OVERVIEW OF MULTI-ASSET, MULTI-RISK PREMIA INVESTMENT PROGRAM UNIVERSE

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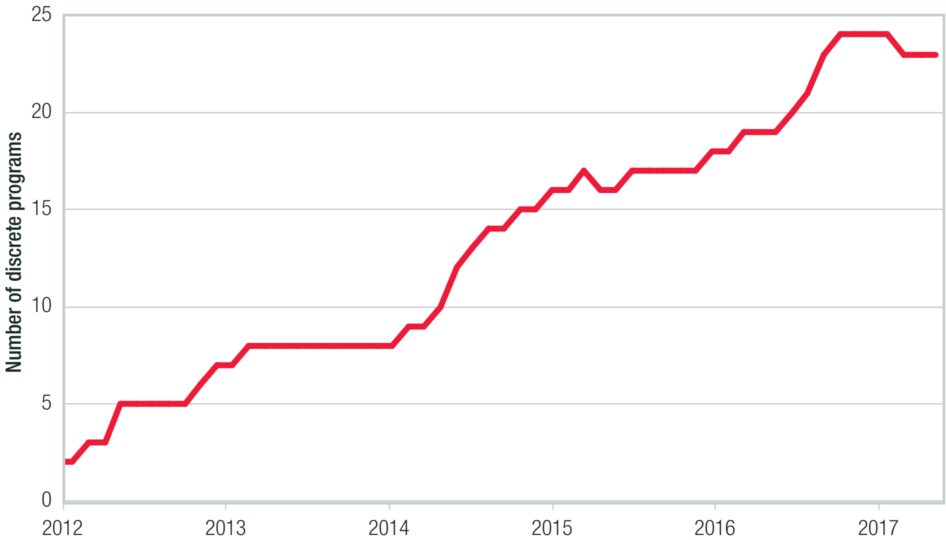
There is an expanding universe of investment programs that are focused on capturing the returns of specific and well known market-related risks: commonly referred to as "risk premia." The most important shared characteristics of these risk premia are that they are well researched by academics and practitioners, economically and behavorially intuitive, prevalent across asset classes, persistent over time, and tradable through liquid instruments. The generic nature of risk premia positions them well to be traded systematically and in a manner that is transparent to investors.

Those familiar with the long-standing Fama-French three-factor stock return model are likely familiar with the concept of risk premia. Fama-French expands the traditional capital asset pricing model by including two additional risk-premia factors: small-market capitalization stocks versus large (small-cap premium), and high book-to-market ratio minus low (value premium). Many other risk premia have been identified across several asset classes, and today some of the most widely utilized risk premia include value, carry, and momentum.

In this snapshot, we explore the key characteristics of the growing universe of multi-asset, multi-risk premia investment programs, where investor interest appears greatest. We observe a proliferation of low-fee programs for this strategy concurrent with growing demand, and as of June 2017 we can measure approximately $35 billion allocated to the strategy.

Exhibit 1 illustrates the significant increase in the number of these programs, demonstrating how the universe has grown from only a couple of offerings as of the end of 2012 to almost two dozen discrete programs through June 2017. This represents a greater than tenfold increase over this five-and-a-half-year time period.

EXHIBIT 1
Growth of Multi-Asset, Multi-Risk Premia Program Universe



Source: SG CIB

Despite the great amount of investor demand in the space, not all programs have managed to survive. In fact, more than 10% of programs that we identified have closed over this time period.

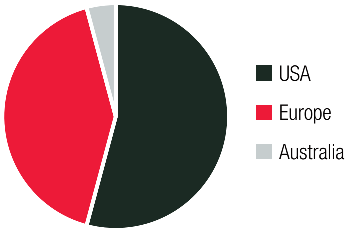
BUILDING A DATASET

One of the greatest challenges in creating a risk-premia program database is selecting the appropriate programs despite their widely varying and possibly ambiguous labels. Some of the additional terms currently used to describe risk-premia investing include style premia, factor investing, diversified alternatives and alternative beta. We sought to identify all of the current and past programs that trade risk-premia factors as the key drivers of return by looking beyond the names used by those programs.

In building our multi-asset, multi-risk premia program dataset, we selected only those programs that diversified across multiple asset classes and utilized multiple risk-premia factors. These programs typically trade equities, fixed income, currencies, and in many cases commodities, and they aim to capture a diversified number of discrete risk premia, most prevalently including value, carry, and momentum. We excluded single-asset-class programs (i.e. equity market neutral – value, momentum) and single-risk-premia programs (i.e. trend followers – momentum), as they are often indistinct from active, full-fee hedge fund managers. Additionally, we excluded customizable solutions, such as those offered by sell-side banking divisions, as those programs are often bespoke, resulting in a lack of composite track records.

Through our search efforts, we found that multi-asset, multi-risk premia programs are offered globally but without much representation in the Asia-Pacific region. Exhibit 2 illustrates that the managers currently offering these programs are primarily established in the U.S. (more than half of the population), followed by Europe (approximately two-fifths of the population), and with a lone manager based in Australia.

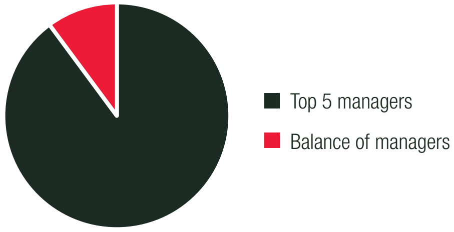
EXHIBIT 2
Current Manager Domicile Breakdown



Source: SG CIB

We additionally observe that the approximately $35 billion of assets under management allocated to multi-asset, multi-risk premia programs are concentrated among a very small group of managers. Exhibit 3 illustrates this highly skewed distribution between managers, with nearly 90% of assets invested in the strategy being allocated to only five managers. Each of these five largest managers have greater than $1 billion of multi-asset, multi-risk premia strategy assets, while no managers outside of the top five currently manage as much as $1 billion in the strategy.

EXHIBIT 3
Strategy AUM: Manager-level Composition



Source: SG CIB

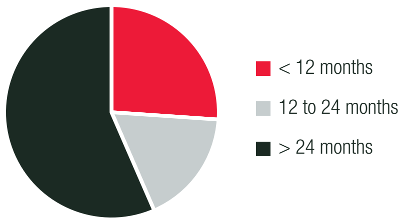
We found in our dataset that many managers offer several different yet substantially similar programs, with the primary differences generally being multiple-investment-vehicle types or volatility levels. To avoid over-representing these similar programs, we considered only the largest discrete program from each manager as of June 2017. We also only considered those programs that had achieved $10 million in assets at some point in their histories. This left 26 discrete programs in our dataset for analysis: 23 live programs and three dead programs.

It should be noted that all of the program data we collected for this study were acquired from the investment managers offering the risk-premia programs, and all return data were net of any management and incentive fees. In all cases, several months to several years of track record were generated in these programs before they came to our attention. This fact raises some concerns that self-selection and survivorship bias may be present in the dataset, resulting in historical returns that may be upwardly biased. To help counterbalance these biases, efforts were made to identify and include "dead" programs within the strategy. It is also possible that other programs were launched and subsequently closed before coming to this team's attention or detection. Lastly, it should be noted that this is not an exhaustive dataset. There were cases where managers did not respond to requests and therefore were not able to be included.

TRACK RECORDS

The track record histories for the 23 live, multi-asset, multi-risk premia programs are still relatively short, with a median track record length of only 27 months. The longest track record starts in December 2007, while the shortest commences in January 2017. Exhibit 4 illustrates that over a quarter of the track records are less than 12 months, while 57% have more than 24 months of performance history.

EXHIBIT 4
Length of Live Program Track Records



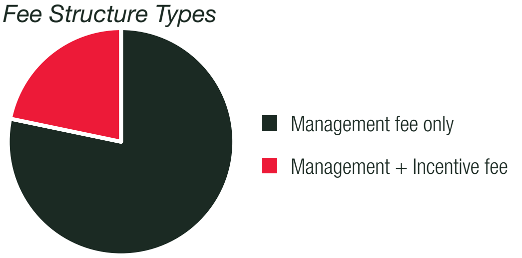
Source: SG CIB

FEE STRUCTURES

It is most frequent that an investment manager charges a flat management fee, rather than a management fee plus an incentive fee, for a multi-asset, multi-risk premia program. We find that more than three-quarters of programs (78.3%) in our dataset charge a management fee alone (Exhibit 5), with the balance of programs additionally charging an incentive fee.

EXHIBIT 5

Fee Structure Types



Source: SG CIB

Management-fee-only programs charge on average 0.93% whereas management-plus-incentive-fee programs charge 0.80% and 11.40% on average (Exhibit 6). Looking at the range of fees charged, when a program charges a management fee only, the lowest listed fee in the dataset is 0.40% and the highest is 1.55%. For those programs charging an incentive fee, the incentive fees range from 10% to 15%.

EXHIBIT 6

Average Fees Charged

Program charging:	Management fee only	Management + Incentive fee
Avg. Management Fee	0.93%	0.80%
Avg. Incentive Fee	–	11.40%
Avg. Standard Dev of Net Returns	5.61%	7.64%

Source: SG CIB

We find the volatility of returns to be 36% higher for those programs that charge an incentive fee versus those that charge a management fee only. This result is achieved as the management-plus-incentive-fee group does not contain any of the programs with the lowest standard deviation of returns. The management-fee-only set contains nine programs with standard deviations below 6.5%, while the management-plus-incentive-fee set contains none.

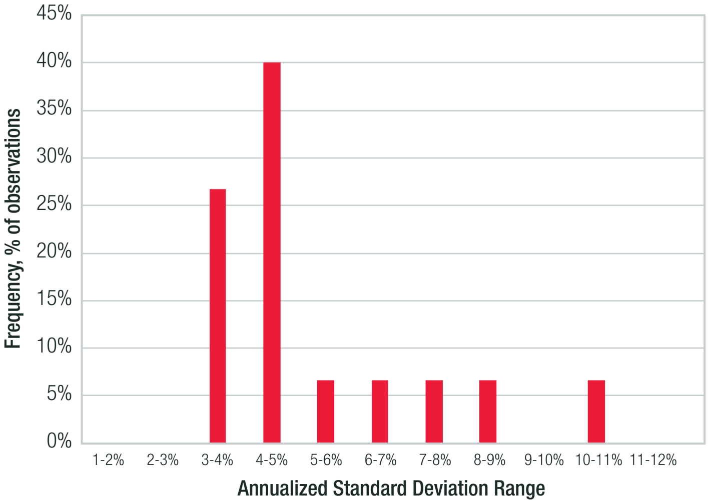
It should be noted that the fee analysis does not include the fee structures of separately managed accounts or other specially negotiated arrangements, which are generally not disclosed and can vary from the commingled products' "headline" fees due to the size of allocation, length of the commitment, and other relevant factors.

VOLATILITY DISTRIBUTION

In our study, 15 live programs currently have track records of at least 18 months. This allows us to take a point-in-time examination of the past 18-month standard deviation of returns as of June 30, 2017. Exhibit 7 shows a distribution of annualized standard deviations from the lowest range of 3–4% to the highest of 10–11%. Return volatility over this time period has skewed towards the low end of the range. Two-thirds of the distribution occurs at less than a 5% annualized standard deviation of returns, with an overall average of 5.34%.

EXHIBIT 7

Last 18-month Trailing Volatility through June 2017



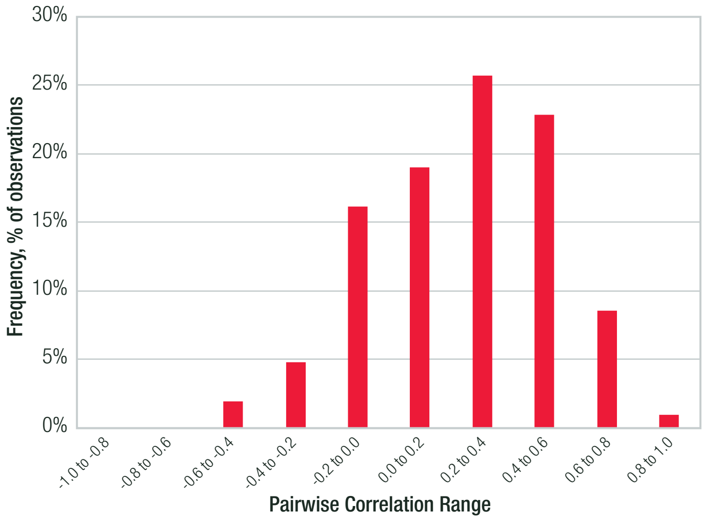
Source: SG CIB

PEER GROUP HETEROGENEITY

It would be reasonable to presume that multi-asset, multi-risk premia programs should act fairly similarly to one another due to the high amount of implementation commonalities among the group. As risk-premia factors are well known, simple, and commonly applied across risk-premia programs, these programs are expected to share a meaningful degree of strategic overlap. Additionally, considering the fact that there is a limited set of liquid markets in which these managers may effectively operate, high degrees of program correlation are reasonably expected. It is surprising then to discover that from a performance perspective, the differences between programs are greater than the similarities. As we can see in Exhibit 8, they are far from being all the same.

EXHIBIT 8

Last 18-month Pairwise Correlations through June 2017



Source: SG CIB

The distribution of pairwise correlations in Exhibit 8 was created with all currently live programs with at least 18 months of track record through June 30, 2017. Almost a quarter of the distribution – 23% – is made up of programs that have negative correlations with one another, emphasizing that there appears to be a lot of variation in terms of the ultimate implementation of a multi-asset, multi-risk premia strategy. We also observe that more than two-thirds of the distribution (68%) falls at less than 0.40 correlation, which we consider to be low. This leaves only 32% of the correlations to fall within a range of 0.40 and 1.00, with just 2% of the distribution having a correlation of 0.80 or higher. The average pairwise correlation was only 0.23.

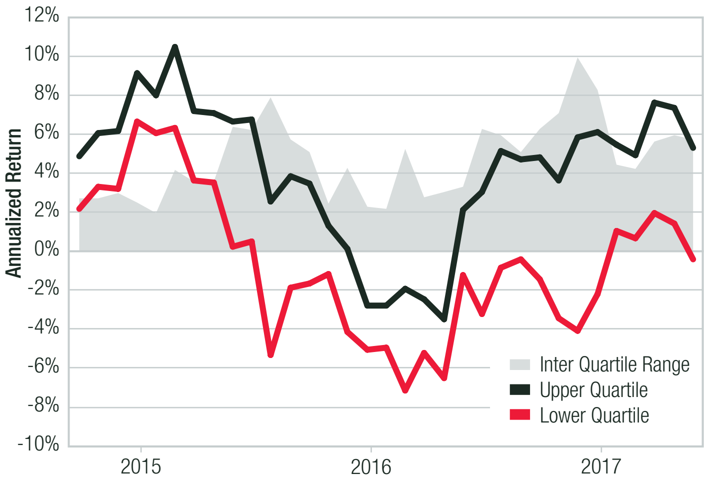
Even among the largest managers in the space, correlations are observed to be low. In fact, the average correlation among the top five largest programs is a mere 0.15 and includes the largest negative correlation in the analysis of -0.50.

RETURN DISPERSION OVER TIME

In order to better understand the amount of variability of program returns within the strategy, we visualize the dispersion of each program's 12-month rolling returns in Exhibit 9. We use a look-back time period that starts on November 2014, as this is first month in which there were at least 10 programs in the dataset. We observe that the interquartile range (IQR) between the first and third quartiles has averaged 4.73% over the time period analyzed, which is in line with expectations based upon the low volatility of the programs.

EXHIBIT 9

Risk Premia Programs: 12-month Rolling Return Dispersion



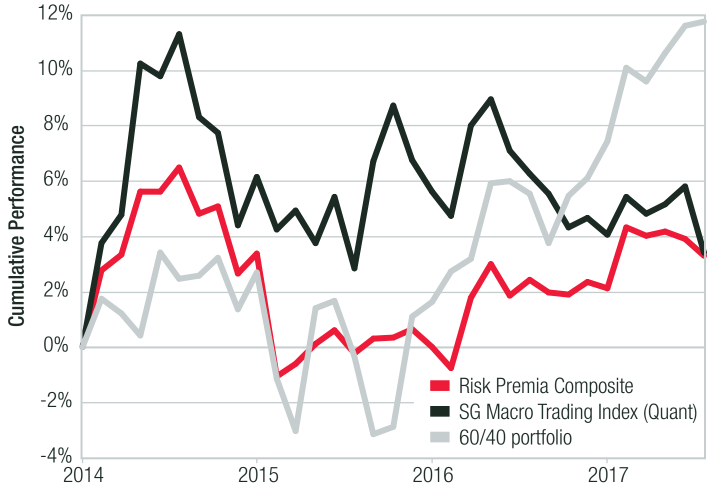
Source: SG CIB

A PEER GROUP COMPOSITE FOR MULTI-ASSET, MULTI-RISK PREMIA

As a next step, we aim to create a return composite for the multi-asset, multi-risk premia strategy using our dataset of 26 live and dead programs. This composite is equally weighted and has been created in a similar manner to the creation of the SG Prime Services' monthly hedge fund indices (see Appendix 1). The composite track record was started once at least 10 programs had active track records, which occurred in November 2014. As other programs continued to come online – or offline – over time, they were added or removed monthly, allowing 32 months of composite track record to June 2017. The 32-month track record for the multi-asset, multi-risk premia composite ("Risk Premia Composite", red line Exhibit 10) is shown compared to a traditional 60/40 stock-bond portfolio as well as the SG Quantitative Macro Index.

EXHIBIT 10

Risk Premia Composite: Cumulative Performance November 2014 to June 2017



Source: SG CIB, Bloomberg

In terms of performance over this time period, the cumulative return of the Risk Premia Composite was almost identical to the SG Macro Trading Index (Quant) yet trailed the traditional 60/40 benchmark but in both cases has done so with a lower amount of volatility. As such, the information ratio for the composite is greater than the quant macro index but trails the 60/40 portfolio due to the return disparity. Return, risk, and correlation figures for the Risk Premia Composite versus common traditional, alternative, and risk-premium benchmarks are displayed in the Exhibit 11 performance table below.

EXHIBIT 11

Performance Table: November 2014 to June 2017

	Annual Return	Annual StDev	Information Ratio	Correlation
Risk Premia Composite	1.23%	4.74%	0.26	1
SG Macro Trading Index (Quant)	1.27%	6.94%	0.18	0.75
SG Trend Index	-1.09%	11.19%	-0.10	0.75
SG CTA Index	0.23%	9.13%	0.03	0.74
Dollar Index (DXY)	3.65%	7.63%	0.48	0.44
60-40 portfolio <VBINX>	4.26%	6.42%	0.66	0.44
SGI Bond 10Y USD	3.32%	6.53%	0.51	0.43
MSCI World Index	6.51%	10.98%	0.59	0.30
SG Equity Quality Factor	3.63%	17.08%	0.21	0.21
SG Equity Long/Short	4.10%	5.90%	0.69	0.20
SG Equity Momentum Factor	2.68%	9.03%	0.30	0.19
SG Equity Market Neutral	2.44%	1.69%	1.44	0.19
Barclays World Bond Index	0.80%	5.02%	0.16	0.12
SGI FX-G10 Carry Trade Index	-4.31%	5.92%	-0.73	0.11
SG Equity Growth Factor	-0.39%	7.44%	-0.05	-0.05
SG Equity Value Factor	3.96%	10.28%	0.38	-0.20
Bloomberg Commodity Index TR	-12.19%	13.67%	-0.89	-0.23

Source: SG CIB, Bloomberg

The results in Exhibit 11 are sorted by correlation to help gauge which strategies may hold the greatest similarities with multi-asset, multi-risk premia. Within this benchmark set, the Risk Premia Composite correlates most highly with the SG Macro Trading Index (Quant), the SG

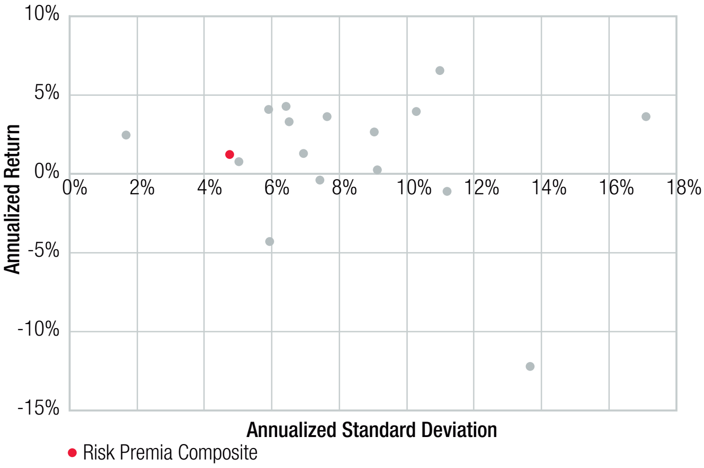
CTA Index and the SG Trend Index. Each of these indices are highly correlated to the momentum factor (trend following) across asset classes, while some of the constituents of the SG Macro Trading Index (Quant) also opportunistically take risk exposures in risk-premia carry trades in currencies and/or fixed income.

We observe the Risk Premia Composite is not as highly correlated with most of the risk-premia strategy component benchmarks and find that each of these display low historical correlations to each other. The equity-focused risk-premia factors such as Quality, Momentum, Growth and Value fall between 0.21 and -0.20 correlations. The Bloomberg Commodity Index registers as the most negatively correlated of the group at -0.23, leaving the balance of correlations between 0.11 and 0.44.

Equity Market Neutral and Equity Long/Short strategy peer group composites were constructed using our hedge fund database (see Appendix 2 for greater detail). In regards to the individual risk premia benchmarks, we use two investible indices from the SG Index team: SGI FX-G10 Carry Trade <SGIFXC10> and SGI Bond 10Y USD <SGIXBU10>, as well as Growth, Value, Quality and Momentum equity market-neutral investment styles as calculated by our colleagues from the SG Equity Quant Research team (please see Appendix 3 for the construction methodology).

EXHIBIT 12

Return - Risk Scatter Plot: November 2014 to June 2017



Source: SG CIB

From a risk/return perspective (Exhibit 12), the Risk Premia Composite registers one of the lowest standard deviations of returns. The composite's 4.74% standard deviation of returns is the second lowest during the observed time period, with only the Equity Market Neutral composite's 1.69% standard deviation being lower. The generally low level of volatility across the Risk Premia Composite constituent programs along with the low pairwise correlations between them are two of the main reasons that the Risk Premia Composite displays such a muted standard deviation of returns.

On the return side, although the composite's annualized return is below the median of the benchmarks, the 0.26 information ratio for the program is exactly at the median. The return-risk scatter plot shows that the composite has a similar volatility to the Barclays World Bond Index but with a slightly higher return.

CONCLUSION

Through this study, we observed that the number of multi-asset, multi-risk premia investment programs has grown steadily over the past five-plus years. This growth has come from across the globe, however most of the programs have originated in the U.S. and Europe. Track records are very short in this strategy, with a peer-group median track-record length of only 27 months, and more than a quarter of currently live programs have less than 12 months of track record.

The current level of assets under management allocated to multi-asset, multi-risk premia programs has grown to approximately $35 billion. These assets are highly concentrated among just five managers, comprising nearly 90% of the capital allocated to the strategy. Multi-asset, multi-risk premia program offerings generally have a "low-fee" structure with more than three-fourths of programs charging a flat management fee only, averaging 0.93%.

The differences in implementation across the strategy are meaningful, resulting in a fairly heterogeneous peer group. We observe that pairwise correlations between programs are very low – averaging just 0.23 in the analysis period – with more than two-thirds (68%) of those pairwise correlations measuring at less than 0.40.

We constructed a multi-asset, multi-risk premia program return composite for benchmarking purposes having 32 months of track record. The composite showed positive, albeit low, returns over the observed period. Correlations of the composite were highest against the SG Macro Trading Index (Quantitative), followed by the the SG Trend Index and the SG CTA Index. The volatility of returns for most multi-asset, multi-risk premia programs were found to be extremely low, which, combined with the low pairwise correlations, led to a low standard deviation of returns for the composite.

It is our objective to continue to carefully track the performance of risk-premia strategies and monitor the evolution of the multi-asset, multi-risk premia universe over time.

APPENDIX 1
SG INDEX CONSTRUCTION METHODOLOGY

The calculation methodology for an SG Index is: (1) Equally Weighted, (2) Monthly Rebalanced, and (3) Calculated in Base Currency (i.e. with no currency hedging). Calculation frequency is monthly and is based on manager-reported returns. Constituents are reconstituted quarterly from a broad base of programs. Managers must trade predominantly their given strategy (as determined by SG). Firm minimum AUM > $30 million.

APPENDIX 2
THE DATASET

For individual hedge fund data, we used our wider database that includes both live and dead funds. We used strategy filters to identify the Equity Long/Short and Equity Market Neutral funds, while removing the multiple-vehicle (e.g. onshore or offshore), currency and leverage share classes to yield a population of unique equity strategies.

APPENDIX 3
LONG/SHORT FACTOR CONSTRUCTION

The Long/Short Factors are created by calculating 39 underlying metrics on the constituents of the FTSE All World Indices (with the exception of the UK, where a wider universe of the FTSE 350 ex IT is used), which are then grouped into eight styles. Factor Combinations are then constructed using a number of the metrics within each style group. In this snapshot, we use six of the Long/Short Factor Combinations to represent various investment styles. These are built using an equally weighted Long/Short portfolio, which is long the top quintile and short the bottom quintile stocks based on the underlying factors. All portfolios are updated on a monthly basis and equal dollar weights given to each of the longs and shorts. For more details or further papers on their performance, please contact the author.

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