

# QUADRIX® STOCK-RATING SYSTEM

## THE CORNERSTONE OF OUR RESEARCH

Quadrix® is our proprietary stock-rating system developed by Horizon Investment Services' Chief Investment Officer, Rich Moroney. Quadrix was designed to measure the appeal of stocks of all stripes using a single yardstick to help us find winners and avoid losers.

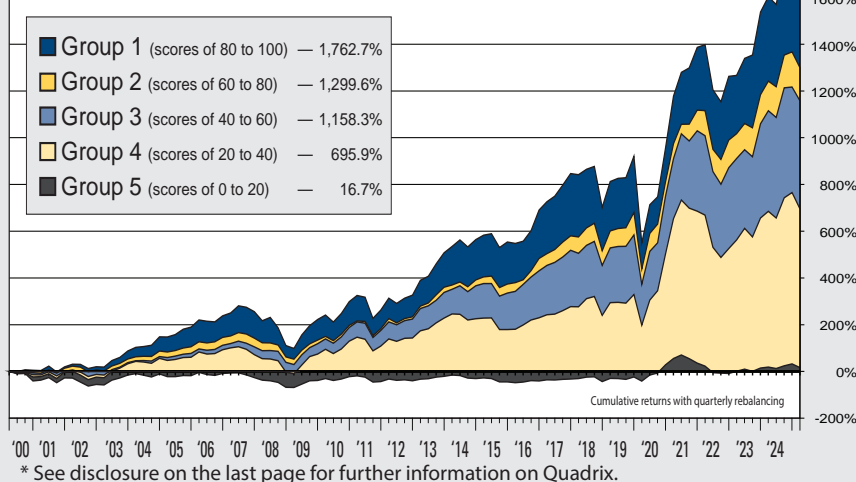
We believe no numbers-based ranking system can substitute entirely for company analysis and that stocks cannot be reduced to a series of equations. Often what may really matter about a company's stock is not on the balance sheet or income statement. For example, Quadrix seeks to tell you which drug companies have done best in growing earnings and sales, but it cannot tell you the companies with the best new drugs in the pipeline.

Still, we believe a numerical ranking system like Quadrix can be a great first screen for building portfolios. Because the system uses only quantifiable factors, it is designed to narrow the focus on companies achieving superior results. Similarly, because Quadrix is not influenced by the fear, hope, and greed that can cloud the judgment of many investors, the system is designed to provide unbiased feedback on current portfolio holdings.

As shown in the chart above, Quadrix has sought to separate winners and losers since we began publishing Quadrix scores in 2000.

### QUADRIX TRACK RECORD\*

Performance of Quadrix® Overall Score  
(for all stocks, 2nd Qtr. 2000 through 1st Qtr. 2025)



### QUADRIX OVERVIEW

Quadrix uses roughly 90 variables to score stocks in seven categories — Momentum, Quality, Value, Financial Strength, Earnings Estimates, Performance, and Reversion.

Within each category, some variables are weighted more heavily based on past effectiveness. To compute an Overall Score, Quadrix uses a weighted average of seven category scores, with Value, Quality, and Momentum receiving the biggest weightings. Based on past effectiveness or expectations regarding market conditions, weightings for the individual variables or the categories may change.

For the most part, Horizon uses Overall Quadrix scores to find what we believe will be likely 12-month winners.

Stocks with Quadrix Overall scores of 80 and above (top quintile — Group 1) have historically outperformed stocks in Group 2 (Quadrix Overall scores of 60 to 80), and Group 2 stocks have historically outperformed stocks in Group 3, and so on. (Please see the chart above for the real-time performance of Quadrix since the second quarter of 2000.)

► **Momentum.** To compute Momentum scores, Horizon ranks the universe of nearly 3,200 stocks on variables related to recent growth in earnings, cash flow, and sales. For example, a company that scores in the top 1% for 12-month sales growth receives a 100 for that variable. For a company that scores better than only 5% of the companies for 12-month sales growth, the score for that variable would be 5.

# QUADRIX® UNCOVERS TOP STOCK PICKS

For each of the Momentum variables, each stock is compared to the universe of all stocks. To calculate the Momentum score, we sum a stock's scores for each variable. For example, if a stock receives a Momentum score of 75, that means the weighted average of its Momentum scores is higher than 75% of the universe.

Some investors rely solely on Momentum factors when picking stocks. Horizon prefers a balanced approach, partly because companies with high Momentum scores often have overvalued stocks. Also, because our Momentum variables look back no further than 12 months, Momentum scores can unduly reward companies experiencing a temporary acceleration in business.

Still, partly because we believe it can help eliminate companies suffering from deteriorating fundamentals, Momentum receives a healthy weighting in the Quadrix system. In fact, we are wary of stocks with high Overall Quadrix scores that do not score well for Momentum. Such scores sometimes reflect a temporary slowdown, but they can also point to a stock headed for trouble.

By definition, Momentum factors are short-term in nature. If you buy a low-quality or overvalued stock simply because of its Momentum score, we believe the risk posed by an earnings slowdown is substantial. In our opinion, the shorter the time horizon, the more important Momentum becomes.

► **Quality.** Horizon's Quality score gauges a company's track record. Most of the Quality variables are growth rates for sales, earnings, cash flow, book value, and dividends. Other variables include expected profit

growth and earnings consistency, along with returns on equity, investment, and assets.

Growth rates for the past one, three, and five years are used. Companies with outstanding 10- or 20-year track records receive no credit beyond the last five years. Companies lacking five-year track records are evaluated based on the average ranks for the Quality variables for which they do have numbers, the methodology Quadrix uses for all missing variables.

Companies with the best growth records score highest for Quality. While a good history is no guarantee of future success, companies with stellar growth records tend to be well-managed businesses with attractive market positions. Because Quadrix measures growth in five areas — sales, earnings, shareholders equity, cash flow, and dividends — it penalizes companies growing earnings through cost-cutting or restructuring.

One shortcoming of Quadrix is the reward it gives companies that have grown through acquisitions. Many of Wall Street's best growth companies have benefited from acquisitions. But we believe internal growth means more than growth through acquisitions. For that reason, Horizon takes a closer look at any high Quadrix scorer with a penchant for acquisitions.

► **Value.** Quadrix's Value variables include such ratios as price/earnings (P/E), price/sales, price/cash flow, price/book value, and P/E relative to expected growth (PEG). In addition, we compare the ratios to the average level of the ratios over the past three and five years.

We believe there are many value plays in the broader market, and

history suggests such stocks tend to outperform. In real-time use since 2000 and in back-tests to 1992, Value scores have done the best job of picking winners among the category scores. Still, because of our balanced approach, Horizon typically prefers attractively valued growers over deep-discount value stocks with poor track records or weak market positions.

► **Financial Strength.** Quadrix Financial Strength scores reflect interest coverage, debt positions, and profit margins. Financial Strength scores can help weed out companies with weak financial positions. Companies with solid finances score best for Financial Strength. By itself, a company's Financial Strength score may not be a great predictor of stock performance. However, a low Financial Strength score is a yellow flag worth investigating.

For industry groups that typically use a lot of debt — including banking, financial services, and utilities — Quadrix Financial Strength scores can appear unduly low. For stocks in such sectors, Financial Strength scores are most meaningful relative to industry peers, rather than the broad market.

► **Earnings Estimates.** By tracking the trend in consensus earnings estimates, one can check whether company fundamentals appear to support a stock's price action. Also, estimate revisions have been a good screen for avoiding companies likely to post negative profit surprises. The Quadrix Earnings Estimates score measures the change in consensus earnings estimates for coming quarters, this fiscal year, and next fiscal year. We also consider variables that reflect the number of analysts boosting estimates relative to the



number cutting estimates. Earnings Estimates scores can be quite volatile, so the category does not receive a big weighting in the Overall Quadrix score. However, for stocks with low Earnings Estimates scores, investors should determine whether the stock price already bakes in negative revision trends.

► **Performance.** The Quadrix Performance score considers a stock's total returns relative to other stocks. To calculate total returns, we take into account both dividends and stock-price changes. Historically, outperformance in periods of 12 months or less has been a bullish signal.

While investors should watch Performance scores closely, they do not receive a huge weighting in Quadrix. We believe that the shorter the time horizon, the more Performance scores should be emphasized. If Performance scores are weak even though company fundamentals appear strong, evaluate

whether the company faces near-term problems.

► **Reversion.** Much like the Performance score, Reversion considers total returns. However, Reversion looks at those returns differently, as our research suggests stocks with strong returns over periods of three years or longer tend to underperform in the year ahead. Few companies can keep outperforming in perpetuity.

Reversion doesn't carry a high weighting in the Quadrix Overall score, though the combination of low Reversion and Value scores may indicate a frothy price, and thus greater-than-usual downside risk in the event of bad news.

## WHY WE BELIEVE QUADRIX WORKS

All too often, investors focus on a single metric or small set of metrics that jibe with their approach. Value investors gravitate toward companies

most attractive based on price/earnings ratios or discounted cash-flow models. Growth disciples focus on companies with the best sales and earnings growth, while momentum devotees look for the strongest stock-price action or earnings-estimate trends.

We have found that two problems plague such narrow approaches. First, if your entire strategy relies on a single metric or small set of correlated metrics, your portfolio could take a major hit by the time you realize change is needed. Second, companies that score best for a particular metric are often outliers, with results distorted by unusual circumstances or one-time items.

Rather than looking for the very best stocks based on a particular metric working right now, we seek to emphasize stocks that score well across a broad number of variables. Of course, the variables should have a track record of working together to predict stock-price action. Quadrix

### EXAMPLES OF QUADRIX® VARIABLES

**Earnings predictability** — Seeks to gauge the consistency of earnings growth based on the historical volatility of year-to-year earnings comparisons.

**EPS estimate revisions** — Change in consensus profit estimates for current and next quarter.

**EPS surprise last quarter** — Seeks to measure reported earnings versus expectations.

**Expected profit growth this year** — Seeks to project one-year change in earnings per share.

**Interest coverage** — Net income before interest and taxes divided by interest expense.

**Long-term debt to capital** — Long-term debt divided by the sum of debt and equity.

**Long-term expected profit growth** — Consensus estimates for five-year earnings growth.

**Operating profit margin** — Operating income before depreciation divided by sales.

**Price to book value** — Current share price divided by shareholders equity per share.

**Price to cash flow** — Current share price divided by trailing 12-month cash flow per share.

**Price to cash flow versus three-year average** — Current share price/cash flow ratio divided by the average of the ratio over the past three years.

**Price to earnings (P/E)** — Current share price divided by earnings per share.

**P/E to estimated five-year EPS growth (PEG)** — P/E using current-year estimated earnings divided by expected five-year earnings growth.

**Price to sales** — Current share price divided by 12-month sales per share.

**Return on assets** — Net income divided by average annual assets.

**Return on equity** — Net income divided by average equity.

**Total return** — The performance of a stock, including both price action and dividends.

— a first screen that narrows the U.S. market down to a smaller pool of promising stocks — can reward balanced strength several ways:

■ **Percentile ranking.** For roughly 90 variables, Quadrix ranks nearly 3,200 U.S. stocks on a percentile basis. For example, let's say Company A has a rank of 95 for its sales growth of 59% in the latest quarter, which placed it in the top 5% of U.S. companies currently in our Quadrix universe. Company B, with sales growth of 709%, earned just five extra points for having the fastest growth among all U.S. companies. In theory, 709% sales growth is better than 59% growth. But in practice, 709% growers — or the extreme outliers for any variable — likely benefit from one-time items, acquisitions, or other unusual circumstances.

■ **Transparency.** Because Quadrix's ranking system is fairly intuitive, if problems occur with the data, we can often spot them. When evaluating candidates for our strategies, we

first consider whether Quadrix paints an accurate picture. If a stock scores very high in Momentum, Quality, Financial Strength, Earnings Estimates, Performance, and Reversion, but earns a 0 in Value, the Overall score might still top 80. Does that mean you shouldn't buy the stock? Not necessarily, but with Quadrix, you have a good idea about what you're getting before you make the purchase.

■ **Broad mix of variables, grouped into distinct categories.** While some of the variables used in Quadrix may seem repetitive, they serve a purpose. For example, because three-year growth in net income and operating earnings are highly correlated, most companies would score similarly for Quality if we dropped one of the variables. By rewarding companies with superior growth rates in both net income and operating earnings — plus cash flow, sales, and book value — Quadrix seeks to weed out companies with unbalanced growth.

Based on what we believe is working and our expectations, we adjust the weightings assigned to individual variables and the categories. But no category has been assigned a weight exceeding one-half of the Overall score.

## CONCLUSION

We believe Quadrix is an excellent tool for uncovering buy candidates. Horizon does not use Quadrix exclusively, since a numerical system cannot capture everything. Still, Quadrix is designed to help ensure that we fish in the right waters. Horizon rarely buys a stock with a Quadrix Overall score below 70.

Quadrix can also help you track industry groups. If most of the stocks in a group score well for Momentum, it provides some confirmation that the companies are benefiting from industry-wide trends. Quadrix is designed to help illustrate whether leading groups are gaining because of strong fundamentals. ■

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The information on the preceding pages reflects the performance of our proprietary Quadrix system and does not reflect the performance of any client account or composite. Quadrix is calculated as follows: Quadrix ranks nearly 3,200 stocks based on roughly 90 variables. Each stock in the Quadrix system is then assigned a percentile ranking from 0 to 100 — for example, a score of 90 means that the stock scored better in our Quadrix system than 90% of the other stocks Quadrix analyzes. We then separate the stocks into deciles, and view the quarterly performance of each of the deciles. The decile scores are then averaged to arrive at quintile scores, which are reflected on the chart. We then track the performance of each stock contained in the quintile on a quarterly basis, starting over again each quarter to reflect a quarterly rebalancing of the stocks contained in each quintile. The returns for each quarter are linked to the previous quarter. The Quadrix returns reflect the reinvestment of dividends and other earnings.

There are no transaction costs or HIS management fees reflected in the calculation of Quadrix performance, and the performance does not reflect HIS' management of a client account or composite. Because Horizon client portfolios hold a significantly smaller number of stocks, performance of HIS client accounts may be materially different than performance portrayed in the Quadrix chart. Quadrix performance also does not reflect the impact that material economic and market factors might have had on HIS' decision-making if HIS were actually managing client assets.

The Quadrix® stock-rating system is a proprietary product wholly-owned by Horizon Publishing Company, Horizon Investment Services' sister company. Horizon Investment Services has contracted with Horizon Publishing Company to use the Quadrix stock-rating system for its stock-screening processes. From time to time Horizon Publishing Company may change the weightings of the various metrics that go into computing Quadrix scores.

An investment in securities involves the risk of loss. Investment return and principal value will fluctuate so that the investment, when redeemed, may be worth more or less than the original investment.

Past performance is no guarantee of future results. No formula or other device being offered can, in and of itself, be used to determine which securities to buy or sell.



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