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Parametric Factor Strategies Methodology

Parametric Factor Strategies are designed to provide cost-efficient and risk-controlled exposures to popular factors—such as dividend yield, value, quality, momentum, and low volatility—through transparent, rules-based portfolio construction. Introducing a systematic bias toward these factors has been found to deliver an attractive risk-return profile, but it also introduces additional turnover, which may erode some of that return. Parametric’s approach to factor-based investing is designed to help clients keep more of their investment return through turnover mitigation, active risk controls, and systematic tax management when applicable.

Parametric uses an optimization process to construct the portfolio in a risk-efficient way by controlling unintended factor exposures. This ensures that exposure to the desired factors is the primary driver of tracking error. As part of this optimization process, we institute constraints versus the market-cap universe to prevent the introduction of unintended sector, security, or country concentration. Parametric Factor Strategies are implemented in separately managed accounts, which allows for additional customization, including tax management.

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Product availability

Parametric offers five stand-alone single-factor strategies, each with a US and a developed international version, for a total of 10 single-factor strategies. Parametric also offers two standardized multifactor blends: value/size/profitability (VSP) and value/momentum/profitability (VMP). Clients can blend together various single-factor strategies to create their own multifactor strategy.

Factor-based strategies	Asset classes
Single-factor strategies	
Dividend yield	US large/mid, world ex-US large/mid
Value	US large/mid, world ex-US large/mid
Quality	US large/mid, world ex-US large/mid
Momentum	US large/mid, world ex-US large/mid
Low volatility	US large/mid, world ex-US large/mid
Multifactor strategies	
Value/momentum/profitability (VMP)	US large/mid, US small, world ex-US large/mid
Value/size/profitability (VSP)	US broad market

Construction methodology

The starting investment universe is the S&P Global Broad Market Index (BMI), subject to liquidity and capacity constraints. The eligible universes for the various asset classes are generated as follows:

- **US large/mid-cap:** The eligible universe is the top 90% of the capitalization of the S&P US BMI, which is determined at the time of annual reconstitution.
- **US small-cap:** The eligible universe is the bottom 10% of the capitalization of the S&P US BMI, which is determined at the time of annual reconstitution.
- **World ex-US large/mid-cap:** The eligible universe is stocks in the S&P Global BMI that are designated as large-cap or mid-cap from countries in the MSCI World ex-US Index. Typically 85% of the capitalization of each country should be represented in the large/mid-cap universe.

We exclude stocks with any of the following attributes from the eligible universes:

- K1 issuers
- Price below \$1.50
- Average daily volume below \$100,000
- Spreads above 200 basis points
- Eaton Vance stock (parent company of Parametric)

Each factor strategy is represented by a model portfolio, which is constructed through an optimization process. The optimization objective for each model portfolio is to maximize exposure to the target factor, subject to constraints on unintended factors, country, currency, and sector exposures. This results in a pure expression of the targeted factor with a predicted tracking error to the cap-weighted benchmark of 3% to 6%, depending on the factor. Parametric uses MSCI Barra risk data and factors as descriptors in our optimization process. See Appendix A for more details.

Single-factor models

Value: Deliver high exposure to stocks that have low prices relative to their fundamental value.

Quality: Deliver high exposure to stocks that are characterized by high profitability, stable earnings, and low leverage.

Momentum: Deliver high exposure to stocks exhibiting recent relative outperformance.

Dividend yield: Deliver high exposure to companies with high dividend yield.

Low volatility: Deliver a portfolio with lower volatility than its benchmark.

Multifactor models

Value/momentum/profitability (VMP): Deliver high exposure to stocks simultaneously exhibiting a low price-to-book ratio, strong relative performance, and high profitability through a bottom-up selection approach.

Value/size/profitability (VSP): Deliver high exposure to stocks simultaneously exhibiting a low price-to-book ratio and low price-to-earnings ratio while overweighting the mid- and small-capitalization market segments and controlling for profitability through a hybrid bottom-up/top-down approach.

We employ a number of optimization constraints at each reconstitution to control the level of active exposure to other factors and limit concentration risk. When constraints are imposed on active exposures, the cap-weighted eligible universe serves as the benchmark. The specific constraints are as follows:

- For most strategies, the weight of each stock won't exceed four times its weight in the cap-weighted universe. For VSP, the weight of each stock won't exceed two times its weight in the cap-weighted universe.
- The weight of each stock won't exceed 1.2 times the weight of the largest stock in the eligible universe.
- The nontargeted active factor exposures are bounded within 0.2 standard deviation units. For those related to the targeted factor exposures, we make the following exceptions to solve for collinearity:
 - Value: The dividend yield factor is bounded only from below, while the growth factor is bounded only from above, since these are related to the targeted value factor.
 - Dividend yield: Value and earnings yield factors are bounded only from below, while the growth factor is bounded only from above, since these are related to the targeted dividend-yield factor.
 - Low volatility: Beta and residual volatility factors are bounded only from above, since these are related to forecast volatility.
 - VMP: Dividend yield is bounded only from below, while growth is bounded only from above, since these are related to the value component of the VMP factor.
 - VSP: Dividend yield is bounded only from below, while growth is bounded only from above, since these are related to the value component of the VSP factor.
- The weight of each sector and industry are bounded within 5% from the sector and industry factor exposures of the cap-weighted universe, with the exception of the dividend yield factor, in which case active exposure to real estate investment trusts can't exceed 0%.

We may impose turnover constraints to strike the right balance between the level of exposure to desired factors exhibited by the model and the level of turnover incurred to attain it. In instances where we target more than one intended factor, we may impose constraints on one or more of the targeted factors to ensure that the magnitude of exposure to the targeted factors relative to each another is as desired.

We reconstitute our models annually or semiannually in order to minimize turnover. However, the investment committee may vote to reconstitute the models between annual reconstitutions if necessary. The primary reasons for a midyear reconstruction would be dilution in the level of exposure to the desired factors or overexposure to non-target factors. Dividend yield strategies will be rebalanced if the weight of non-dividend-paying securities exceeds 5%, in which case we remove these securities and reweight the remaining securities.

Strategy implementation and maintenance

The portfolio management team is responsible for implementing our factor strategies. The team's main area of focus is to ensure portfolio exposures are properly maintained on a daily basis in adherence with model portfolios that serve as the targets. Managers optimize actual portfolios to match the characteristics of the model portfolio, including factor exposures, sector and industry weights, and country and currency weights. Managers also factor in transaction costs, client-directed specifications such as ESG restrictions, and liquidity prior to trading. For taxable clients, the portfolio managers employ tax-management techniques, such as tax-loss harvesting and gain deferral, to increase after-tax returns.

Parametric's research and strategy teams maintain the rules behind the strategies, while the Parametric Investment Strategy team monitors the models. The strategist, in conjunction with the chief investment officer, leads the development of the investment rules that govern the models. The strategist may also recommend enhancements to such rules, and the investment committee votes on all significant proposals. The investment committee is composed of representatives from our portfolio management and research and strategy teams and led by the chief investment officer and the head of investment management. In addition to approving any strategy enhancements, the investment committee meets monthly to monitor active exposures and ensure the models are aligned with their respective investment theses. The committee reviews performance and its drivers, realized and predicted tracking error versus the cap-weighted benchmark, and upcoming corporate action decisions.

Portfolio managers regularly monitor all accounts, which are formally reviewed each month by the Custom Equity Investment Committee to ensure that performance is within expectations. The committee further analyzes any accounts not tracking within expected bounds to ensure that the deviation is due to acceptable circumstances, such as client restrictions.

Appendix A: Parametric factor definitions

US factor definitions			
Dividend yield	100% dividend yield <i>75% dividend-to-price + 25% analyst-predicted dividend-to-price</i>		
Value	75% value <i>85% book-to-price + 5% sales-to-price + 5% cash-flow-to-price + 5% structural value</i>	+ 25% earnings yield <i>5% earnings-to-enterprise value + 45% earnings-to-price + 50% predicted earnings-to-price</i>	
Quality	50% profitability <i>4.4% ROA + 4.4% ROE + 30.4% gross profitability + 30.4% gross margin + 30.4% asset turnover</i>	+ 25% earnings quality <i>11.8% accruals (balance-sheet version) + 5.8% accruals (cash-flow statement version) + 11.8% variability in sales + 11.8% variability in earnings + 11.8% variability in cash flows + 47.0% standard deviation of analyst-predicted earnings per share</i>	+ 25% leverage (-1) <i>50% market leverage + 20% book leverage + 30% debt-to-assets</i>
Momentum	100% momentum <i>100% relative strength</i>		
Low volatility	Minimum variance portfolio		
VMP	40% value composite <i>75% value: 85% book-to-price + 5% sales-to-price + 5% cash-flow-to-price + 5% structural value 25% earnings yield: 5% earnings-to-enterprise value + 45% earnings-to-price + 50% predicted-earnings-to-price</i>	+ 40% momentum <i>100% relative strength</i>	+ 20% profitability <i>4.4% ROA + 4.4% ROE + 30.4% gross profitability + 30.4% gross margin + 30.4% asset turnover</i>
VMP small	Same as PPA VMP		
VSP	40% PPA Value in large-cap universe <i>with Barra profitability active exposure >=0</i>	+ 30% PPA Value in mid-cap universe <i>with Barra profitability active exposure >=0</i>	+ 30% PPA Value in small-cap universe <i>with Barra profitability active exposure >=0</i>
International factor definitions			
Dividend yield	100% dividend yield <i>50% dividend-to-price + 50% analyst-predicted dividend-to-price</i>		
Value	75% value <i>100% book-to-price</i>	+ 25% earnings yield <i>10% cash-earnings-to-price + 20% earnings-to-enterprise-value + 20% earnings-to-price + 50% predicted-earnings-to-price</i>	
Quality	50% profitability <i>25% ROA + 25% gross profitability + 25% gross margin + 25% asset turnover</i>	+ 25% earnings quality <i>10% accruals (balance-sheet version) + 7.5% accruals (cash-flow statement version) + 7.5% cash-earnings-to-earnings + 5% variability in sales + 18.75% variability in earnings + 15% variability in cash flows + 26.25% standard deviation of analyst-predicted earnings-to-price</i>	+ 25% leverage (-1) <i>30% market leverage + 30% book leverage + 40% debt-to-assets</i>
Momentum	100% momentum <i>50% relative strength + 50% historical alpha</i>		
Low volatility	Minimum variance portfolio		
VMP	40% value <i>100% book-to-price</i>	+ 40% momentum <i>50% relative strength + 50% historical alpha</i>	+ 20% profitability <i>25% ROA + 25% gross profitability + 25% gross margin + 25% asset turnover</i>



Disclosure

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