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Web of 'regularities' leads to opportunity

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"A Random Walk Down Wall Street," written by Burton Malkiel more than a decade ago, suggests security analysis is no more effective than dart throwing. This nihilistic philosophy cast doubt on active equity management and helped spark the spectacular growth in indexing. But our recent findings show another stroll down Wall Street is long overdue.

Our empirical walk reveals the stock market to be rife with "return patterns," or "regularities." These return patterns form a tangled web of relationships that must be unraveled to reveal investment opportunity.

For instance, some maintain the long-run superior performance of small-capitalization stocks is due to their tendency to have lower price-earning ratios, or to be more neglected by security analysis. Many contend the size effect might be related to the so-called January or day-of-the-week anomalies. Only a simultaneous analysis of these and all other return effects can unravel the multifaceted mysteries of the market.

In an inefficient market, prices respond slowly to new information and do not fully reflect underlying fundamentals. Even the dividend discount model, the quintessential value model, has little explanatory power when tested jointly with other attributes. We find theoretical value is but a small part of

the security pricing story. Hence the blind pursuit of value is called into question.

Consider the small-firm effect. Stocks with smaller capitalization tend to have less security coverage and higher price volatility than other stocks. As a result, the traditional way of measuring this effect - by small capitalization - picks up other sources of return.

On the other hand, a simultaneous analysis of all interrelated effects fully disentangles and "purifies" return attributions. For instance, consider a portfolio with smaller stocks on average than the market, but marketlike in every other respect. That is, their industry weightings and fundamental attributes such as the p/e ratio are identical to the market. Any differential returns between such a portfolio and the market are due solely to the size bet, and these resulting "pure" returns can provide startling insights.

The January small-firm effect vanishes once year-end tax-related effects are taken into account. This implies the January small-firm phenomenon is merely a surrogate for underlying tax effects. Thus, the sensible investment approach models these tax effects directly and can flexibly adapt to tax code revisions.

Low p/e stocks are usually considered defensive, but this is a mischaracterization. Their seeming defensiveness arises from substituting for truly defensive attributes, such as high yield. Pure returns to the low p/e attribute are no better in down markets than in up markets. Hence, low p/e stocks are not the

safest harbor in times of uncertainty.

Returns to beta, purified of other effects, such as low p/e, did not accumulate during the bull market from July 1982 to August 1987. This is contrary to the capital asset pricing model. Furthermore, both CAPM and the arbitrage pricing theory appear unable to account for the vast majority of market anomalies.

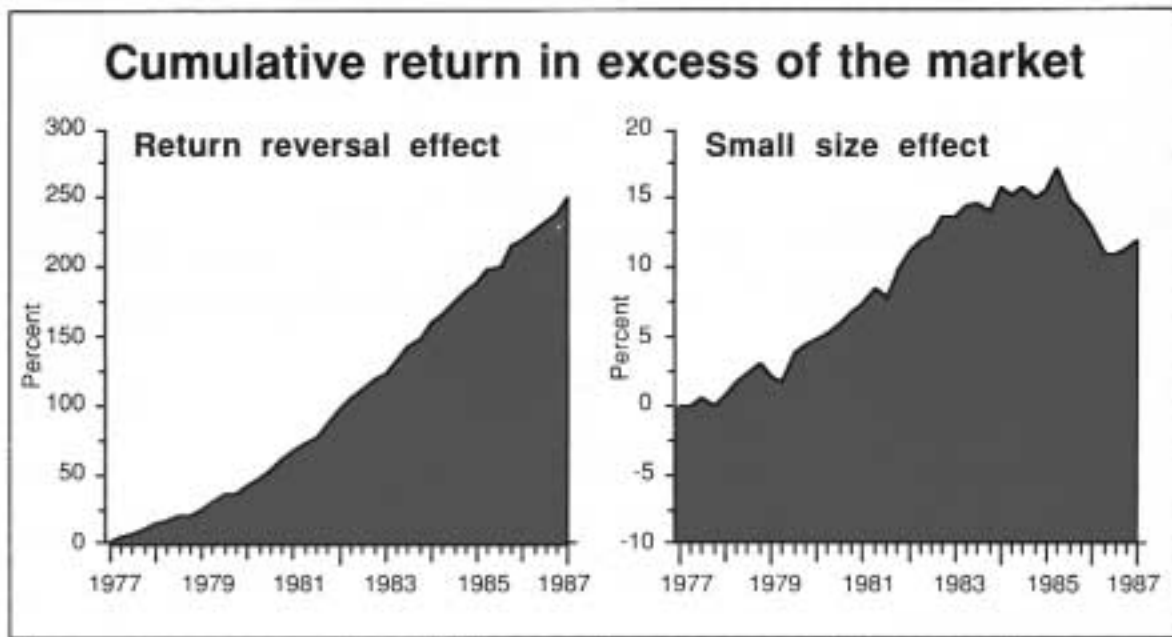
Some effects, like "return reversal," are clearly anomalous pockets of stock market inefficiency. Prices tend to overshoot and then correct in the short run, hence the term reversal. However, if a jump in price is due to good news, such as a favorable earnings announcement, the superior performance likely will persist. Disentangling related effects purifies the measurement of the reversal effect and results in stronger, more consistent performance.

As the accompanying chart shows, the monthly cumulative pure return of a strategy designed to exploit the return reversal anomaly would have produced a cumulative return of 240% over the market, or a compound annual return in excess of the market return of about 13% for the 10 years ended Dec. 31.

But portfolio turnover, and hence transaction costs, also would have been very high, negating much of this gain.

Other effects, such as the small-size effect, are less stable over time, producing a far much smaller premium over the market's return, as the chart shows.

Although pure returns to the small-size attribute have been positive in the



long run, they have been detrimental to performance recently. It would have been optimal to shift from small to large stocks in 1985.

While the size effect is unstable, we find linkages between it and various macroeconomic "drivers," such as foreign exchange rates.

For instance, as the yen appreciates against the dollar, U.S. equities, especially large stocks, become more attractive to Japanese investors. They tend to gravitate to investing in large, esteemed companies. As a result, the small-firm effect might collapse.

Hence, a dynamic strategy that sometimes bets on small size and at other times on large size is the optimal way to exploit such "empirical return regularities." Return effects like size are not at all regular to the naked eye, but are only regular in the broader macroeconomic context. In contrast, the payoffs generated by anomalous pockets of market inefficiency are highly consistent.

Some return effects are linked to macroeconomic drivers, others to the

institutional structure of the market, like the tax code, and still others to psychological underpinnings.

For instance, there is a human tendency to overreact to unexpected events. Several anomalies, including the return reversal low p/e effects, can be traced to this phenomenon.

Before recent changes in the tax code, the optimal tax-avoidance strategy was to realize losses short-term. The rationale was short-term losses sheltered more taxable income than long-term losses. Yet we found long-term tax-loss selling is stronger than short term. This finding relates to the disposition of investors to ride losers too long in an effort to break even.

Most tax-loss trading takes place at year-end rather than the optimal tax strategy of realizing short-term losses throughout the year. Because investors are loath to admit mistakes, they defer loss-taking until year end when tax planning is used as a rationale for closing out losing positions. This behavior leads to predictable return patterns at

the turn of the year.

Even dividend discount model strategies are hostage to market psychology. The model's effectiveness differs in up and down markets, indicating market climate affects investors' willingness to be farsighted. When the market is rising, investors are more optimistic and willing to be reliant on dividend discount model expectations. But when the market is falling, investors become pessimistic and less willing to trust the model's expectations. They place greater emphasis on more tangible attributes like current yield.

Major tenets of conventional investment theory, including market efficiency, investor rationality and value-based pricing, are suspect. In an inefficient market, investment opportunities are bountiful, and an empirical walk Wall Street produces new insights and novel investment ideas.