Understanding the Two Sigma Factor Lens: A Primer on Equity Styles

The Two Sigma Factor Lens consists of Core Macro, Secondary Macro, Macro Styles, and Equity Styles. Core and Secondary Macro factors tend to be explanatory across asset classes. Style factors tend to be explanatory within asset classes, and importantly, are associated with risk premia and positive returns over full business cycles.[1]

Venn's Equity Style factors aim to identify and explain the exposure, risk, and return of investors seeking higher returns, primarily within their equity sleeve. They are designed to be global,[2] long/short, and maintain beta neutrality. In this case, "beta-neutral" means that the long and short portfolios within each Equity Style factor aim to maintain equal betas to global equities.

Exhibit 1: Equity Style Description, Performance, and Risk Since 1998

Equity Style	Description	Return	Volatility	Sharpe
Quality	Long stocks with higher profitability ratios and lower leverage and short the opposite	4.90%	5.17%	0.95
Crowding	Long U.S. stocks with lower residual short interest and short the opposite	2.05%	2.28%	0.90
Low Risk	Long stocks with lower betas to global equity markets and lower residual volatility and short the opposite	6.85%	11.35%	0.64
Momentum	Long relatively higher performing stocks over the past 12 months and short the opposite	5.44%	11.03%	0.54
Value	Long stocks with higher book to price, earnings yield, and dividend yield and short the opposite	4.37%	9.93%	0.48
Small Cap	Long stocks with smaller market capitalizations and short the opposite	0.02%	6.22%	0.03

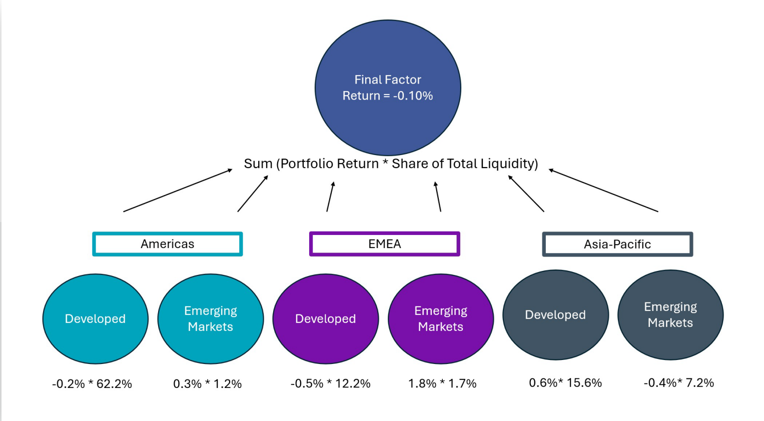
Source: Venn by Two Sigma. Period from 8/7/1998–11/26/2024.
* Small Cap exposure is often targeted by investors as a way to achieve higher return, and is thus a valuable factor for explaining the risk and return of investor portfolios. However, our beta-neutral implementation has experienced near zero returns over its full history. This may suggest that small cap stocks have typically been rewarded for more exposure to the equity risk premium, rather than a unique Small Cap factor.

How Does Venn Construct Its Equity Style Factors?

1. For each factor, across three regions, we create both developed and emerging market long/short and beta-neutral portfolios. For Crowding, we build a single U.S. portfolio.
2. Within each portfolio's universe of stocks, we standardize and combine factor-specific inputs to define each stock's loading to the respective factor.
3. Stocks with positive loadings are put in long portfolios and stocks with negative loadings are put in short portfolios.
4. We then combine all long/short region portfolios by weighting each portfolio's return by its share of total available liquidity. We then sum those values together to form the final factor portfolio return.

[1]Other factors outside of Style factors can be associated with risk premia. For example, there is strong economic rationale for the Equity factor to generate a positive return over the risk-free rate over time.
[2]Crowding is the exception because it only considers U.S. securities.

Exhibit 2: Example of Calculating an Equity Style Factor on a Single Day



Source: Venn by Two Sigma. For Illustration Purposes Only.

Using Venn's Equity Styles for Factor Analysis

While Equity Style exposure can be found across a multi-asset portfolio, the most intuitive results are often found in long/short equity risk premia funds. For example, consider the anonymous manager below:

- **Exposure:** They have exposure to all six of Venn's Equity Styles, highlighting that they are successfully capturing known risk premia.
- **Risk:** Among Equity Styles, the Value factor was their largest driver of risk. Quality exposure lowered portfolio risk.
- **Return:** The Momentum factor was their largest driver of return, even though it had lower exposure and contributed less risk than some other Equity Styles.

Exhibit 3: Venn Factor Analysis of an Anonymous Long/Short Equity Risk Premia Fund

Source: Venn by Two Sigma. 7/17/2013–11/29/2024. Note: Only Equity Styles are being shown. Contribution to risk is out of 100%, meaning other factors also contributed to this manager's overall risk. Small Cap was statistically insignificant.