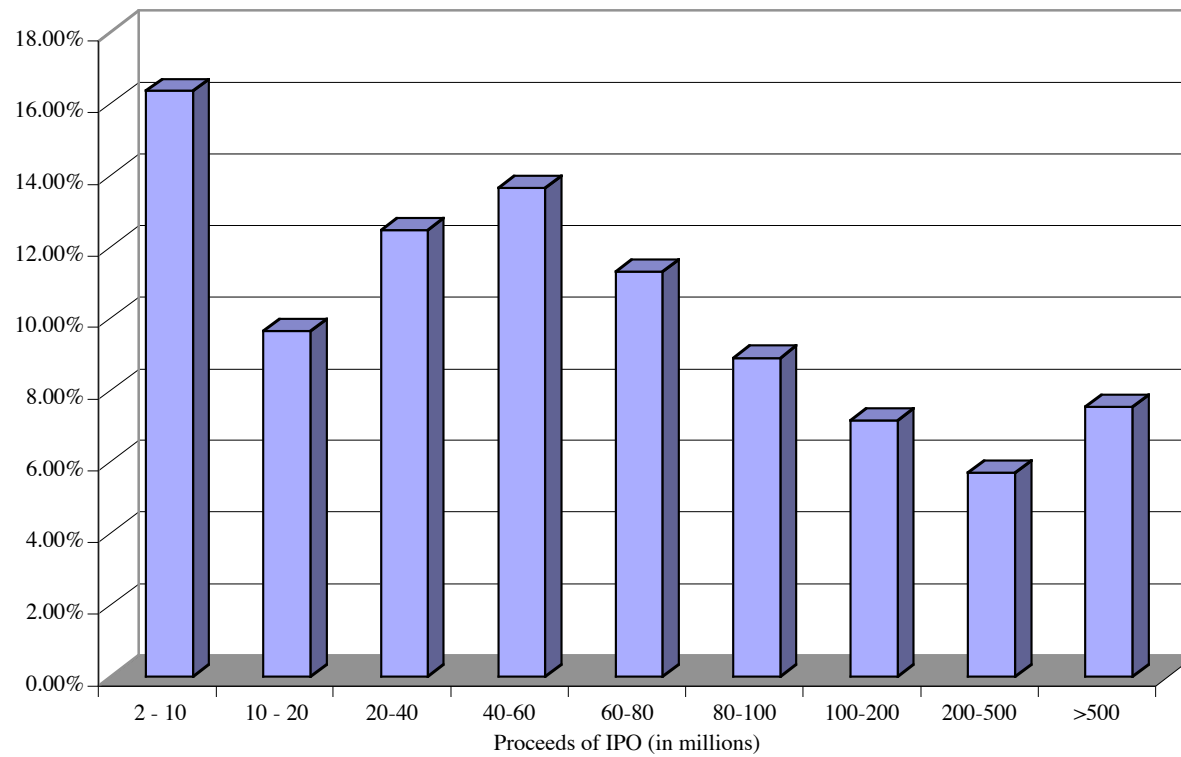
# The importance of a long time horizon..

Figure 9.7: Time Horizon and the Small Firm Premium



## II. Initial Public Offerings

Figure 9.9: Average Initial Return and Issue Size



## More on IPO pricing...

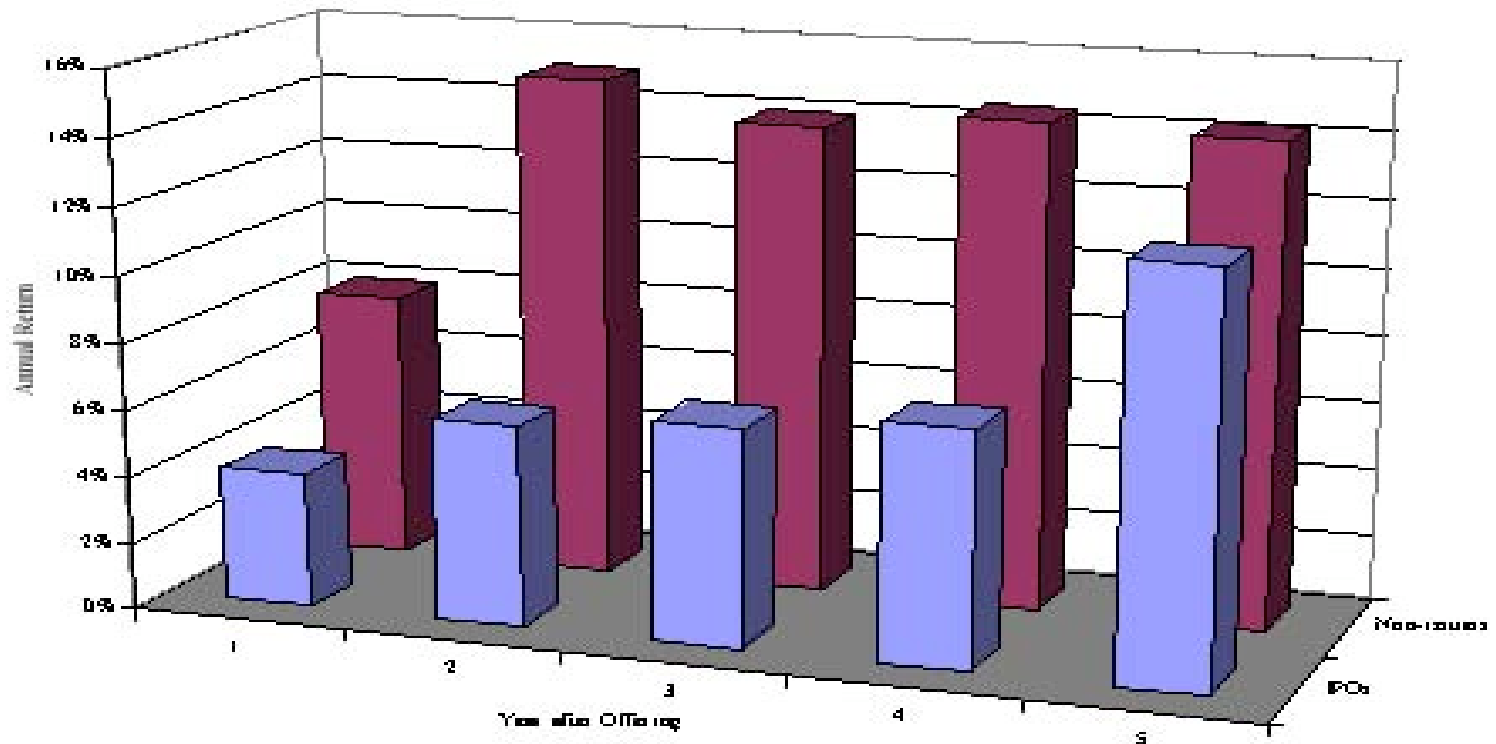
- The average initial return is 15.8% across a sample of 13,308 initial public offerings. However, about 15% of all initial public offerings are over priced.
- Initial public offerings where the offering price is revised upwards prior to the offering are more likely to be under priced than initial public offerings where the offering price is revised downwards.

*Table 9.1: Average Initial Return – Offering Price Revision*

<i>Offering price</i>	<i>Number of IPOs</i>	<i>Average initial return</i>	<i>% of offerings underpriced</i>
Revised down	708	3.54%	53%
Revised up	642	30.22%	95%

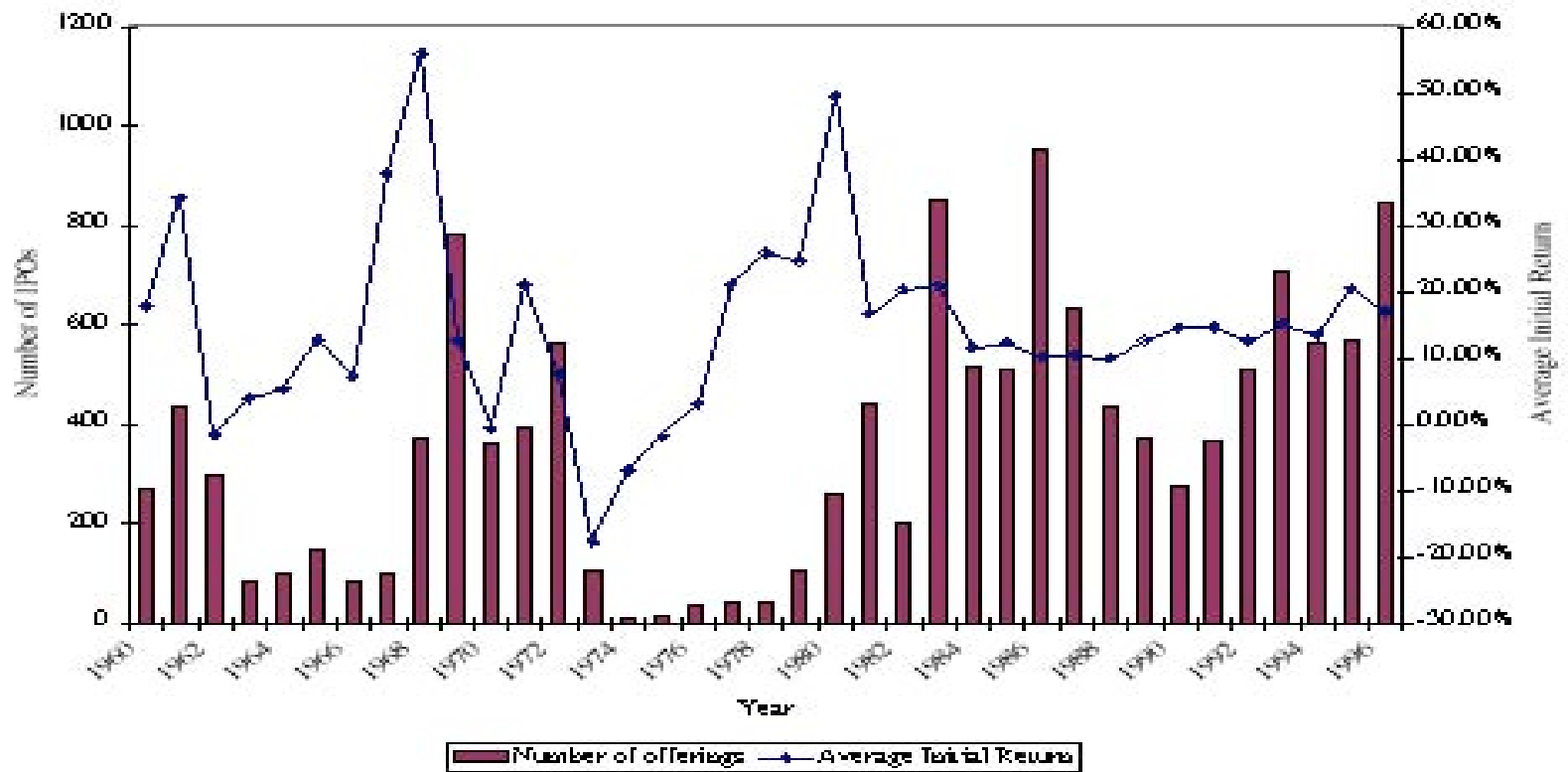
## What happens after the IPO?

Figure 9.10: Post Issue Returns - IPOs versus Non-IPOs



# The IPO Cycle

Figure 9.11: Number of IPOs and Average Initial Returns



## To be a successful IPO investor...

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- Have the valuation skills to value companies with limited information and considerable uncertainty about the future, so as to be able to identify the companies that are under or over priced.
- Since this is a short term strategy, often involving getting the shares at the offering price and flipping the shares on the offering date, you will have to gauge the market mood and demand for each offering, in addition to assessing its value. In other words, a shift in market mood can leave you with a large allotment of over-priced shares in an initial public offering.
- Play the allotment game well, asking for more shares than you want in companies which you view as severely under priced and fewer or no shares in firms that are overpriced or that are priced closer to fair value.



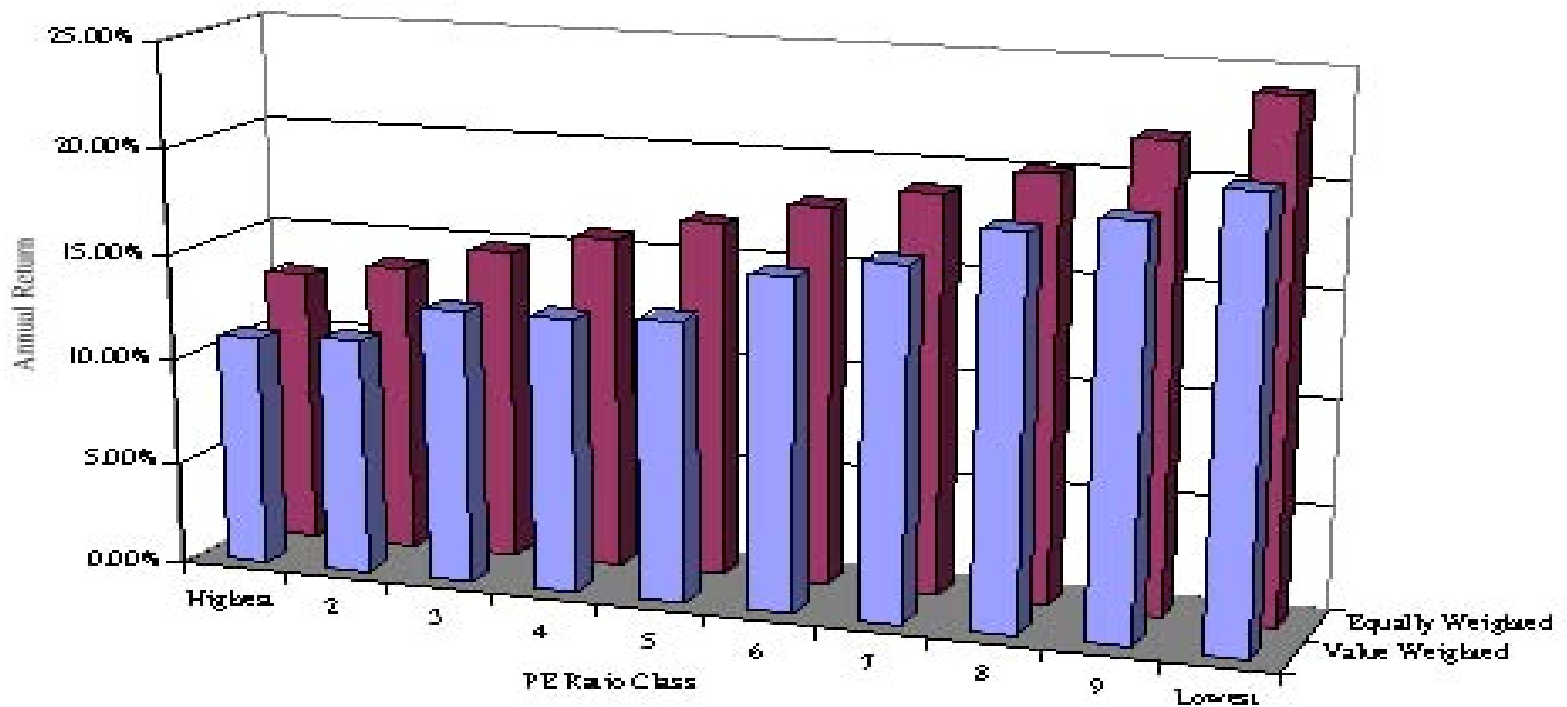
### III. The Passive Screener

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- In passive screening, you look for stocks that possess characteristics that you believe identify companies where growth is most likely to be under valued.
- Typical screens may include
  - Buying stocks with high PE ratios
  - Buying stocks that trade at low PE ratios relative to growth

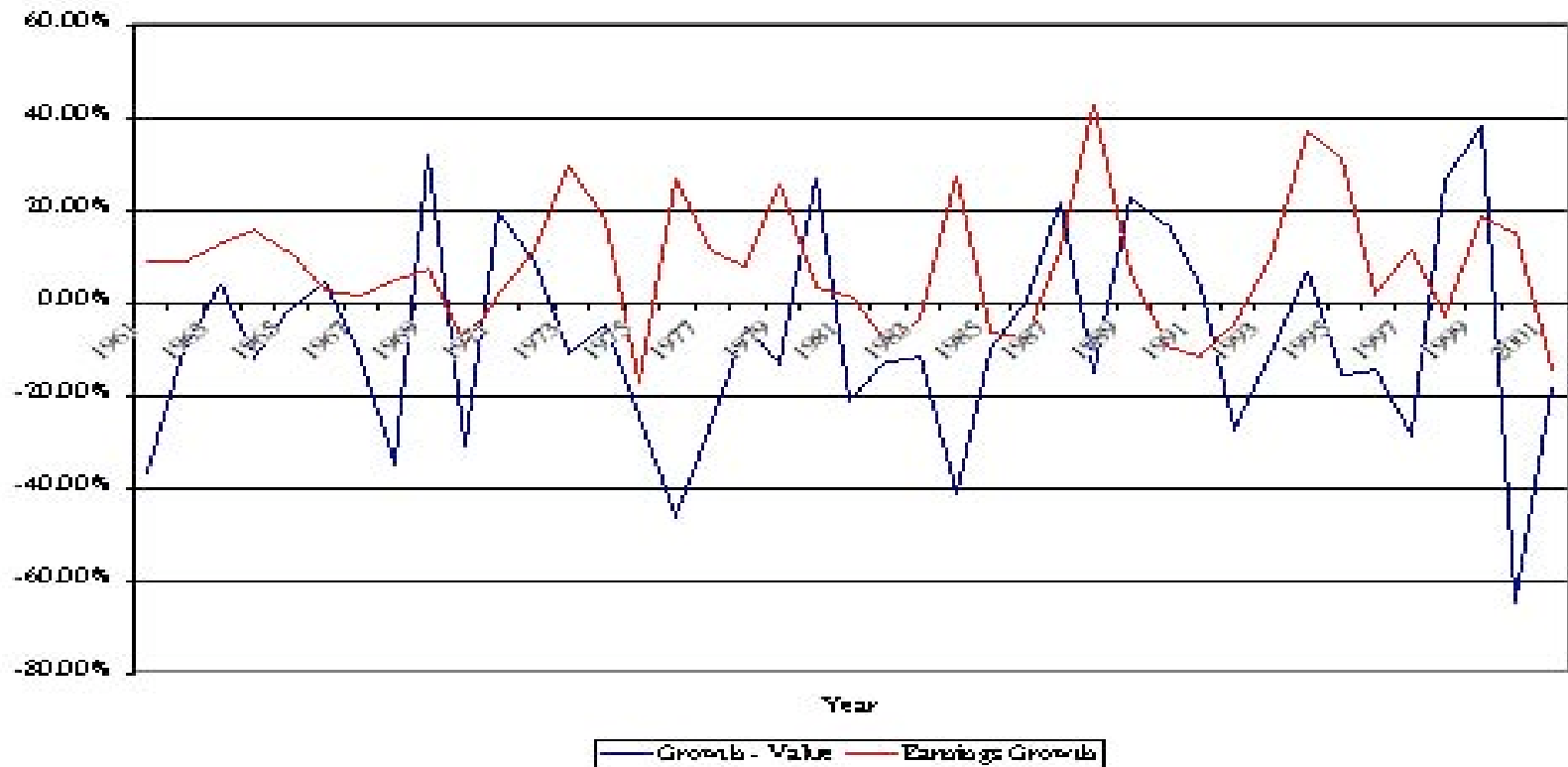
# High PE Ratio Stocks underperform low PE ratio stocks...

Figure 9.14: PE Ratios and Stock Returns - 1952-2001



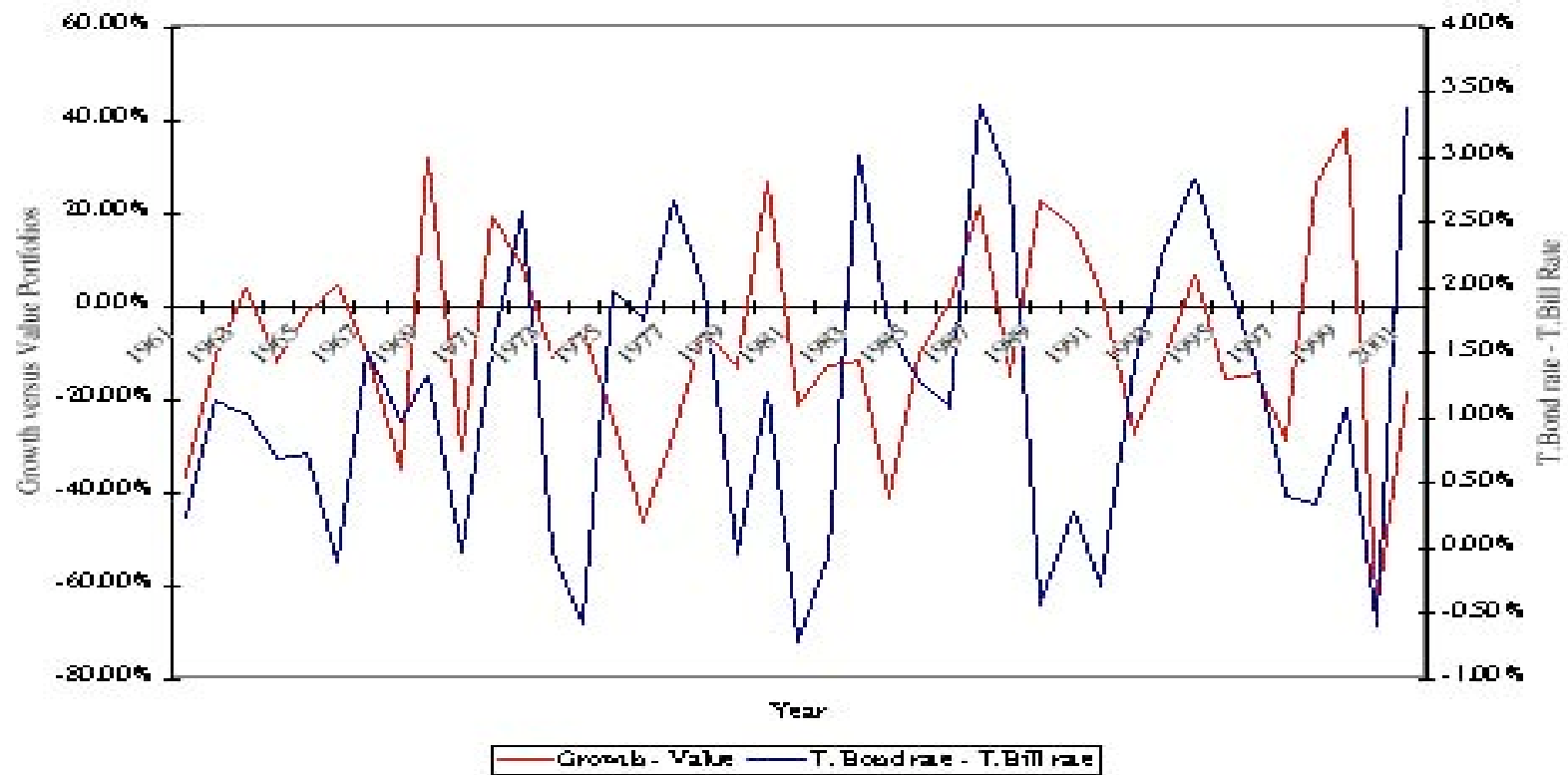
But growth outperforms value when earnings growth is low..

Figure 9.15: Relative Performance of Growth and Value versus Earnings Growth



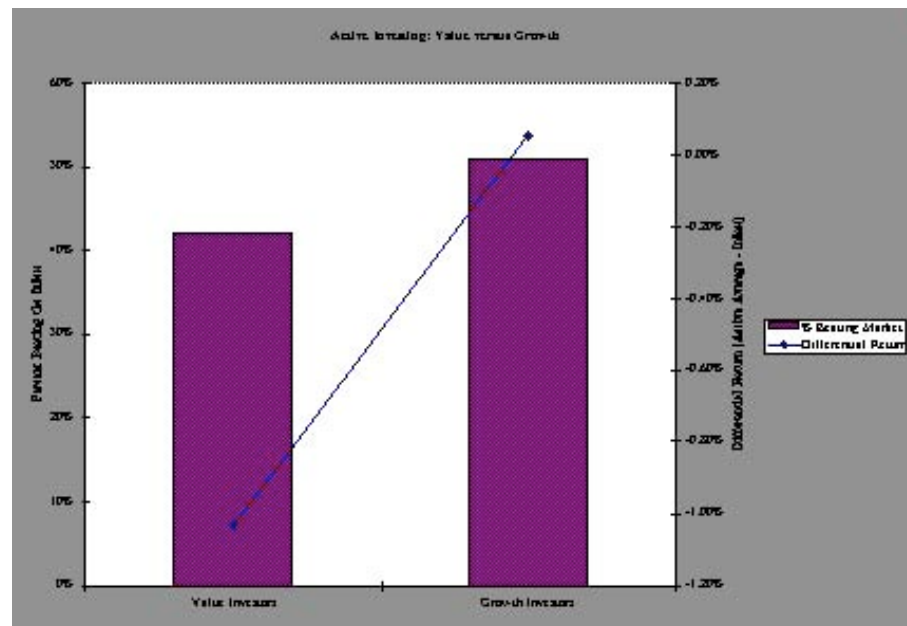
And when the yield curve is flat or downward sloping..

Figure 9.16: Relative Performance of Growth Stocks versus Yield Curve



## Furthermore..

- And active growth investors seem to beat growth indices more often than value investors beat value indices.



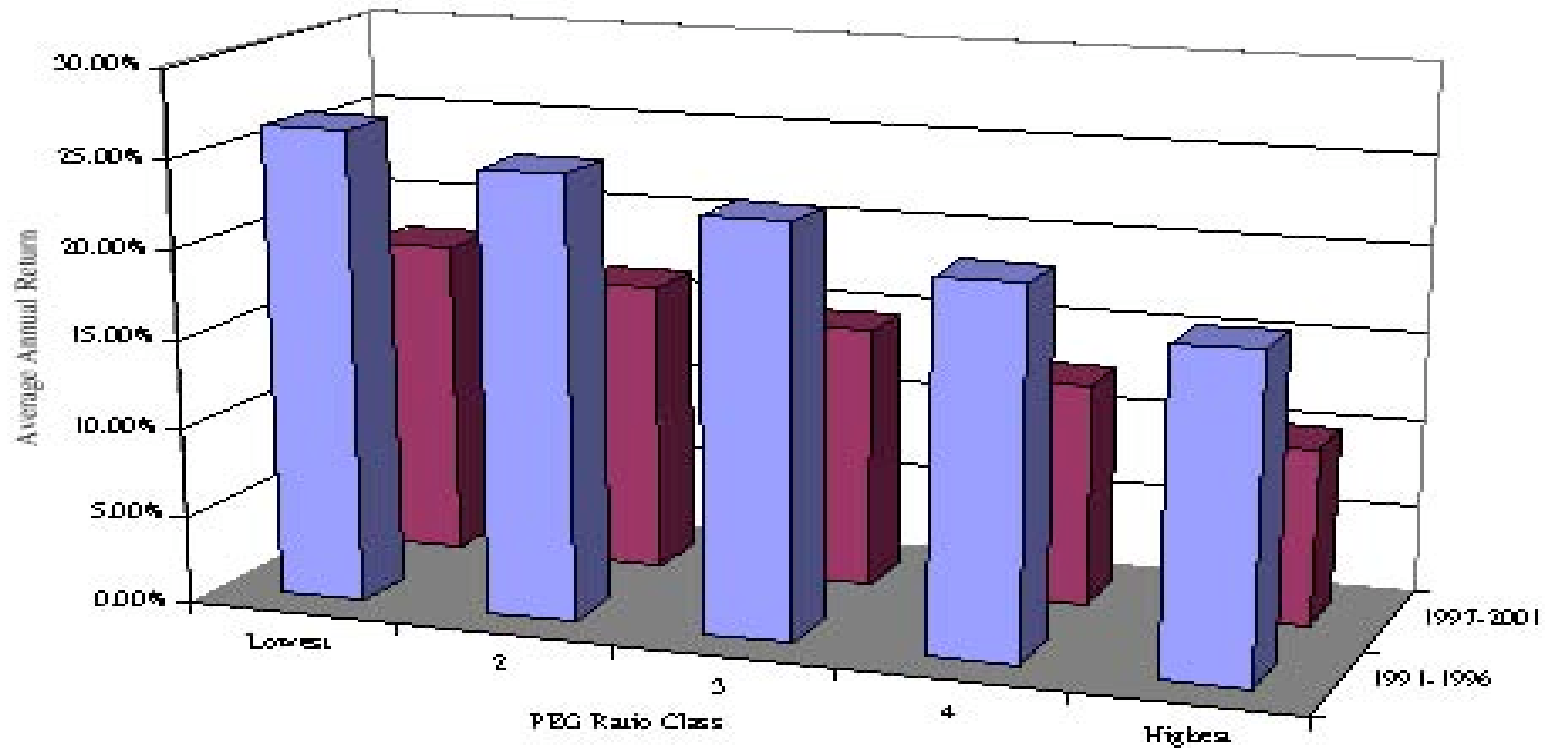
## GARP Strategies...

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- Strategy 1: Buy stocks that trade at PE ratios that are less than their expected growth rates. While there is little evidence that buying stocks with PE ratios less than the expected growth rate earns excess returns, this strategy seems to have gained credence as a viable strategy among investors. It is intuitive and simple, but not necessarily a good strategy.
- Strategy 2: Buy stocks that trade at a low ratio of PE to expected growth rate (PEG), relative to other stocks. On the PEG ratio front, the evidence is mixed. A Morgan Stanley study found that investing in stocks with low PEG ratios did earn higher returns than the S&P 500, before adjusting for risk.

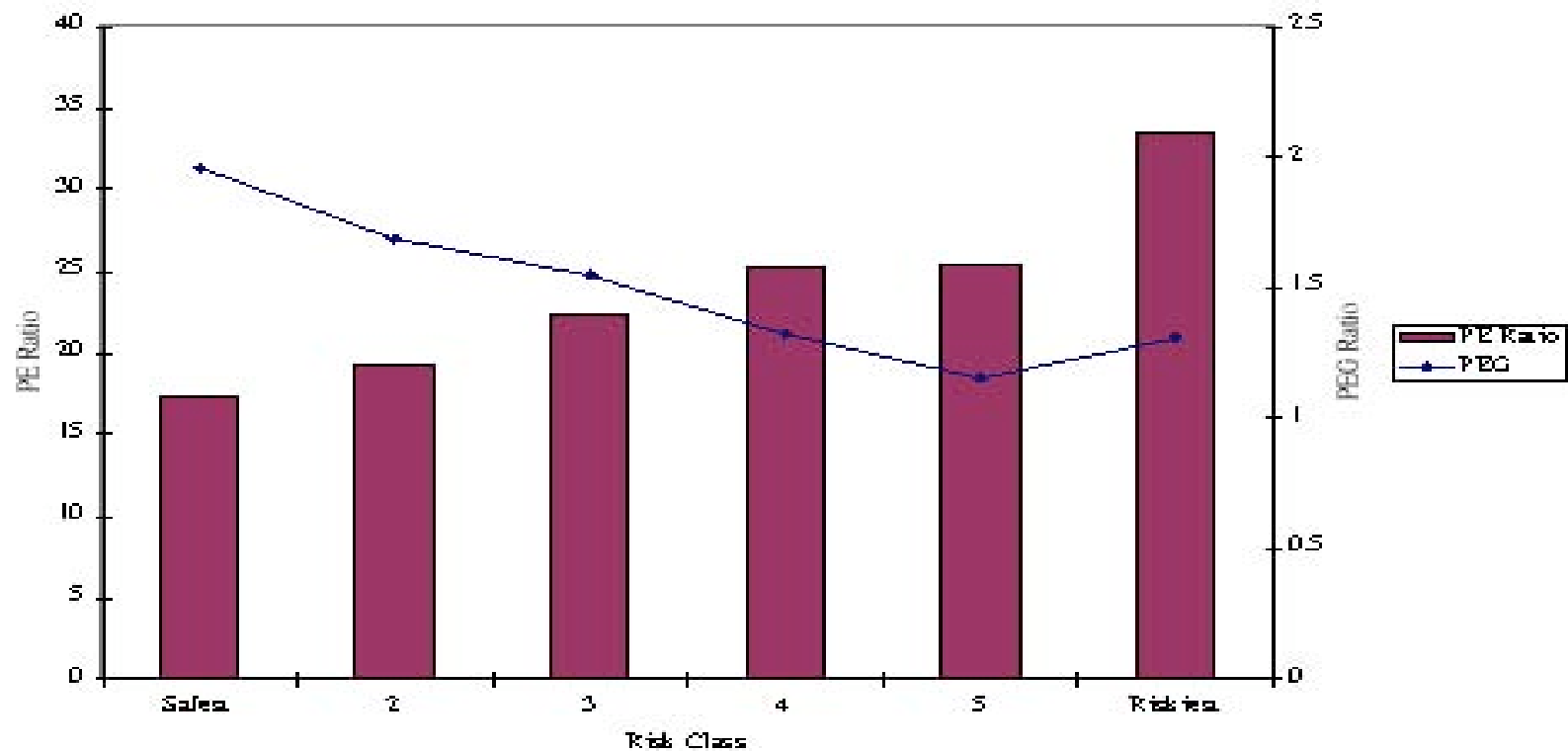
## A Low PEG Ratio = undervalued?

Figure 9.17: PEG Ratios and Annual Returns



## But low PEG stocks tend to be risky...

Figure 9.19: PE and PEG ratios by Risk Class - January 2002





## To be a successful passive growth investor..

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- *Superior judgments on growth prospects:* Since growth is the key dimension of value in these companies, obtaining better estimates of expected growth and its value should improve your odds of success.
- *Long Time Horizon:* If your underlying strategy is sound, a long time horizon increases your chances of earning excess returns.
- *Market Timing Skills:* There are extended cycles where the growth screens work exceptionally well and other cycles where they are counter productive. If you can time these cycles, you could augment your returns substantially. Since many of these cycles are related to how the overall market is doing, this boils down to your market timing ability.

## Activist Growth Investing

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- The first are venture capital funds that trace their lineage back to the 1950s. One of the first was American Research and Development that provided seed money for the founding of Digital Equipment.
- The second are leveraged buyout funds that developed during the 1980s, using substantial amounts of debt to take over publicly traded firms and make them private firms.
- Private equity funds that pool the wealth of individual investors and invest in private firms that show promise. This has allowed investors to invest in private businesses without either giving up diversification or taking an active role in managing these firms. Pension funds and institutional investors, attracted by the high returns earned by investments in private firms, have also set aside portions of their overall portfolios to invest in private equity.

## The Payoff to Private Equity and Venture Capital Investing: Thru 2001

<i>Fund Type</i>	<i>1 Yr</i>	<i>3 Yr</i>	<i>5 Yr</i>	<i>10 Yr</i>	<i>20 Yr</i>
Early/Seed Venture Capital	-36.3	81	53.9	33	21.5
Balanced Venture Capital	-30.9	45.9	33.2	24	16.2
Later Stage Venture Capital	-25.9	27.8	22.2	24.5	17
All Venture Capital	-32.4	53.9	37.9	27.4	18.2
All Buyouts	-16.1	2.9	8.1	12.7	15.6
Mezzanine	3.9	10	10.1	11.8	11.3
All Private Equity	-21.4	16.5	17.9	18.8	16.9

## To be a successful activist growth investor...

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- Pick your companies (and managers) well: Good venture capitalists seem to have the capacity to find the combination of ideas and management that make success more likely.
- Diversify: The rate of failure is high among private equity investments, making it critical that you spread your bets. The earlier the stage of financing – seed money, for example – the more important it is that you diversify.
- Support and supplement management: Venture capitalists are also management consultants and strategic advisors to the firms that they invest in. If they do this job well, they can help the managers of these firms convert ideas into commercial success.
- Protect your investment as the firm grows: As the firm grows and attracts new investment, you as the venture capitalist will have to protect your share of the business from the demands of those who bring in fresh capital.
- Know when to get out: Having a good exit strategy seems to be as critical as having a good entrance strategy. Know how and when to get out of an investment is critical to protecting your returns.



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# Value Investing

Aswath Damodaran

## The Different Faces of Value Investing Today

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- *Passive Screeners*: Following in the Ben Graham tradition, you screen for stocks that have characteristics that you believe identify under valued stocks. Examples would include low PE ratios and low price to book ratios.
- *Contrarian Investors*: These are investors who invest in companies that others have given up on, either because they have done badly in the past or because their future prospects look bleak.
- *Activist Value Investors*: These are investors who invest in poorly managed and poorly run firms but then try to change the way the companies are run.

## *I. The Passive Screener*

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- This approach to value investing can be traced back to Ben Graham and his screens to find undervalued stocks.
- In recent years, these screens have been refined and extended. The following section summarizes the empirical evidence that backs up each of these screens.

## *A. Ben Graham' Screens*

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1. PE of the stock has to be less than the inverse of the yield on AAA Corporate Bonds:
2. PE of the stock has to be less than 40% of the average PE over the last 5 years.
3. Dividend Yield > Two-thirds of the AAA Corporate Bond Yield
4. Price < Two-thirds of Book Value
5. Price < Two-thirds of Net Current Assets
6. Debt-Equity Ratio (Book Value) has to be less than one.
7. Current Assets > Twice Current Liabilities
8. Debt < Twice Net Current Assets
9. Historical Growth in EPS (over last 10 years) > 7%
10. No more than two years of negative earnings over the previous ten years.



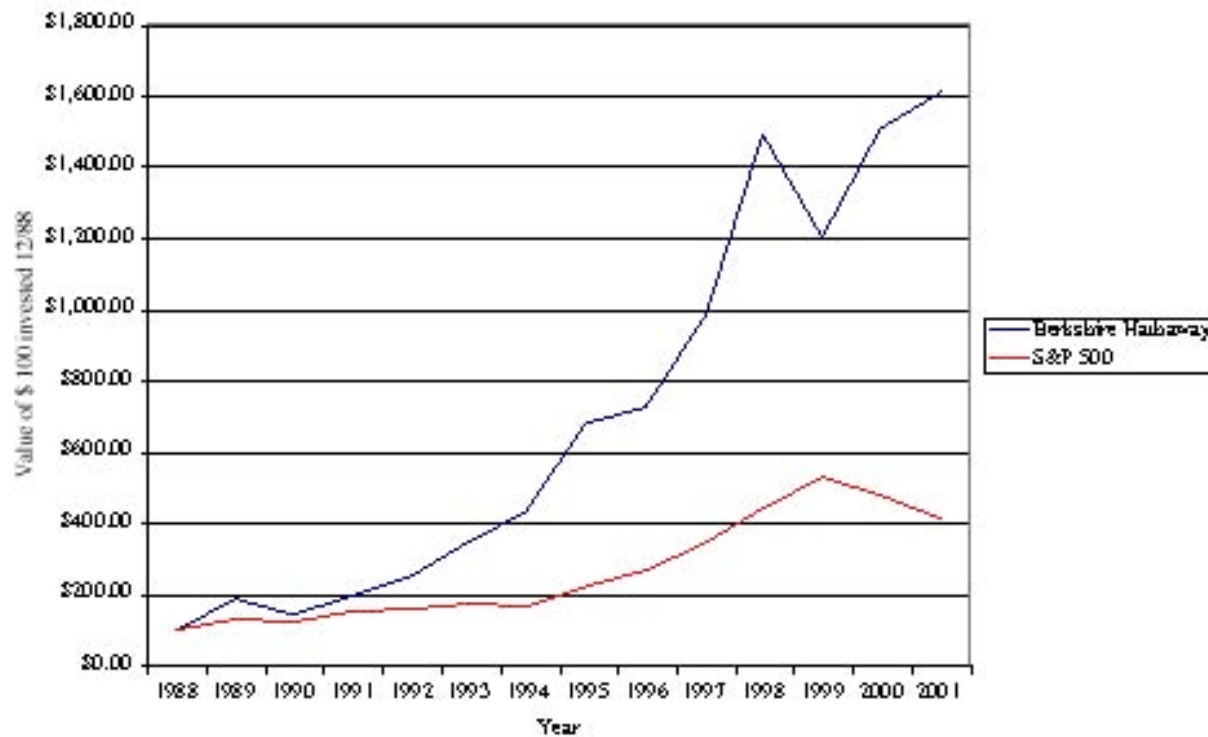
## How well do Graham's screen's perform?

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- A study by Oppenheimer concluded that stocks that passed the Graham screens would have earned a return well in excess of the market.
- Mark Hulbert who evaluates investment newsletters concluded that newsletters that used screens similar to Graham's did much better than other newsletters.
- However, an attempt by James Rea to run an actual mutual fund using the Graham screens failed to deliver the promised returns.
- Graham's best claim to fame comes from the success of the students who took his classes at Columbia University. Among them were Charlie Munger and Warren Buffett.

# The Buffett Mystique

Figure 8.1: Berkshire Hathaway



# Buffett's Tenets

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## ■ *Business Tenets:*

- The business the company is in should be simple and understandable.
- The firm should have a consistent operating history, manifested in operating earnings that are stable and predictable.
- The firm should be in a business with favorable long term prospects.

## ■ *Management Tenets:*

- The managers of the company should be candid. As evidenced by the way he treated his own stockholders, Buffett put a premium on managers he trusted.
- The managers of the company should be leaders and not followers.

## ■ *Financial Tenets:*

- The company should have a high return on equity. Buffett used a modified version of what he called owner earnings

$$\text{Owner Earnings} = \text{Net income} + \text{Depreciation \& Amortization} - \text{Capital Expenditures}$$

- The company should have high and stable profit margins.

## ■ *Market Tenets:*

- Use conservative estimates of earnings and the riskless rate as the discount rate.
- In keeping with his view of Mr. Market as capricious and moody, even valuable companies can be bought at attractive prices when investors turn away from them.

## Be like Buffett?

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- Markets have changed since Buffett started his first partnership. Even Warren Buffett would have difficulty replicating his success in today's market, where information on companies is widely available and dozens of money managers claim to be looking for bargains in value stocks.
- In recent years, Buffett has adopted a more activist investment style and has succeeded with it. To succeed with this style as an investor, though, you would need substantial resources and have the credibility that comes with investment success. There are few investors, even among successful money managers, who can claim this combination.
- The third ingredient of Buffett's success has been patience. As he has pointed out, he does not buy stocks for the short term but businesses for the long term. He has often been willing to hold stocks that he believes to be under valued through disappointing years. In those same years, he has faced no pressure from impatient investors, since stockholders in Berkshire Hathaway have such high regard for him.

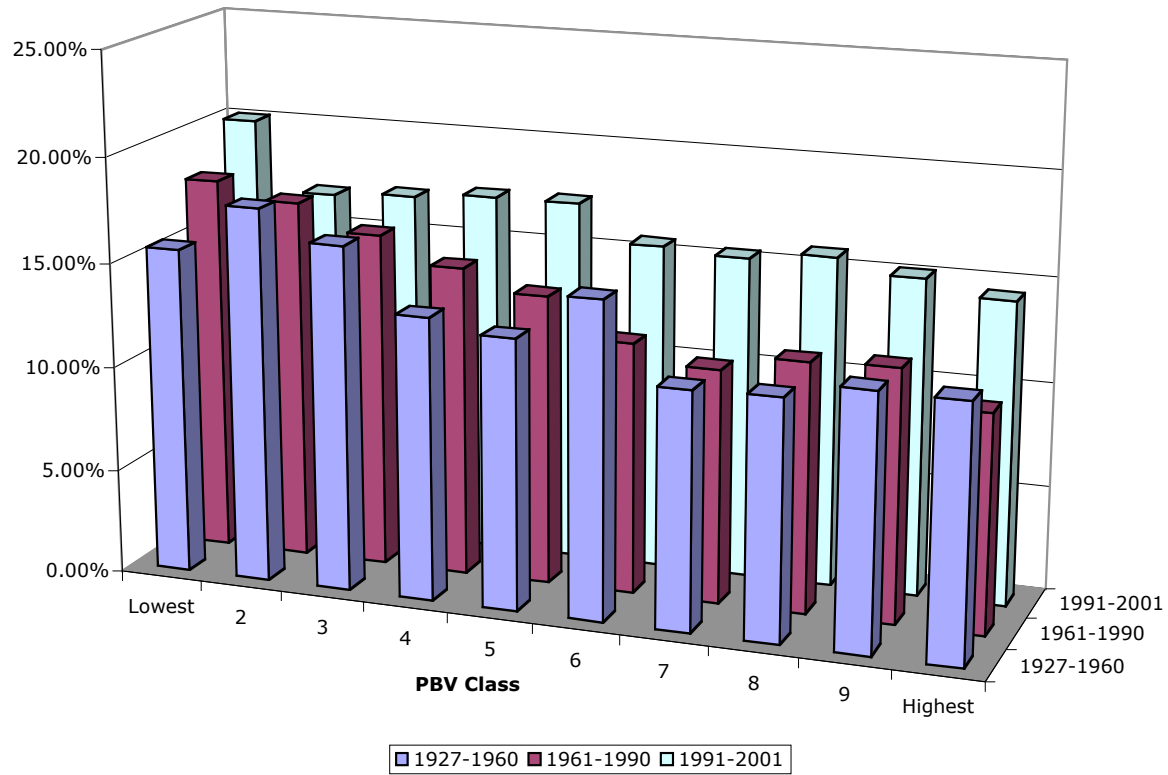
## Value Screens

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- Price to Book ratios: Buy stocks where equity trades at less than or at least a low multiple of the book value of equity.
- Price earnings ratios: Buy stocks where equity trades at a low multiple of equity earnings.
- Price to sales ratio: Buy stocks where equity trades at a low multiple of revenues.
- Dividend Yields: Buy stocks with high dividend yields.

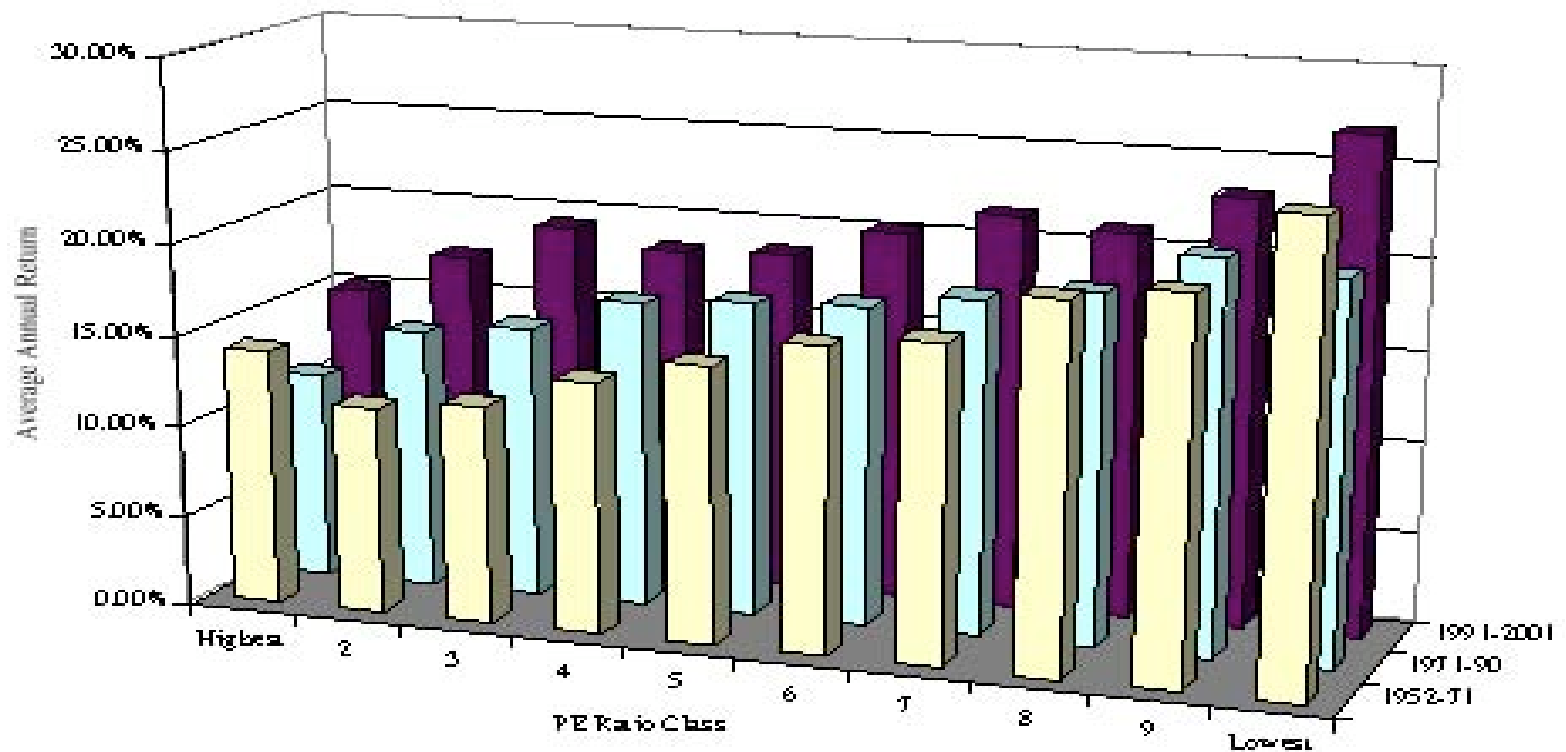
# 1. Low Price to Book Ratios

Figure 8.2: PBV Classes and Returns - 1927-2001



## 2. The Low PE Effect

Figure 8.3: Returns on PE Ratio Classes - 1953-2001



### 3. Price/Sales Ratio Screens

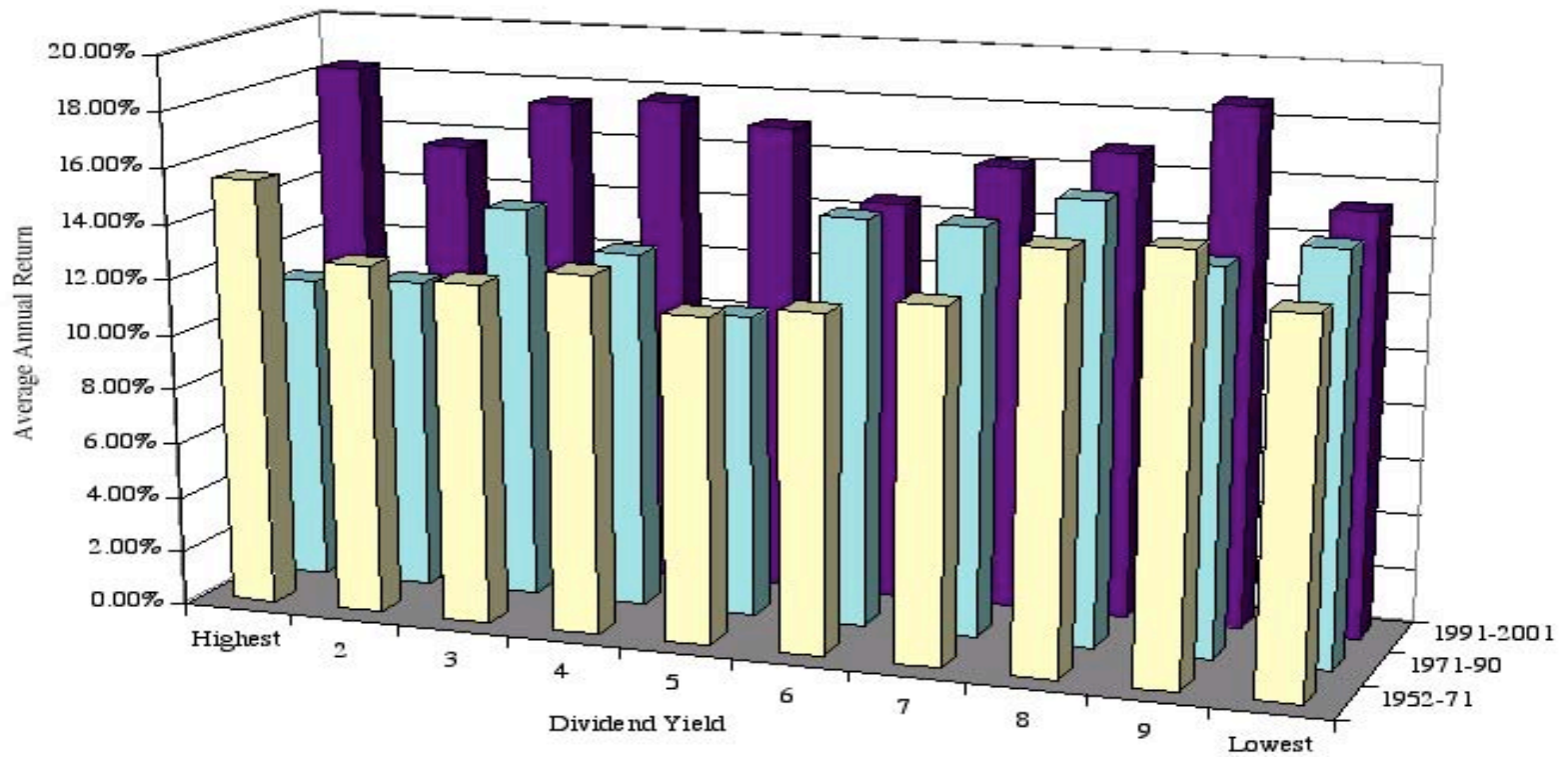
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- Senchack and Martin (1987) compared the performance of low price-sales ratio portfolios with low price-earnings ratio portfolios, and concluded that the low price-sales ratio portfolio outperformed the market but not the low price-earnings ratio portfolio.
- Jacobs and Levy (1988a) concluded that low price-sales ratios, by themselves, yielded an excess return of 0.17% a month between 1978 and 1986, which was statistically significant. Even when other factors were thrown into the analysis, the price-sales ratios remained a significant factor in explaining excess returns (together with price-earnings ratio and size)



## 4. Dividend Yields

Figure 8.4: Returns on Dividend Yield Classes - 1952 - 2001



## To be a successful passive value investor...

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1. **Have a long time horizon.** All the studies quoted above look at returns over time horizons of five years or greater. In fact, low price-book value stocks have underperformed high price-book value stocks over shorter time periods.
2. **Choose your screens wisely:** Too many screens can undercut the search for excess returns since the screens may end up eliminating just those stocks that create the positive excess returns.
3. **Be diversified:** The excess returns from these strategies often come from a few holdings in large portfolio. Holding a small portfolio may expose you to extraordinary risk and not deliver the same excess returns.
4. **Watch out for taxes and transactions costs:** Some of the screens may end up creating a portfolio of low-priced stocks, which, in turn, create larger transactions costs.

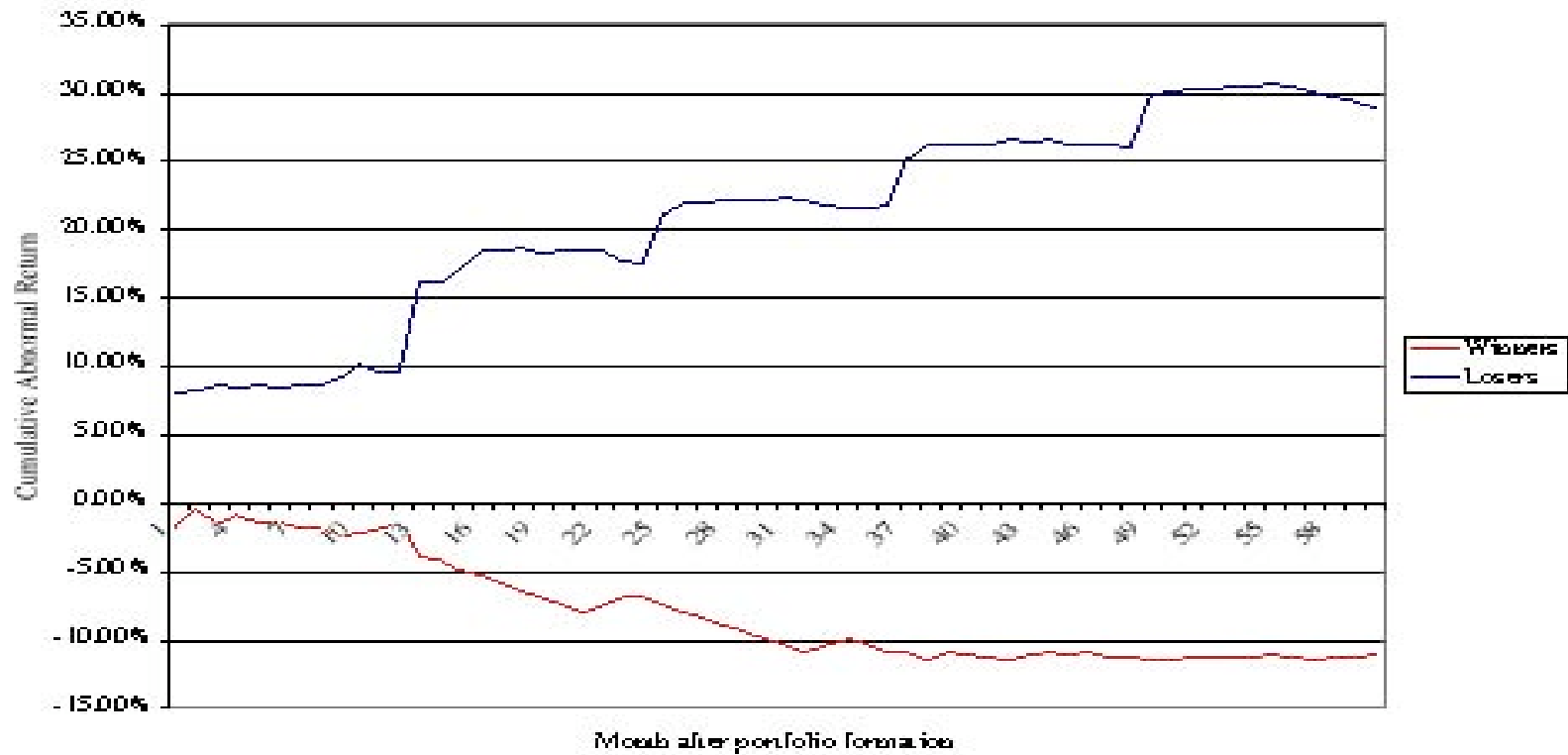
## II. Contrarian Value Investing: Buying the Losers

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- In contrarian value investing, you begin with the proposition that markets over react to good and bad news. Consequently, stocks that have had bad news come out about them (earnings declines, deals that have gone bad) are likely to be under valued.
- Evidence that Markets Overreact to News Announcements
  - Studies that look at returns on markets over long time periods chronicle that there is significant negative serial correlation in returns, I.e, good years are more likely to be followed by bad years and vice versa.
  - Studies that focus on individual stocks find the same effect, with stocks that have done well more likely to do badly over the next period, and vice versa.

# I. Winner and Loser Portfolios

Figure 6.5: Cumulative Abnormal Returns - Winners versus Losers



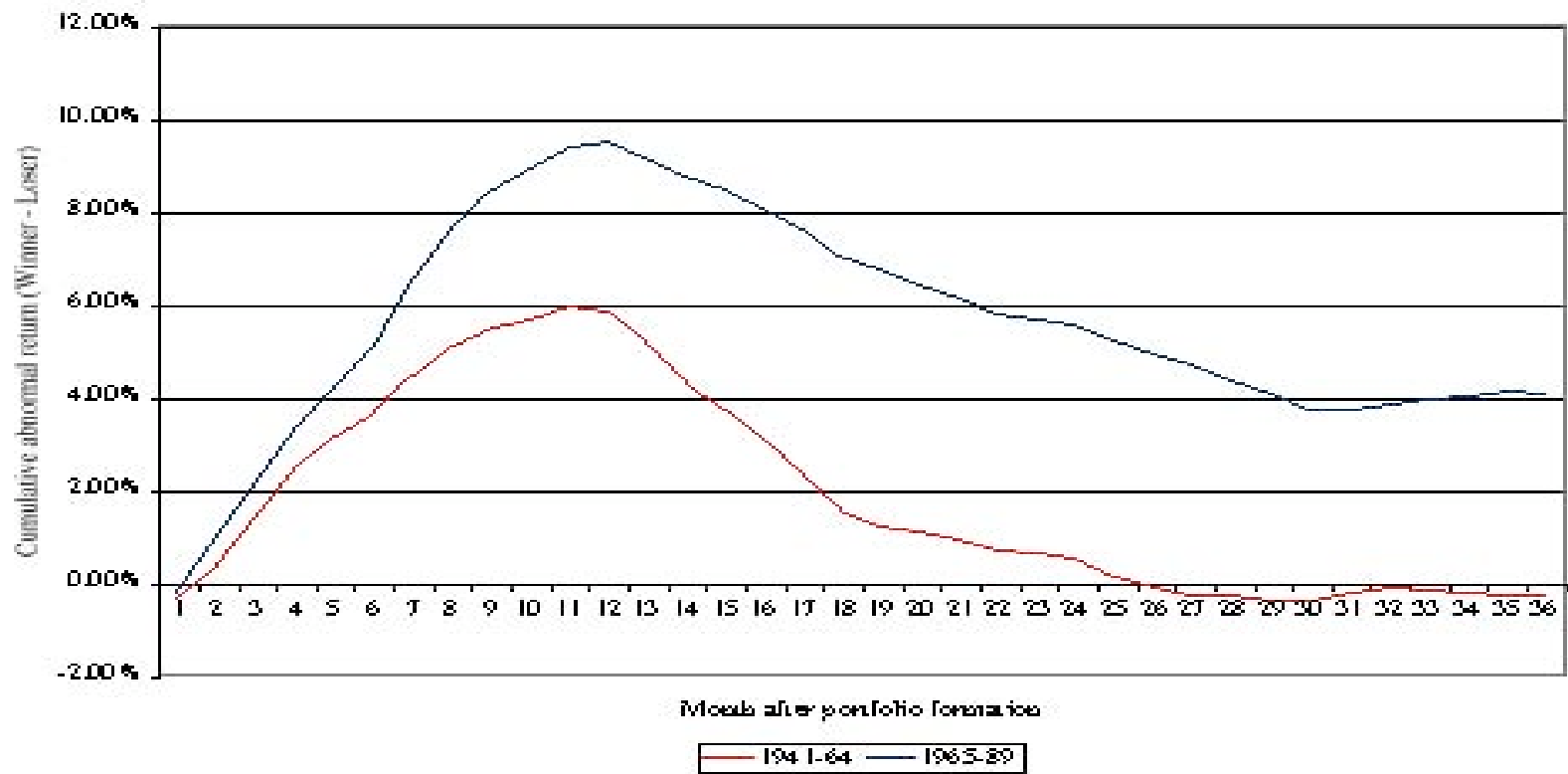
## More on Winner and Loser Portfolios

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- This analysis suggests that loser portfolio clearly outperform winner portfolios in the sixty months following creation. This evidence is consistent with market overreaction and correction in long return intervals.
- There are many, academics as well as practitioners, who suggest that these findings may be interesting but that they overstate potential returns on 'loser' portfolios.
- There is evidence that loser portfolios are more likely to contain low priced stocks (selling for less than \$5), which generate higher transactions costs and are also more likely to offer heavily skewed returns, i.e., the excess returns come from a few stocks making phenomenal returns rather than from consistent performance.
- Studies also seem to find loser portfolios created every December earn significantly higher returns than portfolios created every June.
- Finally, you need a long time horizon for the loser portfolio to win out.

## Loser Portfolios and Time Horizon

Figure 8.6: Differential Returns - Winner versus Loser Portfolios



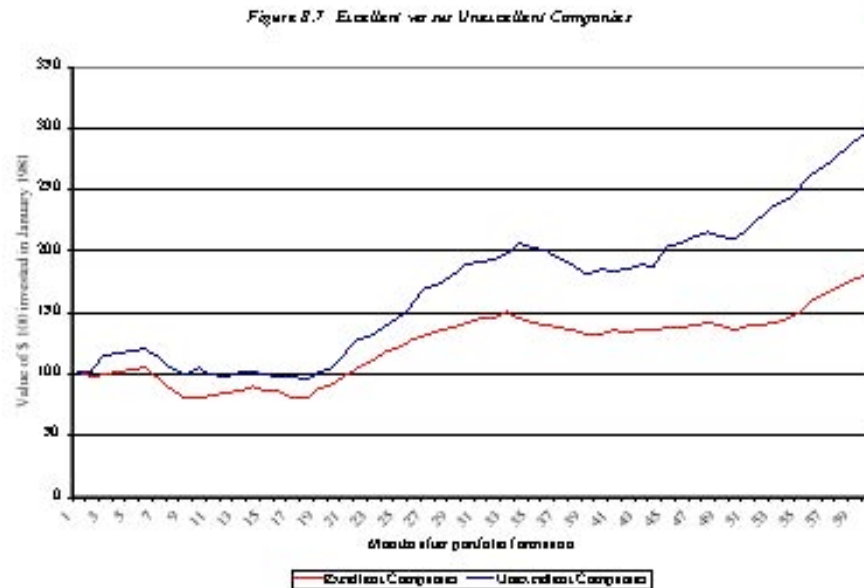
## 2. Good Companies are not necessarily Good Investments

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- Any investment strategy that is based upon buying well-run, good companies and expecting the growth in earnings in these companies to carry prices higher is dangerous, since it ignores the reality that the current price of the company may reflect the quality of the management and the firm.
- If the current price is right (and the market is paying a premium for quality), the biggest danger is that the firm loses its lustre over time, and that the premium paid will dissipate.
- If the market is exaggerating the value of the firm, this strategy can lead to poor returns even if the firm delivers its expected growth.
- It is only when markets under estimate the value of firm quality that this strategy stands a chance of making excess returns.

# 1. Excellent versus Unexcellent Companies

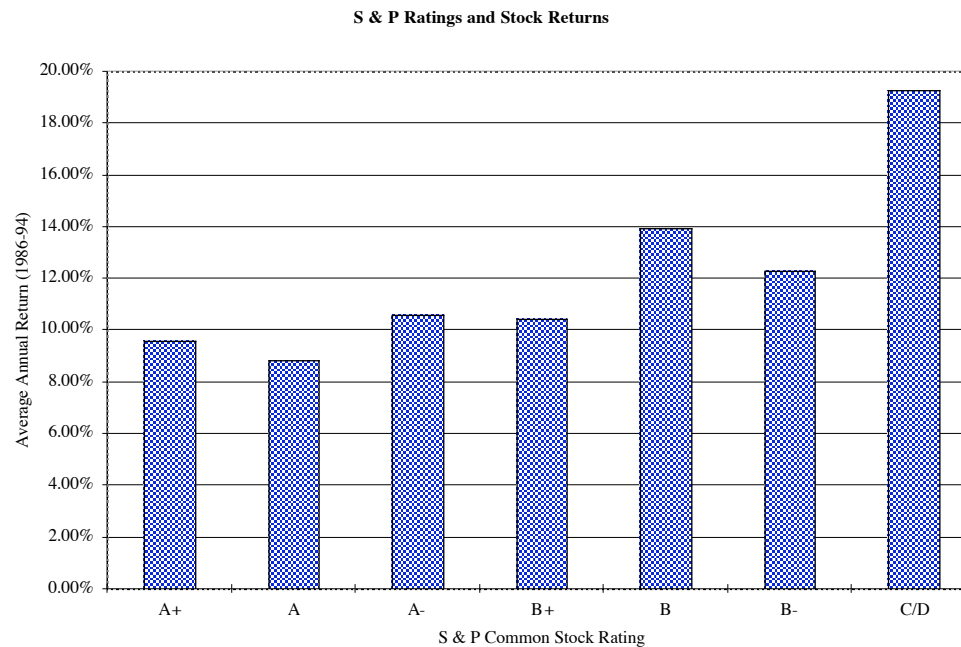
- There is evidence that well managed companies do not always make great investments. For instance, there is evidence that excellent companies (using the Tom Peters standard) earn poorer returns than “unexcellent companies”.





## 2. Risk/Return by S&P Quality Indices

- Conventional ratings of company quality and stock returns seem to be negatively correlated.



## To be a successful contrarian value investor...

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1. **Self Confidence:** Investing in companies that everybody else views as losers requires a self confidence that comes either from past success, a huge ego or both.
2. **Clients/Investors who believe in you:** You either need clients who think like you do and agree with you, or clients that have made enough money of you in the past that their greed overwhelms any trepidation you might have in your portfolio.
3. **Patience:** These strategies require time to work out. For every three steps forward, you will often take two steps back.
4. **Stomach for Short-term Volatility:** The nature of your investment implies that there will be high short term volatility and high profile failures.
5. **Watch out for transactions costs:** These strategies often lead to portfolios of low priced stocks held by few institutional investors. The transactions costs can wipe out any perceived excess returns quickly.

### III. Activist Value Investing

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- An activist value investor having acquired a stake in an “undervalued” company which might also be “badly” managed then pushes the management to adopt those changes which will unlock this value. For instance,
- If the value of the firm is less than its component parts:
  - push for break up of the firm, spin offs, split offs etc.
- If the firm is being too conservative in its use of debt:
  - push for higher leverage and recapitalization
- If the firm is accumulating too much cash:
  - push for higher dividends, stock repurchases ..
- If the firm is being badly managed:
  - push for a change in management or to be acquired
- If there are gains from a merger or acquisition
  - push for the merger or acquisition, even if it is hostile

## a. Breaking up is hard to do... Effects of Spin offs, Split offs, Divestitures on Value

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- Linn and Rozeff (1984) examined the price reaction to announcements of divestitures by firms and reported an average excess return of 1.45% for 77 divestitures between 1977 and 1982. Markets view firms that are evasive about reasons for and proceeds from divestitures with skepticism. Linn and Rozeff report the following -

### *Market Reaction to Divestiture Announcements*

#### *Price Announced Motive Announced*

	Yes	No
Yes	3.92%	2.30%
No	0.70%	0.37%

- Schipper and Smith (1983) examined 93 firms that announced spin offs between 1963 and 1981 and reported an average excess return of 2.84% in the two days surrounding the announcement. Further, there is evidence that excess returns increase with the magnitude of the spun off entity. The excess returns are greater for firms in which the spin off is motivated by tax and regulatory concerns

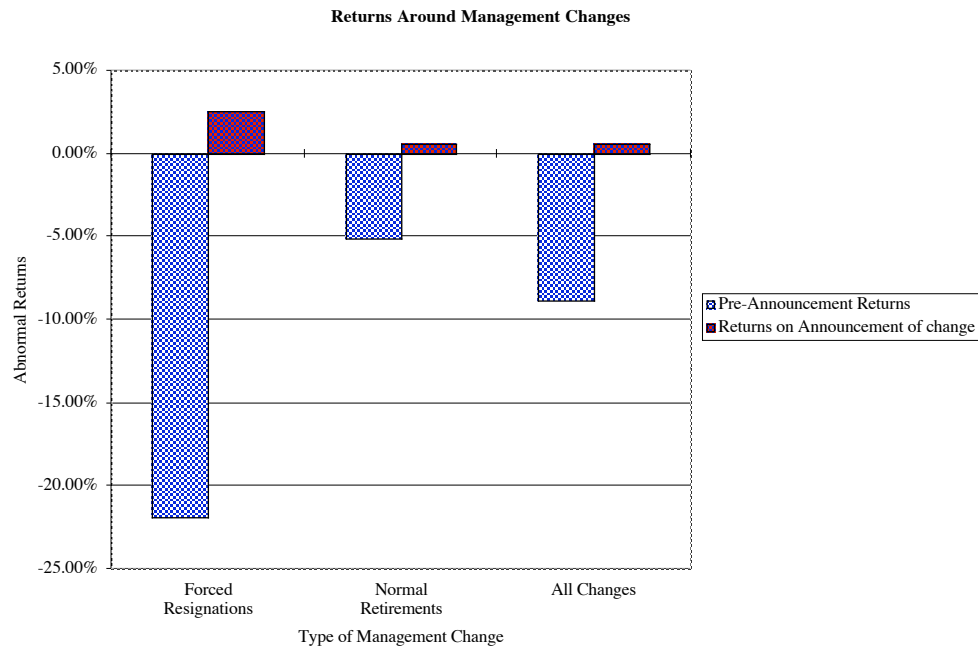
## b. Some firms have too little debt...Effects of Leverage Increasing and Decreasing Transactions

- The overall empirical evidence suggest that leverage increasing transactions increase value whereas leverage reducing transactions decrease value.

<i>Type of transaction</i>	<i>Security Issued</i>	<i>Security Retired</i>	<i>Sample Size</i>	<i>2-Day Return</i>
<i>Leverage-Increasing Transactions</i>				
Stock Repurchase	Debt	Common	45	21.9%
Exchange Offer	Debt	Common	52	14.0%
Exchange Offer	Preferred	Common	9	8.3%
Exchange Offer	Debt	Preferred	24	2.2%
Exchange Offer	Bonds	Preferred	24	2.2%
<i>Transactions with no change in leverage</i>				
Exchange Offer	Debt	Debt	36	0.6%
Security Sale	Debt	Debt	83	0.2%
<i>Leverage-Reducing Transactions</i>				
Conversion-forcing call	Common	Convertible	57	-0.4%
Conversion-forcing call	Common	Preferred	113	-2.1%
Security Sale	Conv. Debt	Conv. Debt	15	-2.4%
Exchange Offer	Common	Debt	30	-2.6%
Exchange Offer	Preferred	Preferred	9	-7.7%
Security Sale	Common	Debt	12	-4.2%
Exchange Offer	Common	Debt	20	-9.9%

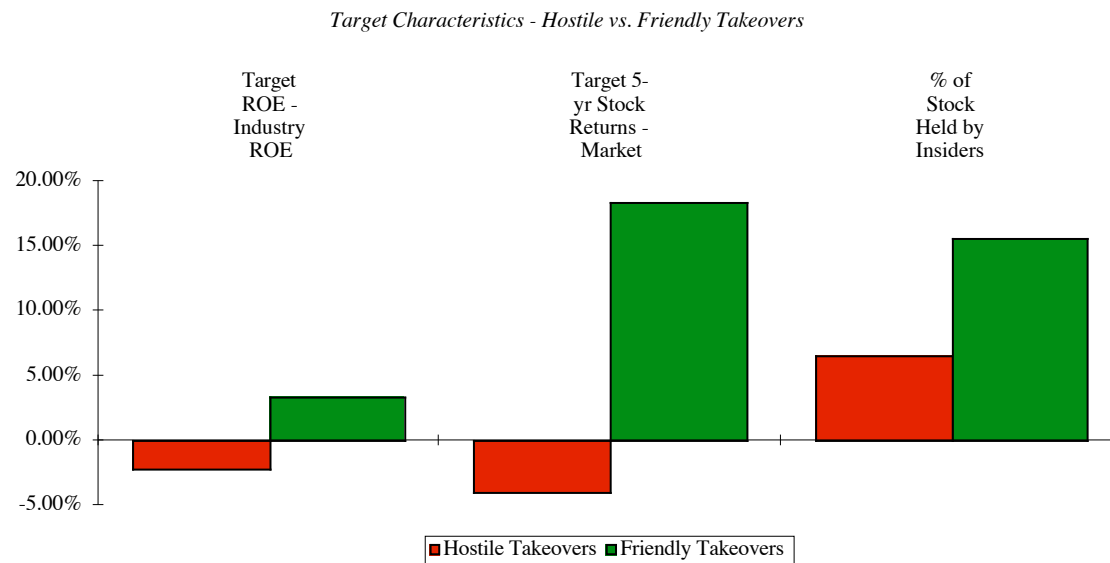
## c. Effects of Management Changes on Firm Value

- The overall empirical evidence suggests that changes in management are generally viewed as good news.

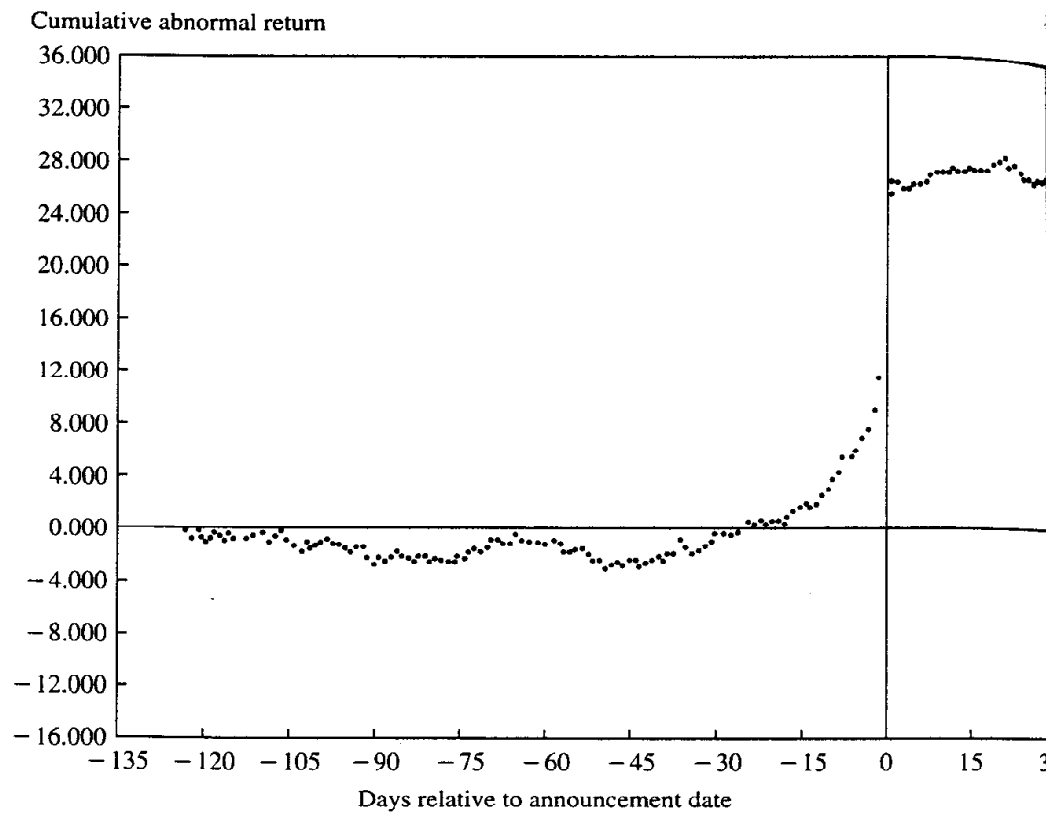


## d. The Effects of Hostile Acquisitions on the Target Firm

- Badly managed firms are much more likely to be targets of acquisitions than well managed firms



*And acquisitions are clearly good for the target firm's stockholders*





## To be a successful activist value investor...

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1. **Have lots of capital:** Since this strategy requires that you be able to put pressure on incumbent management, you have to be able to take significant stakes in the companies.
2. **Know your company well:** Since this strategy is going to lead a smaller portfolio, you need to know much more about your companies than you would need to in a screening model.
3. **Understand corporate finance:** You have to know enough corporate finance to understand not only that the company is doing badly (which will be reflected in the stock price) but what it is doing badly.
4. **Be persistent:** Incumbent managers are unlikely to roll over and play dead just because you say so. They will fight (and fight dirty) to win. You have to be prepared to counter.
5. **Do your homework:** You have to form coalitions with other investors and to organize to create the change you are pushing for.



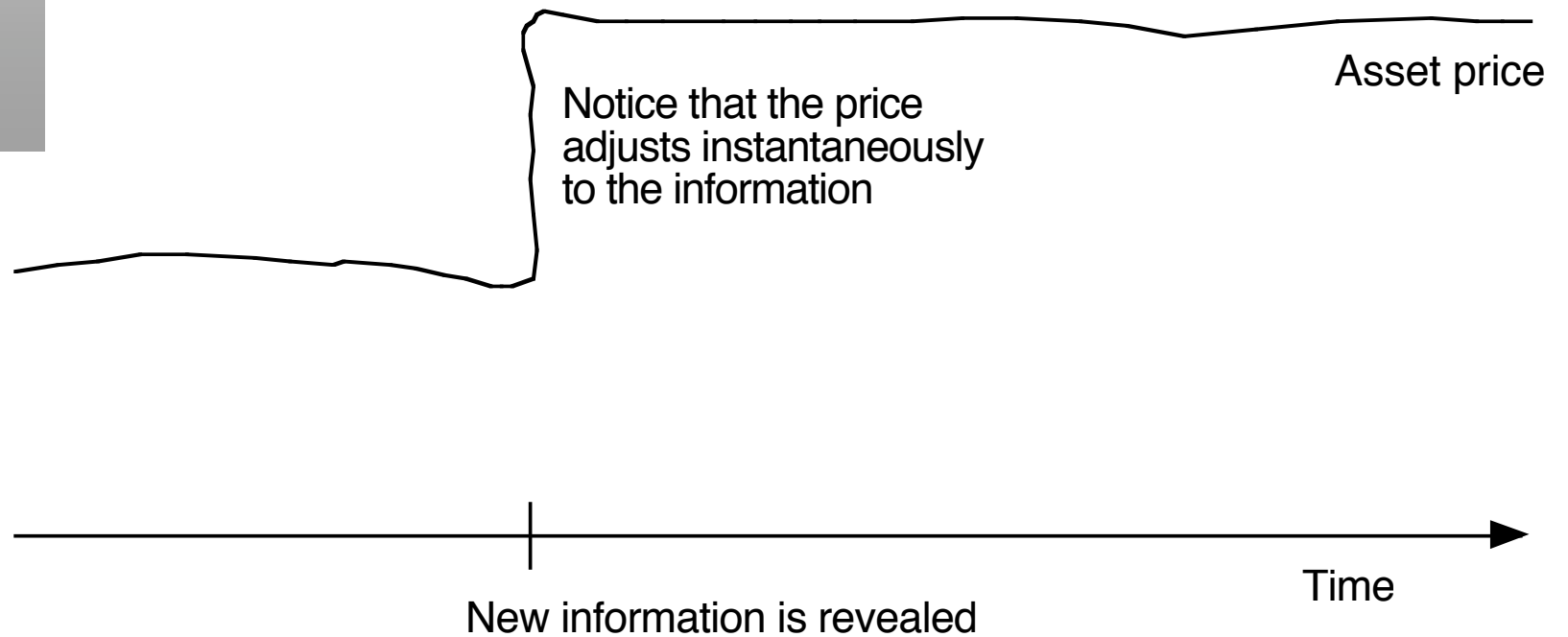
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# Information Trading

Aswath Damodaran

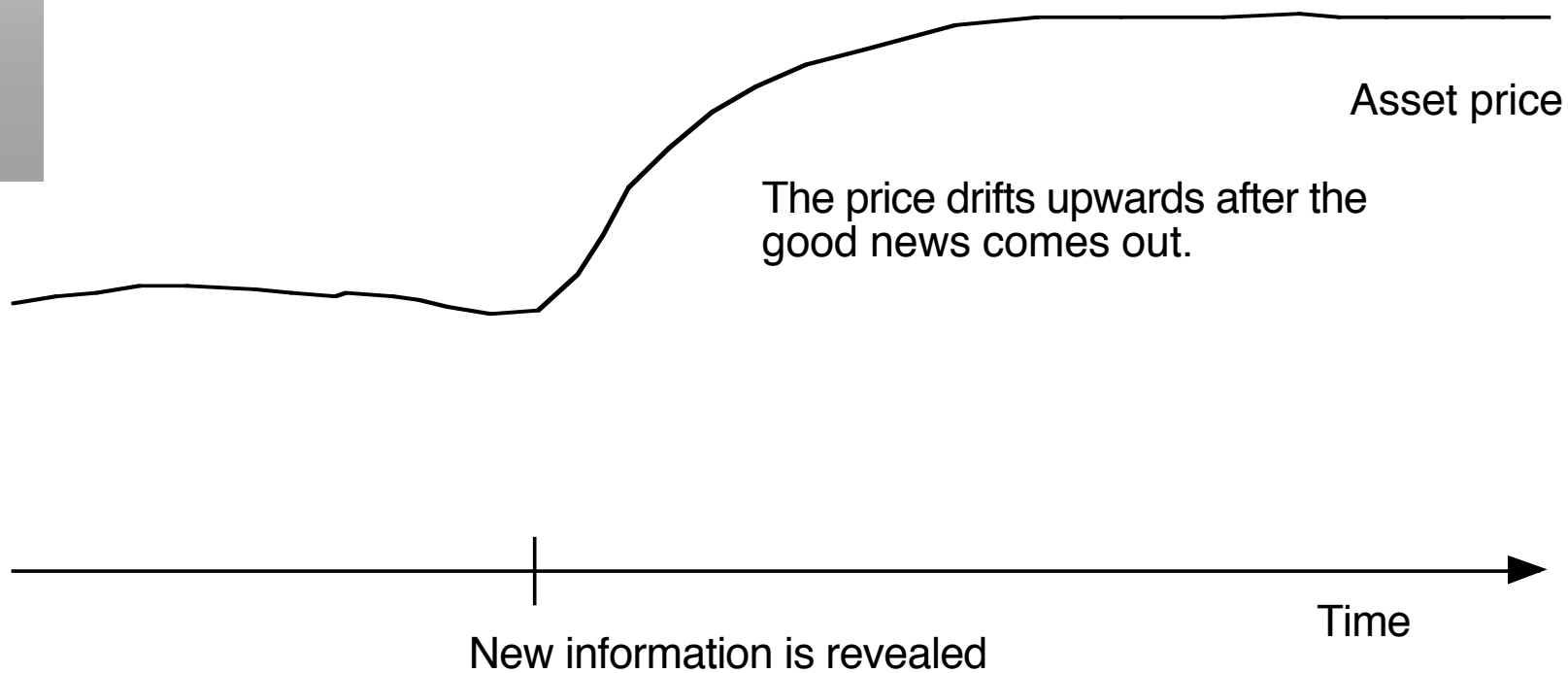
# Information and Prices in an Efficient Market

*Figure 10.1: Price Adjustment in an Efficient Market*



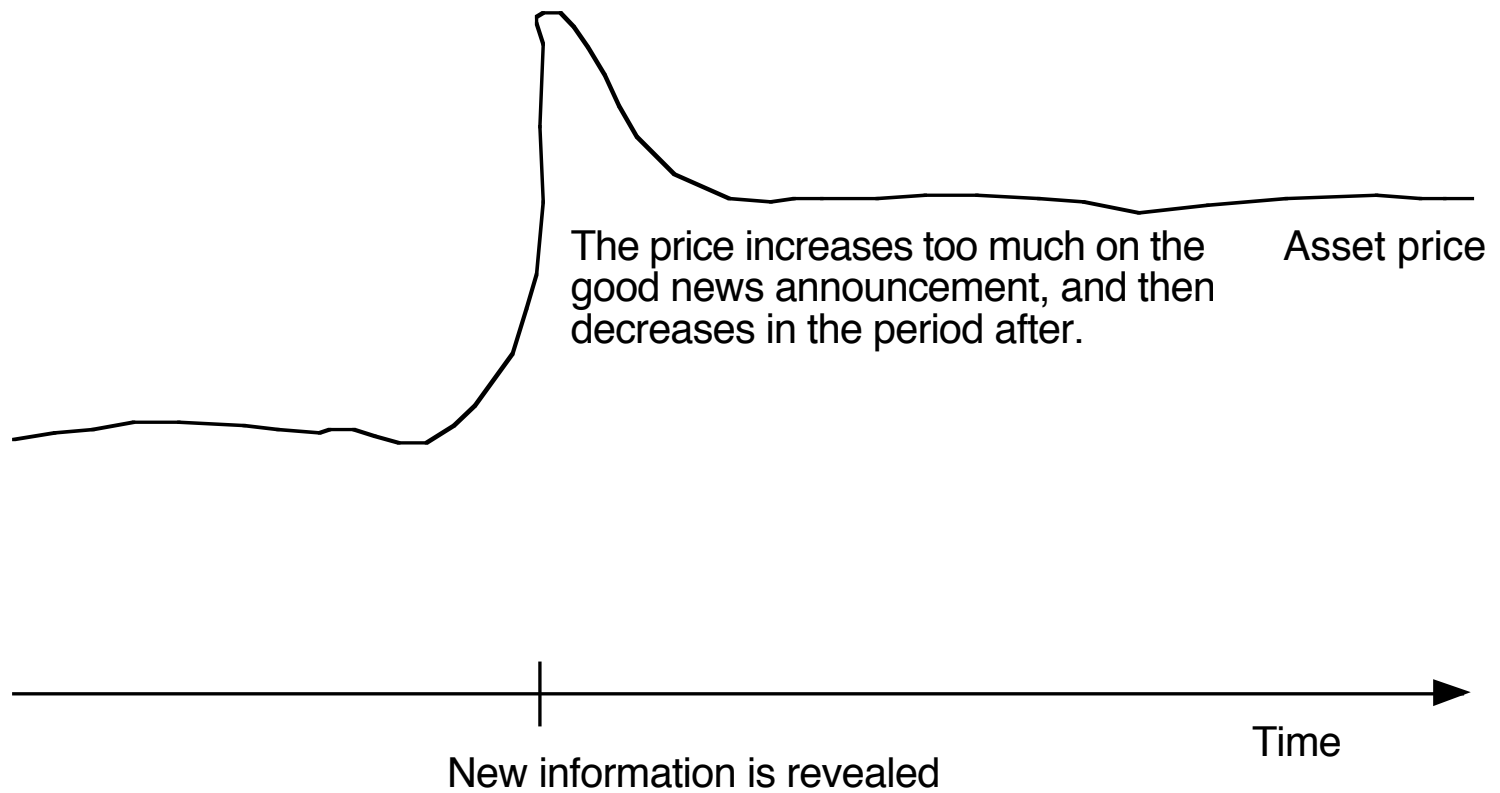
## A Slow Learning Market...

*Figure 10.2 A Slow Learning Market*



# An Overreacting Market

Figure 10.3: An Overreacting Market



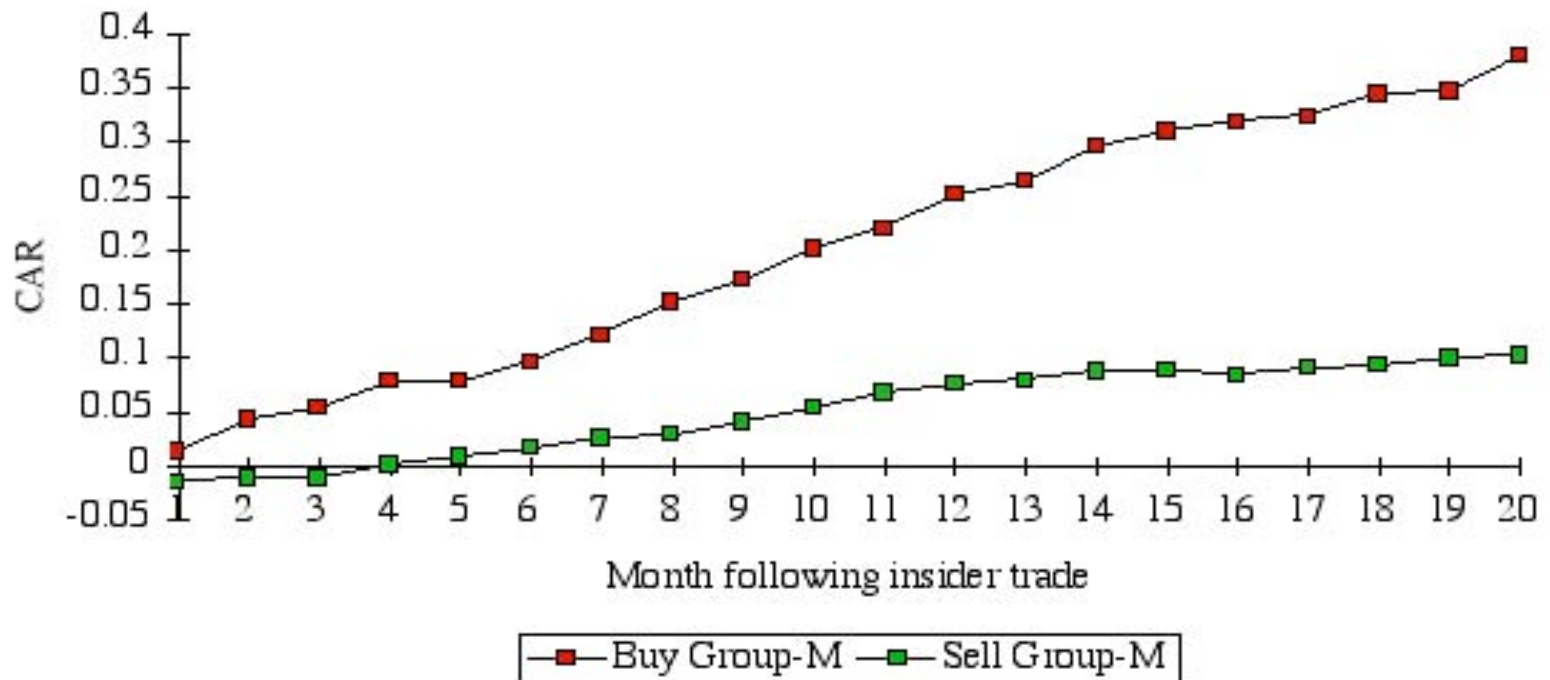
## Trading on Private Information

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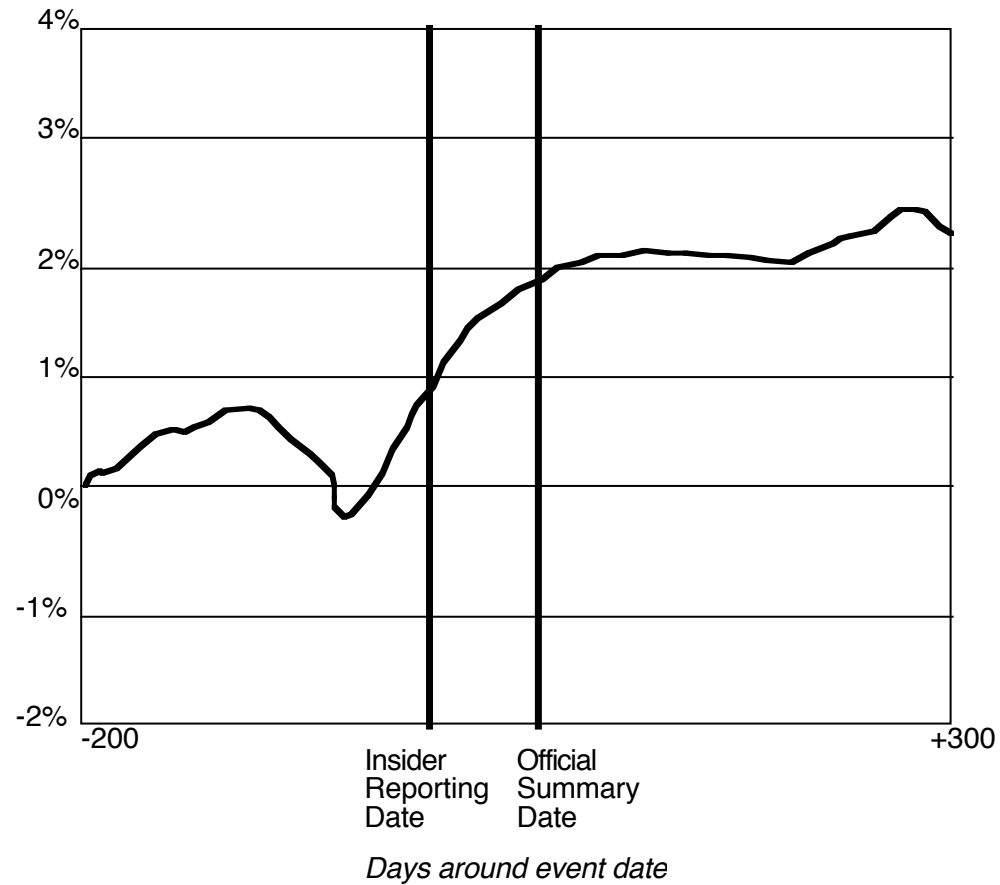
- Insiders are managers, directors or major stockholders in firms.
- Analysts operate at the nexus of private and public information.
- One way to examine whether private information can be used to earn excess returns is to look at whether insiders and analysts earn excess returns.

## Insider Trading as a Leading Indicator of Stock prices..

Figure 10.4: Cumulative Returns Following Insider Trading: Buy vs Sell Group



## Can you follow insiders and make money?





## Are some insiders more inside than others?

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- Not all insiders have equal access to information. Top managers and members of the board should be privy to much more important information and thus their trades should be more revealing. A study by Bettis, Vickrey and Vickery finds that investors who focus only on large trades made by top executives, rather than total insider trading may, in fact, be able to earn excess returns.
- As investment alternatives to trading on common stock have multiplied, insiders have also become more sophisticated about using these alternatives. As an outside investor, you may be able to add more value by tracking these alternative investments. For instance, Bettis, Bizjak and Lemmon find that insider trading in derivative securities (options specifically) to hedge their common stock positions increases immediately following price run-ups and prior to poor earnings announcements. In addition, they find that stock prices tend to go down after insiders take these hedging positions.

## Illegal Insider Trading: Is it profitable?

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- When insiders are caught trading illegally, they almost invariably have made a killing on their investment. Clearly, some insiders made significant returns off their privileged positions.
- Almost all major news announcements made by firms are preceded by a price run-up (if it is good news) or a price drop (if it is bad news). While this may indicate a very prescient market, it is much more likely that someone with access to the privileged information (either at the firm or the intermediaries helping the firm) is using the information to trade ahead of the news. In fact, the other indicator of insider trading is the surge in trading volume in both the stock itself and derivatives prior to big news announcements.
- In addition to having access to information, insiders are often in a position to time the release of relevant information to financial markets. One study find that insiders sell stock between 3 and 9 quarters before their firms report a break in consecutive earnings increases. They also find, for instance, that insider selling increases at growth firms prior to periods of declining earnings.

# Analysts

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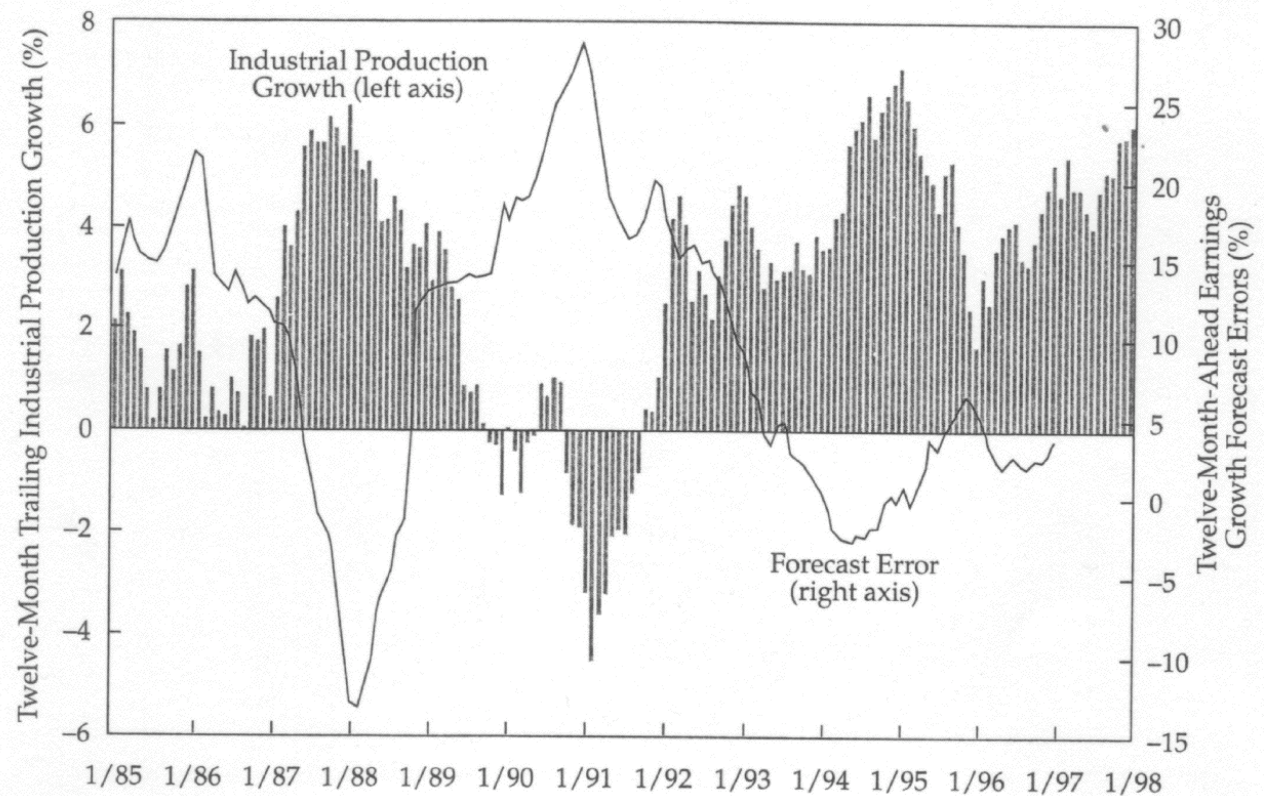
- Analysts have access to public information and to the managers of the firm (and thus to private information).
- Analysts make earnings forecasts for firms (and revise them) and recommendations on buy and sell.

## I. Earnings Forecasts

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- The general consensus from studies that have looked at short-term forecasts (one quarter ahead to four quarters ahead) of earnings is that analysts provide better forecasts of earnings than models that depend purely upon historical data. The mean relative absolute error, which measures the absolute difference between the actual earnings and the forecast for the next quarter, in percentage terms, is smaller for analyst forecasts than it is for forecasts based upon historical data.
- A study in 1978 measured the squared forecast errors by month of the year and computed the ratio of analyst forecast error to the forecast error from time-series models of earnings. It found that the time series models actually outperform analyst forecasts from April until August, but underperform them from September through January.
- The other study by O'Brien (1988) found that analyst forecasts outperform the time series model for one-quarter ahead and two-quarter ahead forecasts, do as well as the time series model for three-quarter ahead forecasts and do worse than the time series model for four-quarter ahead forecasts.

# Analyst Errors seem to be related to macroeconomic conditions...



## How about long term forecasts?

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- There is little evidence to suggest that analysts provide superior forecasts of earnings when the forecasts are over three or five years. An early study by Cragg and Malkiel compared long-term forecasts by five investment management firms in 1962 and 1963 with actual growth over the following three years to conclude that analysts were poor long term forecasters.
- This view was contested in 1988 by Vander Weide and Carleton who found that the consensus prediction of five-year growth in the I/B/E/S was superior to historically oriented growth measures in predicting future growth.

## II. Earnings Revisions...

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- The evidence suggests that buying stocks where earnings have been revised upwards by analysts is a profitable strategy. For example, Hawkins reported that a portfolio of stocks with the 20 largest upward revisions in earnings on the I/B/E/S database would have earned an annualized return of 14% as opposed to the index return of only 7%.
- In another study, Cooper, Day and Lewis report that much of the excess returns is concentrated in the weeks around the revision – 1.27% in the week before the forecast revision, and 1.12% in the week after, and that analysts that they categorize as leaders (based upon timeliness, impact and accuracy) have a much greater impact on both trading volume and prices.

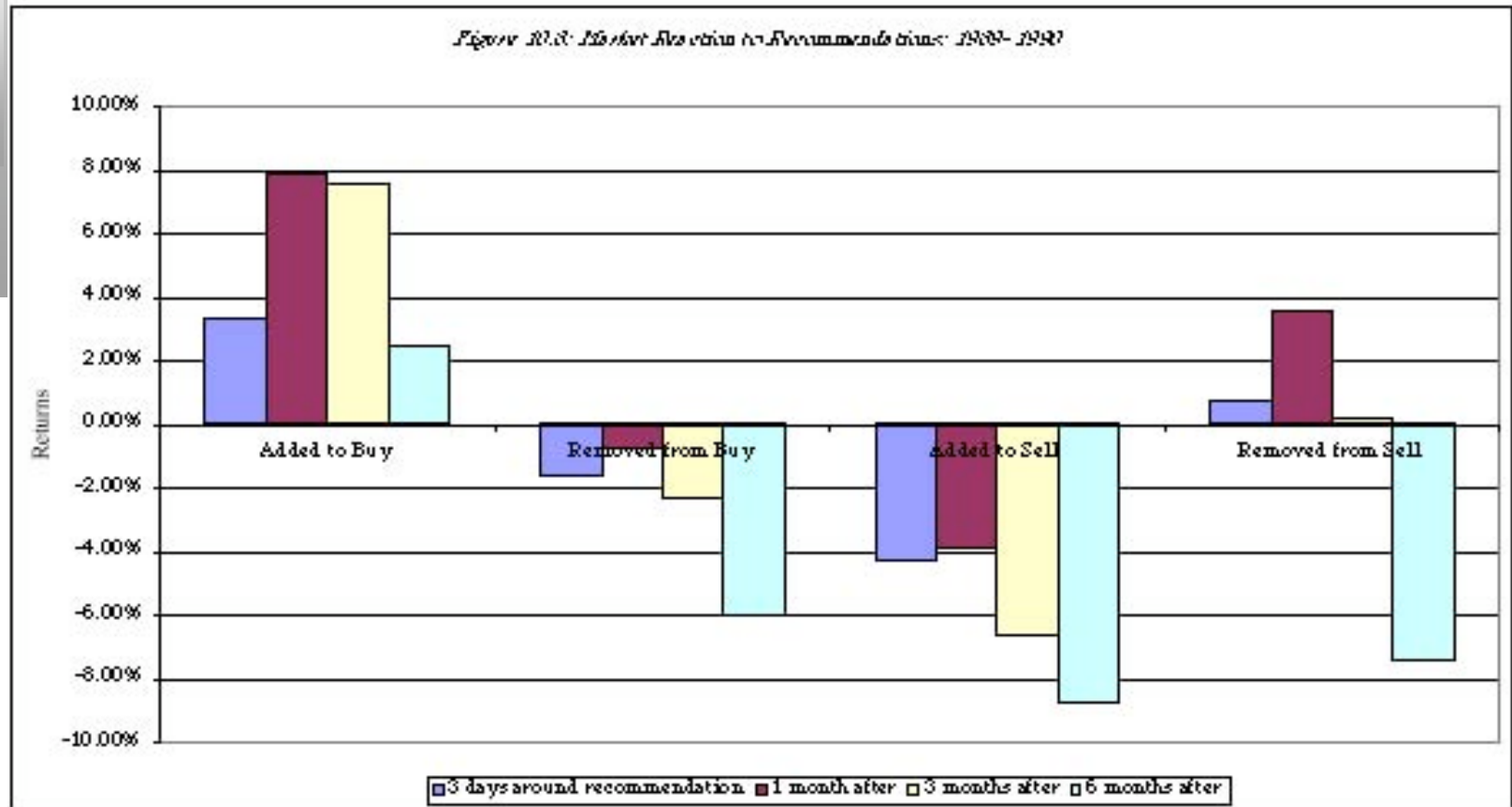
## Potential Pitfalls and possible use...

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- The limitation of an earnings momentum strategy is its dependence on two of the weakest links in financial markets –earnings reports that come from firms (where accounting games skew earnings)and analyst forecasts of these earnings (which are often biased).
- To the extent that analysts influence trades made by their clients, they are likely to affect prices when they revise earnings. The more influential they are, the greater the effect they will have on prices, but the question is whether the effect is lasting.
- It is a short-term strategy that yields fairly small excess returns over investment horizons ranging from a few weeks to a few months.
- One way you may be able to earn higher returns from this strategy is to identify key analysts and build an investment strategy around forecast revisions made by them, rather than looking at consensus estimates made by all analysts. While forecast revisions and earnings surprises by themselves are unlikely to generate lucrative portfolios, they can augment other more long-term screening strategies.



### III. Analyst Recommendations...



## Tempered by fears of bias...



## Using Analyst Recommendations...

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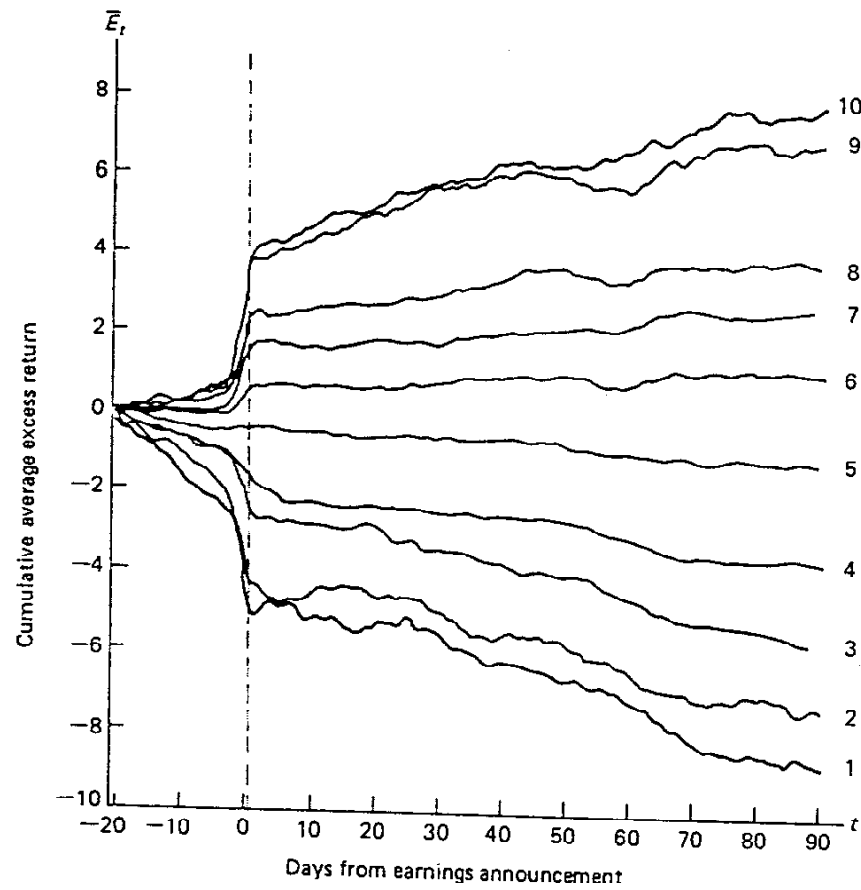
- Even if there were no new information contained in recommendations, there is the self-fulfilling prophecy created by clients who trade on these recommendations, pushing up stock prices after buy recommendations and pushing them down after sell recommendations. If this is the only reason for the stock price reaction, though, the returns are not only likely to be small but could very quickly dissipate, leaving you with large transactions costs and little to show for them.
- You should begin by identifying the analysts who are not only the most influential but also have the most content (private information) in their recommendations. In addition, you may want to screen out analysts where the potential conflicts of interest may be too large for the recommendations to be unbiased. You should invest based upon their recommendations, preferably at the time the recommendations are made.
- Assuming that you still attach credence to the views of the recommending analysts, you should watch the analysts for signals that they have changed or are changing their minds. Since these signals are often subtle, you can easily miss them.

## Trading on Public Information

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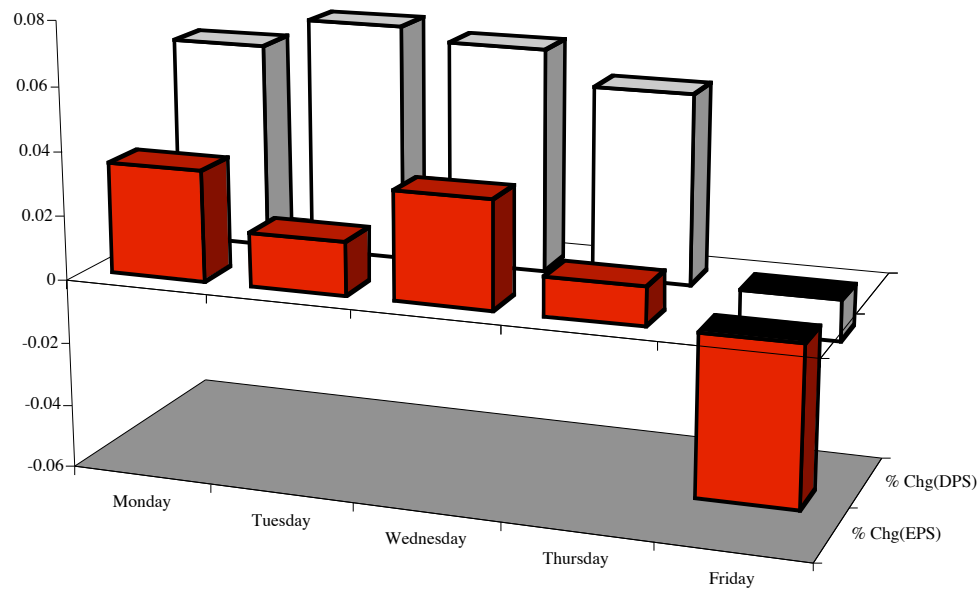
- There is substantial information that comes out about stocks. Some of the information comes from the firm - earnings and dividend announcements, acquisitions and other news - and some comes from competitors.
- Prices generally react to this information.

# I. Earnings Reports

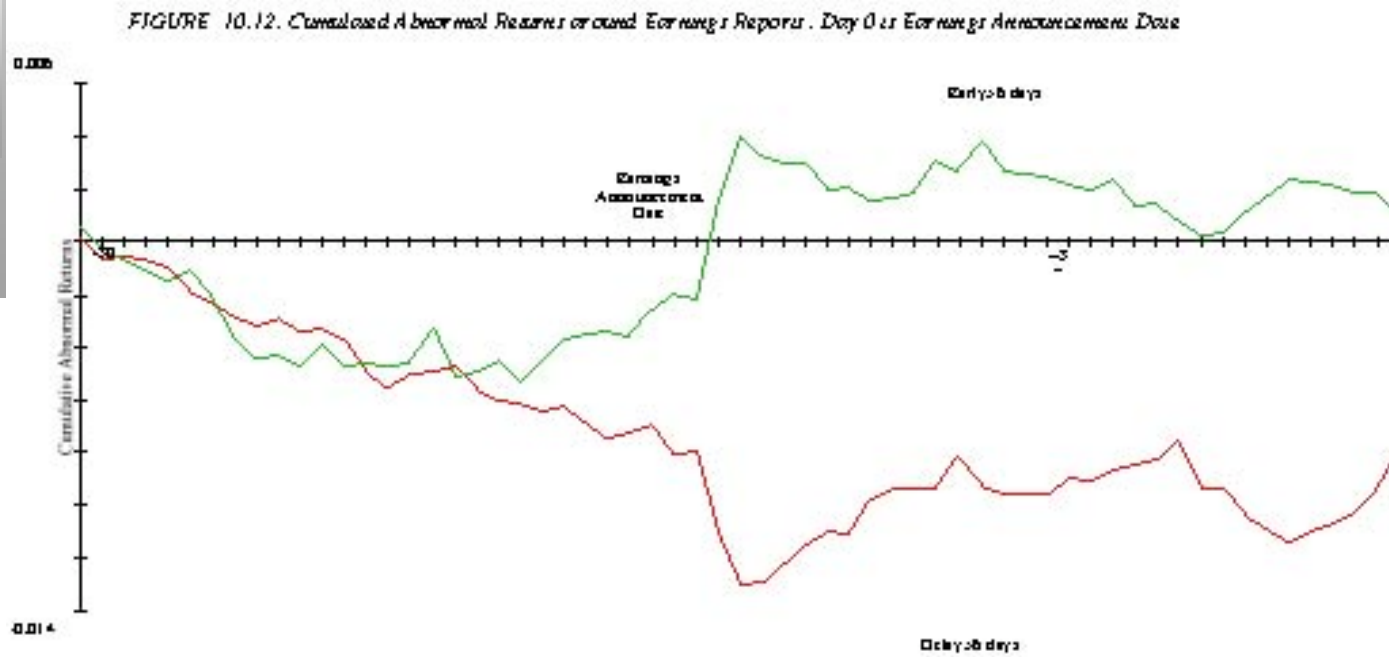


## By day of the week..

Figure 10.11: Earnings and Dividend Reports by Day of the Week

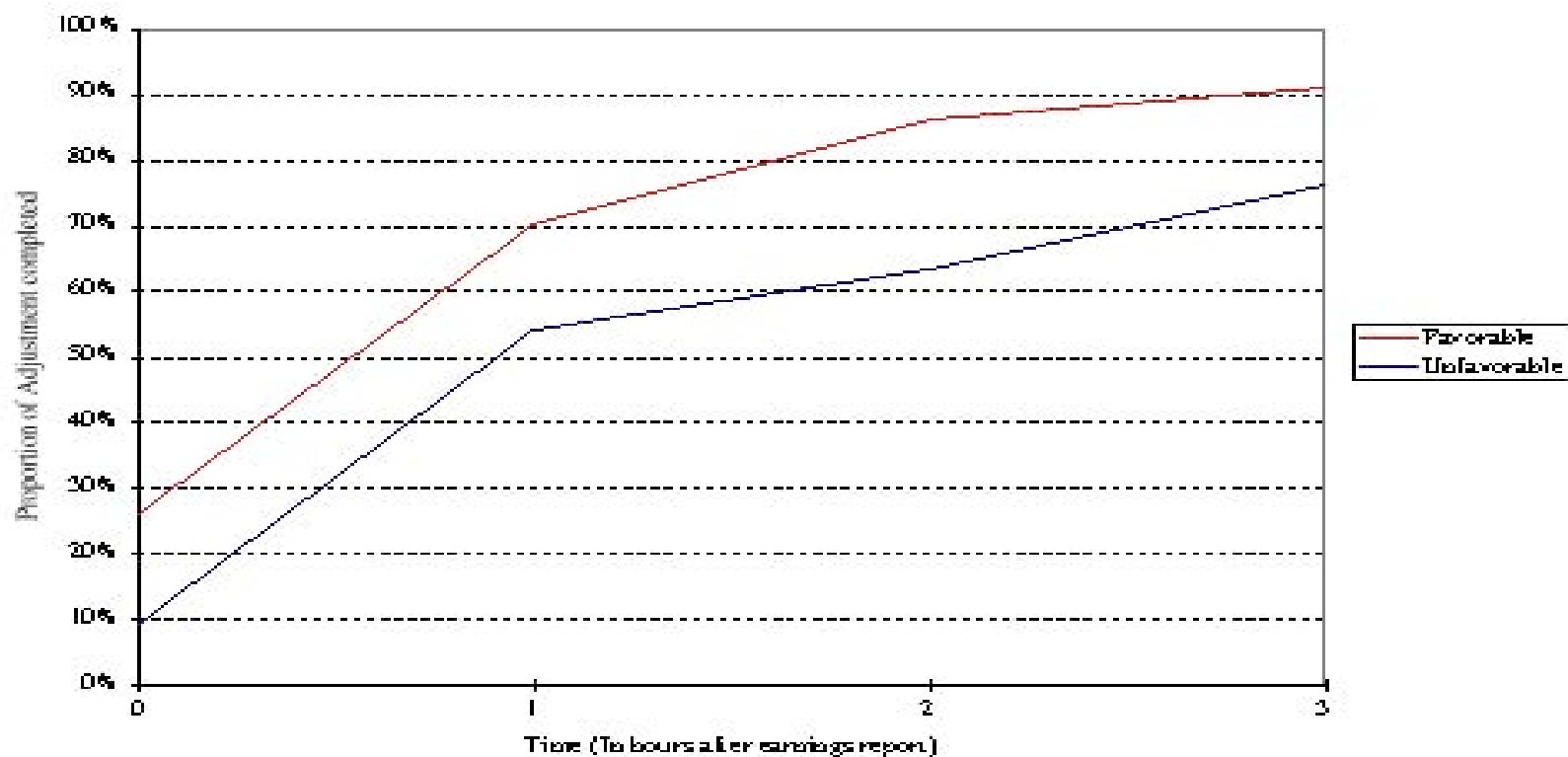


## The Consequence of Delays...



## The Intraday reaction..

Figure 10.13 : Price Adjustment by Hour after Earnings Report





## And earnings quality matters...

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- As firms play the earnings game, the quality of earnings has also diverged across companies. A firm that beats earnings estimates because it has more efficient operating should be viewed more favorably than one that beats estimates because it changed the way it valued inventory.
- Chan, Chan, Jegadeesh and Lakonishok examined firms that reported high accruals – i.e. the difference between accounting earnings and cash flows and argued that firms report high earnings without a matching increase in cashflow have poorer quality earnings. When they tracked a portfolio composed of these firms, they discovered that the high accrual year was usually the turning point in the fortunes of this firm, with subsequent years bring declining earnings and negative stock returns.

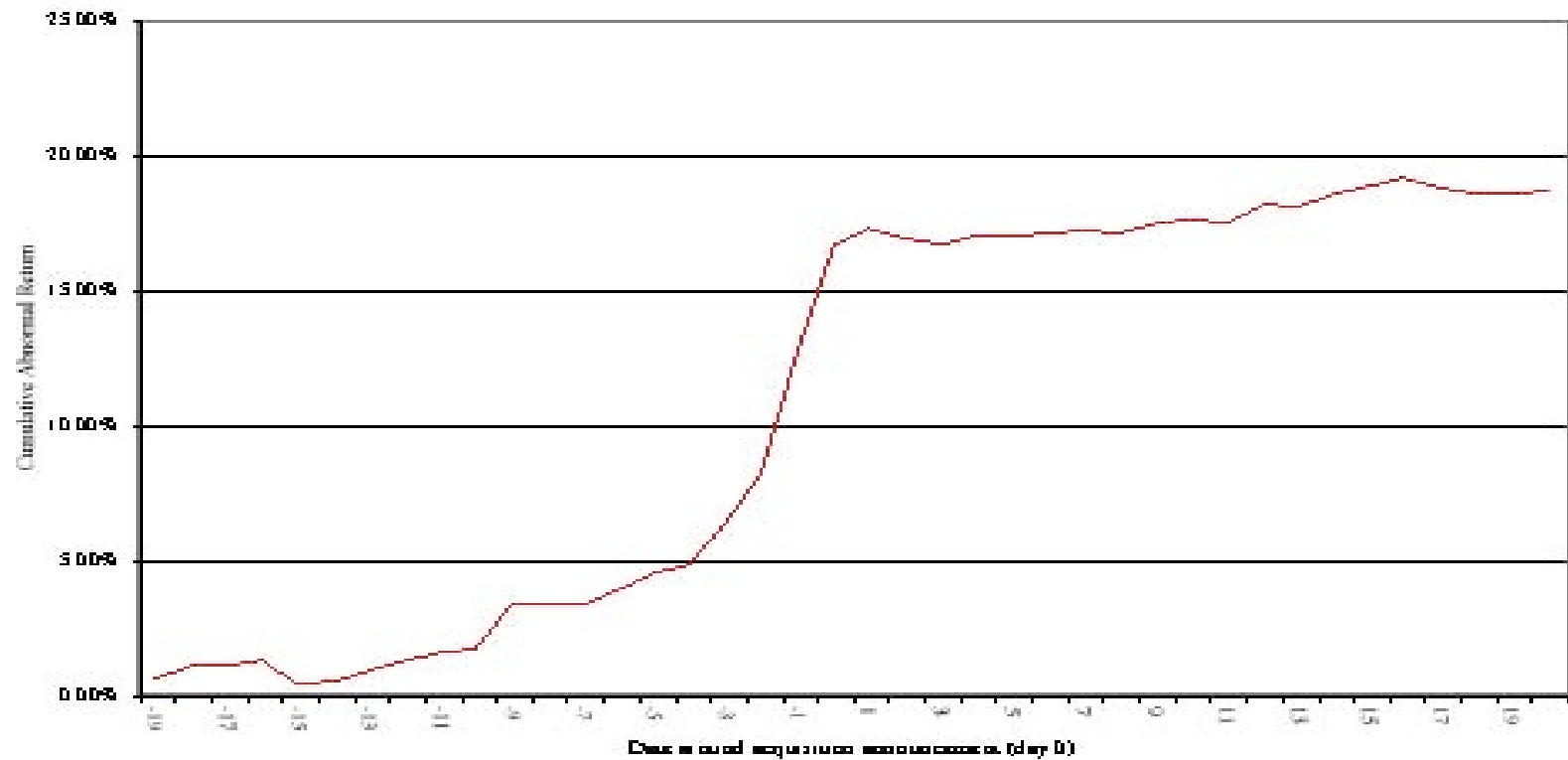
## Can you make money of earnings announcements?

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- One strategy is to buy stocks that report large positive earnings surprises, hoping to benefit from the drift. The evidence indicates that across all stocks, the potential for excess returns from buying after earnings announcements is very small.
- You can concentrate only on earnings announcements made by smaller, less liquid companies where the drift is more pronounced. In addition, you can try to direct your money towards companies with higher quality earnings surprises by avoiding firms with large accruals.
- Your biggest payoff is in investing in companies before large positive earnings surprises. You may be able to use a combination of quantitative techniques (time series models that forecast next quarter's earnings based upon historical earnings) and trading volume (insiders do create blips in the volume) to try to detect these firms. Even if you are right only 55% of the time, you should be able to post high excess returns.

## II. Acquisitions: Evidence on Target Firms

*Figure 10.14: Cumulative Excess Returns to Target Company Stock*



## The Effect on Acquirers..

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- Jensen and Ruback report excess returns of 4% for bidding firm stockholders around tender offers and no excess returns around mergers. Jarrell, Brickley and Netter, in their examination of tender offers from 1962 to 1985, note a decline in excess returns to bidding firm stockholders from 4.4% in the 1960s to 2% in the 1970s to -1% in the 1980s.
- Other studies indicate that approximately half of all bidding firms earn negative excess returns around the announcement of takeovers, suggesting that shareholders are skeptical about the perceived value of the takeover in a significant number of cases.

## After the acquisition... Operating Evidence

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- McKinsey and Co. examined 58 acquisition programs between 1972 and 1983 for evidence on two questions: (1) Did the return on the amount invested in the acquisitions exceed the cost of capital? (2) Did the acquisitions help the parent companies outperform the competition? They concluded that 28 of the 58 programs failed both tests, and six failed at least one test.
- In a follow-up study of 115 mergers in the U.K. and the U.S. in the 1990s, McKinsey concluded that 60% of the transactions earned returns on capital less than the cost of capital, and that only 23% earned excess returns.
- In 1999, KPMG examined 700 of the most expensive deals between 1996 and 1998 and concluded that only 17% created value for the combined firm, 30% were value neutral and 53% destroyed value.

## After the acquisition... Divestitures

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- The most damaging piece of evidence on the outcome of acquisitions is the large number of acquisitions that are reversed within fairly short time periods. Mitchell and Lehn note that 20.2% of the acquisitions made between 1982 and 1986 were divested by 1988. In a study published in 1992, Kaplan and Weisbach found that 44% of the mergers they studied were reversed, largely because the acquirer paid too much or because the operations of the two firms did not mesh.
- Studies that have tracked acquisitions for longer time periods (ten years or more) have found the divestiture rate of acquisitions rises to almost 50%, suggesting that few firms enjoy the promised benefits from acquisitions do not occur. In another study,

## Takeover based investment strategies

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- The first and most lucrative, if you can pull it off, is to find a way to invest in a target firm before the acquisition is announced.
- The second is to wait until after the takeover is announced and then try to take advantage of the price drift between the announcement date and the day the deal is consummated. This is often called risk arbitrage.
- The third is also a post-announcement strategy, but it is a long-term strategy where you invest in firms that you believe have the pieces in place to deliver the promised synergy or value creation.

## Preannouncement Trading

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- Research indicates that the typical target firm in a hostile takeover has the following characteristics:
  - It has under performed other stocks in its industry and the overall market, in terms of returns to its stockholders in the years preceding the takeover.
  - It has been less profitable than firms in its industry in the years preceding the takeover.
  - It has a much lower stock holding by insiders than do firms in its peer groups.
  - It has a low price to book ratio & a low ratio of value to replacement cost.
- There are two ways in which we can use the findings of these studies to identify potential target firms.
  - Develop a set of screens that incorporate the variables mentioned above. You could, for instance, invest in firms with market capitalizations below \$ 5 billion, with low insider holdings, depressed valuations (low price to book ratios) and low returns on equity.
  - The second and slightly more sophisticated variant is to estimate the probability of being taken over for every firm in the market using statistical techniques



## Post-Announcement Trading

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- In this strategy, you buy companies after acquisitions or mergers are completed because you believe that they will be able to deliver what they promise at the time of the merger – higher earnings growth and synergy.
- The likelihood of success seems to be greater
  - In hostile acquisitions, where the management is replaced.
  - In mergers of like businesses than in conglomerate mergers
  - In cost-saving mergers than in growth-oriented mergers
  - In mergers where plans for synergy are made before the merger
  - In acquisitions of small companies by larger companies (as opposed to mergers of equals)

## To be a successful information trader...

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- *Identify the information around which your strategy will be built:* Since you have to trade on the announcement, it is critical that you determine in advance the information that will trigger a trade.
- *Invest in an information system that will deliver the information to you instantaneous:* Many individual investors receive information with a time lag – 15 to 20 minutes after it reaches the trading floor and institutional investors. While this may not seem like a lot of time, the biggest price changes after information announcements occur during these periods.
- *Execute quickly:* Getting an earnings report or an acquisition announcement in real time is of little use if it takes you 20 minutes to trade. Immediate execution of trades is essential to succeeding with this strategy.
- *Keep a tight lid on transactions costs:* Speedy execution of trades usually goes with higher transactions costs, but these transactions costs can very easily wipe out any potential you may see for excess returns).
- *Know when to sell:* Almost as critical as knowing when to buy is knowing when to sell, since the price effects of news releases may begin to fade or even reverse after a while.



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# Arbitrage

Aswath Damodaran

## The Essence of Arbitrage

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- In pure arbitrage, you invest no money, take no risk and walk away with sure profits.
- You can categorize arbitrage in the real world into three groups:
  - Pure arbitrage, where, in fact, you risk nothing and earn more than the riskless rate.
  - Near arbitrage, where you have assets that have identical or almost identical cash flows, trading at different prices, but there is no guarantee that the prices will converge and there exist significant constraints on the investors forcing convergence.
  - Speculative arbitrage, which may not really be arbitrage in the first place. Here, investors take advantage of what they see as mispriced and similar (though not identical) assets, buying the cheaper one and selling the more expensive one.

# Pure Arbitrage

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- For pure arbitrage, you have two assets with identical cashflows and different market prices makes pure arbitrage difficult to find in financial markets.
- There are two reasons why pure arbitrage will be rare:
  - Identical assets are not common in the real world, especially if you are an equity investor.
  - Assuming two identical assets exist, you have to wonder why financial markets would allow pricing differences to persist.
  - If in addition, we add the constraint that there is a point in time where the market prices converge, it is not surprising that pure arbitrage is most likely to occur with derivative assets – options and futures and in fixed income markets, especially with default-free government bonds.

## Markets where pure arbitrage may be feasible...

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- **Futures Markets:** The basic arbitrage relationship can be derived fairly easily for futures contracts on any asset, by estimating the cashflows on two strategies that deliver the same end result – the ownership of the asset at a fixed price in the future.
  - In the first strategy, you buy the futures contract, wait until the end of the contract period and buy the underlying asset at the futures price.
  - In the second strategy, you borrow the money and buy the underlying asset today and store it for the period of the futures contract.
- **Options Markets:** There are three kinds of arbitrage opportunities
  - **Exercise arbitrage:** When the option price is less than the exercise value.
  - **Pricing arbitrage:** When options are mispriced relative to the underlying asset or to each other.
- **Fixed Income Markets:** Fixed income securities lend themselves to arbitrage more easily than equity because they have finite lives and fixed cash flows. This is especially so, when you have default free bonds, where the fixed cash flows are also guaranteed.

## Evidence on pure arbitrage opportunities...

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- *They are uncommon:* In the futures and the options markets, studies indicate that there are sometimes pricing errors, but they tend to be few and far between.
- *The pricing errors tend to be small:* Even when there are pricing errors, they are miniscule.
- *They are fleeting:* When these small and uncommon pricing errors surface, they very quickly disappear.
- They occur most often *when a new security is introduced* into the market - mortgage backed bonds and stock index futures market in the early 1980s, the treasury strip market in the late 1980s, inflation indexed treasuries in the 1990s....

## To succeed at pure arbitrage...

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- The nature of pure arbitrage – two identical assets that are priced differently – makes it likely that it will be short lived. In other words, in a market where investors are on the look out for riskless profits, it is very likely that small pricing differences will be exploited quickly, and in the process, disappear. Consequently, the first two requirements for success at pure arbitrage are access to real-time prices and instantaneous execution.
- It is also very likely that the pricing differences in pure arbitrage will be very small – often a few hundredths of a percent. To make pure arbitrage feasible, therefore, you can add two more conditions.
  - The first is access to substantial debt at favorable interest rates, since it can magnify the small pricing differences. Note that many of the arbitrage positions require you to be able to borrow at the riskless rate.
  - The second is economies of scale, with transactions amounting to millions of dollars rather than thousands.



## Near Arbitrage

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- In near arbitrage, you either have two assets that are very similar but not identical, which are priced differently, or identical assets that are mispriced, but with no guaranteed price convergence.
- No matter how sophisticated your trading strategies may be in these scenarios, your positions will no longer be riskless.

# 1. Same Stock listed in Multiple Markets

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- If you can buy the same stock at one price in one market and simultaneously sell it at a higher price in another market, you can lock in a riskless profit.
- Two examples:
  - Dual or Multiple listed stocks: Many large companies trade on multiple markets on different continents. Since there are time periods during the day when there is trading occurring on more than one market on the same stock, it is conceivable (though not likely) that you could buy the stock for one price in one market and sell the same stock at the same time for a different (and higher price) in another market.
  - Depository receipts: Depository receipts create a claim equivalent to the one you would have had if you had bought shares in the local market and should therefore trade at a price consistent with the local shares. What makes them different and potentially riskier than the stocks with dual listings is that ADRs are not always directly comparable to the common shares traded locally – one ADR on Telmex, the Mexican telecommunications company, is convertible into 20 Telmex shares.

## a. Dual Listed Stocks: Evidence of Mispricing?

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- Swaicki and Hric examine 84 Czech stocks that trade on the two Czech exchanges – the Prague Stock Exchange (PSE) and the Registration Places System (RMS)- and find that prices adjust slowly across the two markets, and that arbitrage opportunities exist (at least on paper) –the prices in the two markets differ by about 2%. These arbitrage opportunities seem to increase for less liquid stocks.
- While the authors consider transactions cost, they do not consider the price impact that trading itself would have on these stocks and whether the arbitrage profits would survive the trading.

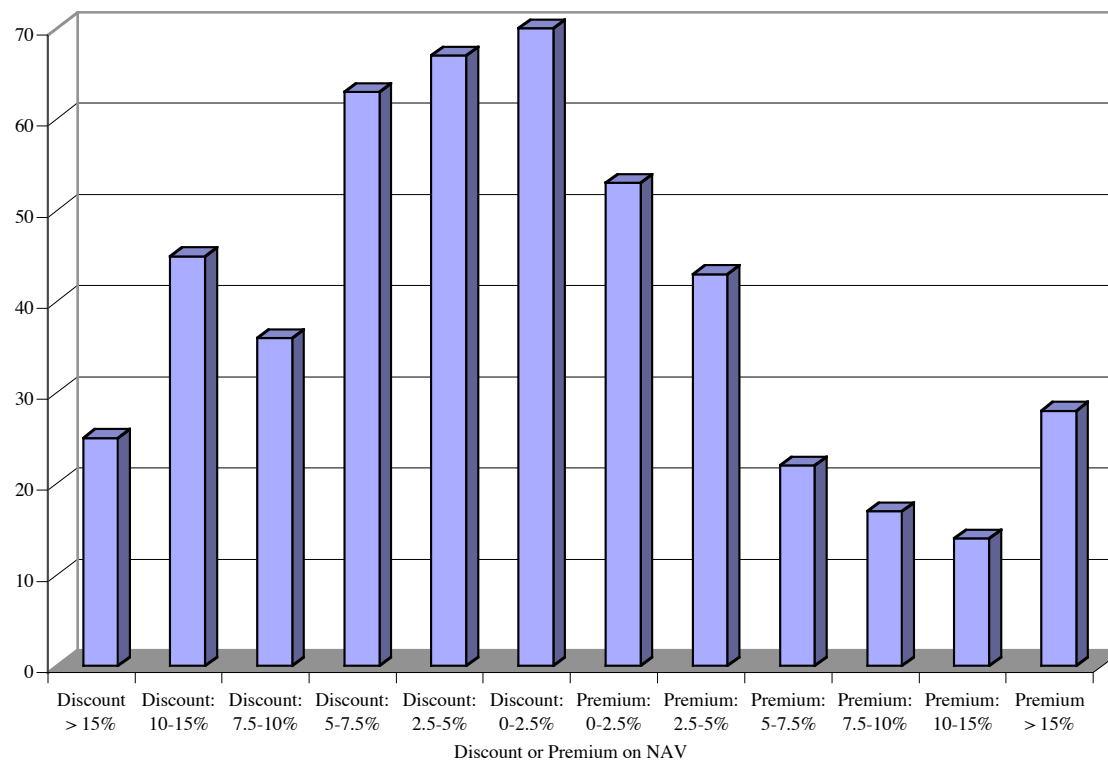
## b. Depository Receipts: Evidence on Pricing

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- In a study conducted in 2000 that looks at the link between ADRs and local shares, Kin, Szakmary and Mathur conclude that about 60 to 70% of the variation in ADR prices can be attributed to movements in the underlying share prices and that ADRs overreact to the U.S. market and under react to exchange rates and the underlying stock.
- They also conclude that investors cannot take advantage of the pricing errors in ADRs because convergence does not occur quickly or in predictable ways.
- With a longer time horizon and/or the capacity to convert ADRs into local shares, though, you should be able to take advantage of significant pricing differences.

## 2. Closed End Funds: Discounts and Premiums on Net Asset Value

Figure 11.7: Discounts/Premiums on Closed End Funds- June 2002



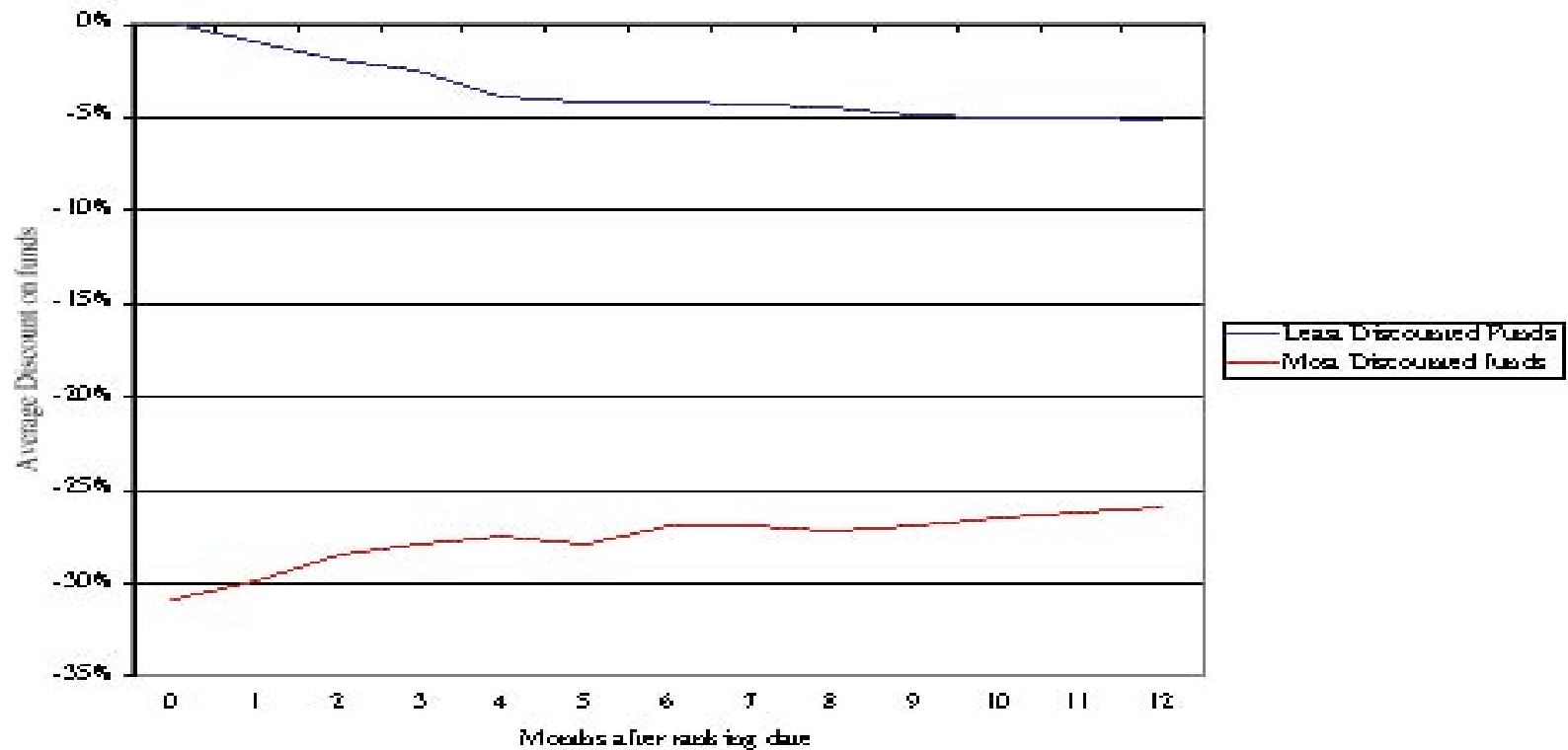
## What is the catch?

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- In practice, taking over a closed-end fund while paying less than net asset value for its shares seems to be very difficult to do for several reasons- some related to corporate governance and some related to market liquidity.
- The potential profit is also narrowed by the mispricing of illiquid assets in closed end fund portfolios (leading to an overstatement of the NAV) and tax liabilities from liquidating securities. There have been a few cases of closed end funds being liquidated, but they remain the exception.

## An Investment Strategy of buying discounted funds...

Figure 11.9: Discounts on most discounted and least discounted funds over time



### 3. Convertible Arbitrage

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- When companies have convertible bonds or convertible preferred stock outstanding in conjunction with common stock, warrants, preferred stock and conventional bonds, it is entirely possible that you could find one of these securities mispriced relative to the other, and be able to construct a near-riskless strategy by combining two or more of the securities in a portfolio.
- In practice, there are several possible impediments.
  - Many firms that issue convertible bonds do not have straight bonds outstanding, and you have to substitute in a straight bond issued by a company with similar default risk.
  - Companies can force conversion of convertible bonds, which can wreak havoc on arbitrage positions.
  - Convertible bonds have long maturities. Thus, there may be no convergence for long periods, and you have to be able to maintain the arbitrage position over these periods.
  - Transactions costs and execution problems (associated with trading the different securities) may prevent arbitrage.



## Determinants of Success at Near Arbitrage

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- These strategies will not work for small investors or for very large investors. Small investors will be stymied both by transactions costs and execution problems. Very large investors will quickly drive discounts to parity and eliminate excess returns.
- If you decide to adopt these strategies, you need to refine and focus your strategies on those opportunities where convergence is most likely. For instance, if you decide to try to exploit the discounts of closed-end funds, you should focus on the closed end funds that are most discounted and concentrate especially on funds where there is the potential to bring pressure on management to open end the funds.

## Pseudo or Speculative Arbitrage

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- There are a large number of strategies that are characterized as arbitrage, but actually expose investors to significant risk.
- We will categorize these as pseudo or speculative arbitrage.

# 1. Paired Arbitrage

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- In paired arbitrage, you buy one stock (say GM) and sell another stock that you view as very similar (say Ford), and argue that you are not that exposed to risk. Clearly, this strategy is not riskless since no two equities are exactly identical, and even if they were very similar, there may be no convergence in prices.
- The conventional practice among those who have used this strategy on Wall Street has been to look for two stocks whose prices have historically moved together – i.e., have high correlation over time.

## Evidence on Paired Trading

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- Screening first for only stocks that traded every day, the authors found a matching partner for each stock by looking for the stock with the minimum squared deviation in normalized price series. Once they had paired all the stocks, they studied the pairs with the smallest squared deviation separating them.
  - If you use absolute prices, a stock with a higher price will always look more volatile. You can normalize the prices around 1 and use these series.
  - With each pair, they tracked the normalized prices of each stock and took a position on the pair, if the difference exceeded the historical range by two standard deviations, buying the cheaper stock and selling the more expensive one.
- Over the 15 year period, the pairs trading strategy did significantly better than a buy-and-hold strategy. Strategies of investing in the top 20 pairs earned an excess return of about 6% over a 6-month period, and while the returns drop off for the pairs below the top 20, you continue to earn excess returns. When the pairs are constructed by industry group (rather than just based upon historical prices), the excess returns persist but they are smaller. Controlling for the bid-ask spread in the strategy reduces the excess returns by about a fifth, but the returns are still significant.

## Two Caveats on Paired Arbitrage

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- The study quoted found that the pairs trading strategy created negative returns in about one out of every six periods, and that the difference between pairs often widened before it narrowed. In other words, it is a risky investment strategy that also requires the capacity to trade instantaneously and at low cost.
- By the late 1990s, the pickings for quantitative strategies (like pairs trading) had become slim because so many investment banks were adopting the strategies. As the novelty has worn off, it seems unlikely that the pairs trading will generate the kinds of profits it generated during the 1980s.

## 2. Merger Arbitrage

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- The stock price of a target company jumps on the announcement of a takeover. However, it trades at a discount usually to the price offered by the acquiring company.
- The difference between the post-announcement price and the offer price is called the arbitrage spread, and there are investors who try to profit off this spread in a strategy called merger or risk arbitrage. If the merger succeeds, the arbitrageur captures the arbitrage spreads, but if it fails, he or she could make a substantial loss.
- In a more sophisticated variant in stock mergers (where shares of the acquiring company are exchanged for shares in the target company), the arbitrageur will sell the acquiring firm's stock in addition to buying the target firm's stock.

## Evidence from merger arbitrage

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- Mitchell and Pulvino (2000) use a sample of 4750 mergers and acquisitions to examine this question. They conclude that there are excess returns associated with buying target companies after acquisition announcements of about 9.25% annually, but that you lost about two thirds of these excess returns if you factor in transactions costs and the price impact that you have when you trade (especially on the less liquid companies).
- The strategy earns moderate positive returns much of the time, but earns large negative returns when it fails. The strategy has payoffs that resemble those you would observe if you sell puts – when the market goes up, you keep the put premium but when it goes down, you lost much more.

## Determinants of Success at Speculative Arbitrage

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- The use of financial leverage has to be scaled to reflect the riskiness of the strategy. With pure arbitrage, you can borrow 100% of what you need to put the strategy into play. In futures arbitrage, for instance, you borrow 100% of the spot price and borrow the commodity. Since there is no risk, the leverage does not create any damage. As you move to near and speculative arbitrage, this leverage has to be reduced. How much it has to be reduced will depend upon both the degree of risk in the strategy and the speed with which you think prices will converge. The more risky a strategy and the less certain you are about convergence, the less debt you should take on.
- These strategies work best if you can operate without a market impact. As you get more funds to invest and your strategy becomes more visible to others, you run the risk of driving out the very mispricing that attracted you to the market in the first place.



## Long Short Strategies: Hedge Funds

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- While hedge funds come in all varieties, they generally share a common characteristic. They can go both buy and sell short assets.
- You can have value and growth investing hedge funds, hedge funds that specialize in market timing, hedge funds that invest on information and hedge funds that do convertible arbitrage.

## The Performance of Hedge Funds

<i>Year</i>	<i>No of funds in sample</i>	<i>Arithmetic Average Return</i>	<i>Median Return</i>	<i>Return on S&amp;P 500</i>	<i>Average Annual Fee (as % of money under management)</i>	<i>Average Incentive Fee (as % of excess returns)</i>
1988-89	78	18.08%	20.30%		1.74%	19.76%
1989-90	108	4.36%	3.80%		1.65%	19.52%
1990-91	142	17.13%	15.90%		1.79%	19.55%
1991-92	176	11.98%	10.70%		1.81%	19.34%
1992-93	265	24.59%	22.15%		1.62%	19.10%
1993-94	313	-1.60%	-2.00%		1.64%	18.75%
1994-95	399	18.32%	14.70%		1.55%	18.50%
Entire Period		13.26%		16.47%%		

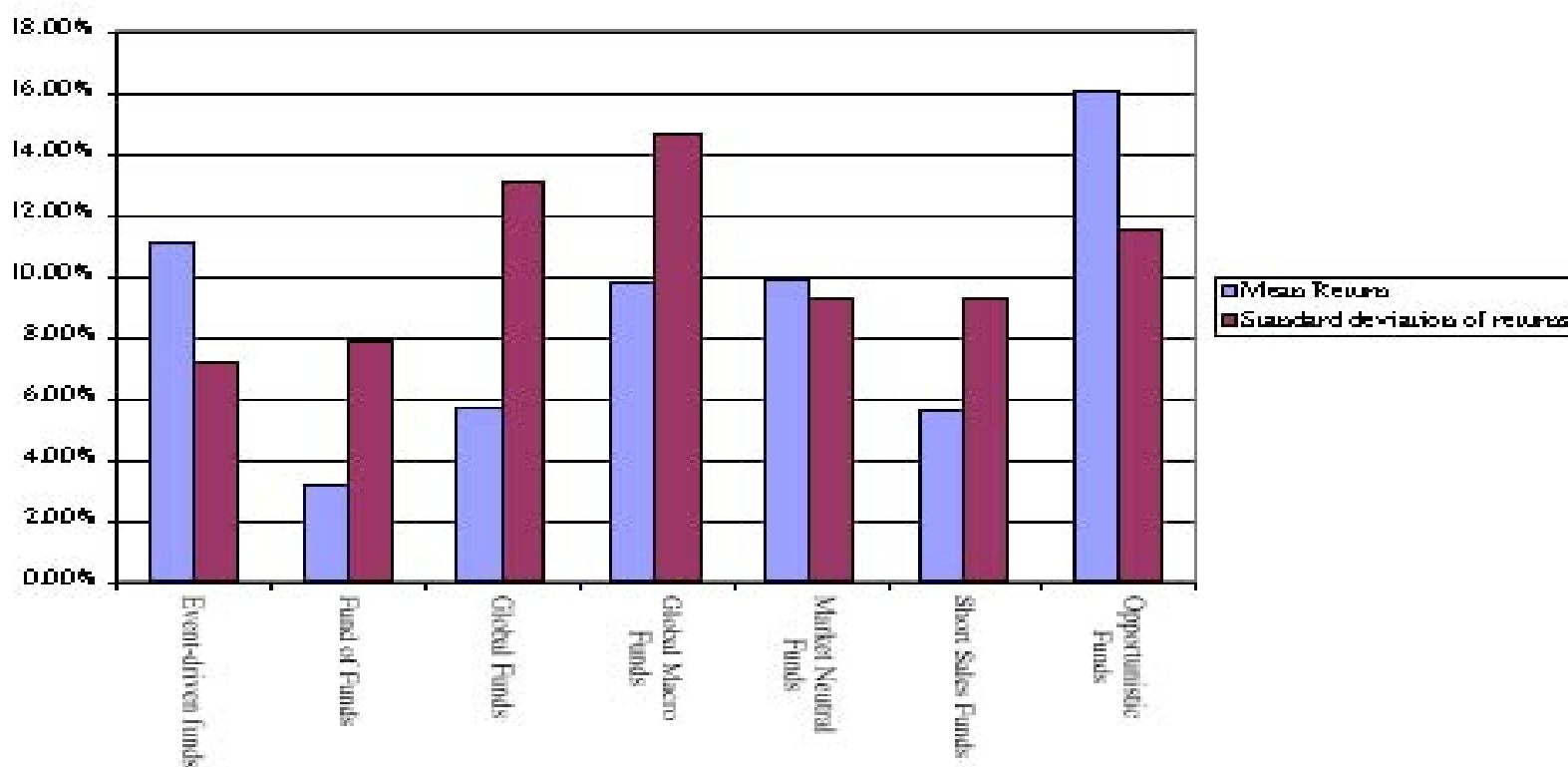
## Looking a little closer at the numbers...

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- The average hedge fund earned a lower return (13.26%) over the period than the S&P 500 (16.47%), but it also had a lower standard deviation in returns (9.07%) than the S & P 500 (16.32%). Thus, it seems to offer a better payoff to risk, if you divide the average return by the standard deviation – this is the commonly used Sharpe ratio for evaluating money managers.
- These funds are much more expensive than traditional mutual funds, with much higher annual fees and annual incentive fees that take away one out of every five dollars of excess returns.

## Returns by sub-category

*Figure 11.10: Hedge Funds: Average Returns and Standard Deviations - 1989-1995*



## There is substantial survival risk..

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- Liang examined 2016 hedge funds from 1990 to 1999. While his overall conclusions matched those of Brown et al., i.e. that these hedge funds earned a lower return than the S&P 500 (14.2% versus 18.8%), they were less risky and had higher Sharpe ratios (0.41 for the hedge funds versus 0.27 for the S&P 500), he also noted that there a large number of hedge funds die each year. Of the 2016 funds over the period for instance, only 1407 remained live at the end of the period.



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# The Case For Passive Investing

Aswath Damodaran

## The Case for Indexing

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- The case for indexing is best made by active investors who try to beat the market and fail.
- In the following pages, we will consider whether
  - Individual investors who are active investors beat the market
  - Professional money managers beat the market

## Individual Investors

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- The average individual investor does not beat the market, after netting out trading costs. Between 1991 and 1996, for instance, the annual net (of transactions costs) return on an S&P 500 index fund was 17.8% whereas the average investor trading at the brokerage house had a net return of 16.4%.
- The more individual investors trade, the lower their returns tend to be. In fact, the returns before transactions costs are accounted for are lower for more active traders than they are for less active traders. After transactions costs are accounted for, the returns to active trading get worse.
- Pooling the talent and strengths of individual investors into investment clubs does not result in better returns. Barber and Odean examined the performance of 166 randomly selected investment clubs that used the discount brokerage house. Between 1991 and 1996, these investment clubs had a net annual return of 14.1%, underperforming the S&P 500 (17.8%) and individual investors (16.4%).



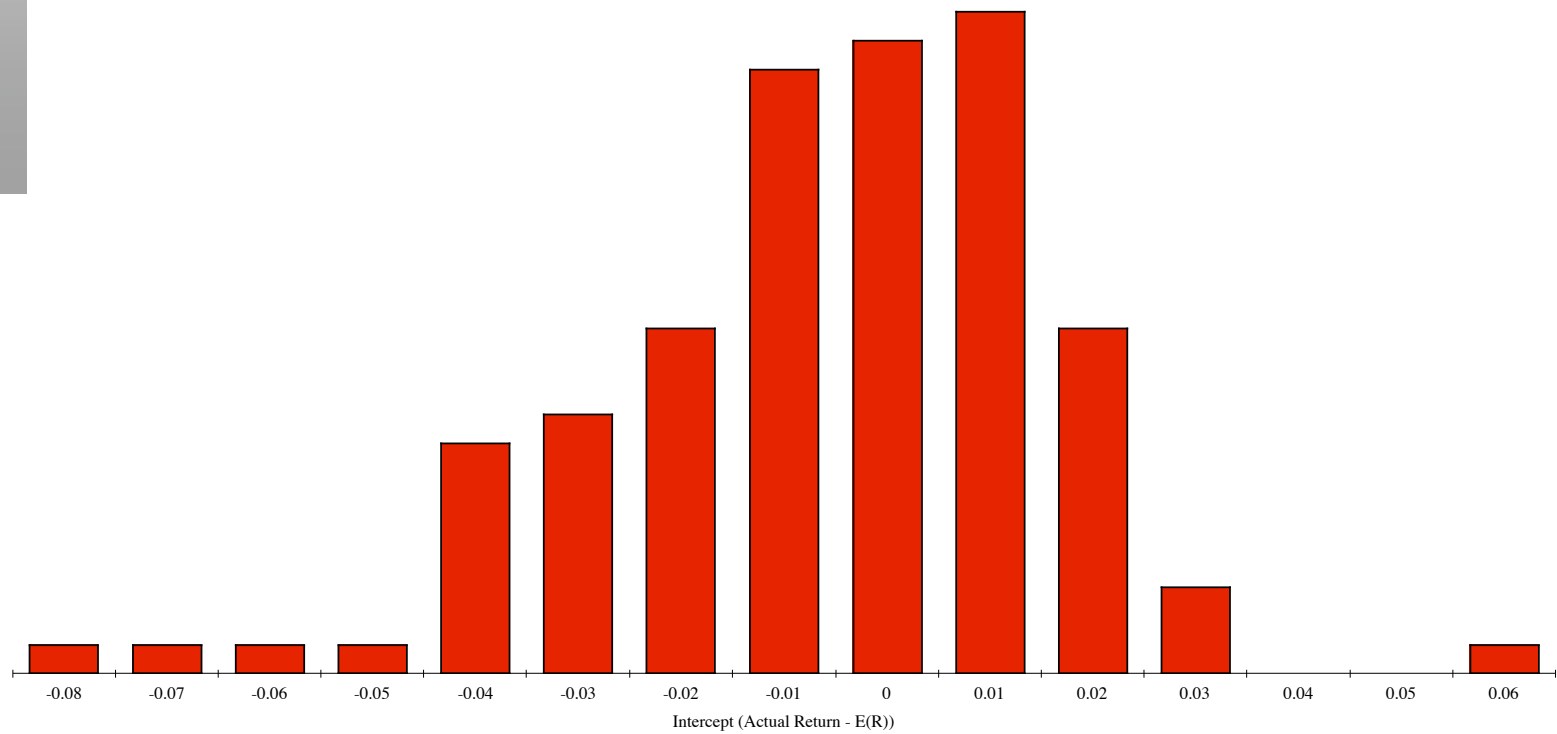
## Professional Money Managers

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- **Professional money managers operate as the experts** in the field of investments. They are supposed to be better informed, smarter, have lower transactions costs and be better investors overall than smaller investors.
- Studies of mutual funds do not seem to support the proposition that professional money managers each excess returns.

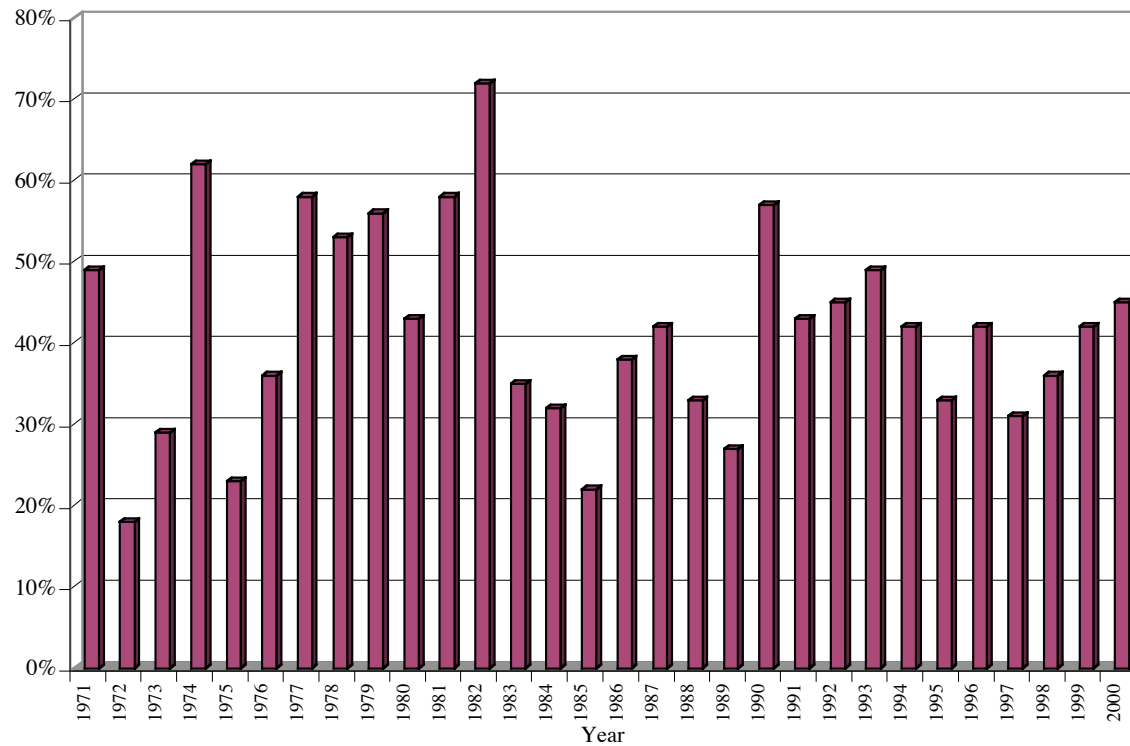
# Jensen's Results

Figure 13.3: Mutual Fund Performance: 1955-64 - The Jensen Study

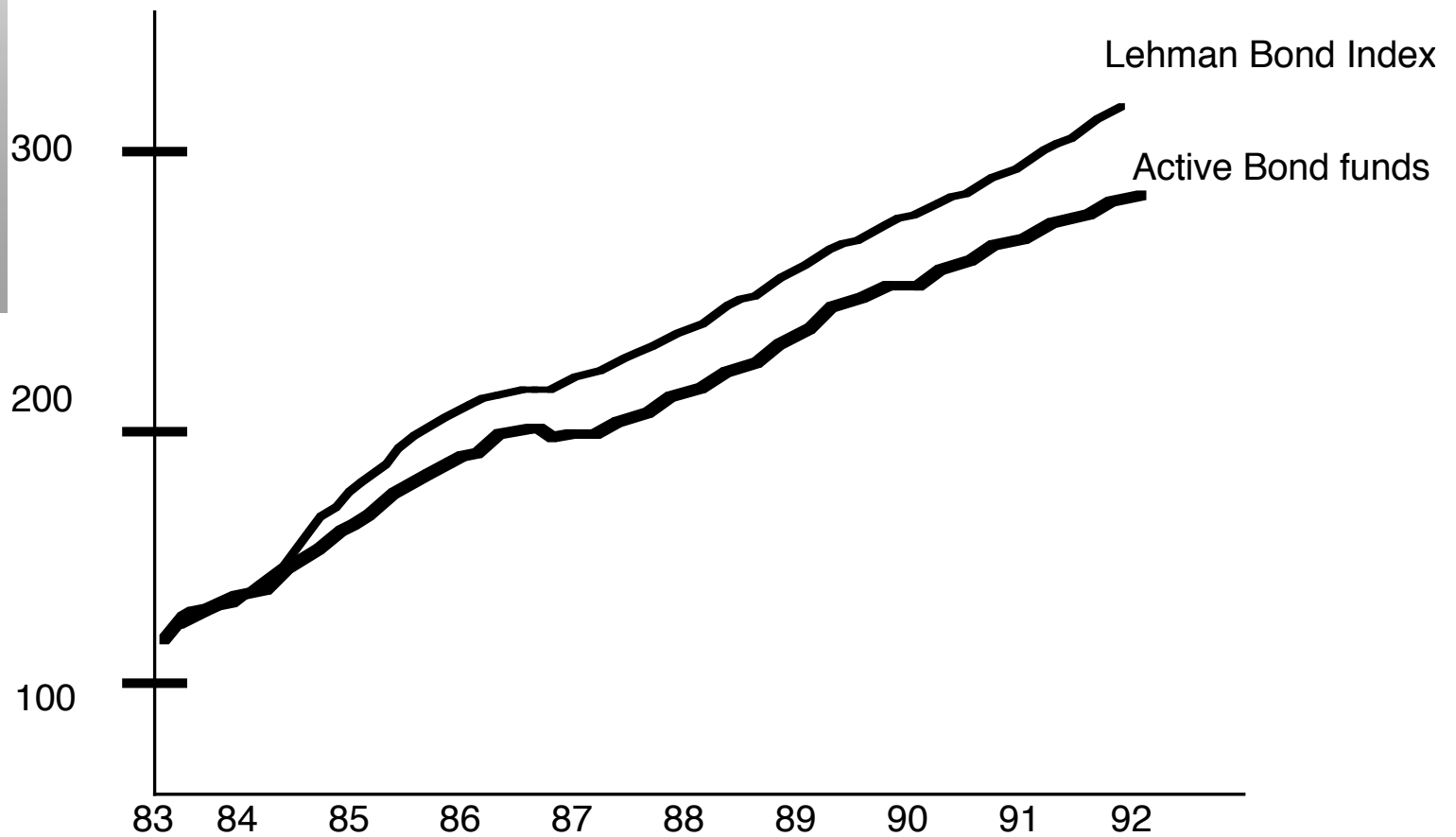


## An Even Simpler Measure: Relative to the Market

Figure 13.5: Percent of Money Managers who beat the S&P 500



The same holds true for bond funds as well...



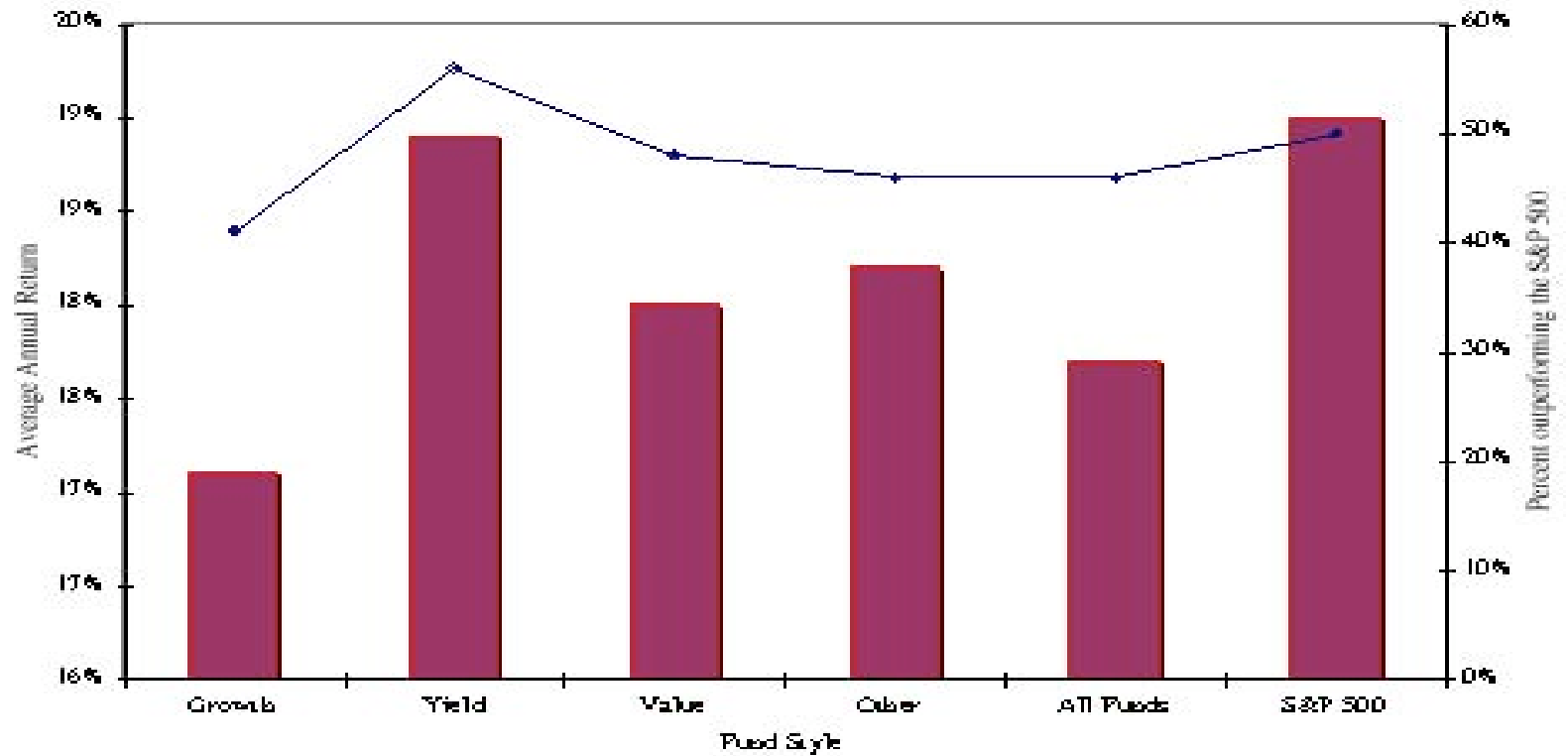
## More Findings on Money Managers

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- These results have been replicated with mild variations in the conclusions. In the studies that are most favorable for professional money managers, they break even against the market after adjusting for transactions costs, and in those that are least favorable, they under perform the market even before adjusting for transactions costs.
- Money managers under perform the market no matter what category of managers you look at.

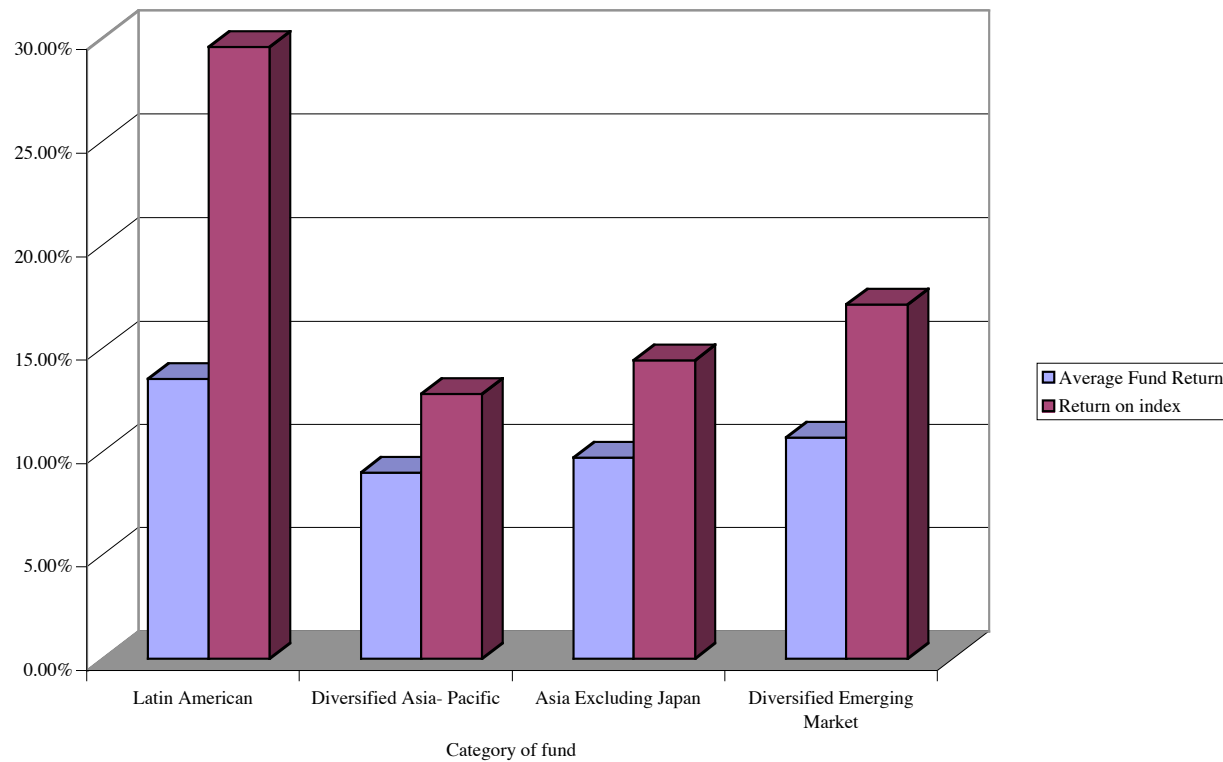
# 1. Categorized by Style

Figure 13.6: Performance by Fund Style - 1993-1998



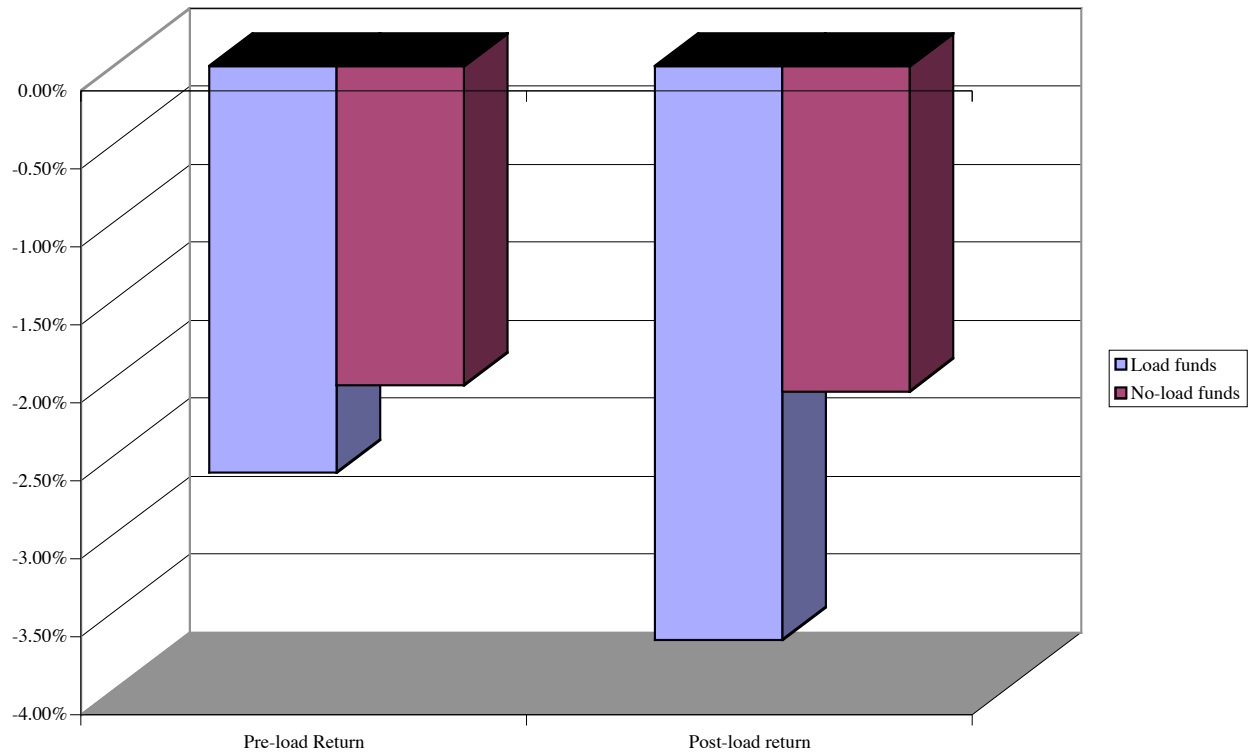
## 2. Emerging Market and International Funds

Figure 13.8: Emerging Market Funds versus Indices



### 3. Load versus No-load Funds

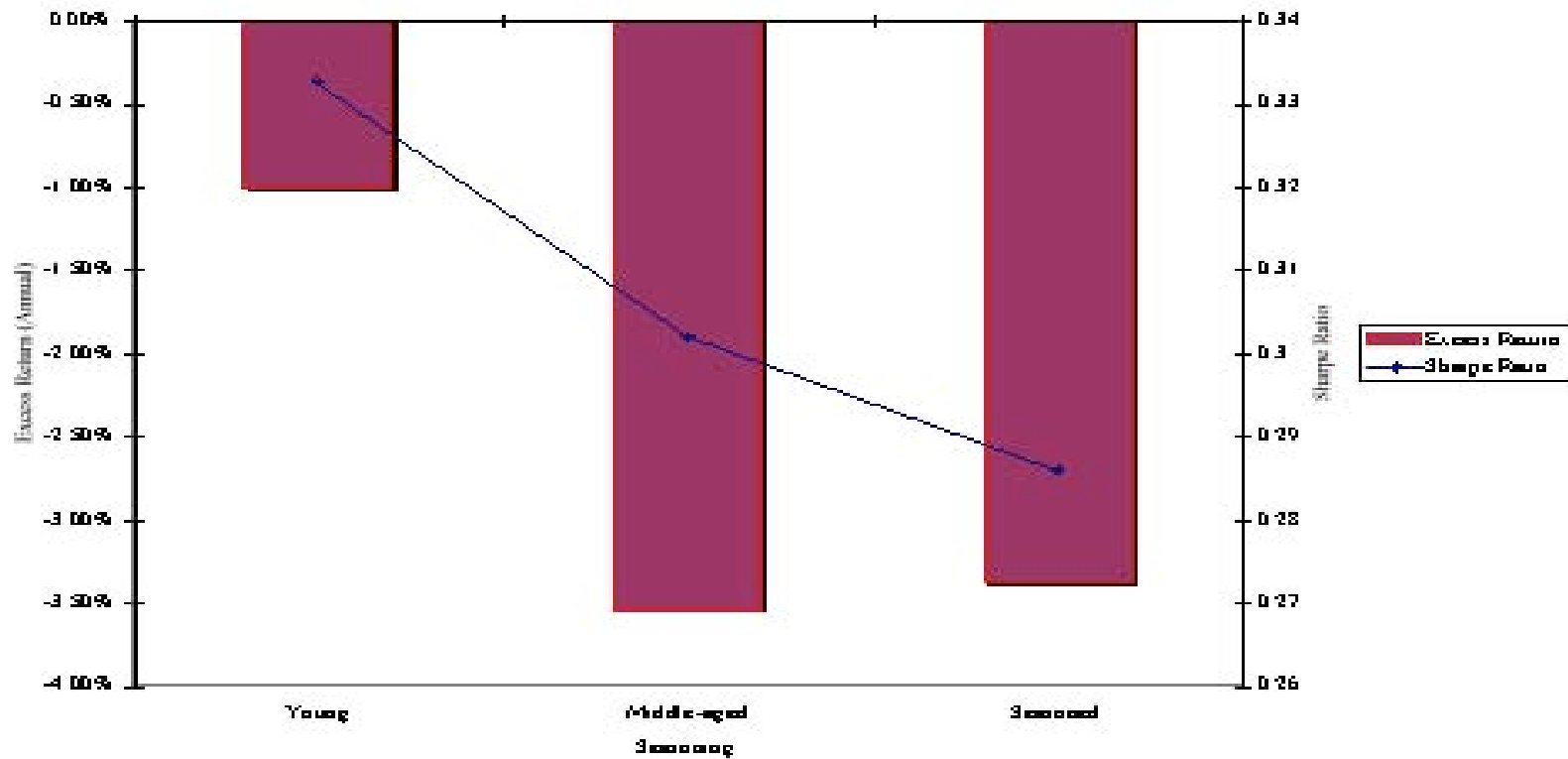
Figure 13.9: Jensen's Alpha: Load versus No-load Funds





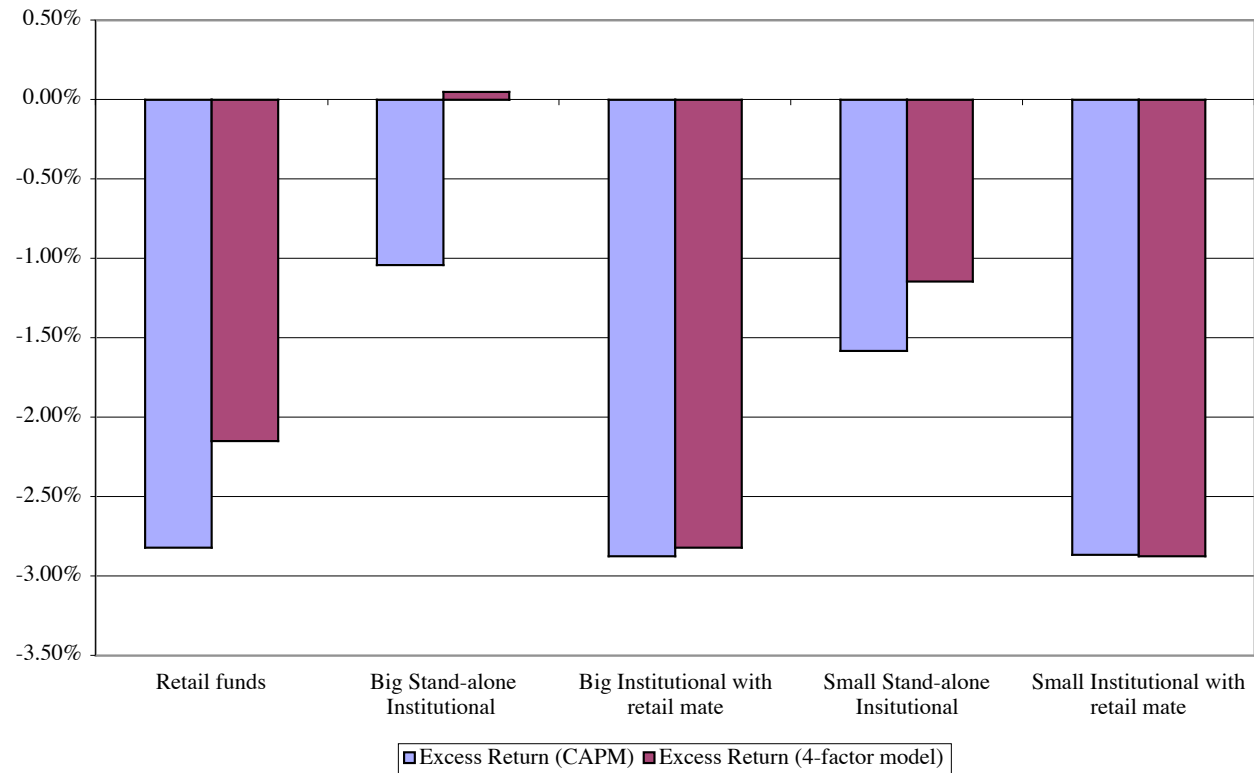
## 4. And fund age...

Figure 13.10: Excess Returns by Fund Age



## 5. Institutional versus Retail Funds

Figure 13.11: Institutional versus Retail Funds: Annualized Excess Returns



## Performance Continuity

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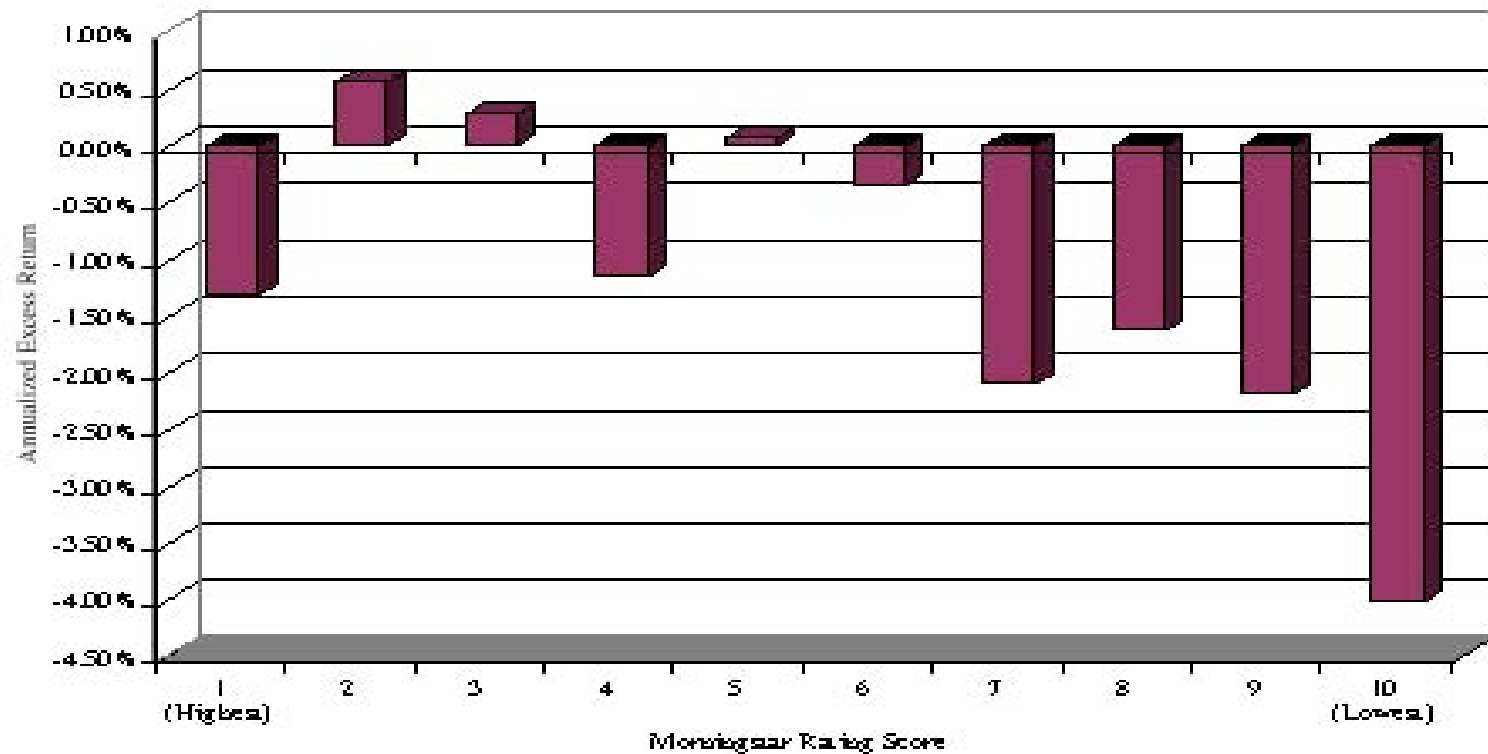
- Fund managers argue that the average is brought down by poor money managers. They argue that good managers continue to be good managers whereas bad managers drag the average down year after year.
- The evidence indicates otherwise.

# 1. Transition Probabilities

Quartile ranking this period	Quartile ranking next period			
	1	2	3	4
1	26%	24%	23%	27%
2	20%	26%	29%	25%
3	22%	28%	26%	24%
4	32%	22%	22%	24%

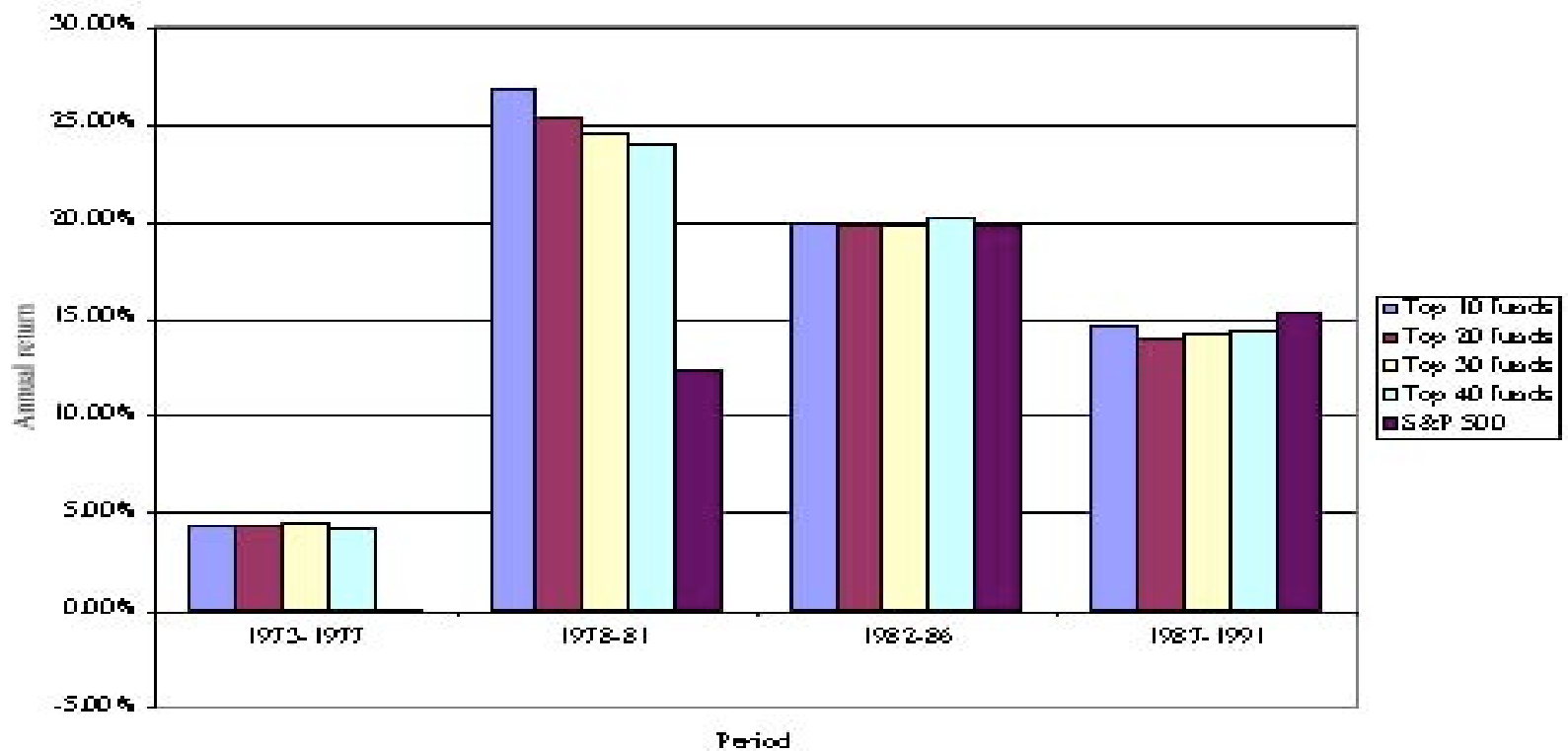
## 2. The Value of Rankings

Figure 13.12: Annualized Returns based on Morningstar Ratings- 1994-1997



Though there is some evidence of hot hands..

Figure 13.13: Returns on top-ranked funds: 1973-1991



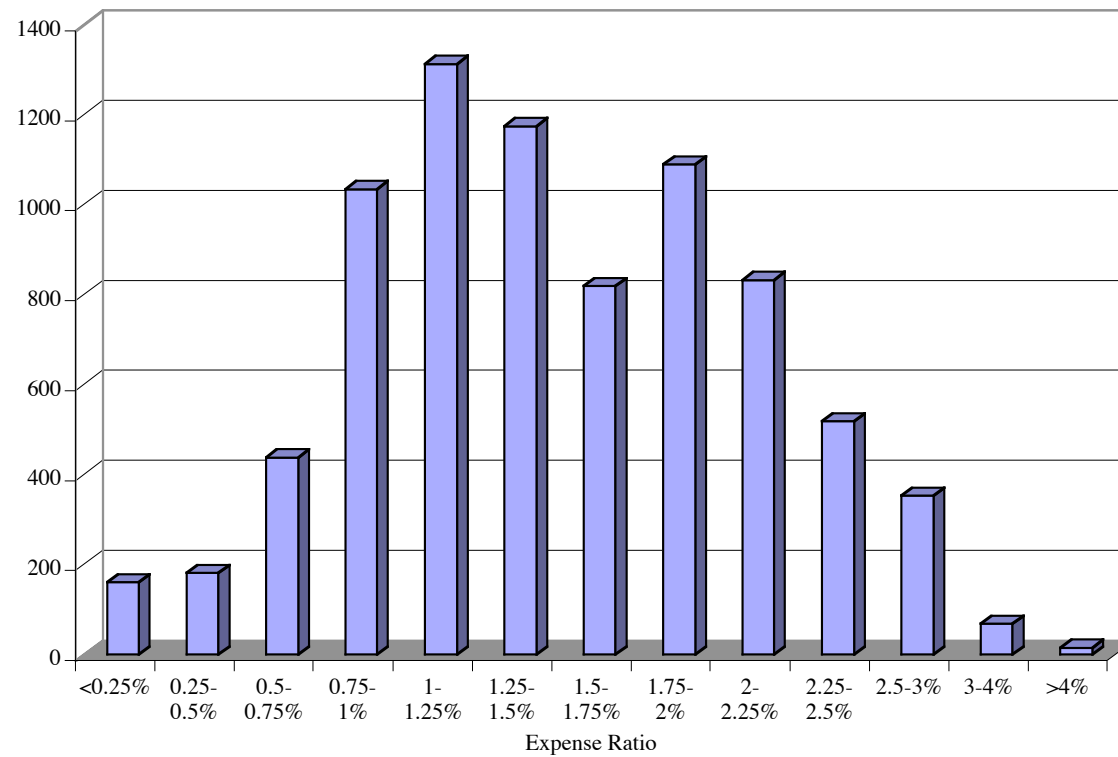
## Why active money managers fail...

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- High Transactions Costs
- High Taxes
- Too much activity
- Failure to stay fully invested in equities
- Behavioral factors

# 1. High Transactions Costs

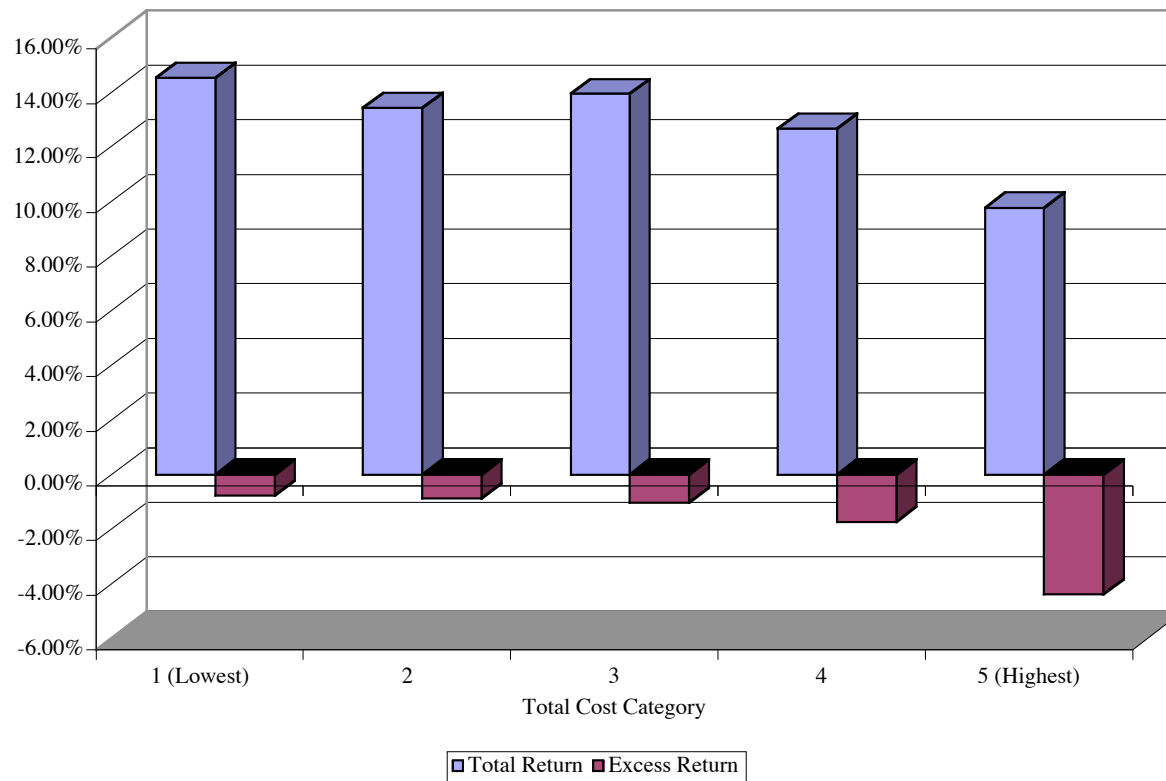
Figure 13.14: Expense Ratios at Equity Mutual Funds





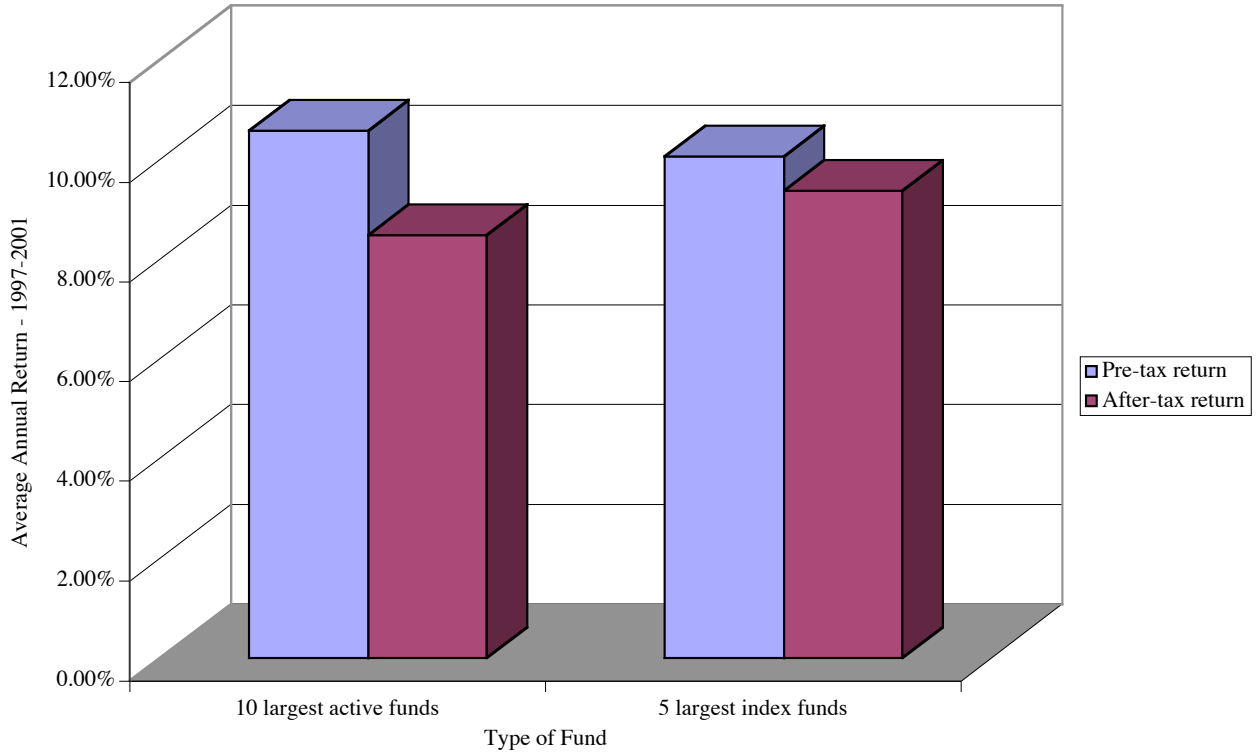
# Trading Costs and Returns

Figure 13.16: Trading Costs and Returns: Mutual Funds



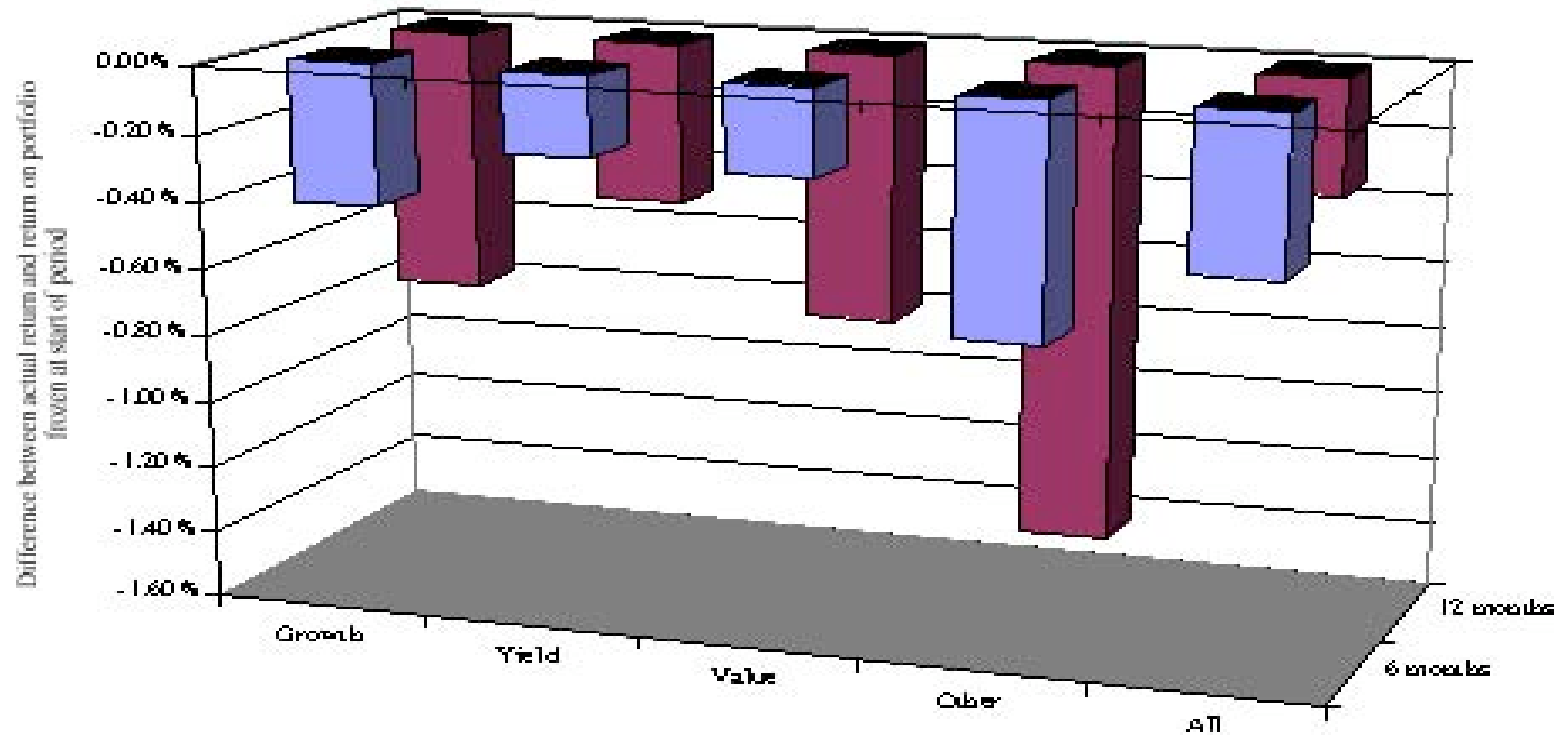
# 2. High Tax Burdens

Figure 13.17: Tax Effects at Index and Actively Managed Funds

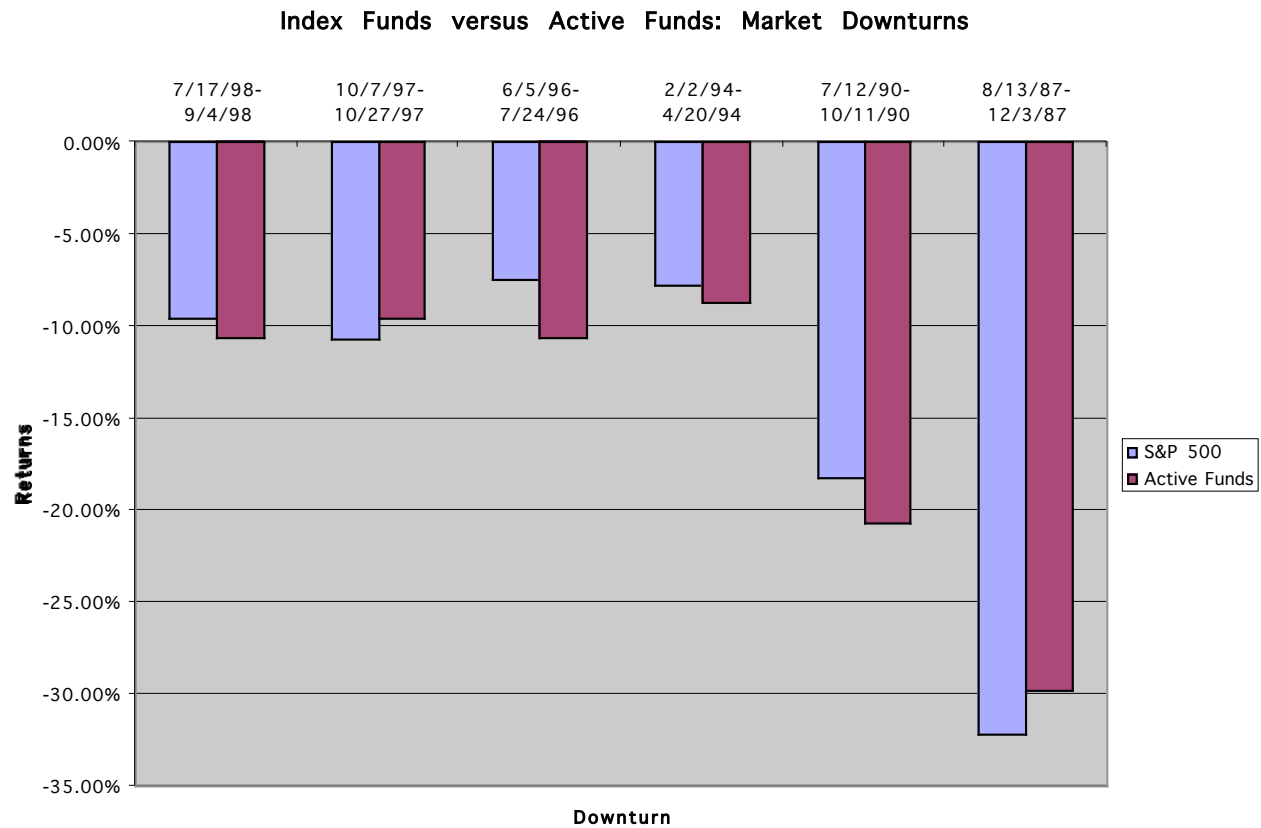


### 3. Too Much Activity

Figure 13.16: Payoff to Active Money Assignment



## 4. Failure to stay fully invested



And staying in cash too long..

## Performance of General Equity Managers During 12 Months Following Bear Markets

	Standard & Poor's 500	Lipper General Equity Average	Index Out- Performance
October, 1974 - September, 1975	38.11 %	35.36%	+2.75 %
August, 1982 - July, 1983	60.57	66.10	-5.53
December, 1987 - November, 1988	25.40	21.95	+3.45
Cumulative 12 Months Following Bear Markets	178.09%	174.18%	+3.91 %
Cumulative Bear Plus Subsequent 12 Month Periods	-8.48 %	-8.49 %	+0.01 %

## 5. Behavioral Factors

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- *Lack of consistency*: Brown and Van Harlow examined several thousand mutual funds from 1991 to 2000 and categorized them based upon style consistency. They noted that funds that switch styles had much higher expense ratios and much lower returns than funds that maintain more consistent styles.
- *Herd Behavior*: One of the striking aspects of institutional investing is the degree to which institutions tend to buy or sell the same investments at the same time.
- *Window Dressing*: It is a well documented fact that portfolio managers try to rearrange their portfolios just prior to reporting dates, selling their losers and buying winners (after the fact). O'Neal, in a paper in 2001, presents evidence that window dressing is most prevalent in December and that it does impose a significant cost on mutual funds.

## Alternatives to Indexing

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- Exchange Traded Funds such as SPDRs provide investors with a way of replicating the index at low cost, while preserving liquidity.
- Index Futures and Options
- Enhanced Index Funds that attempt to deliver the low costs of index funds with slightly higher returns.

## Exchange Traded Funds...

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	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1993-98</i>
SPDR NAV	8.92%	1.15%	37.20%	22.72%	33.06%	28.28%	21.90%
S & P 500	9.19%	1.32%	37.56%	22.97%	33.40%	28.57%	22.17%
Shortfall	-0.27%	-0.17%	-0.36%	-0.25%	-0.34%	-0.29%	-0.28%



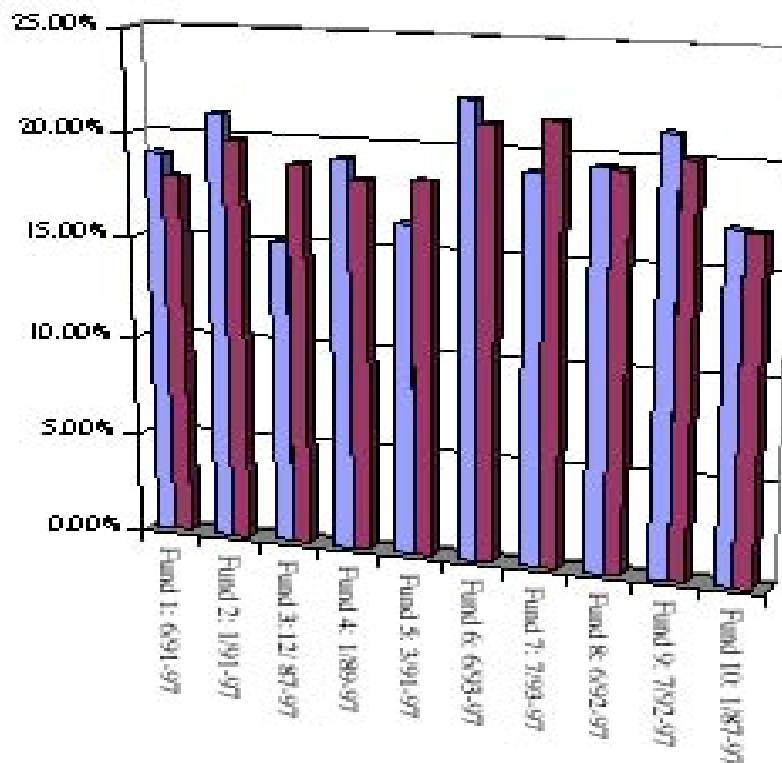
## Mechanics of Enhanced Index Funds...

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- In synthetic enhancement strategies, you build on the derivatives strategies that we described in the last section. Using the whole range of derivatives – futures, options and swaps- that may be available at any time on an index, you look for mispricing that you can use to replicate the index and generate additional returns.
- In stock-based enhancement strategies, you adopt a more conventional active strategy using either stock selection or allocation to generate the excess returns.
- In quantitative enhancement strategies, you use the mean-variance framework that is the foundation of modern portfolio theory to determine the optimal portfolio in terms of the trade-off between risk and return.

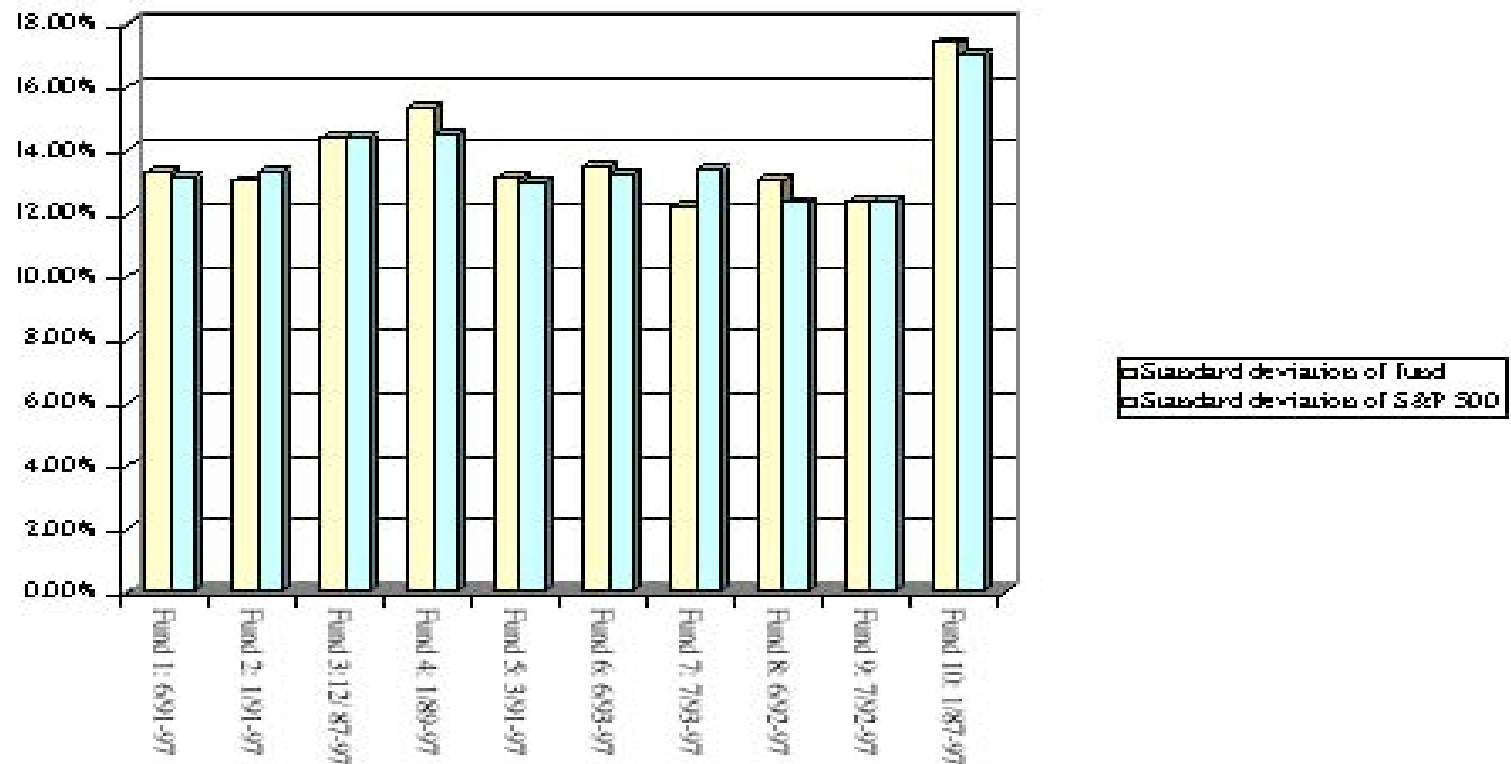
## Enhanced Index Funds... The Returns Promise..

Figure 13.20. Enhanced Index funds vs. S&P 500



## Enhanced Index Funds...The Risk

Figure 13.21: Enhanced Index Funds: Standard deviations vs. S&P 500



## Conclusion

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- There is **substantial evidence of irregularities in market behavior**, related to systematic factors such as size, price-earnings ratios and price book value ratios.
- While these irregularities may be inefficiencies, there is also **the sobering evidence that professional money managers**, who are in a position to exploit these inefficiencies, have a very difficult time consistently beating financial markets.
- Read together, the persistence of the irregularities and the inability of money managers to beat the market is testimony to the **gap between empirical tests on paper and real world money management** in some cases, and the **failure of the models of risk and return** in others.
- The performance of active money managers provides the best evidence yet that indexing may be the best strategy for many investors.



# The Grand Finale: Choosing an Investment Philosophy

Aswath Damodaran

## A Self Assessment

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- To choose an investment philosophy, you first need to understand your own personal characteristics and financial characteristics, as well as your beliefs about how markets work (or fail).
- An investment philosophy that does not match your needs or your views about markets will ultimately fail.

## Signs of a misfit...

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1. You lie awake at night thinking about your portfolio. Investors who choose investment strategies that expose them to more risk than they are comfortable taking will find themselves facing this plight. It is true that your expected returns will be lower with low risk strategies, but the cost of taking on too much risk is even greater.
2. Day to day movements in your portfolio lead to reassessments of your future: While long term movements of your portfolio should affect your plans on when you will retire and what you will do with your future, day-to-day movements should not. It is common in every market downturn to read about older investors, on the verge of retirement, having to put off retiring because of the damage created to their portfolios. While some of them may have no choice when it comes to where they invest, most investors do have the choice of shifting into low-risk investments (bonds) as they approach retirement.
3. Second guessing your investment decisions: If you find yourself second guessing your investment choices every time you read a contrary opinion, you should reconsider your strategy.

## Market Beliefs

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- So much of what we believe about markets comes from anecdotal evidence – from friends, relatives and experts in the field. We also have looked at the prevailing empirical evidence and disagreements among researchers on what works and does not in financial markets.
- Your views about market behavior and the performance of investment strategies will undoubtedly change over time, but all you can do is make your choices based upon what you know today.
- While staying consistent to an investment philosophy and core market beliefs may be central to success in investing, it would be foolhardy to stay consistent as the evidence accumulates against the philosophy.



## Finding an Investment Philosophy

	<i>Momentum</i>	<i>Contrarian</i>	<i>Opportunistic</i>
Short term (days to a few weeks)	<ul style="list-style-type: none"> <li>• <u>Technical momentum indicators</u> – Buy stocks based upon trend lines and high trading volume.</li> <li>• <u>Information trading</u>: Buying after positive news (earnings and dividend announcements, acquisition announcements)</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Technical contrarian indicators</u> – mutual fund holdings, short interest. These can be for individual stocks or for overall market.</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Pure arbitrage in derivatives and fixed income markets.</u></li> <li>• <u>Technical indicators</u> – Patterns in prices such as head and shoulders.</li> </ul>
Medium term (few months to a couple of years)	<ul style="list-style-type: none"> <li>• <u>Relative strength</u>: Buy stocks that have gone up in the last few months.</li> <li>• <u>Information trading</u>: Buy small cap stocks with substantial insider buying.</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Market timing</u>, based upon normal PE or normal range of interest rates.</li> <li>• <u>Information trading</u>: Buying after bad news (buying a week after bad earnings reports and holding for a few months)</li> </ul>	<ul style="list-style-type: none"> <li>• Near arbitrage opportunities: Buying discounted closed end funds</li> <li>• <u>Speculative arbitrage opportunities</u>: Buying paired stocks and merger arbitrage.</li> </ul>
Long Term (several years)	<ul style="list-style-type: none"> <li>• <u>Passive growth investing</u>: Buying stocks where growth trades at a reasonable price (PEG ratios).</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Passive value investing</u>: Buy stocks with low PE, PBV or PS ratios.</li> <li>• <u>Contrarian value investing</u>: Buying losers or stocks with lots of bad news.</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Active growth investing</u>: Take stakes in small, growth companies (private equity and venture capital investing)</li> <li>• <u>Activist value investing</u>: Buy stocks in poorly managed companies and push for change.</li> </ul>

## The Right Investment Philosophy

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- Single Best Strategy: You can choose the one strategy that best suits you. Thus, if you are a long-term investor who believes that markets overreact, you may adopt a passive value investing strategy.
- Combination of strategies: You can adopt a combination of strategies to maximize your returns. In creating this combined strategy, you should keep in mind the following caveats:
  - You should not mix strategies that make contradictory assumptions about market behavior over the same periods. Thus, a strategy of buying on relative strength would not be compatible with a strategy of buying stocks after very negative earnings announcements. The first strategy is based upon the assumption that markets learn slowly whereas the latter is conditioned on market overreaction.
  - When you mix strategies, you should separate the dominant strategy from the secondary strategies. Thus, if you have to make choices in terms of investments, you know which strategy will dominate.

## In closing...

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- Choosing an investment philosophy is at the heart of successful investing. To make the choice, though, you need to look within before you look outside. The best strategy for you is one that matches both your personality and your needs.
- Your choice of philosophy will also be affected by what you believe about markets and investors and how they work (or do not). Since your beliefs are likely to be affected by your experiences, they will evolve over time and your investment strategies have to follow suit.