

Momentum Investing the Richard Driehaus Way

By Wayne A. Thorp, CFA

Article Highlights

- Richard Driehaus is considered in some circles to be the father of momentum investing.
- Driehaus believes strong earnings surprises, sharp upward earnings revisions and both accelerating and sustained earnings growth fuel rising stock prices.
- AAI's Driehaus strategy seeks, among other characteristics, small- and mid-cap companies with year-to-year increases in earnings, strong and positive earnings surprises and short-term price strength.



I am going to start this article with a physics lesson that you may recall from high school.

Paraphrased, Newton's first law of motion states that an object at rest stays at rest and an object in motion stays in motion. This premise applies to investing as well. Specifically, momentum investing holds that trends can persist for some time, and it's possible to profit by staying with a trend until its conclusion.

Momentum investors purchase stocks that are rapidly rising in price in the belief that the rising price will attract more investors, who will drive up the share price even more. A common analogy for momentum investing is 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.

Richard Driehaus is considered in some circles to be the father of momentum investing, but he probably lacks the name recognition that Benjamin Graham and Warren Buffett or other famous money managers such as John Neff and Peter Lynch have in broader circles. Driehaus founded his own firm, based in Chicago, in 1979 and generated returns in small- and micro-cap growth stocks that placed him on Barron's all-century mutual fund team in 2000. This group of 25 fund managers included the likes of such investing superstars as Lynch and John Templeton.

Through the close of 1999, his international growth

fund had an average annual total return of 23.0% since its inception in 1990, with a five-year growth rate of 31.8% as of the end of 1999. In 1999 alone, the Driehaus

Mid Cap fund jumped 22.2% and the Driehaus Small Cap fund climbed 196.6%, both according to Barron's.

More recently, the Driehaus Micro Cap Growth Fund (DMCRX) has a 10-year average annual return of 15.7% through August 31, 2018, and an average annual return of 19.1% since its predecessor limited partnership's inception at the beginning of 2003. His Small Cap Growth Fund (investor class: DVSMX) has seen an average annual return of 13.1% since its predecessor limited partnership opened in January 2007. For much of the 1980s and 1990s, Driehaus ran institutional-only funds but has since branched out to offer "investor class" funds as well, which is why the "since inception" data from Driehaus Capital Management only goes back to the mid-2000s.

The Driehaus Approach

Driehaus focuses on small-cap firms with market capitalizations (stock price multiplied by the number of shares outstanding) of less than \$500 million, as well as mid-cap stocks with market caps up to \$3 billion.

In his own words, Driehaus defines momentum investing as identifying and buying stocks in a strong upward price

move and staying with them as long as the upward move continues.

But what fuels this rapid price increase? For Driehaus, the primary catalysts are strong positive earnings surprises, sharp upward earnings revisions and very strong, consistent and sustained earnings growth and accelerating earnings and sales.

Smaller companies provide the high growth Driehaus covets. It is much easier for a small company to post sales and earnings growth of 20% than a company such as Walmart Inc. (WMT), with annual sales of more than \$500 billion that has been averaging top-line growth of 1.3% a year over the last five years.

Investing in smaller companies requires discipline. These companies tend to have more volatile share prices. Driehaus isn't scared off by volatility, especially when it is to the upside.

However, he stresses the importance of having the discipline to “retreat and sell” at the first sign that momentum is declining. Driehaus feels that it doesn't matter what your ratio of winning trades to losing trades is, as long as you make more money on your winning trades than you lose on your losing trades. His goal is to “live to fight another day.”

The AAIL Driehaus Approach

AAIL has been tracking a Driehaus-centric stock screening strategy based on insights he offered in the book “Investment Gurus” by Peter J. Tanous (Prentice Hall Press, 1997), as well as in a February 2000 Barron's article “The Driehaus Rules.”

The AAIL Driehaus strategy isolates small- and mid-cap companies with:

- Sufficient liquidity;

- Year-to-year increases in earnings;
- Strong, positive earnings surprises; and
- Short-term positive price strength on an absolute basis as well as relative to company's respective industry.

Strategy Performance

Each month, AAIL.com lists the companies passing the AAIL Driehaus screen and tracks the performance of these stocks in a hypothetical portfolio at the Stock Ideas area of AAIL.com.

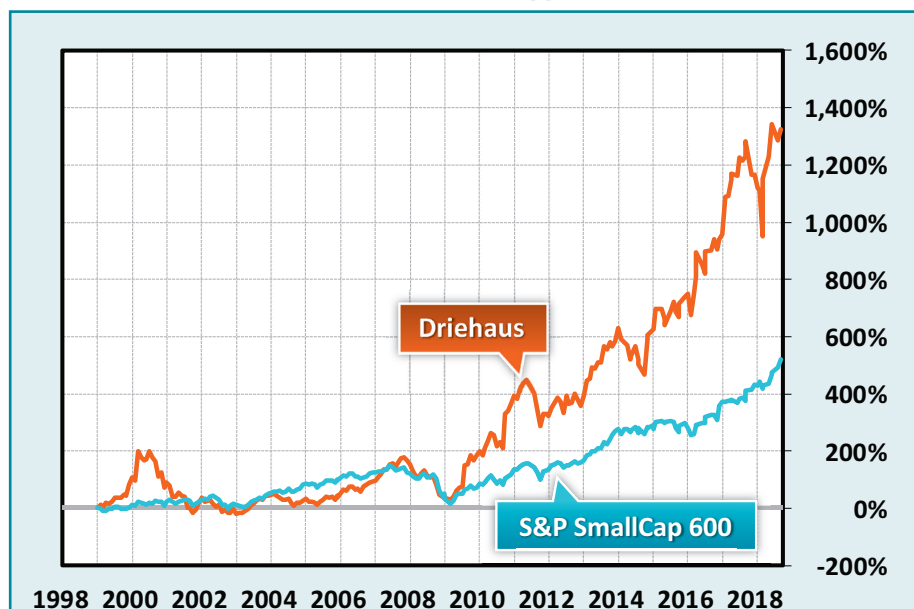
Overall, the Driehaus approach has outperformed the broader market over a variety of time periods in the last 20 years. Figure 1 shows that the AAIL Driehaus screening strategy generated a cumulative return of 1,324% from the beginning of 1999 through the end of September 2018, compared to a total cumulative return of 372% for the S&P 500 and 753% for the S&P SmallCap 600 Growth index. Likewise, the typical exchange-listed stock gained 608% during that time.

Looking at the annual performance of the AAIL Driehaus methodology illustrates the volatile nature of this approach. Since the start of 1999, the strategy has seen its full-year annual performance range from a loss of 42.7% in 2008 to a gain of 106% in 1999. Over the last 10 years, the AAIL Driehaus approach has seen only three “down” years.

Profile of Passing Companies

The characteristics of the stocks meeting the Driehaus criteria as of September 28, 2018, are in Table 1.

Figure 1. Performance of the Driehaus Approach



	Price Gain (%)						Annual Price Gain (%)					Price Gain (%)		Std Dev (%)
	YTD	2017	2016	2015	2014	2013	Since 1999	1 Yr	3 Yr	5 Yr	10 Yr	Bull*	Bear*	
Driehaus	16.8	15.4	24.1	17.2	(0.7)	47.7	14.4	3.0	22.8	16.0	22.7	710.3	(53.4)	32.8
S&P 500	9.0	19.4	9.5	(0.7)	11.4	29.6	5.4	15.7	14.9	11.6	9.6	269.2	(52.6)	14.7
S&P SmallCap 600	13.4	11.7	24.7	(3.4)	4.4	39.7	8.9	17.5	17.7	11.8	11.4	347.3	(52.2)	18.8
All Exchange-Listed Stocks	5.9	15.6	17.1	(11.6)	5.0	38.1	9.8	10.0	12.4	7.7	10.4	320.9	(58.6)	20.1

*Bull market period is March 1, 2009, through September 2018. Bear market period is November 1, 2007, through February 28, 2009. Price performance of hypothetical portfolio rescreened and rebalanced using month-end prices and no transaction costs or dividends. Source: AAIL's Stock Investor Pro/Refinitiv (Thomson Reuters). Data as of 9/28/2018.

Momentum investors are concerned with sales and earnings growth and price appreciation. They are also willing to accept higher price multiples such as price-earnings, price-to-book and price-to-cash-flow ratios. In his interview in the Tanous book, Driehaus addresses the topic of valuation. He doesn't believe there is a "right" price-earnings ratio. In his opinion, price-earnings ratios can be high or low depending on where in the company's earnings cycle the stock is. In the book, Driehaus is quoted as believing that far more money is made by buying high and selling higher than by buying "value" stocks.

An analysis of the median valuation ratios for the companies passing the AAI Driehaus strategy at the end of September 2018 shows that all are higher than those of the typical exchange-listed stock. The median price-earnings ratio for the passing companies is 78.7, nearly four times the median value of 20.5 for exchange-listed stocks.

While the Driehaus methodology looks for companies where year-to-year earnings growth has increased over the last three years and earnings growth for the trailing 12 months (last four fiscal quarters) has been positive, the long-term historical growth for the current Driehaus companies (-0.2%) lags that of exchange-listed stocks (6.1%).

Looking to the future, the median estimated annualized growth in earnings per share over the next three to five years for the current Driehaus

Table 1. AAI Driehaus Portfolio Characteristics

Portfolio Characteristics (Median)	Driehaus Screen	Exchange-Listed Stocks
Price-earnings ratio (X)	78.7	20.5
Price-to-book-value ratio (X)	2.80	2.05
Price-to-sales ratio (X)	3.0	2.4
Price-to-cash-flow ratio (X)	119.2	37.6
EPS 5-yr historical growth rate (%)	(0.2)	6.1
EPS 3-5 yr estimated growth rate (%)	15.0	12.4
Market cap (\$ mil)	1,378.9	982.1
26-wk relative strength vs. S&P 500 (%)	29.2	(7.0)
Price as % of 52-week high (%)	94.5	83.0
Monthly Observations		
Average no. of passing stocks	14	
Largest no. of passing stocks	40	(5/31/2005)
Smallest no. of passing stocks	0	(10/31/2017)
Monthly turnover (%)	64.0	

Source: AAI's Stock Investor Pro/Refinitiv (Thomson Reuters). Data as of September 28, 2018.

companies is 15.0%. This compares to 12.4% for exchange-listed stocks.

Smaller companies, on average, exhibit the rapid growth that Driehaus seeks. That is why his primary focus is on small- and mid-cap companies. Looking at the companies meeting the AAI Driehaus strategy criteria, the median market cap is nearly \$1.4 billion, which is at the upper end of the small-cap spectrum. By comparison, the median market capitalization for exchange-

this period, the strategy has gone from having no companies passing in a given month to having as many as 40 stocks pass in one month.

Finally, given the strict price momentum requirements of the AAI Driehaus methodology, it is probably not surprising that it has one of the highest monthly turnover rates among the screening strategies that AAI tracks. The 64% turnover rate means that, on average, nearly two-thirds of the

listed stocks is closer to \$1 billion.

The current crop of Driehaus stocks have outperformed the S&P 500 index by more than 29% over the last 26 weeks. In contrast, the typical exchange-listed stock has underperformed the S&P 500 by 7% over the same period.

There are 16 companies satisfying the criteria for the AAI Driehaus approach as of the end of September 2018. This is above the monthly average of 14 companies the strategy has seen since the start of 1999. Over

What It Takes: Driehaus Criteria

- The year-to-year growth rate in earnings per share from continuing operations has increased over each of the last three fiscal years
- Growth in earnings per share from continuing operations over the last 12 months has been positive
- The latest quarterly earnings per share surprise (the percentage difference between the actual announced earnings and the consensus earnings estimate for the same period) is greater than or equal to 10%
- At least three analysts provide earnings estimates for the current fiscal quarter
- The percentage change in stock price over the last four weeks is positive
- The 26-week relative price strength is greater than or equal to the industry's 26-week relative price strength
- The market capitalization for the latest fiscal quarter is greater than \$50 million and less than \$3 billion
- Those companies that trade as American depositary receipts (ADRs) are excluded
- The average daily volume for the last 10 days is in the top 50% of all stocks

Table 2. Stocks Passing the AAIL Driehaus Screen—Ranked by Four-Week Price Change

Company (Ticker)	EPS Growth				EPS Srpr (%)	Qtrly EPS (\$)	Price Chg 4-Wk (%)	26-Wk Rel Strgth		Mkt Cap (\$ Mil)	Description
	12 Mo (%)	1 Yr (%)	Y3 to Y2 (%)	Y4 to Y3 (%)				Co (%)	Ind (%)		
Champions Oncology Inc. (CSBR)	93.3	79.2	46.4	45.3	400.0	0.05	98.1	307.1	(14.8)	158.6	oncology drug devlp
Akcea Therapeutics Inc. (AKCA)	62.1	(25.9)	(35.5)	(104.6)	41.8	(0.72)	32.6	20.3	(14.8)	2,913.6	cardio disease treatment
MCBC Holdings Inc. (MCFT)	99.3	99.0	84.0	15.1	28.7	0.66	30.1	30.3	3.3	694.2	watercraft
Genomic Health, Inc. (GHDX)	179.6	73.3	59.3	(31.6)	288.1	0.26	14.8	104.0	(14.8)	2,485.5	cancer testing
Care.com Inc. (CRCM)	502.1	216.9	72.9	57.0	32.1	0.14	13.8	22.2	(8.4)	677.5	online family care mgt
PTC Therapeutics, Inc. (PTCT)	53.1	51.7	17.6	(70.7)	26.6	(0.21)	12.6	60.3	(14.8)	2,189.5	RNA-based medicines
HTG Molecular Diagnostics (HTGM)	67.6	51.1	27.2	(92.3)	26.3	(0.14)	12.5	28.1	(2.7)	145.0	molecular profiling tech
Eagle Bulk Shipping Inc. (EGLE)	95.7	94.2	86.2	72.8	11.1	0.05	12.2	2.2	(8.7)	405.4	cargo vessels
Denbury Resources Inc. (DNR)	116.4	103.0	79.2	(790.4)	17.1	0.13	11.3	115.3	(0.2)	2,828.3	oil & natural gas
Everi Holdings Inc. (EVRI)	81.6	70.5	(137.0)	(963.7)	11.1	0.02	5.8	26.7	(13.6)	657.2	casino gaming & pmnts
Carrizo Oil & Gas Inc. (CRZO)	223.6	109.5	49.9	(559.3)	16.2	0.79	4.1	43.1	(0.2)	2,337.1	oil & gas
Engility Holdings Inc. (EGL)	581.5	328.9	95.8	(438.8)	33.6	0.64	3.7	34.9	(14.6)	1,310.1	engineer logistics & supp
Crocs, Inc. (CROX)	141.7	85.3	66.6	(482.0)	13.6	0.35	3.1	18.6	12.8	1,447.7	casual footwear
Exponent, Inc. (EXPO)	30.2	22.3	9.4	8.3	11.1	0.34	2.4	23.0	(13.6)	2,726.8	sci & engineer consult
Advanced Disposal Servs (ADSW)	173.5	94.8	(9.1)	(93.1)	11.1	0.19	1.5	8.7	(8.0)	2,390.1	waste disposal
AtriCure Inc. (ATRC)	42.5	24.7	(8.7)	(57.8)	95.6	(0.01)	1.4	54.3	(1.1)	1,228.8	atrial fibulation solutions
Median of all passing cos.	97.5	82.3	48.2	(81.5)	26.5	—	11.7	29.2	—	1,378.9	
Median of all exch-listed cos.	17.4	12.1	9.2	2.3	3.8	—	(1.8)	(7.0)	—	982.1	

Source: AAIL's Stock Investor Pro/Refinitiv (Thomson Reuters). Data as of September 28, 2018.

stocks that pass the Driehaus screening criteria in one month do not pass the next month.

Passing Companies

A brief look at the companies passing the Driehaus screen as of September 28, 2018, offers examples of stocks possessing characteristics matching the spirit of the strategy.

EPS Growth

In order to pass the AAIL Driehaus screening strategy, a company must exhibit accelerating annual earnings growth over each of the last three years. In addition, the growth in earnings per share from continuing operations over the last four quarters (trailing 12 months) must be positive.

Among the 16 companies passing the AAIL Driehaus approach (Table 2), seven have grown earnings per share by over 100% over the last 12 months. Engility Holdings Inc. (EGL) leads all other passing companies with

a stratospheric 581.5% growth rate over the last 12 months. The company, which provides a range of engineering, technical, analytical, advisory, training, logistics and support services, posted earnings from continuing operations of \$0.77 per share over the last four fiscal quarters, compared to earnings of \$0.12 per share for the previous four quarters.

Earnings Surprises

Driehaus believes that one way to identify companies with strong earnings growth that are apt to continue that trend is by locating those with “significant” positive earnings surprises—meaning the company’s actual announced earnings beat the consensus analyst estimate. These earnings surprises are also the catalyst for the price momentum that Driehaus looks for. The AAIL Driehaus strategy deems a “significant” earnings surprise to be 10% or greater.

Among the current passing companies, Champions Oncology Inc. (CSBR) had the biggest percentage earnings surprise, as measured on a percentage

basis, of 400%. On September 13, 2018, the company announced earnings per share of \$0.05, while the three analysts tracking it predicted earnings of only \$0.01 per share. Four companies meeting the AAIL Driehaus criteria are tied with earnings surprises of 11.1% for the most recent quarter.

Given that many rapidly growing small- and mid-cap companies are usually not yet profitable, it is worth noting that only four of the 16 passing companies reported negative earnings per share for the latest completed fiscal quarter.

The number of analysts tracking a company is an important factor. Coverage by only one analyst limits the usefulness of an estimate; as the number of analysts covering a company increases, the consensus estimate becomes more credible. Therefore, the AAIL Driehaus screen requires that at least three analysts offer estimates for the current fiscal quarter.

Price Momentum

Beyond earnings growth and

positive earnings surprises, Driehaus also monitors price momentum. The AAI Driehaus approach looks for stocks with a gain in price over the last four weeks. The companies in Table 2 are ranked in descending order by four-week price change. Ideally, the strategy catches a stock just as it enters a prolonged upward price move.

Among the 16 companies passing the AAI Driehaus screen, Champions Oncology has seen the largest price increase over the previous four weeks, at 98.1%. Following the company's strong earnings surprise on September 13, 2018, Champions Oncology jumped nearly 25% the next trading day and has risen 106% through the close on September 28, 2018. This is the type of price behavior Driehaus looks for.

Two passing companies saw a price increase of less than 2% over the last four weeks.

Another measure of momentum is relative price strength, which indicates how well a stock has performed compared to a benchmark—usually a market or industry index. Driehaus tries to invest in industry leaders, both in terms of

earnings growth and price performance. He would rather find a company that has less powerful numbers but is in a better sector or industry. Therefore, the AAI Driehaus criteria require passing stocks to have a 26-week relative strength value that is above the median relative strength for all the companies in the respective industry over the same period. Champion Oncology has the highest 26-week relative strength figure among the passing companies, having outperformed the S&P 500 by 307% over the last 26 weeks (as of September 28, 2018). Meanwhile, the median relative strength for its industry—biotechnology & drugs—has underperformed the S&P 500 by nearly 15% over the last 26 weeks.

Conclusion

The momentum approach to stock selection developed by Richard Driehaus seeks to hit the “home run” that will provide above-normal returns. When investing in such potentially volatile stocks, it is very important to have a system in place that gets you out of a trade with only a minimal loss, while

allowing the winners to ride until their momentum burns out. As the tech bubble of the late 1990s and the financial crisis of 2007–2008 showed, momentum strategies can crash back to earth very quickly, with potentially devastating consequences for investors.

As always, keep in mind that screening is only the first step in the investment process. The stocks passing this or any other screening strategy do not represent a “recommended” or “buy” list. Before making any investment decisions, it is important to perform sufficient due diligence to identify those stocks that match your investing tolerances and constraints.

I first wrote about Driehaus in 2000 and recently reread both the Driehaus section of the Tanous book and the Barron's article. As my understanding of investing has changed over the last 18-plus years, I found that my interpretation of Driehaus' methodology has evolved as well. I intend to create an updated Driehaus screening approach and offer backtested performance data for a future *AAII Journal* article. ▲

Wayne A. Thorp, CFA, is the senior financial analyst and vice president at AAI. Follow him on Twitter at @WayneTAII. Find out more at www.aaii.com/authors/wayne-thorp.

Technical Analysis

(continued from page 15)

then look to the high. We see whether the high is equal to or more than the current box value (59) plus the reversal distance (3). The high is 59, which is less than the current box value plus the reversal distance ($59 + 3 = 62$). Once again, a 3-box reversal did not occur, so we do nothing for the day.

Day 10: High = \$59.48; Low = \$57.56

We are still in a falling O-column with the price in the 59 box (\$58.01 to \$59.00). We first check the low price for the day. The low of \$57.56 warrants a

new O in the 58 box (\$57.01 to \$58.00). Because we drew a new O, the high is completely ignored.

Conclusion

Point & figure charts are a unique way to illustrate price movements of a security. Point & figure charts do not show time in a linear fashion. A single column of X's and O's that make up a point & figure chart can represent one day, or many days, even months or years, depending on the price movement. Because point & figure charts

filter out the noise associated with more traditional charting methods, such as bar or candlestick charts, every box on the chart carries greater significance.

This article laid the foundation for additional point & figure chart analysis. Now that you understand what the boxes and columns that make up a point & figure chart represent, we can move onto using and interpreting point & figure charts. In a future article, I will discuss how to use point & figure charts to identify support and resistance levels as well as upward and downward trendlines. ▲

Wayne A. Thorp, CFA, is the senior financial analyst and vice president at AAI. Follow him on Twitter at @WayneTAII. Find out more at www.aaii.com/authors/wayne-thorp.