## Looking back: The importance of forward-looking assumptions

The importance of forward-looking assumptions cannot be understated. **Exhibit 1** illustrates the error of applying historical average market returns as a proxy for future results. The magnitude of difference between the historical and the actual results reinforces the adage that "past is not necessarily prologue." It goes without saying that interpreting the exact trail of historical market results as representative of future outcomes can have a material impact on expectations of portfolio results and on the ability of institutions to meet their goals and objectives.

Considering the impact that asset class risk, return and correlations have in constructing an accurate assessment of forward-looking efficient frontiers, policy benchmarks and strategic allocations, considerable resources have been dedicated to the task of producing J.P. Morgan's annual assessment of the forward 10- to 15-year outlook—our proxy for two economic cycles. For 18 years, J.P. Morgan has been generating the *Long-term Capital Market Return Assumptions* on an annual basis. Over that time period, our assumptions have attracted considerable attention and application among our clients and consultants.

EXHIBIT 1: PAST IS NOT NECESSARILY PROLOGUE—COMPARING LONG-TERM HISTORICAL AVERAGE EXPECTATIONS WITH 10-YEAR ACTUAL RESULTS (1974-2003 VS. 2004-2013)
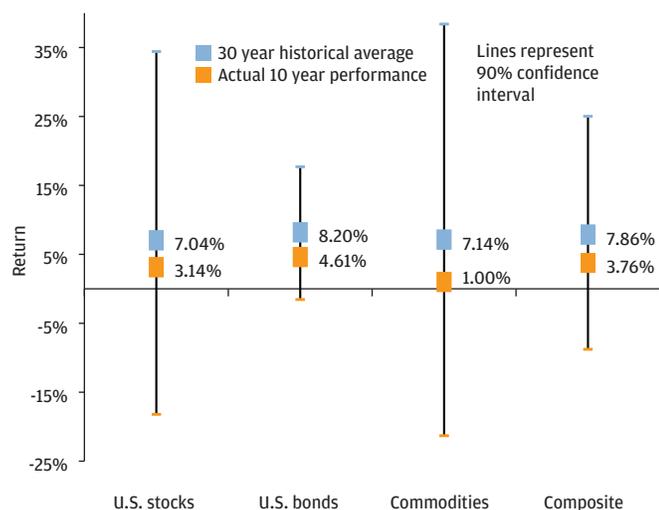
Source: J.P. Morgan. 30-year historical average from January 1974–December 2003; actual 10-year performance from January 2004–September 2013.

Starting in 2004, the asset class assumptions were expanded to include a more comprehensive set of sub-asset classes and strategies, such as Asia ex Japan equity, and alternative strategies, such as diversified hedge funds—all of which are essential in sophisticated portfolio building. With the 2014 *Long-term Capital Market Return Assumptions*, we now have the ability to look back over the minimum estimation time frame with a more robust set of assumptions and examine the projection record broadly, to answer the question, are we any good at this exercise?
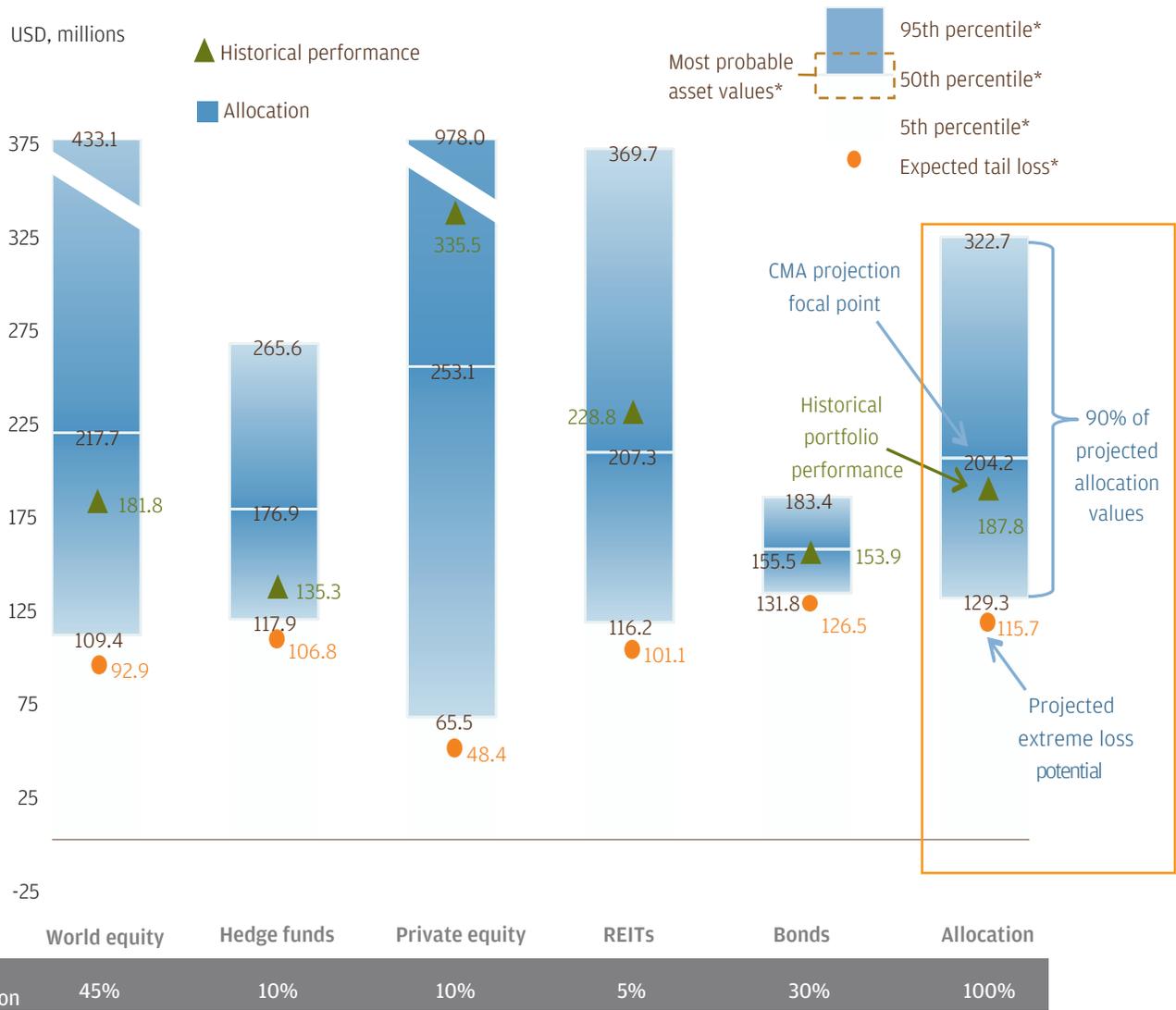
Looking back over the past 10 years of financial market history, this estimation time period was anything but normal, including as it did a recovery from a stock market crash and recession, a credit bubble, a second stock market crash and subsequent great recession, with an ongoing global deleveraging that is still in its early to mid stages in many parts of the world. With the "unknown unknowns" dominating the past 10-year assessments, hitting the target rather than hitting the bull's-eye might seem an appropriate criteria for judging the results. In any estimation, we believe our bottom-up fundamental assessments, coupled with our top-down vision of what's different this time, capture the dynamic of reversion to mean and the unique aspects of each forward economic cycle reasonably well.

As a means of testing the value of the J.P. Morgan 10-year projections for 2004 through to September 2013, we employ a similar portfolio-level exercise. Using a more granular, sophisticated asset allocation, the J.P. Morgan projections are pitted against the actual historical results[1] (**Exhibit 2**). The results are impressive for three main reasons:

• At the end of the 10-year period, the portfolio's total wealth value projected by J.P. Morgan's *Long-term Capital Market Return Assumptions* differed by approximately 8% from the performance of a portfolio using actual benchmark results. This margin of error represents a thirty-eighth percentile rank within a non-normal distribution framework (with a fiftieth percentile rank being a "perfect" score).

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[1] Balanced portfolio constructed with allocation of 45% world equity, 30% core global bonds, 10% hedge funds, 5% REITs and 10% private equity.

EXHIBIT 2: J.P. MORGAN LONG-TERM CAPITAL MARKET RETURN ASSUMPTIONS VS. ACTUAL MARKET RESULTS IN THE CONTEXT OF A BALANCED PORTFOLIO*

Range of projected asset values from the 2004 Long-term Capital Market Return Assumptions and realised returns

USD, millions

▲ Historical performance

■ Allocation

■ 95th percentile*

Most probable asset values* □ 50th percentile*

5th percentile*

● Expected tail loss*

| World equity | Hedge funds | Private equity | REITs | Bonds | Allocation |

- World equity: 433.1, 217.7, 181.8 ▲, 109.4, 92.9 ●
- Hedge funds: 265.6, 176.9, 135.3 ▲, 117.9, 106.8 ●
- Private equity: 978.0, 335.5 ▲, 253.1, 116.2, 65.5, 48.4 ●
- REITs: 369.7, 228.8 ▲, 207.3, 116.2, 101.1 ●
- Bonds: 183.4, 155.5, 153.9 ▲, 131.8 ●, 126.5
- Allocation: 322.7, 204.2, 187.8 ▲, 129.3, 115.7 ●

CMA projection focal point

Historical portfolio performance

90% of projected allocation values

Projected extreme loss potential

	World equity	Hedge funds	Private equity	REITs	Bonds	Allocation
Asset allocation	45%	10%	10%	5%	30%	100%

Source: J.P. Morgan. *Notes: (1) This is a projection used for illustrative purposes only and does not represent investment in any particular vehicle. References to future asset values are not promises or even estimates of actual returns you may experience. Past performance is no guarantee of future results. It is not possible to invest directly in an index. (2) "Most probable asset values," denoted by the darkly shaded area, indicates the range in and around the fiftieth percentile. The fiftieth percentile indicates the middle wealth value of the entire range of probable asset values. The ninety-fifth percentile wealth value indicates that 95% of the probable asset values will be equal to or below that number; the fifth percentile wealth value indicates that 5% of the probable asset values will be equal to or below that number. Another way of looking at it is 90% of the probable asset values will be between those two figures. ETL is an assessment of the average loss as a result of a tail event (tail = worst 5% of outcomes). (3) Historical allocation of 45% world equity, 10% hedge funds, 10% private equity, 5% REITs, 30% global aggregate bonds. Asset allocation assumes annual rebalancing, no taxes and no cash flows. All returns are based on index data and include no manager alpha. Indices used: Barclays Capital Global Aggregate Bond Index, MSCI Developed World Index, HFRI Fund of Funds Diversified Index, Venture Economics U.S. Buyouts Index (proxied with S&P 500 from April-September 2013), NAREIT Equity REITs Index. The 2013 historical return is proxied with the return from January to September. The projections include manager fees but not transaction costs associated with annual rebalancing.

- The projected portfolio results never fell out of a 90% confidence interval (an interval or range including 90% of all portfolio outcomes that are statistically possible using the J.P. Morgan risk, return and correlation inputs) even during the multiple market and strategy declines of 2008. There was, however, a positive four-year compounding period from 2004 through to 2007 that buffered the wealth value decline of the 2008 portfolio decline.

- The greater the volatility of the underlying asset classes in the portfolio, the greater the possibility and degree of missing the mark vs. the ultimate market performance. However, no asset class or strategy projection had no lower than a fourteenth percentile rank within the empirical distribution (with a fiftieth percentile rank being a "perfect" score).

We therefore believe that our process has been a source of stability and value add for the modelling of portfolios and allocation inputs, even when presented with the testing conditions over the past decade.

Looking forward: Getting back to normal?

At the time of writing, the global economy appears to be in a more settled environment, with evidence accruing of a quickening in global activity, signs of ongoing supportive policies by central banks, and asset class valuations that favour risk taking.

Given that this more settled environment comes hard on the heels of a government shutdown in the world's largest economy (which threatened a possible debt default), as well as concerns about the world's second-biggest economy (China), it is a relief that relative calm has been restored so quickly.

Yet despite the better cyclical outlook, ongoing structural concerns remain that are likely to affect the assumptions made over the investment horizon of this document. As we wrote a year ago, serious macroeconomic problems are the background to the present situation; on both sides of the Atlantic, there are unusually high levels of unemployment and critical problems with national budgets. Policy responses have brought interest rates to record lows, yet there has been little economic growth. Political gridlock has threatened to make matters worse, with the U.S. in danger of falling off a fiscal cliff and the eurozone in danger of disintegrating.

Our approach has been to set aside the possible consequences of extreme political intransigence in the U.S.—an assumption that has been tested almost to destruction over the final months of 2013. Nor do we allow for the demise of the euro, as might be expected should the member countries of the European Union fail to agree on the measures necessary to make the eurozone a feasible currency area.

Instead, we have considered a central scenario that we believe to be the most pertinent for financial markets over the next 10 years. In particular, we consider the consequences of the following issues: a prolonged period of public sector deleveraging in the U.S. and in Europe; and the question of global rebalancing, as well as inflation.

Deleveraging and rebalancing: Converging towards the longer term?

Public sector deleveraging remains an ongoing burden for the world economy, despite the extent of the fiscal adjustment that has already occurred. In the past year, public debt levels have risen further in most developed countries, adding to the burden of adjustment over the next 10-to-15 years.

Meanwhile, the October 2013 edition of the IMF's Fiscal Trends shows that sizeable fiscal tightening is still required over the next seven years to stabilise and reduce debt ratios (**Exhibit 3**). For example, in the case of the U.S., the five percentage point tightening of fiscal policy required over a seven-year period is sizeable, especially for an economy that has seen trend real GDP growth of just 1.2% per annum over the 2009-2013 period.

Nevertheless, it should be noted that some of this growth disappointment has been due to tighter fiscal policy as a result of the sequester in the U.S. Meanwhile, it should be noted that the burden of fiscal adjustment has reduced for several eurozone countries.