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Finding the Whys and Wherefores Behind Small-Stock Theory

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SMALL-stock theory holds that superior rates of return are possible in the stock market by investing in small capitalization stocks. Debate on the theory centers on two studies conducted by Rolf Banz and Marc Reinganum, an outgrowth of work started at the Center for Research in Securities Prices at the University of Chicago.

Mr. Banz compared the rates of return of the fifth quintile, or bottom 20%, of stocks on the New York Stock Exchange to the top quintile of stocks during 1926--'79. After adjusting for risk or beta, the rate of return during this period was 11.6% per year for the bottom quintile vs. 8.8% per year for the top quintile.

Mr. Reinganum's study used 2,000 stocks on both the New York Stock Exchange and the American Stock Exchange from 1962-'80. Ten portfolios, each consisting of 200 stocks, were arranged in descending order of market capitalization.

The portfolio containing the smallest stocks had average rates of return more than 20% higher than the portfolio containing the largest stocks. No adjustments were made for risk because the betas for all portfolios ranged near one.

Critics of these studies have argued against small-stock theory, or the small-stock effect, for a variety of reasons.

Some arguments contend the betas were not accurate in the first place, that the data base used by the center contains significant errors and that small stocks are not necessarily synonymous with small companies.

Other arguments purport the small-cap stocks delisted on the exchanges were excluded from further

measurement in the studies. that transaction costs were greater than recognized and that the superior returns of small-cap stocks were clustered in short intervals of the periods under study.

Modern portfolio theorists contend that if it is possible for small-cap stocks to achieve superior rates of return, it is because the small-stocks market is inefficient due to the disproportionate number of dollars poured into researching big companies.

Mr. Banz, one of the earliest proponents of small-stock theory, could not offer an explanation as to why it worked. He likened the small-stock effect to aspirin; it works even though no one fully understands it.

The small-stock effect is rooted in the tendency of small companies' earnings to grow faster than big companies' earnings. In the simplest sense, it is easier for a small company to increase sales from \$1 million to \$2 million than for a big company to expand sales from \$1 billion to \$2 billion.

The same holds true in earnings.

Two studies demonstrate the correlation between earnings-growth rates and stock prices. Henry Latane and Donald Tuttle's study of 48 randomly selected stocks in the Value Line Survey during 1950-'63 shows the eight companies having the fastest earnings growth each year achieved price appreciation of 30% annually vs. price appreciation of 12% per year for the entire universe. By comparison, the eight companies having the slowest earnings growth appreciated just 1% per year.

Manown Kisor and Van Messner, in their study of 800 stocks during 1962-'65. came up with similar findings. In the first year, companies with above-average

earnings growth returned 4% more than the Standard & Poor's 500 stock index, while companies with below-average earnings growth returned 12% less. In each subsequent year, the stocks of companies having above-average earnings growth sharply outperformed those with below-average earnings growth.

In searching for an explanation of the small-stock effect, I decided to test the findings of Latane-Tuttle and Kisor-Messner with small -stock theory.

Earnings-growth rates and stock prices for the top and bottom quintiles of stocks in the S&P 500 were compared during two intervals, 1975-'80 and 1979-'82. These periods were selected because S&P earnings moved in opposite directions in each period, increasing 86% in the earlier period and declining 15% in the latter.

The study results substantiate the small-stock, effect, and shed light on reasons behind it.

From year-end 1975 to year-end 1980, the average price gain was 134% for the bottom quintile of the S&P 500 vs. 45% for the top quintile. During 1975-'80. average earnings growth was 159% for the bottom quintile vs. 105% for the top quintile. The median price gain was 122% for the bottom quintile vs. 7% for the top quintile, while median earnings growth was 149% vs. 83% respectively.

From 1979-'82. the average price gain for the bottom quintile was 63% vs. 36% for the top quintile and average earnings growth was 37% against 13% respectively. The median price gain was 43% for the bottom and 27% for the top, whereas median earnings growth was 23% compared with 7%.

There is an interesting sidelight to the small company effect that has received little attention – the takeover effect.

In analyzing takeovers that occurred during the two intervals used in the study, it was found that small companies are more likely to be acquired than big companies, and they are acquired at a greater price premium than big companies.

Twenty four companies in the bottom 100 of the S&P 500 were taken over from 1975-'80. By comparison,

only one of the top 100 companies of the S&P 500 was taken over. The average gain in price for the 24 companies in the bottom quintile was 224% vs. 53% for the single company in the top quintile.

From 1979-'82, 23 of the bottom quintile companies were acquired at an average price gain of 149%. One company in the bottom quintile went bankrupt. Including the failed company, the average gain in price was still 139%. By comparison, two of the top quintile stocks were acquired at an average gain in price of 89%.

In 1979, the largest five stocks in the S&P 500's top quintile – International Business Machines Corp., American Telephone & Telegraph Co., Exxon Corp., General Motors Corp. and Standard Oil Co. (Indiana) – were significantly larger companies than the largest five stocks in the bottom quintile – Jos. Schlitz Brewing Co., Oklahoma Natural Gas, First Mississippi Corp., Echlin Inc. and Dr Pepper Co.

Small companies tend to proliferate in new and rapidly growing industries as well as less mature industries. Many new companies have emerged in the word processing, personal computer and telecommunications industries in recent years.

But how many new companies have been formed in the chemical and steel industries?

The small-stock effect docs not occur because small stocks are undervalued, underresearched and underowned. The small stock effect is due to the superior earnings ability of small companies.
