

# Macro Allocation Fund

*William Blair*

Investment Review

September 2016

Brian D. Singer, CFA, Partner  
Thomas Clarke, Partner  
Portfolio Managers

The Fund involves a high level of risk and may not be appropriate for everyone. You could lose money by investing in the Fund. There can be no assurance that the Fund's investment objective will be achieved. The Fund is not a complete investment program and you should only consider the Fund for the alternative portion of your portfolio. Separate accounts managed by the Advisor may invest in the Fund and, therefore, the Advisor at times may have discretionary authority over a significant portion of the assets invested in the Fund. In such instances, the Advisor's decision to make changes to or rebalance its clients' allocations in the separate accounts may substantially impact the Fund's performance. The Fund is designed for long-term investors.

The Fund may use investment techniques and financial instruments that may be considered aggressive—including but not limited to the use of futures contracts, options on futures contracts, securities and indices, forward contracts, swap agreements and similar instruments. Such techniques may also include short sales or other techniques that are intended to provide inverse exposure to a particular market or other asset class, as well as leverage. These techniques may expose the Fund to potentially dramatic changes (losses) in the value of certain of its portfolio holdings. Investments are subject to a number of other different types of risk, including market risk, asset allocation risk, credit risk, commodity risk, counterparty and contractual default risk, currency risk, and derivatives risk. For a more detailed explanation and discussion of these risks, please read the Fund's Prospectus.

**Performance cited represents past performance. Past performance does not guarantee future results and current performance may be lower or higher than the data quoted. Returns shown are average annual total returns, which assume reinvestment of dividends and capital gains. Investment returns and principal will fluctuate and you may have a gain or loss when you sell shares. Most recent month-end performance information for William Blair Funds is available by visiting the William Blair Funds Web site at [www.williamblairfunds.com](http://www.williamblairfunds.com), or by calling the William Blair Funds at 1-800-742-7272.**

***Please carefully consider the Fund's investment objective, risks, charges, and expenses before investing. This and other information is contained in the Fund's prospectus, which you may obtain by calling 1-800-742-7272. Read it carefully before you invest or send money.***

Copyright © 2016 William Blair & Company, L.L.C. "William Blair" is a registered trademark of William Blair & Company, L.L.C.

Distributed by William Blair & Company, L.L.C., member FINRA/SIPC.

- **Macro-thematic and geopolitical risks remain disruptive to fundamental opportunities**
- **Macro Allocation Strategy maintains a lower-risk posture**
- **“Why” and “How” stages of the process continue to be crucial in this navigation**

### **Performance Summary**

The Macro Allocation Fund had positive performance in the third quarter driven by both market and currency strategies. Market strategy was particularly beneficial as equity markets enjoyed strong returns during a quarter where macro risks began to subside. Long exposures to European and emerging equities were the primary contributors over the period. Within currency, emerging Asian currencies, such as the Indian rupee and Indonesian rupiah, contributed nicely. Long exposure to the Mexican peso and short exposure to the New Zealand dollar detracted from performance. While macro-thematic and geopolitical influences are still counter acting many of the fundamental opportunities across our investment landscape, their influence has begun to subside. While the strategy remains below its long-term average risk level, we began to add risk into the portfolios during the quarter, particularly in equities.

### **Strategy Positioning**

We feel compelled to remain relatively cautious in the domain of systematic (or beta-like) market risk, as well as by maintaining lower risk exposures to attractive emerging currencies than would otherwise be the case. Our prescription is to keep these risks relatively low going forward, while increasing market non-systematic risk and convexity in the portfolio.

Market strategy remains long of equities, with effective exposure increasing from +15% at the beginning of the quarter to +26% at the end of the quarter, with part of this increase coming from the strategy’s convexity. The strategy remains long of Europe,, UK, and emerging equities, while moving to flat in developed Asia equities. Market strategy is slightly long of fixed income with a net exposure of +1%, with long exposure to U.S. government bonds and credit partially offset by short exposure to European government bonds.

Within currencies, strategy remains long of emerging currencies and short of developed currencies, in line with fundamental valuation. Our long positions remain in emerging Asian currencies such as the Indian rupee, Indonesian rupiah, and Malaysian ringgit, with our largest short positions in the Swiss franc, U.S. dollar, and Canadian dollar.

### **Strategy Review and Outlook**

Global equities, as measured by the MSCI All Country World Index, enjoyed modest gains in the third quarter without significant volatility. Within that, emerging equities outperformed developed ones, and among developed markets, Europe and Japan beat the United States, in contrast to the prior quarter. Bond yields edged upwards—in the case of the eurozone and Japan, the movement took 10-year yields from negative territory back close to zero. Currencies were rather stable; the best performer was the South African rand and the weakest was the Mexican peso. The British pound, which weakened dramatically in the last days of June after voters opted in a referendum to leave the European Union, steadied in the third quarter but did not rebound, although U.K. equities bounced strongly after initial post-referendum weakness and ended the quarter close to their 2016 high.

Influences outside fundamentals—macro-thematic and geopolitical—continue to weigh quite directly on most of the fundamental valuation investment opportunities across our

investment landscape. This explains why, in most cases where price is significantly away from fundamental value, we are taking less portfolio risk than the discrepancies between price and value would imply on their own. Developed equities in aggregate are not substantially mispriced, but areas of attractiveness reside in some European markets (the United Kingdom, Italy, and Spain). Yet, in all three cases, political risk (see below) is considerable and dents our willingness to respond, although we have begun to rebuild positions in the U.K. equity market and the British pound. Several emerging markets are also priced below their fundamental values (although some are expensive), but the influence of the Commodity Super Cycle macro theme, which has pushed up correlations between energy-sensitive markets and is a contractionary influence on return, still counsels against full exposure to Brazil and Russia. Much of the fundamental mispricing in currencies also concerns the cheapness of currencies of commodity exporters, and in these cases we continue to fade the fundamental signal. The result is a generally low-risk posture in strategy, which we have maintained throughout the year. However, developments in the quarter have led us to increase risk during the quarter—albeit from a low base—and this has happened in respect of systematic market risk, nonsystematic market risk, and currency risk.

As outlined in our previous letter, we believe that oil is playing a more dominant role for investors today than in the past given a global environment of slow growth in the world's largest economies, very low inflation, and somewhat hamstrung monetary and fiscal policy levers. This has led to oil prices acting as a proxy for global demand, filling a void for investors deciding where to allocate scarce capital (and second-guessing where others may allocate it). But because oil offers little differentiation as an indicator of growth across the investment landscape, higher correlations are a deductive result: between relevant (commodity-sensitive) equity markets and each other, between currencies and each other, and between equities and currencies. Set against the fundamental backdrop of equities that are on balance attractive,

along with emerging currencies, this narrows the macro diversification that would normally be a prerequisite for these valuation opportunities to provide adequate compensation for their embedded risk. The directional influence of the Commodity Super Cycle macro theme on markets and currencies is less intense than before. This is a consequence of several items: energy having already declined significantly in price in 2014-2015, a greater stability in price evident since the first quarter of 2016, and current oil prices being close to our estimate of their equilibrium level. We have slightly increased exposure because of the latter—such as moving (back) into the highly commodity-sensitive Colombian peso, which offers considerable undervaluation, and increasing our emerging equity exposures. But the influence of this macro theme on risk and correlation prevents us from a more significant re-risking.

The strategy's overall beta to global equities, and total equity exposure, has increased during the quarter. Much of this has been the result of the convexity we had earlier introduced to the portfolio, substituting linear exposure in favor of long options exposure. This convexity is designed to protect downside if markets fall, but may also allow increased participation in upside in rising markets like those of July and August. We have generally allowed this effect to unfold while making direct changes to equity exposures in the domain of nonsystematic risk—increasing exposure to some markets while offsetting this with reductions elsewhere. Examples of this have been increasing short/underweight exposure to unattractive Japan and Canada, and buying modest increases in attractive United Kingdom and Spain. In addition, we have bought small exposure to frontier equity markets, which have the desirable attribute of generally lower correlation to equities than developed and emerging equities exhibit.

Notwithstanding the above, we remain significantly shy of valuation-warranted exposure to Spanish equities, and even more so in respect of Italian equities. Domestic political uncertainty,

influenced by the rise of populist groups, bears responsibility in both cases. Spain's traditional political parties have been unable to form a coalition government despite two general elections in the past 10 months. This is due to the rise of less orthodox groups that are championed by opponents of eurozone-enforced austerity measures. In Italy, a December constitutional referendum has become a resignation event for Prime Minister Renzi should he fail to secure a vote in favor of reforming the electoral rules for Italy's second chamber. Such a result could tip the country back into political uncertainty. We employ a game-theoretical approach to draw investment implications from the risks related to political confrontations such as these—a novel implication often being that “players” (leaders) share a mutual incentive to deliberately increase uncertainty and raise risks in order to achieve their objectives. Such developments unnerve market participants and are shorter-term headwinds to these attractive markets moving toward their fundamental value.

The advantage of our geopolitical analysis framework is to assist in either identifying heightened risk environments to avoid, or to take advantage when the risk environment becomes benign to where risk is compensated. This has recently been the case in respect of the United Kingdom and its eventual exit from the European Union. Although the form that Brexit will take is still unknown and is likely a negative influence for U.K. economic growth, we conclude from our analysis that the political risks have reduced considerably for the near term. There are several developments behind this: Theresa May was elected unopposed as prime minister (to replace David Cameron, who resigned following the Brexit vote) and has swiftly established domestic authority as head of the government; the second largest opposition party (Labour) has been in a state of some disarray following challenges to its divisive leader; and the threat of a second Scottish independence vote (which appeared large immediately after the June referendum as Scottish voters were much more favorable to remaining in the EU) has shrunk as polls have indicated little appetite for it. In addition, France's presidential

election and Germany's federal election in 2017 may result in their respective leaders wishing to keep acrimonious Brexit negotiations out of the spotlight to prevent the populist anti-EU parties from capitalizing on this hostility. On top of this, the U.K. economy may not be suffering as much as the worst predictions. Further, policy has been loosened on the monetary side by the Bank of England, and on the fiscal side by the abandonment of the U.K.'s prior deficit elimination plans. As a result, while we saw reason to both protect our U.K. equity long exposure and increase our short British pound exposure in the second quarter, we have recently moved long of the pound (which has depreciated sufficiently that it is now fundamentally attractive) and have nudged higher our equity position.

In conclusion, while we feel compelled to maintain a strategy of de-risked investment exposures in the domain of systematic market risk, as well as lower risk exposures to attractive emerging currencies than would otherwise be the case, we have moderately re-risked the strategy as some shorter-term macro-thematic and geopolitical headwinds have abated. The challenges of navigating these risks are, we believe, the most significant shifts in the investment landscape to have happened in the last decade, and our investment process, dialogue, and decision-making are well equipped to meet the challenges we now face. We remain vigilant as we assess new and relevant information to capture future investment opportunities in a timely manner and will continue balancing the relationship between risk taken and potential compensation.

Investment Performance for Periods ended 9/30/2016	3 Months	YTD	1 Year	3 Year	Since Inception*	Since Inception**
Macro Allocation Fund – Institutional Class	1.14%	1.67%	-0.19%	--	0.12%	--
Macro Allocation Fund – Class I	1.14%	1.58%	-0.27%	1.34%	--	5.71%
Macro Allocation Fund – Class N	1.06%	1.33%	-0.58%	1.07%	--	5.43%
BofA Merrill Lynch 3-Month U.S. Treasury Bill Index	0.10%	0.24%	0.27%	0.11%	0.35%	0.11%
Long-Term Comparative Index <sup>1</sup>	1.80%	4.52%	5.89%	3.35%	2.95%	4.23%
U.S. CPI + 6%						7.17%

\* Inception: 10/21/2013

\*\*Inception: 11/29/2011

<sup>1</sup>Long-Term Comparative Index return is comprised of the following indices: 40% Barclays Capital U.S. Aggregate Index, 30% MSCI All Country World Index (net), and 30% Bank of America/Merrill Lynch 3-month U.S. Treasury Bill Index.

**Expense Ratios:**

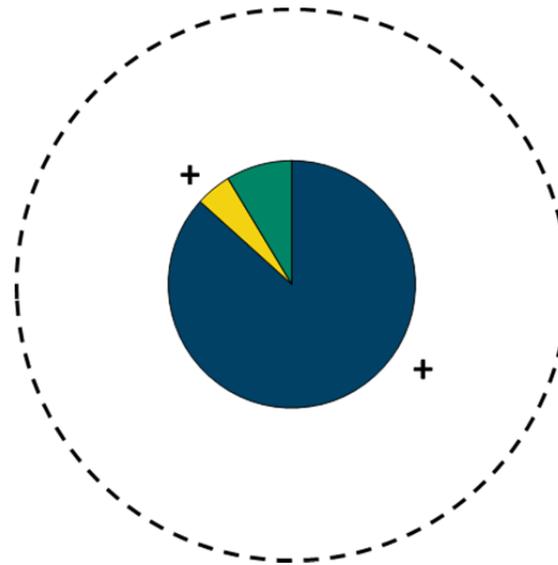
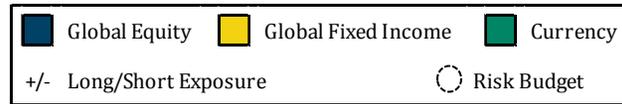
	<u>Gross</u>	<u>Capped</u>
Institutional	1.04%	0.95%
Class I Shares	1.28%	1.10%
Class N Shares	1.56%	1.35%

The expense ratios are as of the Fund’s most recent prospectus. The Fund’s Adviser has contractually agreed to waive fees and/or reimburse expenses to limit operating expenses until 4/30/17. After that date, there is no assurance that the Fund’s expenses will be limited. The Capped Expense does not reflect acquired fund fees and expenses of 0.14% or dividend expenses on short sales of 0.12%. The Fund’s net expenses paid may be different. Please refer to the Fund’s Prospectus for more information on the Fund’s expenses.

Performance cited represents past performance. Past performance does not guarantee future results and current performance may be lower or higher than the data quoted. Returns shown are since inception total returns, which assume reinvestment of dividends and capital gains. Investment returns and principal will fluctuate with market and economic conditions and you may have a gain or loss when you sell shares. For the most current month-end performance information, please call 1-800-742-7272, or visit our Web site at [www.williamblairfunds.com](http://www.williamblairfunds.com). Class I Shares are available to certain institutional investors.

The BofA Merrill Lynch 3-Month U.S. Treasury Bill Index measures total return on cash, including price and interest income, based on short-term government Treasury Bills of about 90-day maturity. The index is unmanaged, does not incur fees or expenses, and cannot be invested in directly. The U.S. CPI + 6% is not a benchmark but is included as supplemental reference as the long-term return objective.

The below chart shows the expected sources of investment risk for the Macro Allocation Fund in comparison to the Fund's total risk budget as of quarter-end.



Risk Budget = 20%  
 Forward-Looking Risk\* = 5.78%

Forward-looking Expected Contributions to Risk (CTR)

Global Equity = 86%  
 Global Fixed = 5%  
 Currency = 9%

Source: William Blair

\*The DAS team's expectation of the portfolio's volatility as viewed through the team's proprietary Equilibrium risk model, in which the team's long-term return and risk assumptions are quantified. Equilibrium can be thought of as "normal" state risk.

The below table shows the calculated regional performance attribution of the Macro Allocation Fund by asset segment as of quarter-end.

Macro Allocation Q3 2016	Equity	Rates	Credit	Currency	Residual / Other	Total
North America	-0.54%	-0.04%	0.26%	0.09%		-0.22%
Developed Europe	0.60%	-0.01%	0.06%	0.04%		0.70%
Developed Asia (ex Japan)	0.15%	0.00%	0.00%	-0.24%		-0.10%
Japan	-0.10%	-0.02%	0.00%	-0.10%		-0.21%
Emerging Markets	0.47%	0.00%	0.07%	0.50%		1.03%
Multi-Region	0.02%	0.00%	0.00%	0.00%		0.02%
Residual/Other						-0.16%
<b>Total</b>	<b>0.61%</b>	<b>-0.06%</b>	<b>0.39%</b>	<b>0.29%</b>	<b>-0.16%</b>	<b>1.06%</b>

*Past performance does not guarantee future results. Portfolio exposures and attribution are based on the Macro Allocation Fund (Class N). Market performance based on data from Bloomberg and DataStream. Relative monthly market attribution is an internal estimate that applies hedged returns sourced from Bloomberg and DataStream to the beginning of month strategy exposures and includes changes throughout the month. The categories included seek to group instruments that represent strategic exposures.*

The detail below shows the Macro Allocation Fund’s market and currency strategy exposures as of quarter-end.

Global Equity	
U.S.	-2.5%
Canada	-3.1%
Europe ex-UK	15.9%
UK	4.9%
Asia Developed	-0.3%
Emerging	10.9%
<b>Total Global Equity</b>	<b>25.8%</b>
Global Fixed Income	
U.S. Treasury & Credit <sup>1,*</sup>	4.8%
Non-U.S. Treasury & Credit <sup>1,*</sup>	-6.5%
Germany	0.0%
France	-1.7%
Japan	2.6%
Switzerland	-3.0%
Emerging	2.8%
<b>Total Global Fixed Income<sup>1</sup></b>	<b>1.1%</b>
Cash	
Unencumbered	32.4%
Other	
Collateral	5.1%
Synthetic	35.6%
<b>Total</b>	<b>100.0%</b>

Active Currency	
U.S. Dollar (USD)	-6.7%
Canada Dollar (CAD)	-6.0%
Other Americas	8.7%
Euro (EUR)	-5.0%
Swiss Franc (CHF)	-10.0%
Pound Sterling (GBP)	3.0%
Other Europe	3.6%
Australia Dollar (AUD) and New Zealand Dollar (NZD)	-8.0%
Japan Yen (JPY)	-4.0%
China Yuan (CNY)	4.5%
Asia (Excluding JPY and CNY)**	12.7%
Other	7.2%
<b>Net Currency</b>	<b>0%</b>

<sup>1</sup>Reflected as 10-year exposures

<i>*Credit Detail</i>	
U.S. Investment Grade Spread	4.87%
U.S. High Yield Spread	3.21%
U.S. MBS Spread	-0.19%
European Investment Grade Spread	2.95%
European High Yield Spread	0.97%

<i>**Select Exposures Detail</i>	
India Rupee	7.95%
Malaysia Ringgit	5.32%
Indonesia Rupiah	2.98%

Not intended as investment advice. Allocations are subject to change without notice. Unencumbered cash is residual cash and equivalents. Collateral is cash and cash-like instruments(e.g., U.S. Treasuries) that are held to secure a derivative exposure. Synthetic offset is accounting offset associated with the use of derivative contracts, which provide economic exposure without an initial outlay of cash.

This section provides additional commentary relating to the strategy changes within the Macro Allocation Fund during the quarter.

**5 July 2016: Removing concavity in UK equity**

From a long-term fundamental valuation perspective, UK equity exposure remains attractive. At the same time, implied volatility has come in from meaningfully elevated levels to only slightly elevated levels since we sold options before the “Brexit” referendum. Conventional wisdom with respect to UK economic activity is that it will slow commensurate with lingering regulatory uncertainty and constrain investment commitments, particularly in the real estate and financial sectors. At the same time, further monetary accommodation and a weaker GBP, in particular, provide some support. This strategy change leaves our total equity exposure unchanged, while increasing slightly the portfolio convexity.

**13 July 2016: Increasing broad emerging market equity and reducing Mexico equity**

From a long-term fundamental valuation perspective, unhedged EM equity remains quite attractive in aggregate, yet has a few notable exceptions of meaningful overvaluation—such as Mexico—at the country level. While the potential for entanglement specifically between China growth, the Commodity Super Cycle, and to a lesser extent external financing vulnerability from Fed rate hikes is still somewhat elevated, it has recently declined a fair bit. The UK vote to leave the EU has led to a further accommodative stance across central banks inclusive of the Fed. This strategy change increases our total equity exposure and with it our total risk (systematic and unsystematic) slightly.

**13 July 2016: Increasing France equity and reducing Italy equity and EMU Financials equity**

From a long-term fundamental valuation perspective, EMU equity remains attractive both in aggregate and on an absolute basis at each country level with some relative dispersion. Peripheral markets (Spain, Italy & Greece) are most attractive followed by France and then ultimately Netherlands and Germany. Conventional wisdom with respect to European financials post-Brexit has further questioned the institutions and the regulations, as well as pushed rates further down and flattened the yield curve. More specifically, with respect to Italy, at a minimum the third largest lender is most likely to require further capital to resolve its NPLs with the bank stress tests results release scheduled for the end of July. There will more likely be others to support accelerating NPL disposal and/or consolidation. At the same time, Italy has a constitutional referendum in October which, while it looks very anti-establishment in detail (reducing the number of Senators, for example), nevertheless has the potential to be rejected by populists as Renzi has tied the outcome of the vote to his staying in office. This strategy change increases our total equity exposure and with it our total risk (systematic) slightly.

**13 July 2016: Increasing U.S. equity and reducing Japan equity**

From a long-term fundamental valuation perspective, both U.S. and Japan equities are slightly overvalued. Post UK referendum and now after the last jobs report, conventional wisdom continues to favor U.S. assets as a relative safe haven. At the same time, conventional wisdom views Japan equity as a relative anti-safe haven (the inverse of the JPY). It remains likely that structural economic reform in Japan may prove elusive for two reasons. First, while it is acknowledged that Abe may have a 2/3 majority of votes in favor of his agenda item of constitutional reform—focused around the language of the use of military force via a rewrite of the constitution established after WWII—it is not necessarily the case that he has such a high margin in support of economic issues. Second, the presence of constitutional reform as an agenda item is likely to be put in competition for time, effort, and political capital on economic reform. This strategy change increases our total equity exposure slightly and with it our total risk (systematic and unsystematic).

**13 July 2016: Reducing Vietnam equity and increasing China equity**

From a long-term fundamental valuation perspective, both China and Vietnam are attractive on an absolute basis. On a relative basis, the valuation gap has narrowed since we initiated exposure in Vietnam (which was sourced from China) 14 months ago. When we initiated exposure to Vietnam in May of 2015, one of the drivers was our game-theoretical analysis of the U.S., which showed a strong alignment in objectives and incentives with the President looking at a Trans Pacific Partnership (TPP) agreement “legacy” item and with a Republican Congress supportive of trade. While the current populist push in the run up to the election appears to have still left some room for passage of TPP during the “lame duck” Congress session after November 4, our current assessment from the U.S. game theater suggests that the Presidential candidates themselves—and more notably Congress—are being forced to lean more anti-trade (from both Democrats and Republicans), which reduces the probability of passage during, and especially after the lame-duck session at year end. With respect to China, while it remains somewhat opaque, as always, there is a seemingly a strong incentive for near-term stability after last year’s episode. While this near-term support likely borrows from future long-term growth, it should be noted that estimates of FX reserves and capital outflows have appeared to stabilize. This strategy change leaves risk little changed. We continue to view Vietnam equity as an attractive market given its relatively lower correlation among equity markets.

**15 July 2016: Buying to close EuroStoxx variance swap**

The European variance market overreacted in the immediate aftermath of the surprise Brexit result. We took advantage of this situation by initiating a short variance position. As variance swap markets reverted toward our Equilibrium volatility level for the EuroStoxx index, the valuation case for being short volatility became less powerful. While European volatilities are still elevated from a long-term Equilibrium perspective, in the short-term our Outlook model volatility for European equity (25%) remains significantly above Equilibrium levels. Therefore, as the swap strike declined below our Outlook model volatility level we closed the position we had originally opened on 27 June. This strategy change leaves our total equity exposure unchanged. It increases the portfolio’s overall convexity profile and facilitates a modest rebuild of convexity that we are implementing in post-Brexit environment where implied volatilities have declined.

**18 July 2016: Buying GBP and selling JPY**

This strategy change moves positions in the direction of valuation-warranted levels, which have for some time been consistent with long GBP exposure and short JPY exposure. For most of 2016 we had been short GBP and modestly long JPY. The short GBP had been fundamentally justified but we augmented the exposure (went more short) and held it for longer due to geopolitical risks around the UK’s referendum on membership of the European Union. After the UK voted to leave the EU in June, the GBP depreciated sharply consistent with a negative economic and confidence shock, coupled with uncertain political leadership. We have held small long JPY exposure longer than fundamentally justified due to the JPY’s powerful “safe haven” attributes, which have resulted in the currency strengthening in 2016 particularly when short-term risks have been elevated or risk-averse sentiment has been strong. While the portfolio has benefitted from the JPY’s strength, it is today quite unattractive and, therefore, its short-term characteristics (negatively correlated with most risky assets) are less compelling. According to our Equilibrium risk model this strategy change has little impact on the risk of active currency strategy.

**19 July 2016: Shifting Japan equity from linear to non-linear**

From a long-term fundamental value perspective, Japan equities remain slightly expensive on an absolute basis and more expensive on a relative basis as compared to the rest of the world. As previously noted, Shinzo Abe's party's relatively strong showing in the Upper House election combined with the long-standing gearing toward further fiscal and monetary stimulus, have begun to lead to suggestions of the potential for a nuanced but notable shift toward a direct funding of fiscal expenditures by permanently increasing the monetary base (often referred to as "helicopter money"). As Japan policy becomes increasingly desperate and nuanced, the combination of fiscal and "verbal vs actual" intervention by the BOJ creates the potential for a wider distribution of reality as well as for a wider distribution of market interpretation. This strategy change leaves risk little changed, while embedding further convexity into the portfolio.

**20 July 2016: Shifting unhedged India equity from linear to non-linear**

From a long-term fundamental value perspective, India unhedged equities remain slightly attractive on an absolute basis (a more attractive currency than hedged equity market). At the same time, implied volatility for unhedged India equities are at the low end of a longer-term range and below both our Equilibrium and Outlook estimates. India remains a favored destination for geopolitical stability and expectations for slow-but-steady progress on the reform front are high. Over the next couple of months, for example, there is a reasonable chance that the long-sought approval of a Goods and Services Tax Bill will finally pass the Upper House. It is expected that the transition to such a centralized tax will limit corruption and red tape and ultimately boost growth. This strategy change leaves risk little changed, while embedding further convexity into the portfolio.

**21 July 2016: Buying convexity in U.S. equities**

The U.S. equity market remains unattractive from a fundamental perspective (price is 12% above value). Since the U.S. benefits from a relative safe-haven status among equity markets, implied volatilities have declined substantially in the post-Brexit period. Such circumstances make it attractive to buy convexity in the U.S. equity market. However, the approaching U.S. elections create the potential for an increase in volatility. As we get closer to the vote, the pressure to commit to populist policies will increase on both sides, and may create uncertainties for the U.S. economy. Therefore, we find it prudent to buy convexity while we are still in a relatively benign environment, where market conventional wisdom is less focused on the outcome of the elections. This strategy change leaves our exposure to U.S. equity unchanged, while embedding further convexity into the portfolio—the call options will allow our strategies to participate in the upside of the U.S. equity market while the put options will protect us against adverse movements.

**29 July 2016: Buying USD, NOK, CNY and selling COP, IDR**

The changes to the USD, CNY, and IDR are motivated by fundamental valuation, while the changes to the COP and NOK are motivated by macro-thematic analysis. The IDR has appreciated since the start of the year and a long exposure is no longer warranted. Conversely, the CNY has depreciated over the last twelve months and valuation warrants a longer exposure. The COP and NOK are both exposed to the Commodity Super Cycle theme, but the COP has a higher beta with respect to this theme. In aggregate, this change will reduce our exposure to the Commodity Super Cycle theme while shifting exposure to a lower beta currency.

**3 August 2016: Increasing exposure and convexity in U.S. and emerging markets equity**

We are introducing call options in U.S. equities, increasing the strike on existing emerging market equity put options, and increasing Russia equity. From a long-term fundamental value perspective, U.S. equity remains slightly unattractive while broad EM equity remains modestly attractive, and Russia equity notably attractive. Current implied volatility is very attractive across the spectrum. In terms of conventional wisdom and macro-thematic influences, the pre-Brexit and post-Brexit extended pause from the Fed is a positive influence for U.S. assets and has amplified the relative safe-haven status of the U.S. At the same time, EM markets also benefit from this pause with respect to the intensity of the external financing vulnerability as well as in the ongoing reach for yield in a broader low-rate environment. In addition, the Commodity Super Cycle theme appears to be settling into a range where prices drastically overshooting or undershooting our long-term fair value of \$40-\$50 are now somewhat less likely. This strategy change slightly increases total risk, while embedding further convexity into the portfolio.

**30 August 2016: Increasing convexity and unsystematic risk via emerging markets equity**

We are increasing the notional of our existing emerging markets equity put options, increasing broad emerging equity exposure, and increasing China equity. From a long-term fundamental value perspective, both broad emerging equity and China specifically (as the largest member of the aggregate), are attractive as are implied volatilities. In terms of conventional wisdom and macro-thematic influences, EM markets continue to benefit from an extended pause from the Fed with respect to the intensity of external financing vulnerability as well as in the ongoing reach for yield in a broader low-rate environment. In addition, the Commodity Super Cycle theme appears to be settling into a range where prices drastically overshooting or undershooting our long-term fair value of \$40-\$50 are now somewhat less likely. At the same time, the correlation between the China Growth theme and Commodity Super Cycle have backed off extreme highs, which allows for a bit more differentiation on a relative basis among countries. This strategy change leaves total risk unchanged, while embedding further convexity into the portfolio.

**1 September 2016: Decreasing U.S. investment grade bonds and U.S. value equities, increasing U.S. financial sector equities, and shifting U.S. energy sector equities from linear to non-linear**

From a long-term fundamental value perspective, while broad U.S. equity is slightly unattractive, relative valuation opportunities remain wide among size, style, and sector with U.S. value, energy, and financials. Similarly, U.S. investment grade spreads remain attractive on a relative basis to sovereign bonds. Credit spreads, U.S. value and energy (where we have either reduced exposure or embedded convexity) have all outperformed, YTD. In the case of financials, we are increasing exposure as it has underperformed, YTD. In terms of implied volatility, both U.S. value and U.S. energy are also below Outlook risks at current levels. In terms of conventional wisdom and macro-thematic influences, U.S. markets continue to benefit from an extended pause from the Fed and a general safe-haven bid. This strategy change reduces total risk slightly, while embedding further convexity into the portfolio.

**2 September 2016: Adding frontier market equity and reducing India and Vietnam equity**

From a long-term fundamental value perspective, while aggregate emerging market and frontier market equity markets are attractive, we continue to see notable differentiation between the attractiveness of individual markets and regions. India's recent sustained rally has now moved it toward fair value and Vietnam's relative outperformance reduced both its absolute and relative attractiveness from a long-term valuation perspective. Stage 2 dynamics were previously in favor of both markets given their geopolitical stability and reform-mindedness. That said, as we look forward the marginal contributions in these dimensions from stage 2 are likely to be somewhat more limited now. India will focus primarily on seeing through the local state

approvals of the goods and services tax and the baton for the governor of the RBI post has passed from Raghuram Rajan to Urjit Patel. In Vietnam, the push to reform, particularly with respect to TPP, is likely to be somewhat slower given the reduced probability of near-term approval in the U.S. due to populist pushback. This strategy change slightly reduces total risk while also expanding the breadth of that risk across markets that have a lower than average correlation with the broad global investable market universe.

**9 September 2016: Increasing Spain equity and reducing Japan equity**

From a long-term fundamental valuation perspective, Spain remains meaningfully attractive while Japan remains slightly unattractive. The negotiations around forming a government in Spain are ongoing as the PP came up a handful of votes shy of the majority needed. Despite the drawn out process, Podemos and PSOE are not in a position to govern at the moment and there's little indication of momentum toward that end. Outside of this formation the other possible government options (such as minority PP or even repeat elections) don't appear nearly as detrimental or uncertain, and thus provide an opportunity to step back into Spain. This was done on a relative basis to Japan, where all eyes remain on the monetary policy in response to the announced fiscal stimulus this summer that will only gradually be deployed in the coming years. This strategy change leaves total risk unchanged, while taking advantage of a relative opportunity and slightly increasing unsystematic risk.

**14 September 2016: Buying RUB, selling COP**

Both the RUB and the COP are fundamentally attractive currencies, but the COP is more attractive than the RUB such that a larger long COP exposure than long RUB exposure is warranted. We have for some time kept aggregate portfolio exposure to commodity-sensitive currencies (and assets) lower than most of their valuation-versus-price situations are signaling, and this is due to the influence of our considerations in respect of the "downside of the Commodity Super Cycle" macro theme, which—acting outside of valuation analysis—serves to raise the risk, raise the correlation, and reduce the compensation of commodity-linked exposures, which include the RUB and the COP. However, we estimate that the sensitivity to oil of the RUB and the COP are similar such that this trade does not alter aggregate commodity-sensitive exposure in the strategy. According to our Equilibrium risk model, the risk of active currency strategy (stand-alone basis) increases slightly as a result of this strategy change.

**16 September 2016: Buying GBP, selling JPY**

This strategy change moves positions in the direction of the fundamental opportunity in both the GBP and the JPY. We anticipate the political risk and uncertainty surrounding Brexit is likely to be significantly diminished in coming months, which removes part of the rationale for suppressing long exposure. In addition, the UK economy has not experienced as sharp a downturn as forecast while at the same time the UK government has not yet commenced the official exit procedure and is not expected to do so before early 2017. In addition, the JPY strength has been counterproductive to the Bank of Japan's inflation mandate, which raises the possibility of more aggressive monetary easing in the future, a development which may in turn undermine the unattractive JPY.

**19 September 2016: Increasing UK equity and decreasing Canada equity**

From a long-term fundamental valuation perspective, UK equity remains meaningfully attractive while Canada has now become slightly expensive. For most of 2016 we have held a reduced long or flat exposure to UK equity given risks around the UK's referendum on membership of the European Union, and, after the vote to leave the EU, due to the uncertainty and political risks concerning exit negotiations, as well as the likely negative economic shock

from EU exit. We anticipate the political risk and uncertainty surrounding Brexit is likely to be significantly diminished in coming months, which removes part of the rationale for suppressing long exposure. In addition, the UK economy has not experienced as sharp a downturn as forecast while at the same time the UK government has not yet commenced the official exit procedure and is not expected to do so before early 2017. At the same time, Canada has been bolstered by a somewhat larger gearing to a rebounding energy sector as well as supportive monetary and fiscal policy (similar to the UK). With no current desire to affect the exposure to the Commodity Super Cycle theme, these changes leave total sector exposure to energy and materials unchanged. This strategy change slightly increases total risk, while taking advantage of a relative opportunity and slightly increasing unsystematic risk as well.

**23 September 2016: Increasing European and emerging markets equity**

From a long-term fundamental valuation perspective, France, Spain, UK, and broad emerging markets remain some of the most attractive equity exposures. For most of 2016 we have held reduced long or at times even flat equity exposure to the UK, France, and Spain given local geopolitical risks as well as those around the lead up to the UK's referendum on membership of the European Union, and, after the vote to leave the EU, due to the uncertainty and political risks concerning exit negotiations as well as the likely negative economic shock from an EU exit. We are now increasing equity exposure to these markets to be somewhat closer to the level justified by its fundamental attractiveness as we anticipate the political risk and uncertainty is likely to be significantly diminished in coming months, which removes part of the rationale for suppressing long exposure. At the same time, emerging markets equity has been a spot where we have been selectively long, and sometimes above signals, particularly in areas that are more commodity import-oriented. Our long-standing assessment of the external financing theme and U.S. conventional wisdom continues to affirm a near-term pause from the Fed and extended broad relative stability for emerging markets.

**29 September 2016: Increasing unsystematic risk via European financials**

We are increasing unsystematic risk by adding exposure to the STOXX Europe 600 banks index while simultaneously keeping Italy exposure unchanged and reducing broad global equity exposure. From a long-term fundamental valuation perspective, European financials remain extremely attractive, while, in aggregate, the MSCI All Country World equity index remains fairly valued. The UK vote to exit the EU was particularly disruptive to European financials in that it led to both lower short-term interest rates and additional regulatory uncertainty. We have recently noted the period of relative respite or calm with respect to the UK negotiations. We have recently seen the U.S. DOJ open the bidding on the very high side of market expectations for its fine on Deutsche Bank, which has led to further short-term angst. That opening bid is likely to prove on the high side of the actual settlement and, if not, the ECB will support DB as needed ahead of both the U.S. elections as well as the series of votes or elections in Europe (on-going in Spain, Italy constitutional reform, and France and German elections next year). This strategy change leaves total risk unchanged, while increasing unsystematic risk.

**29 September 2016: Extending maturity of emerging market equity put protection**

Please see original strategy change note from 30 August 2016. The extension of put protection on emerging markets equity is driven by the continued desire to embed convexity in the portfolio where we have long exposure, as well as by the potential risks upcoming from the U.S. election, particularly as it relates to candidate positions on trade. This strategy change extends the maturity of the put protection beyond the U.S. elections.

**30 September 2016: Buying ZAR, PHP and selling MXN**

Fundamental valuation does not warrant any reduction in MXN exposure, and this is being changed for “Step 2 / why” reasons. Valuation does justify the slight increase in ZAR exposure and it justifies a significant long exposure to PHP. We are reducing MXN exposure due to the investment implications of our U.S. geopolitical game theater analysis. In the U.S. presidential race, both candidates would likely drag policy in a less-free-trade direction, with the bigger influence resulting from a Trump presidency, particularly as it may affect Mexico. The election is too close a competition at this stage for us to remain comfortable with the previous MXN long exposure, and the likelihood of a Trump win (not the most probable outcome at this stage) could rise in the remaining weeks. We do not wish to make an overall reduction in emerging currency exposure, or a significant reduction in commodity-sensitive exposure, hence some of the MXN sale is being switched into ZAR. As the PHP has already reacted significantly to the influence of President Duterte and is now substantially fundamentally attractive, we wish to add at least some long PHP exposure. According to our Equilibrium risk model the risk of active currency strategy (stand-alone basis) increases slightly as a result of this strategy change.

**30 September 2016: Increasing convexity in U.S. markets**

We introduced a variance swap on U.S. equities and added put options on U.S. Treasuries. From a long-term fundamental valuation perspective, U.S. equities remain modestly unattractive while U.S. 10-year bonds remain meaningfully unattractive on an absolute basis. More notably, short-term variance for U.S. equity and implied volatility for U.S. 10-yr bonds remain well below our Outlook risk estimates, presenting an opportunity to further build convexity into the portfolio at attractive levels. While the U.S. elections are by design set up to ensure many checks and balances, there seems to once again be another largely binary outcome unfolding with symptoms that are familiar to rising and often surprising populist theme-oriented results. Those primary symptoms include the allure of anti-establishment candidates often leading with an anti-immigration and nationalist bent. At a broad level, this dynamic presents another instance of uncertainty with a likely near-term asymmetric impact on markets. In addition to the election, the Fed continues to prod and to plea with the market toward another rate hike by year-end but remains particularly sensitive to global influences and financial conditions. This strategy change slightly reduces total risk, while more notably increasing portfolio convexity.

## *Glossary - Terms*

---

**Alpha:** A measure of a portfolio's return in excess of the market return, after both have been adjusted for risk. It is a mathematical estimate of the amount of return expected from a portfolio above and beyond the market return at any point in time. For example, an alpha of 1.25 indicates that a stock is projected to rise 1.25% in price in a year over the return of the market, or the return when the market return is zero. When an investment price is low relative to its alpha, it is undervalued, and considered a good selection.

**Beta:** A quantitative measure of the volatility of the portfolio relative to the overall market, represented by a comparable benchmark. A beta above 1 is more volatile than the overall market, while a beta below 1 is less volatile, and could be expected to rise and fall more slowly than the market.

**Developed Markets:** Using the Morgan Stanley Capital International (MSCI) geographic definition, this region includes: United Kingdom, Europe (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Spain, Sweden and Switzerland), Japan, Pacific Asia (Australia, Hong Kong, New Zealand, and Singapore) and the Western Hemisphere (Canada and other Americas).

**Information Coefficient:** A measure of the correlation between expected and actual returns.

**Information Ratio:** A measure of risk-adjusted return. The annualized excess return of the portfolio relative to a respective benchmark, divided by the annualized tracking error relative to that same benchmark. The higher the measure, the higher the risk-adjusted return.

**R-squared:** A measurement of how closely the portfolio's performance correlates with the performance of its benchmark, such as the MSC AC World Free ex US Index. In other words, it is a measurement of what portion of a portfolio's performance can be explained by the performance of the overall market or index. Ranges from 0 to 1, where 0 indicates no correlation and 1 indicates perfect correlation.

**Risk (Standard Deviation):** A measure of the portfolio's risk. A higher standard deviation represents a greater dispersion of returns, and thus a greater amount of risk. The annualized standard deviation is calculated using monthly returns.

**Sharpe Ratio:** A risk-adjusted measure calculated using standard deviation and excess return (Portfolio return – Risk Free Rate) to determine reward per unit of risk. The higher the Sharpe ratio, the better the portfolio's historic risk-adjusted performance.

**Tracking Error:** Tracking Error measures the extent to which a portfolio tracks its benchmark. The tracking error of an index portfolio should be lower than that of an active portfolio. The tracking error will always be greater than zero if the portfolio is anything other than a replication of the benchmark.