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## The Quest for Quality

Parametric's Quality Strategy offers investors exposure to profitable companies with stable earnings and low financial leverage. These types of firms tend to have durable business models, sustainable competitive advantages, and strong balance sheets. Their profits tend to be less sensitive to economic and business cycles, which should result in low levels of bankruptcy risk. Such firms are more likely to weather economic downturns and periods of financial market distress. They display defensive characteristics and typically face smaller drawdowns in bear markets.

In this paper, we show how Parametric has designed its Quality Strategy using a quantitative factor-based approach. This approach offers exposure to quality firms in a risk-efficient manner that keeps unintended factor exposures in check. The resulting strategy has an attractive risk-return profile. Our backtests indicate the strategy would have outperformed the market with lower levels of volatility, plus some downside protection in bear markets. It's also more risk-efficient than leading quality-themed exchange-traded funds (ETFs) available in the marketplace, since it offers a higher quality exposure per unit of tracking error risk. These risk-aware and risk-efficient features distinguish Parametric's strategy from those offered by other firms.

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## Portfolio construction

Parametric defines *quality stocks* as those that share the following three attributes: profitability, low earnings variability, and low financial leverage. The idea is to pick companies that generate sustainable profits and are capable of weathering economic downturns and periods of financial crisis. Research shows that each of these quality metrics is associated with long-term outperformance, providing evidence for a “quality premium.”<sup>1</sup> Index providers like MSCI and FTSE Russell have adopted a similar approach and use these three attributes to define quality.<sup>2</sup>

While we use this same basic framework to define quality, we also incorporate a number of enhancements to reflect other research in this area:

- While index providers primarily use return-on-assets (ROA) and return-on-equity (ROE) to measure profitability, we additionally incorporate gross profitability metrics when measuring profitability. This is based on research by Novy-Marx (2013), who found that gross profitability is a strong predictor of future returns, since profitable firms have significantly higher returns than unprofitable firms and earn a gross profitability premium.
- We incorporate accruals-based earnings quality metrics in addition to earnings variability. Accruals measure the difference between cash and accounting earnings, with lower accruals reflecting higher earnings quality. Firms with high levels of accruals are likely to be engaged in earnings management to achieve desired financial reporting results. Incorporating earnings quality metrics should help weed out such firms. In addition, it can potentially help boost performance, based on findings by Sloan (1996) that companies with lower accruals earn higher returns.<sup>4</sup>

Based on the above summary, Parametric measures a firm’s quality as follows:

**Parametric quality exposure = 50% profitability + 25% earnings quality and variability  
+ 25% financial leverage**

The profitability, earnings, and leverage factors are based on style-risk factors in Barra’s risk model. Quality firms are those with high profitability, high earnings quality, low earnings variability, and low financial leverage. Profitability gets a higher weight in the above formulation than the other metrics as profitability is the primary determinant of quality.<sup>3</sup> Firms with sustainable competitive advantages should be profitable; low earnings variability is a good attribute for a firm only if it is profitable to begin with.

Parametric constructs its Quality Strategy in a risk-efficient way via an optimizer, with the objective of maximizing quality exposure subject to constraints on unintended style-risk factors, and country, currency, and sector bets. These constraints help ensure that any tracking error risk is primarily taken to gain the desired quality exposure. This helps make the strategy more risk-efficient compared to other quality strategies offered in the marketplace.

The eligible universe of securities consists of large-cap and mid-cap stocks from the S&P® Global BMI Index. The universe is restricted to US stocks for the US Quality Strategy and to stocks from countries in the MSCI EAFE Index and Canada for the Developed Markets ex-US Quality Strategy. The strategies are typically reconstituted annually, but may occasionally be reconstituted between the annual reconstitutions to move targeted exposures to desirable levels. Also, turnover constraints may be imposed to strike the right balance between the level of exposure to desired factors and the level of turnover incurred to attain them.

<sup>1</sup> GMO. “The Case for Quality – The Danger of Junk.” Whitepaper, GMO, March 2004.

<sup>2</sup> MSCI. “MSCI Quality Indices Methodology.” MSCI, May 2013; FTSE Russell. “Russell Stability Index Series v2.0: Construction and Methodology.” FTSE Russell, December 2016.

<sup>3</sup> Robert Novy-Marx. “The Other Side of Value: The Gross Profitability Premium.” *Journal of Financial Economics* 108, no. 1 (May 2013): 1–28.

<sup>4</sup> Richard G. Sloan. “Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?” *The Accounting Review* 7, no. 3 (July 1996): 289–315.

## Performance

Figure 1 shows the backtested performance of the US Quality Strategy and the Developed Markets ex-US Quality Strategy from 1997 to 2019. Performance was calculated after deducting an annual management fee of 40 basis points (bps).

**Figure 1: Annualized backtested performance of Parametric Quality Strategies, 1997–2019**

	US Quality	Russell 1000 Index	Developed Markets ex-US Quality	MSCI World ex-US Index
Net total return	10.74%	8.77%	7.24%	4.99%
Net excess return	1.97%		2.25%	
Volatility	14.76%	15.08%	15.10%	16.20%
Tracking error	3.49%		3.15%	
Information ratio	0.56		0.72	
Max. drawdown	42.91%	51.13%	49.61%	56.63%
Rate of outperformance over rolling three-year periods	77.59%		82.57%	

Sources: PPA, Russell, and MSCI, 12/31/2019. Backtested performance is hypothetical and is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be relied upon to make investment decisions. Backtested performance is presented net of management fees and estimated trading costs and reflects the reinvestment of dividends. It is not possible to invest directly in an index. All investments are subject to the risk of loss. See Disclosures for additional information.

The simulations reflect that both strategies outperformed their respective benchmarks on a net-of-fee basis by approximately 2% with tracking error of approximately 3.5%. Both strategies exhibit defensive characteristics in that they have lower volatility and smaller drawdowns than the market. To capture the probability of outperformance associated with investing in these strategies, we calculated the rolling three-year returns on a monthly basis over the sample period. Based on the monthly time series of these rolling three-year returns, we calculated that both strategies would have outperformed their benchmarks more than 75% of the time.

To better illustrate the defensive characteristics of these strategies, we looked at the hypothetical performance of the strategies in up and down markets. Strategies that display defensive characteristics are expected to outperform in down markets. We define up and down markets based on the trough and peak levels of the Russell 1000 Index for US equities and the MSCI World ex-US Index for international equities. We have three up markets and two down markets over our sample period for both asset classes.

Figure 2 shows the net excess returns for the quality strategies in each of these market periods.

**Figure 2: Annualized backtested performance in up and down markets of Parametric Quality Strategies**

US market environment (up/down)	Russell 1000 total return	US Quality net excess return	Developed Markets ex-US market environment (up/down)	MSCI World ex-US Index total return	Developed Markets ex-US Quality net excess return
Jan 1997–Aug 2000 (up)	23.56%	5.96%	Jan 1997–Mar 2000 (up)	14.73%	5.38%
Sep 2000–Sep 2002 (down)	-24.99%	3.27%	Apr 2000–Mar 2003 (down)	-19.21%	1.74%
Oct 2002–Oct 2007 (up)	16.10%	-2.63%	Apr 2003–Oct 2007 (up)	28.13%	-2.65%
Nov 2007–Feb 2009 (down)	-41.55%	7.22%	Nov 2007–Feb 2009 (down)	-46.56%	6.37%
Mar 2009–Dec 2019 (up)	17.15%	1.21%	Mar 2009–Dec 2019 (up)	9.80%	2.26%

Source: PPA, Russell, and MSCI, 12/31/2019. Backtested performance is hypothetical and is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be relied upon to make investment decisions. Backtested performance is presented net of management fees and estimated trading costs and reflects the reinvestment of dividends. All investments are subject to the risk of loss. See Disclosures for additional information.

The backtests indicate that the strategies are defensive in nature because they would have performed better than the market in down markets, when investors are more concerned about capital preservation. The strategies offer this downside protection without necessarily sacrificing performance in up markets, as can be seen by both strategies outperforming in two of the three up-market periods.

In Figure 3, we show the simulated rolling three-year annualized excess returns (net of fees) for the strategies. Except for the few years leading up to the global financial crisis of 2008, the strategies would have generally earned similar or better returns than the market.

**Figure 3: Rolling three-year annualized excess returns of Parametric Quality Strategies**



Sources: PPA, Russell, and MSCI, 12/31/2019. Backtested performance is hypothetical and is provided for illustrative purposes only. It does not reflect the experience of any investor and should not be relied upon to make investment decisions. Backtested performance is presented net of management fees and estimated trading costs and reflects the reinvestment of dividends. It is not possible to invest directly in an index. All investments are subject to the risk of loss. See Disclosures for additional information.

## Risk efficiency

To show the effect of Parametric's risk-efficient strategy construction, we compared Parametric's quality strategies with quality-focused ETFs offered by iShares and PowerShares. In figure 4, we compare the active exposures to the quality factor as well as the tracking error risk taken to get this exposure. We see that the Parametric Quality Strategy offers higher exposure to the quality factor than the comparable ETFs in both US and international market segments. Exposure to the underlying profitability, earnings, and leverage factors is typically more pronounced for Parametric's quality strategies.

To measure the active risk taken to get this exposure, we calculate the forecasted tracking error based on Barra's risk model. We observe that Parametric's quality strategies have similar levels of tracking error risk to those of comparable ETFs. We also calculate the quality exposure-to-tracking error ratio as a measure of risk efficiency.<sup>5</sup> Portfolios that demonstrate a higher ratio are more risk-efficient in attaining the desired quality exposure. Parametric's quality strategies are more risk-efficient in all instances because they provide much higher quality exposure per unit of tracking error. This result is not surprising given how Parametric constructs its quality strategies. Both the PowerShares and iShares ETFs have a large negative active exposure to the value factor, likely due to the fact that profitable firms generally have higher price-multiple ratios. On the other hand, Parametric's quality strategies have a much smaller negative exposure to the value factor due to constraints on unintended style-risk factors.

**Figure 4: Active exposure and risk efficiency of Parametric Quality Strategies (as of 12/31/2019)<sup>a</sup>**

	Parametric US Quality Model	iShares Edge MSCI USA Quality Factor ETF (QUAL)	Invesco S&P 500 <sup>®</sup> Quality ETF (SPHQ)	Parametric Developed Markets ex-US Quality Model	iShares Edge MSCI Intl Quality Factor ETF (IQLT)	Invesco S&P International Developed Quality ETF (IDHQ)
<b>Active exposures<sup>b</sup></b>						
Quality exposure	0.52	0.26	0.33	0.61	0.34	0.52
Profitability	0.81	0.36	0.46	0.81	0.45	0.77
Earnings quality and variability <sup>c</sup>	0.18	0.07	0.09	0.12	0.12	0.07
Leverage	-0.29	-0.25	-0.29	-0.69	-0.34	-0.46
<b>Risk efficiency</b>						
Forecasted tracking error (%)	2.73	2.01	2.69	2.03	1.97	3.00
Quality exposure-to- tracking-error ratio	0.19	0.13	0.12	0.30	0.17	0.17

<sup>5</sup> Jennifer Bender, Xiaole Sun, and Taie Wang. "A New Metric of Smart Beta: Factor Exposure per Unit of Tracking Error." *The Journal of Index Investing* 7, no. 2 (Fall 2016): 109–118; Paul Bouchev, Maximilian Lutz, Vassilii Nemtchinov, and Mahesh Pritamani. "Accentuate the Positive, Eliminate the Negative: Using Constraints to Amplify Factor-Based Indexes." *The Journal of Index Investing* 8, no. 4 (Spring 2018): 93–111.

<sup>a</sup> The benchmark used to calculate active exposures and tracking error is the Russell 1000 Index for the US quality portfolios and the MSCI World ex-US Index for the international quality portfolios.

<sup>b</sup> Active exposure is expressed in units of standard deviation.

<sup>c</sup> A higher score indicates high earnings quality and low earnings variability.

Sources: Parametric, BlackRock, and Invesco, 12/31/2019. For illustrative purposes only. Model data is hypothetical and does not reflect the experience of any investor. Not a recommendation to buy, sell, or hold any security. Comparing the management and performance of a separate account to an exchange-traded fund is not a true and equal comparison due to differences in guidelines and restrictions, fees and expenses, and cash flows, among other factors. Because of these disparities, investors and clients are cautioned against undue reliance on separate account and fund performance comparisons.

## Conclusion

Parametric's Quality Strategy offers exposure to profitable companies that demonstrate low levels of financial leverage and stable earnings patterns. The strategy offers exposure to quality firms in a risk-efficient manner by keeping unintended factor exposures in check. The resulting quality strategy has an attractive risk-return profile, outperforming the market in backtests with lower levels of volatility and some downside protection in bear markets. It's also more risk-efficient than leading quality ETFs available in the marketplace in that it offers a higher quality exposure per unit of tracking error risk.

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2015 is back-tested performance. The model portfolio is fully invested and does not maintain any cash. Back-test dividends were reinvested into individual securities (i.e. initial weights are drifted forward, reinvesting dividends). Model dividends are reinvested across entire portfolio (i.e. initial shares do not change). The model return assumes no additional cash inflows or outflows. The back-test and model data reflect an annual reconstitution in October and assumes that all securities held were available for purchase and sufficiently liquid to achieve the trading activity used by the model. Transactions are executed, without exception, market-on-close; securities are priced by FactSet. Performance is calculated by aggregating security total return times security weight for each security in the portfolio each month. Performance reflects the deduction of management fees (40 bps), the highest fee charged to retail investors, and estimated transaction costs (10 bps). There were no material changes to the investment model during the period presented.

The Developed Markets ex-US Quality Model portfolio was inception on October 15, 2015. Performance presented for January 1, 1997 through October 30, 2015 is back-tested performance. The model portfolio is fully invested and does not maintain any cash. Back-test dividends were reinvested into individual securities (i.e. initial weights are drifted forward, reinvesting dividends). Model dividends are reinvested across entire portfolio (i.e. initial shares do not change). The model return assumes no additional cash inflows or outflows. The back-test and model data reflect an annual reconstitution in October and assumes that all securities held were available for purchase and sufficiently liquid to achieve the trading activity used by the model. Transactions are executed, without exception, market-on-close; securities are priced by FactSet. Performance is calculated by aggregating security total return times security weight for each security in the portfolio each month. Performance reflects the deduction of management fees (40 bps), the highest fee charged to retail investors, and estimated transaction costs (15 bps). There were no material changes to the investment model during the period presented.

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