Dissecting Anomalies

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The authors investigate the pervasiveness of well-known return anomalies for three size categories—microcaps, small stocks, and big stocks. By using univariate sort analysis and regression analysis, they find that the anomalies associated with net stock issues, accruals, and return momentum are pervasive in all size groups. The anomalies related to asset growth, profitability, and the market-to-book ratio were not found to be pervasive in the size groups. The size effect was found to be influenced primarily by companies in the microcap group.

A great deal of academic research has reported the empirical existence of stock return patterns that are considered anomalies. The authors investigate the pervasiveness of seven anomalies for company size (i.e., market capitalization) groupings. In addition to the insights provided by including three size groups—microcaps, small stocks, and big stocks—in their analysis of return anomalies, the authors find that microcaps have the largest effect on the size effect anomaly.

The authors use monthly return data from June 1963 through December 2005 for companies trading on the NYSE, Amex, and (after 1973) NASDAQ. Size groups are formed each year at the end of June by using as breakpoints the 20th and 50th percentiles for the market capitalization variable for stocks trading on the NYSE. The NYSE breakpoints are used to form the three size groups. The average monthly sample size is 3,060 companies. Although the companies in the microcap group are about 60 percent of all stocks in the sample, their market capitalization is only 3 percent of the total market capitalization of the sample. The companies in the big-stock group constitute more than 90 percent of the total market capitalization of the sample. Therefore, the big-stock group dominates the returns of

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value-weighted indices, and the microcap group dominates the returns of equally weighted indices. The microcaps also are found to have the largest standard deviation of returns (and for each of the anomaly variables), thereby indicating that microcaps influence tests of market efficiency.

The authors use two approaches to investigate stock return anomalies. In the sorts approach, the average returns are measured net of size and market-to-book effects and are examined within quintiles of the anomaly variable. In accordance with the anomaly literature, the return of hedge portfolios, which is the long versus the short position of extreme quintiles, is also analyzed. In the second approach, the slopes of the cross-sectional regressions provide information related to the marginal effect of each anomaly variable.

Regression analysis and the univariate sorts methodology show the returns for the anomaly variables for net stock issues, accruals, and momentum to be pervasive in the three size groups. That is, returns of the hedge portfolios formed from the sorts are found to be large and significant (for both the equal-weighted and the value-weighted portfolios) for the variables that proxy net stock issues, accruals, and momentum.

Using regression analysis, the authors find a positive relationship between momentum and returns for all size groups. The momentum anomaly, however, is found to be half as strong for the microcap group. A negative relationship is found for both the net stock issues and the accruals for all size groups, and the relationship is weakest for the accrual variable in the big-stock group.

The negative relationship between asset growth and returns is stronger for the microcap group than the small-stock group but is not significant for the big-stock group. The positive relationship between profitability and returns is found only for the small-stock group. The slope in the regression analysis for the book-to-market ratio is significant for the small-stock and the microcap groups. Because regression slope coefficients are significant for the model with all companies, the authors suggest that asset growth, profitability, and the book-to-market ratio still provide some unique information in all size groups.

The authors argue that all their anomaly variables proxy to some degree for expected cash flows in the traditional valuation model. Consequently, they conjecture, evidence of return anomalies does not distinguish between how much of the return variation is the result of the pricing of risk and how much is the result of market inefficiency.

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