

# Are Hedge Funds Anti-Quality?

## Factor-Based Insights

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- The factor profile of a hedge fund index revealed consistent bets against quality between July 2012 and October 2016.
- The anti-quality bets contributed materially to the performance of the index, especially during the severe drawdowns in the summer of 2015 and at the turn of the year from 2015 to 2016.
- Hedging the hedge fund index with a quality strategy tempered risk along several dimensions, including drawdown.

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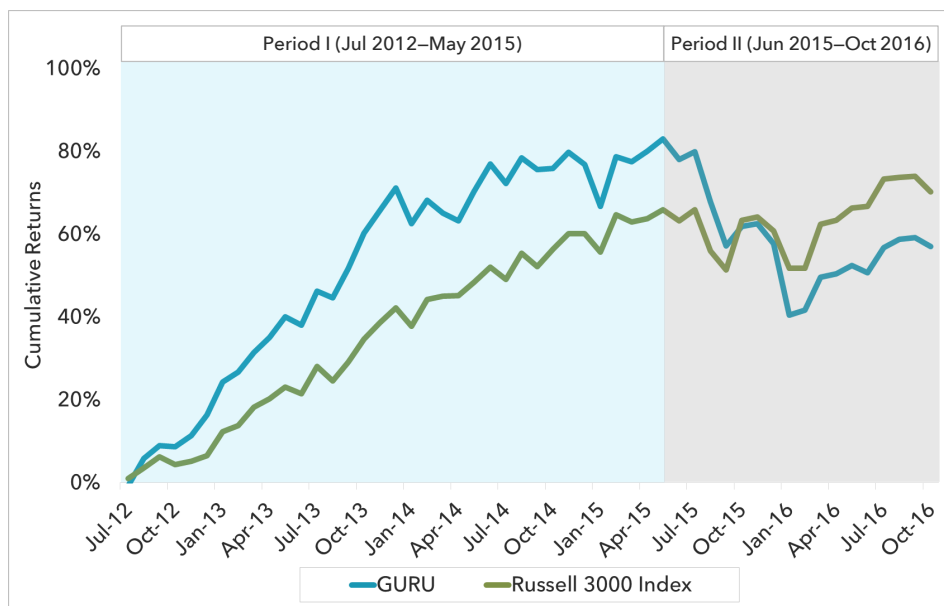
References to returns, risks, performance, tracking error, and other such characteristics describing portfolios in this paper are based on hypothetical analysis techniques (also known as back-testing) and do not represent actual portfolios. Since returns included herein are hypothetical and based on back-testing, it is important to note that they are for illustrative purposes only. Past performance, whether illustrative or actual, is not a guarantee of future performance. Please refer to the important disclosures within and at the end of this paper.

Hedge funds lost some of their sparkle when they underperformed in falling and turbulent markets late in the summer of 2015 and at the start of 2016. Curious about what they were getting for fees as high as 2-and-20, investors asked questions. In response to several inquiries from our clients, we investigated and provided factor profiles and risk estimates for particular hedge funds. These client-driven analyses highlighted some common themes, including consistent exposure of the hedge funds we looked at to high volatility and high leverage. It makes sense that a stock-picking hedge fund would choose risky securities with high volatility in pursuit of extraordinary outperformance.

Since market turbulence affects everyone, we decided to pursue a more general study—one whose findings could be disseminated broadly. That required using a publicly available data source. After a review of potential sources, we settled on the Global X Guru™ Index ETF (GURU), which tracks the Solactive GURU Index. From its [website](#), GURU “seeks to generate alpha over the broad market by investing in highest conviction ideas from a select pool of hedge funds.” GURU’s holdings are based on these hedge funds’ long equity positions in US companies, which are obtained from their Securities and Exchange Commission Form 13F filings.

We replicated GURU from its holdings and then subjected the replication to the same factor-based analysis that we had applied to the individual hedge funds in our earlier study. GURU, of course, is different from most hedge funds in important ways. Notably, GURU is long-only, while hedge funds are typically long/short.<sup>1</sup> Nevertheless, our analysis highlighted the same exposures that we had found in the individual hedge funds we examined. The details follow.

### GURU’s Performance



**Figure 1:** Cumulative returns to GURU (NAV) and the Russell 3000 Index. Source: Bloomberg Finance L.P. and the FTSE Russell website.<sup>2</sup>

Figure 1 shows the cumulative returns of GURU and a diversified benchmark, the Russell 3000 Index, from July 2012 through October 2016. GURU reached its peak value in May 2015, almost three years from the inception of our study. Over this initial sub-period, GURU outperformed the Russell 3000 Index by 17.0% on a cumulative, net-of-fees basis. However, GURU's fortunes reversed, and it lagged the Russell 3000 Index by 16.7% in the more recent sub-period from June 2015 through October 2016. GURU underperformed the Russell 3000 Index by 13.2% over the full period of almost four and a half years. At the same time, GURU carried more risk.

#### Key Risk Attributes

	Russell 3000 Index	GURU
Volatility	10.3%	13.0%
Beta	1.0	1.1
Tracking Error	0.0%	6.1%
Worst Drawdown	-8.8%	-23.2%

**Table 1:** Key risk attributes for the Russell 3000 Index and GURU. July 2012–October 2016. Source: Bloomberg Finance L.P. and the FTSE Russell website.

Key risk attributes of GURU and our benchmark, the Russell 3000 Index, are shown in Table 1. Between July 2012 and October 2016, GURU was more volatile than the index, and it experienced a more severe worst drawdown.

### The Factor Profile of a Hedge Fund Replication

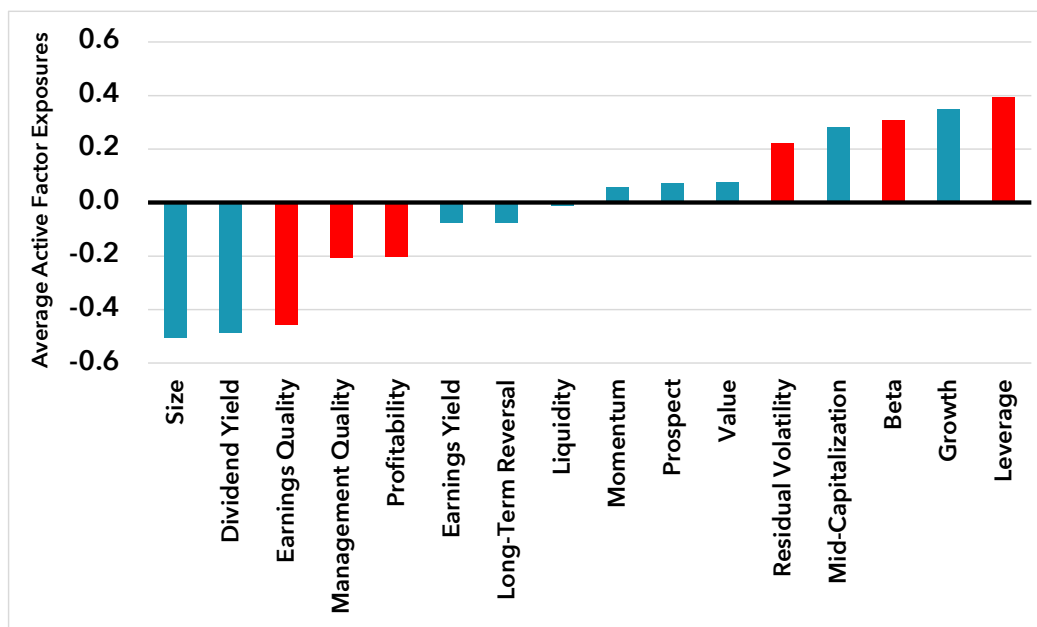
With the goal of determining performance drivers, we replicated GURU using end-of-month holdings obtained from Bloomberg. The analysis that follows is based on our replication, the GURU Proxy (GP). In the Appendix to this paper, we quantify differences in risk and return between GURU and GP. Important aspects of GURU's performance, including its positive active return between July 2012 and May 2015, and its negative active return between June 2015 and October 2016, are also present in GP. Using a factor model that controls for industry effects, we determine GP's monthly exposures to factors such as industry, size, value, momentum, and quality, as well as the contributions of these factors to performance.<sup>3</sup>

Return Decomposition (%)

Factor	Period I (Jul 2012–May 2015)	Period II (Jun 2015–Oct 2016)
	Factor	20.4
Asset Specific	1.9	-7.2
Active	22.3	-15.1

**Table 2:** Decomposition of GP’s active return relative to the Russell 3000 Index into factor and asset-specific components. Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

Table 2 shows a decomposition of GP’s active return into factor and asset-specific components. In the first period, factors accounted for most of the active return, suggesting that the index construction process averaged away any return residual to the factors that may have been present in the long components of individual hedge funds. In the second period, factors were less important in both absolute and relative terms, accounting for roughly half of the active return, and the residual return was negative.



**Figure 2:** GP’s average active exposures (as measured by Z-score) to the 16 equity style factors in the USSLOW model. July 2012–October 2016. Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

The next step is to identify the factor bets implicit in the strategy. We calculated GP’s active exposures to the 16 equity style factors in the USSLOW equity model for each month in our study period,<sup>4</sup> and the averages are displayed in Figure 2. This figure reveals a number of interesting attributes, including GP’s tilts toward small, high-growth firms. In this article, however, we concentrate on the six “quality” factors that are highlighted in red. Historically, quality strategies have tended to outperform diversified benchmarks over long horizons and in turbulent periods of any duration.<sup>5</sup> This may account for their popularity. Alternative explanations for the wide adoption of quality include its name (who doesn’t want high-quality items?) and its association with such eminent investors as Benjamin Graham, David Dodd, Warren Buffett, and Jeremy Grantham.

	Exposure	
	Quality	GP
Management Quality	+	–
Earnings Quality	+	–
Profitability	+	–
Residual Volatility	–	+
Leverage	–	+
Beta	–	+

**Table 3:** Profile of quality exposures alongside the average exposures of our GURU replication, GP, to quality factors over the entire study period, July 2012–October 2016. Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

Like all factor tilts, “quality” refers to a range of investments with varied return and risk attributes, so our characterization of quality is far from unique. At the same time, it is more than defensible. We identify a quality investment by its positive exposure to earnings quality, management quality, and profitability, and its negative exposure to residual volatility, beta, and leverage. Table 3 shows a schematic quality exposure profile alongside the average exposure profile of GP to quality factors. The average GP exposure profile was exactly reversed from a quality profile.



**Figure 3:** Time series of GP’s active exposures (as measured by Z-score) to quality factors. July 2012–October 2016. Blue shade represents Period I (Jul 2012–May 2015) and grey shade represents Period II (Jun 2015–Oct 2016). Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

In addition, the anti-quality profile in GP was present month by month, and not simply on average. This can be seen in Figure 3, which shows time series of GP’s exposures to the six quality factors. Since the anti-quality profile persisted in both the initial period of outperformance and the subsequent period of underperformance, it is plausible that the wide difference in active return over the two periods might be explained, at least in part, by the performance of these six quality factors.

**Return Contributions (%)**

	Period I (Jul 2012–May 2015)	Period II (Jun 2015–Oct 2016)
Active	22.3	-15.1
Factor	20.4	-7.9
Anti-Quality	5.0	-5.0

**Table 4:** Total factor and anti-quality contributions to GP’s active return relative to the Russell 3000 Index. Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

Table 4 shows the contribution of the anti-quality profile to GP’s active return in the two sub-periods. In Period I, between July 2012 and May 2015, nearly one-quarter of the outperformance was explained by the anti-quality exposure. Some of the other important contributors were size and growth. In Period II, between June 2015 and October 2016, roughly one-third of the underperformance was explained by anti-quality.

Return Contributions (%)

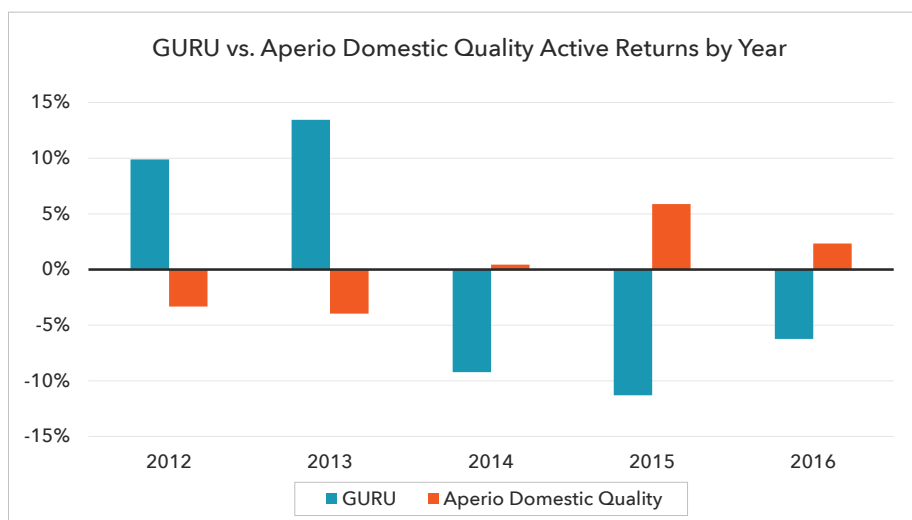
	Drawdown I (Aug–Sep 2015)	Drawdown II (Dec 2015–Jan 2016)
Active	-3.5	-5.9
Factor	-2.3	-5.1
Anti-Quality	-1.7	-2.8

**Table 5:** Total factor and anti-quality contributions to GP’s active return relative to the Russell 3000 Index. Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

Finally, we focus on the performance of GP during the two drawdown periods that motivated this study. As shown in Table 5, for each of the two drawdowns, roughly half the active return was explained by GP’s anti-quality profile.

In summary, we have seen that our replication of GURU exhibited a consistent anti-quality profile during the period beginning in July 2012 and ending in October 2016. That profile explained a substantial component of active return both in an initial period of outperformance and a subsequent period of underperformance. The anti-quality profile was especially important during the two drawdowns that drove underperformance in Period II.

Quality Hedging GURU



**Figure 4:** Annual active returns to GURU (NAV) and Aperio Domestic Quality, July 2012–October 2016. 2012 returns: July–December; 2016 returns: January–October. Source: Bloomberg Finance L.P. and Aperio Group.

To what extent is the anti-quality profile of our GURU replication present in GURU itself? Without access to GURU’s complete transaction history, it is impossible to know for sure. However, the negative correlation between GURU and Aperio Domestic Quality,<sup>6</sup> shown in Figure 4, is suggestive. Over our study period, from July 2012 through October 2016, the correlation between active returns to GURU and Aperio Domestic Quality was -0.9 based on annual data and -0.4 based on monthly data.

Key Risk Attributes

	Russell 3000 Index	GURU	Aperio Domestic Quality	50% GURU / 50% Aperio Domestic Quality
Volatility	10.3%	13.0%	8.7%	10.0%
Beta	1.0	1.1	0.7	0.9
Tracking Error	0.0%	6.1%	5.1%	3.1%
Worst Drawdown	-8.8%	-23.2%	-4.9%	-11.3%

**Table 6:** Key risk attributes for the Russell 3000 Index and GURU. July 2012–October 2016. Source: Bloomberg Finance L.P., FTSE Russell website, and Aperio Group.

More circumstantial evidence for the existence of an anti-quality profile in GURU is obtained by creating a hypothetical strategy return stream using a 50/50 blend of GURU and Aperio Domestic Quality monthly returns.<sup>7</sup> Key risk attributes for this blend are shown in Table 6, which is an expansion of Table 1. The volatility of the blend was lower than the volatility of the Russell 3000 Index over the period July 2012 to October 2016. At -11.3%, the worst drawdown of the blend is closer to the worst drawdown of the index, -8.8%, than to GURU’s worst drawdown of -23.2%.



## Summary

It makes sense that a stock-picking hedge fund would choose risky securities in pursuit of extraordinary outperformance. However, the stock-picking process can lead to unintended bets in a portfolio. In our factor-based analysis of several hedge funds and a replication of the Guru Index ETF, that is what we found.

Our replication of GURU had a consistent anti-quality profile from July 2012 through October 2016, even though GURU's performance during that period involved an initial run-up followed by a subsequent crash. In both periods, the anti-quality profile contributed materially to performance. Prompted by this analysis, we tested a hypothetical "quality-hedged GURU" and found evidence of risk mitigation.

Volatility has trended downward since the beginning of 2016. With the Chicago Board Options Exchange (CBOE) Volatility Index® (VIX®) dipping into single digits, the market turbulence that accompanied the severe drawdowns in late summer of 2015 and at the start of 2016 may seem like a distant memory. But market turbulence will likely return, even though we cannot say when. Investors with complex and opaque holdings might consider factor profiling their opaque investments before the next drawdown, giving themselves the opportunity to put the hedge back in hedge funds.

## Appendix

Cumulative returns to GURU and Aperio's replication.

### Reconciliation of Returns (%)

	Period I (Jul 2012–May 2015)	Period II (Jun 2015–Oct 2016)	Whole Period (Jul 2012–Oct 2016)
Replication Active Return <sup>8</sup>	22.3	-15.1	-5.6
Management Fees <sup>9</sup>	-4.0	-0.9	-5.1
Reconciliation Amount	-1.3	-0.7	-2.5 <sup>10</sup>
Active Return (NAV)	17.0	-16.7	-13.2

Source: Bloomberg Finance L.P. and the Barra US Total Market Equity Model (USSLOW).

## Endnotes

<sup>1</sup> Other limitations of the study: GURU differs from many hedge funds in that it excludes short positions, derivatives, foreign securities, alternative investments, real estate, and bonds; the 13F filings used to select the securities are filed by each hedge fund approximately 45 days after the end of each calendar quarter.

<sup>2</sup> "FTSE Russell" is a trading name of FTSE International Limited ("FTSE") and Frank Russell Company ("Russell") and their respective subsidiary undertakings, which are members of the London Stock Exchange Group plc. [www.ftse.com](http://www.ftse.com).

<sup>3</sup> Our analysis is based on the Barra US Total Market Equity Model (USSLOW).

<sup>4</sup> The Barra US Total Market Equity Model (USSLOW) has factors in three categories. The first category consists of a single dominant factor, the market factor, to which most assets are positively exposed. The second category consists of industry factors. The third category consists of style factors, such as value, size, momentum, and quality.

<sup>5</sup> Please see "Quality Investing" by Robert Novy-Marx. [rnm.simon.rochester.edu/research/QDoVI.pdf](http://rnm.simon.rochester.edu/research/QDoVI.pdf).

<sup>6</sup> The Aperio Domestic Quality Strategy refers to our Domestic Quality Composite, which includes all qualifying, discretionary, tax-managed portfolios that seek to provide diversified exposure to high-quality US companies. The strategy seeks to reduce portfolio volatility versus the benchmark (the S&P 500 Index) by focusing on lower-risk and higher-quality stocks. The S&P 500 Index is an equity benchmark representing the performance of US markets. The strategy is tax-managed to maximize tax-loss harvesting and minimize capital gains from portfolio turnover. The Domestic Quality Strategy tilts the portfolio (versus the benchmark) toward stocks with the following characteristics: lower volatility and beta, less variation in earnings, lower leverage, and higher earnings yield. The composite results are time-weighted rates of return and are presented net of the highest applicable investment advisory fees for this strategy. Returns reflect the deduction of actual trading expenses incurred during the period. These expenses include fees on purchases and sales of securities, such as brokerage commissions, bid-ask spreads, exchange fees, and/or taxes. For those portfolios with asset-based pricing (ABP) fees where actual, direct trading expenses cannot be identified and segregated (e.g., asset-based custody/trading/administrative expenses), returns reflect the deduction of the entire fee. Composite returns do not reflect custodial or other intermediary fees. Valuations and returns are calculated and expressed in US dollars. If applicable, composite returns are presented net of all foreign withholding taxes. Net-of-fees returns reflect the deduction of a 0.35% annual fee—the highest fee paid by any account in this strategy. Net returns are calculated monthly by deducting 1/12th of 0.35% from monthly composite gross returns. Some accounts in the composite may have a fee schedule that differs from the standard fee.

<sup>7</sup> A hypothetical blended portfolio that is invested 50% in GURU and 50% in Aperio Domestic Quality was created using a monthly return stream based on the average of GURU's NAV returns and Aperio Domestic Quality Composite's pre-tax, net-of-fees returns for each month in the study period, with the assumption of rebalancing of the portfolio to the 50/50 blend weights on a monthly basis. Aperio Domestic Quality also utilizes the Earnings Yield factor in the Barra US Total Market Equity Model (USSLOW) as part of its strategy. The Earnings Yield factor, along with all the other intended and unintended factor bets that are not categorized as quality in this study, may have contributed to the analysis results and references to returns, risks, performance, tracking error, and other such characteristics describing portfolios in this paper.

<sup>8</sup> Replication Tracking Error: 0.98%.

<sup>9</sup> Total management fees are calculated by adding 1/12th of 0.75% (GURU's annual fund management fee) back to GURU's monthly NAV returns, for each period shown.

<sup>10</sup> Average monthly: 0.03%.

## Disclosure

The information contained within this paper was carefully compiled from sources Aperio believes to be reliable, but we cannot guarantee accuracy. We provide this information with the understanding that we are not engaged in rendering legal, accounting, or tax services. In particular, none of the examples should be considered advice tailored to the needs of any specific investor. We recommend that all investors seek out the services of competent professionals in any of the aforementioned areas.

With respect to the description of any investment strategies, simulations, or investment recommendations, we cannot provide any assurances that they will perform as expected and as described in our materials. Past performance is not indicative of future results. Every investment program has the potential for loss as well as gain.

Due to the complexity of tax law, not every single taxpayer will face the situations described herein exactly as calculated or stated, i.e., the examples and calculations are intended to be representative of some but not all taxpayers. Since each investor's situation may be different in terms of income tax, estate tax, and asset allocation, there may be situations in which the recommendations would not apply. Please discuss any individual situation with tax and investment advisors first before proceeding. Taxpayers paying lower tax rates than those assumed or without taxable income would earn smaller tax benefits from tax-advantaged indexing or even none at all compared to those described.

Back-testing involves simulation of a quantitative investment model by applying all rules, thresholds, and strategies to a hypothetical portfolio during a specific market period and measuring the changes in value of the hypothetical portfolio based on the actual market prices of portfolio securities. Investors should be aware of the following: 1) Back-tested performance does not represent actual trading in an account and should not be interpreted as such; 2) back-tested performance does not reflect the impact that material economic and market factors might have had on the manager's decision-making process if the manager were actually managing clients' assets; and 3) there is no indication that the back-tested performance would have been achieved by a manager had the program been activated during the periods presented above. For back-tested performance comparisons, the benchmark returns are simulated using historical constituents' weights and total returns.

The Russell 3000® Index is an equity benchmark for US stock performance. It is a capitalization-weighted index covering the largest 3,000 publicly traded US stocks. The index represents approximately 98% of the total market capitalization of the US stock market.

The S&P 500® Index is an equity benchmark for US stock performance. It is a capitalization-weighted index covering 500 large US companies chosen by Standard & Poor's for market size, liquidity, and industry group representation.

The CBOE Volatility Index® (VIX® Index®) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices.

The Solactive Guru Index is comprised of the top US listed equity positions reported on Form 13F by a select group of entities that Solactive AG characterizes as hedge funds.