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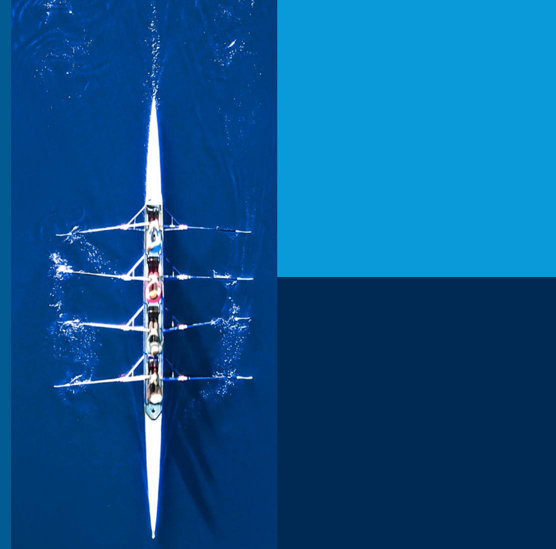

When Is a Portfolio Efficient Enough? Evaluating Alternative Betas

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Over the past 40 years, since 1980, interest rates have declined, meaning bond prices have generally increased. Now that this 40-year trend of declining interest rates has ended—and rather abruptly—investors are struggling to find ways to create an efficient portfolio with more stable returns. Why? Well, it appears that bonds may no longer provide the portfolio ballast that they have for the past decade and the traditional 60/40 portfolio[1] might no longer work as expected.

So, where do we go to find a solution? Back to the 1950s and 60s, when this very issue was really first analyzed in depth. Before that, and ever since serious investing began (for reference, the first stock market was formed in Amsterdam in 1611; the NYSE started in 1792) investors understood there was a relationship between risk and return. But, investors lacked ways to both reliably measure and manage risk and incorporate this uncertainty into the valuation of an investment portfolio.

Enter Harry Markowitz in 1952, who had the insight to measure and manage portfolio risks by holding imperfectly correlated assets together in a portfolio. He illustrated that lower correlations between assets had the net effect of canceling some—but not all—of the associated risks within a portfolio. These lower correlations, where assets would not move together in lockstep, helped reduce the variance of returns over time.

Building upon this in the mid-1960s were William Sharpe and John Lintner who created a coherent framework to understand how those associated risks within a portfolio, as explained by Markowitz, should affect its expected return, or its valuation. Et voila!, the Capital Assets Pricing Model (CAPM) was born. As such, the two troublesome questions about how to manage risk, and how to value it, were theoretically answered by these two seminal insights, which formed the cornerstone of modern financial theory. But as Albert Einstein famously said, "In theory, theory and practice are the same. In practice, they are not."

By the 1970s the CAPM model was being criticized as too theoretical in assuming a risk sensitivity to a portfolio, aka its beta, (and for a number of other factors that are beyond the scope of this paper). But this concept of

[1] 60% Equity / 40% Fixed Income Portfolio.

beta is important because it connects market risk to the required return an investor expects to be compensated for, for taking that risk. The debate surrounding beta is unresolved and leaves investors to evaluate **alternative measures of beta** and to think differently about the investing future when the past may be an imperfect guide.

Today we are engaged in the same age-old debate about the most efficient balance of risks in a portfolio of stocks and bonds, and what might be the volatility of returns in the future. Is a passive 60/40 portfolio the optimal solution as many investors thought was the case for many, many years? Or is there something better? While this may be a gross oversimplification of a risk-balanced strategy for a portfolio, investors cannot ignore the fact that the 60/40 portfolio worked pretty well for 40 years. In other words, holding bonds passively lowered the beta, or risk, of the portfolio. But today, do bonds even reduce risk or lower beta in a portfolio? Alternatively, do they actually increase the risk and beta? And either way, what is the driver of this risk?

Finding a New Risk Balance When the 60/40 Is No Longer Optimal

The direction of interest rates in the near- and longer-term future provides critical information. If interest rates do not trend lower, but shuttle sideways in a limited range, or even drift higher, then we believe the traditional passive 60/40 portfolio is suboptimal. In our minds the solution is an actively balanced portfolio that seeks to reduce the volatility of returns. And why do we care so much about volatility? Well, the advantage of stabilizing return volatility is that it allows an investor to compound returns more predictably into the future. Note that Warren Buffett has always professed that much of his wealth can be attributed to the power of compounding. We believe the key to compounding returns is by investing in a balanced strategy that has demonstrated the ability to control risk, specifically a Global Balanced and Risk Control Strategy.

The Objective of the 60/40 Portfolio

The objective of the 60/40 portfolio was to reduce the volatility of returns over a long-term investment horizon by balancing the risks between the equities and bonds an investor held in a portfolio. The overriding goal was to try to minimize downside risk, or drawdowns, and participate in the upside — and the importance of avoiding drawdowns cannot be overemphasized. Drawdowns are those moments in volatile markets that every investor has been through when their portfolio is losing money "on paper" to the point where the fear becomes palpable and they can't take it anymore. The ability to withstand drawdowns in some ways represents an investor's risk tolerance. During severe drawdowns (think the GFC of 2008-09) some investors sell near a market bottom, which is generally the worst time to sell. This is a real risk, and the issue with significant drawdowns "on paper" or otherwise is the simple math involved; if an investor loses 50% of their portfolio in an extreme drawdown their portfolio now has to earn 100% just to get back to even.

We believe that when balancing the risks in a portfolio, with fewer and less extreme drawdowns, an investor has a better chance of compounding returns in a stable and predictable manner, as shown in a stylized example of 8% vs. 5.3% in *Display 1*. After all, that is the goal of financial planning and meeting long-term liabilities.

Did the 60/40 Risk Balance Work…?

As intimated, the 60/40 portfolio worked well for investors from 1999 to 2021 (notice that 2022 has not been included, something that will be addressed shortly). Broadly speaking,

DISPLAY 1

Avoiding Volatility – and Drawdowns - Matter When Compounding

	LESS VOLATILE RETURNS		MORE VOLATILE RETURNS	
	Alternating years of 7% and 9% gains		Alternating years of 32% gains, 16% losses	
YEAR		**1,000,000**		**1,000,000**
1	7%	1,070,000	32%	1,320,000
2	9%	1,166,300	-16%	1,108,800
3	7%	1,247,941	32%	1,463,616
4	9%	1,360,256	-16%	1,229,437
5	7%	1,455,474	32%	1,622,857
6	9%	1,586,466	-16%	1,363,200
7	7%	1,697,519	32%	1,799,424
8	9%	1,850,296	-16%	1,511,516
9	7%	1,979,816	32%	1,995,202
10	9%	**$2,158,000**	-16%	**$1,675,969**
Average annual return	**8.0%**		**8.0%**	
Compound annualized return	**8.0%**		**5.3%**	

The example shown is for illustrative purposes only and does not represent actual market returns. The data has been chosen to convey the concept of compounding and the erosive effects of volatility and drawdowns on returns. There is no assurance that an investors will experience similar results.

holding bonds lowered the beta of the portfolio, but what really made the 60/40 allocation work was that the bonds generated positive returns in **20 out of 23 years**.[2] The down years for bonds were:

- 2021, which was the worst all-time year until 2022 (-2.9%)
- 1999, the year before the "dotcom bubble" burst, as investors piled into equities (-1.7%).
- 2006, where bonds were essentially flat (0.0%).

On average, bonds returned roughly 4.1% a year from 1999 to 2021, and during those down years for bonds in 1999, 2006 and 2021, equities returned around 4.1%[3] on average, meaning that holding stocks and bonds in a 60/40 portfolio worked out reasonably well. All told, bonds compensated investors quite nicely for equity risk and lowered the volatility of returns for the overall portfolio. But to be crystal clear, the driving force of the success of the 60/40 portfolio was the consistency of bond returns.

…YES, but Will It Continue To Work?

Will bonds continue their historical string of positive returns? If 2022 is any indication of the future, maybe not, as bonds were down -12.0%. This made 2022 a particularly bad year because equities were down too, something that **never happened in the period 1999 - 2021**. Equities and bonds generally had a low correlation, meaning they did not move synchronously, and that was the essential selling point of that traditional 60/40 portfolio. But the burden of future success for bonds is in the interest rate cycle, because history shows that roughly 85% of bond returns were attributable to movements in interest rates.[4] To reiterate, since rates trended lower from 1982 to 2021, bond returns were typically positive.

It might provide more insight to ask whether one thinks interest rates will trend lower for the next 40 years. We don't think so, and this is where the static 60/40 risk balance allocation becomes challenged. If interest rates trend sideways in a range into the future then bonds will not be the steady hedge to equities they once were, invalidating a 60/40 balance. If rates drift higher, then bonds become even more circumspect as a hedge that provides stable returns when matched against equities. As a result the beta, the risk factor of the 60/40 portfolio, is likely to increase

All told, there is nothing magical about a 60/40 portfolio. In fact, the term didn't exist before 1980; it was coined that year when rates started trending lower and investors developed the concept of risk parity. Risk parity is a now common portfolio allocation strategy that uses risk to determine allocations across various components of an investment portfolio, viewing the risk and return of the entire portfolio as a single construct. This was groundbreaking stuff.

Historically, all else being equal, interest rates have moved in a cyclical sideways range. This means there will be years when bonds and equities have positive correlations and years when they have negative correlations. But if interest rates do not steadily trend lower, the correlation risks between both assets will rise and the riskiness—the portfolio beta—will rise.

What's the Solution?

To start, we believe the solution is active management, not passively investing in a portfolio and watching in frustration as it does not do what it was expected to do — and unable to do anything about it. More specifically, the solution is to adopt actively managed strategies that pair the risks of assets held in a portfolio against each other in order to help reduce the volatility. We think of this as an **alternative beta strategy**, compared to a strategy that relies on historical bond returns during a time when interest rates are trending lower.

In other words, an investor needs to be more concerned about how a manager is balancing the risks in one's portfolio through asset allocation decisions with the objective of reducing the volatility of returns. Which brings us right back to where we started: reducing return volatility, limiting the risk of significant drawdowns and helping to stabilize returns so they are more predictable and can compound over time. This can be achieved by balancing the risks in the portfolio but also providing a framework and the discipline to control risk. In our flagship multi-asset strategy, the Global Balanced Risk Control Strategy, we actively manage allocations across equity, fixed income, commodity-linked notes and cash in the same portfolio. As you can see from *Display 2*, we make significant changes to our asset mix based on what we see as upcoming risk events in an attempt to get ahead of potential market volatility.

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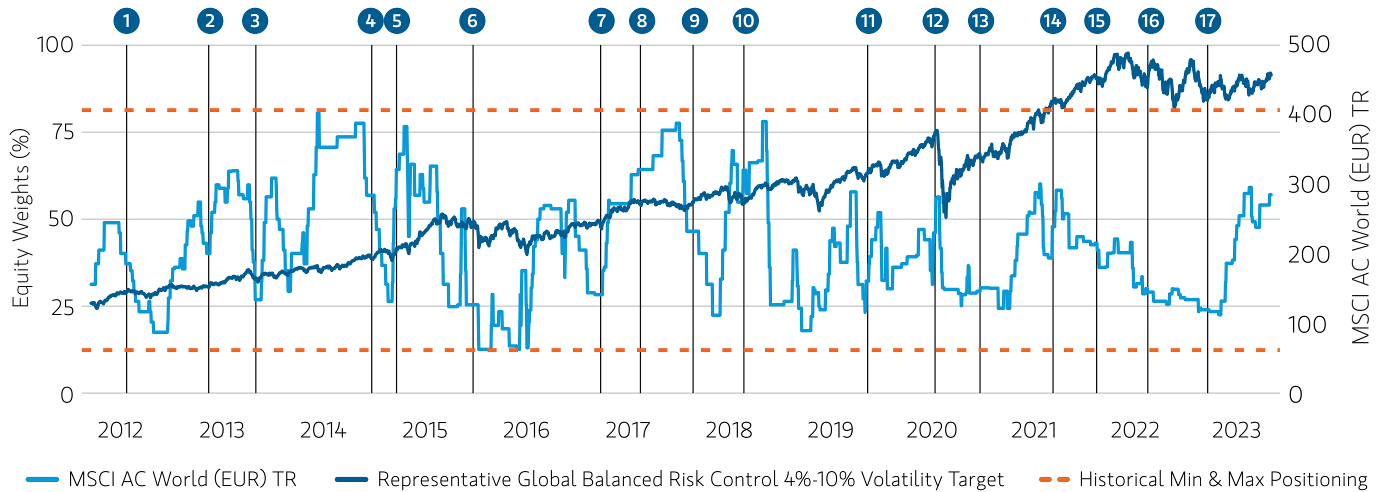
[2] Euro Aggregate Bonds are defined as the Bloomberg Euro Aggregate Total Return Value Unhedged EUR Index. Source: Bloomberg, data from 1999 – 2021. Returns data provided is annual. **The index performance is provided for illustrative purposes only and not meant to depict the performance of a specific investment. Past performance is not guarantee of future results.**

[3] European Equities defined as MSCI EMU (EUR) Total Return Index. Source: Bloomberg, data from 1999 to 2021. Returns data provided is annual

[4] Bloomberg Index Data.

DISPLAY 2

Dynamic equity exposure is key in our multi-asset portfolios



1. Weak Chinese data and political uncertainty in Europe
2. US deficit negotiations on hold
3. Concerns over Chinese credit and growth
4. Emerging markets rebound on better-than-expected Chinese data
5. US rate hike priced in and strong US economic data
6. Chinese stock market crash
7. President Trump elected US President
8. French election first round
9. Tensions rise in the Korean Peninsula
10. US increases tariffs on Chinese goods
11. Further volatility due to US-China trade war
12. COVID-19 expands outside of China
13. Concerns that fundamental economic damage will emerge
14. Markets jittery in the face of risks, including rising rates
15. Upcoming Fed tapering, US debt ceiling and rich valuations
16. Fed Hawkishness and Russia-Ukraine tensions fuel volatility
17. Continued caution, given volatility, high inflation, rising rates, ongoing geopolitical concerns and threats to global growth

Source: Representative GBaR Portfolio, MSIM, DataStream, 3 November 2011 to 31 May 2023. Subject to change daily. Provided for informational purposes only and should not be deemed as a recommendation to buy or sell securities in the asset class shown above. Each portfolio may differ due to specific investment restrictions and guidelines. Accordingly, individual results may vary. The information shown herein represents supplemental information, which supplements the composite presentation for the Global Balanced Risk Control Commingled Composite. Effective weights incorporate the impact of options. Target weights are the weights targeted at the time of the team's rebalancing.

Note: The Left-Hand Scale represents the equity weights of the Representative GBaR Portfolio with a Volatility Target of 4-10%.

In Summary

We believe that the start of a secularly changing investment environment is already underway, an environment in which static 60/40 allocation strategies will be suboptimal. We do not believe that bonds can provide portfolio ballast in the near and longer-term future. Furthermore, they can no longer be expected to have a low correlation to equities and to help reduce the risk beta, particularly in an unmanaged, passive portfolio with the inability to maneuver deftly. To manage ongoing market volatility and minimize potential participation in those severe drawdowns that can erode the ability to compound effectively, we believe investors will need an active volatility manager, like the Portfolio Solutions Group.

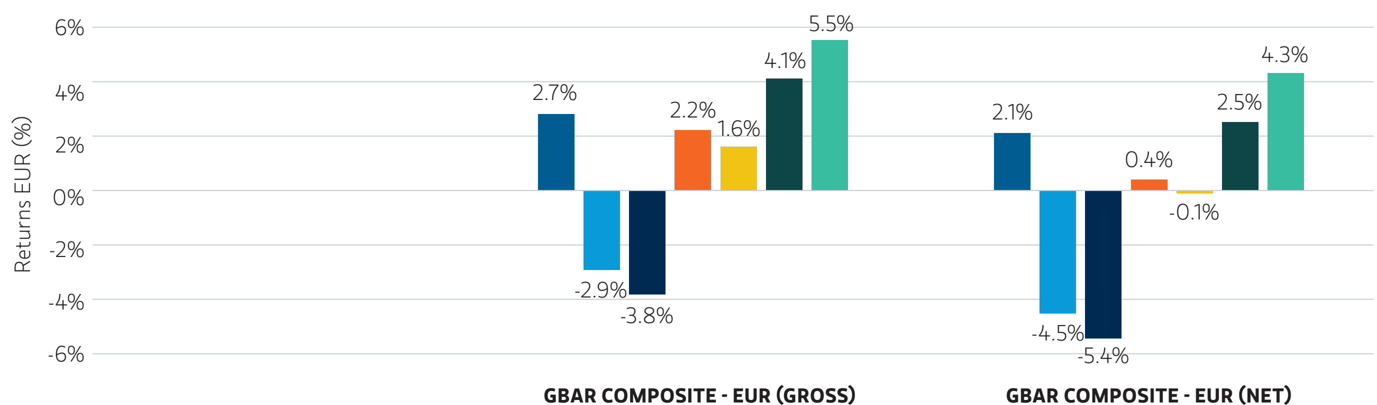
Risk Considerations

There is no assurance that the Strategy will achieve its investment objective. Portfolios are subject to market risk, which is the possibility that the market values of securities owned by the portfolio will decline and that the value of portfolio shares may therefore be less than what you paid for them. Market values can change daily due to economic and other events (e.g. natural disasters, health crises, terrorism, conflicts and social unrest) that affect markets, countries, companies or governments. It is difficult to predict the timing, duration, and potential adverse effects (e.g. portfolio liquidity) of events. Accordingly, you can lose money investing in this portfolio. Please be aware that this strategy may be subject to certain additional risks. There is the risk that the Adviser's **asset allocation methodology** and assumptions regarding the Underlying Portfolios may be incorrect in light of actual market conditions and the Portfolio may not achieve its investment objective. Share prices also tend to be volatile and there is a significant possibility of loss. The portfolio's investments in **commodity-linked notes** involve substantial risks, including risk of loss of a significant portion of their principal value. In addition to commodity risk, they may be subject to additional special risks, such as risk of loss of interest and principal, lack of secondary market and risk of greater volatility, that do not affect traditional equity and debt securities. **Currency fluctuations** could erase investment gains or add to investment losses. **Fixed-income securities** are subject to the ability of an issuer to make timely principal and interest payments (credit risk), changes in interest rates (interest-

rate risk), the creditworthiness of the issuer and general market liquidity (market risk). In a rising interest-rate environment, bond prices may fall and may result in periods of volatility and increased portfolio redemptions. In a declining interest-rate environment, the portfolio may generate less income. Longer-term securities may be more sensitive to interest rate changes. **Equity and foreign securities** are generally more volatile than fixed income securities and are subject to currency, political, economic and market risks. Equity values fluctuate in response to activities specific to a company. Stocks of **small-capitalization companies** carry special risks, such as limited product lines, markets and financial resources, and greater market volatility than securities of larger, more established companies. The risks of investing in **emerging market countries** are greater than risks associated with investments in foreign developed markets. **Exchange traded funds (ETFs)** shares have many of the same risks as direct investments in common stocks or bonds and their market value will fluctuate as the value of the underlying index does. By investing in exchange traded funds ETFs and other Investment Funds, the portfolio absorbs both its own expenses and those of the ETFs and Investment Funds it invests in. Supply and demand for ETFs and Investment Funds may not be correlated to that of the underlying securities. **Derivative instruments** can be illiquid, may disproportionately increase losses and may have a potentially large negative impact on the portfolio's performance. A **currency forward** is a hedging tool that does not involve any upfront payment. The use of leverage may increase volatility in the Portfolio. **Diversification** does not protect you against a loss in a particular market; however, it allows you to spread that risk across various asset classes.

Global Balanced Risk Control Commingled Composite Performance

Presented in EUR



	GBAR COMPOSITE - EUR (GROSS)	GBAR COMPOSITE - EUR (NET)
YTD	2.7%	2.1%
1 Year - Annual	-2.9%	-4.5%
2 Year - Annual	-3.8%	-5.4%
3 Year - Annual	2.2%	0.4%
5 Year - Annual	1.6%	-0.1%
10 Year - Annual	4.1%	2.5%
Since Inception Annualized	5.5%	4.3%

Source: Datastream, from Global Balanced Risk Control Commingled Composite inception 30 June 2009 to 30 April 2023. Performance returns reflect the average annual rates of return. Periods less than 1 year are not annualized. The composite results shown are GROSS and NET of investment advisory/management fees, which include performance fees if applicable, are quoted in EUR and include the reinvestment of dividends and income. Each portfolio may differ due to specific investment restrictions and guidelines. Accordingly, individual results may vary. **Past performance is no guarantee of future returns. GIPS is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein. Please refer to the GIPS Report and Appendix for important additional information and disclosures.**

* Return figures for periods less than one year are not annualized.

Global Balanced Risk Control Commingled Composite

Presented in EUR Terms

YEAR	GROSS COMPOSITE RETURN (%)	NET COMPOSITE RETURN (%)	INDEX RETURN (%)	COMPOSITE 3-YR EX-POST STANDARD DEVIATION (%)	INDEX 3-YR EX-POST STANDARD DEVIATION (%)	NUMBER OF ACCOUNTS	COMPOSITE MARKET VALUE (M)	FIRM ASSETS (B)	INTERNAL DISPERSIONS (%)
2012	13.10	12.70	N/A	5.76	N/A	2	543	212.2	N/A
2013	10.97	10.06	N/A	5.91	N/A	2	1,255	224.7	N/A
2014	9.49	8.24	N/A	5.38	N/A	2	1,597	274.3	N/A
2015	5.81	4.41	N/A	5.87	N/A	2	2,637	307.5	N/A
2016	6.14	4.68	N/A	5.97	N/A	2	3,304	319.7	N/A
2017	7.29	5.71	N/A	5.23	N/A	2	5,876	328.2	N/A
2018	(3.81)	(5.33)	N/A	4.62	N/A	2	5,584	323.1	N/A
2019	9.43	7.75	N/A	4.45	N/A	2	5,192	401.9	N/A
2020	8.24	6.33	N/A	6.97	N/A	2	4,432	540.9	N/A
2021	5.39	3.53	N/A	6.34	N/A	2	4,306	660.0	N/A

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Prior to January 1, 2002, the Firm was defined as an investment management firm consisting of investment advisory operations within various legal entities. As of January 1, 2002, the Firm definition was expanded to include all investment advisory operations within MSIM excluding affiliated and unaffiliated wrap fee programs. From January 1, 2007 to May 31, 2010, the Firm definition included wrap fee programs, which were sold May 31, 2010. Due to an acquisition of assets from Morgan Stanley Smith Barney LLC ("MSSB") business on October 1, 2015, the Firm definition was expanded to include wrap fee programs. The Fundamental Equity Advisors wrap fee program was transferred to another firm in October 2018.

The Global Balanced Risk Control Commingled Composite was created on September 30, 2016 and its inception date is June 30, 2009. This composite is designed to include all separately managed accounts and pooled vehicles managed on a fully discretionary basis according to the Global Balanced Risk Control strategy. The strategy applies a top-down global asset allocation approach, investing in equities (including listed real estate and listed infrastructure), fixed income, commodity-linked investments and cash. The strategy aims to provide capital growth over time, measured in Euro, while actively managing total portfolio risk; target volatility is in the range of 4% - 10%. Among the strategy's investments are actively-managed mutual funds (including those managed by Morgan Stanley Investment Management), ETFs and index futures, which are used for the purposes of efficient portfolio management. The strategy may also invest in ETCs. The strategy may invest in derivatives such as index futures contracts, index futures options, and equity index options, for efficient portfolio management. Foreign exchange forward contracts may be used to a limited extent, including for currency hedging purposes. Using derivatives involves specific risks, including those related to counterparty, liquidity, valuation, correlation, and market risks. A complete list and description of all composites and limited distribution pooled funds (LDPF) is available upon request. A list of the firm's broad distribution pooled funds is available on the firm's website (MSIM.com).

Performance data quoted represents past performance, which is no guarantee of future results. Each portfolio may differ due to specific investment restrictions and guidelines. Any double digit return cannot be sustained and investors should be aware that these returns were primarily achieved during favourable market conditions. Returns are reported in EUR. The composite can include portfolios with different currencies which have been converted to the reported currency. The internal dispersion of annual returns is measured by the standard deviation of asset-weighted portfolio gross of fees returns included in the composite for the full year. The internal dispersion is not applicable ("N/A") for any period if fewer than 6 accounts are in the composite for the full year. The three-year annualized ex-post standard deviation measures the variability of the gross composite and benchmark returns over the preceding 36-month period. The three-year ex-post standard deviation is not applicable ("N/A") for any period if 36 monthly returns for the composite are not available. Policies for valuing investments, calculating performance and preparing GIPS Reports are available upon request.

Previously, the 1-Month Euro LIBOR interest rate was presented as the benchmark for this composite. However, as the composite's strategy is risk targeted and permits investments in various asset classes, effective January 1, 2017, we believe that no appropriate benchmark exists. Therefore, there is no benchmark presented ("N/A") for this composite.

Gross performance is net of all transaction costs and withholding taxes. Net performance is net of all transaction costs, withholding taxes, actual investment management/advisory fees which include performance fees if applicable and applicable administrative expenses. Any performance fees are accounted for and deducted when earned. Performance returns include the reinvestment of dividends and income. The standard investment advisory fee schedule is as follows: 0.85% per annum on first $100 million of assets; 0.75% per annum on next $150 million of assets; 0.65% per annum on next $250 million of assets; 0.55% per annum on assets under management thereafter. Actual investment advisory fees incurred by clients may vary.

DEFINITIONS

Volatility is a statistical measure of the dispersion of returns for a given security or market index. The team measures volatility on an ex-ante (forward-looking) basis using the manager's proprietary risk management system. **Targets** are typical ranges. There is no assurance that these targets will be attained.

The **Asset Allocation** strategies provide the Investment Adviser with wide discretion to allocate between different asset classes. From time to time, the Asset Allocation may have significant exposure to a single or limited number of fixed income or equity asset classes. Accordingly, the relative relevance of the risks associated with equity securities, Fixed Income Securities and derivatives will fluctuate over time.

Investments in derivative instruments carry certain inherent risks such as the risk of counter party default and before investing you should ensure you fully understand these risks. Use of leverage may also magnify losses as well as gains to the extent that leverage is employed. These investments are designed for investors who understand and are willing to accept these risks. Performance may be volatile, and an investor could lose all or a substantial portion of his or her investment.

The **MSCI All Country World Index (ACWI)** is a free float-adjusted market capitalization weighted index designed to measure the equity market performance of developed and emerging markets. The term "free float" represents the portion of shares outstanding that are deemed to be available for purchase in the public equity markets by investors. The performance of the Index is listed in EUR and assumes reinvestment of net dividends.

The **Bloomberg Euro Aggregate Total Return Value Unhedged EUR Index** is a broad-based flagship benchmark that measures the investment grade, euro-denominated, fixed-rate bond market, including treasuries, government-related, corporate and securitized issues. Inclusion is based on currency denomination of a bond and not country of risk of the issuer. Total Returns shown in unhedged EUR.

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IMPORTANT INFORMATION

There is no guarantee that any investment strategy will work under all market conditions, and each investor should evaluate their ability to invest for the long-term, especially during periods of downturn in the market.

A separately managed account may not be appropriate for all investors. Separate accounts managed according to the particular Strategy may include securities that may not necessarily track the performance of a particular index. A minimum asset level is required.

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