



A MATTER OF OPINION

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A Look at Style: The Characteristics of Quantitative Approaches

By James B. Cloonan

In my last column, which began a series on being your own portfolio manager, I discussed the various “styles” of investing and the different ways to categorize these styles. For this series, the most useful way to divide them focuses on the information necessary to implement the styles, which can be split into quantitative approaches and qualitative approaches. This column will consider the quantitative approaches.

The Key: Available Data

Quantitative approaches can be value-oriented or growth-oriented; they can be simple or complex. The key is whether the system for reaching a decision can be completely determined by available data—financial reports, earnings estimates, price and trading volume.

Theoretically, a quantitative approach could be programmed into a computer that has access to the necessary databases and decisions could be made almost without further human involvement. However for most investors, complete automation would not be the most practical method. Nonetheless, any quantita-

tive approach should have rules that are specific and programmable.

Table 1 shows the variables most commonly used in quantitative decision models. Sometimes a single variable or ratio is used (for instance, market capitalization or price-earnings ratio) and sometimes many variables will be considered and perhaps given different weights (for instance, a Benjamin Graham approach).

There are a number of multiple factor approaches to quantitative stock selection that have appeared to be successful over the years. In some of these, the designers have spelled out the approach. In others, such as the management of successful mutual funds, the approach is proprietary, but outsiders can get some idea by analyzing the stocks chosen over the years. Some of the best-known approaches have been featured in the *AAII Journal*. These include: the Benjamin Graham approach; C-A-N-S-L-I-M; the Beginner's Portfolio; and Shadow Stocks.

The Variables

The key to the success of a quantitative

screening and selection approach depends on how successful different variables are in finding excess returns (returns above those of an index fund) over the long term. While all of the commonly used variables seem intuitively reasonable, they all have weaknesses, although in many cases the weakness is not due to the variable itself, but to the relationship to price or another variable that is considered. Here is a brief run-down of the more popular variables:

Market Capitalization (shares outstanding times price) has been a successful long-term selection criteria in that small-cap stocks have outperformed large-cap stocks over the long term. Much of the long long-term success, however, can be attributed to a few very good years, and this seems to be a cyclical phenomenon. The reasons for small stock success can be attributed to their almost infinite upside potential, the lack of institutional investors at the earlier stages, and the probability of institutional interest as the company gets larger. Since there is less information and analyst coverage, investors using additional screens or qualitative research should find more opportunities for mispricing in the small-cap sector.

Selections using this variable would be much better if there were an efficient way to screen for companies that are small and getting smaller on their way to extinction. One of the problems with small-caps is that if they get into diffi-

Table 1.
Quantitative Screening:
Commonly Used Variables

- Market Capitalization
- Earnings Per Share, EPS Growth
- Share Price, Price Changes
- Book Value
- Cash Flow, Cash Flow Changes
- Sales Revenue, Sales Growth
- Profit Margin, Profit Margin
- Changes
- Dividends, Dividend Growth
- Assets (Relative to Liabilities)
- Liabilities (Relative to Assets)

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culty, they can go under completely. Large-cap stocks, on the other hand, have an easier time finding a merger partner or receiving additional financing when they encounter difficulty.

Earnings Per Share can be compared to price (the price-earnings ratio) or viewed over time, in which case earnings growth is the variable. This is a growth-oriented variable and can be evaluated either in terms of the absolute growth rate or the increase in the growth rate (acceleration) over time. Clearly, growth, and particularly accelerating growth, is desirable. The question is, how much do you pay for it and how do you know how long the growth will last?

Price divided by earnings gives the price-earnings ratio, which can be compared to other stocks and to long-term historical averages. Comparing the price-earnings ratio to the earnings growth rate can give a value-oriented measure. A stock may be considered underpriced if

the price-earnings ratio is less than the earnings growth. For instance, if a stock has an annual earnings growth rate of 24%, then a price-earnings ratio of less than 24 would indicate a bargain. Such a stock should double in earnings in three years, and since the price-earnings ratio is unlikely to go down and may well go up, the stock should more than double in the three years. The question is: Will the current earnings growth rate continue?

Another concern with earnings is that only historical earnings are "hard data." For the future, you must either do primary research or use the projections of analysts who publish estimates. Of course, you can look at projections, changes in the projections over time or consider the accuracy of the projections when actual earnings are released to see if there are surprises—positive or negative. Since earnings projections are published continuously, the data can be programmed however you choose. Positive changes

are considered good (beyond the value of the change itself) and negative changes are bad (sometimes disastrous). There are different opinions on interpretation and long-term versus short-term effects. Negative surprises can be considered an indication of bad things to come, but if market reaction is too negative, contrarians may see opportunity.

Price by itself is not meaningful, but price compared to other variables provides the ratios used in almost all value analysis. **Price changes** can be used in selecting growth stocks and are the key ingredient in technical analysis. In choosing growth stocks, you can look at stock price growth (or acceleration) or concentrate on the growth of the variables (earnings, sales, margins) that are underlying the price change—or both.

In the next issue, I'll continue the discussion of the quantitative approaches, and then I'll proceed to the qualitative approaches.



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