A LOOK AT MOMENTUM INVESTING: SCREENING FOR STOCKS ON A ROLL

By Wayne A. Thorp

Momentum investors purchase stocks that are rapidly rising in price in the belief that the rising price will attract other investors, who will drive up the price even more. One key is recognizing when the momentum is beginning to fade.

Envision a snowball rolling down a hill: As it rolls along, it picks up more snow, which causes it to move faster, which causes it to pick up even more snow and move even faster.

That's the basic strategy behind momentum investing—purchasing stocks that are rapidly rising in price in the belief that the rising price will attract other investors, who will drive up the price even more.

Richard Driehaus is one of the champions of momentum investing, favoring companies that are exhibiting strong growth in earnings and stock price. He is not a household name, but his firm, Driehaus Capital Management in Chicago, rates as one of the top small- to mid-cap money managers, and his success has landed him a spot on Barron's All-Century Team—a group of 25 fund managers that includes such investment luminaries as Peter Lynch and John Templeton.

This article focuses on Driehaus' momentum strategy, which is discussed in the book "Investment Gurus" by Peter J. Tanous (New York Institute of Finance, $24.95), and serves as the basis for this article.

THE MOMENTUM APPROACH

Driehaus emphasizes a disciplined approach that focuses on small- to mid-cap companies with strong, sustained earnings growth that have had "significant" earnings surprises. If a company's earnings are slipping, it is eliminated. Ideally, you would like to see improving earnings growth rates.

Driehaus uses positive earnings surprises as a "catalyst." An earnings surprise takes place when a company announces earnings different from what has been estimated by analysts for that period. When the actual earnings are above the consensus estimates, this is a positive earnings surprise; a negative earnings surprise occurs when announced earnings are below consensus estimates. Another factor is the range of earnings estimates—a surprise for a company with a narrower range of estimates tends to have a greater impact than a surprise for a company whose estimates have a greater dispersion. In general, positive earnings surprises tend to have a positive impact on stock prices.

Another key to momentum investing is to recognize when the momentum is beginning to fade, when sellers begin to outnumber buyers. Thus, investors need to closely monitor the company itself, as well as the market, and it therefore is a strategy that makes sense only for those willing to keep their fingers constantly on the pulse of the stock.

Driehaus cautions investors to be mindful of events such as earnings announcement or warnings and earnings estimate revisions—anything that could either signal the slowing of the upward trend or propel the price even higher. In addition, investors should gauge the direction of both the industry in which the company operates as well as the broader market environment, both of which could affect the individual holdings.

EARNINGS GROWTH SCREENS

Table 1 presents a list of the companies that passed a screen of filters based on the Driehaus momentum investing approach and applied to AAII's *Stock*

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Investor Pro database.

The heart of the Driehaus method is to identify those companies with improving earnings growth rates. To find those stocks that are exhibiting sustained or increasing growth rates in earnings per share, the screen first filters for stocks whose year-to-year earnings growth rate is increasing. The screen examines the growth rates in earnings from continuing operations from year 4 to year 3, year 3 to year 2, year 2 to year 1, and from year 1 to the trailing 12 months, and requires an earnings growth rate increase each period over the rate that preceded it. [The box below shows how these growth rates are calculated.]

Growth over each of the last three years is used for two reasons—first, a longer period would exclude companies not in existence for more than three years; second, it is long enough to see if a pattern of sustained or increased earnings has developed.

Another screen stipulates that, at a minimum, a company has experienced positive earnings growth over the trailing 12 months compared to the earnings in the preceding 12 months. Many of the companies that pass the earnings growth rate screen are not yet profitable—they do not necessarily have positive earnings.

Applying the four earnings growth rate criteria narrows the *Stock Investor* database down to 220 companies (out of 9,269 companies tracked by the program).

Table 1 shows selected earnings growth rates in continuing operations for the companies that ultimately passed all of the criteria: The median growth rates over the last four quarters compared to the preceding four quarters (the 12-month growth rate), from fiscal year 2 to year 1 (the one-year growth rate), and from fiscal year 3 to year 2 are 68.4%, 4.5%, and –21.9%, respectively.

As these numbers show, the growth in earnings over the last four quarters as compared to the previous four quarters has taken off, particularly when compared to the median increase of 8.5% for all the stocks in the database. Exchange Applications (EXAP) has seen earnings growth of almost 126% during this period. The "laggard" of this group, Microcell Telecommunications (MICT), has seen growth of 9.3%, which is only slightly above the median growth rate for all stocks.

Looking at the prior periods provides some insight into where many of these companies are coming from. Three of the eight companies that passed this screen actually saw earnings fall from fiscal year 2 to fiscal year 1, while all but two had declining earnings from fiscal year 3 to fiscal year 2. However, companies that experience negative earnings growth from period to period, as long as the negatives are getting smaller, do not scare off Driehaus. He terms these time periods the flexion points—where negative earnings are declining, and ultimately shifting to positive earnings figures. For example, Terayon Communication Systems (TERN) saw its earnings fall over 99% from year 3 to year 2, yet it saw positive growth of 0.2% in earnings from year 2 to year 1. This is the kind of turnaround Driehaus is looking for.

One last point to keep in mind about earnings growth concerns the base earnings level used to calculate earnings growth. For instance, two companies with 100% growth in earnings from year 2 to year 1 would be considered on an equal footing at first glance. However, upon closer examination it turns out that Company A's earnings have gone from $0.01 to $0.02, while Company B's earnings have risen from $0.50 to $1.00—telling a much different story. Therefore, when you see an extremely high growth rate for a company, you may wish to check where the company started. Growth rates are very helpful in identifying interesting stocks, but you should look at the underlying figures to gauge the true significance of these changes.

EARNINGS SURPRISES

Once companies with improving historical earnings growth rates have been identified, the next step is to select those most likely to continue the trend. One event Driehaus sug-

DETERMINING THE GROWTH RATE

Earnings per Share (from Continuing Operations) for Intel (INTC)

Quarterly:			**Annual:**		
Q1	25-Sep-99	$0.44	Y1	26-Dec-98	$1.82
Q2	26-Jun-99	$0.53	Y2	27-Dec-97	$2.12
Q3	27-Mar-99	$0.60	Y3	28-Dec-96	$1.57
Q4	26-Dec-98	$0.62	Y4	30-Dec-95	$1.08
Q5	26-Sep-98	$0.47			
Q6	27-Jun-98	$0.35			
Q7	28-Mar-98	$0.39			
Q8	27-Dec-97	$0.53			

12-Month Growth Rate:

Formula: [(Q1 + Q2 + Q3 + Q4) ÷ (Q5 + Q6 + Q7 + Q8)] – 1
[(0.44+ 0.53 + 0.60 + 0.62) ÷ (0.47+ 0.35 + 0.39 + 0.53)] – 1
= 0.259 or 25.9%

One-Year Growth Rate (Y2 to Y1):

Formula: (Y1 ÷ Y2) – 1
(1.82 ÷ 2.12) – 1
= –0.142 or –14.2%

gests seeking is a "significant" positive earnings surprise, where the company's actual announced earnings beat the median consensus analyst estimates. Earnings estimates are based on expectations of the future performance of a company; surprises signal that the market has underestimated the company's future prospects in its forecast.

Driehaus does not specify what he considers to be a "significant" earnings surprise. Recent studies have shown that analysts tend to be pessimistic when it comes to their quarterly earnings estimates. Therefore, it is more likely that a company will beat its quarterly earnings estimates than fail to meet them. Using data on 498 of the S&P 500 companies from the third quarter of 1999, one analyst estimate service, First Call, found that earnings came in, on average, 3% above analysts' estimates. On our own *Stock Investor* program with data as of January 28, 2000, the median earnings surprise for the 4,328 companies with earnings surprise data was 2.4%. Therefore, ideally, an earnings surprise screen would take into account this apparent downward bias in analysts' estimates.

Only 4,328 companies in the *Stock Investor* database have earnings surprises, so simply performing the screen automatically eliminates half of the companies. Requiring the earnings to be at least 5% above the estimates winnows the database down to 1,807 companies, while a 10% minimum requirement narrows the database to 1,340. Not wanting to be too restrictive, yet wanting to choose a level that was "significant," we chose 10% for use in this screen. Applying this criterion to the list of companies that passed the earnings growth requirements narrows the list to 59 companies.

In Table 1, the median earnings surprise percentage for the companies that passed all of the screens is 26.4%, well above the 2.4% median percentage for the entire database. NetIQ (NTIQ) leads the pack, with an earnings surprise percentage of 300%. NorthEast Optic Network (NOPT) had the lowest earnings surprise percentage, 11.8%.

To provide perspective, the table also provides the announced earnings figure. NetIQ had announced earnings of $0.08, which was 300% above the median expectation, meaning that the median earnings estimate was $0.02 per share.

The earnings per share figures for the passing companies also illustrate that most of these companies, although moving up, are not yet profitable—only three of the final eight companies have positive quarterly earnings.

The number of analysts tracking a company is an important factor. Coverage of a company by only one analyst limits the usefulness of an estimate; as the number of analysts covering a company increases, the consensus estimates become more credible. Of course, requiring more analyst coverage reduces the number of stocks with the required estimates; in the *Stock Investor* database, only 2,741 companies have at least three analyst estimates, and only 1,737 firms have at least five. For this screen, we required at least three analysts, which provides a high, a middle, and a low estimate for a given company. Adding this requirement reduced the number of passing companies from 59 to 40 companies.

MOMENTUM

Like most investors, Driehaus remains invested in a stock until he sees a change in the overall market, in

TABLE 1. MOMENTUM COMPANIES: FIRMS PASSING ALL SCREENS

	EPS Continuing Grth				Announc'd	4-Wk.	26-Week			
	Last	Y2	Y3	Earnings	Qtrly	Price	Relative Strength		Mrkt	
	12 Mos.	to Y1	to Y2	Surprise	EPS	Change	Firm	Industry	Cap.	
Company (Exchange*: Ticker)	**(%)**	**(%)**	**(%)**	**(%)**	**($)**	**(%)**	**(%)**	**(%)**	**($ Mil)**	**Description**
Celgene Corp. (M: CELG)	23.5	8.8	1.8	23.8	–0.16	5	354	41	1,258.5	Pharmac'ls & agrochemical
Exchange Applications (M: EXAP)	125.7	73.5	–63.3	20.0	0.06	67	158	64	1,092.4	Customer optimiz'n software
Geoworks Corp. (M: GWRX)	47.1	–2.1	–6.7	27.3	–0.08	96	1,218	30	582.6	Mobile E-commerce & info
Heartport, Inc. (M: HPRT)	65.1	–4.4	–8.5	26.1	–0.17	47	177	3	178.2	Systems for heart surgeries
Microcell Telecom. (M: MICT)	9.3	–20.2	–96.3	26.6	–1.82	25	277	30	2,214.8	Communication servs
NetIQ Corporation (M: NTIQ)	80.2	64.9	17.3	300.0	0.08	17	256	64	1,030.0	Application mgmt software
NorthEast Optic Network (M: NOPT)	71.6	49.6	–35.3	11.8	–0.45	49	151	30	1,513.4	Fiber optic transmission
Terayon Comm. Sys. (M: TERN)	74.7	0.2	–99.2	116.7	0.12	67	163	72	2,293.5	Cable modem systems
Median for passing companies	**68.4**	**4.5**	**–21.9**	**26.4**	**–**	**48**	**216**	**–**	**1,175.5**	
Median for all companies	**8.5**	**5.2**	**11.4**	**2.4**	**–**	**1**	**–8**	**–**	**109.5**	

Source: AAII Stock Investor 3.5 Pro (currently in beta testing), Market Guide, I/B/E/S Data as of 01/28/00 **M = Nasdaq*

the sector, or in the individual company. He has no qualms with buying a stock that has already seen a rapid rise in price if he believes that trend will continue.

Aside from strong, sustained earnings growth and positive earnings surprises, there are several other characteristics that Driehaus looks for to identify stocks that will continue their upward trend. These characteristics primarily concern momentum.

The first momentum screen looks for those companies whose stock price has experienced a positive increase over the last four weeks; the larger the required price increase, the more strict the momentum screen. As a stand-alone criteria, 4,618 companies in the *Stock Investor* database had a positive percentage change in price over the last four weeks. Adding this requirement to our other Driehaus screens winnows the list of passing companies down to 16.

Among all companies that passed the full screen in Table 1, the winner in this category is Geoworks Corporation (GWRX), with a four-week price increase of 96%. This is even more impressive when compared to the median price increase for all stocks in the database, which is only 1%. At the other end of the scale in the list of passing stocks, Celgene Corp. (CELG) has seen a price increase of only 5%, which is still above the median four-week price change for the entire database. The median for the eight stocks that passed all the criteria is 48%, a definite illustration of the underlying price strength of these companies.

The second momentum screen focuses on relative strength. Relative strength communicates how well a stock has performed compared to some benchmark—usually a market or industry index—over a given time period. A positive relative strength means that the stock or industry outperformed the S&P 500 for the period, while a negative relative strength means it underperformed the S&P 500 for the period.

The relative strength screens here provide two measures—the firm relative to the S&P 500 and the company's industry relative to the S&P 500.

The first relative strength screen seeks companies that over the past 26 weeks have had stock performance better than that of the S&P 500. The 26-week time period allows for patterns to develop for both the industry and the company. Shorter time periods tend to produce false signals, while longer time periods may signal a trend that has already ended. The 26-week period provides a solid middle ground. In the *Stock Investor* database, there are 4,447 companies with a 26-week relative strength that is greater than zero—meaning the price has outperformed the S&P 500 over the last 26 weeks. Applying this criteria to the other Driehaus screens knocks out three companies, bringing the grand total thus far to 13.

In this relative strength screen, Geoworks again leads the way, towering above the market with a relative strength figure of 1,218%. The median for the companies that passed all the criteria is almost 217%, compared to the entire database, which has underperformed the S&P 500 by 8%.

The last relative strength measure

Definitions of Terms

The following is a short description of the screens and terms used in Table 1.

EPS Continuing Grth—Last 12 Mos.: The percentage change in earnings per share from continuing operations between the last four fiscal quarters and the preceding four fiscal quarters.

EPS Continuing Grth—Y2 to Y1: The percentage change in earnings per share from continuing operations from fiscal year two to fiscal year one.

EPS Continuing Grth—Y3 to Y2: The percentage change in earnings per share from continuing operations from fiscal year three to fiscal year two.

Earnings Surprise: The percentage by which announced earnings exceeded or fell short of the median analysts' estimate for the latest fiscal quarter. Positive earnings surprises tend to have a positive impact on stock price.

Announc'd Qtrly EPS: The earnings per share figure announced by a company for the latest fiscal quarter, but which has not been filed with the SEC.

4-Wk. Price Change: The percentage change in stock price over the last four weeks.

26-Week Relative Strength—Firm: The percentage by which the stock price of a company has either outperformed or underperformed the S&P 500 over the last 26 weeks.

26-Week Relative Strength—Industry: The median 26-week relative strength figure for all companies in a given industry.

Mkrt Cap.: Market capitalization in millions of dollars. Number of common stock shares outstanding times share price. Provides a measure of firm size.

compares the prospective company's industry and how it has performed relative to the S&P 500. Driehaus would rather buy a stock in a strong industry group even if its earnings growth is weaker rather than a stock with stronger earnings growth but in a weak industry. This is because strength or weakness in an industry as a whole can have a strong impact on the performance of an individual company. While this step cannot be automated with *Stock Investor*, the industry relative strength data can be looked up and companies failing to meet the criteria can be manually removed. Applying this process to the other Driehaus criteria eliminated one company whose industry has underperformed the S&P 500 over the last 26 weeks, bringing the number of passing companies down to 12.

For the most part, the companies that passed all of the screens are in very strong industries, with most outperforming the S&P 500 by at least 30% over the last 26 weeks. The communications equipment industry, represented by Terayon Communication Systems, has performed best, outperforming the S&P 500 by 72%. The lone exception is the Medical Equipment & Supplies industry, represented by Heartport, which has outperformed the S&P by only 3%. While this stock has performed very well when compared to the market, its industry's weakness could begin to weigh on its price performance.

THE UNIVERSE

Richard Driehaus focuses most of his energies on small- to mid-cap stocks. Historically, small-cap stocks have done better than larger stocks, with the trade-off being higher risk and volatility. By focusing on smaller companies with strong earnings growth rates, he hopes to identify the market giants of tomorrow.

There are differing definitions of the market capitalization categories, but for the screen here, we defined small- and mid-size stocks as ranging from $50 million to $3 billion in market capitalization; 4,933 companies in the *Stock Investor* database fit into this range. Adding this requirement to the other Driehaus screens reduces the number of passing companies to nine.

In the list of companies passing all of the criteria, the median market capitalization is $1.176 billion—10 times larger than the median market cap of the entire database of $109.5 million. The largest company in the list of passing stocks is Terayon Communication Systems. (TERN), with a market capitalization of $2.29 billion; the smallest company is Heartport, Inc., weighing in at $178.2 million.

Driehaus also prefers to deal with domestic firms, so the screen here eliminates American depositary receipt firms (ADRs), which are foreign companies that are traded on U.S. exchanges. Adding this requirement to the prior screens reduces the overall total to eight.

TRADING VOLUME

One difficulty that can arise when attempting to invest in small-cap stocks is that they may lack liquidity, meaning that they have relatively low daily trading volume. This may not be an overriding concern for a buy-and-hold investor, but fast-paced momentum investors need sufficient volume and float (number of shares freely tradeable) to buy and, more importantly, to sell shares with ease.

Once again, the rules are subjective. A key factor is how many shares will be bought and sold during each trade; the more shares you will be buying and selling, the higher the daily volume that should be required. Buying 1,000 shares of company that typically trades on volume of 10,000 shares a day will most likely be more difficult than buying 100 shares of that same company.

The median daily volume for the 4,933 companies that fall into the small- and mid-cap category in the *Stock Investor* database is 97,000, while the average is almost 288,000 shares traded. For the entire *Stock Investor* database, the median daily trading volume is 57,000 and the average is 387,000. Our screen uses the percent rank function in *Stock Investor*, which breaks down the entire database in percentiles for a given data field. We required companies to have a daily trading volume that falls in the top 50% of the database. As it turns out, this criterion did not change the number of passing companies.

The final tally of companies passing all of the screens is eight. Not surprisingly, all eight companies operate in businesses that have been performing well recently—telecommunications, biotechnology, and computers. The results of any type of momentum screen will mirror the current sentiment of the market—companies in the "hot" industries will be favored over less popular industries.

CONCLUSION

The momentum approach to stock selection used by Richard Driehaus identifies companies that have strong-sustained earnings growth, accompanied by earnings announcements that exceed analysts' estimates and upward-moving prices. The approach seeks the "home run" that will provide above-normal returns. The key is to have a system in place that gets you out of a trade with only a minimal loss, while allowing the winners to run until the momentum dies.

By implementing a strategy built on discipline and careful examination of a company, its industry, and the market, momentum may be on your side. However, remember that screening is just a first step. There are qualitative elements to examine that cannot be captured by a computer-generated list. Further fundamental analysis is necessary for successful investing. ◆