



Long-term capital market return assumptions

2013 estimates and the thinking behind the numbers

UK

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J.P. MORGAN ASSET MANAGEMENT
LONG-TERM CAPITAL MARKET
RETURN ASSUMPTIONS

J.P. Morgan Asset Management's Long-term Capital Market Return Assumptions are developed each year by our Assumptions Committee, a multi-asset class team of senior investors from across the firm. The Committee relies on the input and expertise of a range of portfolio managers and product specialists, striving to ensure that the analysis is consistent across asset classes. The final step in the process is a rigorous review of the proposed assumptions and their underlying rationale with the senior management of J.P. Morgan Asset Management.

Our capital market assumptions are used widely by institutional investors—including corporate pension plans, endowments, foundations, insurance companies, sovereigns and government-affiliated institutions—to ensure that investment policies and decisions are based on real-world, consistent views and can be tested under a variety of market scenarios.

ABOUT
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J.P. Morgan Global Institutional is distinguished by its capital markets knowledge, global investment expertise and the long-term, proactive partnerships it establishes with clients. Our innovative strategies span equity, fixed income, real estate, private equity, hedge funds, infrastructure and asset allocation. J.P. Morgan Global Institutional is part of J.P. Morgan Asset Management, with assets under supervision of USD 2.1 trillion and assets under management of USD 1.4 trillion (as of 31/12/2012).

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**J.P. Morgan Asset Management Long-term
Capital Market Return Assumptions**

2013 estimates

FOREWORD

The ancient Mayans predicted that the world as we knew it would end in late 2012. While this prediction has not literally been fulfilled, we are certainly living in challenging and ever changing times. Indeed, the Mayans may simply have anticipated great changes in our environment and the way in which systems and people interact—a new beginning for the world as we know it.



David Shairp
Global Strategist,
Asset Management Solutions Group

Our *Long-term Capital Market Return Assumptions* appear for their 17th year. Once more, we share our best thinking on the long-term outlook—the result of collaboration among our Asset Management Solutions Group, Institutional Asset Management Strategy Team and J.P. Morgan Private Bank, as well as a broad range of investment experts across the firm and around the world.



Anthony Werley
Chief Portfolio Strategist,
Endowments & Foundations Group

This is the second year that our long-term assumptions are being delivered in an expanded report format, in an effort to draw together ten- to 15-year assumptions for returns, volatilities and correlations, as well as the macro thinking behind them. We believe that

J.P. Morgan Asset Management offers one of the most established processes, with a broad coverage of asset classes numbering approximately 50, delivered by an experienced investment team.

But, above all, this report is intended to be consistent, cohesive and comprehensive, offering an accessible and transparent audit trail for clients and their boards and regulators. We have, therefore, maintained our simple building-block process to arrive at our estimates of fixed income and equity returns, so that users can challenge and question these inputs.



Michael Feser, CFA
Global Investment Director and
Portfolio Manager,
Asset Management Solutions Group

We would like to thank the many colleagues throughout the organisation who have contributed to the output or helped in the production of this document. As the ancient Mayans foresaw significant global changes, so we too are constantly seeking to develop and improve our investment insights and analysis to help our clients successfully anticipate future challenges and thrive amid uncertainty.

We very much hope that you will find this edition of the *Long-term Capital Market Return Assumptions* useful and insightful and look forward to your suggestions for further improvement.

A stylized handwritten signature of David Shairp.

David Shairp

A handwritten signature of Anthony Werley.

Anthony Werley

A handwritten signature of Michael Feser, CFA.

Michael Feser, CFA

Settling down for the long haul

by **David Shaarp**, *Global Strategist, Asset Management Solutions Group*
and **Alexandre Christie**, *Strategy Advisor, Strategy Group*

Serious macroeconomic problems dominate 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 historic lows, yet there is little economic growth. Continuing political gridlock could undermine the efficacy of US policymaking in coming months, following the fiscal cliff drama at the end of 2012. Meanwhile, policy inadequacy in the eurozone had threatened possible disintegration of the single currency, until the European Central Bank (ECB) intervened with a verbal commitment to support the euro at all costs.

A more settled and 'normal' period for the US and western Europe may be some way off and the best way to think about possible paths from here to there may be in terms of scenarios.

Our approach has been to set aside the possible consequences of extreme political intransigence. Thus, we did not allow for a deep recession in the US such as might have been expected if the temporary tax reductions of the Bush era (and a number of other stimulus measures) had been left to expire across the board. Nor do we allow for the demise of the euro, as might be expected if the member countries of the European Union (EU) fail to agree on the measures necessary to make the eurozone a feasible currency area.

Instead, we consider a central scenario that we believe to be the most pertinent for financial markets over the next ten years. In particular, we consider the consequences of two broad phenomena: a prolonged period of public sector deleveraging in the US and in Europe; and the impact of a change in monetary and fiscal policy in the developed markets.

Deleveraging continues

The theme of public sector deleveraging that we highlighted in last year's edition is set to continue. In the past year, public debt levels have risen further, placing additional pressure on the burden of adjustment over the next ten-to-15 years. The latest edition of the International Monetary Fund's (IMF's) *Fiscal Trends* (October 2012) shows that the required fiscal adjustment needed over the next ten years is even larger than previously thought. Indeed, the UK government announced in its Autumn Statement that its target of stabilising and reducing the UK public debt relative to GDP by the time of the next general election, due in May 2015, is unlikely to be met.

Governments are carefully working their way down the menu of outcomes for possible debt reduction (growth, repayment, inflation, restructuring and default). In early 2012, the Greek government restructured its public debt, reducing debt outstanding by EUR 107 billion—the largest government reduction in history. At the time of this writing, a second restructuring was underway and there is every chance that further relief will be needed in coming years. With the economics (and politics) of deleveraging, one can (almost) always count on indebted governments to do the wrong things, after they have exhausted the other options.

Challenges for policymakers

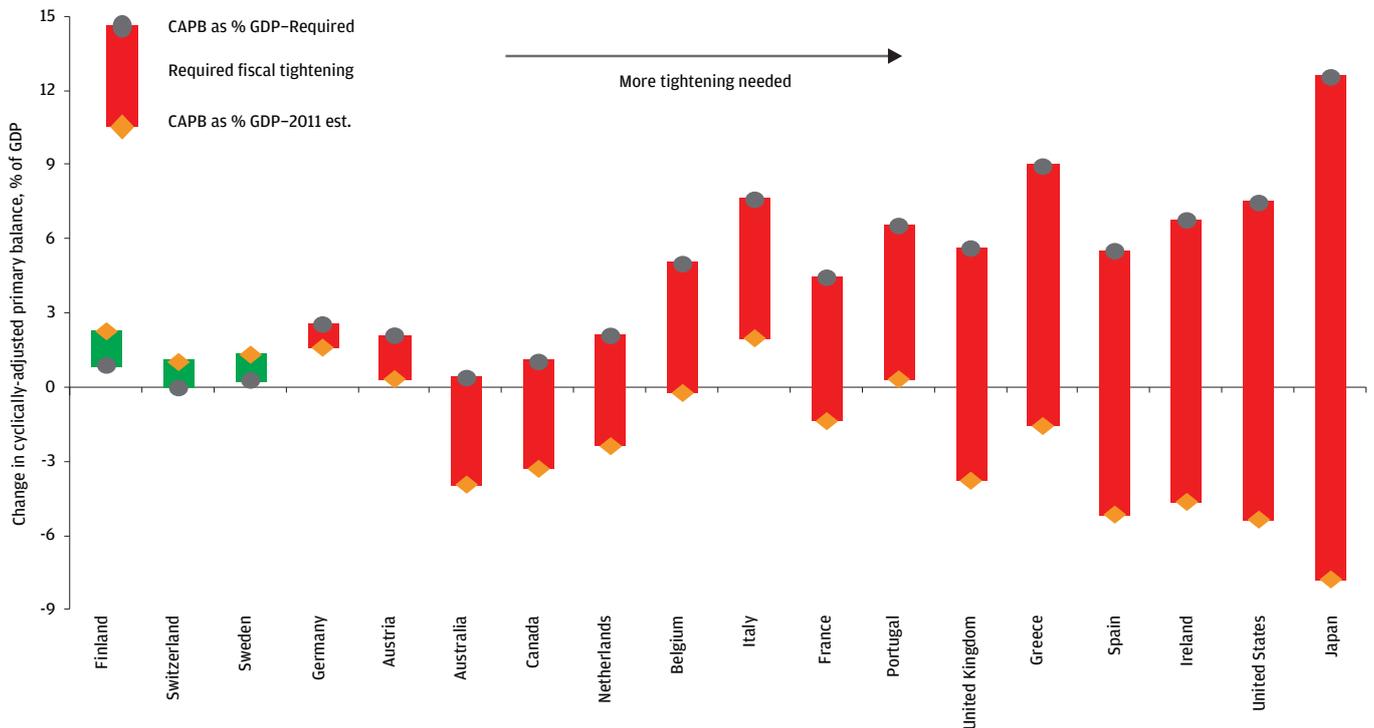
Further deleveraging presents two challenges for policymakers. The first challenge is the potential onset of 'adjustment fatigue,' to use the IMF's description. More pertinently, this fatigue is likely to test the electoral patience of countries to continue to soldier on with further fiscal austerity. **Exhibit 1** (on the following page) shows IMF estimates of the *cumulative* fiscal tightening needed to achieve cyclically-adjusted primary budget balances (CAPB)¹ consistent with long-term debt reduction. The chart shows CAPB as a percentage of GDP estimates for 2011, targeted levels and the gap between the two, which represents the required fiscal tightening. To place these adjustments in perspective, the painful adjustments made by Greece over the past three years have amounted to 14.1 percentage points (ppts) of GDP, much more than the 4.3 ppts achieved by the UK. It is therefore somewhat disturbing to see the scale of required adjustment in the US (12.8 ppts) and Japan (20.3 ppts). The required fiscal adjustment needed in several countries is so severe that austerity is likely to be a fixture over the next decade, or even longer. This could try the patience of voters over at least the next two sets of elections.

The second challenge concerns the efficacy of monetary policy, with a number of reports recently questioning whether it (and the unconventional programmes adopted in the past five years) has 'run out of bullets.' While there are no *theoretical* limits to the extent to which a central bank can expand its balance sheet to raise prices and thus to combat deflation, there may be *practical* limits to the extent to which this can be done. A recent paper by William White,² the former head of the Bank for International Settlements (and one of the few who accurately anticipated the crisis of 2007/2008) suggested that there are limits to what central banks can do. Moreover, he thought that there were reasons for believing that monetary stimulus might now be far less effective in boosting aggregate demand than previously. The paper also raised the concerns that ultra easy monetary policy could be a threat to the health of financial institutions and encourage unsound policies by governments.

¹ The primary budget balance is the overall budget balance, excluding the costs of debt service.

² White, William R. (2012, August) "Ultra Easy Monetary Policy and the Law of Unintended Consequences," Federal Reserve Bank of Dallas, working paper No. 126.

EXHIBIT 1: FISCAL ADJUSTMENT REQUIRED OVER THE NEXT DECADE*



Source: IMF Fiscal Trends, October 2012.

*The chart shows the gap between current underlying fiscal balances, excluding debt service costs (diamonds) and the levels needed at the end of the next ten years that are consistent with stabilising/falling debt ratios (circles).

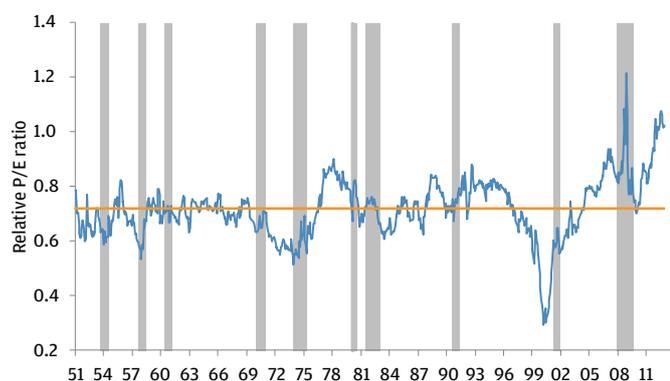
The assumption chart is for illustrative purposes only.

Re-rating of yield and spread product

One of the investment consequences of ultra easy monetary policies is the search for safe haven investments and a scramble for income. This has spawned a large number of products devoted to income investing in the current environment of low government bond yields. While the search for income may make it easier for corporations and pension funds to fund liabilities and match expected cash flows, income investing also carries costs. The most significant of these costs are the implied risks that arise from a focus on targeting income rather than total return. The reach for greater yield and wider spreads can mean that investors take on more risks than before - risks that may be under-appreciated. For example, greater exposure to high yield bonds involves taking on larger default risk, which tends to also come with greater illiquidity risk. Ultimately, the search for yield often also leads to greater volatility in the longer term, even if it is compressed over shorter time frames. Investment in longer-dated government bonds also involves greater duration risk - a risk that could crystallise most painfully when the current period of ultra-easy policies comes to an end.

The current low-yield environment has led income investors to look beyond fixed income to real assets, with bond-like characteristics. Moreover, certain equities that can offer material yield advantages are being sought after, despite the differences in income characteristics between equity and fixed income assets. As **Exhibit 2** on the following page shows, the relative valuation of income-oriented versus growth stocks in the US has led some senior investors to mutter darkly about a developing 'yield bubble.'

EXHIBIT 2: THE RE-RATING OF HIGHER-YIELDING US STOCKS*



Source: Empirical Research Partners, Corporate Reports, National Bureau of Economic Research.

*The chart shows the P/E of the top quintile of US stocks ranked by dividend yield, relative to the market average and using capitalisation-weighted data. The index used is the S&P 500. Data through November 2012.

Asset class implications

Before turning to our return assumptions at the broad asset class level, **Exhibit 3** provides a macroeconomic backdrop for the developed world. Real GDP expectations are unchanged for the US and Japan and revised slightly upward for Europe and the UK. On the inflation front, a more inflationary stance at the ECB should bring Europe more in line with the UK and US. In Japan, despite resolve to reverse negative inflation, this could be a long time in coming. Emerging markets (EMs), however, are likely to be the source of growth and inflation.

Fixed Income

Government bond yields are likely to rise significantly from today's levels, although not for a while. The period of 'normalisation' is assumed to be extended because central banks are likely to keep policy rates lower for longer. Fixed income returns are likely to fall as yields rise toward expected higher 'equilibrium' levels in the latter part of our forecast horizon. Returns on US cash and long Treasuries are expected to be negative in real terms over the next decade, given an assumed annual core inflation rate of 2.25% in the US (see **Exhibit 4A** on the following page for fixed income assumptions).

Equities

Equity returns are likely to benefit from higher dividend yields, while we expect little or no benefit from valuations, following the surge in performance during 2012. While developed market growth prospects may have dimmed, we continue to look for western companies to benefit from fast-growing markets

EXHIBIT 3: EXPECTED TEN- TO 15-YEAR ANNUALISED GROWTH AND INFLATION RATES

Comparison of Assumptions*	2012 (%)	2013 (%)
UNITED STATES		
Headline inflation	3.25	2.50
Core inflation	2.75	2.25
Real GDP	2.25	2.25
UNITED KINGDOM		
Headline inflation	3.00	3.00
Core inflation	2.50	2.50
Real GDP	1.75	2.00
EUROPE		
Headline inflation	2.00	2.25
Core inflation	1.75	2.00
Real GDP	1.25	1.50
JAPAN		
Headline inflation	1.00	0.25
Core inflation	0.50	0.00
Real GDP	1.00	1.00

Source: J.P. Morgan Asset Management estimates.

*2013 capital market assumptions are as of 30 September 2012; 2012 assumptions are as of 31 October 2011.

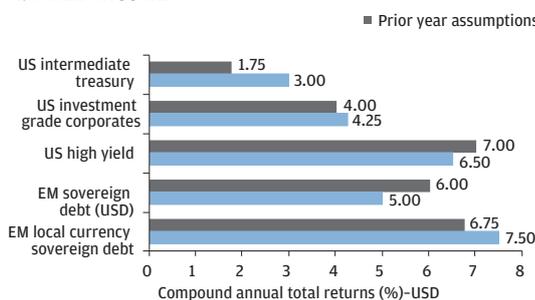
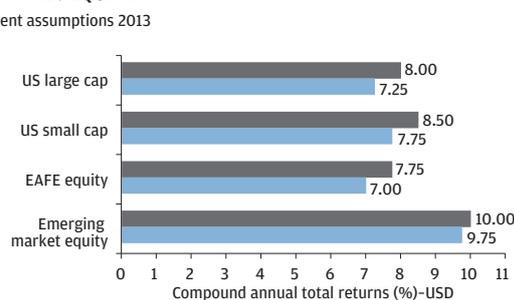
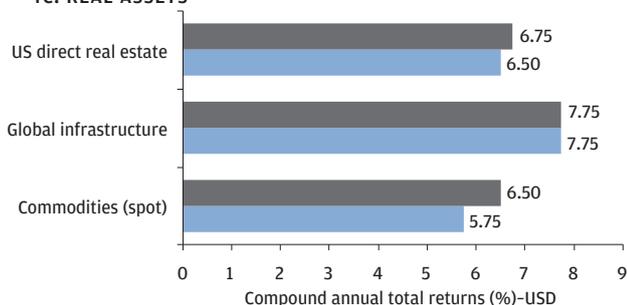
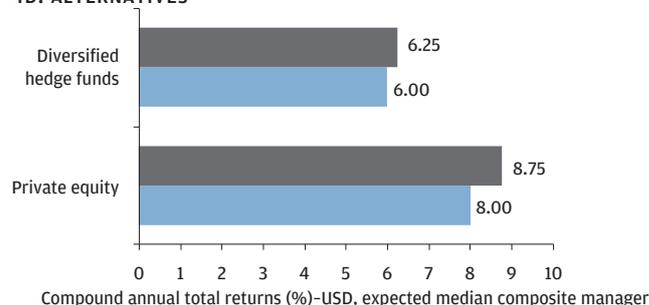
overseas. Emerging stock markets are expected to remain the top performers (see **Exhibit 4B** on the following page).

Nominal US equity returns of 7.25% equate to average annual real returns of 5%, after subtracting our core inflation estimate. This is respectable, but below the long-term average of 6.2% per annum.

Alternatives

The outlook for real estate returns remains promising. Capitalisation rates have compressed over the past year, but property prices remain depressed and operating fundamentals are likely to strengthen. Commodity returns are still expected to outstrip inflation, but are likely to ease slightly given the projected moderation in global growth. Returns are generally assumed to be in line with global nominal GDP growth, but are adjusted over time for greater efficiency of asset use, as emerging market commodity consumers move up the efficiency curve (see **Exhibit 4C** on the following page).

With the slight reduction assumed for publicly traded risk asset returns, median hedge fund returns are also expected to be slightly below last year's assumptions, particularly for more directional strategies. Median manager private equity

EXHIBIT 4: SELECTED LONG-TERM (TEN- TO 15-YEAR) CAPITAL MARKET RETURN ASSUMPTIONS**4A: FIXED INCOME****4B: EQUITY****4C: REAL ASSETS*****4D: ALTERNATIVES***

Source: J.P. Morgan Asset Management. Estimates are as of 31 October 2011 and 30 September 2012.

Indices used: Barclays US Treasury 7-10 Year Index, Barclays US Corporate Index, Merrill Lynch High Yield Master II Index, J.P. Morgan EMBI Global Composite Index, J.P. Morgan GBI-EM Global Diversified, S&P 500® Index, Russell 2000® Index, MSCI EAFE Index, MSCI Emerging Markets Index, NCREIF Property Index, Dow Jones-UBS Commodity Spot Index, HFRI Fund of Funds Diversified Index, Thomson Venture Economics.

*These asset classes and strategies are unlike other asset classes shown above, in that there are no underlying investable indices.

returns should benefit as capital market activity revives, with returns assumed to be similar to mid-cap equities. However, we expect wide differentials across managers (see **Exhibit 4D**).

Enhanced coverage in this year's assumptions

Currencies

Currency exchange rates, while not treated as a stand-alone asset class, are critical to ensure the internal consistency of our assumptions, as they create an explicit link between economies and financial markets globally. In prior years, our exchange rate assumptions were derived in their entirety from local interest rate differentials. This year, we have expanded this framework by drawing on a broader set of widely accepted theoretical concepts, such as absolute and relative purchasing power parity (PPP), productivity differentials and the terms of trade, to develop assumptions that reflect the future fair value of a currency exchange rate. While we have arrived at these

assumptions after applying careful quantitative analysis and fundamental economic judgment, we like to caution investors not to treat these as point forecasts, but as our attempt to capture the impact of underlying macroeconomic trends on the fair value of a currency exchange rate over the long term. As currency markets have demonstrated repeatedly in the past, exchange rates tend to swing in very wide ranges around their fair values for sustained periods of time, and thus, we do expect the observed exchange rates to do the same relative to our assumptions in the future (see **Exhibit 5** on the following page).

Emerging markets

This year, we have also expanded our coverage to include eight of the largest and most significant emerging markets: Brazil, China, India, Korea, Mexico, South Africa, Russia and Taiwan. The combined equity market capitalisation of these eight markets amounts to USD 8.7 trillion, accounting for 76% of emerging market capitalisation and equivalent to 52% of US equity market capitalisation (See **Exhibit 6**).

EXHIBIT 5: ASSUMPTIONS FOR SELECTED CURRENCY EXCHANGE RATES—NEXT TEN YEARS

Currency		End Sep 2012 levels	Assumptions
Euro	EUR/USD	1.29	1.23
Japanese yen	USD/JPY	78	75
Swiss franc	USD/CHF	0.94	1.00
British pound	GBP/USD	1.62	1.54
Australian dollar	AUD/USD	1.04	1.08
Canadian dollar	USD/CAD	0.98	0.98
Swedish krona	USD/SEK	6.6	6.3

Source: Bloomberg, J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

*According to market convention, CURRENCY A/CURRENCY B means one unit of CURRENCY A is worth the stated number of units of CURRENCY B. EUR/USD = 1.23 means 1.00 EUR is worth 1.23 USD.

EXHIBIT 6: LONG-TERM ASSUMPTIONS FOR SELECTED EMERGING MARKETS

Country	Real GDP growth (% p.a.)	Core inflation (% p.a.)	Equity returns, local currency (% p.a.)
Brazil	4.25	5.00	12.3
China	7.50	3.00	11.1
India	7.75	7.50	16.3
Korea	4.00	3.00	12.1
Mexico	3.75	3.25	12.7
Russia	3.75	5.50	11.9
South Africa	3.50	4.75	12.8
Taiwan	4.00	2.00	10.6

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

In our view, emerging markets are currently more complex than a straightforward play on global growth. From a macro perspective, the eight ‘mainstream’ emerging markets seem to have arrived at an inflection point after a decade of rapid development. As they place a greater emphasis on meeting domestic demand, as opposed to exporting, their large current surpluses may dissipate.

A fundamental lesson from the history of emerging economies is that the concept of ‘emerging’ is not nearly as definitive and one-way as the term implies. Graduation to developed status does not guarantee a future of stability. For investors, the main message is clear: Market development is dynamic and volatile, rather than steady and uniform. The recent past may imply that the emerging markets merit a strategic allocation as a growth asset. The longer view of history requires investors to remain vigilant, market by market, to ensure that they are fairly compensated for a constantly shifting mix of risk and reward.

Methodology

As in previous years, we have used a building-block approach to arrive at our assumptions. We believe that this provides clarity and transparency for readers and enables them to challenge and reconcile the inputs that go into our assumptions. The building blocks are as follows:

Fixed income return

Expected future yields +/- change in bond prices

Equity return

Inflation + real earnings growth + dividend yield +/- impact of valuation changes

Alternative asset returns

Historical analysis/investor judgment about relationship to public markets

Volatility and correlations

In our view, investors should allow for the effects of serial correlation (and indeed other forms of non-normality, such as fat-left tails and converging correlations) in their asset allocation decision-making process. In our *Long-term Capital Market Return Assumptions*, we test for serial correlation and adjust these estimates accordingly, based on quantitative techniques as well as a qualitative review for reasonableness and consistency. We believe risk estimates that account for the effects of serial correlation represent improved starting points for the asset allocation process, compared to those derived purely from historical data using traditional techniques. As a final step in the process, we have adjusted the volatility levels for selected assets, to ensure that not only the return, but also the implied risk-adjusted returns or Sharpe ratio assumptions are internally consistent.

I. Long-term Capital
Market Return Assumptions
by asset class

Lower for even longer

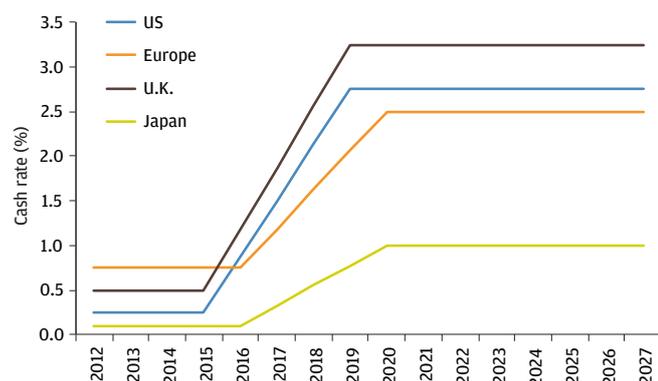
by **Michael Feser, CFA**, *Global Investment Director and Portfolio Manager, Asset Management Solutions Group*
and **Grace Koo, PhD**, *Research and Portfolio Management, Asset Management Solutions Group*

In brief

Expect lacklustre fixed income returns as rates stay low during the next few years, followed by rising yields over the medium term:

- Government bond yields should stay low for longer as we now expect the normalisation of rates to begin in 2015 for the US and UK
- We expect the normalisation process for the euro area and Japan to begin a year later than in the US
- Corporate bonds continue to benefit from investor demand for yield and income.
- Emerging market equilibrium spreads and local currency bond yields remain similar to last year's assumptions.

We expect developed economies to operate with substantial slack and growth to remain subdued in the US and elusive in the eurozone, while inflation expectations continue to be firmly anchored. Major central banks are therefore likely to keep policy rates low for the next three-to-four years, resulting in a sustained period of low cash and bond yields ahead. Policy rates are expected to start normalising to their 'equilibrium' levels only in 2015 to 2016, as resource utilisation finally tightens to more typical levels (See **Exhibit 1**, next page). This pushes our expectation of a normalised yield environment further out in the future compared to last year's assumptions.

EXHIBIT 1: NORMALISATION PATHS FOR CASH RATE ASSUMPTIONS

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

The combination of an extended period of accommodative central bank policy with continued investor preference for safety will likely lead to negative real cash returns in most markets, with cash returns, on average, 75 basis points (bps) below headline inflation.

Similar to last year, we believe yield curves are likely to flatten globally, especially in the long- to ultra-long end, as demographics and structural factors, such as the growth of liability-driven investments, increase the demand for long-duration securities. The search for income and a narrower credit quality differential between sovereign and corporate credits should lead to lower than historical equilibrium spread levels for high yield bonds. We believe credit loss rates may fall below their historical average, as the adverse impact from shorter economic cycles will be more than offset by continued underwriting discipline and a lower level of excess credit buildup, benefiting high-yield credit returns globally.

In the following sections, we discuss the forecasts by region in more detail (see **Exhibit 2**).

US rates: A quicker path to equilibrium

Cash and bond yields are expected to be stable for the next three years, followed by a three-year adjustment period toward equilibrium yields of 2.75% for cash and 4.75% for ten-year US Treasuries. We continue to expect rates to reach their equilibrium level by 2018, the same as last year, but we have moved back the start of the normalisation period while allowing for a faster adjustment pace thereafter. Although the equilibrium cash yield is forecasted to be 25 bps above headline inflation, the Fed's accommodative policy and

EXHIBIT 2: FIXED INCOME—SELECTED LONG-TERM EQUILIBRIUM RETURN ASSUMPTIONS

GOVERNMENT—COMPOUND (IRR) TEN-15 YEAR RETURNS (LOCAL)

	Yields (%)	Returns (%)
US core inflation	2.25	
US cash	2.75	1.75
US 10-yr Treasury	4.75	3.25
US TIPS (real yield)	1.50	3.75
US municipal	3.75	3.25
European core inflation	2.00	
European cash	2.50	1.25
European 10-yr government bond	4.50	2.50
UK core inflation	2.50	
UK cash	3.25	2.25
UK 10-yr government bond	5.00	3.00
Japan core inflation	0.00	
Japan cash	1.00	0.50
Japan 10-yr JGB	2.00	1.25

CREDIT—COMPOUND (IRR) TEN-15 YEAR RETURNS (LOCAL)

	Spread (bps)	Returns (%)
US corporate bonds	125	4.25
US high yield bonds	475	6.50
European investment grade corporate bonds	125	3.75
Pan-European high yield bonds	500	7.00
EM sovereign debt*	250	5.00
EM local currency sovereign debt*	7.50%	7.50
EM corporate debt*	300	6.50

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012. Equilibrium fixed income yields have been rounded to the nearest 25 bps.

*Spreads are over equivalent-maturity US Treasury securities, excepting local-currency debt which is a yield; returns are in unhedged US dollars.

investor demand for safety in the near term brings cash returns to -0.50% after adjustment for core inflation. Fixed income returns will suffer during the period when yields rise toward equilibrium levels, contributing to our expectation for ten-year US Treasury bonds to return 3.25% annually over the forecast horizon.

We maintain the view that the yield curve between cash and ten-year US Treasuries will be slightly steeper than in the past. This reflects a minor inflation bias and incorporates Japan's experience following an extended period of zero interest rates. We expect the long end of the yield curve, between ten-year and 30-year maturities, to flatten to 25 bps

in equilibrium due to strong structural demand for long-duration bonds.

In credit, we forecast relatively tighter spreads compared to long-run historical observations for investment grade corporate and high yield bonds, similar to last year's assumptions. Our forecasts account for shorter economic cycles helping to prevent excess credit build as well as sustained strong investor demand for income and yield. Therefore, we maintain our expectation of equilibrium investment grade corporate credit spreads at 125 bps. Continued strong investor appetite for high yield assets lead us to keep the average net premium required to hold high yield bonds at 275 bps accompanied by an average default rate of 3.0% to 3.5% and recovery rates around 40%, resulting in an expected credit loss of 200 bps. In aggregate, these effects result in an equilibrium high yield spread of 475 bps compared to the historical average of 550 bps. The corresponding return forecasts for US investment grade corporate bonds and high yield bonds are 4.25% and 6.50%, respectively.

The euro area: A slower path to equilibrium

With a new European Central Bank (ECB) president signaling a willingness to pursue a more accommodative stance, along with weaker-than-expected euro area growth dynamics in the near term, we push back the onset of normalisation for the euro area rate cycle from two years (last year's assumption) to four years. We now expect euro area rates to be anchored until 2016, accompanied by an adjustment period of three years to the equilibrium level. Cash returns will also be lacklustre in the near term, but yields will reach the equilibrium level of 2.5% in the long run, 25 bps above headline inflation. For euro government bonds,¹ we maintain the forecast of a ten-year equilibrium yield of 4.5%, which reflects, in part, a sustained level of credit differentiation among euro area sovereign issuers. The outlook for European corporate credit is similar to that for the US, with investment grade credit spreads of 125 bps and a slightly wider high yield spread of 500 bps,² reflecting an illiquidity premium for European over US high yield bonds.

¹ We assume the euro remains intact and major players, such as Spain and Italy, continue to be members of the euro area.

UK normalising at US speeds, Japan at Europe's pace

For the UK, we assume that the path to normalisation will be the same as in the US, with yields initially unchanged for three years, followed by an adjustment period of three years and an equilibrium cash yield of 3.25% – just ahead of headline inflation at 3%. For UK government bonds, we maintain the forecast of a ten-year equilibrium yield of 5%, with returns adversely affected by the required rise toward equilibrium levels, resulting in a 3.00% annualised return over the forecast horizon.

For Japan, the normalisation path is expected to be similar to that of the euro area. The long-term prospects for Japan have not changed versus last year's assumptions. Domestic savings will continue to support low rates, while cash and ten-year yields are expected to stay relatively low at 1% and 2%, respectively.

Emerging markets: An evolution

One of the bigger challenges in forecasting the equilibrium yields and spreads for emerging market (EM) fixed income is the potential for significant changes in the index composition over the forecast horizon. For hard currency EM sovereign debt, we believe the credit quality of the market is peaking, as high quality issuers are likely to focus on developing and issuing in their local currency markets, while lower-rated frontier markets will grow their issuance of external debt. Therefore, we keep the long-run equilibrium spread forecast at 250 bps over US Treasuries, unchanged from last year.

For hard currency EM corporate bonds, we believe the composition in terms of investment grade and high yield issuers is also broadly in equilibrium. The corporate sector has more cyclical sensitivity, and its average issuance size is much smaller than that of EM sovereign debt. Therefore, we anticipate corporate bonds will trade at a discount to hard currency EM sovereign bonds, with an expected equilibrium spread of 300 bps over US Treasuries, unchanged from last year.

² Given the downgrades of European hybrid and subordinated bank debt, the composition of European high yield has become more concentrated in the financial sector. Our forecast assumes a reversion of the sector composition toward a more traditional mix of corporate sector issuers.

We continue to expect equilibrium yields for local currency EM debt to rise to 7.5% over the strategic horizon. The increase is driven by the need for higher real yields, as EM national savings rates are likely to fall toward the lower levels typically seen in developed markets over time.

Further opening of the Brazilian, Indian and Russian local fixed income markets could push the equilibrium yield beyond this level. However, a significant increase in Chinese local bonds would have the opposite effect and require a downward adjustment of the equilibrium yield. Neither change in the index composition is currently contemplated or incorporated in our forecasts.

Starting from a higher base

by **David Shaarp**, *Global Strategist, Asset Management Solutions Group*
and **Archan Basu, CFA**, *US Head of Portfolio Construction, J.P. Morgan Private Bank*

In brief

Austerity in the developed economies is likely to constrain growth and profits in the coming years.

- We expect dividend payouts to rise and account for a larger share of earnings as corporations with large cash balances accommodate the demands of aging, income-focused investor bases.
- Growth stocks should outperform value stocks. We anticipate that businesses will invest in technology, the largest growth sector, to enhance productivity in a sluggish global economy while deleveraging and heightened regulation will challenge the financial sector, the largest value component.
- Strong 2012 returns imply less likelihood of a long-term re-rating of US stocks. By contrast, the depressed state of European and Japanese markets suggest modestly higher valuations in a future recovery.
- Supported by more favourable demographics and healthier public finances, emerging markets should continue to outperform those in the developed world.

2012 was a strong one for equity markets. Total returns in the major markets were above their long-term averages, consistent with our theme that markets are emerging from a decade of negative returns. Looking ahead, equity prospects for the next ten to 15 years have to contend with the macro headwind created by fiscal deleveraging with its implications of slower growth and compressed profits.

Crucial to our assessment remains a clear distinction between *economic* performance and *market* performance. While we remain guarded about the economic outlook, there are reasons why equity returns could remain respectable, even after coming off a higher base in 2012. As in previous years, we use a simple building-block macro approach to construct our equity return assumptions (**Exhibit 1**).

EXHIBIT 1: SELECTED EQUITY LONG-TERM RETURN ASSUMPTIONS AND BUILDING BLOCKS

% change	US	Europe ex-UK	UK	Japan
Real GDP	2.25	1.50	2.00	1.00
Core inflation	2.25	2.00	2.50	0.00
Nominal GDP	4.50	3.50	4.50	1.00
EPS growth	4.50	3.75	4.25	2.00
Dividend yield	2.75	3.50	3.50	2.50
Valuation impact (P/E)	0.00	0.50	0.00	0.50
Total return (local currency)	7.25	7.75	7.75	5.00

MEMO ITEMS

Real returns	5.00	5.75	5.25	5.00
Dividend yield as % of total return	38	45	45	50

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

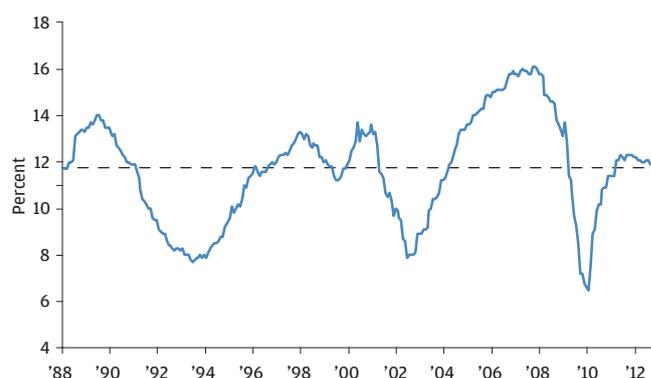
Margin and return on equity (ROE)

In general, we expect real earnings growth to hold its own relative to real GDP growth in the early years of our forecast horizon. This reflects a belief that trade openness will persist and enhance multinationals' global reach, enabling them to expand production lines and sales in foreign markets. Those companies with the largest exposure to fast-growing emerging markets - in particular, companies in Europe (excluding the UK) and Japan - should derive the greatest benefit relative to their slow-growing domestic economies. (Corporations in both geographies source a greater share of their total revenues from the emerging world than their counterparts in the United States.)

Longer term, traditional investment wisdom holds that return on equity (ROE), driven significantly by profit margins, tends to revert towards its long-term mean, usually by way of an initial overshoot (**Exhibit 2**). It is notable that at the end of the third quarter of 2012, consensus earnings estimates had margins advancing past already record highs. While long-term mean reversion at some point is likely, we believe that it could be delayed, thanks to the rising contribution of earnings from fast-growing emerging markets and a longer and more drawn-out period of accommodative monetary policy. In the event, fiscal tightening would take longer to impact corporate profits.

On margins, ROEs, and much else, Japan remains a special case. The key question is whether Japan reverts downward to its own low historical averages or upward toward the global

EXHIBIT 2: GLOBAL RETURN ON EQUITY (ROE)*



Source: Worldscope data aggregated by Thomson Datastream.

*Trailing basis. Data are as of October 2012.

mean. In other words, does Japan remain mired in its unique microeconomic dynamics or does it migrate toward other systems? We do not believe in either of these narratives in its entirety and have allowed for a mix of both.

Income

With corporate cash balances and earnings remaining close to all-time highs and with the pressure of aging populations intensifying in the US, Europe and Japan (not to mention China) over the coming ten to 15 years, we believe that investors will be attracted to yield in the future as now. This suggests that companies will be encouraged to use their capital to raise the dividend payouts favoured by retirees living on fixed incomes. Our assumption horizon reflects this

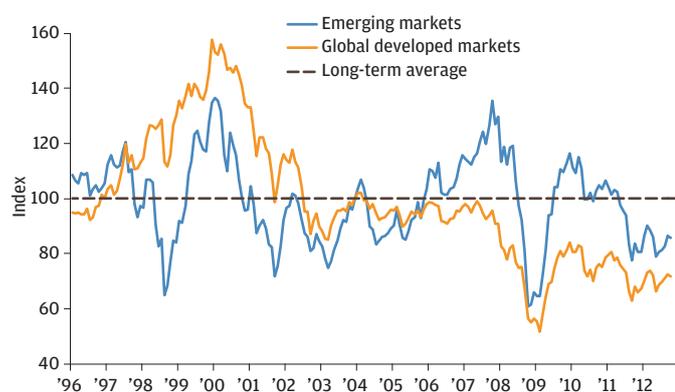
expected rise in payouts as a higher contribution from dividend yields to total returns (Exhibit 1). We also look for higher relative returns to mid-cap equity, since we expect the bulk of mergers and acquisitions, the other major application of corporate earnings, to be directed toward mid-sized companies.

Valuation

Although valuations still trail their long-term averages, 2012 saw a significant equity re-rating (Exhibit 3). Only 3% of the S&P 500's 16% gain over the first nine months of last year is attributable to dividend and earnings growth. The balance came mostly from valuation changes. Compared to their 40-year trailing mean, current market P/E ratios are only 4% lower in the United States and Europe compared to 13% lower in the UK. Our estimates of cyclically adjusted P/E ratios, which rely on ten-year trailing earnings, suggest that Europe and Japan have fallen close to their 30-year lows, even as those in the US and the UK have risen significantly above theirs.

So for both the US and the UK, we assume no impact on total returns from valuation changes, despite consistently dovish central bank policy. The renewal of quantitative easing with QE3 and the extension of the near-zero interest rate policy into 2015 imply that the US Federal Reserve is committed to preventing deflation from taking hold. This support from easy monetary policy should offset any risk of some mild de-rating

EXHIBIT 3: VALUATION INDICES-EMERGING VERSUS DEVELOPED EQUITIES*



Source: Thomson Datastream, J.P. Morgan Asset Management; data are as of October 2012.

*The composite valuation indices are geometrically weighted indices of four metrics (forward price to earnings, price to book, price to cash flow and dividend yield) for MSCI World and MSCI Emerging Market Equities, rebased to their 1996-2011 averages.

pressures over our assumptions horizon, following the strong move in markets in 2012. For Europe and Japan, by contrast, we look for small positive contributions from valuation.

Other equity assumptions

Our expectations for prolonged deleveraging, continued banking sector headwinds and an extended period of near-zero interest rates in the developed markets have implications for other key equity assumptions:

Size and style

In the US, we believe that sector concentrations point in favour of growth stocks, although they should conform to their typical pattern of higher volatility compared to a lower but steadier return from value stocks. The largest sectors in growth and value are, respectively, technology and financials, each sector accounting for around 25% of its index. Technology should reap significant benefits from an ongoing corporate focus on productivity and a continuing emphasis on innovation in the face of slow economic growth. On the other hand, returns for financials are likely to be constrained by persistent deleveraging in the private sector and a tougher regulatory environment, which will include stricter capital requirements.

We have maintained the return premium for small cap over large cap at 50 bps in the US and 25 bps in Europe ex-UK, with an increase to 50 bps in the UK. For both US small and mid-cap equities, valuations have become more expensive versus large cap. In Europe, small caps have enjoyed a small premium versus large caps on a price-to-book value basis. While we expect this to normalise over a ten- to 15-year horizon, a protracted period before full banking union in the eurozone could mean that small caps, which have relatively low index exposure to banks, will sustain a premium versus large caps through the first half of the next decade.

Emerging markets

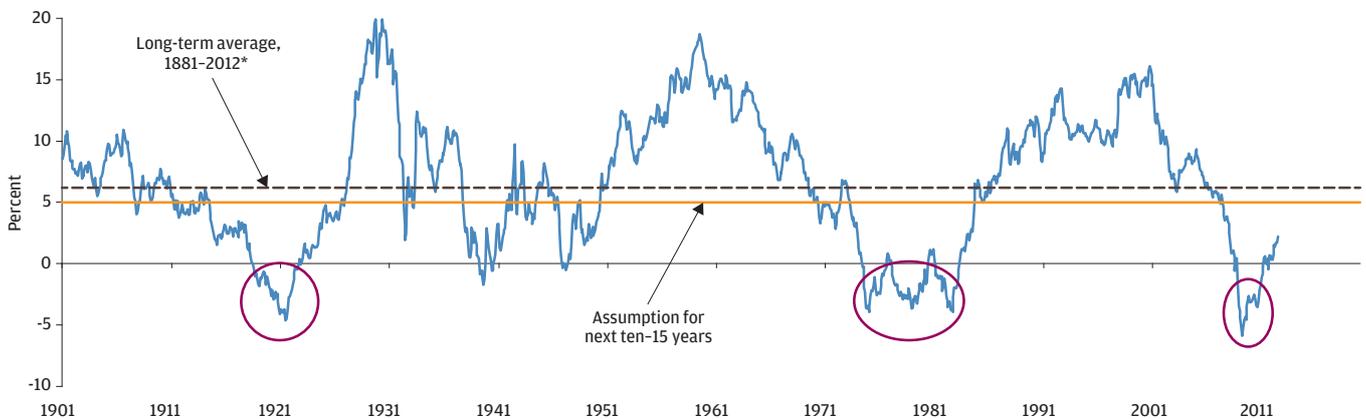
We are projecting a return premium for emerging relative to global markets at 225 bps - assuming total EM equity returns of 9.75% per annum - despite a difficult patch for the emerging world, which saw equities in three of the four BRICs recording relatively poor performance and underperforming the US indexes. There have been siren voices suggesting that these countries have been beset by *structural* problems, given the global economic slowdown. Nevertheless, we believe that the emerging world will outperform the developed markets over

the longer term. As a bloc, they have more robust demographics and their public finances are generally in much better shape than the developed world's. Their banking systems are healthier and more likely to support economic growth. Accordingly, the return differential to developed markets should persist in our view, reflecting better future prospects for EMs.

Real returns

US equities are expected to provide total returns of 7.25% per annum over the next decade. This equates to annualised real returns of 5%, once allowance is made for core inflation. The projection compares favourably to expected real returns on US government bonds, but is slightly lower than the long-term average of 6.2% per annum (**Exhibit 4**).

EXHIBIT 4: LONG-TERM REAL RETURNS, US EQUITIES



Source: Professor Robert Shiller, J.P. Morgan Asset Management. Data are as of June 2012.

Importance of top manager alpha increases as composite assumptions moderate

by **Anthony Werley**, *Chief Portfolio Strategist, Endowments & Foundations Group*

In brief

Lower return assumptions for equity, fixed income and commodity risk assets lead to a moderation in our median manager return assumptions across most alternative strategies. This easing in composite return assumptions plus expectations for continued wide performance dispersion clarifies the importance of top manager alpha in meeting investor return objectives.

- Hedge fund composite risk-adjusted returns should remain more attractive than for equities and stock/bond portfolios of moderate risk, despite industry headwinds and more modest risk asset return assumptions.
- For private equity, public market mid-cap equity returns are a reasonable proxy for average actual median financial sponsor performance.
- Returns for commodities are expected to be below last year's estimates but meaningfully above global inflation assumptions, given slower global nominal GDP growth and more efficient use of commodities as countries grow and modernise.
- Returns from real assets returns are expected to remain only modestly below 2012 assumptions, given starting yield, a modicum of economic growth and inflation expectations.

Traditional asset class returns provide the essential building blocks for projecting alternative strategy returns. This year's noticeably lower equity, fixed income and commodity risk asset return assumptions proportionately impact our expectations for most alternative strategies - particularly absolute return or hedge fund classes. Clearly, alpha is a necessity in meeting still elevated return objectives.

As in the past, 2013's assumptions suggest that the alternative manager core tool box of leverage, timing, short selling, concentration and a non-benchmark orientation toward overall portfolio construction is no panacea for reaching or beating equity market returns, at least in the hands of the median private equity and hedge fund manager. With alternative strategy returns projected to decline from prior year estimates, the importance of alternative manager dispersion plays an even more critical role in meeting prevailing institutional long-term return objectives. Our alternative strategy assumptions for 2013 continue last year's spotlight on the wide dispersion of manager returns across the spectrum of capital markets investment options. Dispersion of performance results, from hedge funds through private equity, is expected to remain wide, particularly versus traditional asset classes.

In the following sections, we discuss our assumptions for the various alternative strategy classes in more detail (see Exhibits 1A and 1B).

Absolute return/hedge funds

Identifying 'core' beta

We employ a factor approach to determining the core beta exposure each composite hedge fund series exhibits. The factor approach utilises a regression-based quantitative methodology that seeks to find the best fit of a composite's return versus a representative sample of traditional market factors, such as returns for the S&P 500, high yield and US government bonds, etc. The factor approach has delivered a consistently high level of explanatory benefit with regard to a hedge fund composite's market risk or beta exposures. These market risk exposures are multiplied by the traditional long-term market return assumptions. The output of this approach is a composite expected long-term equilibrium beta return projection.

EXHIBIT 1A: ALTERNATIVE STRATEGIES—SELECTED LONG-TERM RETURN ASSUMPTIONS

US DOLLAR-BASED COMPOUND (IRR) TEN-15 YEAR RETURNS

	(%)
US PRIVATE EQUITY	8.00
HEDGE FUNDS	
Event driven	6.25
Long bias	7.00
Relative value	5.00
Macro	6.25
Diversified	6.00

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012 for private equity and 30 June 2012 for hedge funds.

Note: Private equity (PE) strategies are unlike traditional asset classes in that there is no underlying investable index. The return estimates shown above are equal to our estimates of mid-cap equity returns.

Given their complex risk reward trade-offs, we counsel clients to use qualitative and quantitative approaches in setting strategic allocations to these alternative asset strategies.

EXHIBIT 1B: REAL ASSETS—SELECTED LONG-TERM RETURN ASSUMPTIONS

US DOLLAR-BASED COMPOUND (IRR) TEN-15 YEAR RETURNS

	(%)
REAL ESTATE/INFRASTRUCTURE	
US REITs	6.75
US direct real estate (unlevered)	6.50
US value added real estate (unlevered)	8.00
European direct real estate (unlevered)	6.00
Global infrastructure	7.75
COMMODITIES (SPOT)	5.75
Gold (spot)	6.25

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

Other methodological considerations shaping our long-term assumptions include:

- Hedge fund categories are defined by Hedge Fund Research, Inc. (HFRI) Index definitions.
- Our analysis is based on HFRI historical manager data.
- The Fisher-Geltner-Webb,^{1,2} methodology is used for unsmoothing manager returns.
- We apply 90% Winsorisation³ for outlier data clean-up and historical return calculations.

The dominant betas residing within hedge fund portfolios haven't changed noticeably since the 2012 projections were constructed. As mentioned above, the underlying betas or market drivers of return are projected to be lower across global equity, credit and commodities - thus having a direct impact on all hedge fund strategy return projections. This year we have included a small decrement to those beta-derived return projections, reflecting the headwinds of industry asset size, lack of trending markets, the low interest rate environment and correlation convergence. (For a more in-depth discussion of these factors, see the following chapter of this paper, 'The building blocks of hedge fund returns: New market norms put a higher premium on skillful investing.') Despite lower projected returns, hedge funds, on average, are likely to generate strong risk-adjusted returns versus equity as well as moderate risk profile stock/bond combinations.

Private equity

The private equity return assumption reflects our conviction that an accurate estimation of average financial sponsor returns would be essentially flat to the public markets over extended periods of time. Specifically, we use our US mid-cap public equity return assumption, since the mid-cap space has

historically been the capitalisation playing field for the largest percentage of assets dedicated to private equity.

In the absence of reliable data for calculating private equity risk, volatility is calculated using the premise that debt levels are a reasonable proxy for the risk assumed within a financial sponsor framework. Assuming the average financial sponsor takes on a debt burden 40% higher than that of the mid-cap universe, volatility would be represented at a 40% premium to public mid-cap equity volatility.

For 2013 we will make a downward adjustment to the volatility estimate. After review, it appears that a 40% increase in volatility above mid-cap public market volatility adequately reflects the risk of balance sheet leverage and actual tail risk inherent in private equity investing at the average manager level. In effect, 2013's assumption (in contrast to last year's) does not apply an additional non-normality increment to underlying volatility estimates.⁴

Private equity represents the clearest case for the necessity of achieving a return premium to the average return expectation in the assumptions. Compensation for debt burden levels, illiquidity and other idiosyncratic risks taken necessitate a return well in excess of public markets. Relative to other core asset and strategy classes, return dispersion across the private equity composite has traditionally been the widest, reflecting these unique strategy risks and capabilities (See **Exhibit 2**, next page).

Commodities

We have assessed global nominal GDP growth (real GDP plus a price deflator) to be the best predictor of long-term commodity spot price change over a strategic time frame. Over the past 15-year period, global growth has been driven increasingly by emerging versus developed economy activity, with emerging economies accounting for roughly 25% of global nominal GDP. We expect this trend to continue, with emerging markets increasing their share of global nominal GDP to roughly 50% over the next strategic 15-year time frame.

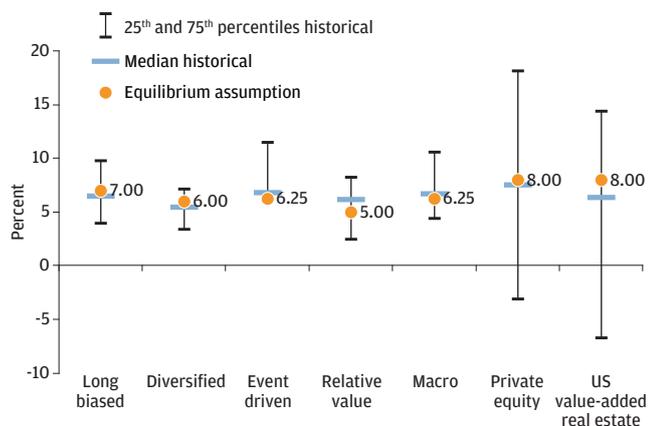
¹ J.D. Fisher, D.M. Geltner, and R.B. Webb, 1994, "Value Indices of Commercial Real Estate: A Comparison of Index Construction Methods," *Journal of Real Estate Finance and Economics*, 9:137-164.

² See also Abdullah Sheikh, (2011, December). "Risk Estimation: Addressing the impact of serial correlation on the estimation of risk," *J.P. Morgan Asset Management Long-term Capital Market Return Assumptions: 2012 estimates and the thinking behind the numbers*.

³ Winsorisation, named for the engineer John P. Winsor, is a process for transforming data for the purpose of removing the impact of potentially spurious outliers on statistical results.

⁴ In our *Long-term Capital Market Return Assumptions*, we test for serial correlation and adjust our volatility estimates accordingly, based on quantitative techniques in addition to a qualitative review for reasonableness and consistency. See Abdullah Sheikh, (2011, December). "Risk Estimation: Addressing the impact of serial correlation on the estimation of risk," *J.P. Morgan Asset Management Long-term Capital Market Return Assumptions: 2012 estimates and the thinking behind the numbers*.

EXHIBIT 2: MANAGER ALPHA AND DISPERSION



Source: Forward-looking hedge fund assumptions are J.P. Morgan estimates and based on methodologies discussed. Hedge fund manager returns are taken from Pertrac and internal J.P. Morgan databases. Historical range is given at 25th, 50th and 75th percentiles using annualised return from July 2005 to June 2012, with the exception of PE data. PE historical manager returns are taken from Thomson Venture Economics data. For detailed methodology, please see below. Value-added real estate dispersion was sourced from Preqin data for the category value-added real estate funds from vintage years of 2001 to 2008. The numbers show the average IRR quartiles for Q1 and Q3, and the median IRR across these vintage years.

Given the complex risk-reward tradeoff in these assets, we counsel clients to rely on judgment rather than quantitative optimisation approaches in setting strategic allocations to these asset class strategies.

Data and calculation for PE dispersion: For the historical PE dispersion, Thomson Venture Economics is used for the ten-Year Pooled Horizon Return data, broken down by quartiles. PE forward-looking return is based on the revised J.P. Morgan *Long-term Capital Market Return Assumptions* for 2013.

Underlying Thomson Venture Economics Methodology: Thomson Venture Economics Private Equity ten-Year Pooled Horizon return is calculated by pooling all cash flows from a sample of funds over a ten-year time period, along with the sample's net asset value at the beginning and ending points of the calculation. Based on this pooled series of cash flows, the Pooled IRR is calculated. When reporting the ten-Year Pooled Horizon return by quartile, a fund's quartile position would be based on where the fund's cumulative IRR falls compared to funds with similar primary market, vintage year, and fund stage focus. Cash flows of funds with similar quartiles would be pooled together to find the ten-Year Pooled Horizon return by quartile.

However, global deleveraging of the past few years and projected slower global growth going forward instigate a modification to our trend-line estimates. As we have seen in the past, as countries grow and modernise they tend to economise on the factors of production, including commodity inputs. This efficiency dynamic is likely being accelerated by a slowing in global demand and export growth. Therefore, our 2013 commodity estimates reflect, not only slower global GDP growth, but also a modest decrement to the impact of growth on commodity demand. Commodity returns, however, are still expected to exhibit a meaningful increment above global inflation.

Gold has claimed an important foothold in the portfolios of investors - from individuals to institutions, including hedge funds and central banks. Thus, it has earned inclusion in our capital markets process. Gold is not an asset class but does possess advantages as a store of value and has unique correlations versus public equities and the US dollar. Our return methodology is a function of gold's relationship to global inflation expectations and global growth. We found that the price of gold is positively correlated to emerging market (EM) equity returns and inflation and negatively correlated to the dollar. These three factors together provide a parsimonious model that captures both the impact of global demand (through emerging market equity returns and rising inflation) as well as the "flight to safety" aspect of gold associated with a declining dollar.

Just as modernisation has dampened the relationship between economic growth and demand for commodities on the margin, gold has seen a slackening in consumer demand as the metal has become absolutely expensive - particularly in some low income, high per capita gold consumption countries such as India. However, this negative price-elasticity of demand for gold on the part of some consumers needs to be seen in the context of the countervailing rising demand from both institutional and sovereign investors.

Real assets

Real estate return estimations are typically bounded by the outlook for equity and fixed income returns, as core real estate has, over cycles, typically generated returns between those for bonds and equities. Over time, we have also noted that core real estate returns in major developed markets are highly correlated to nominal GDP, so economic growth and inflation expectations are also key variables to consider. Finally, when moving out on the risk curve to value-added and opportunistic strategies, levels of leverage and the accrual of value through operational improvements are drivers of returns that should outpace core real estate returns over longer holding periods. The current approximate internal rate of return (IRR) of 7% for US core/plus property seems fair value in light of the return to risk opportunities of equity and fixed income. With investors still relatively risk-averse, valuations for value-added and opportunistic strategies have lagged core. The combination of this valuation lag and expected return premia, from both higher levels of leverage and the ability to create value at the property level, results in the potential for attractive relative returns for these strategies.

As was noted last year, European real estate did not suffer as great a drop in 2008 to 2009 or as strong a rebound since, as local investors tend to be very committed to local property investment, supporting values on the downside. Additionally, long-term cash flow and, therefore, value appreciation should be limited by weak expectations for European economic fundamentals and inflation.

US REITs

US REITs are trading at their historical average relationship to the underlying real estate assets and should, through higher leverage, result in a return premium over time. The international real estate securities market has lagged that of the US, suggesting that returns from an international or global allocation should outperform.

Infrastructure

Infrastructure returns reflect the exposure to stable sectors, such as regulated utilities and energy pipelines, as well as the need to attract capital by compensating investors for long-term commitments.

SPECIAL SUPPLEMENT:
THE BUILDING BLOCKS OF HEDGE FUND RETURNS

New market norms put a higher premium on skillful investing

by **Anthony Werley**, *Chief Portfolio Strategist, Endowments & Foundations Group*

In brief

On balance, we believe a continuation of present market conditions enhances the potential rewards for those hedge fund investors most adept at due diligence, portfolio construction and risk management.

- While the environment suggests a marginal downward bias in average hedge fund manager returns versus underlying public markets, hedge funds should continue to offer an attractive advantage on a risk-adjusted basis, with a possible leg up for the large and swift players.
- Portfolio optimisation exercises will continue to draw high allocations to hedge funds, particularly as core fixed income diversification benefits recede.

In our past *Long-term Capital Market Return Assumptions* materials, we discussed the importance of identifying market risk as the key factor in projecting ‘average’ hedge fund returns for all strategy classes (i.e., returns for the middle 50% of managers in the J.P. Morgan hedge fund database).¹ That approach remains our core methodology, as it has proven very effective for projecting average returns in the past and is likely to continue to prove itself going forward.

However, over the years of economic crises and deleveraging dynamics there has been a change, at least on the margin, in the underlying market conditions that prompt managers to take risk and generate returns. Changes in market conditions are likely to impact average manager returns as navigating the new conditions and applying the hedge fund return enhancement and risk reduction tool box become more challenging. Some of the most significant condition changes include: converging correlations, growing industry asset size/crowding, cash drag/low interest rate levels, trendless markets, tail risk, markets driven as much by government policy as by economic fundamentals, and Dodd-Frank/Volker Rule regulatory mandates.

On the positive side of the ledger, as some doors slam shut, others open. Frontier markets, large financial institutions’ trading activity limitations and divestiture requirements, the lower liquidity of cash markets versus derivative markets and even access to mega computing power - these are just some of the factors driving new and changed opportunity sets. Being able to seize new opportunities within and across markets may very well be best handled by multi-market, experienced, deeper resourced organisations. In any event, one thing is clear: Being able to identify the winners and losers in the ‘new normal’ of investing puts a premium on due diligence, portfolio construction and risk management.

A changing market environment may challenge average manager returns

As a means of testing the impact of changed market conditions on hedge fund performance, we compare average hedge fund returns and broad market returns (as measured by the S&P 500) over two time frames: the ‘normal’ period (2003 through 2007) versus the ‘new normal’ (2010 to the present). We also observe equity market correlations, interest rate levels,

¹ Werley, A. (2011, December), “Composite assumptions understate top manager returns,” *J.P. Morgan Asset Management Long-term Capital Market Return Assumptions—2012 estimates and the thinking behind the numbers*, 39-42.

industry size and the degree of broad market trending over the same two periods. We use the S&P 500 as a performance benchmark as it provides a broad measure of risk asset performance and is the most common beta across hedge fund strategy classes, as well as the dominant beta in many hedge fund strategies.

Broad market returns during these two periods are not substantially dissimilar (14.7% versus 10.6% for the normal versus new normal periods, respectively). However, average hedge fund returns are meaningfully different (10.9% versus 3.2% for the normal versus new normal). Stating the performance comparison differently, average hedge fund returns were 74% of S&P 500 returns in the normal period - but only 30% of broad market returns in the new normal.

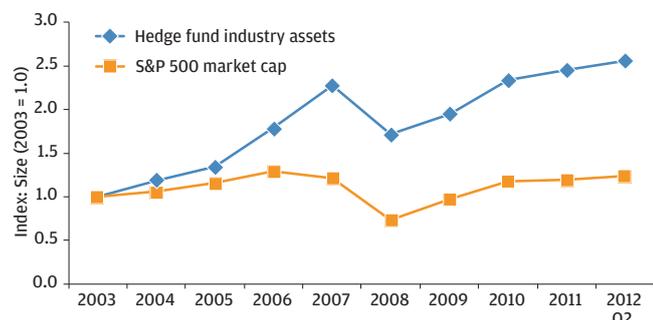
This return disconnect between the broad market and hedge fund average from 2010 to the present cannot simply be the result of the hedge fund industry adopting wholesale new beta exposures, since risk assets during this period rose generally in tandem. Using the S&P 500 as a benchmark can be disputed and there are likely multiple reasons for the difference in return capture in one period versus the other. However, our analysis observes changes between these two time frames in industry asset size, correlations, the level of interest rates and trending conditions that are likely to be an important part of the explanation.

The 2010 to the present time frame is broadly indicative of the economic and financial environment envisioned by our capital market assumptions over the next ten years: shorter business cycles, the continuation of the longer-term deleveraging dynamic, interest rates anchored lower by Federal Reserve policy, weaker-than-average GDP growth and, importantly, a lower appetite for risk-taking. These macro conditions may contribute to the continuation of correlation, trending and interest rate conditions presently in effect.

Growth in hedge fund assets

Growth in hedge fund industry asset size is one condition that is likely to persist for the indefinite future as institutional and individual investors search for more diversified and lower risk sources of return. **Exhibit 1** (next page) begins to indicate the magnitude of the issue. An obvious implication of industry size is too much investing power chasing a relatively scarce number of investment opportunities. This imbalance increases the likelihood of ‘crowded’ trades where a significant number

EXHIBIT 1: RAPID GROWTH OF INDUSTRY ASSETS MEANS AN INCREASINGLY CROWDED HEDGE FUND SPACE



Source: Hedge Fund Research, Inc., Standard and Poor's. Data are as of June 2012.

of managers pursue the same relatively narrow and limited liquidity opportunity. As 2008 illustrated, the simultaneous unwinding of those crowded trades in a panicked and illiquid 'risk-off' environment presents the possibility of an actual loss beyond the original estimation of potential losses.

More frequent episodes of convergence

High correlation within and between markets may not be a permanent fixture of the investing environment. As we work through deleveraging conditions, however, converging correlation episodes are likely to occur more often and thus will present a challenge to intra-market long/short and multi-market allocators. The ability to distinguish between fundamentally attractive longs and fundamentally unattractive shorts in any market - equity, credit fixed income or commodity - is a standard source of alpha that may become less reliable.

The correlation heat maps in **Exhibit 2** illustrate the change in the intra-equity market correlation conditions between the two time periods studied. In summary, the change is quite pronounced: 28 of 28 intra-market correlations increased, nine of 28 correlations had a regime change (ie, shifted from a moderate to high or a low to moderate correlation level) while the average intra-market correlation increased from 0.66 to 0.83.

EXHIBIT 2: INCREASING CORRELATIONS ACROSS AND WITHIN MARKETS

'NORMAL' EQUITY MARKET TOTAL RETURN (USD) CORRELATIONS—2003 TO 2007:

	US Large Cap	US Mid Cap	US Small Cap	EAFE Equity	European Large Cap	Japanese Equity	Asia ex-Japan Equity	Emerging Markets Equity
US Large Cap								
US Mid Cap	0.909							
US Small Cap	0.857	0.954						
EAFE Equity	0.820	0.780	0.731					
European Large Cap	0.847	0.764	0.716	0.950				
Japanese Equity	0.297	0.387	0.373	0.577	0.301			
Asia ex-Japan Equity	0.613	0.623	0.590	0.701	0.608	0.459		
Emerging Markets Equity	0.676	0.684	0.655	0.817	0.724	0.527	0.934	

Low	< =.30
Moderate	> .30 and < =.70
High	> .70

'NEW NORMAL' EQUITY MARKET TOTAL RETURN (USD) CORRELATIONS—2010 TO JUNE 2012

	US Large Cap	US Mid Cap	US Small Cap	EAFE Equity	European Large Cap	Japanese Equity	Asia ex-Japan Equity	Emerging Markets Equity
US Large Cap								
US Mid Cap	0.981							
US Small Cap	0.961	0.984						
EAFE Equity	0.920	0.876	0.836					
European Large Cap	0.909	0.863	0.819	0.991				
Japanese Equity	0.672	0.612	0.599	0.753	0.674			
Asia ex-Japan Equity	0.810	0.831	0.806	0.862	0.849	0.540		
Emerging Markets Equity	0.863	0.880	0.859	0.902	0.890	0.577	0.981	

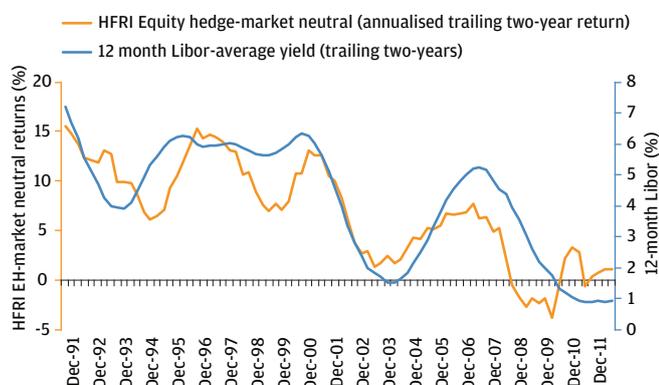
Low	< =.30
Moderate	> .30 and < =.70
High	> .70

Source: Bloomberg, MSCI, Russell, Standard and Poor's. Returns are for S&P 500 Total Return, Russell Mid Cap Total Return, Russell 2000 Total Return, MSCI daily TR gross EAFE USD, MSCI Europe daily TR gross Europe USD, MSCI daily TR gross Japan USD, MSCI daily TR Gross AC Asia Ex-Japan USD and MSCI daily TR gross EM USD indices.

Interest rate levels as core drivers of return

The level of interest rates plays a role in hedge fund returns primarily through the return earned on cash balances and the spread between interest earned on short exposures and the interest cost of long leverage. It is difficult to estimate the net impact of interest rate differentials for the industry since it has more or less impact depending upon the strategy type in question. Instead, we will use the Market Neutral strategy composite as our stalking horse for illustrating the net impact of interest rates on returns. Market Neutral, for our purposes, has the benefit of broadly indicating the impact of short rebates and leverage/borrowing on a net basis since both sides of the trade are endemic to the strategy. **Exhibit 3** illustrates the clear relationship between two-year smoothed Market Neutral returns and the level and change in interest rates on a two-year smoothed basis. Other factors such as changes in correlation regimes may also be contributing to the return pattern but, with an R-squared of 0.67, interest rates are likely to be a core driver of results.

EXHIBIT 3: INTEREST RATES HAVE LED MARKET NEUTRAL STRATEGY RETURNS

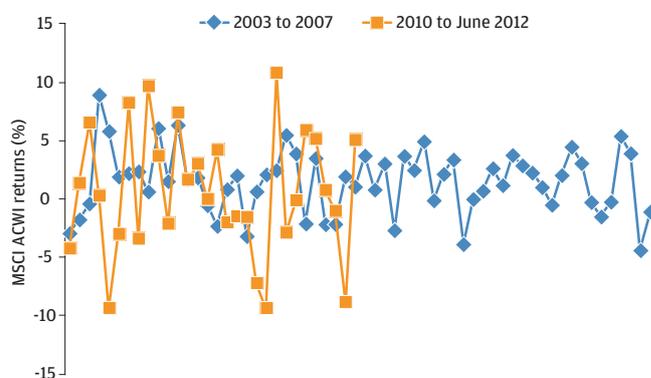


Source: Bloomberg, Hedge Fund Research, Inc. Market neutral returns are for HFRI Equity Hedge Market Neutral Index. Data are from January 1990-July 2012.

Changing patterns in market returns

The trending nature of markets is a condition mostly considered as a factor in returns for Commodity Trading Advisor (CTA)/Macro strategy funds. Trending may also play a role for a broader cross section of managers outside of CTA/Macro. Longer-term trends allow managers time to identify a developing theme, execute and leverage their bet as a means to add alpha. The shorter or shallower a trend, the harder it is for any manager to identify, capitalise and unwind the position(s) before the trend reversal eats meaningfully into returns. **Exhibit 4** shows the trending nature of the global equity market during the two periods in question. Clearly, the 2003 to 2007 period, on average, had trends of a longer duration and corrections of a smaller magnitude than those of the later 2010 to June 2012 period, suggesting the earlier period offered a more favourable environment for hedge fund managers to leverage market trends.

EXHIBIT 4: NEW NORMAL—MORE FREQUENT TREND REVERSALS AND SHARPER MARKET CORRECTIONS



	2003 to 2007	2010 to June 2012
# of corrections > 5%	20	15
Months in period	60	30
Normalised # of corrections > 5%	33.3%	50.0%
Average size of correction	7.6%	12.3%
Average length of correction (months)	4.4	1.6

Source: MSCI. Returns are for MSCI ACWI Index.

Looking ahead

Projecting hedge fund returns ten-to-15 years forward is an exercise given more to hitting the target rather than the bull's eye. The core of our projection approach remains a quantitative factor exposure discipline. While there are a few more inputs into the process that are hard to quantify precisely, on balance we see a possible marginal downward bias to average hedge fund performance for the middle 50% of managers.

Our most important conclusions remain the same as in previous years, however. Even average hedge fund performance will exhibit attractive risk-to-return ratios versus the underlying public markets. The dispersion of manager returns will remain very wide within each strategy class, presenting hedge fund allocators and funds of funds managers with the opportunity to distinguish themselves materially from average performers (**Exhibit 5**). The antidote to financial and industry headwinds and wide manager dispersion risk remains in the power of skillful due diligence, portfolio construction and risk management. These skills have always been at the heart of successful alternative investing.

**EXHIBIT 5: DISPERSION OF HEDGE FUND MANAGER RETURNS
(2010-JUNE 2012)**

	75th percentile	50th percentile	25th percentile
Long biased	7.73	3.19	-1.24
Diversified	3.49	1.05	-0.11
Event driven	8.04	4.42	2.09
Relative value	10.42	7.38	4.48
Macro*	8.03	3.28	-0.22

Source: Pertrac, J.P. Morgan Asset Management proprietary hedge fund database.

*Macro results are for 2010 through May 2012.

II. Enhanced methodology and coverage in 2013 assumptions

CURRENCY EXCHANGE RATES

The bumpy road to fair value

by **Archan Basu, CFA**, *US Head of Portfolio Construction, J.P. Morgan Private Bank*
and **Michael Feser, CFA**, *Global Investment Director and Portfolio Manager, Asset Management Solutions Group*
and **Daniel Scansaroli, PhD**, *Quantitative Investment Strategist, J.P. Morgan Private Bank*

In brief

Currency and exchange rate assumptions are critical to the internal consistency of our long-term capital markets outlook. This year's assumptions are based on an expanded framework incorporating not only local interest rate differentials, but also a broader set of widely accepted theoretical and empirical concepts designed to capture the real-world complexity of exchange rate determination.

Over our ten- to 15-year time horizon, we are projecting relatively slight changes from current exchange rates. We see nothing in our forecast, however, that would alter the historical pattern of rates, which tend to undergo substantial short-term volatility around their fair value equilibrium. We anticipate that the euro and sterling, coping with fundamental structural challenges, will depreciate relative to the dollar. On the other hand, global industrial growth will continue to support the major 'commodity' currencies - the Canadian and Australian dollar and the Swedish krona.

While not treated as a stand-alone asset class, currency and exchange rate assumptions are critical to ensure the internal consistency of our assumptions. They create an explicit link between domestic economies and global financial markets. In prior years, our exchange rate assumptions were derived in their entirety from local interest rate differentials. This year, we have expanded our framework by drawing on a broader set of widely accepted theoretical and empirical concepts, such as absolute and relative purchasing power parity (PPP), productivity differentials and terms of trade, to develop assumptions that reflect the future fair value of a currency exchange rate.

While we have arrived at our assumptions after applying careful quantitative analysis and fundamental economic judgment, we caution investors, as always, not to treat the assumptions as point forecasts but as our attempt to capture the impact of underlying macroeconomic trends. Even though both interest rates and the relative prices of imports and exports reflect domestic money demand and supply over the long run, history has demonstrated repeatedly that exchange rates tend to swing in very wide ranges around their fair values for sustained periods. We see no reason not to expect the observed exchange rates to do the same relative to our assumptions in the future.

Theoretical background and analytical framework

Five macroeconomic concepts underpin 2013's currency assumptions: PPP, relative PPP, terms of trade, interest rate differentials and spillover effects not accounted for by PPP theory.

Purchasing power parity (PPP)

Exchange rates reflect the transaction value of traded goods and services between countries. The commonly accepted foundation for the valuation of long-run currency levels is PPP, which holds that identical goods should trade for the same price relative to other goods and services, with differentials explained by exchange rates between currencies. Any other differentials in a market where trade is open and free of such frictions as trade barriers, tariffs, quotas and transportation costs would soon be arbitrated away; an individual could simultaneously buy a good in one country and sell it in another for a riskless profit. The increase in demand for the good at the cheaper location would force its price up just as the decrease in the more expensive location would push it down, eliminating the arbitrage.

PPP suggests that the exchange rate between two countries is equal to the ratio of their price levels. The theory does not require that each item within a basket of goods and services have the same relative price, but rather that the exchange rate between two countries equals the ratio of their overall price levels - some more expensive items could be offset by less expensive items in the basket to preserve the purchasing power of the country as a whole.

Relative PPP

Expanding from the static fair value concept of PPP, we incorporate relative PPP theory to establish an understanding of the evolution of the fair value of a currency exchange rate in the future. Relative PPP asserts that prices and exchange rates change in a way that preserves the ratio of each currency's domestic and foreign purchasing power. In other words, the percentage change in the exchange rate between two countries over any period is equal to the difference between the inflation rates of the countries. Thus, we derive our currency assumptions by focusing on differences in the expected core inflation rates.

Terms of trade

Input costs for energy, food and raw materials are a significant driver of a country's terms of trade - the ratio of a country's export prices to its import prices (for example, when commodity prices rise more rapidly than prices for finished goods, the terms of trade for the regions exporting the commodities improve at the expense of worsening terms of trade for economies importing the commodities and exporting back finished goods). We capture shifts in terms of trade by incorporating our assumptions for the price change of a diversified basket of commodities.

Interest rate differentials

As in prior years, our assumptions account for interest rate differentials between different countries by focusing on ten-year risk-free interest rates for both their monetary effects and their role in the context of the uncovered interest rate parity. Monetarily, when a country's interest rates rise, the demand for borrowing in its currency decreases since the cost of loans becomes more expensive. Under PPP, this causes prices to rise generally in the long run and ultimately depreciates the currency.

Uncovered interest rate parity, on the other hand, views changes in interest rates from the lender's perspective. Investors will seek a proportional rise in the foreign exchange (FX) rate in order to invest in a country with lower interest rates, so a decline in interest rates should trigger an equal rise in the value of its currency relative to others.

Spillover effects

Given the central role of PPP in our fair value exchange rate framework and its implicit reliance on frictionless, perfectly competitive traded goods markets, we also strive to account for some of the limitations of the theory, such as the *Balassa-Samuelson Effect*. The *Balassa-Samuelson Effect* observes that the overall purchasing power in wealthier, more productive countries is less than in poorer, less productive countries. Wealthier countries typically have higher wages in the traded sector coupled with higher productivity. These higher wages, however, will also impact the non-tradeable sectors, making non-tradeable goods (and services) such as a haircut, tax preparation or public sector services relatively more expensive. This distortion of relative prices between sectors exposed to foreign trade and competition and those sheltered from it tends to be persistent and affects the movement of local prices in ways not accounted for by PPP theory.

Long-term currency exchange rate assumptions

Overall, our FX assumptions show relatively mild changes in major foreign exchange markets over the next decade (Exhibit 1).

Euro

For the **euro**, we maintain the base case over the assumption horizon that monetary union will survive in some form. The markets have reflected this sanguine outlook and the euro traded close to its current fair value at EUR/USD 1.29 at the end of September 2012. While we expect policy actions will save the common currency, we believe the eurozone ultimately cannot escape a larger drag on growth as it delevers its expanded sovereign balance sheet relative to the US. Our assumptions, therefore, contemplate that both the eurozone's economic growth and inflation will undercut those of the US, resulting in a moderate deterioration to a **EUR/USD 1.23** exchange rate.

EXHIBIT 1: ASSUMPTIONS FOR SELECTED CURRENCY EXCHANGE RATES—NEXT 10 YEARS

Currency		End Sep 2012 levels	Assumptions
Euro	EUR/USD	1.29	1.23
Japanese yen	USD/JPY	78	75
Swiss franc	USD/CHF	0.94	1.00
British pound	GBP/USD	1.62	1.54
Australian dollar	AUD/USD	1.04	1.08
Canadian dollar	USD/CAD	0.98	0.98
Swedish krona	USD/SEK	6.6	6.3

Source: Bloomberg, J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

*According to market convention, CURRENCY A/CURRENCY B means one unit of CURRENCY A is worth the stated number of units of CURRENCY B. EUR/USD = 1.23 means 1.00 EUR is worth 1.23 USD

Yen

Yen strength, still a surprise after a decade, is projected to remain in place, but it is likely going to have a bumpy ride, given its substantial overvaluation relative to the US dollar. Ultimately, Japan's lowest-for-longest yield environment and persistent trade surplus will still outweigh an anaemic macro environment and limited domestic natural resource base. Bearing in mind that even the staggering government debt load is mostly internally held, we expect the yen is fair value to reach the so far unprecedented level of **USD/JPY 75** over the next two market cycles. However, the election of Shinzo Abe as prime minister of Japan, and his intention to encourage the Bank of Japan to ease policy and target a higher rate of inflation, suggest, if successful, a weaker path for the currency going forward. This is a challenge to our central case assumption that we will monitor carefully.

Swiss franc

Surrounded by the troubled eurozone, the **Swiss franc** is poised to weaken somewhat in sympathy, albeit from a much higher starting valuation. Tight money, banking strength and a robust corporate economy at the heart of Europe's recovery should mitigate any weakness, but speculation has led to a significant overvaluation, whose reversal will lead to some pain down the line. Our central case assumptions are for the **Swiss franc to trend towards USD/CHF 1 and CHF/EUR 0.81**.

British pound sterling

Rounding out the reserve currency group, **sterling** starts out fairly valued at GBP/USD 1.62, but higher inflation and slower growth are projected to **gradually reduce the fair value of sterling against the dollar to an expected GBP/USD 1.54**.

Against the euro, the equilibrium exchange rate remains unchanged at EUR/GBP 0.80. It appears that the sharp fiscal tightening after 2008 is having little impact on the currency, although a weaker currency may have made the adjustment process easier than it would have been otherwise.

Commodity currencies

The **Australian** and **Canadian dollars**, despite starting at a somewhat overvalued position, are expected to strengthen further, aided by a run-up in the valuation of their countries' resource base. In the central case of our assumptions, we see the Canadian dollar reaching **USD/CAD 0.98**, while the Australian dollar appreciation trend may lead to **AUD/USD 1.08** - a level that until recently hadn't been seen in 30 years.

Lastly among the developed currencies, the fair value of the **Swedish krona**, too, is expected to benefit from higher commodity prices, together with tighter money and higher productivity growth, rising to **USD/SEK 6.3**.

Searching for the next group of growth assets

by **Michael Feser, CFA**, *Global Investment Director and Portfolio Manager, Asset Management Solutions Group*
and **David Shairp**, *Global Strategist, Asset Management Solutions Group*

In brief

The strength of the emerging markets (EMs) should figure crucially in the health of the developed markets to the extent that growing domestic demand in the former offsets austerity and deleveraging in the latter. We anticipate that the eight largest EMs - China, Korea, Brazil, Taiwan, South Africa, India, Russia and Mexico, in descending order of size¹ - will lead the domestic trend, increasingly differentiating themselves from the bulk of the emerging markets and from each other. This does not mean we expect the characteristic opportunity - and volatility - of EMs to vanish from the global investment landscape. Rather we can foresee that the smaller markets, those next in line after the 'Big Eight,' could well demarcate the coming frontier of explosive developmental growth.

¹ Based on market capitalisation weighting within the MSCI Emerging Markets Index.

The term emerging market was first coined over 30 years ago by the then-CIO of the investment arm of the World Bank, to take in fast growing countries that were in a state of transition to developed status. Traditionally, four characteristics defined the EMs:²

- Elevated levels of risk accompanied by the prospect of greater returns than those available in the developed markets
- More volatility and correspondingly less liquidity
- Relatively opaque corporate governance and rudimentary securities regulation
- Reliance on foreign investment

With the exception of the last point, these characteristics still pertain, but the distinction between developed and emerging markets has narrowed or blurred and, in some cases, completely disappeared since the wave of financial crises that swept over Asia and Russia in 1997 and 1998. In the wake of the crises, the Asian economies in particular curtailed their reliance on capital imported from the developed economies by running undervalued exchange rates that fuelled massive external surpluses. Central banks then contained currency appreciation through intervention and by accumulating foreign exchange reserves. This policy transformed the emerging markets into exporters of capital to the developed world, as they recycled large and consistent current surpluses. Today, the need for foreign capital inflows is no longer a defining characteristic of the emerging markets.

Market cap heavyweights

Exhibit 1 summarises the impact of this revolutionary transformation on each of the constituents of the MSCI Emerging Markets Index. Of the 21 constituents, nine are members of the International Monetary Fund's (IMF's) Group of 20 major economies; 15 are included in the J.P. Morgan Emerging Markets Bond Index (EMBI), testimony to their breadth of issuance and depth of liquidity; 15 conform to the IMF's definition of an emerging market as one transitioning to stable and robust institutions and regulation. Yet as of 2011, only two of the 21 index constituents, Korea and Taiwan, had

EXHIBIT 1: EMERGING MARKETS CHARACTERISTICS

Country	Per capita GDP*	MSCI EM (% weight)	JPM EMBI Member of G-20	IMF definition of EM	Inclusion in long-term assumptions
Brazil	12,594	12.6	✓	✓	✓
Chile	14,394	1.9	✓	✓	
China	5,445	17.3	✓	✓	✓
Colombia	7,067	1.2	✓		
Czech Republic	20,407	0.3			
Egypt	2,781	0.4	✓		
Hungary	14,044	0.3	✓	✓	
India	1,489	7.0		✓	✓
Indonesia	3,495	2.7	✓	✓	✓
Korea	22,424	15.8		✓	✓
Malaysia	9,656	3.6	✓	✓	
Mexico	10,064	4.9	✓	✓	✓
Morocco	3,054	0.1			
Peru	6,009	0.7	✓	✓	
Philippines	2,370	0.9	✓	✓	
Poland	13,463	1.5	✓	✓	
Russia	13,089	6.0	✓	✓	✓
South Africa	8,070	7.8	✓	✓	✓
Taiwan	26,337	11.1			✓
Thailand	4,972	2.2		✓	
Turkey	10,498	1.7	✓	✓	✓

Source: MSCI (as of September 2012), IMF, J.P. Morgan, MacData, J.P. Morgan Asset Management, Bloomberg, World Bank.

*GDP is in 2011 US dollars. Data are as of December 2011.

per capita GDPs greater than the poorest members of the eurozone, which says two things about the classification of emerging markets: First, the EMs still have a way to go - and room to grow - to attain developed status, and second, the line between emerging and developed is a fine and shifting one.

The combined market capitalisation of the index's eight largest constituents - China, Korea, Brazil, Taiwan, South Africa, India, Russia and Mexico, in descending order of size - amounts to USD 8.7 trillion. The eight account for 76% of the MSCI Emerging Markets Index's market capitalisation. Their aggregate market size equals a little more than half (52%) of the US equity market's cap weight - and attests to the fact that the eight jurisdictions have each become viable investment destinations in their own right.

² Ashoka Mody, "What is an Emerging Market?," IMF Working paper WP/04/177, September 2004.

EXHIBIT 2: ANNUAL CALENDAR RETURNS FOR NINE ASSET CLASS BENCHMARKS

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 YTD
DJ UBS Cmnty 23.9%	MSCI EME 56.3%	REITs 31.6%	MSCI EME 34.5%	REITs 35.1%	MSCI EME 39.8%	Barclays Agg 5.2%	MSCI EME 79.0%	REITs 27.9%	REITs 8.3%	REITs 15.8%
Barclays Agg 10.3%	Russell 2000 47.7%	MSCI EME 26.0%	DJ UBS Cmnty 17.5%	MSCI EME 32.6%	MSCI EAFE 11.6%	Cash 1.8%	MSCI EAFE 32.5%	Russell 2000 26.9%	Barclays Agg 7.8%	S&P 500 14.3%
Market Neutral 7.4%	MSCI EAFE 79.2%	MSCI EAFE 20.7%	MSCI EAFE 14.0%	MSCI EAFE 26.9%	DJ UBS Cmnty 11.1%	Market Neutral 1.1%	REITs 28.0%	MSCI EME 19.2%	Market Neutral 4.5%	Russell 2000 11.8%
REITs 3.8%	REITs 37.1%	Russell 2000 18.3%	REITs 12.2%	Russell 2000 18.4%	Market Neutral 9.3%	Russell 2000 -33.8%	Russell 2000 27.2%	DJ UBS Cmnty 16.7%	S&P 500 2.1%	MSCI EME 11.7%
Cash 1.7%	S&P 500 28.7%	S&P 500 10.9%	Market Neutral 6.1%	S&P 500 15.8%	Barclays Agg 7.0%	DJ UBS Cmnty -36.6%	S&P 500 26.5%	S&P 500 15.1%	Cash 0.1%	MSCI EAFE 11.5%
MSCI EME -6.0%	DJ UBS Cmnty 22.7%	DJ UBS Cmnty 7.6%	S&P 500 4.9%	Market Neutral 11.2%	S&P 500 5.5%	S&P 500 -37.0%	DJ UBS Cmnty 18.7%	MSCI EAFE 8.2%	Russell 2000 4.2%	Barclays Agg 4.2%
MSCI EAFE -15.7%	Market Neutral 7.1%	Market Neutral 6.5%	Russell 2000 4.6%	Cash 4.8%	Cash 4.8%	REITs -37.7%	Barclays Agg 5.9%	Barclays Agg 6.5%	MSCI EAFE -11.7%	DJ UBS Cmnty 1.5%
Russell 2000 -20.5%	Barclays Agg 4.1%	Barclays Agg 4.3%	Cash 3.0%	Barclays Agg 4.3%	Russell 2000 -1.6%	MSCI EAFE -43.1%	Market Neutral 4.1%	Cash 0.1%	DJ UBS Cmnty -13.4%	Cash 0.1%
S&P 500 -22.1%	Cash 1.0%	Cash 1.2%	Barclays Agg 2.4%	DJ UBS Cmnty -2.7%	REITs -15.7%	MSCI EME -53.2%	Cash 0.1%	Market Neutral -0.8%	MSCI EME -18.2%	Market Neutral -0.4%

Source: Russell, MSCI, Dow Jones, Standard & Poor's, Credit Suisse, Barclays, NAREIT, FactSet, J.P. Morgan Asset Management. Data are as of 30 September 2012.

*Market Neutral returns include estimates found in disclosures.

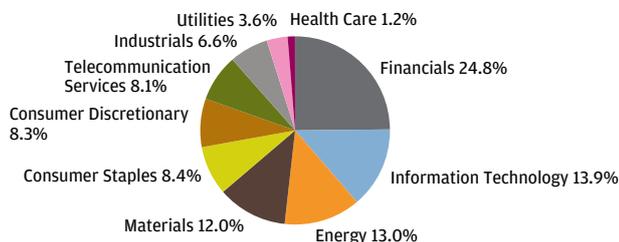
Anatomy of a takeoff

EM assets have functioned as the primary drivers of portfolio growth in recent years, thanks both to vigorous economic expansion and maturing financial markets. This coming of age has translated to increased valuations and reduced liquidity and risk premia. The historically high risk premia on emerging market debt reflected in part the inferior credit quality of EM sovereigns. Over the past decade, a series of credit upgrades has captured much of the credit premium. In 2000, just 19% of the bonds in the J.P. Morgan Emerging Market Bond Index had investment-grade ratings. By 2012, the proportion had risen to 63%.

The benefits of this compression of risk premia can be seen as well in the strong returns of emerging market equities during the period (although it should be noted the majority of EM equity outperformance came from the convergence of EM equity earnings and returns on equity with those metrics in the developed markets). Exhibit 2 shows the relative annual performance of nine basic asset classes from 2002. At first glance EM equities live up to their volatile reputation, delivering the best returns in four different years and the worst returns twice. For the full 11 years, however, EM equities recorded the most solid gains of any asset class. In addition to its leading performance four times, it ranked among the top three in three other years.

EXHIBIT 3: COMPARISON OF BENCHMARK SECTOR WEIGHTINGS

3A: MSCI EMERGING MARKETS SECTOR WEIGHTS



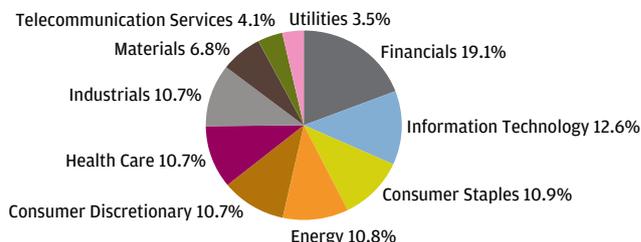
Source: Factset. Holdings data are as of 28 September 2012. Totals may not add to 100% due to rounding.

The sector composition of the MSCI Emerging Markets Index (**Exhibit 3A**) explains why the asset class is so pro-cyclical and growth oriented. A quarter of the index is invested in energy and materials compared to just over one-sixth of the developed market MSCI World Index (**Exhibit 3B**). By contrast, the MSCI World has nearly ten times the exposure to the more stable healthcare sector. In other words, as has been suggested, a tilt toward emerging market equities and away from the developed markets can serve much the same tactical purpose today as a relative value bet on basic resources versus pharmaceuticals.

Emerging apart

In our view, emerging markets in their current state of evolution offer much more than a straightforward play on *global* growth. From a macro perspective, the eight ‘mainstream’ emerging markets seem to have arrived at an inflection point after a decade of rapid development. As they place a greater emphasis on meeting domestic demand, as opposed to exporting, their large current account surpluses may dissipate. The differences among them may come to count more than their categorical similarities as ‘emerging markets.’ Their individual demographics, their status as net commodity consumers or producers, per capita income growth, the size of their financial markets and the extent that fiscal policy fosters domestic consumption will independently determine the extent of opportunity in each of the mainstream markets. As our long-term assumptions indicate, the opportunity could vary considerably from market to market (**Exhibit 4**).

3B: MSCI WORLD DEVELOPED MARKETS SECTOR WEIGHTS



Source: Factset. Holdings data are as of 28 September 2012. Totals may not add to 100% due to rounding.

Looking at the asset class as a whole, we believe three investment themes will shape its future:

- Sector composition will likely shift over time with the diversification of sources of growth and an increasing reliance on domestic markets.
- We anticipate a continuation of the trend toward using emerging market stocks as income assets, with dividend yields in some emerging markets exceeding those in the developed world.

EXHIBIT 4: LONG-TERM ASSUMPTIONS FOR SELECTED EMERGING MARKETS

Country	Real GDP growth (% p.a.)	Core inflation (% p.a.)	Equity returns, local currency (% p.a.)
Brazil	4.25	5.00	12.3
China	7.50	3.00	11.1
India	7.75	7.50	16.3
Korea	4.00	3.00	12.1
Mexico	3.75	3.25	12.7
Russia	3.75	5.50	11.9
South Africa	3.50	4.75	12.8
Taiwan	4.00	2.00	10.6

Source: J.P. Morgan Asset Management. Estimates are as of 30 September 2012.

- New opportunities may arise in the still-to-emerge markets (such as the Next 11³ and the CIVETS⁴) which are expected to undergo developmental growth similar to the mainstream markets since the crises of the late 1990s. This would mean that the high return/high volatility growth frontier could well transition beyond the Big Eight in ways that the cap-weighted MSCI index cannot capture.

Global rebalancing hanging in the balance

The outlook for the emerging markets will play an important role in determining trends in the global cost of capital over the next ten to 15 years. The shift away from external surplus as emerging market economies re-focus on their domestic markets will largely influence the economic assumptions in future editions of our *Long-term Capital Market Return Assumptions*. They will depend on the extent to which emerging market demand can offset the drag from fiscal austerity in the developed world. **Exhibit 5** diagrams the investment significance of this question by showing the four combinations of the adjustment process in both the developed and emerging markets and their probable effect on the prospective real cost of capital. As the table shows,

EXHIBIT 5: GLOBAL REBALANCING SCENARIOS

	Emerging world promotes adjustment	Emerging world impedes adjustment
Developed world tightens fiscal policy (and eases monetary policy)	Successful rebalancing ↑ DM net saving ↓ EM net saving Regime: Disinflation ■ Lower cost of capital ■ Favors equities	Slump/Depression ↑ DM net saving ↑ EM net saving Regime: Deflation ■ Stable/higher cost of capital ■ Favors AAA bonds
Developed world fails to tighten fiscal policy	Sovereign credit crisis ↓ DM net saving ↓ EM net saving Regime: Inflation ■ Higher cost of capital ■ Favors real assets	Financial repression/Protectionism ↓ DM net saving ↑ EM net saving Regime: Stagflation? ■ Locally set cost of capital ■ Favors gold bearer instruments

Source: Gemstrat, J.P. Morgan Asset Management.

*DM=developed markets, EM=emerging markets. Cost of capital considered in real terms.

unless there is meaningful rebalancing, the outlook for risk assets could be challenging, perhaps threatening a rising cost of capital or even some form of protectionism.

‘The fundamental things apply’

A fundamental lesson from the history of emerging economies is that the concept of ‘emerging’ is not nearly as definitive and one-way as the term implies. Graduation to developed status does not guarantee a future free of high relative volatility. In some cases, the outcome can be a return to emerging status after a country has graduated:

- Argentina at the beginning of the last century achieved developed economic status, outpacing Canada and Australia among others. By 1913, it was the world’s tenth wealthiest nation per capita, before returning full circle back to emerging market status. By 1998, it had fallen back to thirty-sixth in the global wealth stakes, even before an escalating crisis and subsequent economic collapse in 2002.⁵
- A more recent example is Greece, which rose to the ranks of the developed markets in 2001, following a massive equity boom between 1997 and 1999. Sadly, its subsequent years in the developed market universe brought an 80% index decline to its recent low in May 2012 and did not prevent the economy from suffering from levels of turbulence similar to that which the Asian and Russian markets encountered in 1997 and 1998.

For investors, the main message is clear. Market development is dynamic and fluctuating rather than steady and uniform. The recent past may imply that the emerging markets merit a strategic allocation as a growth asset. The longer view of history requires of investors that they remain vigilant market by market to ensure that they are fairly compensated for a constantly shifting mix of risk and reward.

³ The Next 11, or N-11, has been defined by Goldman Sachs to include Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Turkey, South Korea and Vietnam.

⁴ CIVETS comprise Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa.

⁵ Ana Eiras and Brett Schaefer, April 2001, *Argentina’s Economic Crisis: An “Absence of Capitalism,”* The Heritage Foundation.

Glossary

Balance of payments is the record of monetary transactions between a country and the outside world. Receipt of funds, such as those from exports, new borrowing and investment receipts, are recorded as positive (credit) items; payment of funds, such as for imports, debt servicing or new investment, are negative (debit) items. The overall balance of payments should equal zero when all components (including changes in reserve items) are included.

Bearer assets are assets whose ownership is not recorded, such as bank notes, bullion and some government bonds. Bearer assets are difficult, if not impossible, for authorities to track (and expropriate).

Budget surplus (deficit) is a government's revenues (expenditures) in excess of expenditures (revenues), including interest payments.

Commodity Trading Advisor (CTA) Macro Strategy funds (or managed future funds) are strategies which use exchange-traded futures, options and OTC forward contracts, seeking to profit from movements in global financial, currency and commodity markets.

Current account is equal to the balance of trade, or value of exports minus imports of goods and services, plus factor income (e.g., interest and dividends) and net unilateral transfers (e.g., foreign aid). A current account surplus often increases a country's net foreign assets.

Cyclically adjusted budget balance is a structural fiscal position estimated by adjusting the budget surplus (deficit) to reflect a hypothetical business-cycle neutral environment, based on assumptions for cyclical sensitivities of government revenues and expenditures. The International Monetary Fund (IMF) and Organisation for Economic Co-operation and Development (OECD) publish estimates of this indicator.

Debt is some quantity owed as a result of past or present borrowing.

Debt service is a borrower's payments on its debt over some period, usually inclusive of both principal and interest.

Deficit is the amount by which cash outflows (expenses) exceed inflows (income) in a given period.

Deleveraging, in the macroeconomic context, is a reduction of a nation's total public and private sector debt, especially relative to nominal GDP.

Equilibrium level is the average or cycle-neutral value for a market or macroeconomic variable (e.g., yield or credit spread) expected to prevail over the long term.

Fiscal cliff is a term US Fed Chairman Ben Bernanke coined in 2012 to describe a combination of US federal spending cuts scheduled to become effective 31 December 2012 and tax cuts scheduled to expire on that date, seen by many to have the potential to produce a mild recession. The American Tax Payer Relief Act, signed into law on 2 January 2013 helped to address the tax side of the cliff.

Foreign exchange reserves, or international reserves, are foreign currency-denominated assets (eg, cash deposits, bonds, special drawing rights and IMF reserve positions) and gold held by a central bank. These assets are usually denominated in certain reserve currencies (eg, US dollar), and are sometimes used to intervene in foreign exchange markets to influence or peg the exchange rate.

Hard currencies are globally traded currencies that are expected to maintain value, and therefore, often held as foreign-exchange reserves. Examples from recent history include the US dollar, euro, British pound sterling, Swiss franc, and Japanese yen.

Liquidity premium is the extra return investors demand for holding an asset that is less readily convertible to cash than another, such as private equity and real estate.

Non-normality is a term we use to describe three characteristics of asset returns typically ignored by traditional mean-variance models. These effects include serial correlation, 'fat' left tails and converging correlations. For a fuller treatment of the topic, please refer to our white paper, *Non-normality of Market Returns—A framework for asset allocation decision-making*, by Abdullah Z. Sheikh, J.P. Morgan Asset Management, May 2009.

Normalisation refers to the restoration of economic conditions, such as interest rates, to more cycle-neutral levels following a temporary dislocation period.

OECD or the **Organisation for Economic Co-operation and Development** is an international organisation of democratic countries with market-based economies founded in 1961, which ‘provides governments a setting in which to discuss, develop, and perfect economic and social policy.’

Primary budget balance of a government is its overall budget deficit (or surplus) excluding debt service net expenditures (ie, interest and principal payments on outstanding debt).

Purchasing Power Parity or **PPP** exists when the same bundle of goods (usually that defined by the CPI) in two countries has an equal value at the prevailing exchange rate. Adjusting GDP for PPP means converting a country’s GDP to another currency using the hypothetical exchange rate that would yield purchasing power parity.

Quantitative easing or **QE** is a form of monetary policy by which a central bank purchases financial assets, thereby expanding its balance sheet, increasing the money supply and stimulating aggregate demand; quantitative easing is distinct from the more usual policy of targeting interest rates through open market operations and is usually employed when interest rates are already exceptionally low.

Re-rating occurs when market views shift, increasing or decreasing price-to-earnings and other valuation ratios.

Risk premium is the return investors expect to earn by holding risky assets, in addition to the return on a virtually riskless asset.

Serial correlation, also known as **autocorrelation** or **lagged correlation**, is correlation between a time series variable with itself over some interval. If returns are serially correlated at lag 1, then returns in one period are positively related to returns in the prior period.

Sovereign debt is issued by a national government to finance its operations and may be denominated in either local currency or foreign hard currency.

Standard deviation is one measure of how dispersed data is around the average. Mathematically, it is calculated as the square root of variance, which is the mean of squared differences from the mean.

Tail risk is the risk of the value of an asset or portfolio of assets moving more than three standard deviations from its current value. Managing downside, or *left tail risk*, has become a major focus for portfolio risk managers. *Kurtosis* is the statistical measure of tail thickness, and is higher for most asset classes than implied by the normal distribution.

Volatility is a term used interchangeably with standard deviation throughout this paper to describe the variation in changes of some financial level or rate over time.

Winsorisation applies a cap and floor to extreme data values to remove the impact of potentially spurious outlier data on statistical results. A 90% Winsorisation would set all values below the 5th percentile and above the 95th percentile to these respective percentile values. Winsorising is not equivalent to ‘trimming,’ which simply excludes outlier data from the sample.

J.P. MORGAN LONG-TERM CAPITAL MARKET RETURN ASSUMPTIONS

2013 estimates

Expected ten-15 year annualised compound returns (%) ^{1,2}			Rationale
UK ECONOMIC INDICATORS	Inflation	3.00	High unemployment and deleveraging of the public and private sectors are likely to constrain
	Core Inflation	2.50	
	Real GDP	2.00	
EQUITY ²	US Large Cap (local)	7.25	US corporate earnings growth expected to match real GDP growth. Dividend yields expected torical averages given persistent deleveraging pressures and higher expected inflation.
	US Large Cap Value (local)	7.00	Growth expected to outperform value given more favourable sector concentrations and
	US Large Cap Growth (local)	7.50	
	US Mid Cap (local)	8.00	
	US Small Cap (local)	7.75	Premium to large cap assumed for both. Mid-cap companies in particular likely to benefit
	Europe ex-UK Large Cap Equity (local)	7.75	Earnings premium to nominal GDP expected due to large share of emerging market-sourced
	Europe ex-UK Small Cap (local)	8.00	Small premium to large cap assumed. Sluggish domestic demand to restrain return advantage.
	UK Large Cap Equity	7.75	Sum of below building blocks (Nominal EPS growth + Dividend yield + P/E return impact).
	UK Large Cap EPS Growth	4.25	Real corporate earnings growth expected to slightly trail real GDP.
	UK Large Cap Dividend Yield	3.50	Dividend yields expected to rise as companies favour payouts over new investment given
	UK Large Cap P/E Return Impact	zero	Valuation multiples to remain below long-term historical averages given persistent
	UK Small Cap	8.25	Small premium to large cap assumed. Sluggish domestic demand to restrain return advantage.
	Japan Large Cap (local)	5.00	Earnings to outperform domestic economy given exposure to fast-growing overseas markets.
	Asia ex-Japan Equity (unhedged)	10.00	Headwinds from higher imported commodity prices expected to be largely offset by stronger
	Emerging Markets Equity (unhedged)	10.25	Healthy economic fundamentals, favourable demographics, and policy flexibility to support
	Global Equity (unhedged)	8.00	Market capitalisation-weighted average of expectations for regional equity returns.
	EAFE Equity (local)	7.25	
ALTERNATIVE/OTHER ²	Hedge Fund—Diversified (hedged) ^{4,5}	6.50	Expected hedge fund returns based on multi-variate regressions to public markets. Blend of
	Hedge Fund—Event Driven (hedged) ^{4,5}	6.75	Blend of emerging markets, commodities, mid cap, small cap, US high yield and cash betas the
	Hedge Fund—Long Bias (hedged) ^{4,5}	7.50	Blend of commodities, emerging markets equity, large and small cap betas the main driver of
	Hedge Fund—Relative Value (hedged) ^{4,5}	5.50	Blend of emerging markets credit, commodities, US high yield and investment grade bond
	Hedge Fund—Macro (hedged) ^{4,5}	6.75	Blend of commodities, emerging markets equity and cash betas the main driver of median
	US Direct Real Estate (unlevered, local) ^{4,5}	6.50	Sustained appreciation of real estate assets, lower initial property yields and lower nominal
	European Direct Real Estate (unlevered) ^{4,5}	6.50	European real estate with low nominal GDP growth to produce muted return expectations.
	Global Infrastructure ^{4,5}	8.25	Return expectations driven by growing global interest in perceived safety of infrastructure
	Commodities (unhedged, spot) ⁴	6.25	Return expectation based upon the growth of nominal global GDP. Returns slightly less
	Gold (unhedged, spot)	6.75	Expected return based on historical relationship with inflation expectations, the US dollar and
FIXED INCOME ²	US Intermediate Treasury (local) ³	3.00	Yield levels to stay low in the near term and to rise subsequently toward their higher equilibrium
	European Government Bond (local)	3.50	Absolute yields in stronger eurozone member states to stay low in the near term, rising aggregate long-run total returns expected to outpace other major developed markets as
	UK Gilt	2.00	Absolute yields to stay low in the near term, rising toward higher equilibrium nominal levels as
	World Government Bond (local)	2.50	Government bond yields to rise globally from current levels, leading to negative mark-to-market
	World ex-UK Government Bond (local)	2.50	
	US Short Duration Gov't/Credit (local)	2.00	
	US Aggregate (local)	3.50	Spreads expected to narrow somewhat, but total returns to be constrained as overall yields rise
	US Investment Grade Corporate (local)	4.25	Spreads are expected to narrow, but returns will be constrained as absolute yields rise due to
	European Aggregate Bond (local)	3.50	
	European Investment Grade Corporate (local)	3.75	
	US High Yield (local)	6.50	Limited mark-to-market losses from the rise in Treasury rates will be partially offset by further
	US Leveraged Loan (local)	6.00	
	European High Yield (local)	7.00	Returns to be boosted by spread tightening more than offsetting higher yields on government
	Emerging Markets Local Currency Sovereign Debt (unhedged)	8.00	Yields expected to rise as inflation and real rates in emerging economies increase to their higher
	Emerging Markets Sovereign Debt (hedged)	5.50	Spreads expected to narrow further, but total returns are constrained as overall yields rise with
	Emerging Markets Corporate Debt (hedged)	7.00	
UK Cash	2.25	The Bank of England to keep policy rates on hold for an extended period and raise them only	

* Data as of 30 September 2012, except hedge funds (diversified, event driven, long bias, and relative value) as of 30 June 2012 and hedge fund (macro) as of 31 May 2012.

¹ Return estimates are on a compound or internal rate of return (IRR) basis. Equivalent arithmetic averages, as well as further information, are shown on the following page.

² All asset class assumptions are in total return terms, including equity return assumptions. All returns are in local currency terms unless otherwise indicated.

³ US Intermediate Treasury returns based on Barclays Capital US Treasury: 7-10 Year Index.

inflation in the short term, while aggressive reflationary central bank policy and rising import prices risk higher inflation over the medium-to-longer term.
public and private sectors and a slower labour force expansion are likely to constrain economic growth.
to rise as companies favour payouts over new investment given higher uncertainty over economic outlook. Valuation multiples to remain below long-term his-
higher share of revenues sourced from overseas markets.
from acquisition activity by larger firms, especially given significant cash build-up on large-cap corporate balance sheets.
revenues. Valuations to improve from depressed levels as a resolution to the debt crisis is ultimately reached. Moderate rise in dividend yields expected.
Total returns expected to recover over the long term as corporate sector outperforms domestic economy.
higher uncertainty over economic outlook.
deleveraging pressures and higher expected inflation.
Japan to remain a global underperformer given demographic challenges and ongoing battle with deflation.
underlying economic growth than in other emerging regions.
long-run growth, while rising labour costs drag on earnings. Capital inflows expected to support equity returns.
emerging markets, commodities, small cap and US aggregate bond betas the main driver of median manager expected return. Sizeable divergences expected among managers.
main driver of median manager expected return. Sizeable divergences expected among managers.
median manager expected return. Sizeable divergences expected among managers.
betas the main driver of median manager expected return. Sizeable divergences expected among managers.
manager expected return. Sizeable divergences expected among managers.
GDP expectations reduce return expectation by 0.25% from 2012.
cash flows and the benefit of leverage from low risk “bondable” assets.
robust as large developing market commodity users increase efficiency, in line with historic evidence.
emerging markets.
levels as monetary policy is eventually normalised. Low total returns due to low income and negative mark-to-market returns from rising rates.
towards higher equilibrium nominal levels as monetary policy is eventually normalised. Uncertainty over fiscal sustainability in weaker countries to persist, but EU policymakers ultimately manage to contain the crisis.
monetary policy is eventually normalised. Real total returns negative due to both low income return and capital losses as rates rise.
returns as rates converge to equilibrium.
with Treasury rates; intermediate maturity securities benefit most from the curve roll-down.
higher aggregate rates on government bonds.
narrowing of spreads. Income expected to be the major driver of return. Haircut applied to total returns for expected loss from defaults.
bonds. Haircut applied to total returns for expected defaults.
equilibrium levels over time. Total returns largely driven by income.
US Treasury rates.
gradually thereafter.

⁴ Private equity, hedge funds, real estate, infrastructure and commodities are unlike other asset categories shown above in that there is no underlying investible index. Hedge fund returns are shown net of manager fees.

⁵ The return estimates shown for these asset classes and strategies are our estimates of industry medians—the dispersion of returns among managers in these asset classes and strategies is typically far wider than for traditional asset classes. See additional notes on the following page.

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Capital Market Assumptions Committee

David Shairp
Global Strategist
Asset Management Solutions Group

Anthony Werley
Chief Portfolio Strategist
Endowments & Foundations Group

Michael Feser, CFA
Global Investment Director and Portfolio Manager
Asset Management Solutions Group

Michael Albrecht
Research and Portfolio Management
Asset Management Solutions Group

Archan Basu, CFA
US Head of Portfolio Construction
J.P. Morgan Private Bank

Alexandre Christie
Strategy Advisor
Strategy Group

Michael Hood
Markets Strategist
Market Strategy Group

Grace Koo, PhD
Research and Portfolio Management
Asset Management Solutions Group

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J.P. MORGAN ASSET MANAGEMENT

Finsbury Dials | 20 Finsbury Street | London, EC2Y 9AQ | United Kingdom

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