Using Buy-Side Analytics to Improve Stock Selections

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When managing a stock portfolio, investors and advisors must first decide on the information and data they will use to select stocks. Then, applying a variety of analytical models to this information, specific buy and sell decisions are made. Over time, investors devote considerable time and effort to refining and improving the stock-picking strategy.

Frequently, sell-side stock reports are included in the information set. Investors recognize the unique skills and company access of the analysts who author these reports and the major impact their recommendations have on future stock price movements. Sell-side reports have the additional advantage of being readily available and are distributed to a wide audience.

Buy-side analytics

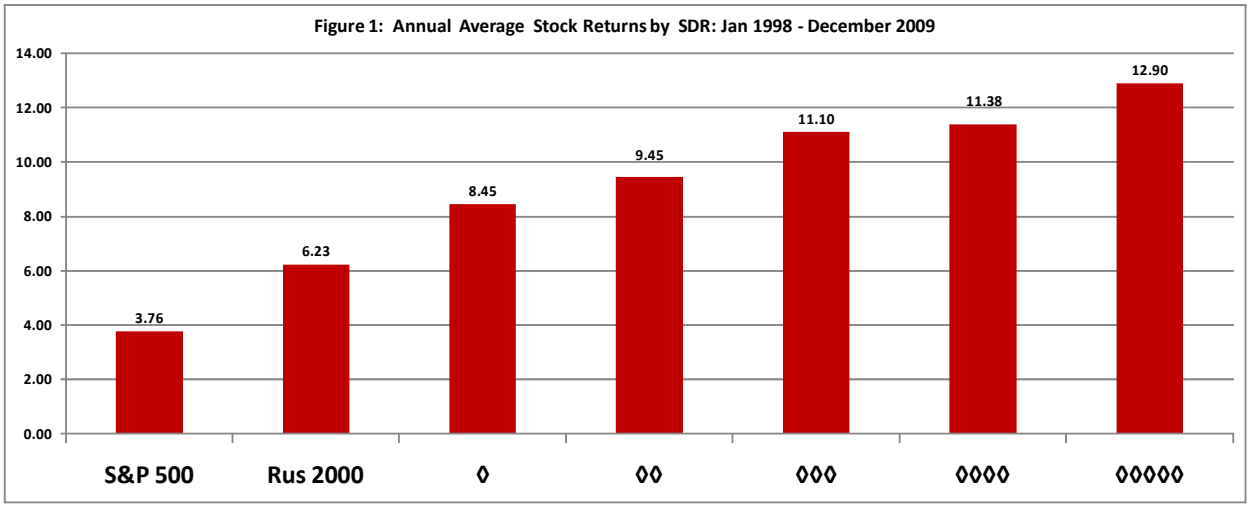
There is, however, a group of analysts and portfolio managers who affect future stock price movements even more: the buy-side active equity managers who "put their money where their mouth is" by ranking and weighting their best stock ideas within their portfolios. A growing number of academic articles confirm that these best ideas generate superior returns. For example, Randy Cohen, et al., in. *Best Ideas*, show that the top relative stock pick of the typical active US equity manager generates average risk-adjusted alpha of nearly 6% annually. In another recent study, Russ Wermers et al. in *The Investment Value of Mutual Fund Portfolio Disclosure*, show that building a portfolio based on mutual fund holdings, weighted by past fund performance, generates an average risk-adjusted alpha exceeding 7% annually.

Thus buy-side analytics, the process of extracting these "buy-side stock recommendations" from active equity fund holdings, can provide valuable information when selecting stocks. AthenaInvest has built a buy-side analytics platform that each month assigns a Stock Diamond Rating (SDR) to each stock held by active US equity mutual funds. The system takes into account manager quality (as measured by strategy consistency), manager conviction (as measured by portfolio concentration) and whether a stock is held for alpha generation (as measured by its relative position in the portfolio). Based on objective measurement of manager behavior and relative portfolio holdings across all active US equity funds, a Stock Diamond Rating emerges. A rating of SDR5 is assigned to the top stocks of the top managers, SDR4 to the next group, and so forth.

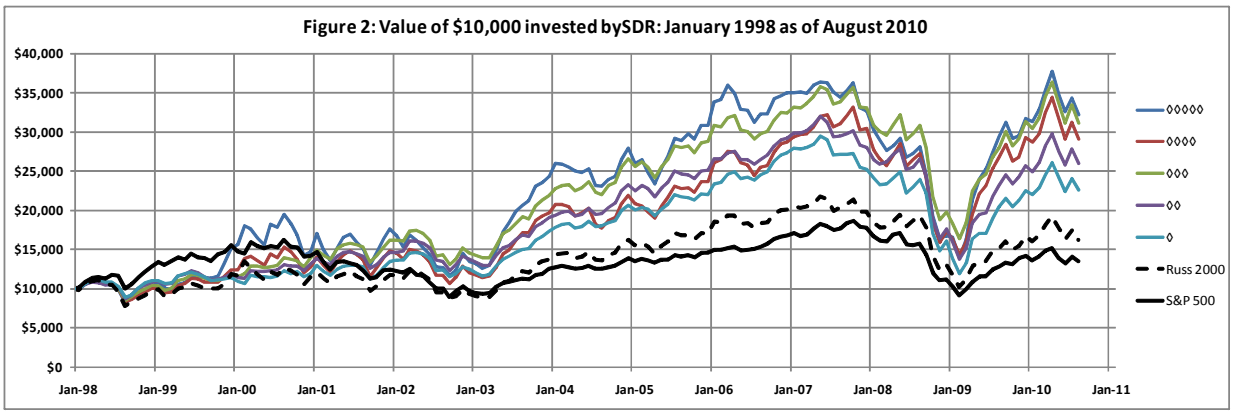
Past performance is not included in SDR determination, as current manager behavior is superior to past performance in predicting manager quality and performance. (See Improving on Morningstar's Ratings: Moving Beyond Past Performance in June 22, 2010 *Advisor Perspectives* for more details.)

The predictive power of stock diamond ratings

Using information available at the beginning of each month to determine each stock's SDR, the subsequent average Center for Research in Securities Prices at the University of Chicago (CRSP) survivor bias-free annual return for each SDR group from January 1998 through August 2010 is reported in Figure 1 below (based on over 300,000 month-stock observations). There is a strong, positive correlation between SDR and subsequent returns. Top-performing SDR5 stocks beat bottom-performing SDR1 stocks by an impressive 445 basis points annually, while beating the Russell 2000, their best comparison benchmark, by an even-stronger 667 bp and the S&P 500 by 914 bp. These are comparable to the results obtained by Cohen (2009) and Wermers (2007) that are reported above.



The value of $10,000 invested in each SDR and in the two indices on January 1, 1998, ending August 2010, is reported in Figure 2 below, illustrating SDR performance over time.



Thus SDRs, which highlight the top stocks of the top buy-side managers, can be a valuable addition to an existing stock-selection process or even a standalone portfolio management tool. Selecting higher-SDR stocks, on average, increases subsequent annual returns by 128 basis points per SDR. Indeed, top-rated stocks outperform lower-rated stocks, confirming the stock-picking ability of skilled active equity managers.

Extracting buy-side "stock recommendations"

A major implementation problem is that the buy-side, unlike the sell-side, does not freely publicize and distribute its stock recommendations. The most widely available source of buy-side recommendations is the SEC-required quarterly holdings reports from the 3,000 active equity mutual funds domiciled in the US. Each holdings data point can be thought of as a publically reported "stock recommendation" by the fund's management team. This represents a huge data set – 300,000 stock recommendations each quarter.

In order to extract useful information from this mountain of holdings data, there are a number of challenges to overcome.

- The buy-side does not provide stock recommendations in an easily accessible and readable format. A sophisticated computer platform capable of gathering and organizing the hundreds of thousands of fund holdings over time is needed to perform this analysis.

- Not all fund managers are equally skilled at stock picking, so a reliable system must be found for identifying top managers.

- Absolute holdings are of little use, since they are primarily determined by fund size and stock size. It is critical to develop a method to identity top stocks based on their relative importance within a portfolio and the market at large.

- While the typical active equity manager overweights top picks, they also purchase less desirable stocks in order to "fill out" their portfolio. Cohen (2009) argues that this performance-destroying over-diversification is the result of powerful industry incentives, such as being paid based on AUM and being required to track an index. Thus it is also important to separate stocks held for alpha generation purposes (alpha stocks) from those held purely for diversification purposes (diversification stocks).

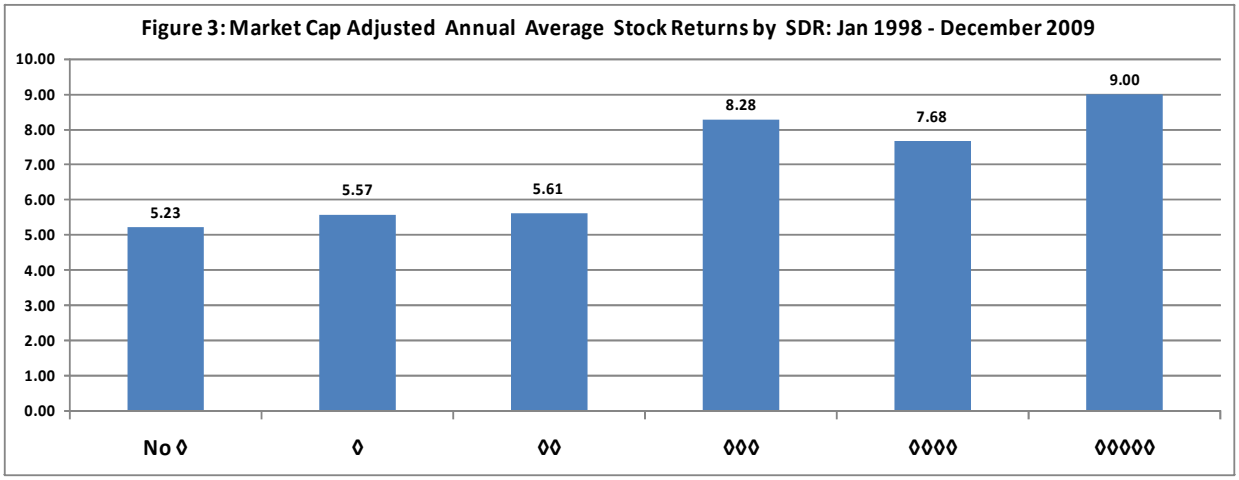
- Holdings data reported on a quarterly basis by mutual funds might initially seem too stale to be useful. But studies show that such holdings data provide valuable information up to 12 months after their initial reporting. (See, for example, *The Investment Value of Mutual Fund Portfolio Disclosure*.) An analysis of Thomson Reuters data indicates that 75% of the holdings data points are three months or newer and 90% are six months or newer. Statistical testing also confirms that the data maintains its predictive value even with the embedded time lag. In fact, currently available holdings data does provide valuable information.

Extracting buy-side information from mutual funds holdings data is not an easy task, but the effort is well worthwhile.

Stock diamond ratings and the small-firm effect

Is it possible that the SDRs are simply just capturing the small-firm effect? In order to examine this issue, the market-cap (MC) decile for each stock each month is calculated. Based on MC deciles, there was a strong small-firm effect during the January 1998 through December 2009 time period, and SDRs and MC deciles were modestly correlated. This means that higher SDRs are associated with smaller stocks, so some or maybe all of the higher SDRs' superior performance can be explained by a strong small-firm effect.

To test this contention, individual monthly stock returns are MC-adjusted to an effective MC decile of 1 (the largest stock decile). If the small-firm effect explains SDR returns, then MC-adjusted returns will be equal across SDR groups. But the MC-adjusted results reported in Figure 3 below continue to display a strong positive relationship between returns and SDR. As in the case of the unadjusted returns reported earlier, SDR5 stocks also generate the highest MC-adjusted returns. Unrated stocks are the worst performing group, underperforming the typical rated stock by 215 basis points. In addition, I found that SDRs work better among larger stocks than they do among smaller stocks.



Thus top stocks held by top managers outperform even after adjusting for the small-firm effect. Clearly SDRs capture an important future stock return predicator, and selecting higher-SDR stocks can move an investor away from diversification stocks toward alpha stocks, increasing returns in the process.

Data Sources: AthenaInvest, Thomson Reuters Financial, and CRSP.

For more details regarding the empirical tests reported in this article, see the white paper Buy-side Driven Stock Selection at AthenaInvest.

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