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ARTICLE

Why Value, Quality, and Momentum Belong Together

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Key Points

- The Research Affiliates systematic active equity investment process integrates three key signals (value, quality, and momentum) to form a more comprehensive framework for security selection and portfolio construction.
- Value, quality, and momentum are economically distinct and imperfectly correlated. This diversification of alpha sources can improve robustness across regimes.
- The resulting investment process is designed to be robust across environments, resilient to behavioral pitfalls, and grounded in economic intuition.
- Smoother performance, shallower drawdowns, and greater adaptability increase the likelihood that investors can maintain discipline through full market cycles.

Introduction: One Signal Is Never Enough

Investing is an exercise in decision making under uncertainty. No single signal—no matter how intuitive or well supported by history—captures the full complexity of markets. Prices reflect expectations, expectations change, and investors themselves are prone to systematic errors. The challenge for a long-horizon, fundamentally driven investor is not to find the perfect signal but to assemble a process that is robust across environments, resilient to behavioral pitfalls, and grounded in economic intuition.

> *"The challenge for a long-horizon, fundamentally driven investor is not to find the perfect signal but to assemble a process that is robust across environments, resilient to behavioral pitfalls, and grounded in economic intuition."*

This philosophy sits at the heart of the Research Affiliates systematic active equity investment process. Rather than relying on a single dimension of information, we integrate value, quality, and momentum—three signals that are individually powerful, economically intuitive, and (crucially) complementary. Used together, they have the potential to form a more comprehensive and reliable framework for security selection and portfolio construction than any one signal could achieve on its own.

Value: Anchoring to Economic Reality

Value is the foundation of the investment process. At its core, value investing is about paying a reasonable—or preferably cheap—price for a stream of cash flows. Over long horizons, the price paid matters enormously. Buying assets at elevated valuations embeds optimistic assumptions that leave little room for disappointment; buying at lowered valuations provides a margin of safety and the potential for valuation mean reversion.

Within our value signal, we combine multiple dimensions of valuation, including sales, cash flow, book value, intangibles, dividends, and buybacks. This multi-dimensional approach seeks to deliver more consistent value exposure to the portfolio.

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Consider a value investor who is only concerned with a single definition of value, such as the book-to-price or sales-to-price ratio. Such a one-dimensional philosophy would result in a portfolio that not only falls short on other dimensions of value but also lacks in diversification and performance. **Exhibit 1** shows the resulting top five holdings of a set of single-metric value strategies that select stocks along a given dimension. The fifth strategy selects companies as determined by our Diversified Value signal, which combines all four metrics and incrementally refines for intangibles and buybacks.

Exhibit 1. Top Five Holdings of Value Strategies (as of December 31, 2025)

Company	Country	Sector	Book/Price	Sales/Price	Cash Flow/Price	Dividend Yield
Top Holdings Selecting by Book/Price						
Intel	United States	TECH	1.09	0.22	0.23	5.39%
Softbank	Japan	COMM	0.74	0.09	0.14	0.55%
General Motors	United States	CCYC	1.49	0.46	0.39	4.55%
Deutsche Bank	Germany	FINC	0.96	0.03	0.11	0.50%
Warner Brothers	United States	COMM	0.63	0.11	0.15	0.42%
Top Holdings Selecting by Sales/Price						
CVS	United States	NCYC	0.76	0.91	0.19	3.48%
Glencore PLC	Switzerland	ENRG	0.75	1.23	0.28	7.02%
Phillips 66	United States	ENRG	0.59	0.89	0.11	4.73%
Honda	Japan	CCYC	2.44	1.08	0.51	3.90%
Valero	United States	ENRG	0.53	0.94	0.19	7.29%
Top Holdings Selecting by Cash Flow/Price						
Banco Santander	Spain	FINC	0.60	0.03	0.18	1.28%
Intel	United States	TECH	1.09	0.22	0.23	5.39%
TotalEnergies	France	ENRG	0.90	0.56	0.32	6.01%
Softbank	Japan	COMM	0.74	0.09	0.14	0.55%
Deutsche Telekom	Germany	COMM	0.55	0.17	0.37	3.33%
Top Holdings Selecting by Dividend Yield						
Citigroup	United States	FINC	0.90	0.04	0.15	4.96%
Intel	United States	TECH	1.09	0.22	0.23	5.39%
BHP Group	Australia	BMAT	0.29	0.16	0.17	7.46%
Pfizer	United States	CARE	1.06	0.20	0.24	7.56%
Lowe's	United States	CCYC	0.00	0.01	0.09	7.70%
Top Holdings Selecting by Diversified Value						
Intel	United States	TECH	1.09	0.22	0.23	5.39%
CVS	United States	NCYC	0.76	0.91	0.19	3.48%
BP	United Kingdom	ENRG	0.80	0.61	0.39	5.87%
General Motors	United States	CCYC	1.49	0.46	0.39	4.55%
Glencore PLC	Switzerland	ENRG	0.75	1.23	0.28	7.02%

Note: Stocks in Developed Markets are sorted by valuation metric, and the top-quintile strategies are selected and weighted by market cap.

Source: Research Affiliates, using data from Worldscope and Datastream.

Value stocks selected according to their book-to-price ratio, for example, could look cheap on that basis alone but still could be unattractive along other dimensions, such as sales to price, cash flow to price, or dividend yield. Selecting stocks by Diversified Value ensures that a company's attractive valuation is confirmed across multiple dimensions simultaneously. This more comprehensive value approach has an impact on performance as well. **Exhibit 2** shows the simulated performance of the above five value strategies over the 1990–2025 period.

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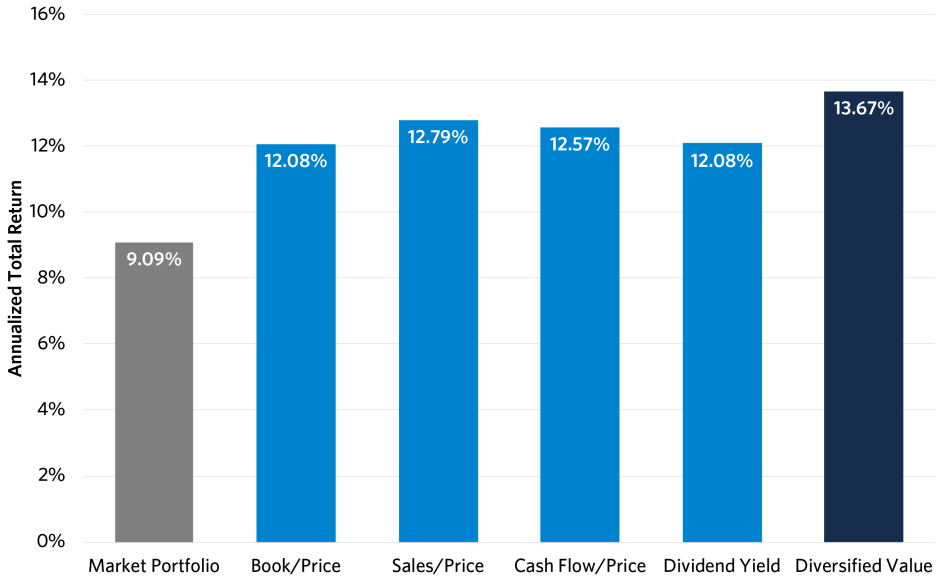
Exhibit 2. Performance of Top-Quintile Value Strategies in Developed Markets (1990–2025)



Note: Stocks in Developed Markets are sorted by valuation metric, and the top-quintile strategies are selected and weighted by market cap.

Source: Research Affiliates, using data from Worldscope and Datastream.

Our Diversified Value approach seeks to improve on naïve single factors but can still result in a stock selection that is clustered in a few cheap industries and also can result in holding stocks that tend to co-move with each other. We supplement our value signal with risk adjustments to reduce exposure to uncompensated factor risk.[1] In practice, this means reducing exposure to securities whose returns are largely explained by common value factor betas and reallocating toward stocks that are cheap for more idiosyncratic reasons in what we call Unrecognized Value.

Exhibit 3 shows the sector allocation of top-quintile portfolios based on Diversified Value, Unrecognized Value, and the final Composite Value signal. In many cases, the addition of Unrecognized Value ameliorates extreme sector positioning compared with Diversified Value alone. In tech and healthcare, traditionally expensive sectors that are underrepresented in value strategies, Unrecognized Value offers its largest upward adjustment, helping the final signal identify technology and healthcare companies uncorrelated to the value portfolio but at attractive prices. Likewise, Unrecognized Value offers downward adjustments in energy and consumer cyclicals, allowing the process to reduce exposure to perpetually cheap stocks.

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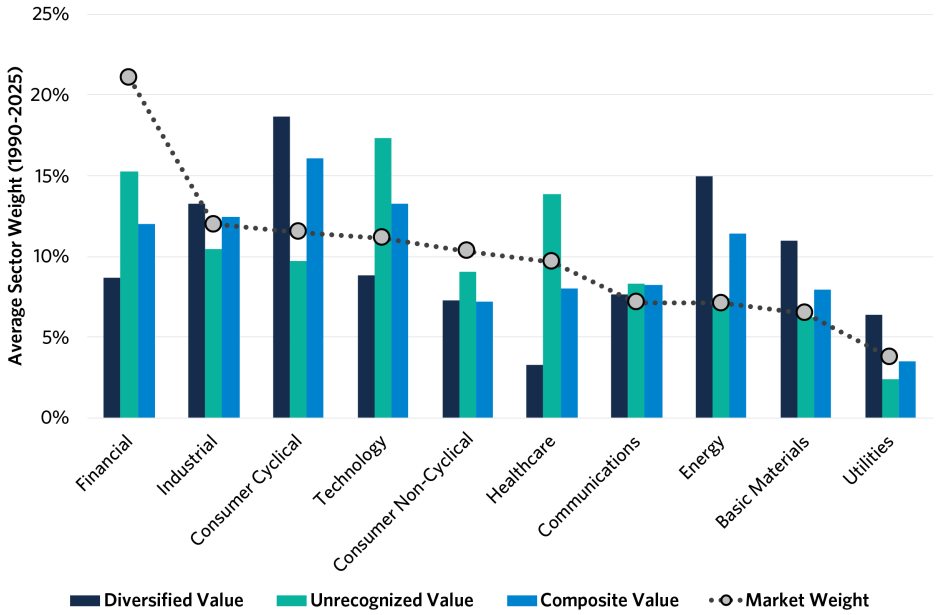
Exhibit 3. Average Sector Weights of Top-Quintile Value Portfolios



Source: Research Affiliates, using data from Worldscope and Datastream.

With all of these adjustments in place, the Composite Value signal represents our final assessment of what makes a company attractively priced, incorporating multiple dimensions of equity valuation and forming the foundation of our active strategy.

Even with the potential advantages of the Composite Signal, value investing is not without challenges. Valuation signals can take time to pay off, and cheap assets can become cheaper before they mean-revert. These difficulties are not flaws in the logic of value, but they do highlight a practical limitation: valuation alone provides limited guidance on *timing* and *risk differentiation*.

This is where quality and momentum enter the picture.

> *"Valuation alone provides limited guidance on timing and risk differentiation. This is where quality and momentum enter the picture."*

Quality: Separating Cheap from Fragile

Not all cheap assets are equal. Some are undervalued because they are temporarily out of favor; others are cheap because their fundamentals are genuinely deteriorating. Quality helps distinguish between the two.

Quality metrics—such as profitability, balance-sheet strength, and prudent investment behavior[2]—capture a company's ability to sustain and grow its economic value over time. High-quality firms tend to be more resilient in downturns, less dependent on external financing, and better positioned to compound wealth through the cycle. From a behavioral perspective, quality addresses a key weakness of pure value strategies: the tendency to over-allocate to businesses facing structural decline or financial distress. By incorporating quality, our process is designed to avoid over-rewarding low prices that simply reflect poor underlying economics.

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Importantly, quality is not used as a substitute for value. A wonderful company at an unreasonable price is still a speculative investment. Instead, quality acts as a *conditioning variable*, improving the odds that a low valuation represents mispricing rather than a value trap.

Take our Diversified Value top quintile portfolio from above and further divide these companies into quintiles according to their quality score. **Exhibit 4** shows the resulting five portfolios in quintiles that range from low to high quality within deep value companies.

Exhibit 4. Quality Quintiles Within Value

Developed Markets 1990-2025	Market	Value Only	Value, Low Quality	Value, Quality 2	Value, Quality 3	Value, Quality 4	Value, High Quality
Return	9.1%	13.7%	13.2%	13.7%	12.0%	12.7%	15.6%
Volatility	14.8%	18.2%	20.8%	19.5%	19.3%	19.6%	18.0%
Sharpe Ratio	0.53	0.60	0.51	0.56	0.48	0.51	0.72
Maximum Drawdown	-52.7%	-55.8%	-60.6%	-52.3%	-56.9%	-65.6%	-48.7%
Avg. Composite Discount vs. Market	0%	-57%	-58%	-56%	-56%	-57%	-55%
Avg. Debt/Assets vs. Market	1.00	1.11	1.30	1.18	1.13	1.08	1.00

Note: Composite Discount uses an average of price/sales, price/book, price/earnings, price/cash flow, and price/dividends and represents an average discount of these metrics to a market portfolio. The more negative the number, the more deeply discounted the portfolio.

Source: Research Affiliates, using data from Worldscope and Datastream.

Among cheap stocks, the quintile with the highest quality had the highest returns, the lowest volatility, and the highest Sharpe ratio. In fact, this quality effect of higher return and lower volatility can be seen at every level of starting value quintile. (For the full return and volatility tables of the 5x5 value and quality portfolio sorts, see **Appendix A**.) It also had the lowest drawdown among the group during the global financial crisis, lower even than the market portfolio, an impressive feat given its concentration of 4% of the market universe.

These advantages demonstrate quality's defensive characteristics when conditioned on value. Higher-quality value stocks tend to hold up better during market stress and moderate drawdowns without sacrificing long-term return potential.

This tendency for quality to provide a smoother ride without sacrificing performance is a result of using a composite of quality signals that, in combination, are uncorrelated with value. Note the valuation and debt/assets statistics of the high-quality value portfolio compared with the lower-quality value portfolios. Even though the quality portfolio has lower financial leverage, it is priced at nearly the same discounted valuation as the lower-quality value portfolios. Avoiding the lower-quality, cheap-for-a-reason stocks is key to risk mitigation for any successful value manager.

Momentum: Respecting the Market's Information

If value anchors portfolios to economic reality and quality filters out fragility, momentum adds a critical third dimension: *market confirmation*.

Momentum captures the tendency of assets that have performed well recently to continue performing well in the near term, and vice versa. While this may seem at odds with valuation-based investing, the intuition is compelling. Prices adjust gradually because information diffuses slowly, investors underreact to new data, and institutional constraints delay repositioning.[3] Momentum reflects this slow adjustment process.

Like our approach to value and quality, we use multiple variations of momentum, each adjusting prior returns for a potential source of risk. Together, the composite momentum signal serves two key roles in the investment process:

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1. **Timing and Turnover**: Momentum can help avoid prematurely allocating to assets whose fundamentals may be improving but whose prices continue to signal unresolved negative information. Momentum can also help avoid prematurely selling holdings whose improving prospects have further to run.

2. **Risk management**: Adding the right amount of momentum can undo the performance-degrading anti-momentum bias often associated with deep value strategies. By reducing exposure to securities experiencing persistent negative trends, momentum can help mitigate drawdowns and smooth the path of returns.

Crucially, momentum is not used to chase growth narratives or abandon valuation discipline. Instead, it acts as a safeguard against the behavioral and structural forces that can cause value strategies to underperform for prolonged periods. It encourages humility: even when valuation looks compelling, the market may be signaling that patience is required.

Exhibit 5 looks again at our same top value quintile from previous sections, this time dividing it into five quintiles by momentum.

Exhibit 5. Momentum Quintiles Within Value

Developed Markets 1990-2025	Market	Value Only	Value, Low Momentum	Value, Mom. 2	Value, Mom. 3	Value, Mom. 4	Value, High Momentum
Return	9.1%	13.7%	10.4%	12.9%	13.2%	14.4%	13.9%
Volatility	14.8%	18.2%	26.1%	20.3%	18.5%	17.5%	16.9%
Sharpe Ratio	0.53	0.60	0.30	0.50	0.57	0.67	0.67
Maximum Drawdown	-52.7%	-55.8%	-74.7%	-58.3%	-48.4%	-52.3%	-47.8%
Fama-French-Carhart Betas							
Market Beta	1.00	1.05	1.23	1.04	1.02	0.99	0.95
SMB: Size	0.00	0.35	0.86	0.48	0.26	0.27	0.27
HML: Value	0.00	0.64	0.70	0.67	0.65	0.59	0.59
WML: Momentum	0.00	-0.26	-0.59	-0.39	-0.23	-0.11	-0.03

Source: Research Affiliates, using data from Worldscope and Datastream.

Momentum has a dramatic effect on volatility reduction within this value portfolio. This effect may be counterintuitive at first, as the momentum signal is fast moving and capable of generating volatility on its own. However, the same holds for anti-momentum. Deep value portfolios can be prone to take on a substantial anti-momentum bias if not accounted for properly. Note the loadings on the momentum risk factor (WML) in the Fama-French-Carhart (FFC) regressions above. Value stocks can be extremely volatile and anti-momentum if you select the recent losers. In fact, the low-momentum value portfolio has by far the highest volatility of the 25 portfolios in the 5x5 double sort (see **Appendix A**). Incorporating a momentum signal into the process to ameliorate this effect and wait before picking up falling knives may be an important risk-reduction strategy for value investors.

"(Momentum) encourages humility: even when valuation looks compelling, the market may be signaling that patience is required."

Integration, Not Stacking

Bringing these signals together raises a crucial design question: How should multiple signals be combined? A critical distinction in our approach is that value, quality, and momentum are integrated, not simply layered on top of one another. Stacking portfolios in

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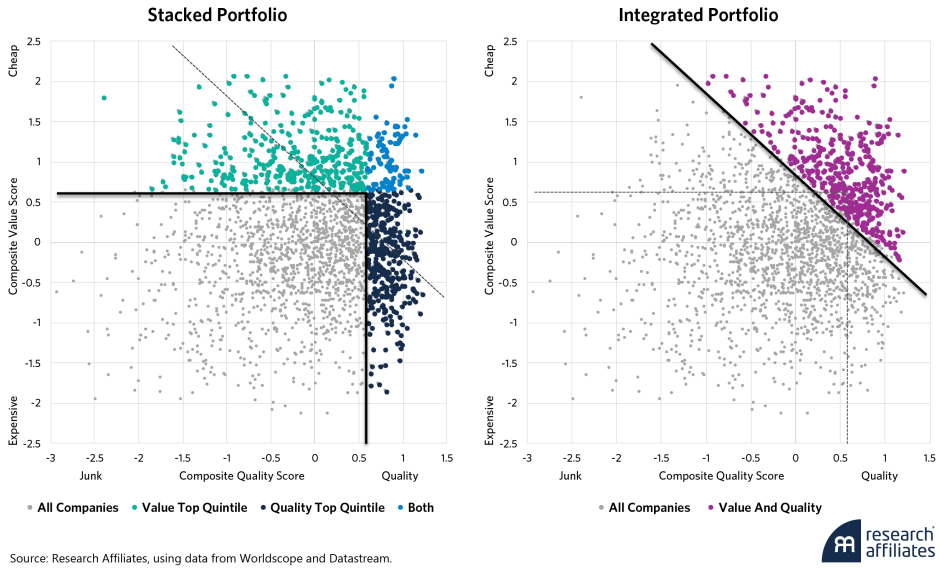
concentrated active strategies can dilute economic intent and create unintended exposures. In contrast, integration evaluates securities holistically, allowing each signal to influence portfolio weights in a balanced and intentional manner.[4]

As a simplified example, consider a strategy that combines value and quality. This strategy can select a value portfolio and a separate quality portfolio and weight them 50/50. We call this the stacked approach. Alternatively, the strategy can combine the value and quality signals and select based on the combined signal. We call this the integrated approach. **Exhibit 6** shows a scatter plot of value and quality signals for our stock universe and the resulting selected holdings of each approach.

Exhibit 6. Stacking vs. Integration



Source: Research Affiliates, using data from Worldscope and Datastream.

In this example, the stacked portfolios contain many stocks that are expensive or junk. The integrated approach on the right looks for companies that are varying degrees of value plus quality, capturing the additive effects of the signals. Integration ensures that capital is allocated to securities that are simultaneously attractive across multiple dimensions, rather than averaging across separate portfolios that may internally conflict.

This approach is particularly important for concentrated active strategies. The more concentrated the selection, the more impactful the unintended consequences of including high-quality yet expensive companies or low-quality cheap companies. At low levels of concentration on the other hand, such as a broad index strategy, stacked and integrated portfolios grow more alike as they include more names. When selecting a small number of stocks, however, one can afford to be picky and select companies that have positive value *and* quality *and* momentum characteristics.

In practice, our process does not have such a distinct border of selection as the integrated chart on the right. Instead, signals are integrated into a system of portfolio construction that accounts for other important considerations, such as liquidity, concentration, regional allocations, turnover, and transaction costs, to name a few. A successful construction methodology will likely balance these competing priorities *and* the integrated signals as weights drift and signals update in real time.

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Why the Combination Works

The true power of our investment process lies not in any single signal but rather in their interaction.

Value, quality, and momentum are economically distinct and imperfectly correlated. Each responds differently to macroeconomic conditions, investor sentiment, and business cycles. When one signal is temporarily weak, another often provides support. This diversification of alpha sources seeks to improve robustness across regimes. Together, they form a coherent decision framework that balances conviction with caution.

Our Global active value strategies date from 2006, providing tangible corroboration of our research. **Exhibit 7** shows the track record of our Global Composite and Emerging Market Equities strategies.

Exhibit 7. Active Strategy Performance

As of 12/31/2025	3 Years (Ann.)	5 Years (Ann.)	10 Years (Ann.)	Since Incept. (Ann.)	Since Incept. Date
Emerging Markets	**20.70%**	**13.80%**	**13.30%**	**8.40%**	**6/1/2006**
Excess Return	3.20%	6.30%	4.70%	2.50%	
Global Composite	**18.40%**	**13.40%**	**11.30%**	**8.10%**	**6/1/2006**
Excess Return	2.80%	1.80%	1.40%	1.30%	

Note: The Emerging Markets portfolios reflect live net performance of Research Affiliates sub-advised U.S. portfolios utilizing these strategies since inception. Net performance was calculated using gross performance of the strategy minus 39 bps (representing fees). SAE Global launched on April 30, 2025. Return data prior to launch is simulated by combining the live performance of sub-advised US, International and Emerging Markets portfolios minus an assumed fee of 35 bps.

Source: Research Affiliates.

Why Other Signals Are Not Included

A natural question is why our portfolio process focuses on value, quality, and momentum—and not on other well-known signals, such as dividends, dividend growth, volatility, size, or thematic characteristics. The short answer is not that these signals lack merit but that they either overlap substantially with existing components, lack a strong standalone economic rationale, or do not improve the robustness of the overall process once value, quality, and momentum are already in place.

Dividends and Dividend Growth

Dividends are among the most commonly cited investment signals, often viewed as indicators of income, discipline, or shareholder friendliness. Rather than being a separate signal, dividends are fully embedded in Diversified Value. Our approach also incorporates buybacks, which have become an increasingly important way to return cash to shareholders. By contrast, we do not incorporate dividend growth in our process. Rapidly rising dividends have not always commanded a return premium, as this can reflect management's limited confidence in organic growth opportunities and a preference for returning cash to shareholders.[5]

Volatility and Defensive Characteristics

Low-volatility and minimum-variance strategies have attracted significant attention, often justified by behavioral arguments or institutional constraints. While these approaches can reduce short-term portfolio fluctuations, volatility itself is not a fundamental driver of long-term expected returns.

In our investment process, defensive characteristics emerge organically through quality and valuation. High-quality companies with strong balance sheets and stable profitability tend to be less volatile, particularly during market stress. Adding volatility as a separate

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signal would risk prioritizing price smoothness over economic value, potentially sacrificing long-term return potential without improving robustness.

> *"In our investment process, defensive characteristics emerge organically through quality and valuation. High-quality companies with strong balance sheets and stable profitability tend to be less volatile, particularly during market stress."*

Size and Structural Tilts

Our research has not shown a reliable premium to size (smaller cap).[6] More importantly, size does not represent a decision variable that investors can meaningfully anchor to fundamentals. Our active portfolios may naturally tilt toward smaller or larger companies at different points in the cycle, but only as a *consequence* of valuation, quality, and momentum—not as an objective in itself. This ensures that any size exposure is earned rather than assumed.

Other Signals—Not Yet Defined

The combination of value, quality, and momentum represents the culmination of many years of research and evolving our investment process. Momentum, for example, was added in 2013, and our global strategy dates back to 2006. Active management requires us to remain agile and advance our understanding of ever-evolving markets. We will continue to refine the process as markets evolve, but any addition must earn its place.

Every additional signal introduces estimation error, complexity, and implementation risk. A robust process prioritizes parsimony over proliferation. Value, quality, and momentum were chosen because we believe they do four things:

- Have clear and distinct economic rationales,
- Address different dimensions of investor behavior and market inefficiency,
- Complement one another without excessive overlap, and
- Improve both long-term return potential and portfolio resilience.

This discipline keeps our active research and investment process focused, transparent, and repeatable.

Conclusion

Long-term investing is as much about *staying invested* as it is about identifying return premia. Extended periods of underperformance—however rational in hindsight—can test the patience of even the most disciplined investors.

By combining value, quality, and momentum, our investment process seeks to improve not only expected returns but also the *experience* of earning them. Smoother performance, shallower drawdowns, and greater adaptability increase the likelihood that investors can maintain discipline through full market cycles.

In a world where no single signal is infallible, robustness is critical. The integration of value, quality, and momentum reflects three simple but powerful insights: markets are complex, investors are human, and better outcomes require more than one lens.

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Appendix A: Double Sorted (5x5) Portfolios

Exhibit A1. Value and Quality

Return

	Low Quality	2	3	4	High Quality
Low Value	6.72%	6.70%	6.31%	8.87%	10.12%
2	6.55%	6.71%	8.00%	8.37%	11.15%
3	6.65%	7.90%	8.73%	9.96%	11.32%
4	7.91%	8.84%	10.19%	10.73%	12.12%
High Value	13.19%	13.66%	11.95%	12.71%	15.62%

Volatility

	Low Quality	2	3	4	High Quality
Low Value	20.54%	19.84%	17.75%	16.62%	15.79%
2	17.79%	17.79%	16.54%	15.31%	13.61%
3	18.16%	17.58%	15.68%	14.34%	13.66%
4	18.50%	15.63%	16.21%	14.71%	14.43%
High Value	20.76%	19.48%	19.32%	19.62%	18.04%

Sharpe Ratio

	Low Quality	2	3	4	High Quality
Low Value	0.20	0.20	0.20	0.37	0.47
2	0.22	0.23	0.32	0.37	0.62
3	0.22	0.30	0.39	0.51	0.63
4	0.28	0.39	0.46	0.55	0.65
High Value	0.51	0.56	0.48	0.51	0.72

Exhibit A2. Value and Momentum

Return

	Low Mom.	2	3	4	High Mom.
Low Value	6.23%	6.27%	7.12%	7.00%	8.71%
2	4.72%	6.70%	8.12%	11.03%	10.64%
3	6.52%	7.88%	10.13%	9.95%	10.95%
4	6.11%	10.40%	11.19%	11.12%	11.43%
High Value	10.40%	12.89%	13.24%	14.43%	13.93%

Volatility

	Low Mom.	2	3	4	High Mom.
Low Value	19.98%	18.08%	16.79%	17.21%	20.63%
2	19.22%	16.27%	15.11%	14.59%	15.69%
3	18.56%	17.29%	14.95%	14.94%	14.09%
4	20.70%	16.78%	15.19%	14.34%	15.02%
High Value	26.06%	20.26%	18.53%	17.47%	16.89%

Sharpe Ratio

	Low Mom.	2	3	4	High Mom.
Low Value	0.18	0.20	0.26	0.25	0.29
2	0.11	0.25	0.36	0.57	0.51
3	0.21	0.30	0.50	0.49	0.59
4	0.17	0.46	0.56	0.59	0.58
High Value	0.30	0.50	0.57	0.67	0.67

Source: Research Affiliates, using data from Worldscope and Datastream (1990-2025).

End Notes

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