SmartMoney / *By Nicole Bullock*

Stock-Picking Computers

In the early 1980s, Greg Forsythe was working as an engineer at Union Carbide and studying for an M.B.A. He traded stocks based on the usual factors: earnings growth, share price and the advice of Wall Street analysts.

"I wasn't getting anywhere," says Mr. Forsythe, now a senior vice president at brokerage Charles Schwab. "The engineer in me said, 'There has to be a more systematic way to evaluate a stock's prospects.' "

There was. It's called quantitative investing, and it has since become a popular strategy for big pension funds and mutual funds alike. In the past year, the number of quant mutual funds has more than doubled to 140 while total assets jumped by a third, to $57 billion in 2006.

Quants create computer models that crunch data and look for patterns. Because computers can process more data than humans and aren't swayed by emotions, the models, in theory, can spot winners and losers faster than mere mortals. They also do it for less money: Expense ratios tend to be about 20% lower than those of traditional stock funds. On the flip side, quants tend to trade frequently, which can lead to a big tax bill. Here are three takes on the strategy.

Schwab Core Equity Fund (SWANX): Mr. Forsythe developed a stock-picking model that ultimately became the Schwab Equity Ratings System. The model looks at 18 factors in four categories: fundamentals, valuation, momentum and risk. In contrast to many quant firms, humans have veto power over the machines at Schwab. A few years ago, for example, the fund stopped adding to its position in Merck despite resounding buy signals. The technology couldn't pick up on the Vioxx withdrawal, but the people did.

Since adopting the quant approach in 2002, the Core Equity fund has returned 14% annually—beating its benchmark, the S&P 500.

Old Mutual Analytic U.S. Long/Short Fund (OADEX): Six years ago four people with a total of 12 math, science and economics degrees among them came up with a new version of the classic hedge fund. Some $60 billion—mostly in pension funds—is now invested in the strategies they devised, which bear the cryptic names 120/20 and 130/30. This fund is run by Analytic Investors, which has three of the four 120/20 designers on staff.

Here's how it works: Models score the Russell 1000 daily, producing a universe that's ranked from best to worst. For each $100 invested, the fund sells short $20 of the worst stocks. (In short selling, an investor sells borrowed shares, hoping to buy them back later at a lower price and pocket the difference.) It then buys $120 of the highest-scoring ones. Hence, 120/20. Since Analytic adopted the strategy for the Old Mutual fund about a year ago, the fund has returned 24%.

Analytic has used this type of portfolio for big institutional clients since mid-2002, and returns have topped the S&P 500 by more than two percentage points annually.

Bridgeway Large-Cap Growth Fund (BRLGX): John Montgomery doesn't know when the Federal Reserve meets next. On any given day, he also may not know whether the Dow is up or down. He doesn't even know the names of some of the companies he buys for the 11 funds he runs. Tuning out the noise "helps me make better decisions," Mr. Montgomery says.

So far, his technique has worked. The performance of Bridgeway's flagship Aggressive Investors fund—it has returned nearly 20% annually for the past decade—and Mr. Montgomery's unapologetic reliance on his computer models have made him a star in the world of quant mutual funds. The Large-Cap Growth fund is relatively new, but it's based on his successful models.

As for strategy, Mr. Montgomery doesn't divulge much.

"We wish we knew more about his models," says Morningstar analyst Reginald Laing. "But if the secrets get out, he will lose his edge."

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