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# Small Cap and Growth Investing

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## 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.

# ***1. Small Cap Investing***

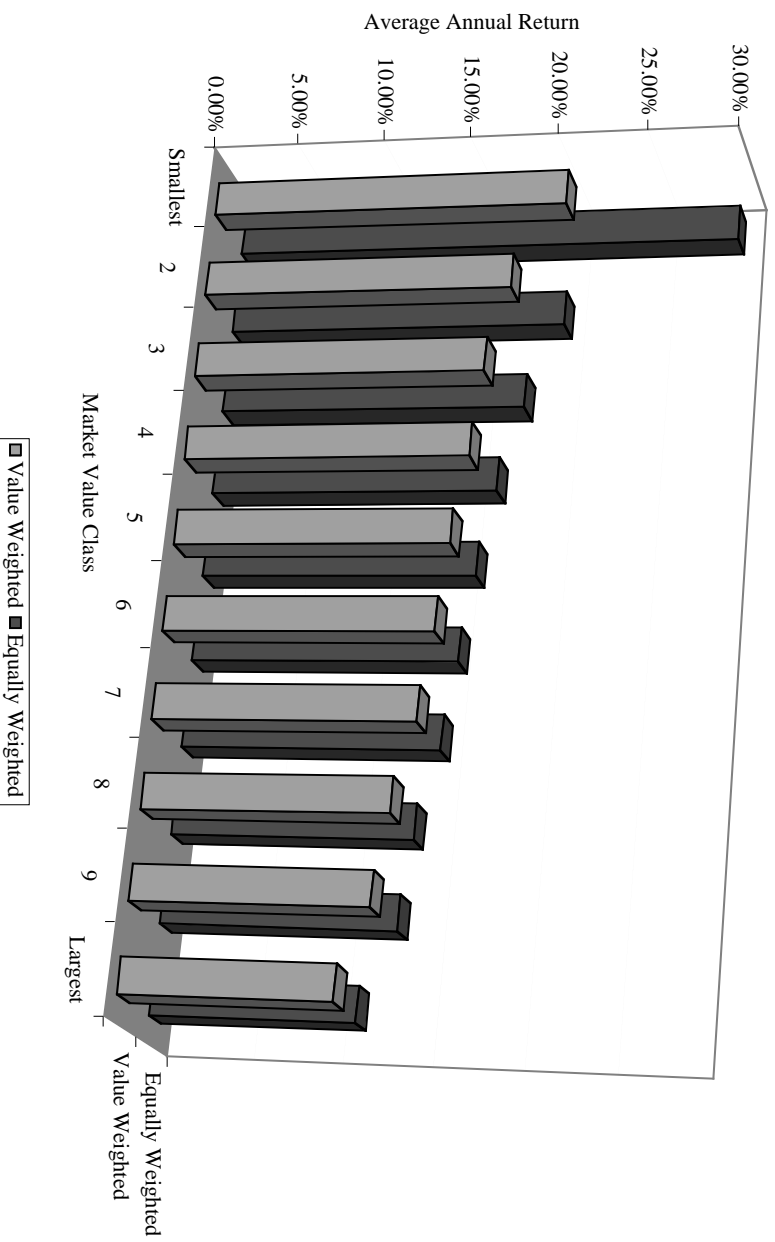
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- One of the most widely used passive growth strategies is the strategy of investing in small-cap companies.

- There is substantial empirical evidence backing this strategy, though it is debatable whether the additional returns earned by this strategy are really excess returns.

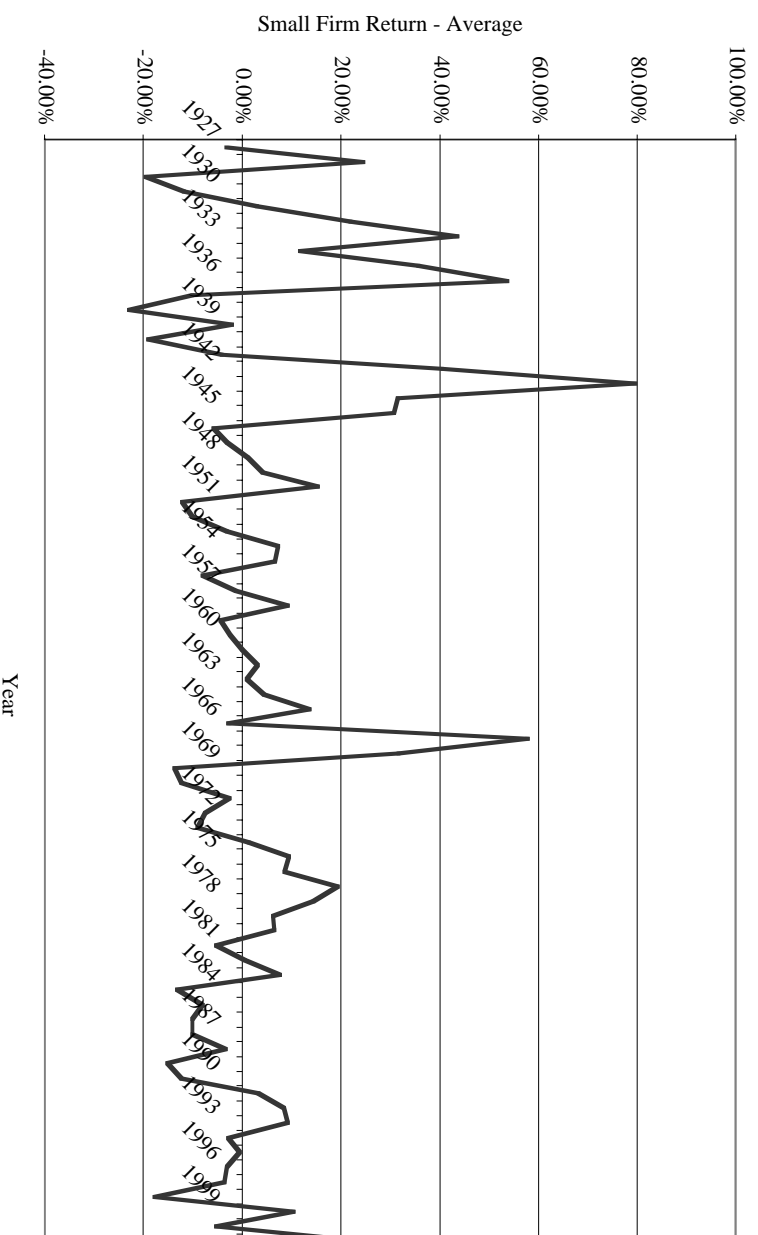
# The Small Firm Effect

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

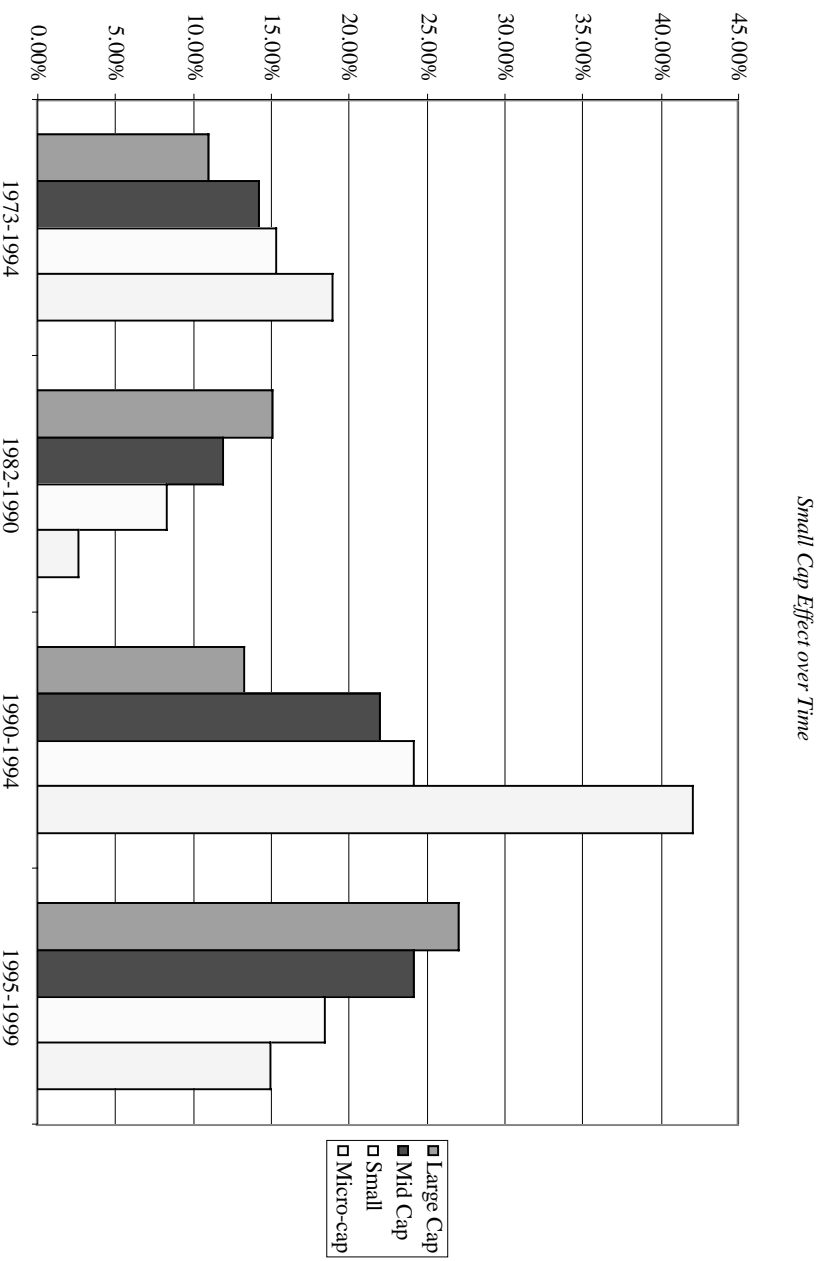


# Small Firm Effect Over Time

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



# Cycles in Small Firm Premium



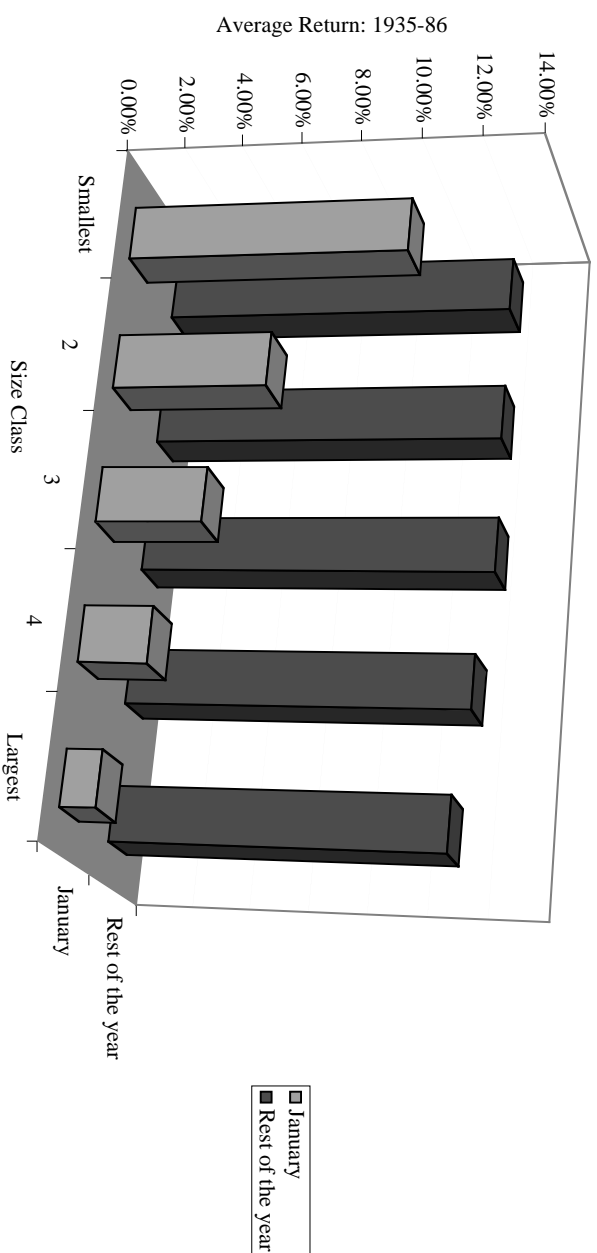
## Has the small firm premium disappeared?

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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?

# The Size and January Effects

Figure 9.4: The Small Firm Effect in January



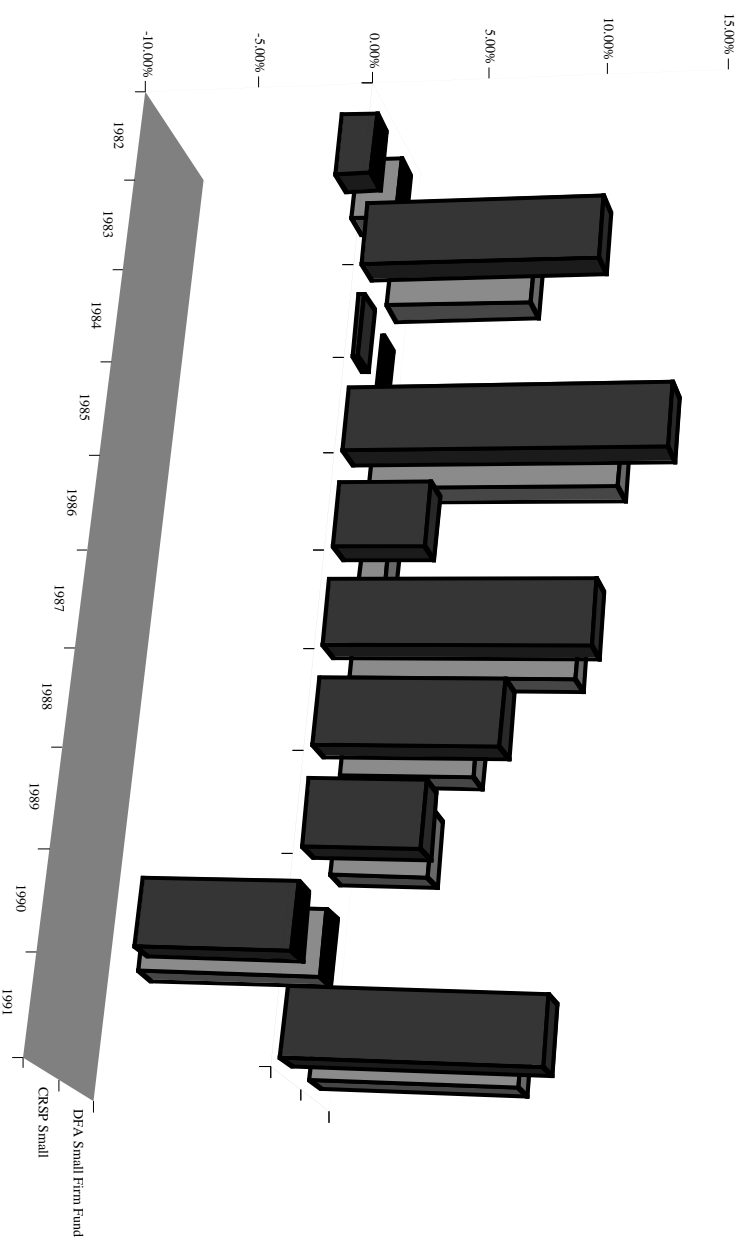
## Possible Explanations

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- The **transactions costs** of investing in small stocks is significantly higher than the transactions costs of investing in larger stocks, and the premiums are estimated prior to these costs. While this is generally true, the differential transactions costs are unlikely to explain the magnitude of the premium across time, and are likely to become even less critical for longer investment horizons.
- The **difficulties of replicating the small firm premiums** that are observed in the studies in real time are illustrated in Figure 9.11, which compares the returns on a hypothetical small firm portfolio (CRSP Small Stocks) with the actual returns on a small firm mutual fund (DFA Small Stock Fund), which passively invests in small stocks.

# Difficulties in Replicating Small Firm Effect

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

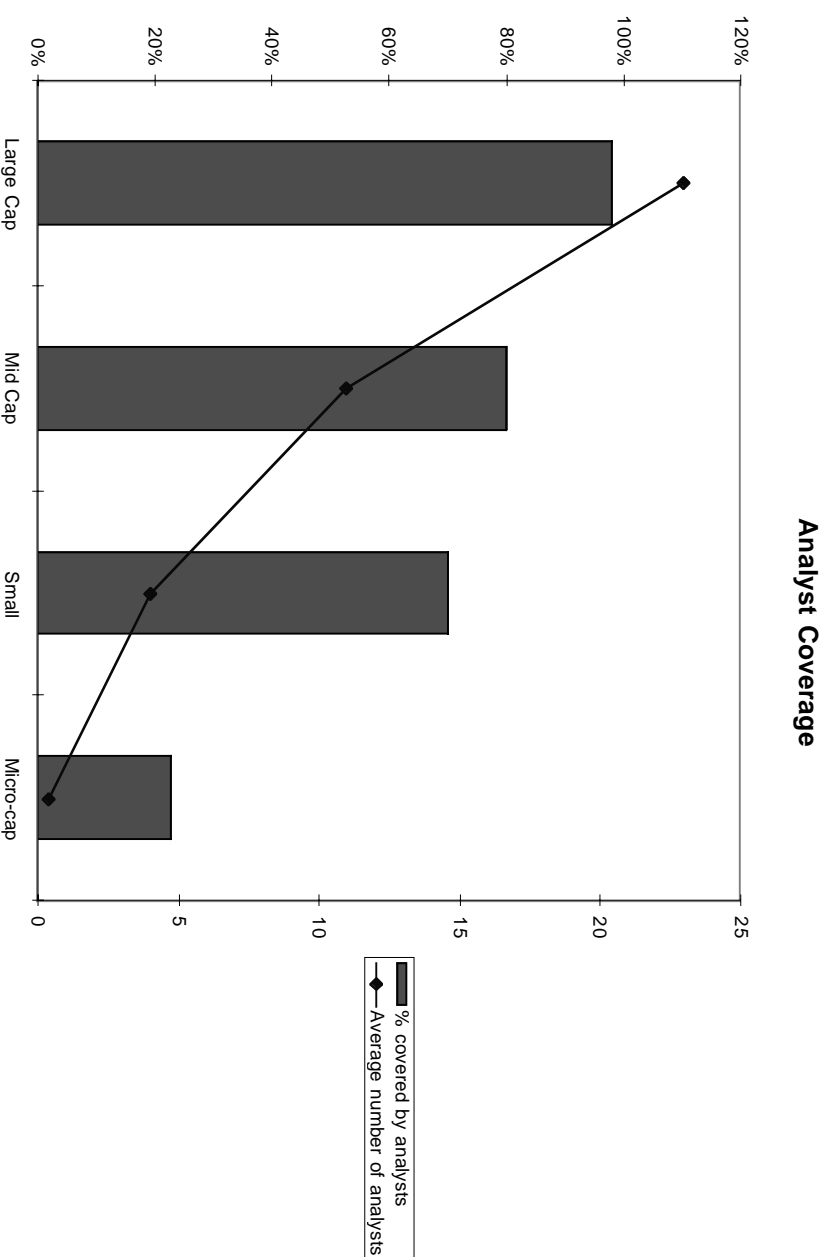


## Risk Models and the Size Effect

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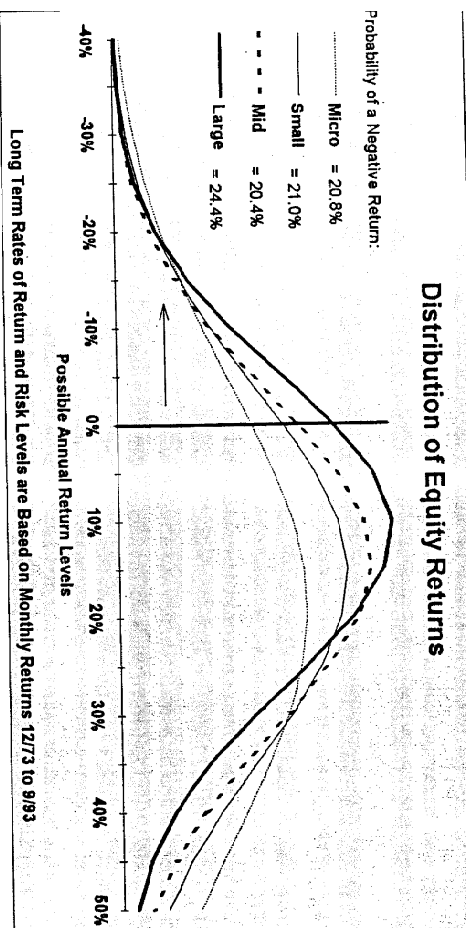
- **The capital asset pricing model may not be the right model for risk, and betas under estimate the true risk of small stocks.** Thus, the small firm premium is really a measure of the failure of beta to capture risk. The additional risk associated with small stocks may come from several sources.
  - 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



But ..

There is some counter-evidence on the riskiness of small stocks



# Determinants of Success at Small Cap Investing

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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..

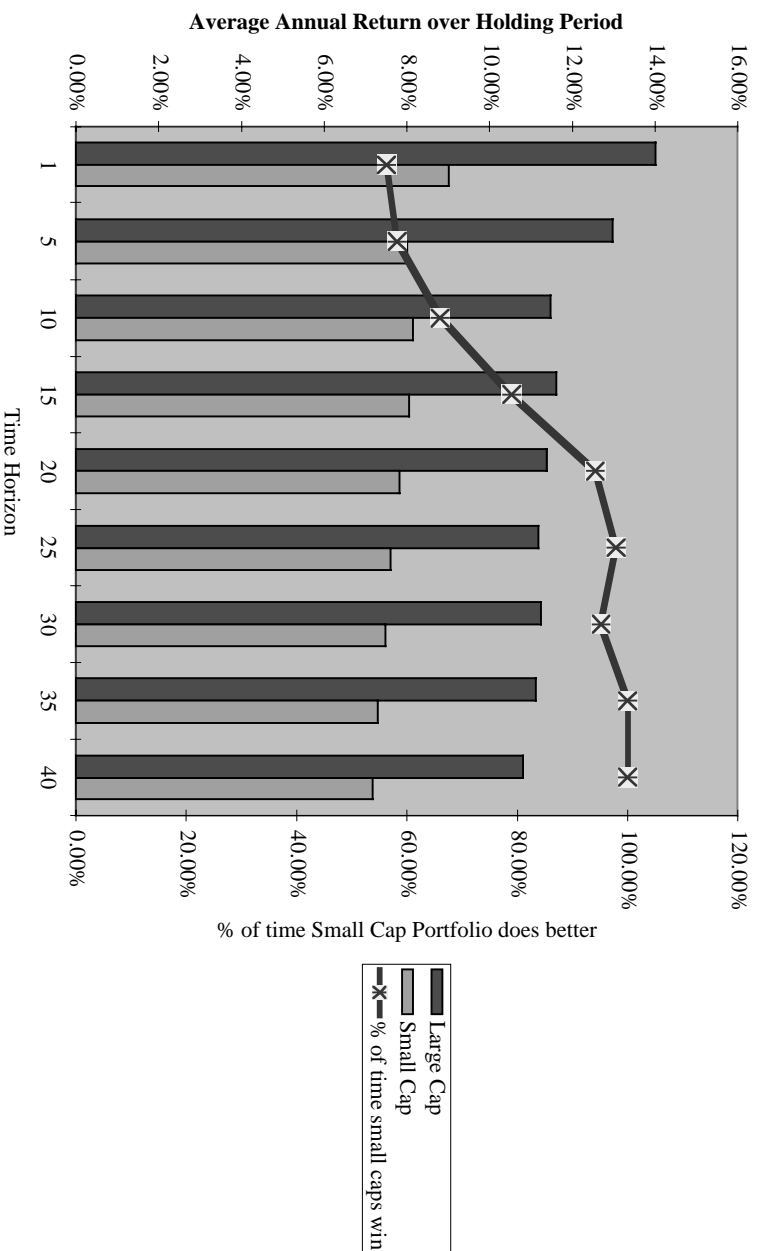


Figure 9.7: Time Horizon and the Small Firm Premium

## Evidence from outside of the United States

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- There is evidence of a **small firm premium in markets outside the United States** as well. Dimson and Marsh examined stocks in the United Kingdom from 1955 to 1984 and found that the annual returns on small stocks exceeded that on large stocks by 7% annually over the period.
- Bergstrom, Frashure and Chisholm report a **large size effect for French stocks** (Small stocks made **32.3%** per year between 1975 to 1989, while large stocks made **23.5%** a year), and a much smaller size effect in Germany.
- Hamao reports a **small firm premium of 5.1% for Japanese stocks** between 1971 and 1988.

# II. Initial Public Offerings

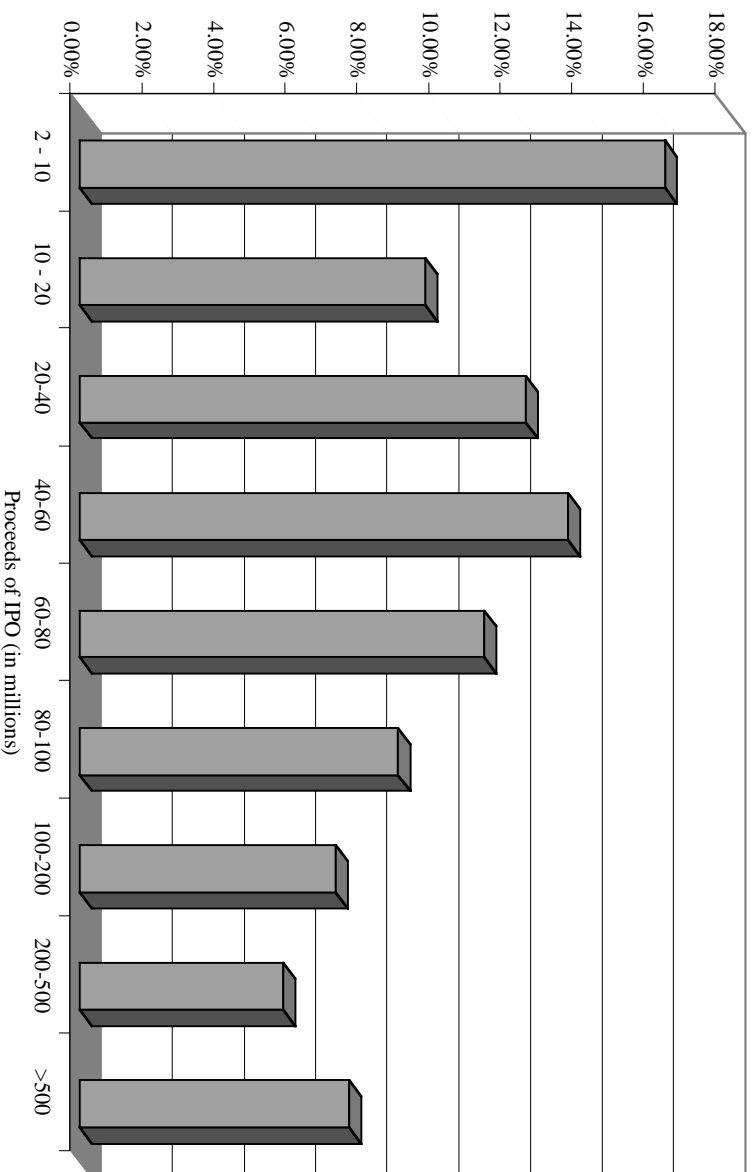


Figure 9.9: Average Initial Return and Issue Size

## More on IPO pricing...

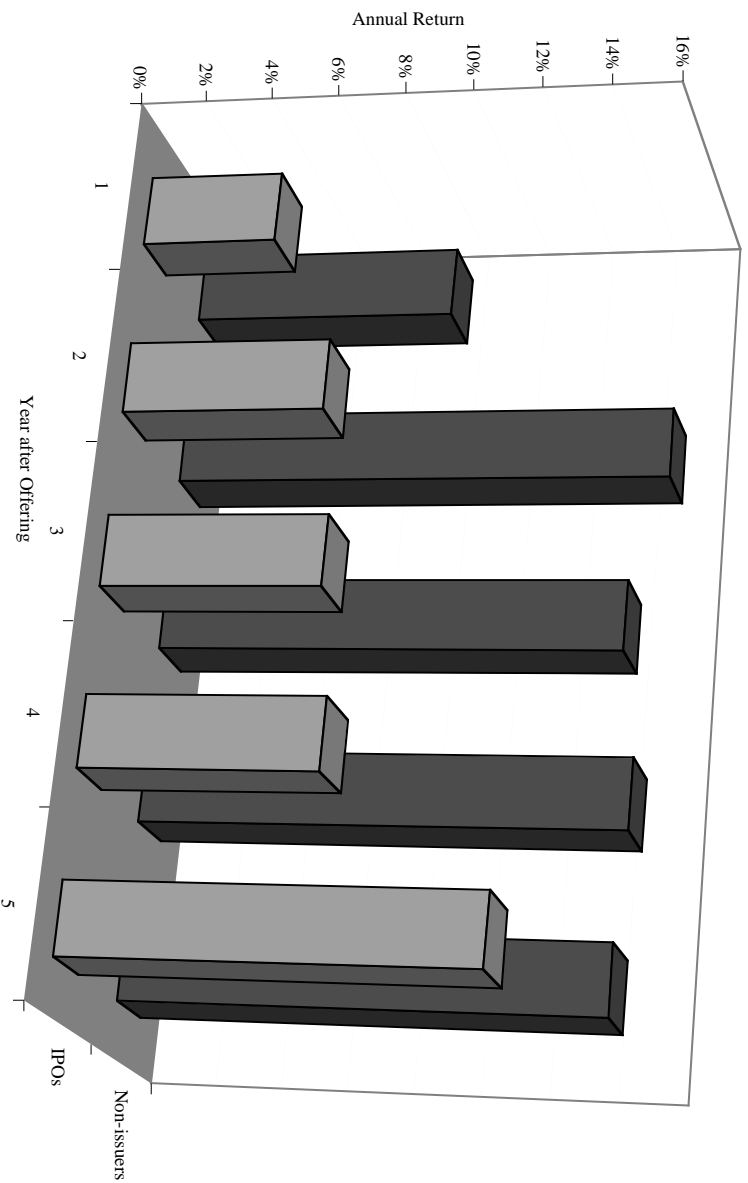
- The average initial return is 15.8% across a sample of 13,308 initial public offerings. However, about 15% of all initial public offerings are over priced.
- Initial public offerings where the offering price is revised upwards prior to the offering are more likely to be under priced than initial public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

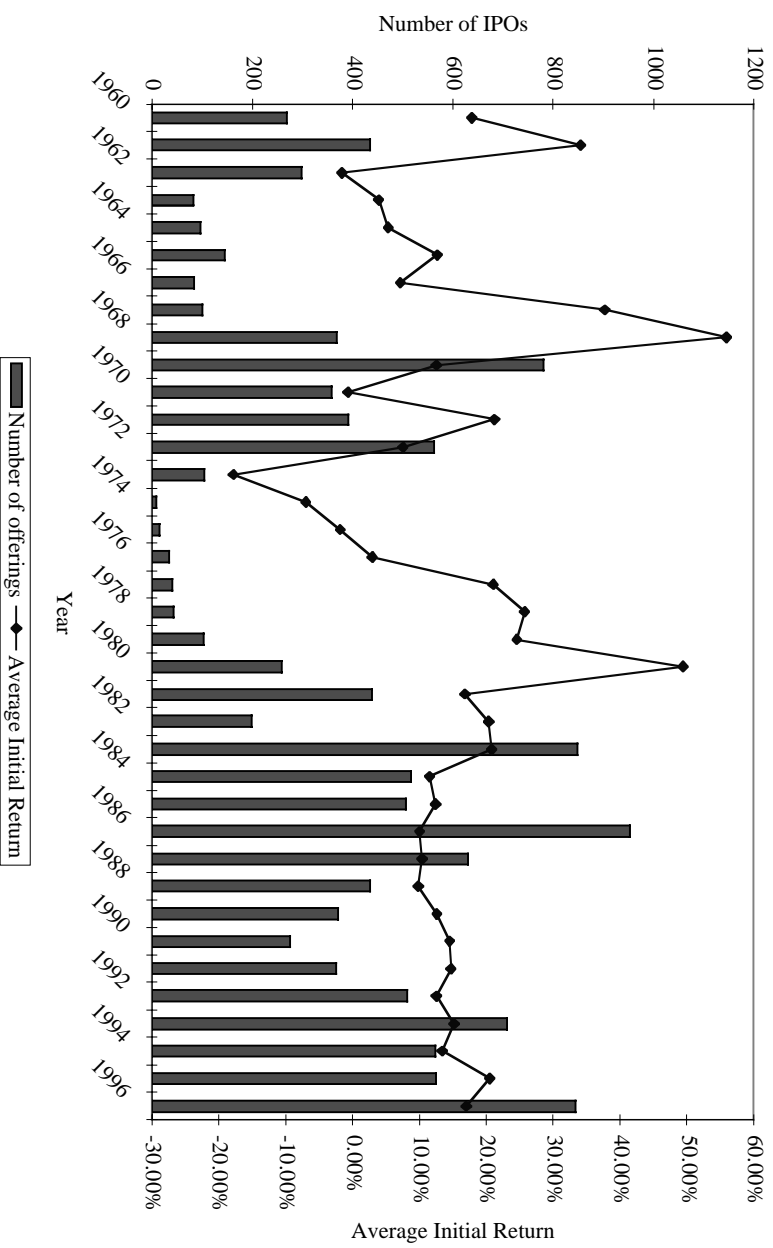
# What happens after the IPO?

Figure 9.10: Post Issue Returns - IPOs versus Non IPOs



# The IPO Cycle

Figure 9.11: Number of IPOs and Average Initial Return



## Determinants of Success at IPO investing

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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 the ratio of price earnings to growth (called the PEG ratio) and earnings growth over time (called earnings momentum)

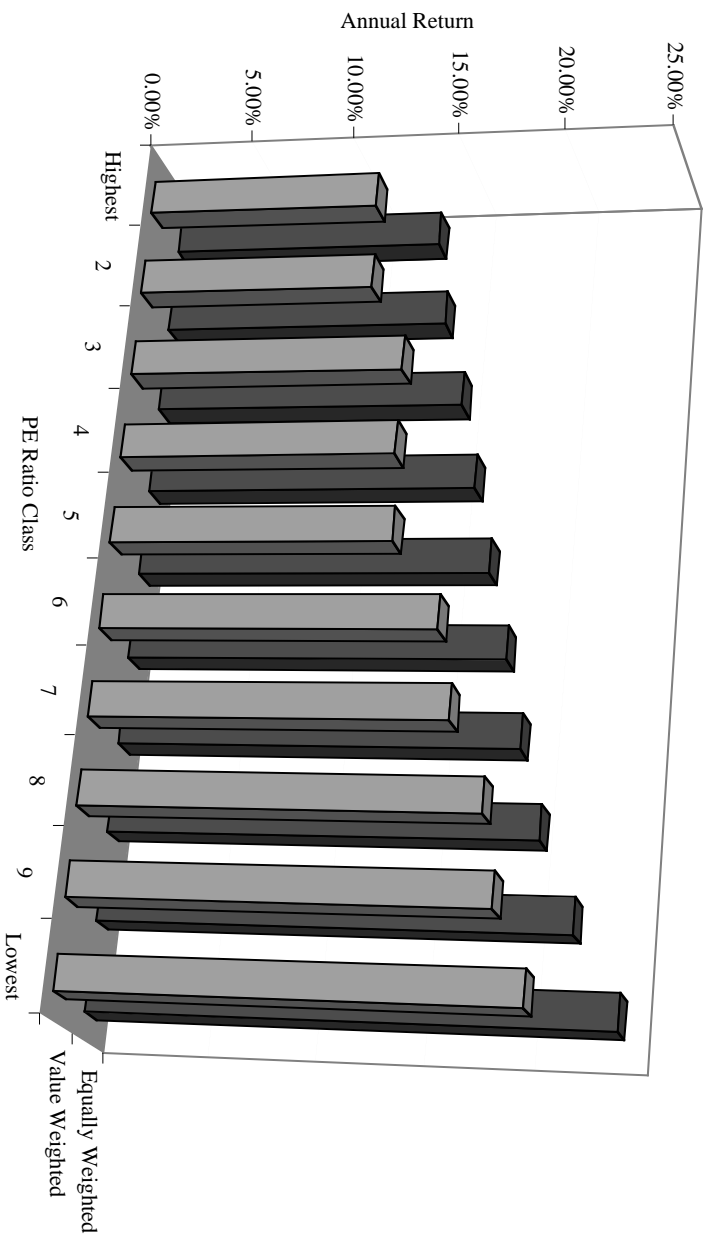
## a. Earnings Growth Screens

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- Historical Growth: Strategies that focus on buying stocks with high historical earnings growth show no evidence of generating excess returns because
  - Earnings growth is volatile
  - There is substantial mean reversion in earnings growth rates. The growth rates of all companies tend to move towards the average.
  - Revenue growth is more predictable than earnings growth.
- Expected Earnings Growth: Picking stocks that have high expected growth rates in earnings does not seem to yield much in terms of high returns, because the growth often is over priced.

## b. High PE Ratio Stocks

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



# But there are periods when growth outperforms value ..

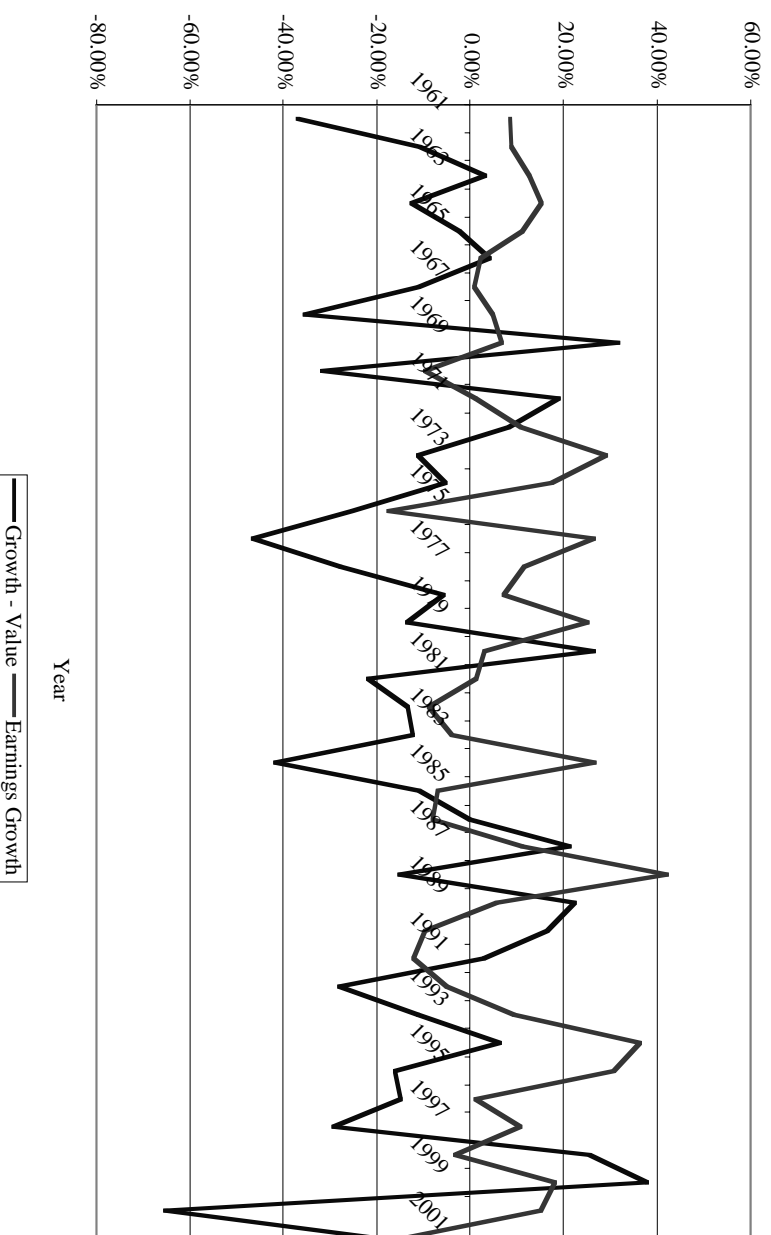
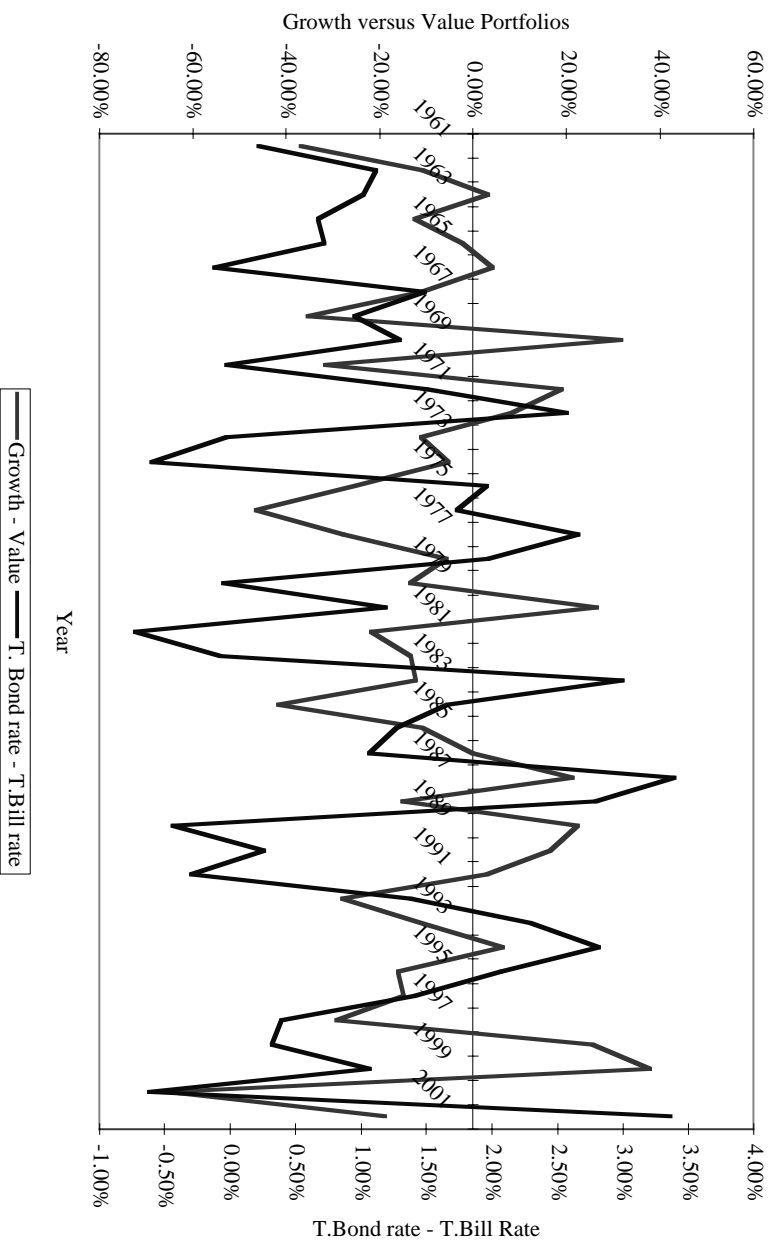


Figure 9.15: Relative Performance of Growth and Value versus Earnings Growth

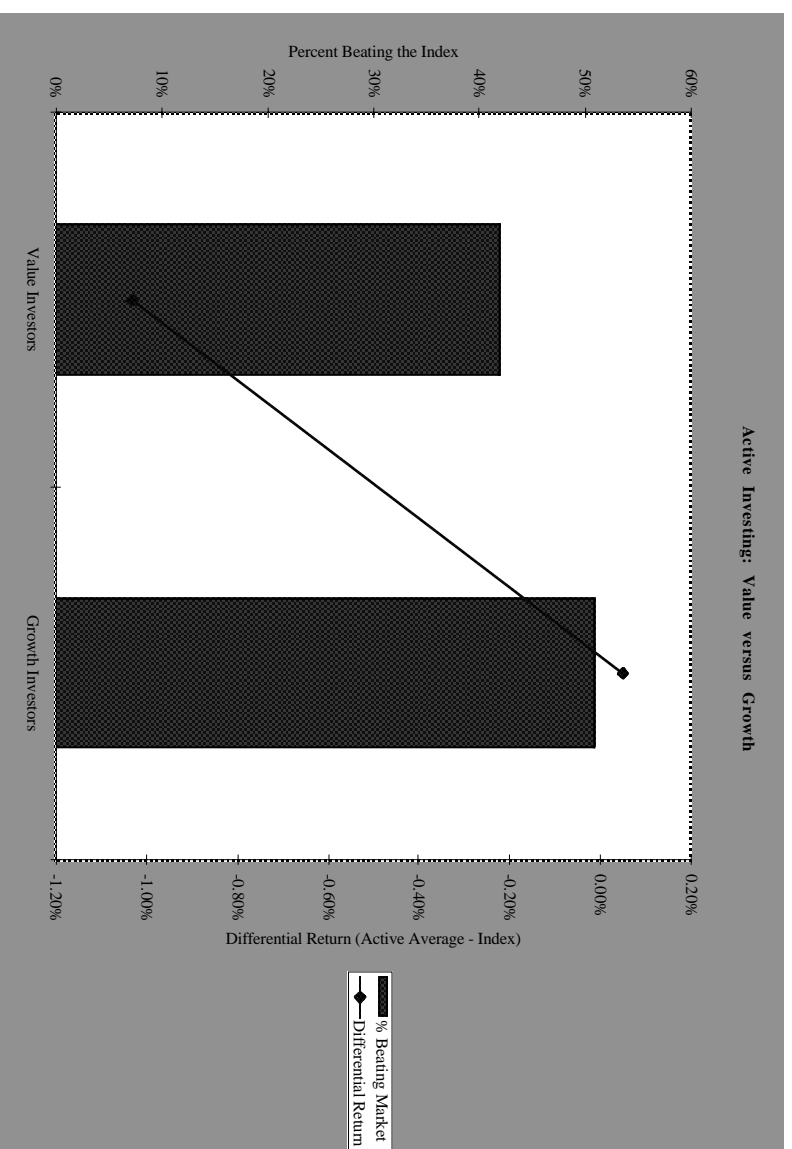
Especially when the yield curve is flat or downward sloping..

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.



### 3. PE Ratios and Expected Growth Rates

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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.

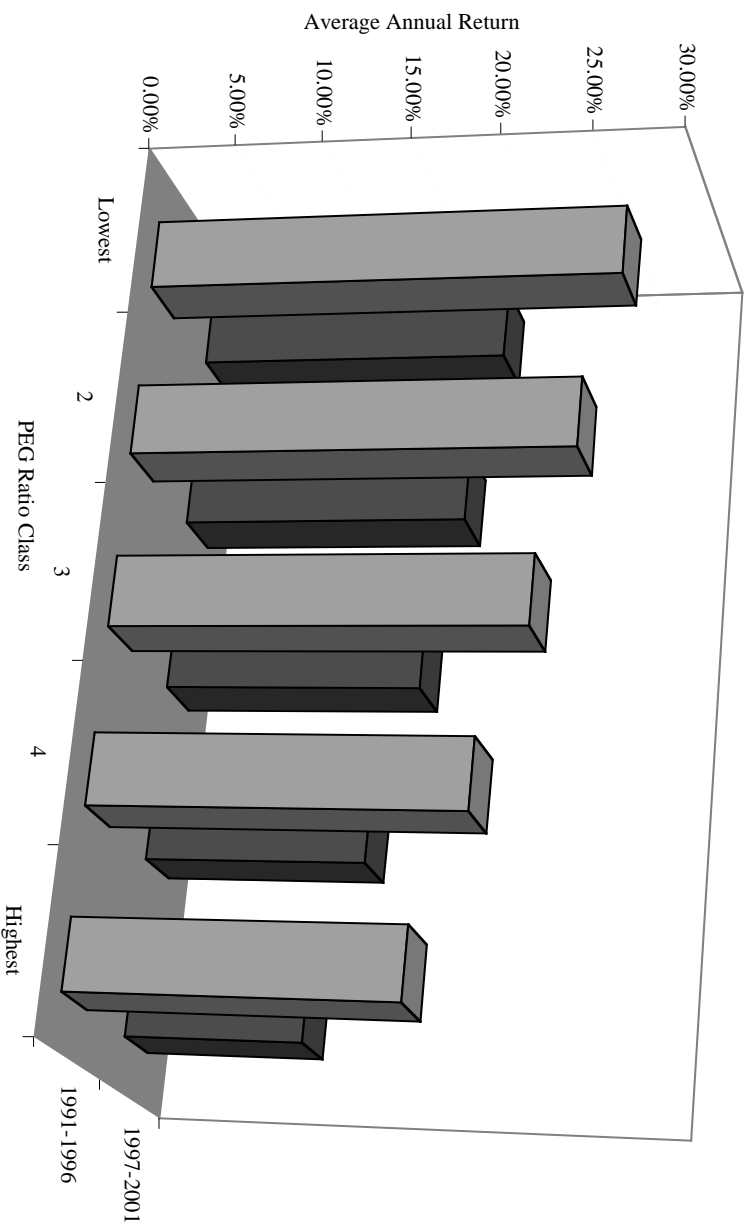
## Buy if $PE < \text{Expected Growth rate?}$

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- This strategy can be inherently dangerous. You are likely to find a lot of undervalued stocks when interest rates are high.
- Even when interest rates are low, you are likely to find very risky stocks coming through this screens as undervalued.

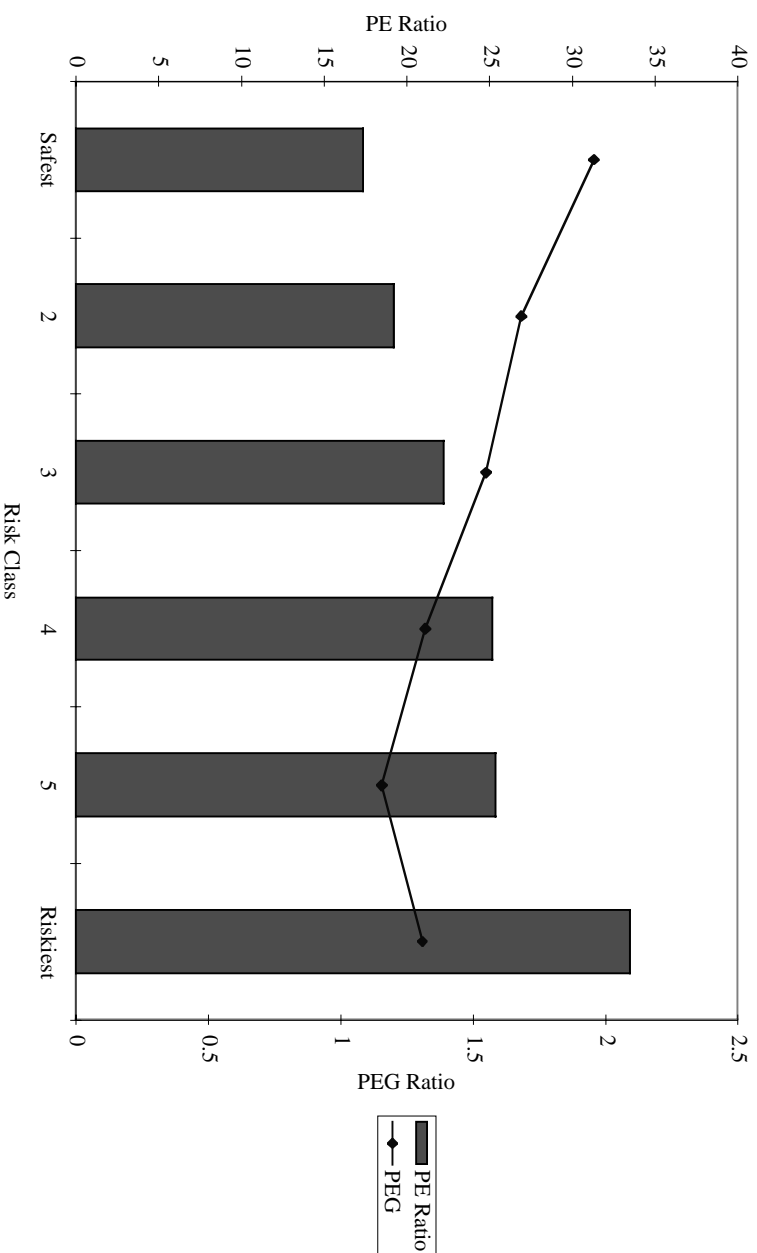
# A Low PEG Ratio = undervalued?

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



# Determinants of Success at Passive Growth Investing

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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 Process of Venture Capital Investing

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■ *Provoke equity investor's interest:* The first step for a firm is to get private equity investors interested in investing in it. Its capacity to do so will depend upon the business it is in and the track record of the managers in the firm.

■ *Valuation and Return Assessment:* In the *venture capital method*, the earnings of the private firm are forecast in a future year, when the company can be expected to go public. Multiplied by an expected earnings multiple in a future year you get the exit or terminal value. This value is discounted back to the present at a *target rate of return*, which measures what venture capitalists believe is a justifiable return, given the risk that they are exposed to.

■ *Structuring the Deal:* You have to negotiate two factors.

- First, the private equity investor has to determine what proportion of the value of the firm he or she will demand, in return for the private equity investment. Private equity investors draw a distinction between what a firm will be worth without their capital infusion (pre-money) and what it will be worth with the infusion (post-money). Optimally, they would like their share of the firm to be based upon the premoney valuation, which will be lower.
- Second, the private equity investor will impose constraints on the managers of the firm in which the investment is being made. This is to ensure that the private equity investors are protected and that they have a say in how the firm is run.

# Post-deal Management

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■ *Post-deal Management:* Once the private equity investment has been made in a firm, the private equity investor will often take an active role in the management of the firm. Private equity investors and venture capitalists bring not only a wealth of management experience to the process, but also contacts that can be used to raise more capital and get fresh business for the firm.

■ *Exit:* There are three ways in which a private equity investor can profit from an investment in a business.

- The first and usually the most lucrative alternative is an initial public offering made by the private firm. While venture capitalists do not usually liquidate their investments at the time of the initial public offering, they can sell at least a portion of their holdings once they are traded.
- The second alternative is to sell the private business to another firm; the acquiring firm might have strategic or financial reasons for the acquisition.
- The third alternative is to withdraw cash flows from the firm and liquidate the firm over time. This strategy would not be appropriate for a high growth firm, but it may make sense if investments made by the firm no longer earn excess returns.

# 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

# Determinants of Success at Growth Investing

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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.