

Winter 2013

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## The common language of benchmarking

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J.P. Morgan Private Bank  
Interpreting performance

A benchmark can be a valuable and objective gauge of manager performance during specific market periods—provided that it accurately reflects the investment goals and philosophy of the manager and the risk composition of the underlying assets.



**Richard Madigan**  
Chief Investment Officer  
J.P. Morgan Private Bank

We grapple a lot with the concept of benchmarks; when misused, they can provoke the wrong investment behavior. That said, we believe having a framework for talking about real return objectives around a risk budget is essential.

Since 2008, this discussion has become even more important. The lesson learned from the Great Recession of 2008 is that understanding portfolio risk matters now more than ever. But there is a critical difference between absolute and relative risk: the former focuses on value, the latter simplistically on return. Investing isn't merely about how much something can go up; it is also about how much an asset has already risen and how much it can fall.

A benchmark should be easily understood, especially since the investment landscape has become more complex. At its core, benchmarking should help measure the progress toward long-term investment goals. It should capture the signature investment style and approach of a particular money manager. Our investment style is anchored to a philosophy focusing on total return efficiency within a particular risk budget. Our goal is to optimize an up/down return capture that allows for fewer bumps and the consistent compounding of those returns over time.

The value of a benchmark is to provide a clear understanding of the investment risks taken in a particular portfolio, and why. Used simplistically, a benchmark can confuse the difference between the return on, and the return of, capital, as benchmark hugging constrains not only an investment toolkit, but also the investment horizon. It tends to promote momentum over value and misses the fact that efficient portfolio construction should diversify fundamental risk factors and not return streams, which can be highly correlated.

It's easy for money managers to say they don't believe in benchmarks, but the operative question is: Why? If it's because they don't want to be held to a specific view or investment discipline, that's as dangerous as benchmark hugging, since both indicate indifference to valuation and horizon.

An investor's most precious tools are investment horizon and liquidity. Benchmarks allow for consistency in investment discipline. For us, this means focusing on fundamental value outside of simplistic stock/bond blends, and investing over a market cycle in order to compound returns efficiently.

I hope you find this paper a valuable part of our continued investment dialogue with you.

A handwritten signature in black ink, enclosed in a large, hand-drawn oval. The signature appears to read 'R Madigan'.

## Helping clients understand how we manage money

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In the global multi-asset class investment space, the ultimate goal is the preservation and appropriate growth of wealth in real terms over time. This goal effectively describes a total-return-based investment approach, which seeks to maximize returns for a given amount of portfolio risk over a long-term investment horizon. A benchmark can enrich the dialogue between client and portfolio manager, providing the common language in which the investment mandate between the two could be written.

When properly used, a benchmark can be an important gauge of portfolio managers' progress toward achieving their longer-term investment goals. A good benchmark can also render an investment more transparent. It should broadly reflect management style, provide insight into general risk characteristics, and indicate the potential drawdowns a client can expect.

At J.P. Morgan, as we set out to choose our benchmarks and create our own “common language,” we look for an accurate representation of how we invest. This paper outlines the components of a successful benchmark, and the importance of selecting the right one. We hope these insights can help provide you with greater clarity into how we manage money.

## Finding a fair reflection of risk and return

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An effective benchmark needs to be a fair match for overall portfolio risk taking in order to provide proper expectations for long-term returns.

However, we have observed that benchmarks tend to be used to assess performance on a shorter-term basis. Many of these short-term periods might feature markets moving largely in just one direction. Placing excessive focus on short-term relative performance can potentially result in unwanted behavior on the part of the portfolio manager—such as excessive risk taking to catch up with the benchmark, or paring back risk following a period of outperformance. These actions can result in missed investment opportunities.

Choosing an appropriate benchmark is, therefore, critical, and in our own search, a few key principles guided our choice. In our view, a benchmark should be:

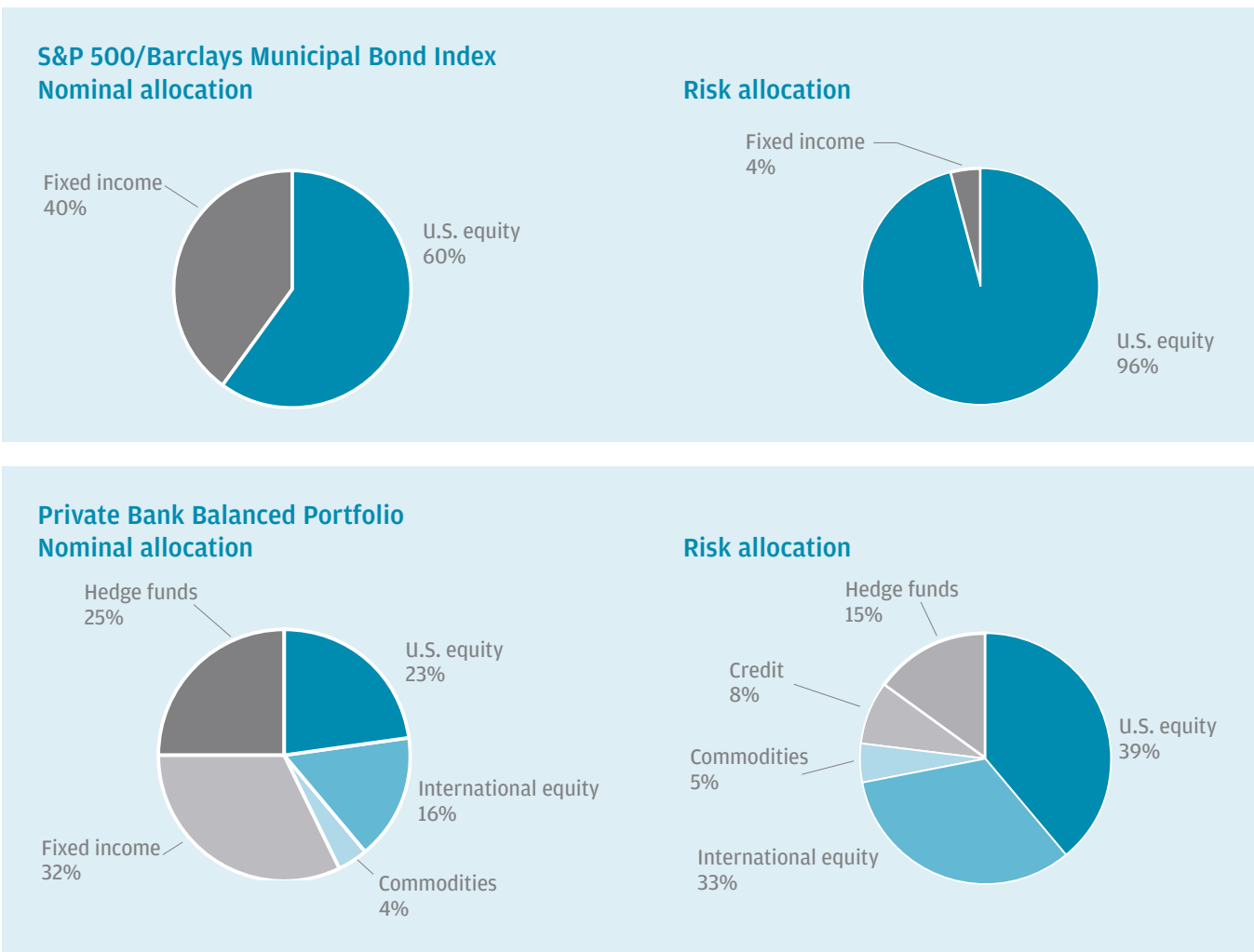
- Simple and relevant
- Consistent with long-term investment objectives, philosophy and risk taking
- Reflective of portfolio return asymmetry

**Simplicity and relevance**

A good benchmark should be simple, rather than simplistic, and needs to reflect the portfolio manager’s specific investment process. The components should be well recognized, and clients should be able to form quick assessments of portfolio performance and future return expectations, making transparency and measurability especially important.

While using a stock/bond mix as a benchmark may be simple (and very common), as managed portfolios have broadened the scope of the investments they use, this type of benchmark now may not be relevant enough.

In our view, it’s important to have benchmarks that accurately reflect a portfolio’s underlying risk, and that can mean a wider investment set than stocks or bonds. For example, compare the composition of portfolio risk for a 60/40 stock/bond blend (using the S&P 500 for the equity allocation and Barclays Municipal Bond Index for fixed income) and a representative Private Bank Balanced Portfolio:



Source: Based on J.P. Morgan Private Bank Proprietary Risk Factor Model.

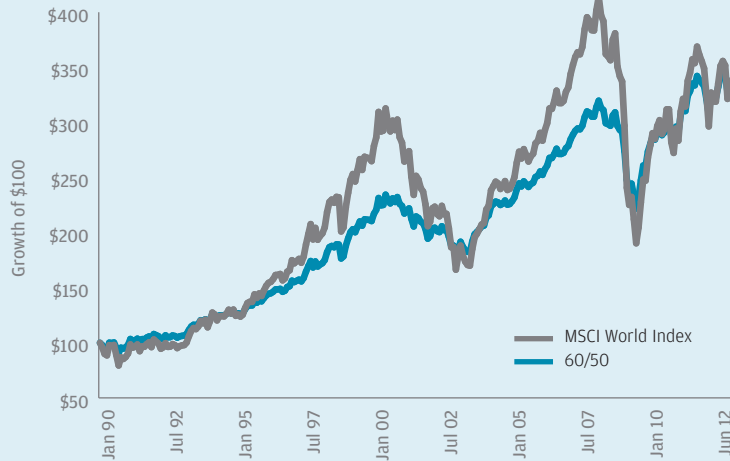
A 60/40 blend may appear to be a reasonable representation of the portfolio's performance, especially in environments with elevated correlations between asset classes. However, the difference in risk exposures may create significant performance differentials when correlations normalize. The more diversified Balanced Portfolio will also result in lower total risk taken in those environments.

Another unintended consequence of simplifying the benchmark to just two markets is a reduction in incentives for the portfolio manager to properly diversify risk exposures. Any position in the portfolio that is not reflected in the benchmark becomes a source of return deviation, thus increasing the tracking error to the benchmark. A manager may be inclined to reduce "non-benchmark" risk, which could adversely impact the portfolio's ability to meet the client's long-term objectives.

While an oversimplified benchmark is not desirable, there are also drawbacks to overcomplicating matters and including numerous components that reflect current portfolio allocations in great detail. We believe a benchmark should represent only those asset classes that portfolios will allocate to in any environment. Many portfolio allocations, even strategic ones, may fail this test. Furthermore, a benchmark that changes with portfolio allocations does not give the client a good gauge of the manager's tactical skills and the portfolio's long-term risks.

The key to choosing a good benchmark is achieving a balance between simplicity and relevance. Striking this balance will create transparency for the client and enrich the dialogue. The benchmark will be even more powerful if this transparency is linked to the portfolio's investment objectives and philosophy.

### MSCI World Index vs. 60/50 Up/Down Capture Index



1/1990-06/2012	MSCI World Index	Up/Down Capture Index
Return	6.0%	6.1%
Volatility	15.7%	8.6%
Sharpe ratio	0.17	0.22
% of return	100%	102%
% of volatility	100%	55%

Source: Bloomberg.

#### Consistency with investment objectives, philosophy and risk

Another dimension to consider is how closely a benchmark fits with a portfolio manager’s approach to setting and achieving return and risk targets.

In the case of the Private Bank’s portfolios, these are managed to optimize total-return efficiency over a market cycle, given a particular risk budget. For example, through a typical market cycle of three to five years, our Balanced Portfolio is expected to achieve a 6%–8% annualized return, net of fees, with 6%–8% annualized volatility.

Although these measures are excellent markers for evaluating long-term growth of wealth, they are of little help in constructing monthly benchmarks, given how volatile underlying investment options can be from quarter to quarter and year to year.

Instead, we find the concept of up and down capture of global equity market returns to be a more appropriate measure of monthly performance. Taking the Balanced Portfolio again as an example, a hypothetical portfolio that delivers 60% of positive MSCI World returns (“up capture”) over a given month, but only 50% of the negative returns (“down capture”) is a robust way of representing the path to achieving full-cycle risk and return targets. In the chart above, we look at how this approach fared against equities over the past 20 years. Annualized risk and return characteristics of global equities over that period are similar to long-term investor expectations for the asset class.

- A 60/50 up/down capture shows higher efficiency versus investing in straight equities. It generated similar returns over the longer term, but with just over half the equity volatility. It also produced a higher Sharpe ratio, as a result.
- It would be impossible to implement a portfolio such as this, as it would require an exact knowledge of when to own more equity (60% when markets go up) and when to own less (50% when markets go down). However, it is a good target for managers, who will strive to produce similar results through tactical shifts, while taking advantage of different market opportunities.
- By participating less in market declines, the likelihood is not as high that the portfolio manager or the client will engage in wealth-destructive behaviors, such as selling out at the bottom of the cycle.

Outperformance through efficient compounding is at the core of our investment philosophy and central to achieving our risk/return targets. Capturing a large part of equity returns with just over half the equity risk is no small feat. We believe it is important that the benchmark reflects this efficiency to an extent that is reasonable, but active management of the portfolios is required to produce consistent asymmetry of returns.

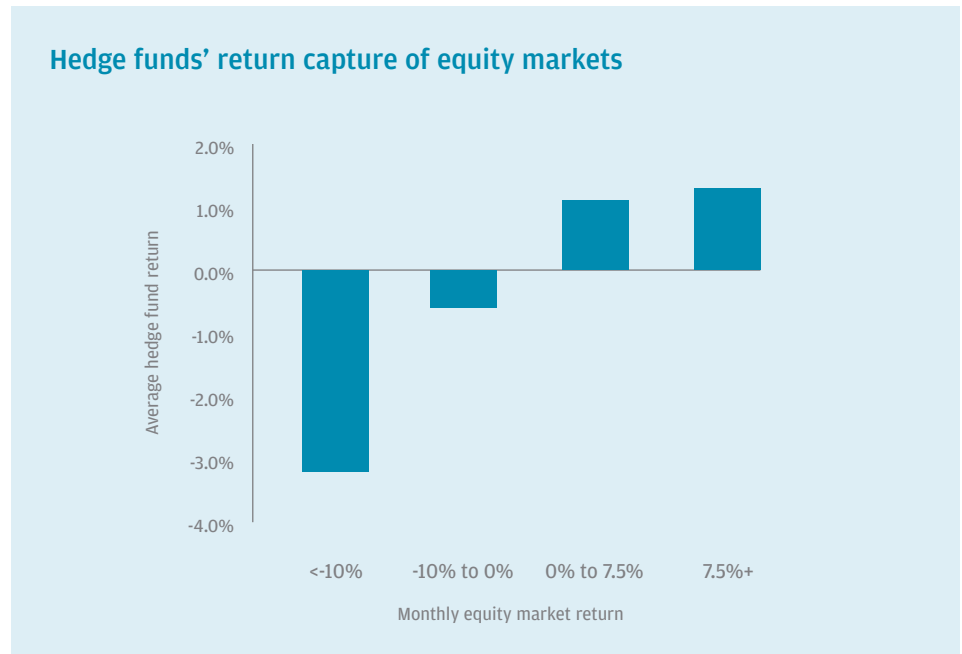
### **Portfolio return asymmetry**

Achieving better upside than downside is highly desirable, but it comes at a price. Most financial assets have extended periods of positive returns, followed by sharp reversals.

In constructing our own benchmarks, we pay very close attention to the profile of market exposures (“betas”) and active exposures (“alpha”) that underlying managers bring to our portfolios, and how these exposures correlate with each other in various market environments. We have developed a proprietary factor model approach, which allows for deep understanding of portfolio positions, return sources and risk decomposition. This approach is an integral part of our portfolio construction process and helps inform our research on benchmarking.

By investing in managed vehicles, which combine market exposures with stock and bond picking, we are inheriting precisely the asymmetric up/down capture profile of returns that leads to the generation of alpha. Moreover, active managers are more likely to exploit risk assets, which are vulnerable during times of rising volatility and risk-asset correlations. In such environments, tracking error risk is amplified and can lead to higher capture of downside performance.

The crisis of 2008 was an example of this. It was a challenging alpha environment for long-only and hedge fund managers alike. The most damaging aspect of the crisis for active managers was not just the increase across correlations generally, which subsided relatively quickly, but the significant increase in the correlations of key risk assets to U.S. equities, which lasted much longer.



Sources: Bloomberg and HFRI.

The chart above examines this phenomenon in the hedge fund asset class, which is frequently associated with alpha generation. It also illustrates the average performance of hedge funds (represented by the HFRI FOF: Diversified Index), given the severity and direction of the monthly changes in the MSCI World Equity Index (over the past 10 years).

During months with equity returns between -10% and +7.5% (which is the majority of equity returns for the period, and historically), hedge funds tend to make almost twice as much in the up markets (1.1% on average monthly) as they lose in the down markets (-0.6% on average monthly). The interesting detail is that when MSCI World rallies by more than 7.5% in the month, hedge funds don't enjoy a significant boost to their returns. Conversely, when MSCI World falls by more than 10% in the month, hedge funds tend to lose value at a greater rate.

We would expect the difference in up/down capture to be greater in less volatile, more normal markets with upward tendencies. We would also expect that highly turbulent and volatile markets would make it more challenging to achieve higher up capture than down capture. The proper benchmark should have a similar asymmetry to reflect investment style.



## Constructing benchmarks that match our investment approach

Our discussion so far leads us to the benchmarks presented below. They are consistent with our broad strategic asset class allocation ranges, but more importantly, they reflect the philosophy and style of our portfolio managers:

### Proposed benchmark blends

Balanced Blend		Growth Blend	
Global Equity	40%	Global Equity	60%
Alternative Investments	20%	Alternative Investments	20%
Commodities	5%	Commodities	5%
Bonds	30%	Bonds	10%
Cash	5%	Cash	5%

Source: Bloomberg.

Following the principle of being simple and relevant, our proposed benchmarks—Balanced Blend and Growth Blend—have five primary components:

- Equities
- Alternatives
- Commodities
- Fixed income
- Cash

These represent the breadth of our underlying investment options, as well as our themes and core portfolio holdings over the longest time horizon.

**Equities** are represented by the MSCI World Index, a broad, global equity benchmark. This part of the benchmark remains the largest contributor to portfolio risk. The addition of a global perspective is better aligned with our global style of investing.

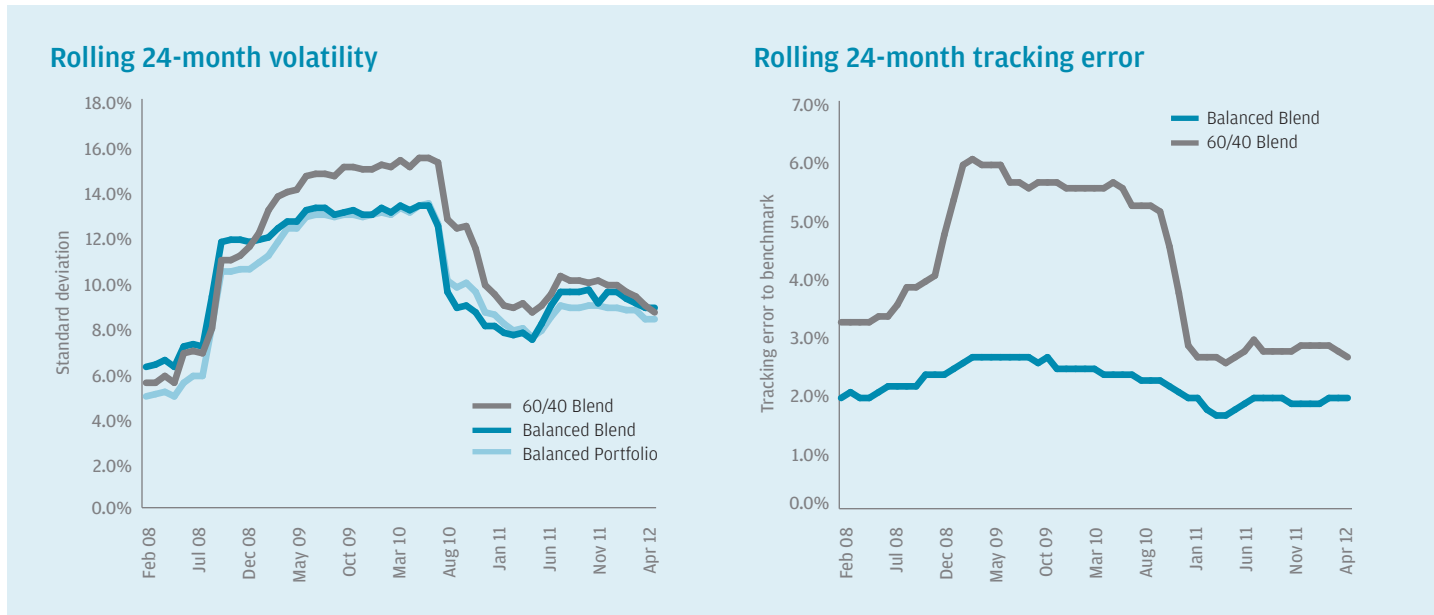
**Alternative investments** are represented by the HFRI FOF: Diversified Index, a widely used measure of performance for multi-strategy/multi-manager hedge fund portfolios. Using a hedge fund index in the benchmark helps capture an important risk exposure in our portfolios—manager alpha. It helps create a return asymmetry for the benchmark, which reflects our investment philosophy, and shows the value of risk-efficient compounding, not only versus equity investments, but also versus simple stock/bond blends. While many HFRI indexes suffer from survivorship and selection bias, these effects are small for the HFRI FOF: Diversified Index.

**Commodities** are another important investment theme, and a significant risk allocation for our portfolios. We chose the Dow Jones-UBS Commodities Index for this portion of the benchmark to reflect the importance of diversified exposures in commodity allocations, as well as across other asset classes.

**Fixed income and cash allocations** are proxies for the type of duration exposure that we take in our portfolios in different regions. Fixed income benchmarks will be different across regions, but consistently reflect the broad opportunity set representative of the local investors' investment choice. Fixed income benchmarks are always hedged to the portfolio's base currency, and corporate credit exposures remain off benchmark.

## A better representation of risk

Using our Balanced Portfolio as an example, the charts below demonstrate that our selected benchmarks represent portfolio risk more fairly and more efficiently than a simple stock/bond mix. We review how well they represent the total risk of the portfolio (volatility), and how closely they match monthly portfolio returns (tracking error).



Source: Based on J.P. Morgan Private Bank Proprietary Risk Factor Model.

The monthly volatility chart on the left confirms that the Balanced Blend benchmark is a better match from a volatility perspective, tracking portfolio risk closely before and after the financial crisis. The tracking error chart on the right lends further perspective to our choice. Our selected benchmark more closely tracks the returns of the portfolio (within the 2% annualized tracking error, which is in line with expectations). Crucially, it maintains this closer fit throughout the period of financial crisis, when the tracking error of the 60/40 Blend doubled. Taken together, the charts confirm that our Balanced Blend benchmark provides a better understanding of the risk and return behavior of the portfolio.

## In conclusion

As with any common language, benchmarks are a simple tool for an investment discussion, not a replacement for one. They help set expectations and provide a reference point in the achievement of longer-term goals. As in managing money itself, there is both science and art in this process. In our view, these benchmarks provide an excellent representation of how we invest, and how we approach risk and return in all market conditions.

For further information, please contact your local J.P. Morgan representative.

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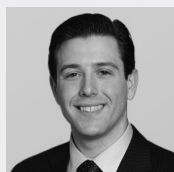
Georgiy Zhikharev is the U.S. Head of Portfolio Construction at J.P. Morgan Private Bank in New York. His team is responsible for constructing efficient multi-asset class portfolio solutions for clients across the spectrum of risk tolerance, portfolio size and level of sophistication, with a focus on combining the investment insights of the Private Bank with the rigor of proprietary portfolio construction and risk management tools. He is also a member of the Private Bank's Global Investment Committee, Hedge Fund Advisory Council and Private Equity Advisory Council.

Mr. Zhikharev has been with J.P. Morgan for 12 years. Prior to his current role, he was the Global Head of Quantitative Research and Analytics for the Global Markets Strategy Team. He spent five years as Portfolio Manager for the Global Access Hedge Fund Portfolios, and Risk Officer for

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Before joining J.P. Morgan, Mr. Zhikharev was Director and Partner at Dialogue Investments, an investment management and consulting company in Russia, responsible for proprietary portfolio investments and investment management advisory business.

He holds a master's degree in Business Administration with a concentration in Finance from DePaul University in Chicago. He also holds a Ph.D.-equivalent degree in Economics from the Kazan State University, Russia. Additionally, Mr. Zhikharev holds a Financial Risk Manager (FRM) designation from the Global Association of Risk Professionals.



**Daniel J. Scansaroli, Ph.D.**  
*Vice President, Quantitative Research*

Dr. Scansaroli is a member of J.P. Morgan Private Bank's CIO Quantitative Research and Analytics Team, which is responsible for researching and developing quantitative strategies to execute risk-efficient portfolios, and implementing tools for the CIO Strategy Team. Additionally, the team develops and maintains proprietary tools for risk management, portfolio construction and portfolio performance enhancement.

Dr. Scansaroli joined J.P. Morgan in June 2012 from Lehigh University's \$1 billion plus Endowment, where he was responsible for developing and monitoring tools for quantitative risk management, portfolio construction, and performance/investment analysis with public market, hedge fund and private equity investments. He has also worked as a lead Process Management Consultant streamlining work processes, and as an Analyst at Rothschild in the M&A and Restructuring division.

Dr. Scansaroli holds several degrees from Lehigh University, including a doctorate in Industrial/Financial Engineering, Masters of Science degrees in Applied Mathematics and Management Science, and a Bachelor of Science in Mechanical Engineering. His dissertation developed more accurate risk measurement and derivative pricing techniques that extend Black-Scholes pricing and hedging techniques for assets that possess strong momentum, mean reversion, and/or long-memory. His research has been presented at several distinguished conferences, including the Institute for Operations Research and Management Science (INFORMS), and Modeling and Optimization: Theory and Applications (MOPTA).

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## KEY RISKS OF INVESTING IN ALTERNATIVES

### Investment risk:

All investments risk the loss of capital. No guarantee or representation is made that a fund's investment program will be successful. A fund's investment program may involve, without limitation, risks associated with limited diversification and high concentration, high level of leverage, investments in speculative assets, and the use of speculative and possibly untested investment strategies and techniques, interest rates, currencies, volatility, tracking risks in hedged positions, security borrowing risks in short sales, credit deterioration or default risks, systems risks and other risks inherent in the fund's activities. Certain investment techniques of a fund (e.g., use of direct leverage or indirectly through leveraged investments) can, in certain circumstances, magnify the impact of adverse market moves to which a fund may be subject.

### General economic and market conditions:

The success of a fund's activities may be affected by general economic and market conditions, such as interest rates, availability of credit, inflation rates, economic uncertainty, changes in laws (including laws relating to taxation of a fund's investments), trade barriers, currency exchange controls, and national and international political circumstances (including wars, terrorist acts or security operations). These factors may affect the level and volatility of securities prices and the liquidity of a fund's investments. Volatility or illiquidity could impair a fund's profitability or result in losses. A fund may maintain substantial trading positions that can be adversely affected by the level of volatility in the financial markets.

**Currency risks and non-United States investments.** Investments may be denominated in non-U.S. currencies. Accordingly, changes in currency exchange rates, costs of conversion and exchange control regulations may adversely affect the dollar value of investments.

**Dependence on trading manager.** Performance is more dependent on manager-specific skills, rather than broad exposure to a particular market.

**Event risk.** Given their niche specialization, market dislocations can affect some strategies more adversely than others.

**Financial services industry risk factors.** Financial services institutions have asset and liability structures that are essentially monetary in nature and are directly affected by many factors, including domestic and international economic and political conditions, broad trends in business and finance, legislation and regulation affecting the national and international business and financial communities, monetary and fiscal policies, interest rates, inflation, currency values, market conditions, the availability and cost of short-term or long-term funding and capital, the credit capacity or perceived creditworthiness of customers and counterparties, and the volatility of trading markets. Financial services institutions operate in a highly regulated environment and are subject to extensive legal and regulatory restrictions and limitations, and to supervision, examination and enforcement by regulatory authorities. Failure to comply with any of these laws, rules or regulations, some of which are subject to interpretation and may be subject to change, could result in a variety of adverse consequences, including civil penalties, fines, suspension or expulsion, and termination of deposit insurance, which may have material adverse effects.

**General/Loss of capital.** An investment in alternative investment funds involves a high degree of risk. There can be no assurance that the alternative investment fund's return objectives will be realized, and investors in the alternative investment fund could lose up to the full amount of their invested capital. The alternative investment fund's fees and expenses may offset the alternative investment fund's trading profits.

**Lack of information.** The industry is largely unregistered and loosely regulated, with little or no public market coverage. Investors are reliant on the manager for the availability, quality and quantity of information. Information regarding investment strategies and performance may not be readily available to investors.

**Leverage.** The capital structures of many financial services companies typically include substantial leverage. In addition, investments may be consummated through the use of significant leverage. Leveraged capital structures and the use of leverage in financing investments increase the exposure of a company to adverse economic factors, such as rising interest rates, downturns in the economy or deteriorations in the condition of the company or its industry, and make the company more sensitive to declines in revenues and to increases in expenses.

**Limited liquidity.** Interests are not publicly listed or traded on an exchange or automated quotation system. There is not a secondary market for interests and, as a result, invested capital is less accessible than that of traditional asset classes. Also, withdrawals and transfers are generally restricted.

**Potential conflicts of interest.** The payment of a performance-based fee to the trading manager may create an incentive for the trading manager to cause the alternative investment fund to make riskier or more speculative investments than it would in the absence of such incentive.

**Speculation.** Alternative investments, often employ leverage, sometimes at significant levels, to enhance potential returns. Investment techniques may include the use of derivative instruments, such as futures, options and short sales, which amplify the possibilities for both profits and losses, and may add volatility to the alternative investment fund's performance.

**Valuation.** Because of overall size or concentration in particular markets or positions held by the alternative investment fund, or for other reasons, the value at which its investments can be liquidated may differ, sometimes significantly, from the interim valuations arrived at by the alternative investment fund.

## DEFINITIONS OF INDICES

**HFRI Macro Index.** Investment managers that trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top-down and bottom-up theses, quantitative and fundamental approaches, and long- and short-term holding periods. Although some strategies employ relative value techniques, macro strategies are distinct from relative value strategies, in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to equity hedge, in which the fundamental characteristics of the company are the most significant and are integral to the investment thesis.

**MSCI World Index.** A free float-adjusted market capitalization index that is designed to measure global developed market equity performance. The MSCI World Index consists of the following 23 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States.

**S&P 500 Index (S&P 500).** Consists of 500 stocks chosen for market size, liquidity and industry group representation. It is a market-value weighted index (stock price times number of shares outstanding), with each stock's weight in the index proportionate to its market value. All returns include reinvested dividends except where indicated otherwise. The S&P 500 Total Return Index also includes dividends reinvested.

#### DEFINITIONS OF HEDGE FUND STRATEGIES

**Diversified.** Multi-strategy approach that is diversified among the primary strategies listed below. Manager is able to blend individual strategies to create higher efficiency and lower volatility.

**Long/Short Equity.** Long or short positions in equities or options deemed to be under or over valued. Manager does not attempt to neutralize the amount of long and short positions (i.e., will be net long or net short).

**Event driven.** Focuses on particular corporate events, such as investments in companies whose capital structure is undergoing change.

**Merger arbitrage.** Investments in securities of firms involved in mergers.

**Distressed.** Investments in companies in reorganization or bankruptcy.

#### Macro-Opportunistic

**Global macro.** Managers analyze fundamental and economic data to seek to capitalize on the relative economic strengths/weaknesses of countries, regions or currencies.

**Opportunistic.** Generally, these funds are aggressive and seek to make money in the most efficient way at a given time.

**Relative Value.** Involves simultaneous purchase and sale of similar securities to exploit pricing differentials. Also attempts to neutralize long and short positions to minimize the impact of general market movements. This closely describes the equity market neutral sub-strategy, but also applies to fixed income arbitrage (e.g., it reduces exposure to the yield curve) and statistical arbitrage (e.g., quantitative analysis of technical factors) sub-strategies.

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