



Private Bank

Rich Expectations, Poor Allocations



Outlook 2014

2014 At a Glance

- We remain bullish on global growth prospects. Our portfolio allocations reflect our view that equities will probably outperform fixed income for a meaningful period ahead, following years of profound monetary easing.
- Investors should participate with their eyes open. After exceedingly strong, risk-adjusted returns in developed market (DM) equities, particularly in the US and Japan, we expect a moderation. Global equity returns in 2014 should be closer to 10% than 30% even in the sustained recovery we expect.
- Global fixed-income returns were near zero in 2013 after many years of bond price appreciation. We continue to expect close to zero returns for high-grade bonds and about 4% for high-yield instruments, assuming a very slow ascent in DM interest rates.
- Now is the time to position portfolios for future returns that are likely to be less robust than today. Hedges of many kinds are valuable assets that have been “left in the dust” amid a roaring bull market for equities and credit. Wise investors should be buyers of cheap hedging when market volatility is low. This is such a time.
- Have investors raised their risk tolerance too much while reducing their liquidity preference too little? The value of select less liquid investments may be underestimated. For investors with flexible time horizon, we believe that the return characteristics of certain private equity, real estate and hedge fund strategies may perform better, on a risk adjusted basis, than public markets at current relative valuation levels.

Strategy Highlights

- **Shifting Growth Opportunities** Global growth prospects are shifting, with an acceleration of DM growth on the horizon that is unlikely to fully flow through to emerging markets (EM). We identify equity opportunities in select EM countries that possess external surpluses and low valuations. In contrast, investors should remain cautious of EMs which are likely to be negatively impacted by rising rates and changing growth patterns in DM.
- **Hedging Portfolio Risk** It is generally cheaper to hedge a dollar of risk in today’s soaring markets than in 2008’s depressed market. There are several hedging strategies that may favorably change the risk profile of portfolios.
- **The Liquidity Trade Off** Given both high cash allocations in many portfolios and a galloping bull market in equities, investors should consider raising exposures to less liquid investments that may have strong relative return prospects.
- **Harnessing Global Change** The potential for disruptive innovation is creating opportunities for investors who can identify and invest in the “game changing” companies and technologies. Consider how the landscape for global energy is changing faster than is widely recognized.

Price quotes are as of December 6, 2013 unless stated otherwise.

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Alternative investments referenced are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in the fund, potential lack of diversification, absence of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds and advisor risk.

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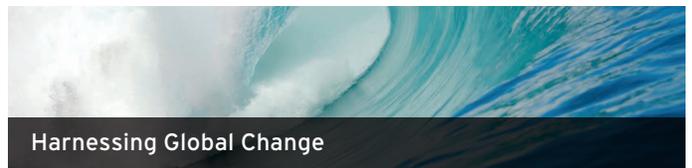
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<https://www.privatebank.citibank.com/outlook>

Rich Expectations, Poor Allocations

Eduardo A. Martinez Campos, Global Head of Investments

Our Outlook for 2014 marks a significant change from our 2012-13 investment views. Making portfolio recommendations in the midst of an unprecedented global experiment in monetary policy has been no easy task. While our call on interest rates has proven correct, asset classes responded to monetary stimulus in a rather indiscriminate manner. We have seen both equities and many fixed income markets rise in tandem regardless of economic fundamentals and modest growth expectations. Investors, however, have not participated broadly in those market developments, and, despite a rise of over 20% in the value of global equity markets during 2013 (following a 13% rise in 2012), portfolios still remain poorly allocated, underweight in equities, overweight in cash and carrying a significant amount of interest rate risk.

2014 welcomes recent appointments at major central banks - Yellen at the Fed, Carney at the Bank of England and Koruda at the Bank of Japan (with Draghi continuing at the European Central Bank). Each central bank head faces the eventual task of initiating a shift in the course of monetary policy; in some cases, like the US, with a view to start reigning in liquidity; in the case of Japan, the opposite. All so far have indicated that, until their economies show signs of sustained recovery, or inflation picks up meaningfully, short-term rates are to remain low. Yet, most central banks have somewhat exhausted their battery of economic recovery tools with rates already at all-time lows. As such, the eventual impact of any further action on monetary policy will have only a residual appreciation effect on asset prices, or a significant negative effect (depreciation), depending on how radical the policy reversal is.

Given where we are in the different cycles of monetary policy, our view is that asset classes will have less room for appreciation in 2014; and so investors' return expectations, especially for relatively liquid markets, need to adjust.

The returns seen in liquid benchmark indices, such as the S&P 500, during 2010-13 are unlikely to be repeated in the environment ahead (see Figures 1 and 2). Our forecast for global equity and fixed income markets in 2014 is 12% and 1% respectively.

Figure 1. Citi's forecasts on GDP growth

Region	GDP Growth (%)		
	2013	2014	Change
Global	2.4	3.1	0.7
US	1.7	2.7	1.0
Euro-Area	-0.4	0.9	1.3
Emerging Markets	4.6	4.9	0.3
China	7.6	7.3	-0.3

Source: Citi Research as of December 2, 2013.

All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

Figure 2. Annual returns for benchmark equity and fixed income indices

Index	Equity Total Returns (%)						
	2008	2009	2010	2011	2012	2013 YTD	2010 -13 YTD
S&P 500	-38.2	27.7	14.1	1.3	16.2	28.8	73.0
Euro STOXX 600	-43.8	32.4	11.6	-8.6	18.2	15.6	39.4
MSCI Japan	-42.6	9.1	0.6	-18.7	21.6	47.1	46.2
MSCI EM	-45.8	62.0	14.1	-12.7	17.0	2.6	19.5
Index	Fixed Income Total Returns (%)						
	2008	2009	2010	2011	2012	2013 YTD	2010 -13 YTD
Global Aggregate	7.1	4.3	4.3	5.7	5.6	0.3	17.0
U.S. Aggregate	7.0	5.1	6.3	7.9	4.2	-1.8	17.7
Euro-Area Aggregate	7.4	6.5	2.1	3.5	10.7	2.6	20.2
Emerging Market Sovereign	-10.5	27.5	12.0	8.5	17.7	-7.1	33.3
High Yield Corporate	-25.9	55.2	14.3	5.5	15.2	6.7	48.1

Sources: Haver Analytics, MSCI, Factset, The Yield Book and Citi Private Bank as of December 3, 2013.

Note: "Global Aggregate" is Citi World Broad Investment Grade Index, "US Aggregate" is Citi US Broad Investment Grade Index, "Euro-Area Aggregate" is Citi Euro Broad Investment Grade Index, "Emerging Market Sovereign" is Citi Emerging Markets Sovereign Bond Index (ESBI), and "High Yield Corporate" is Citi US High Yield Market Index.

All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

Our investment views for 2014 reflect both our forecasts for economic growth and the impact of a gradual return to a more normal global monetary policy, be it in the form of asset-purchase tapering by the Fed or an eventual rise in policy rates across the world. With short-term rates currently anchored close to zero, improved signs of economic recovery - which should be favorable for risk assets and especially equities - will translate into rising medium- to long-term interest rates. We remain bullish on risk assets, especially equities, but with reduced expectations for equity returns. While broadly underweight fixed income, we identify opportunities in pockets where the return takes into account

an eventual rise in rates focusing on the trade off between return and liquidity. We continue to recommend, as suitable, a core allocation to hedge funds, to help balance investment portfolios and incorporate uncorrelated sources of return.

In our Outlook 2014, Steven Wieting, Citi Private Bank's Global Chief Investment Strategist, expands on our investment outlook and asset class views for the year ahead, and Alexander Godwin, Citi Private Bank's Global Head of Asset Allocation, demonstrates the importance of following an asset allocation framework to portfolio management.

So, what should investors focus on in the year ahead? Our investment themes for 2014 reflect four core principles:

- We focus on global economic fundamentals and seek investment opportunities in markets where we expect improved performance of economic drivers such as consumer demand, housing, exports, employment, etc. *relative to where they are today*. In this context, we identify **Shifting Growth Opportunities** between developed markets (DM) and emerging markets (EM) in 2014 and beyond. We favor markets such as the US and Europe over EM generally. But within EM, we make a distinction between markets with weak economic fundamentals, those with poor current accounts, fiscal deficits and a dependency on commodity price drivers, and those with stronger fundamentals, net exports, positive current accounts and stronger domestic economies that will benefit more from improved growth in the developed world. On a more strategic, medium-term basis, we examine the impact that changing demographics will have on the performance of developed and emerging economies, and how investors can potentially extract value from this increasingly important trend.
- As we expect an eventual return to more normal monetary conditions (meaning less central bank liquidity) and the impact this will have on asset prices, we focus on **Hedging Portfolio Risk** as one of our key themes for 2014. We believe now is an opportune time to consider hedging investment portfolios, given relatively low volatility in benchmark, liquid indices and the correspondingly low cost of hedging instruments and strategies. We also consider how investors can start rebalancing portfolios, adding exposure to equities with some element of embedded downside risk management; or how investors can hedge portfolio risks by means of proxy markets such as foreign exchange.
- We expect 2014 to be a year when many investors will need to re-rate their return expectations for the main asset classes and, more importantly, returns versus the value of liquidity. The search for yield in the year ahead will require investors to evaluate **The Liquidity Trade Off**. The re-rating of return and liquidity expectations can take many forms. We highlight three specific areas where investors can consider positioning portfolios for increased performance by sacrificing some liquidity for higher returns. We examine returns between private and public equity markets, yield for illiquidity in credit markets, and the role of hedge funds in investors' portfolios.
- Lastly, consistent with our views in 2013, we believe the world is transitioning out of a cycle marked by significant dislocations in the financial markets and real economies. Our continuing theme, **Harnessing Global Change**, focuses on two areas where we expect to see structural changes in the economic and financial landscape. Philip Watson, Citi Private Bank's Global Investment Lab Head, examines the increasing substitution of conventional energy sources to cheaper alternatives such as shale gas and renewables. We also focus on investing in "disruptive innovation," identifying key characteristics of the future "game changers" in areas such as transportation, energy, finance and 3D printing.

As we emerge from the crisis and enter into a new phase in financial markets, we would advise our clients to take a close look at their existing investment portfolios, ensure there is a strategic asset allocation framework in place and designate a portion of their portfolios to take advantage of thematic investment opportunities or specific strategies to help protect their wealth.

As your trusted advisor, we would welcome the opportunity to work with you and guide you through the landscape of short-, medium- and long-term risks and opportunities.

Strategies and investments mentioned in this document may not be suitable for all investors. Products, strategies and services discussed herein may have eligibility requirements that must be met prior to investing. Each investor should carefully view the risks associated with the investment and make a determination based upon the investor's own particular circumstances, that the investment is consistent with the investor's objective. Products and strategies described herein involve risk and may not perform as described.

Outlook 2014: Stay Ahead of a Charging Bull

Steven Wieting, Global Chief Investment Strategist

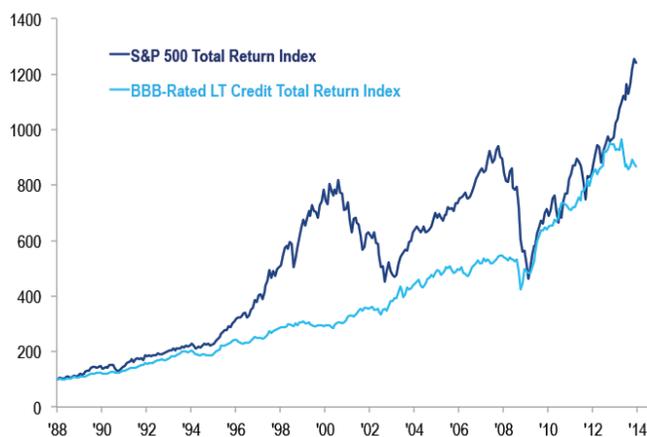
We're bullish. We've long been bullish. And when we write *Outlook 2015* there's a reasonable chance we'll still be bullish on the prospects for financial markets. Nonetheless, now is the time to acknowledge and position portfolios for a future return period that is less robust than today. When a reversal in fortune for the financial markets comes, history suggests the opportunity to take evasive action will shrink away quickly.

The quality of what you own matters more now, the amount you should get paid for taking risk should be clear, and wise investors should be buyers of cheap insurance when market volatility is low.

Review of 2013

Developed market (DM) equities enjoyed an extraordinary near 22% total return in 2013, emerging markets (EM) roughly 3%. Global fixed-income returns were near zero in 2013 after many previous years of bond price appreciation. Indices like the S&P 500, with a +28% total return, are among the most liquid, low-cost investment vehicles in the world, yet offered among the world's most stellar returns.

Figure 1. Equity markets paid a severe price after strong runs in 2000 and 2007



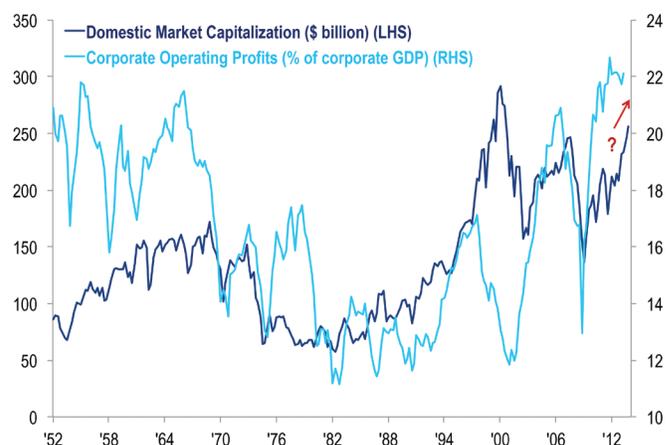
Sources: Standard & Poor's and Citigroup Global Markets as of December 2, 2013.
Note: Indexed, Jan. 1988 = 100.

Equity market valuations rose in both 2012 and 2013. However, looking at the US alone, valuations fell in nine of the previous twelve years. While there is much that is disappointing in the recovery from the 2008 financial crisis, there has been little to disappoint in corporate profits. We surmise that investors doubted the sustainability of the unusually sharp increase in profits early in the recovery. Not only have those profits endured, they continue to grow further. While earnings-per-share (EPS) were up just 6% in 2013, it is likely that EPS in the aggregate will have grown about 30% from prior peak-2007 levels. Meanwhile, share prices have risen just half as much. Thus, looked at from the pre-crisis to the current period, US equity valuations have fallen during the age of central bank quantitative easing.

The road ahead for 2014

With this backdrop in mind, we expect further equity market gains to come, and still see current valuation anomalies as more serious in fixed income markets. However, if we have *two more years* of rapid price escalation, US equities will again have a serious valuation problem and pay a meaningful price in the next inevitable downturn, as seen in 2000 and 2007 (see Figures 1 and 2). Most European markets, Japan and some EMs should have somewhat longer to improve on the valuation front, but the US stock market, at 48% of global market cap, will be decisive for setting the global tone in any future market correction of magnitude.

Figure 2. Valuations in US equity markets have risen sharply in recent years but have still trailed behind corporate profits



Source: Federal Reserve Board and Bureau of Economic Analysis as of December 3, 2013. Note: Corporate GDP is gross value added of corporate business.
RHS = Right Hand Side; LHS = Left Hand Side

Maturing bull market

With this “maturing bull market” in mind, investors must focus on issues of liquidity and hedging opportunities, at a time when such a focus is largely ignored. “Long strategies” have trounced “long and short,” as markets have climbed sharply. But it’s gradually getting harder to find great value in long-only strategies in our view. From the perspective of the outlook for business, one can now find rather stunning examples of “disruptive innovation” offering significant economic benefits and future profit opportunities. But somewhat akin to the late 1990s, investors are once again willing to assign a very significant upfront value to growth on a mere promise. This creates opportunities for quick equity profits, but leaves less on the plate for the future investor (see “Searching for Tomorrow’s Game Changers: Investing in Innovation”).

Citi Private Bank’s Global Investment Committee (GIC) remains overweight equities and underweight fixed income. Our expectation for equity market returns in 2014 is positive, though moderating. A gain roughly half that of 2013 seems plausible. It may take some tilting around geographically (see “The Developed Markets Step Ahead”) but such gains are still exciting and worthy of the overall equity overweight recommended by the GIC (see “The Cost of Not Rebalancing Portfolios”). For fixed income, our views remain largely the same as in the latter half of 2013: we expect close to zero returns for high grade and near 4% returns for “high yield” bonds in 2014, assuming a very slow ascent in developed market interest rates. Thus, we continue to underweight fixed income generally.

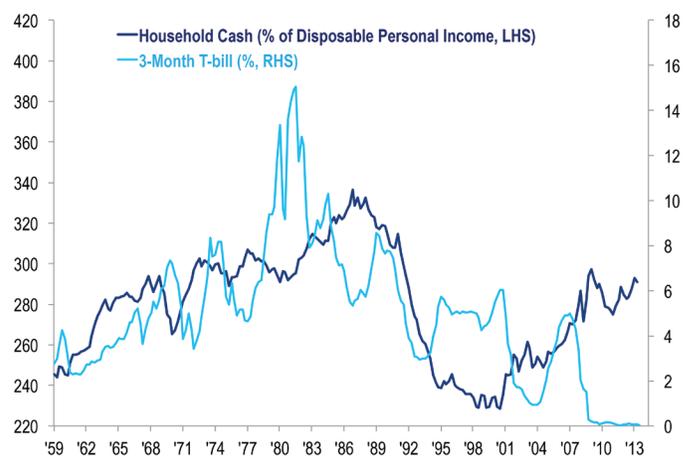
Borrowers with the weakest balance sheets will likely experience an outsized negative reaction when concerns over a turn in Fed policy resurface in 2014, as seems likely. In 2014 and beyond, *no investor* should be able to rest easily in the aftermath of a truly profound central bank Quantitative Easing (QE) campaign. Investors who still fret over “extreme downside risk” accept low returns in fixed income markets or cash, but largely don’t see the low cost for hedges - alongside a prudent increase in risk exposure - as worthwhile. We view things differently. “Buy insurance when it’s cheap.”

While optimism may have carried too far in small areas of the market place, investors have been more discriminating in awarding performance. As such, correlations across asset classes and within markets have generally declined in the maturing bull market. Yet such correlations will likely jump (as usual) in some future period of significant market stress. Hedges may be one of the few bargains left behind in the bull market rally. We see opportunity in using the greater dispersion of risk pricing to hedge real business risks and portfolios in a cost-effective manner. This can be driven by a strategy of both buying and selling expected volatility over different time frames, and using seemingly unrelated markets like foreign exchange to offset risk (see “FX as a Portfolio Hedge”).

Thawing risk tolerance and performance chasing

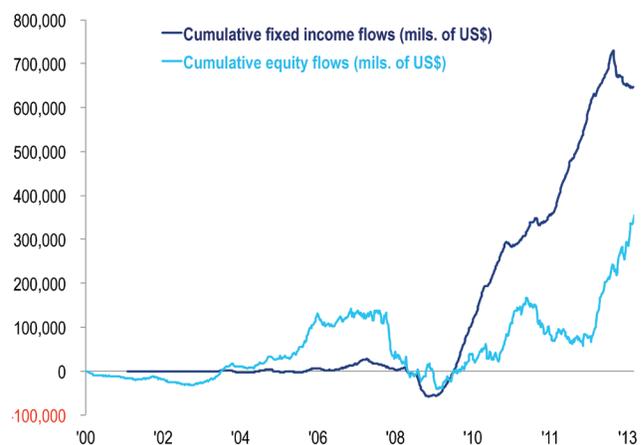
A recent Citi Private Bank survey of family office investors revealed a near 40% cash weighting and a 25% average equity market allocation. Yet, a sizeable majority of investors expected double-digit US equity gains in 2014. Cash allocations are often discussed in institutional investor portfolios. But institutional managers largely remain fully invested in the asset class of their mandate. End investors are more important in our view. With such high cash weightings (see Figure 3), we would expect “performance chasing” dynamics to eventually take hold, sending the under-invested into the dwindling return environment of public markets. Following long behind performance, investor flows have been migrating away from fixed income and into equities (see Figure 4). DM equity inflows have suddenly jumped by the most in seven years.

Figure 3. Household cash deposits have risen, rates have fallen



Sources: Federal Reserve Board and Bureau of Economic Analysis as of 3Q13.
Note: deposits include foreign deposits, checkable deposits and currency, time and savings deposits, and money market fund shares. RHS = Right Hand Side; LHS = Left Hand Side

Figure 4. Global fund flows are migrating from fixed income to equity markets

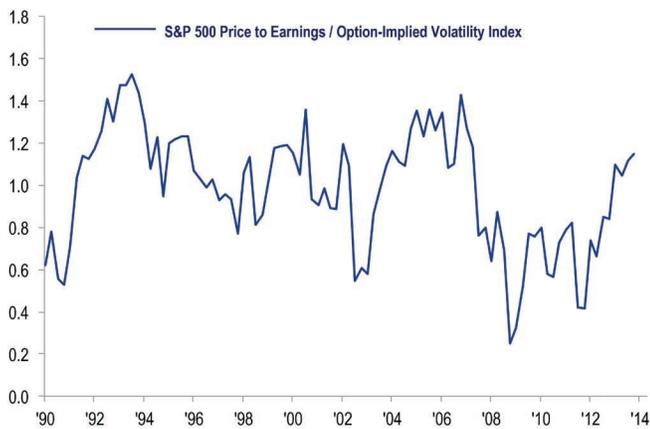


Source: EPFR (weekly data since inception) as of November 27, 2013.

Meanwhile, market valuations - and therefore risks - have been rising relative to the costs of hedging in both equities and credit markets. While we noted that the price/earnings (PE) multiple for the S&P 500 has fallen some since 2007, the price of expected future market volatility has dropped more (see Figure 5). Similarly, while credit spreads have tightened sharply since 2008 - limiting future returns for investors - the insurance cost for hedging credit risk has plummeted (see Figure 6).

In general, a dollar of investment risk is cheaper to hedge in today's soaring markets than it was in 2008-09's depressed markets.

Figure 5. The price of expected future market volatility has fallen more than the price/earnings of the S&P 500



Sources: Standard & Poor's and Chicago Board of Exchange as of December 2, 2013.

We recommend an overweight to equities at current valuation levels with a 12-18 month tactical investment horizon. Looking forward, however, the very high cash allocations and a future runaway bull market in equities suggests investors should presently consider raising exposures to less liquid investments, including high quality private equity, hedge fund and real estate structures. Such a move does not come without a cost. In some future period of market dislocation, illiquid assets would indeed be *illiquid*. But the total return one can earn from quality alternative investments could potentially exceed the returns on public equities when public markets are fully valued. One lesson of the 2008-09 period is that the liquidity of "liquid assets" is not guaranteed and can create a shock when it disappears. In short, it is important for investors to be fully compensated for the illiquidity they eventually assume.

Figure 6. The insurance cost for hedging credit risk has plummeted



Source: Bloomberg as of December 3, 2013. Note: CDX = Credit Default Swap
RHS = Right Hand Side; LHS = Left Hand Side

Aside from some *unintended* consequences, regulatory changes aimed at shoring up the global financial system are likely to succeed, in our view. The global economy is less at risk of another banking-induced collapse. While investors have witnessed the impact that financial deleveraging (including a dramatic rise in bank equity capital and large declines in consumer debt burdens) has had on economic growth in recent years, they haven't fully accepted the benefits in terms of safety and durability. Recognition of the "durable recovery" is a significant element of our still bullish outlook. A safer banking system means that the economy can withstand shocks better and recover faster.

Arguably, substantial recognition of the "more durable recovery" was made in 2013, though we believe it still has further to run in the US. While the risks still seem greater, we have become increasingly optimistic on Europe's prospects for both equity and credit markets in 2014. These markets have understandably lagged behind the US, but may catch up some in the coming year (see Figure 7). We are also bullish on Northern Asia within the otherwise less compelling emerging markets, given external surpluses and likely exposure to improving world trade.

Figure 7. European equity markets may be able to catch up some with the US

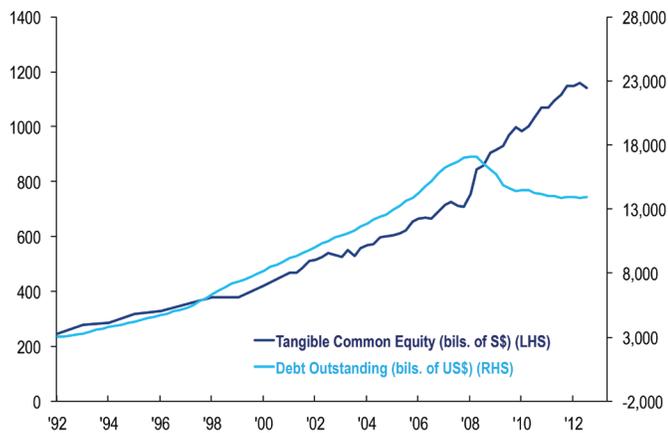


Sources: Standard & Poor's and STOXX Limited as of December 4, 2013. Note: Indexed, Jan. 3, 1995=100

Migration of risks

The US banking system has seen equity capital rise dramatically with portfolio holdings simultaneously deleveraged (see Figure 8). With a lag, the same deleveraging is taking place in Europe, reinforced of late by economic recovery prospects. Yet some regulatory responses seem to have simply forced a migration of risks from financial institutions to end investors. This is likely to result in reduced liquidity at some point in the future, though certain markets seem to ignore this risk. While we are underweight fixed income, no balanced portfolio should have a zero allocation. Those investors that aren't in dire need of (questionable) liquidity, or are unwilling to pay so dearly for it, should consider trading their most liquid corporate bonds for less liquid alternatives in order to enhance yield (see "Yield for Illiquidity: An "Easy" Way to Boost Return on Capital").

Figure 8. The US banking system has deleveraged and de-risked



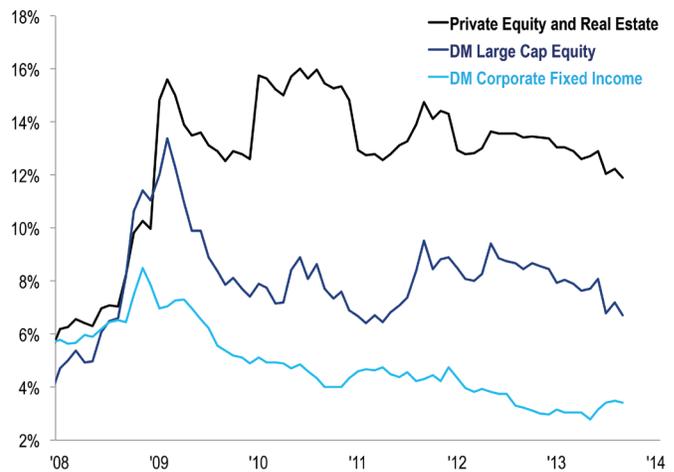
Sources: Federal Deposit Insurance Corporation and Federal Reserve Board as of 3Q13. RHS = Right Hand Side; LHS = Left Hand Side

Much more broadly, we ask, "Have investors raised their risk tolerance too much while reducing their liquidity preference too little?" As discussed in "The 2014 Illiquidity Premium: Opportunities from Private Equity and Real Estate" and illustrated in Figure 9, the estimated "required return" in bond and stock markets has fallen significantly since 2009 while the return expectations for illiquid private market investment products have been far more stable.

The ability to hold assets that fall in price through a market dislocation, or *have no price* in a market dislocation, requires a sterling balance sheet. But we surmise that such a balance sheet, coupled with the willingness to assume liquidity risk when others don't, will do much to determine which investors distance themselves from the falling return prospects of a maturing bull market.

In summary, we remain bullish on growth prospects, and expect equities to outperform fixed income for a meaningful period ahead following years of profound monetary easing. But investors should participate with their eyes open. Markets such as the US are no longer depressed. Hedges in particular and select alternative investments have been "left in the dust" in the roaring bull market recovery. We suggest investors take advantage of such opportunities.

Figure 9. Expected 10-year annualized returns for various asset classes



Source: Citi Private Bank as of September 2013.

The investment strategies presented are not appropriate for every investor. Individuals should review with their Financial Advisors the terms, conditions and risks involved with specific products or services. Past performance is no guarantee of future results. There is no guarantee that these strategies will succeed. This information is intended for illustrative purposes only. Investment results may vary.

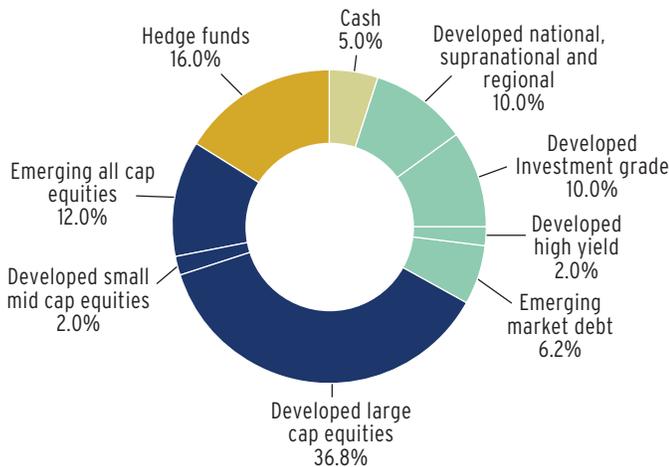
The Cost of Not Rebalancing Portfolios

Alexander Godwin, Global Head of Asset Allocation

Even with the steady improvements to the global economy and financial markets over the course of 2012 and 2013, many investors have been hesitant to follow asset allocation advice and remain seated on significant amounts of cash. This has caused a considerable drag on portfolio performance and will continue to cost investors dearly should they not look to rebalance their portfolios for the environment ahead.

A recent Citi Private Bank poll, on the investment allocations and views of 50 family offices from over 20 countries, found that the average family has only 25% invested in public equities, with an astonishingly high 40% allocation to cash. The remainder is split between fixed income (17%) and alternatives (19%). Such a conservative portfolio will have returned a meager 6% in US dollar terms this year (to November 25, 2013), even with the stellar stock returns.

Figure 1. Recommended strategic allocation



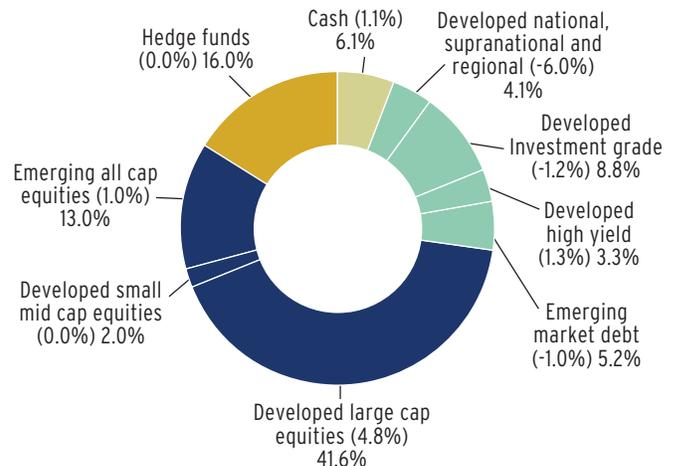
Strategic allocation for a risk level 3 portfolio based on Citi Private Bank's Adaptive Valuation Strategies (AVS) as of November 20, 2013.

Throughout 2013, our advised balanced strategic asset allocation (level 3 with hedge funds) was allocated 51% to public equities and only 5% to cash. The remainder was split between fixed income (28%) and alternatives (16%). Our advised allocation would have returned nearly double that of the average polled family allocation, at 11% over the same period. (See Figures 1-3 for our recommended strategic, tactical and active allocations for a risk level 3 investor.)

The reason for this striking performance difference is simple. Equities are up over 20%, while fixed income and cash have barely returned anything positive at all.

While we do not expect equities to perform as strongly in the years ahead, we still believe they will comfortably outperform fixed income and cash. Cash, meanwhile, will continue to lag behind even fixed income over a 10-year horizon.

Figure 2. Recommended tactical allocation



Tactical allocation for a risk level 3 portfolio set by Citi Private Bank's Global Investment Committee (GIC) on November 20, 2013.

Figure 3. Summarizing our recommended risk level 3 portfolio allocations

Asset class	Strategic (%)	Tactical (%)	Active (%)
Cash	5.0	6.1	1.1
Emerging all cap equities	12.0	13.0	1.0
Developed small/mid cap equities	2.0	2.0	0.0
Developed large cap equities	36.8	41.6	4.8
Emerging market debt	6.2	5.2	-1.0
Developed high yield	2.0	3.3	1.3
Developed investment grade	10.0	8.8	-1.2
Developed national, supranational and regional	10.0	4.1	-6.0
Hedge funds	16.0	16.0	0.0

Note: Risk level 3 is designed for investors with a blended objective, who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. This risk level may be appropriate for investors willing to subject their portfolio to additional risk for potential growth in addition to a level of income reflective of his/her stated risk tolerance.

We use a proprietary approach, Adaptive Valuation Strategies (AVS), to set our long-term return expectations. This approach uses valuation levels to better understand the likely 10-year returns we might expect from each major asset class. We believe history demonstrates that over a 10-year time horizon valuations tend to move back to long-term averages. Combining this effect with the trend in earnings growth and dividend yields allows us to get a sense of future equity returns.

The cost of not following asset allocation advice

Based on our forward looking long-term return expectations, the asset allocation of family office investors revealed in the poll would yield only 3.3% per annum – only a little above current 10-year inflation expectations of 2.2%. This is significantly below the expected 5.2% annual return expected for our advised balanced allocation. It stands in sharp contrast to those of the family offices themselves who, on average, said they expected annual portfolio returns of 8%.

To illustrate the importance of asset allocation over time, consider what would happen after 10 years of compounding. A 3.3% annual return would yield an increase of 38.3% while a 5.2% return would achieve 65.7%. In other words, the value would rise almost 72% more. Market returns

are for illustrative purposes only. Actual results may vary significantly. Future investment returns will fluctuate with market conditions.

These expectations stand in sharp contrast to those of the family offices themselves. While we would expect only 3.3% returns from the sort of allocation revealed in the poll, the same poll suggests average long-term expectations of around 8%.

The time to rebalance portfolios is now

Looking again at the family office poll, we discover that actually future expectations of markets are surprisingly similar to our own, despite the dramatically different portfolio positioning. 65% of family offices expect equities to rise by over 10% in the coming year (even above our long-term expectations), while 77% expect rates to rise by 50 basis points or more.

In such an environment, we would expect low returns across fixed income and cash. To potentially achieve the 8% portfolio return that many family offices are expecting, it seems these allocations will need to shift substantially away from cash and into equities and select alternatives.

Citi Private Bank's long-term return expectations using AVS

- Overall global developed equity valuations are slightly above their long-term average, after the recent strong performance. We expect annual returns close to 7% driven mostly by trend earnings growth (5-6%) and the dividend yield (2-3%), with a small negative impact from valuation adjustment.
- After lagging behind for several years, emerging equities now offer estimated returns above 8% given valuation levels have dropped below their long-term average.
- In contrast, low yield levels in fixed income will continue to limit long-term returns. Our long-term AVS return estimates for government, investment-grade corporate and high-yield bonds are only 1.9%, 3.4% and 2.9% respectively. The recent rise in bond yields has helped emerging markets where estimated returns have now risen to 5.1%.
- However, none of these asset classes are expected to perform as poorly as cash, with an estimated return of 0.4% per annum. (Note again, these are 10-year ahead estimates.)



Shifting Growth Opportunities

Why Aren't Emerging Markets Leading Anymore?

Steven Wieting, Global Chief Investment Strategist

Classifications such as “emerging markets” (EM) and “developed markets” (DM) always seem somewhat forced. In the past year, two Euro-area member states were “demoted” to EMs in an index of sovereign borrowers when the countries lost investment-grade credit ratings. Some countries clearly viewed as “EM” jumped to investment grade. Even more rich: try discerning between an Emerging and “Frontier” market.

The BRIC countries (Brazil, Russia, India and China) always had huge differences. For most of the last decade, China was an external surplus country with a stalled population, recovering sharply from a past period of economic repression. India was generally an external deficit country with a young and growing population also suffering from past policy mistakes. Brazil was somewhat more like India, though it benefited sharply from trade linkages to China. Russia was a case of relative success from an income standpoint, but largely because of the massive boom in energy export prices. Throughout the EM world, there was an element of “catching up” to the industrial (technological) standards of DM economies which vaulted EM growth rates. This was particularly true of China, and it continues to be to some extent.

However, there were numerous, significant one-time benefits to EMs in the past decade. These included expanded, globalized trade coupled with a DM world consumption binge (most clearly in the US), a commodity price “super cycle,” which has topped out and large declines in credit costs, that generated a re-rating of return requirements throughout EM asset markets, including equities.

Looking forward, we believe EM economies and asset markets are likely to perform in a far more asynchronous way, with the three identified benefits largely history. We see both risks and opportunities in the “awkward EM” label (see “The Developed Markets Step Ahead”).

Meanwhile, as discussed in “Global Demographic Transitions,” EM demographics are far from uniform, and may present a future growth drag for those markets that have in some cases attracted the greatest amount of outside investment in the recent past. Citi Private Bank’s Global Investment Lab Head, Philip Watson, discusses investment implications of world demographic trends further in “Investing in the Demographic Divide.”

The Developed Markets Step Ahead

Steven Wieting, Global Chief Investment Strategist

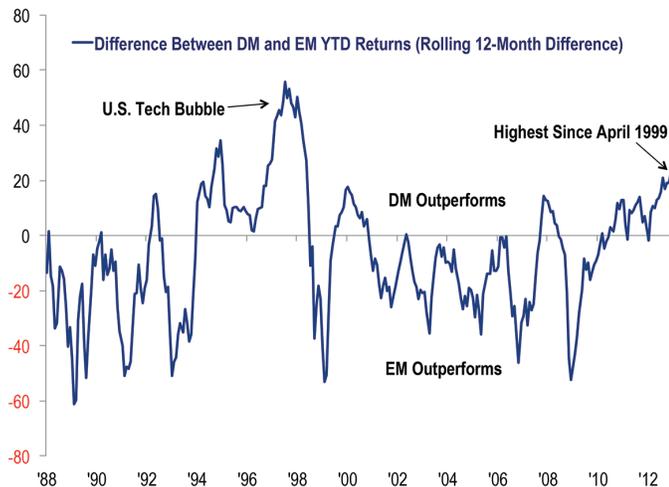
Planet earth can't run a trade surplus

Growth in the world economy is not a zero sum game. What's good for one country or region need not rob another of prosperity. Instead, various regional recoveries are likely to broaden and accelerate global growth. However, with production and savings patterns in the developed markets (DM) changing - and the world as a whole a "closed system" that cannot run a trade surplus - we expect a general slower growth phase for the last decade's high flying emerging markets (EM). We see a likely revival in DM economic growth in 2014 as a helpful catalyst for certain EM exporting countries, while leaving others far behind.

As noted in "Outlook 2014: Stay Ahead of a Charging Bull," DM equities are on track to generate a 22% total return in 2013 while EM equities posted a much less robust 3% gain. Investments in EM local-currency sovereign debt (measured in USD) posted a -7% return in 2013, while DM sovereign debt returns were about zero.

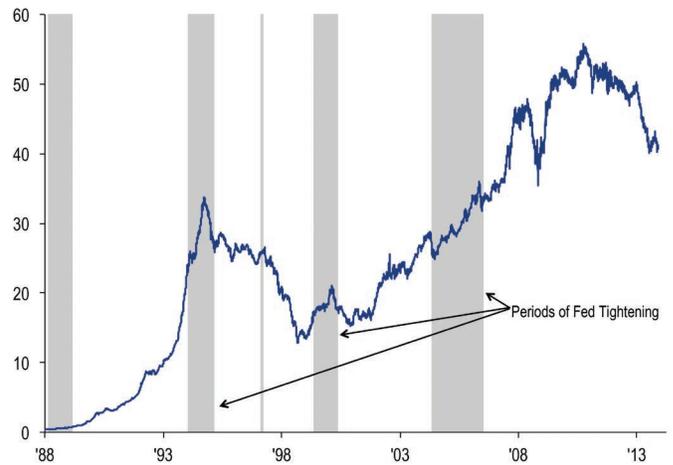
Obviously, there are huge differences in performance from one country to the next. But the market performance differences in "EM" and "DM" as a whole are *not* a random outcome. We suspect the differences, particularly in equities, may shrink some in the coming year, most likely because DM equity gains should be less robust than 2013's 22% return. But it is notable that DM equity outperformance has persisted for over two years now (see Figure 1). In contrast, while there hasn't been much short-term consistency, EM *outperformance* has been the very long-term norm (see Figure 2).

Figure 1. MSCI 12-month DM equity return less EM



Sources: MSCI / Factset as of November 29, 2013.

Figure 2. MSCI EM index/DM index (relative performance EM)



Source: Bloomberg as of December 2, 2013.

Key performance trends for EM and DM

We see three relevant, lasting and interrelated macro trends for EM and DM economies and their markets:

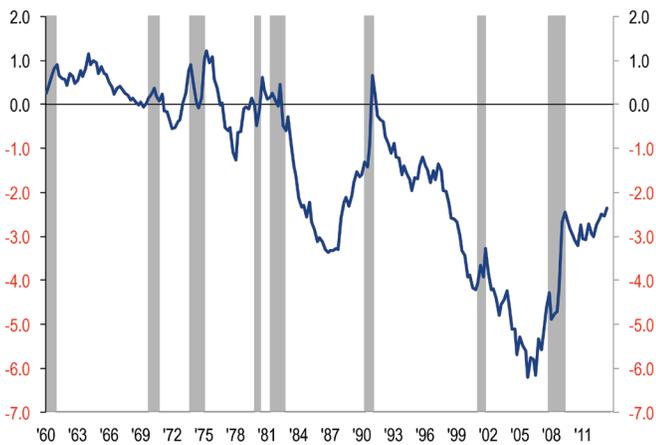
- DM growth will likely accelerate relative to EM growth in 2014:** We expect some revival of EM exports and economic growth in 2014. But the US (already) and Europe (incipiently) have experienced a shift in the composition of their economic activity to-date. This shift is marked by stronger production, exports and savings trends that are fundamentally less favorable for EM exporters. Japan is also seeking a "return to its roots" with a belated quantitative easing (QE) policy aimed at weakening the yen, coupled with an increase in the domestic consumption tax.
- The commodity "super-cycle" is reversing:** The last decade was unusual for its lasting commodity price gains for EM commodity exporters, whether measured in US dollars or in local currency terms. Massive investments in commodity production capacity accompanied the commodity boom, with the US energy-sector investment acting as a poster child. Looking backwards, we see that this commodity "super cycle" peaked around 2011. Because it was a dominant factor driving EM market outperformance (and DM underperformance) in the last decade, EM economies do not have the benefit of this tail wind any longer.

- **The exceptional EM performance of the past decade in credit can't be repeated:** Reflecting sharp improvements in their creditworthiness (often due to commodity-related income gains) over the past decade, EM debt markets have maintained the bulk of their gains from that period. The sharp declines in credit spreads and yields cannot be repeated in the period ahead given a zero bound on interest rates. We believe yield declines boosted DM equity markets in the 1980s-1990s, partly setting the stage for the poor performance that followed. EM markets largely saw similar benefits in the 2000s, and that has run its course. There is further risk that with the peaking of Fed stimulus, EM credit markets will suffer. Certainly, EM countries that run fiscal and external trade deficits will find the credit markets in 2014 and beyond much more challenging than they had done over the past decade.

Factors constraining the EM recovery

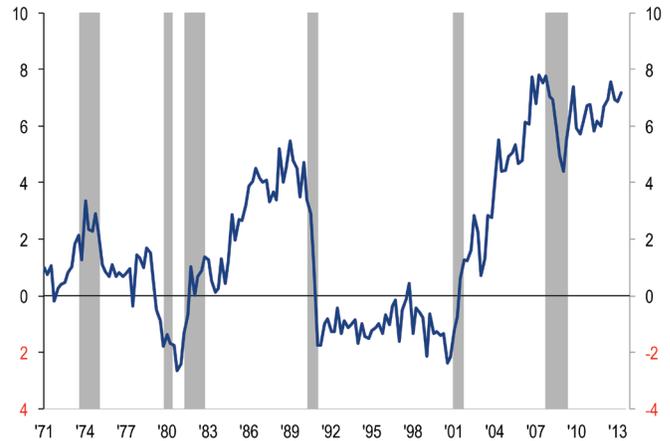
In DMs, domestic savings are being rebuilt and production is improving. This mirrors the credit excesses and falling savings rates of the 2000s. External deficits have been stabilized in the case of the US for the first time in an expansion cycle in 30 years (see Figure 3). Europe, led by Germany, is running a large and increasing external trade surplus, which is interestingly the source of some political friction (see Figure 4).

Figure 3. US current account balance (% of GDP)



Source: Bureau of Economic Analysis as of 2Q 2013. Note: shaded regions denote US recession.

Figure 4. Germany current account balance (% of GDP)



Sources: Deutsche Bundesbank and Haver Analytics as of 2Q 2013. Note: shaded regions denote US recession.

With developed economies no longer providing a huge export fuel to EMs, many EM countries have allowed their fiscal balances to worsen, supporting their domestic demand. This is the reverse of the newly found savings caution in the DM world.

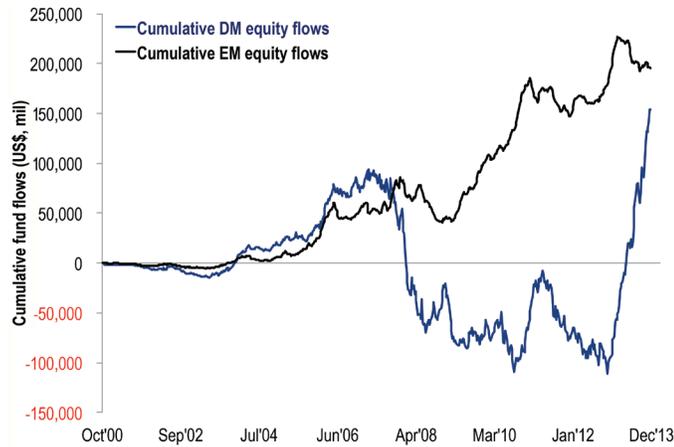
Trade deficits require others to hold increasing quantities of the deficit country's local currency. This has started to reverse the unusually stable (and in some cases appreciating) EM exchange rates seen in the decade past that were a main attraction for capital inflows. In short, many of the factors boosting EM growth in the past decade were non-repeating. In some cases, the risk is a reversal, with those EMs with twin deficits most exposed (see Figures 5 and 6).

Figure 5. Emerging and developing economies current account balance (% of GDP) and ex-China surplus



Source: International Monetary Fund as of 2012. Note: 2013-18 data are IMF forecasts.

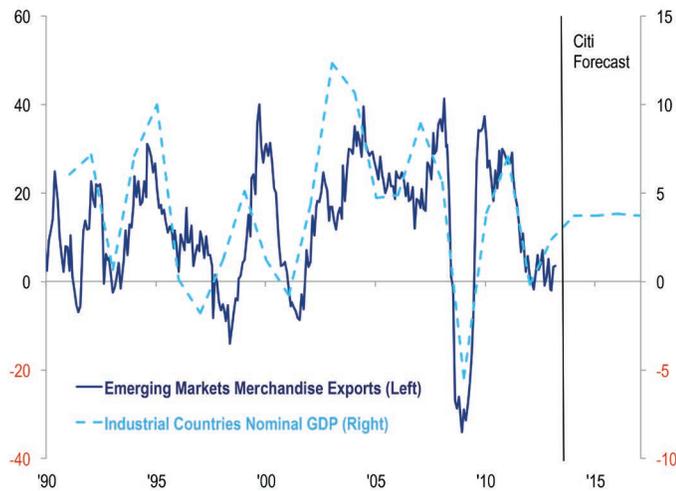
Figure 6. Cumulative EM vs. DM equity fund inflows



Source: EPFR (weekly data since inception) as of October 16, 2013.

This less favorable trend for EM is not absolute. The nearly one percentage point acceleration Citi economists expect in DM economies in 2014 should spill over positively into EM, where growth is expected to accelerate by 0.3% (see Figure 7). This spill-over will of course not be shared equally by all countries.

Figure 7. Emerging markets merchandise exports vs. industrial countries nominal GDP (YoY%)



Sources: International Monetary Fund and Citi Research - Economics as of December 2, 2013. Note: Citi forecast uses real GDP + CPI to create nominal GDP.

We are already seeing signs that the entrenched US recovery is likely to boost certain EM exporters and Europe seems poised to help (see Figure 8). In particular, we positioned for this with an overweight to North Asian equities mid-2013 and continue to hold that view for 2014.

Figure 8. US manufacturing imports index (YoY difference) vs. Asia-Pac (ex-Japan) EPS growth (YoY%)



Sources: Bloomberg and Citi Private Bank as of October 2013.

What the surge in US energy production means for investors

Any EM export growth revival will vary greatly from the strong broad trends of the past decade. The rise in commodity prices during the past decade was the most significant since the 1970s, measured in any currency. In fact, the commodity price surge likely played a role in the US dollar's weakening over that period. Yet, in the US since 2011 - fueled by profits from commodity production and associated capital investment - we are seeing a "gusher" of natural gas and unconventional crude oil production, reversing the most significant element of the commodity price spike (see Figure 9 and "The Changing Landscape of Global Energy").

The US has a high propensity to consume imports from any incremental dollar of new income, so there will be more dollars to consume items away from energy as prices stabilize or fall. However, in the context of the still weak US dollar and the demand excesses of the last decade, the energy production revival in the US has led to stronger relative trade performance, meaning more domestic production and profits. Of course, the world economy needs a demand source from somewhere. But equities represent producers, and this favors DM markets given the altered composition of global growth.

Figure 9. US mining output index (energy and non-energy) vs. US investment in oil fields, mining equipment and structures (% of GDP)



Sources: Federal Reserve Board and Bureau of Economic Analysis as of September 2013. RHS = Right Hand Side; LHS = Left Hand Side

Investment portfolio considerations

For most of 2013, the Global Investment Committee (GIC) held overweight positions in DM stocks with relative caution in EM stocks reflected by our largely neutral weightings. We held underweight positions in DM and EM bond markets for most of the year, with DM debt weightings cut first. The logic for the underweight to EM debt is fairly straightforward even after the recent “foot dragging” from the Federal Reserve. Yields are historically low, and the largest borrowers do not have the strongest fundamentals among EM countries.

Figure 10. EM equities and credit have traded close in sync since 2008



Sources: MSCI and The Yield Book as of November 12, 2013. ESBI = Emerging Sovereign Bond Index; RHS = Right Hand Side; LHS = Left Hand Side

For EM equities, the case is not as clear. Since 2008, EM equities and credit have traded remarkably close in sync (see Figure 10). Importantly, the period prior to 2008 saw tremendous declines in EM borrowing costs amid massively improved EM fundamentals. As noted, those improvements were significantly driven by the commodity super cycle, amplified by a decade-long weakening in the US dollar, driving capital flows to EM.

At times, the EM stocks selloff of 2013 seemed too indiscriminate. Many EM markets bounced back in the second half of the year. But the decade of superb progress in EM prior to the Global Financial Crisis was driven by several non-repeating factors. Like the US from 1982-2000, EMs had benefited from sharp declines in credit costs that have run their course now that rates are low (see Figure 11).

Figure 11. EM equities no longer enjoy a “tailwind” of declining credit costs



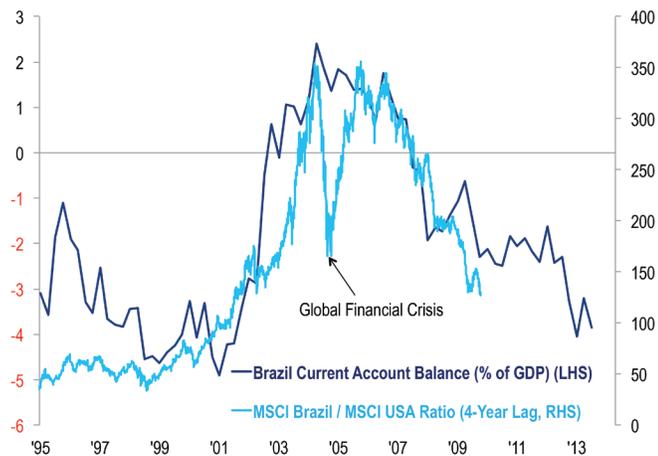
Sources: Federal Reserve Board and Citigroup Global Markets as of November 12, 2013. ESBI = Emerging Sovereign Bond Index; RHS = Right Hand Side; LHS = Left Hand Side

Our recommendations for 2014

We will consider adding further EM equity overweight positions among countries with external surpluses and low valuations. Such markets should respond in a more enduring way to the resumption of global growth and trade flows we expect in 2014, rather than merely the questionable continuation of easy money policies in the US.

In contrast, we will maintain our underweight to some equity markets among EM deficit countries as developments warrant (see Figure 12). We will continue to closely monitor and adjust our recommended portfolio allocations (please follow our monthly Quadrant publication to keep informed).

Figure 12. Brazil, like many in EM, has allowed its fiscal balance to worsen, requiring external savings flows



Sources: Haver Analytics, MSCI, and Factset as of November 12, 2013. RHS = Right Hand Side; LHS = Left Hand Side

Forecasts are as of the date specified and provided for information purposes only. The investor should not base its decision to enter into a trade solely on the basis of the forecasts. Actual results may vary from the forecast rates provided herein. The indices are unmanaged, are not investable, have no expenses and reflect reinvestment of dividends and distributions. Index data is provided for comparative purposes only. A variety of factors may cause an index to be an inaccurate benchmark. Past performance does not guarantee future results. Investors cannot invest in an index. As a result of market activity since the data above, current performance may be different from that shown.

Global Demographic Transitions

Nathan Sheets, Global Head of International Economics, Citi Research
 Robert A. Sockin, Senior Associate, International Economics, Citi Research

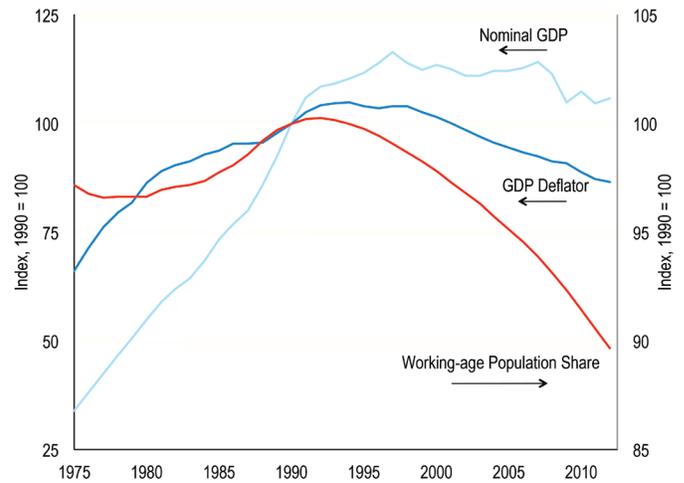
Looming demographics challenges in the advanced economies are now receiving considerable attention. The potential implications for government debt burdens, international competitiveness and the availability of adequate supplies of labor are increasingly apparent.

But what is the outlook for demographics in the rest of the world, particularly in the rapidly growing emerging market (EM) economies? Will these other economies remain sufficiently youthful to offset the drag stemming from aging in the advanced world?

The answers to these questions are sobering. Our recent research finds that, although demographics in the emerging economies are likely to remain more favorable than those in the advanced, there are reasons for caution. First, EM demographics will be strikingly less supportive of growth in the years ahead than has been the case in recent decades. Many EM are better positioned than the advanced economies, but they face meaningful challenges themselves.

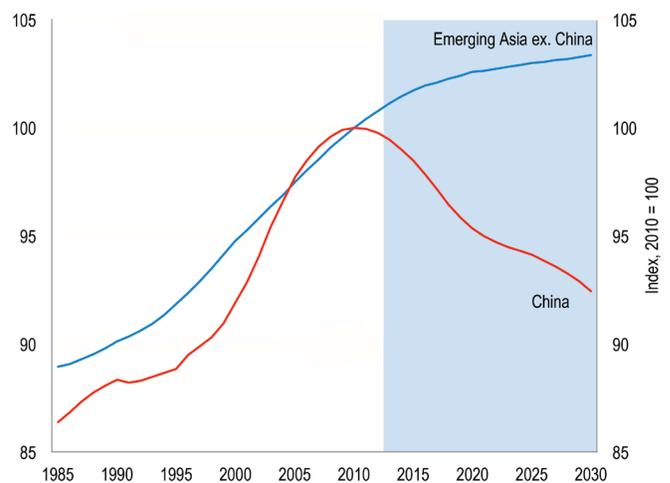
A second reason for caution is that Chinese demographics look broadly similar to those in the advanced economies. Consistent with this observation, we see the effects of population aging as likely to weigh heavily on growth in China, subtracting as much as 3 percentage points relative to the pace of expansion in recent decades. The challenges faced by Chinese policymakers as they pilot their economy through this demographic transition strike us as underappreciated global risks.

Figure 1. Japan working-age population share vs. GDP



Sources: United Nations, OECD and Citi Research as of October 2013.
 Working-age population share = share of total population aged between 15-64.

Figure 2. China & Emerging Asia working-age population share



Sources: United Nations and Citi Research as of October 2013.

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Figures 1 and 2 help to frame this discussion. As shown in Figure 1, the share of the working-age population in Japan peaked in the early 1990s as the asset bubble burst, and has subsequently fallen off sharply. Almost in lockstep, the Japanese GDP deflator (a broad measure of prices) also peaked and has since been on a downward trajectory. Similarly, nominal GDP first slowed, then stagnated, and eventually stepped down during the Global Financial Crisis. We do not believe that Japan's twenty-year economic sclerosis can be explained solely by demographic variables, but these correlations are striking and suggest that demographics played a role.

Figure 2 highlights what this might mean in the years ahead for emerging Asia, a region which accounts for over half the world's population. Notably, China's working-age population share is slated to decline through the next two decades; indeed, the drop is expected to be almost as steep as that recorded in Japan in recent years. This doesn't imply that China is poised for a Japanese-style stagnation, but it does suggest that demographics will be less supportive of growth than in the recent past. In contrast, other emerging Asian countries will generally see their shares continue to rise, albeit somewhat more gradually than in the near past.

Several other features of global demographics are also likely to cast a shadow on world economic performance. The good news here is that the global population is expected to keep growing in coming decades, expanding at a pace of about 1% annually, just a little slower than in recent years. The bad news is that the working-age population share is poised to level off over the next few years and to decline thereafter, reversing the sustained rise in recent decades.

Our research indicates that the working-age population share has considerable economic importance, as it captures the availability (and perhaps even the vitality) of labor resources. As such, we see its impending downturn as indicating a potentially troubling turning point for the world economy.

As a related matter, in recent decades the advanced economies have enjoyed larger working-age population shares than in EM. But, going forward, this advantage will swing towards EM. The full implications of this demographic shift for the relative supplies of labor across countries and regions, as well as for the attractiveness of investment in various parts of the world, remain an open issue. Our sense is that these developments are likely to intensify incentives for immigration to the advanced economies (where capital will be relatively abundant) and for capital flows into EM (where labor will be relatively abundant). The clear conclusion is that sizable resource flows across countries will remain a fact of life in the decades ahead.

Overall, our view is that any demographic lift coming from EM is unlikely to meaningfully offset the headwinds from aging in the advanced economies. Rather, we believe that the world as a whole is likely to feel the strains associated with shifting demographics.

That said, there is important variation across countries and regions. While China's demographic profile is set to deteriorate dramatically (as is Korea's), countries such as India and Indonesia will face relatively supportive demographics. The open – and in our view uncertain question – is whether these countries are now well-positioned to emerge as engines of growth for the global economy. Africa, another notable example, is likely to account for a sizable portion of global population growth over the next two decades and will find itself home to roughly one-fifth of the world's population by 2030. This will have significant implications for Africa's share of global migration flows, its voice in global deliberations, and the importance of its financial markets.

Although the headwinds associated with aging are likely to be significant, economic outcomes are in no sense predetermined. Aging poses serious challenges, but it also presents opportunities. The ability of market economies to adapt should not be underestimated.

Opportunities in a shifting demographic landscape

In the face of shifting demographics, we expect firms to substitute toward more capital-intensive production technologies, thus allowing labor resources to be used more efficiently. There is also scope to implement policies to blunt the adverse effects of aging, including measures to stimulate labor force participation – particularly of older workers. The task of structuring such incentives is one of the major challenges policymakers face as the global economy continues its transition into a very different demographic landscape.

Investing in the Demographic Divide

Philip Watson, Global Investment Lab Head

As discussed in “Global Demographic Transitions,” both developed and emerging economies are likely to face challenges from changing demographics in the years ahead. But these trends can also present opportunity for the astute investor. We explore how emerging demographics translate in investment terms and who will be the likely winners and losers of these important trends.

Away from the impact on labor supply, an aging population can affect the economy and markets through changing investment and spending behaviors. Where is the aging population likely to invest its savings in older age? And what types of *spending* tend to evolve as demographics change? Different investment and consumption patterns may influence markets far and wide – from pension to healthcare providers (See Figure 1).

Outcome-oriented investing looks to outstrip the old benchmark-oriented approach, where returns relative to a pre-determined benchmark are crucial. Short-term or peer-based measures of performance are replaced with an approach that looks to deliver regular income, low volatility and inflation protection – characteristics vital for investors looking to maintain their lifestyle needs. Of course, such investments haven’t met required return hurdles for older investors in recent years.

Still, the asset management industry is responding to the unique requirements of this growing population in a number of innovative ways. Figure 2 highlights some of these, tying investor objectives with industry solutions.

Figure 1. Developed market (DM) aging – changes in investment and spending

	How they are likely to invest	How they are likely to spend
Examples	<ul style="list-style-type: none"> • A rise in specific “outcome based” investments • A shift in asset allocation trends • Greater focus on “personal pensions” and pensions management, including liability-driven investing 	<ul style="list-style-type: none"> • Opportunities in provision services • Spending within age-dependent sectors, such as Healthcare and Insurance

Investment implications of an aging population

- **Retirement doesn’t come cheap.** 10,000 Americans and 14,000 Europeans retire each day. Though asset-rich overall, the substantial retiring population creates a huge fiscal burden. The European Union, for example, comprises only 8-9% of the world’s population of 7 billion, accounting for 25% of GDP globally, but a staggering 50% of social spending.
- **Fueling a “wall of money.”** The estimated value of assets controlled by and invested for retirees in the coming years is set to skyrocket. Professor Amin Rajan¹ estimates that as much as \$25 trillion of retail investment assets will be held by retirees or those approaching retirement by the end of this decade. This accounts for a staggering 75% of total world-wide assets held by mass affluent investors. It is also the result of assets accumulated by aged persons who substantially benefitted from the outperformance of equity markets between the early 80s and the late 90s. How they manage these assets, and who will be the future holders, is likely to have considerable implications on investor returns in the years ahead.
- **How is this growing aging population likely to invest?** While the opportunities available in the market place won’t necessarily match their requirements, an aging demographic will seek investments in order to maintain lifestyle needs. Broadly speaking, this typically supports solutions with predictable returns, based on lowered volatility and with inflation protection. These needs are creating a new pivot for the asset management industry, drawing upon existing approaches but with a shift towards investments that are more “outcome oriented.”

Figure 2. Investor requirements and industry solutions

	Income Seeking	Inflation Protection	Low Risk
Investment Requirements	Regular and predictable income	Seeking positive real returns once taking account of inflation	Unconstrained lower risk Lower Volatility
Illustrative Solutions	<ul style="list-style-type: none"> • Fixed income strategies: real, unconstrained, flexible, dynamic • Dividend strategies; thirst for value investments • Synthesized credit-like returns: the rise of alternative credit 	<ul style="list-style-type: none"> • Traditional linkers: inflation-linked securities • Real-return funds: inflation-protected funds • Infrastructure vehicles linked to inflation 	<ul style="list-style-type: none"> • Fund vehicles with flexibility • Absolute-return vehicles • Risk-minimization strategies • Dynamic asset allocation approaches • Tilt in preference towards lower risk/moderate return strategies

Underpinning all of these requirements is *capital preservation*. By and large, an increasing share of investors will seek investments with low correlations to equities and bonds. Select hedge funds will likely play an important role in this - multi-strategy and relative-value funds, for example, typically have a low correlation to traditional markets.

Investment opportunities from DM aging trends

All of the above is likely to lead growth in several sectors. Aside from asset management front runners, companies that are able to actively respond to demographic trends and offer innovative products for their target market will benefit the most. We highlight opportunities in the *Insurance* and *Health Care* sectors.

We expect attractive growth opportunities for life insurers in pension risk transfers as corporate pension funds look to de-risk. Citi Research estimates this will be a \$100 billion market (market cap) over the next five years.²

Aging populations unsurprisingly spend a disproportionate amount of their spending on healthcare. The US Bureau of Labor Statistics reports that out-of-pocket healthcare expenditures increase 2.6 fold when comparing a 30 year-old cohort to a 70-year old group. This result doesn't even account for the massively higher government transfer payments for the older group.

Companies that are positively exposed to growth in many healthcare segments should benefit. It is broadly anticipated that the aging population will place a greater weight on age-care services, pharmaceutical companies, and also drive biotechnology development in chronic illnesses such as arthritis, asthma, cancer and diabetes.

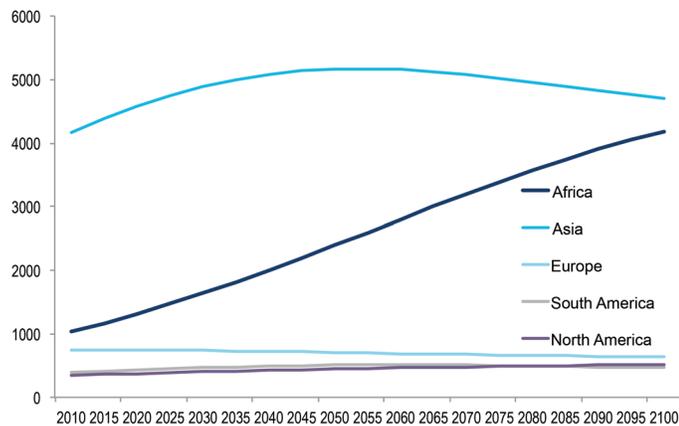
- **Population Health Management (PHM) Technology Market:** Often overlooked, the PHM Technology Market is an area that we view to have significant growth potential. This is largely due to the catalyst within the US of the 'Patient Protection and Affordable Care Act' (colloquially known as "Obamacare"), but is equally applicable for developed countries that are grappling with an aging population.
- **Healthcare Services Management:** With governments eager to serve a valuable electorate, installing efficiency in Healthcare provision is a growth area. That includes "Big Data" techniques, which are focused on delivering better value per patient and efficiently managing the finite resources of the state.

Emerging market (EM) youth - changes in spending

Notable changes are also afoot at the younger end of the demographic spectrum. While consumer spending patterns are less consistent in EM countries, the effect of economic growth has cascaded into transformational income growth, liberating a vast number from poverty. Young and productive populations are producing what is termed a "demographic dividend" in some economies. This is distinctly different from a dynamic in the past where rapid population growth in poor economies tended to *reduce* per-capita income.

India has a very youthful population, while Indonesia, Brazil and Mexico all have younger labor pools. In Africa, the "young continent," projections are for the African population to exponentially grow from current levels, close to Europe, to four times the size, and approaching Asia, in the next 100 years (see Figure 3).

Figure 3. The African population is forecast to grow to four times its size in the next 100 years



Source: United Nations as of July 2013.

The emergence of the Africa demographic boom, with its underdeveloped infrastructure and untapped resources, suggests a period of rapid growth for those African economies that are increasingly well-managed. The same is true for specific industry sectors. One example of this is the Telecom industry. According to a survey by the International Telecoms Union (ITU), Africa recently became the world's fastest-growing mobile phone market. Mobile phone usage in the continent has increased at an annual rate of 65% over the past five years, which is twice the global average. Nigeria has become one of the fastest growing markets in the world for mobile communications, propelled by a young population, market liberalization and telecom-sector reforms, with an estimated 88 million mobile phones in use compared to a population size of 170 million.³ Are investors positioning their portfolios for these demographic changes?

Much investor behavior is being driven by shorter-term influences and lacks the conviction required to invest for long-horizon trends. Yet the forceful undercurrents associated with demographic changes are here to stay.

Investors should seek to position their portfolios to invest in those areas able to benefit from the economic and savings impacts of these significant demographic trends. This includes investing in those asset classes and strategies that are set to draw on the huge volumes of capital held by the aging segment, as well as those companies that are selectively placed to benefit from the likely spending of this segment.

In years to come, the "demographic dividend" could become a term used by those investors savvy enough to have positioned for these shifting trends.

1. Professor Amin Rajan - Chief Executive Officer of CREATE, Fellow at Oxford University; "Retirees or those approaching retirement" encompasses individuals born between 1945 and 1965.

2. Citi Life Insurance, September 24, 2013.

3. "World Usage Patterns & Demographics," New Media Trend Watch, European Travel Commission

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There is no guarantee that these strategies will succeed. This information is intended to illustrate products and services available through Citigroup Global Markets Inc. Strategies and investments mentioned in this document may not be suitable for all investors. Products and strategies discussed herein may have eligibility requirements that must be met prior to investing. Each investor should carefully view the risks associated with the investment and make a determination based upon the investor's own particular circumstances, that the investment is consistent with the investor's objective. Products and strategies described herein involve risk and may not perform as described.



Hedging Portfolio Risk

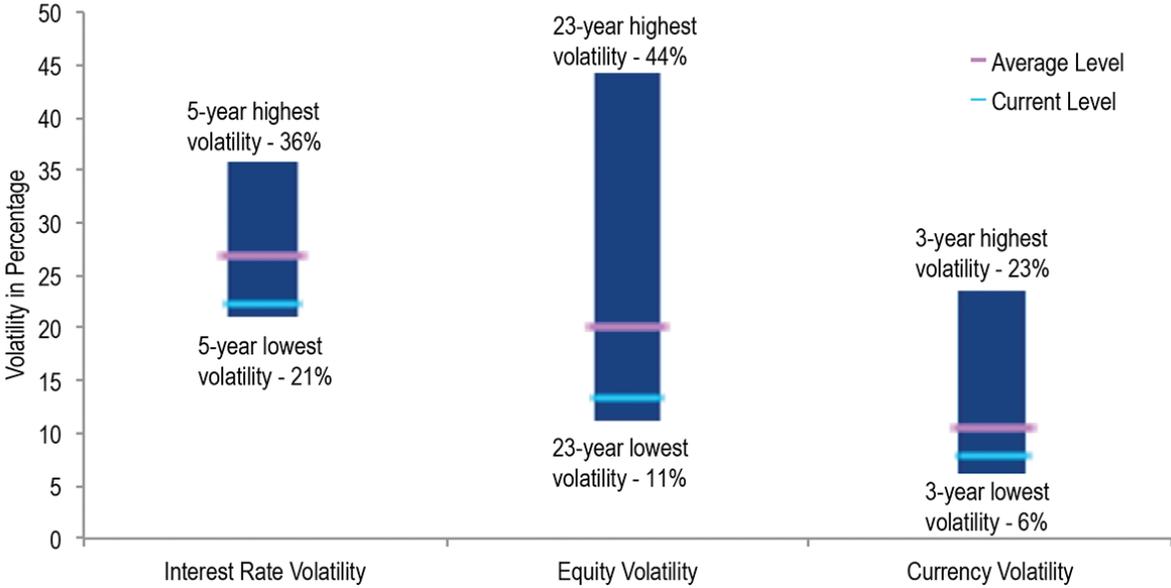
Risk Management

Philip Watson, Global Investment Lab Head

Every action has an equal and opposite reaction

Risk management comes in multiple forms and involves varying costs (both implicit and explicit). It is a point not to be overlooked that hedging costs are currently at historic lows. Option volatilities are generally used in the market as a proxy for the cost of hedging since the volatility level is a major component driving the price. This is illustrated in Figure 1, which looks at option volatilities across major asset classes in a historical context. As can be seen, these are at the lower end of their historic range.

Figure 1. Option volatility as a proxy for the cost of hedging



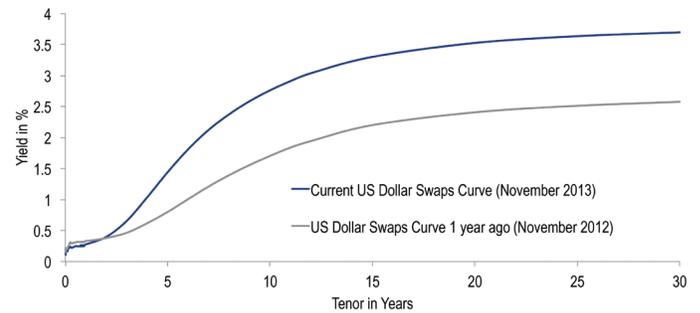
Sources: Citi and Bloomberg as of November, 2013.

Central to risk management is *portfolio construction*. This starts with defining an asset allocation profile to meet the unique investment objectives of the client. Citi Private Bank uses an approach called Adaptive Valuation Strategy (AVS), which adjusts portfolio allocation dynamically based on current valuation levels relative to the historical trend (see “The Cost of Not Rebalancing Portfolios”). This in turn helps to reduce the risk of being overly exposed to the most expensive asset classes. AVS also assesses the risk of the portfolio against extreme downside risk (EDR) – a conservative measure that forecasts the potential losses that could incur during times of severe market stress – historical data across market cycles when possible. This ensures that risks are not misrepresented over shorter periods or ignored against other measures.

Investors wishing to gain a deeper understanding of the source and size of risks within their portfolios can use multi-factor analysis which breaks down the portfolios sensitivity to the multiple risk factors that drive the portfolios performance and volatility. Once the risk factor has been quantified, it needs to be compared with its compensation (in other words, whether you are paid for that risk). Should the return offered from this factor prove insufficient, the risk can be managed via hedging, divestment or other strategies listed earlier.

Within single asset classes and securities, investors should deploy techniques to review underlying valuation and price momentum. Applied in a disciplined manner, these systemic frameworks can help provide early warning signs for the buy/hold/sell decision process which can prove invaluable at this stage of the cycle (see Figure 2 on following page).

Figure 3. USD yield curve steepening in 2013



Source: Bloomberg as of November, 2013.

Risk management via enhanced frameworks

Other risk minimization frameworks exist for investors. These include risk adjusted allocation approaches that offer an alternative to conventional market weightings and aim to generate excess return while tracking the market direction. In equities, for example, equal risk weighted approaches have historically delivered higher risk-adjusted returns for investors than traditional ETFs tracking market cap-weighted indices. These trading strategies can be executed to embed a degree of hedging to help manage downside risk in case the general market falls more than a pre-determined level.

Strategies available for managing risk are diverse but can be grouped under the following categories:

- **Diversification:** involves managing risk by investing in inversely-correlated exposures that may reduce the overall risk of the portfolio. This includes looking both across and within asset classes on a near- and longer-term basis. Correlations require active monitoring. For example, the correlations between treasuries and equities have moved in both directions this year alone.
- **Risk reduction strategies:** typically involve holding an investment whilst reducing a particular aspect of the risk concentration within the portfolio, such as duration or exposure to general market risk for instance. This thereby helps to reduce the future sensitivity to loss arising from specific risk factors the portfolio has concentration in.
- **Risk barbell:** is a risk reduction strategy, which allocates a proportion of the portfolio to lower risk assets and another portion, usually smaller than the former, to higher yielding riskier assets. The term “barbell” comes from the distribution of risks which are often quite distinct, with little or no “middle ground” risk asset classes in between. The lower yielding but low risk part helps to manage capital preservation, whereas the higher yielding, albeit diversified, allocation generates the higher returns within the portfolio.
- **Explicit hedging:** allows investors to take an offsetting exposure against an underlying investment that is employed to potentially reduce risk for a defined period, or within an instrument purposefully selected to perform in stress periods. These can be rendered more cost-effective through various strategies, as discussed in the articles that follow.
- **Divestment:** offers the choice to sell or reduce an exposure in the anticipation of future losses.

Managing foreign exchange volatility

Currency risk is, in many cases, overlooked when building an optimal portfolio. Leaving currency un-hedged, investors frequently discover surprising positive or negative outcomes in performance. Consider this year the case of Japan, with a sharply rising stock market, offset quite measurably by a weakening currency. These can be managed. Given the current near-zero interest rates and historically low market expectations for volatility, now is an optimum time to consider hedging FX risk, looking across asset classes and currency exposures within an investment portfolio (see "FX as a Portfolio Hedge").

Interest rate risk

The US Fed and U.K. Monetary Policy Committee have firmly placed rising rates on the radar. The reality is that markets will start to anticipate the rise before the event itself. Investors have already witnessed the impact this could have - both on the speed of USD yield-curve steepening and also the sensitivity to the Fed's announcements (see Figure 3 and "Hedging the Risk of Rising Rates").

A disciplined approach to interest rate risk management involves quantifying the opportunity cost of waiting versus taking action now. This should be relevant for any clients with exposures to interest rates on either their asset or liability side, including loans where the impact of leverage should be verified. This also takes into account better management of credit risk.

Implicit forms of risk management are also available for investors. Select managers with flexible mandates and a nimble approach to investing can help dampen volatility in the portfolio. This applies to hedge funds and some absolute return strategies.

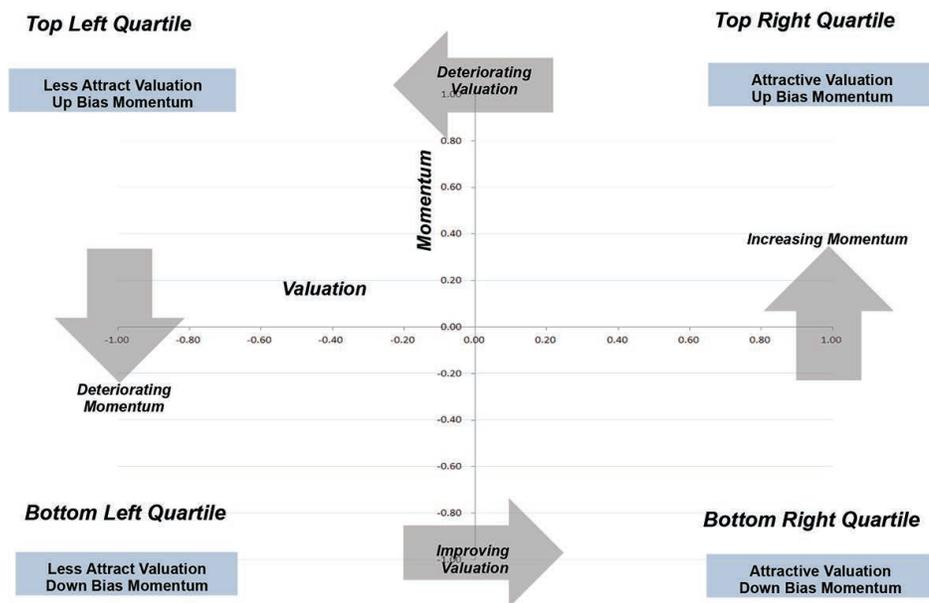
All of the above is based on the assumption that risks vary among individual investment portfolios. Moreover, the way risk is perceived can be drastically different from one investor to the next. This further emphasizes the importance of reviewing portfolios and investment objectives on a regular basis. Your advisor can help you with this.

The sharp rise in many markets should raise concerns for any investor. At the same time, the current opportunity cost of managing risk is relatively cheap.

Positioning portfolios for the risks ahead

Although 2014 looks set to be a year of accelerating global growth with subsequent implications on a range of asset classes, various market factors will require skillful risk-management strategies. We urge investors to position their portfolios sooner rather than later for these expected challenges.

Figure 2. Illustrating equity selectivity



Source: Citi Private Bank Global Investment Lab

The above can be used to filter out the individual stocks based on their valuation and trading momentum.

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Hedging the Risk of Rising Rates

Michael Brandes, Global Head of Fixed Income Strategy

Now is an opportune time to consider hedging fixed-income portfolios given that improving economic prospects typically correlate with rising rates. In our view, global GDP is poised to rise by 3.1% in 2014 (compared to 2.4% in 2013) as momentum shifts from the emerging world to more advanced economies. The US and UK are likely to lead growth in core markets, which should boost 10-year benchmark yields to around 3.3% by year-end.

These trends suggest that 2014 will be another challenging year for bond investors. While historically low and falling benchmark yields have fueled fixed income gains in recent years, there is now limited scope for core rates to decline.

We expect rising rate pressures to broadly produce the largest drag on fixed income performance this coming year. For example, we expect long-dated Treasury returns to be negative even if rates rise only modestly, consistent with our year-end forecast (see Figure 1).

Figure 1. Total return by Citi interest rate forecast

Market/maturity	Jun 2014 Total return %	Dec 2014 Total return %
US Treasury Index	-1.0	-0.8
1-3 years	0.0	0.2
3-5 years	-0.4	-0.2
5-7 years	-1.3	-1.2
7-10 years	-1.7	-1.3
10 years+	-5.7	-5.7

Source: Citi Private Bank Fixed Income Strategy as of November 20, 2013. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

There are many ways for bond investors to offset the potential drag on returns as rates rise. Alternatives range from shortening duration to using derivatives shift exposures. Here is a brief overview of recommended strategies to consider:

Reduce duration exposure

The most straightforward way that a bond investor can hedge against rate risk is to simply shorten duration by selling longer-dated positions. Reducing duration (or price sensitivity to changes in rates) allows investors to help mitigate the impact of higher yields.

We recommend a more defensive approach with premium bonds. These securities are more resilient as rates rise due to higher cash flows and they provide an effective way to shorten portfolio duration and dampen volatility. We would avoid structures such as zero-coupon bonds, which are especially susceptible to higher rates (since there is no cash flow, only price risk).

Favor credit risk over rate risk

Investors should overweight credit risk while limiting duration exposure. If the gradual rise in yields is being bolstered by stronger economies and a low default rate (as we expect), then lower quality fixed income investments (such as BBB-rated corporates and high-yield bonds) could potentially reward investors. While further spread compression may be modest, relatively attractive yields are expected to offer better returns in 2014 than higher-quality instruments. Investors should consider reducing long-dated positions in vulnerable bond sectors such as core sovereigns, agencies, supranationals, and ultra-high quality corporate debt.

Diversify sources of yield

Income-oriented investors should consider diversifying sources of yield beyond traditional fixed income securities. Indeed, dividend-paying equities typically have greater potential for price appreciation than conventional bonds as growth improves. This includes master limited partnerships (MLPs), real estate investment trusts (REITs), utilities, and other high dividend-paying stocks that feature more attractive yields compared to fixed income. However, these equities are also subject to high interest rate correlation and duration risk and may not be suitable for all investors. Equities with rising pay-out ratios in cyclical industries should be more immune to these pressures, but are a wholly different asset class.

Floating-rate investments

Floating-rate debt typically benefits when interest rates rise. Floaters may be issued as asset-backed securities (ABS), commercial mortgage-backed debt (CMBS), non-agency mortgage bonds, municipals, high-grade corporates, high-yield bank loans, and hybrids (fixed-to-floating rate preferreds).

Typically, floating-rate debt is linked to a short-term rate (usually LIBOR), plus a spread. Floaters benefit from higher cash flows as short-term rates rise. Some credit and bank loan securities also contain coupon floors, which offers a minimum payment if rates were to decline significantly.

Integrate an absolute return strategy

Absolute return strategies (featuring by hedge funds and some mutual funds) provide opportunities to profit from a potential rise in rates. These funds seek to generate uncorrelated returns from traditional benchmarks with reduced volatility. Since absolute return managers endeavour to produce profits in all market conditions, strategies are typically unconstrained and holdings can be quite diverse. These funds may comprise allocations to conventional securities along with hedging strategies using derivatives.

Hedge with derivatives

In a rising rate environment, investors should consider hedging portfolios with derivatives that reallocate the types of price risks endemic of fixed income securities, such as those that shift payments to a floating structure and thus offset bond price declines. On the other side of the ledger, for borrowers with variable rates, derivatives may also help cap rising rate risks.

Notably, interest rate forecasts are uncertain, and low rates can fall further. In such a case, the hedges on a bond portfolio can lose value.

Structured notes may be created using derivatives to benefit from a rise in rates but are typically less liquid than conventional market instruments.

Structured products can be highly illiquid and are not suitable for all investors. Additional information can be found in the disclosure documents of the issuer for each respective structured product described herein. Investing in structured products is intended only for experienced and sophisticated investors who are willing and able to bear the high economic risks of such an investment. Investors should carefully review and consider potential risks before investing. These risks may include but are not limited to the following:

- Lack of liquidity in that there may be no secondary market for the particular structured product and none is expected to develop
- Principal amount due at maturity is subject to the credit risk of the issuer and/or guarantor
- Issuer or Guarantor default (ratings are at the time of issuance and subject to change during the term of the Note). Ratings represent assessments of credit worthiness of the Issuer or Guarantor (if any) and are not indicative of the market risk associated with the Notes, or the underliers
- Volatility of returns
- Restrictions on transferring structured products
- Absence of information regarding valuations and pricing
- Risks associated with derivatives embedded in the structure
- Early redemption by an issuer under certain circumstances
- Foreign currency risk
- Complex tax structures and delays in tax reporting

Bonds are affected by a number of risks, including fluctuations in interest rates, credit risk and prepayment risk. In general, as prevailing interest rates rise, fixed income securities prices will fall. Bonds face credit risk if a decline in an issuer's credit rating, or creditworthiness, causes a bond's price to decline. High yield bonds are subject to additional risks such as increased risk of default and greater volatility because of the lower credit quality of the issues. Finally, bonds can be subject to prepayment risk. When interest rates fall, an issuer may choose to borrow money at a lower interest rate, while paying off its previously issued bonds. As a consequence, underlying bonds will lose the interest payments from the investment and will be forced to reinvest in a market where prevailing interest rates are lower than when the initial investment was made.

The investor must ascertain if they are suitable for each investment product based on their unique investment objectives and risk tolerances. All products and services discussed herein have eligibility requirements that must be met prior to investing.

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Derivatives are financial contracts whose value depends on, or is derived from, the value of an underlying asset, reference rate or index. Typically derivatives are used as a substitute for taking a position in the underlying asset and/or as part of a strategy designed to reduce exposure to other risks, such as interest rate or currency risk. They may also use derivatives for leverage, in which case their use would involve leveraging risk. The use of derivative instruments involves risks different from, or possibly greater than, the risks associated with investing directly in securities and other traditional investments. Derivatives are subject to a number of risks described elsewhere in this section, such as liquidity risk, interest rate risk, market risk, credit risk and management risk. They also involve the risk of mispricing or improper valuation and the risk that changes in the value of the derivative may not correlate perfectly with the underlying asset, rate or index. When investing in a derivative instrument one could lose more than the principal amount invested. Also, suitable derivative transactions may not be available in all circumstances and there can be no assurance that engaging in these transactions to reduce exposure to other risks would be beneficial.

Hedging Equity Risk in your Portfolio

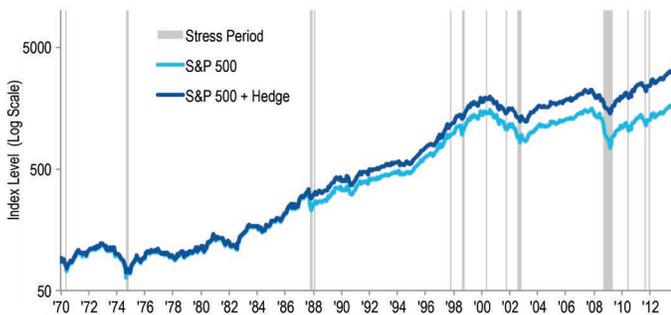
Olivier Sarfati, Head of US Equity Trading Strategy, Capital Markets

As shown in Figure 2 of “Rich Expectations, Poor Allocations,” the S&P 500 Index climbed more than 28% in 2013 after a 16% rally in 2012, and +14% above its pre-crisis 2007 high of 1565.

“Known unknowns” and “unknown unknowns” require consideration of downside risks as well as the upside from here. One of the main benefits of hedging your investment portfolio is that it potentially increases the long-term performance of portfolio returns while at the same time reducing overall volatility. By dampening the impact of drawdowns, investors may have a better chance of outperforming benchmarks over the long run.

We illustrate this in Figure 1, where we compare a simple long S&P 500 position versus the same position but with a hedge. In our illustration, the latter hedged strategy outperforms the benchmark by 1.4% annualized over a 40-year period covering January 1970 to April 2010. (This illustration does not take into account the cost of hedging, fees or commissions that may have been incurred from hedging.)

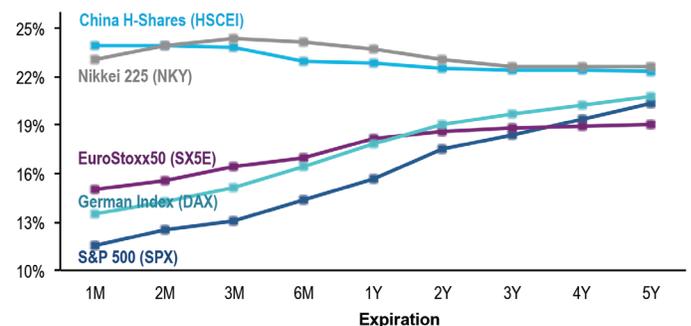
Figure 1. S&P 500 performance vs S&P 500 “hedged” performance



Source: Bloomberg and Citi Trading as of November 30, 2013. Past performance is not indicative of future returns. Real returns may vary.

There are various strategies that can provide a cost-effective way to add or reduce risk without the large transaction costs (and potentially added tax consequences) of turnover in strategic holdings. For example, as suitable, an investor who has allocated a large portion of their assets to a mutual fund closely tracking the S&P 500 could employ a derivative hedging strategy on the index, instead of repeatedly trading in and out of actual cash positions. (It should be noted that the use of derivative strategies may also increase the overall risk level of a portfolio.)

Figure 2. Volatility term structure of various international stock markets



Sources: Bloomberg and Citi Trading as of November 21, 2013.

Past performance is not indicative of future returns. Real returns may vary.

Consider hedging today to lock-in cheap implied volatility

There are numerous strategies available for investors looking to potentially benefit from the low implied volatility of the S&P 500. The “time” or “duration” in question matters - charting the term structure across global indices shows that, while the S&P 500 has lower implied volatility than that of other global indices, its term structure is also the steepest (see Figure 2). This means that the hedging costs for the US markets rise with the duration of the hedge. This is an important consideration when hedging, as investors need to strategically decide on what time horizon they are willing to stretch and how much they are willing to pay for a hedge, based on their risk profile.

While some investors may prefer using short-term hedges to benefit from the steep term structure, this strategy may prove to be penny-wise but pound-foolish since it is vulnerable to short-term volatility spikes, resulting in higher price and increasing the overall cost.

Instead, suitable investors can hedge a moderate selloff cost effectively by using bearish strategies that are tailored to their specific portfolio objectives and risk profile. These strategies may comprise options, structured notes and other derivatives. While the ability of derivatives to hedge very sharp selloffs will vary depending on the level of downside risk mitigation on offer, strategies such as structured notes may typically offer a potential buffer against a decline of up to 15% depending on the risk characteristics of the particular structured note. This is roughly consistent with the maximum 17% S&P 500 decline seen since 2010.

We continue to view hedging portfolio exposure to the market as critical, particularly as valuations have climbed. Most importantly, investors need to consider how the strategy type and cost can be best applied based on their unique investment objectives and risk profile. The use of derivative strategies may entail more risk, and should form part of the discussion with your investment advisor.

Derivatives are financial contracts whose value depends on, or is derived from, the value of an underlying asset, reference rate or index. Typically derivatives are used as a substitute for taking a position in the underlying asset and/or as part of a strategy designed to reduce exposure to other risks, such as interest rate or currency risk. They may also use derivatives for leverage, in which case their use would involve leveraging risk. The use of derivative instruments involves risks different from, or possibly greater than, the risks associated with investing directly in securities and other traditional investments. Derivatives are subject to a number of risks described elsewhere in this section, such as liquidity risk, interest rate risk, market risk, credit risk and management risk. They also involve the risk of mispricing or improper valuation and the risk that changes in the value of the derivative may not correlate perfectly with the underlying asset, rate or index. When investing in a derivative instrument one could lose more than the principal amount invested. Also, suitable derivative transactions may not be available in all circumstances and there can be no assurance that engaging in these transactions to reduce exposure to other risks would be beneficial.

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Enhancing the Equity Risk/Return Profile

Julie Bennett, Vice President, Capital Markets

Although Citi's expectation for equity markets in 2014 is moderately bullish, there are signs that the return outlook is softening. With equity markets at historic highs, it may be prudent to explore ways to reduce some of the downside risk within an equity allocation. Participating via structured notes could present one such avenue.

Equity structured notes may alter the risk/reward profile of a direct equity position, potentially reducing both downside risk as well as overall volatility, and may help control market entry point risk.

Enhancing the equity risk/return profile

For investors seeking equity exposure, allowing for limited upside potential while mitigating the risk of a market decline, an equity structured note may be a suitable strategy. Equity structured notes can be used to expand or replace direct equity holdings, or alongside direct equity investments for a blended strategy.

Equity structured notes seek to achieve a range of investment objectives. They can help provide exposure to a specific holding, alter the risk/reward profile of a specific investment and reduce both downside risk as well as overall volatility while potentially controlling risks around a market entry point. Alternatively, products can be structured to enhance yield.

The notes can be customized to provide a level of embedded downside risk mitigation. Additionally, they can be tailored so that the potential upside payoff is in line with the investor's current outlook for the underlying asset (e.g. an index trading within a certain range, moderately bullish, or very bullish). The range of potential returns and structuring options depends upon the maturity date of the note and the prevailing market environment (e.g. interest rates and market-implied volatility).

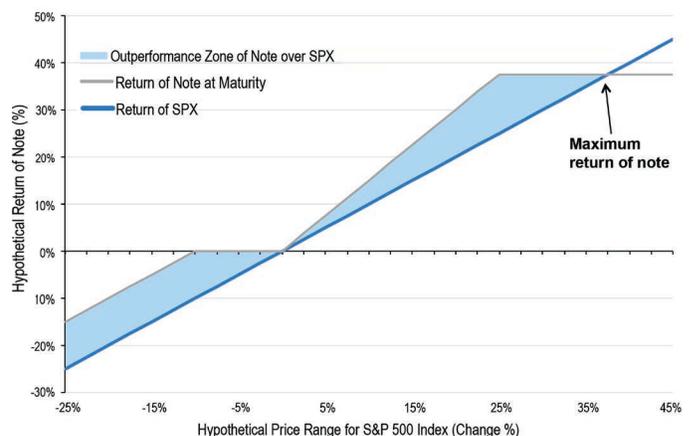
Strategy for a moderately bullish environment

In a market environment where expected returns are positive, but not exceptionally strong, notes can be structured with an equity return up to a pre-determined maximum, along with some level of downside risk mitigation (see Figure 1).

Key risks to consider

- A direct equity investment offers unlimited participation on the potential upside so, in extremely bullish markets, this would earn a higher return than a structured note.
- Some structures do not pay any income or dividend yield during the life of the instrument.
- Structured notes are debt instruments and investors should carefully evaluate the creditworthiness of the issuer and/or guarantor (if any).
- The economics of some structured notes are payable at maturity and may not meet an investor's liquidity needs.
- Structured notes may trade in the secondary market, but their price will be influenced by various factors including, but not limited to, the performance of the underlying asset, volatility of the underlying asset, interest rates, and credit spreads of the issuer and/or guarantor (if any). If an investor must sell a note prior to maturity, it may have to be sold at a significant discount to the original investment. There also can be no assurance of an existence of a secondary market for the structured notes.

Figure 1. Hypothetical illustration of structured note payoff relative to S&P 500 (limiting upside and downside)



Source: Citi.

Your investment advisor can help to recommend a suitable allocation and structured product(s) tailored to the overall makeup of your portfolio.

FX as a Portfolio Hedge

Steve Wieting, Global Chief Investment Strategist

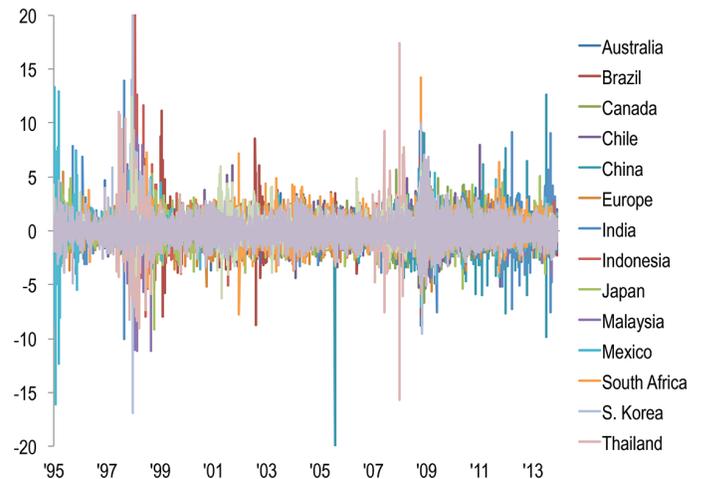
The summer of 2013 saw a significant rise in foreign exchange (FX) volatility concentrated in emerging markets (EM). The 8% drop in the Indian Rupee against the US dollar in August was (marginally) the largest decline since 1991. The Indonesian Rupiah was severely battered. This occurred even as India (the sovereign) owes no foreign debt. Indonesia doesn't even rank in the top twenty of foreign debtors relative to the size of its economy.

As discussed in "The Developed Markets Step Ahead," a full decade of decline for the US dollar in the "rear view mirror," a change in the composition of developed market (DM) and Chinese growth, and a peak in the Fed's monetary easing cycle, suggest a more difficult period ahead for some EM economies and their exchange rates.

As we've long noted elsewhere, the profound central bank easing programs of recent years will not fade into history without consequence. Much like the rise in US market interest rates that some doubted would ever come, we believe investors should brace for continued bouts of currency market volatility in the next few years as the Fed slowly disengages from a massive monetary easing campaign.

As Figure 1 shows, so-called periods of "currency crisis" are far more frequent than global banking catastrophes, such as the crisis of 2008-09. The bout of currency volatility in the summer of 2013 was not nearly as broad or severe as other periods of market stress in the past. Observers may recall that the round of contagious fear in July 1997 began with a similar "narrow" base of weakening currencies in emerging Asia. By January 1998, volatility was far more widespread across the world.

Figure 1. Daily movements in currencies in standard deviations



Sources: Federal Reserve Board, Wall Street Journal and Citi Private Bank as of September 2, 2013. Note: sample period for standard deviation is 1995-to-date.

Importantly, periods of rising currency volatility appear to slightly lead wider turmoil in other asset markets (see Figures 2 and 3) and drive economic activity. We believe there are opportunities for risk managers to build hedges for portfolios and other assets at risk, such as non-financial businesses.

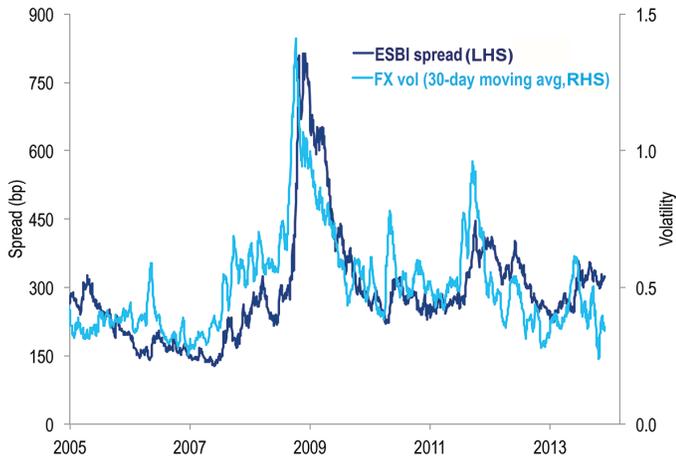
Figure 2. MSCI DM stock price index vs. average volatility of FX rates (Inverted), 2005-2013



Sources: Factset and Haver Analytics as of September 2, 2013.

Volatility is measured as 30-day average of daily % changes in 47 currencies measured in standard deviations (absolute values). RHS = Right Hand Side; LHS = Left Hand Side

Figure 3. EM debt spreads to US Treasuries vs. average volatility of FX rates, 2005-2013



Sources: The Yield Book and Haver Analytics as of September 2, 2013.
Volatility is measured as 30-day average of daily % changes in 47 currencies measured in standard deviations (absolute values). RHS = Right Hand Side; LHS = Left Hand Side

What can we do if recent market fears return and become self-reinforcing as seen in currency crises of the past?

We would point to the high degree of pricing discrimination in FX markets now. As examples, India and Indonesia have seen a sharp rise in options-implied volatility. Volatility pricing in several other EM countries with current account deficits (and relatively higher external currency debt) has not risen.

With the divergence of currency options pricing in EM extremely wide, greater than during the Global Financial Crisis for some, various hedges can be constructed with these and other FX markets that could potentially rise in value if such volatility converged.

We posit that in a period of broadening FX volatility, such a structure could help hedge risks somewhat in other, positively-correlated asset markets as shown in Figures 2 and 3. Meanwhile, in a period of falling volatility and improving global financial markets, the hedge might still gain in value if the countries experiencing high currency volatility see improving confidence. Such a hedge could lose value if country-level concerns remained highly selective or diverged further.

Notably, these are just a list of the macro-scenario risks. Hedging currencies carries risks unique to derivatives, such as contracts expiring worthless, and is not suitable for all investors. Your investment advisor can help recommend a suitable solution for you.

Derivatives are financial contracts whose value depends on, or is derived from, the value of an underlying asset, reference rate or index. Typically derivatives are used as a substitute for taking a position in the underlying asset and/or as part of a strategy designed to reduce exposure to other risks, such as interest rate or currency risk. They may also use derivatives for leverage, in which case their use would involve leveraging risk. The use of derivative instruments involves risks different from, or possibly greater than, the risks associated with investing directly in securities and other traditional investments. Derivatives are subject to a number of risks described elsewhere in this section, such as liquidity risk, interest rate risk, market risk, credit risk and management risk. They also involve the risk of mispricing or improper valuation and the risk that changes in the value of the derivative may not correlate perfectly with the underlying asset, rate or index. When investing in a derivative instrument one could lose more than the principal amount invested. Also, suitable derivative transactions may not be available in all circumstances and there can be no assurance that engaging in these transactions to reduce exposure to other risks would be beneficial.

International investing may not be for everyone. There may be additional risk associated with international investing, including foreign, economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes, and differences in financial and accounting standards. The possibility that adverse political events, financial problems, or natural disasters in a country or region will cause investments in that country or region to lose value. The risks of investing in emerging or developing markets can be substantially greater than the risks of investing in developed markets.



The Liquidity Trade Off

Liquidity and Risk

Steven Wieting, Global Chief Investment Strategist

Little by little, at escalating prices, investors have accepted views that the world is not ending, and have paid higher premiums for assets in the past five years. In the case of fixed income credit assets, the lower yields now offered compared to five years ago are obvious. Equities too have seen values rise more than long-term trend profit gains. Thus, markets have “re-rated” future economic growth prospects from “abysmal” to “moderate” or somewhat better. Time will tell. In our 2013 Mid Year Outlook, we described this sharp turn in financial conditions as “markets the mirror opposite” of 2008-09.

Yet one thing apparently hasn’t changed. Investors still desire a very quick exit from positions, even if that now means accepting returns roughly half that of 2008-09 (see Figure 9 in “Outlook 2014: Stay Ahead of a Charging Bull”). Confidence in the newly-regulated financial system is only an inch deep. This has left clients in survey measures and the actual portfolios we can observe at Citi Private Bank with cash holdings in excess of 30% and with literally no returns on those assets (see “The Cost of Not Rebalancing Portfolios”).

As we noted in our overview, there are no free lunches for investors. Waiting for the next crisis to reduce asset prices allows time for markets to drift higher, raising prospective entry points further. In the meantime, cash has a negative inflation-adjusted return. While the future always brings surprises, and we expect more shocks will be felt in the decade to come, our 10-year ahead estimates for illiquid alternative strategies have fallen *significantly* less than that for the best-performing liquid markets, and also relative to the absolute return opportunity (see Figure 1).

It may come as a shock at some point in the future when investors have paid a liquidity premium for assets, and liquidity is at least momentarily gone. Meanwhile, we believe the patient investor with a longer investment horizon can take advantage of the relative bargains left behind. These include less liquid alternative assets and hedges.

Figure 1. Citi Private Bank’s 10-year annualized return estimates for various asset classes

Date	Developed Market Large Cap Equities		Developed Market Corporate Credit		Private Equity and Real Estate	
	10-year annualized return estimate	Change	10-year annualized return estimate	Change	10-year annualized return estimate	Change
Jan 2009	12.0%		7.0%		14.8%	
Sep 2013	6.7%	-5.3%	3.4%	-3.6%	11.9%	-2.9%

Source: Citi Private Bank as of November, 2013.

The investment strategies presented are not appropriate for every investor. Individuals should review with their Financial Advisors the terms, conditions and risks involved with specific products or services. Past performance is no guarantee of future results. There is no guarantee that these strategies will succeed. This information is intended for illustrative purposes only. Investment results may vary.

The 2014 Illiquidity Premium: Opportunities from Private Equity and Real Estate

Daniel O'Donnell, Managing Director, Global Head of Private Equity and Real Estate Research & Management (PERERM)

Richard Howe, Vice President, Private Equity Research & Management (PERERM)

With public equity market valuations rising in the developed markets, returns from private equity (PE) and real estate (RE) appear attractive, especially on a relative basis. There is a material premium to be earned by selectively assuming illiquidity risk in this environment. Furthermore, with correlation among liquid asset classes still high, a thoughtful and consistent allocation to PE and RE may be an attractive way to diversify risk. In addition to portfolio diversification, the benefits of illiquid investments include:

- The potential for higher returns
- Greater control of the underlying investment
- The ability to participate in strategies that are generally not available via publically traded securities

While PE and RE offer significant benefits, it is also important to be cognizant of their unique risks which include a lack of liquidity, complex tax structures and potential for losses.

When considering the benefits and risks of illiquid investments, we believe that a thematic approach to building portfolios is essential as future returns will depend on the right managers and specific opportunities.

In 2014, we identify several themes within PE and RE that have the potential to generate returns. These include developed market (DM) deleveraging, global urbanization, and the ongoing energy revolution in North America.

Citi Private Bank takes its thematic views and seeks to identify attractive risk-adjusted opportunities on a global basis.

Illiquid investments, including PE and RE, are a critical part of a balanced portfolio, and can add value when consistently implemented and held for the tenor of the investment period.

Illiquid versus liquid returns: an historical view

Historical data confirm that PE and RE fund investments have generated excess returns over time relative to the public markets, as represented by the S&P and NAREIT All Equity REIT indices. There are several reasons for this, including the ability to buy assets at lower valuations than may be available in the public markets, adding value to privately held enterprises by reinvesting cash flow or restructuring businesses more aggressively, and the relative patience of managers in choosing when and how to exit investments.

According to Thomson Reuters Venture Economics data, the median US and EMEA private equity buyout investment over the past 10, 15 and 20 years, has outperformed public benchmarks annually by an average of 360bps, 370bps and 140bps, respectively (see Figures 1, 2 and 3). If an investor was fortunate enough to invest with a top quartile buyout manager, the annual outperformance increased to 1910bps, 1710bps and 1940bps, respectively. Past performance is not indicative of future returns.

Similarly, outsized returns have also been evident over extended periods. Over the past 15 and 20 years, the NCREIF Townsend Opportunistic Index has outperformed the NAREIT All Equity REIT Index on an annual basis, by 140bps and 250bps, respectively. Meanwhile, top quartile opportunistic real estate managers outperformed the NAREIT All Equity REIT Index by 1800bps, 1340bps and 1510bps, over 10, 15 and 20 year time periods, respectively.¹ Past performance is not indicative of future returns.

Figure 1. Public vs. Private Equity annual total performance

	10-Year	15-Year	20-Year
United States PE Buyout – Top Quartile	26.3%	21.2%	28.1%
United States PE Buyout – Pooled	10.7%	7.8%	10.1%
United States PE Buyout – Bottom Quartile	-0.3%	-2.0%	-1.8%
S&P 500 Total Annual Total Return	7.2%	4.2%	8.7%

Sources: Thomson Reuters Venture Economics (696 funds) for top quartile and median, Bloomberg Finance as of June 6, 2013. Past performance is not indicative of future results. Actual portfolio results will vary.

Figure 2. Public vs. Private Real Estate annual total performance

	10-Year	15-Year	20-Year
US Opportunistic Real Estate Private Equity - Top Quartile	29.0%	23.1%	25.6%
NCREIF Townsend Opportunistic Index	10.7%	11.1%	13.0%
US Opportunistic Real Estate Private Equity - Bottom Quartile	-14.1%	-13.3%	-13.2%
NAREIT All Equity REITs Index	11.0%	9.7%	10.5%

Sources: Thomson Reuters Venture Economics (100 funds) for top quartile data, National Council of Real Estate Investment Fiduciaries (NCREIF), National Association of Real Estate Investment Trusts (NAREIT) 2Q 2013. As of June 6, 2013. Past performance is not indicative of future results. Actual portfolio results will vary.

Figure 3. Past 5-year 12-month rolling performance

	Twelve Months Ending June 2013	Twelve Months Ending June 2012	Twelve Months Ending June 2011	Twelve Months Ending June 2010	Twelve Months Ending June 2009
United States PE Buyout - Top Quartile	27.0%	14.2%	33.1%	32.1%	-12.2%
United States PE Buyout - Pooled	20.2%	5.3%	22.6%	20.9%	-21.9%
United States PE Buyout - Bottom Quartile	13.3%	-0.5%	11.5%	4.6%	-34.5%
S&P 500 Total Annual Total Return	20.7%	5.4%	30.7%	14.4%	-26.2%
US Opportunistic Real Estate Private Equity - Top Quartile	20.3%	6.6%	24.1%	19.0%	-12.2%
NCREIF Townsend Opportunistic Index	14.7%	7.2%	28.0%	-1.1%	-50.4%
US Opportunistic Real Estate Private Equity - Bottom Quartile	0.5%	-9.7%	0.0%	-36.2%	-58.3%
NAREIT All Equity REITs Index	10.2%	12.5%	34.1%	52.6%	-43.3%

Sources: Thomson Reuters Venture Economics, Bloomberg Finance, National Council of Real Estate Investment Fiduciaries (NCREIF), National Association of Real Estate, as of June 6, 2013. Investment Trusts. Past performance is not indicative of future results. Actual portfolio results will vary.

As seen in Figures 1 and 2, private equity and real estate performance varies widely by quartile. For PE Buyout funds, the difference between top quartile and bottom quartile performance over the past three years was 19.2% compared to 10.1% for US equity mutual funds.² Accordingly, PE and RE manager selection is critical. There is also evidence that the top performing PE and RE funds will continue to outperform in subsequent funds. According to Preqin data, 65% of private equity and real estate funds with top or second quartile performance go on to manage a top or second quartile successor fund.³ As such, we seek to partner with historically top quartile managers with thematically relevant capabilities.

The higher PE and RE returns are driven in large measure by investors willing to give up daily liquidity in exchange for strategies that demand patient execution and have a longer holding period.

The value of control

A second critical benefit of investing in illiquids is control over the underlying investment. Citi Private Bank generally partners with private equity and real estate managers that make control investments. As a result, these managers are fully engaged and empowered to set strategic priorities and drive execution.

In 2008, McKinsey interviewed twenty chairmen and CEOs to contrast the corporate boards of public equity versus private equity. The study noted that corporate boards tend to be a key driver of operational excellence.⁴ Although the study was not comprehensive, some interesting data points emerged. Notably, a supermajority of respondents cited that PE boards add more value than public company boards by focusing almost exclusively on “value creation levers,” while public boards are more focused on “budgetary control, the delivery of short-term accounting profits, and avoiding surprises for investors.” Accordingly, we focus on partnering with managers with the requisite resources and a track record of creating value through operational improvements.

Access to strategies that diversify portfolio risk

The third benefit to investing in illiquids is the opportunity offered to participate in targeted strategies that are generally unavailable through the public markets. For a prime example, we would cite investments that take advantage of dislocations driven primarily by global deleveraging.

European financial institutions have become forced sellers of assets and are expected to de-lever at least €3 trillion⁵ over the next three to five years. Meanwhile, data provider Preqin estimates only \$210 billion of capital has been raised by alternative managers to take advantage of this opportunity.⁶

While this supply-demand imbalance driven by regulatory changes presents an opportunity for well-positioned private equity and real estate managers, the opportunity is not generally available via publically traded structures. Thus, the most efficient way to gain direct exposure to this opportunity is through an illiquid vehicle.

With higher potential returns, greater control, and the ability to participate in strategies unavailable in public markets, illiquid investments can potentially offer a premium to liquid investments and add material value to a balanced portfolio, especially when consistently implemented.

Notwithstanding, significant due diligence is necessary to partner with managers with strong track records, a history of creating value through operational improvements, and thematically relevant strategies. It is also important to maintain flexibility to optimize selection criteria across geography and sector, depending on the risk/reward profile of the investment opportunity. This flexibility is needed to assess the standout opportunities within the asset class.

Given the opportunities offered by illiquid investments, clients may wish to consider a consistent but thoughtfully implemented portfolio allocation to private equity and real estate, based on their investment objectives and risk profile. As discussed in "Outlook 2014: Stay Ahead of a Charging Bull," expected returns in PE and RE have fallen relatively less than those of the very bullish public equity and credit markets.

1. Thomson Reuters Venture Economics data, November 2013. Townsend Opportunistic Index does not segment performance by quartile.

2. Preqin, Reuters Lipper Handbook 2013, December 2013.

3. Preqin Private Equity Performance Monitor, July 2013.

4. "The Voice of Experience: Public Versus Private Equity," McKinsey & Company, December 2008.

5. RBS analysis, August 2013.

6. Preqin, April 2013.

Alternative investments such as Real Estate and Private Equity that are referenced in this report are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in the fund, potential lack of diversification, absence of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds and advisor risk.

Strategies and investments mentioned in this document may not be suitable for all investors. Products, strategies and services discussed herein may have eligibility requirements that must be met prior to investing. Each investor should carefully view the risks associated with the investment and make a determination based upon the investor's own particular circumstances, that the investment is consistent with the investor's objective. Products and strategies described herein involve risk and may not perform as described.

Hedge Funds: Apparent Opportunities, Absent Exposures

Eric Siegel, Global Head of Hedge Fund Research and Management

A well-diversified portfolio should include an allocation to hedge funds. The recent strong run in traditional equities and potential for rising interest rates marks a backdrop highlighting the need for hedge fund exposure.

While individual funds have unique, idiosyncratic risks, hedge funds occupy a segment of the investment liquidity spectrum between traditional investments and private equity. As an asset class, they offer an attractive risk-adjusted return profile combined with a low correlation to other assets.

An improving environment for alpha generation

Overall, hedge funds performed in line with expectations in 2013. The broad HFRI Fund-Weighted Index was up 6.4% through October. While this trails the returns generated by the broad equity markets, we note that hedge funds outperformed fixed income, including high-yield, over the same time frame.

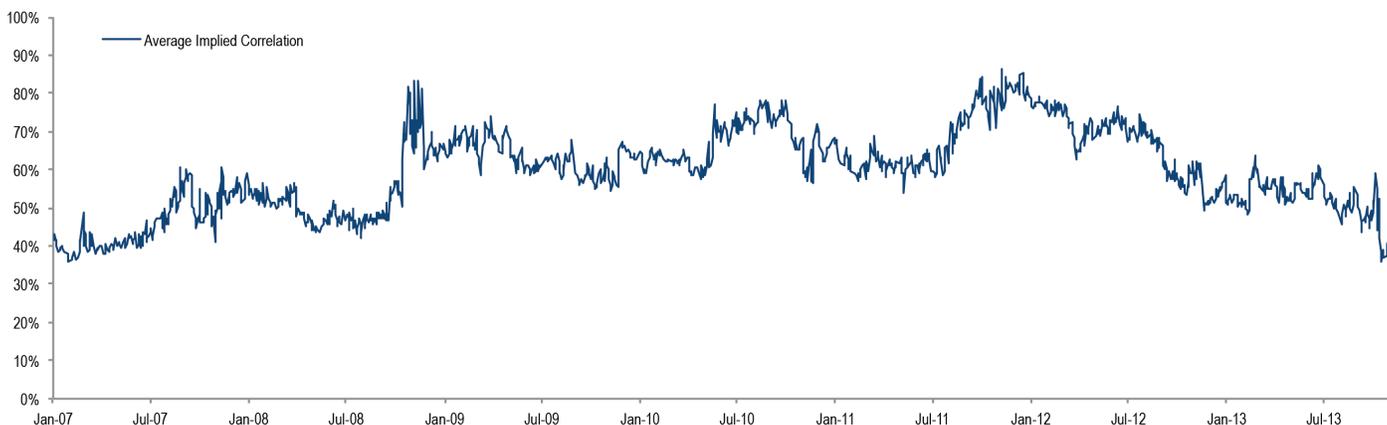
It is important to keep in mind the relative risk profiles of hedge funds and the rationale for including them in a broadly diversified investment portfolio. While generally not expected to keep pace with traditional assets during strong bull market environments, hedge funds can help provide attractive risk-adjusted returns over the course of an investment cycle and help preserve capital during more difficult market environments.

The primary reason to invest in hedge funds is to gain exposure to alpha - that is, returns above and beyond those that can be captured by broad market exposure (i.e. beta), primarily as a result of security selection.

Alpha is difficult to generate but is valuable to a portfolio since its presence can help both increase returns over a full investment cycle (since by definition it represents return above and beyond those available via exposure to beta) and lower volatility (since alpha itself tends to be uncorrelated to beta).

The period from mid-2008 through mid-2012 (when broad-share markets halved and then doubled), was a difficult market for alpha generation as a result of elevated levels of intra-stock correlations. At the most basic level, hedge funds look to generate returns by purchasing securities that seem "cheap" and shorting securities that appear "rich," and consequently capturing the spread as valuations (eventually) normalize. In an environment where high correlation levels prevail, security prices tend to move in lock-step and the markets tend not to discriminate between "cheap" and "rich" securities. As a result, it can be challenging for fundamental, value-oriented investors to generate excess returns. From mid-2012, we began to see intra-stock correlation levels revert to normal levels (see Figure 1) and, in concert, the alpha of hedge fund managers increase.

Figure 1. SPX Average implied correlation



Source: Bloomberg as of November 15, 2013.

CBOE SPX Implied Correlation Index measures the expected average correlation of price returns of S&P 500 Index Components, implied through SPX option prices and prices of single-stock options on the 50 largest components of SPX. Less liquidity, but "patient" strategies outperform over time.

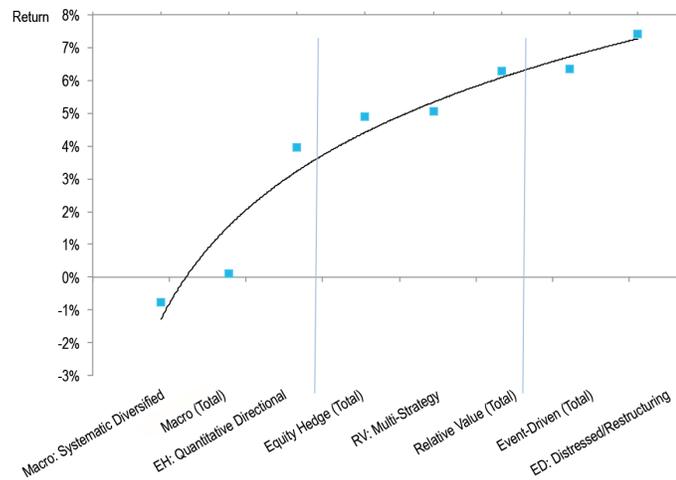
Less liquidity, but “patient” strategies outperform over time

Hedge funds fall between traditional funds and private equity on the liquidity spectrum. Liquidity terms vary from fund to fund, but typically range from quarterly to annually. These extended liquidity terms provide hedge fund managers with investment flexibility – allowing them to invest in less liquid opportunities such as distressed debt or take a longer-term investment horizon.

As can be seen in Figure 2, over the past three years there has been a strong correlation between the intrinsic liquidity of various hedge fund strategies and their returns. Driven by low interest rates and low-and-declining levels of implied and realized volatility, liquid strategies such as macro and managed futures have struggled while less liquid strategies such as distressed investing have benefitted from reduced competition for the underlying assets. Anecdotally, we have also noted that managers with longer liquidity terms within any given strategy tend to outperform managers with more liquid terms.

We believe the flexibility afforded by longer liquidity terms allows certain managers to invest with a longer-term horizon without having to worry about short-term mark-to-market effects and the potential impact on fund assets.

Figure 2. High correlation between the liquidity and returns of hedge fund strategies



Source: Citi Private Bank and Hedge Fund Research, Inc. Sept. 30, 2010 - Sept. 30, 2013.

All hedge funds are not equal

Investing in hedge funds as a homogenous asset class without an understanding of risk and return will generally lead to unsatisfactory results. Last year we introduced the concept of segregating hedge funds by their risk tolerances and

Diversification does not ensure against loss of principal.

An investment in alternative investments (e.g., hedge funds, private equity) can be highly illiquid, are speculative and not suitable for all investors. Investing in alternative investments is for experienced and sophisticated investors who are willing to bear the high economic risks associated with such an investment. Investors should carefully review and consider potential risks before investing. Certain of these risks may include, loss of all or a substantial portion of the investment due to leveraging, short-selling, or other speculative practices; lack of liquidity in that there may be no secondary market for the fund and none is expected to develop; volatility of returns; restrictions on transferring interests in the Fund; potential lack of diversification and resulting higher risk due to concentration of trading authority when a single advisor is utilized; absence of information regarding valuations and pricing; complex tax structures and delays in tax reporting; less regulation and higher fees than mutual funds; and manager risk.

investment objectives, and allocating in accordance with the overall goals of the portfolio. In general we classify hedge funds into:

- **Return Enhancers** are funds that exhibit a relatively higher beta to traditional markets, such as long/short equity and event-driven funds.
- **Volatility Dampeners** are funds that display low-to-moderate correlation with traditional markets, such as multi-strategy as well as relative value funds.
- **Diversifiers** are funds that show low or negative correlation to traditional asset classes, such as many macro funds and Commodity Trading Advisors (CTA).

Regardless of strategy, we would like to stress the importance of manager selection. Simply investing in hedge funds as an asset class is not enough. Rather, it is important to choose funds with an identifiable investment edge that will allow them to generate alpha on a go-forward basis. The overall risk tolerance of the client and the entire client portfolio context is necessary in assessing the risk of including any funds.

Opportunities for 2014

Looking forward to 2014, we believe the Return Enhancer segment in particular should be of interest to our clients. This segment offers the opportunity to participate in equity-like returns within a risk-controlled framework. Due to the normalized level of intra-stock correlations, we expect the alpha-generating environment for equity long/short funds to remain robust. In general, we tend to prefer those managers that have an identifiable investment edge, often related to expertise in specific industry sectors.

The environment for certain equity-oriented event-driven managers also looks attractive given the growing level of deal activity. While the overall opportunity for credit-oriented managers has declined, we note the increasing level of opportunities in Europe. For example, the default rate for high-yield bonds in Europe recently jumped to 7.5% according to Standard and Poor's. While peak default rates in the US reached a much higher 11.1% in 2009, that peak was followed by several years of outperformance for distressed managers who had waited for bargains available outside of conventional public bond markets.

Overall, we continue to see our clients under-exposed to hedge funds relative to our 16% recommended allocation – a trend that we strongly feel needs to be addressed. The current low-yield environment, with equity market rallies over the past few years, argues strongly for adding a source of uncorrelated returns to a diversified portfolio. Simply put, the easy money in the traditional markets is likely over.

Yield for Illiquidity: An “Easy” Way to Boost Return on Capital

Stephen Antczak CFA, Head of US Credit Strategy, Citi Research

Jung Lee, Senior Associate, Credit Strategy, Citi Research

As we noted, and our many earlier warnings about falling credit market returns, investors may find it hard to achieve meaningful yield in their portfolios following the long period of zero central bank policy rates. We underweight low-yielding US Treasuries and recently moved to a slight underweight in US corporate investment grade debt, even with credit spreads potentially sustainable during the recovery. Yet no balanced portfolio should have a zero fixed income weighting. For those investors who are also willing to hold individual bonds until maturity (in the process, avoiding some risks associated with bond mutual funds), we note the potential for yield enhancement in high-quality bonds that are infrequently traded and in some alternative bond structures. Citi Credit Strategist, Stephen Antczak, describes how suitable investors can take advantage of the liquidity trade off. We believe certain private investors, with the appropriate risk, duration and liquidity requirements, can potentially benefit as well.

– Steven Wieting, Global Chief Investment Strategist

Determining the optimal amount of liquidity to hold in a portfolio is no easy task. That said, opportunities are available for credit market investors looking to edge down the liquidity spectrum to enhance yield.

Compared to other institutional investors, insurance companies usually have more latitude to move down in liquidity in order to boost yield. We believe large private investors, with sufficiently strong balance sheets, could potentially benefit as well. To study this, we examined the credit portfolios of fifteen different insurers to identify the strategies they are applying and to determine how much value can be unlocked.

Before continuing, we would like to acknowledge that we oversimplify in our study. Liquidity is very complicated - bid/ask spread, sourcing bonds, etc. are all factors that play a role in practice, but not in theory.

But that said, there may be value to be unlocked. In this study we define liquidity via our own liquidity scoring model. It takes into account five factors, ranging from the clustering of trading activity, to the propensity of client trading to be one-sided (all client buys or all client sells).

Key Findings:

Insurers way down in liquidity

We see that 80% of the overall credit market has a liquidity score of 49% or lower. But the number for the typical insurance portfolio is vastly different - 80% of the typical insurance company portfolio has a maximum liquidity score of only 26%.

So the holdings of insurers are far less liquid than the market, but the real question is how much this down-in-liquidity positioning is actually worth? We find that it is worth quite a bit. If we calculate return-on-capital (ROC), based on the National Association of Insurance Commissioners (NAIC) capital requirements, we find that the broad market generates a ROC of 7.07%, relative to 7.43% for the typical insurance portfolio.

Many differences across portfolios

The average portfolio is tilted towards less liquid bonds. That said, there is an extremely large range around the average, with the liquidity score for each portfolio in our sample set stretching from 7.8% to 18.4%.

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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We went through a very simple liquidity/ROC “optimization” exercise. We focused on the four most-liquid portfolios and calculated how much their ROC would increase if they brought their scores more in-line with their competitors (again, we acknowledge this is easy in practice, not the real world). Specifically, within these four portfolios, for each name that was *already held* (i.e. the insurance company is comfortable with the credit risk), we looked to see if there was another bond in the same maturity bucket with a lower liquidity score. If so, and the ROC was higher, we shifted from one to the other.

The results of this very simple approach were surprising. On average, liquidity went from 16% to 11%, but ROC increased from 7.3% to 8.2%.

Everyone has room for “improvement”

As noted above, while the average insurance portfolio holds less liquid issues, there may be room for “improvement.” We went through the same optimization exercise detailed above for the average portfolio rather than just the most liquid ones.

The results of this optimization for the average portfolio were similar to those for the most liquid ones - dramatic. Liquidity in the typical portfolio went from 13% to 9%, but ROC increased from 7.4% to 8.4% (see Figure 1).

Investor considerations

Following these examples in the insurer portfolio domain, there may be ways for investors to edge down in liquidity and significantly boost returns (assuming a hold-to-maturity strategy). We highlight two approaches below.

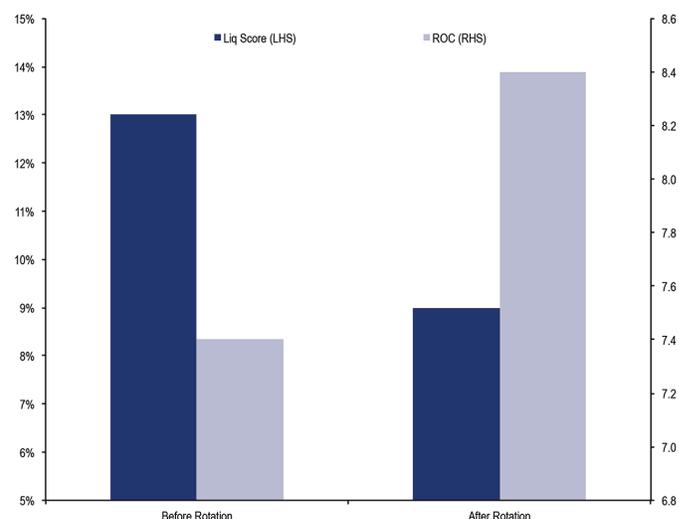
Idea #1: Single name rotation

Examining long-tenor bonds in various sectors that are widely held in the portfolios, we observe an average yield pick-up of 28 basis points and a dollar takeout (cost drop) of \$2, by rotating from more liquid issues into another bond of similar maturity and lower liquidity.

Idea #2: Out-of-the-box rotation

Of course, there are many varieties of less liquid bonds as shown in Figure 2. For example, in structured credit, a generic single-A-rated Collateralized Loan Obligation (CLO) currently provides a yield of 4.75%.

Figure 1. Return on capital and liquidity score of sample corporate bond portfolio before and after rotation to liquidity reduction



Sources: Citi Research, TRACE. RHS = right hand side; LHS = left hand side.

Note: Liquidity score as of October 14, 2013; percent of portfolio based on market value as of October 11, 2013; based on 2012YE portfolios.

Figure 2. Down in liquidity options to enhance yield

Liquidity	Market	Yield	Pick-up (bp)
High	Liquid IG corporate	4.78%	
Low	Less-liquid IG corporate	5.00%	22
High	A-rated corporates	2.80%	
Low	A-rated CLO's	4.75%	195
High	AAA agency-MBS (GSE)	3.00%	
Low	Non-agency MBS	5.57%	257
High	AAA CMBS Super Duper	1.65%	
Low	AAA CMBS Jr. Mezz	3.65%	200

Sources: Citi Private Bank, The Yield Book, Barclays Capital as of December 5, 2013; Citi research as of November 5, 2013.

The investor must ascertain if they are suitable for each investment product based on their unique investment objectives and risk tolerances. All products and services discussed herein have eligibility requirements that must be met prior to investing.

Strategies and investments mentioned in this document may not be suitable for all investors. Products, strategies and services discussed herein may have eligibility requirements that must be met prior to investing. Each investor should carefully view the risks associated with the investment and make a determination based upon the investor's own particular circumstances, that the investment is consistent with the investor's objective. Products and strategies described herein involve risk and may not perform as described.

Bonds are affected by a number of risks, including fluctuations in interest rates, credit risk and prepayment risk. In general, as prevailing interest rates rise, fixed income securities prices will fall. Bonds face credit risk if a decline in an issuer's credit rating, or creditworthiness, causes a bond's price to decline. High yield bonds are subject to additional risks such as increased risk of default and greater volatility because of the lower credit quality of the issues. Finally, bonds can be subject to prepayment risk. When interest rates fall, an issuer may choose to borrow money at a lower interest rate, while paying off its previously issued bonds. As a consequence, underlying bonds will lose the interest payments from the investment and will be forced to reinvest in a market where prevailing interest rates are lower than when the initial investment was made.



Harnessing Global Change

The Death of Innovation? Really?

Steven Wieting, Global Chief Investment Strategist

In his provocatively-titled 2012 working paper, “Is US Economic Growth Over?,” economist Robert J. Gordon described three industrial revolutions or technological waves that caused sharp, sustained increases in economic growth - first for the UK, but ultimately in “the US frontier” as he describes it. As the title suggests, the US-focused Gordon (for one) is pessimistic about the course of human innovation going forward.

Different factors drive economic performance (i.e. a lack of “technology” doesn’t separate the economies of North and South Korea. The form of economic governance does). Yet theories that technological breakthroughs *largely* drive per-capita growth are compelling.

After all, there have been no changes in human physiology since the stone age. The vast difference between lives then and now is accumulated knowledge. So why the intense pessimism that innovation-led growth is behind us?

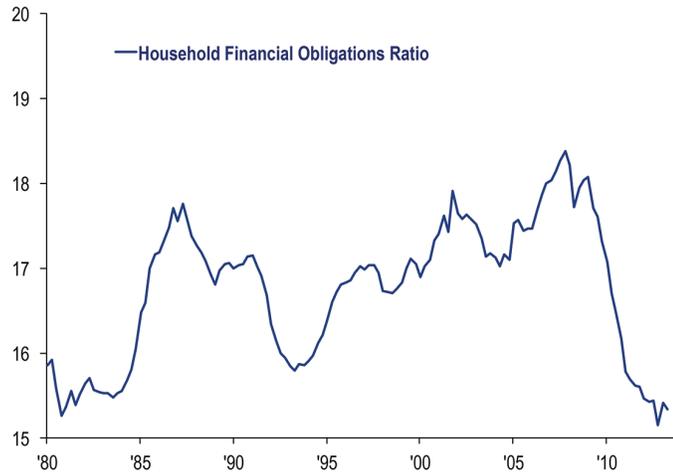
Gordon knowingly asks observers if they would trade their indoor plumbing - an invention of the 19th century, for access to “social media” - an invention of the 21st. However,

economists have generally been poor identifiers of the economic significance of technology. Most were surprised by the late 1990s information-technology-led growth surge as technologies first conceived in decades past were refined and given pervasive application.

Today, many innovations might fall well short of the locomotive in significance, but we doubt that forthcoming information technology and robotics applications amount to mere “entertainment.” Moreover, disruptive innovation in products and business models comes in many forms, aside from “technology” itself.

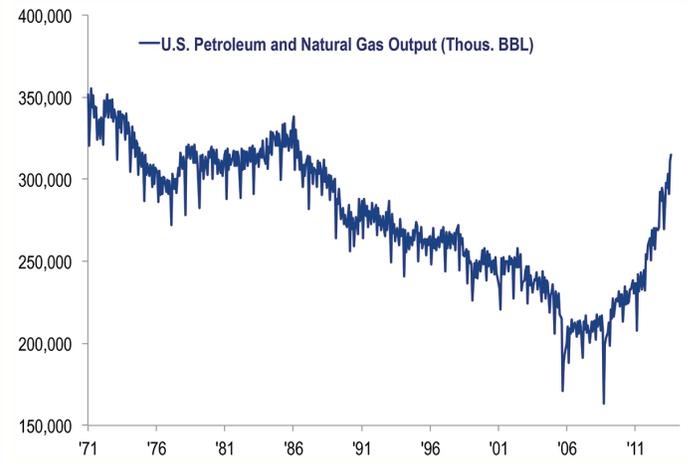
By the standards of just two years ago, many of the “non-technology” obstacles to growth that Gordon catalogues in his paper have seen massive, even unexpected change (see Figure 1). Other pessimists have cited resource constraints on growth, such as “peak oil” production fears, in their own grim outlook. Yet the innovations in hydraulic fracturing - first used for oil and gas extraction in the late 1940s - have unexpectedly pushed US oil and gas production back toward record highs after decades of decline (see Figure 2). This is even while non-fossil fuel alternatives and energy-saving technologies have not disappeared from the horizon.

Figure 1. Consumer debt burdens have fallen considerably in recent years



Source: Federal Reserve Board as of June 30, 2013.

Figure 2. US oil and gas production has risen to high levels



Source: Energy Information Administration as of August 2013.

We endorse active investment management in areas where “disruptive technology” plays a role. As we argue in “Outlook 2014: Stay Ahead of a Charging Bull,” in 2013 bullish equities markets have rewarded huge market capitalizations to some innovators on a mere forecast of future profits. But while the single best technology may seem nearly priceless, the second best can become practically worthless.

History suggests many worthy experiments fail, and these are likely to include some of today’s market success stories too.

Searching for Tomorrow's "Game Changers": Investing in Innovation

Philip Watson, Global Investment Lab Head

All portfolios should have an allocation to companies that are set to drive growth. How successfully companies orchestrate strategies for innovation will separate the leaders from the followers. Investors should ask themselves how well they are positioned in these companies.

Peter F. Drucker wrote, "If you want something new, you have to stop doing something old."¹ In that sense, as the world reinvents itself, investors should look through this prism of change - finding new opportunities, and critiquing their portfolios in new ways.

Innovation is widely cited as one of the most important drivers in creating sustainable value for shareholders. And, as history has proven, successful innovators can benefit from a strong and enduring competitive advantage - with handsome rewards for investors. Yet, it seems that investors lack the tools and awareness to identify the leaders of tomorrow.

The advent of plastic transformed metal and wood usage, cars did similar for rail, mobiles disrupted fixed-line telephony...what's next?

As any owner of a (slow) personal computer, a stand-alone digital camera or a CD collection knows, the rate of change for technology is extraordinary. It would be no exaggeration to describe these items as "relics" of the very recent past. Pushed aside by tablets, smartphones, cloud computing and streaming music, innovation is the DNA of our times.

Looking at the markets globally today, where are some of the most exciting trends? What should investors be mindful of? Where are the value creators?

We highlight five innovations that we believe have the potential to drive significant change, in turn offering investors considerable opportunity:

- **Transportation:** The "Driverless" Car is a programmed self-driving car. Several US states, including Nevada, Florida and California, have already taken steps to authorize the operation of these cars under specific circumstances. Milton Keynes in the UK is also testing the viability of the program, with up to 100 Pod cars expected to be used along designated paths by 2017. The system is being sold to

automobile manufacturers. Implications are broad and far reaching, not only for road safety but also for productivity and housing.

- **Production Devices:** "3D" printing is defined as the fabrication of a product through the deposit of a material or binder using a print head, nozzle, or other printer technology. It has been cited on occasions as the next industrial revolution, impacting how products can be designed and manufactured. This technique forges digital design into real life matter, where businesses and individuals can produce their own creative products. According to Wohlers Associates, the 3D printing market is expected to be worth \$6.5 billion by 2019, while a separate forecast by the US Consumer Electronics Associates expects the market to be worth \$5 billion by 2017.
- **Energy:** Solar remains on the rise. Solar Photovoltaics is the generation of electricity from semiconductor materials. Falling equipment prices have made renewable energy increasingly cost competitive with traditional fossil fuels. While varying with government subsidies across countries, solar power has already become competitive in some, outstripping conventional generation and causing utilities to issue profit warnings. Solar provision keeps getting cheaper, meeting new demand, eating into existing demand, and taking the load at peak times. This makes Solar a very disruptive innovation - especially to the utilities, and oil and gas companies that operate at the top end of the cost curve. Solar could see \$1.3 trillion of investment in new capacity from 2012-35 according to the International Energy Agency.
- **Finance:** Mobile Payments are payments initiated from a mobile device, such as a phone or tablet, or a payment accepted by a mobile device. This sector is expected to experience substantial growth in the coming years, with the opportunity likely to evolve quite differently in emerging and developed markets.²
- **Information Technology:** Eye Sensory Technology uses the gaze of your eye to orientate a device for people with speech and communication impairments. The technology is also being applied to personal computers (PCs) to replace the "middle man" - the mouse. Likely implications on the broader market will extend to gaming, hospitals, diagnostics and vehicle safety (imagine drowsiness detectors).

How to invest in those companies with the foresight, innovation and business models to create value?

Those willing to invest in the “game changers” are frequently deterred by what looks like excessive risk – either investing early in start-ups or through the volatility that can arise with micro- to small-cap exposure. And the pace at which companies have been transforming from virtually unknown entities to large, established corporations has been astonishing.

Ultimately, a portfolio should be constructed to include some allocation to companies that are set to drive growth through innovation. Identifying and investing in innovative companies operating in favorably positioned sectors will be crucial. This involves seeking out the highest-conviction names globally, across sectors and innovation areas.

Routes to execution vary. Investors can choose to invest on a single stock basis, via structured access routes or through those reputable asset managers focused on outperformance in this space. With renewed appetite for IPOs in 2013, the primary market may also offer some interesting ideas for investors in the year ahead.

Whether we are in a golden age or not, change is upon us. Explosive growth in some sectors and the potential for major disruption in new markets presents an ocean of opportunity for savvy investors. Investors should start taking note, before they find themselves disadvantaged victims of the “game changers.”

1. Peter F. Drucker - writer, professor and management consultant; contributed to modern management theory.

2. Juniper Research predicts \$670 billion in transaction value by 2015; the Yankee Group projects \$545 billion in payment value by 2015 and Canada-based IE Market Research Corporation estimates \$1 trillion of transaction value by 2016.

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The Changing Landscape of Global Energy

Philip Watson, Global Investment Lab Head

The global energy industry is going through seismic changes that few would have thought imaginable just five years ago. Quite simply, the pace of innovation of new technologies is causing a more rapid migration away from conventional sources of energy, including nuclear and fossil fuels, to shale gas and renewables, such as wind and solar.

Lessons from history suggest that the composition of energy sources used can shift dramatically, especially when technological advancement creates cost parity relative to predominant energy supplies. This is perhaps unsurprising as new technologies are embraced at the expense of incumbents.

We believe these transitions are happening faster and to a greater extent than widely recognized. The ferocious pace of change has already been felt in Germany, which now generates 20% of its power from Solar versus just 1% six years ago.¹ Energy distributors and consumers are also adapting fast to this new environment. The energy mix is rapidly changing and is having far-reaching economic and geopolitical implications - turning importers into exporters, energy laggards into leaders (and vice versa), and changing the industrial competitiveness of nations. The changing landscape of global energy will be transitory, far-reaching and multi-faceted - providing a new set of opportunities for investors.

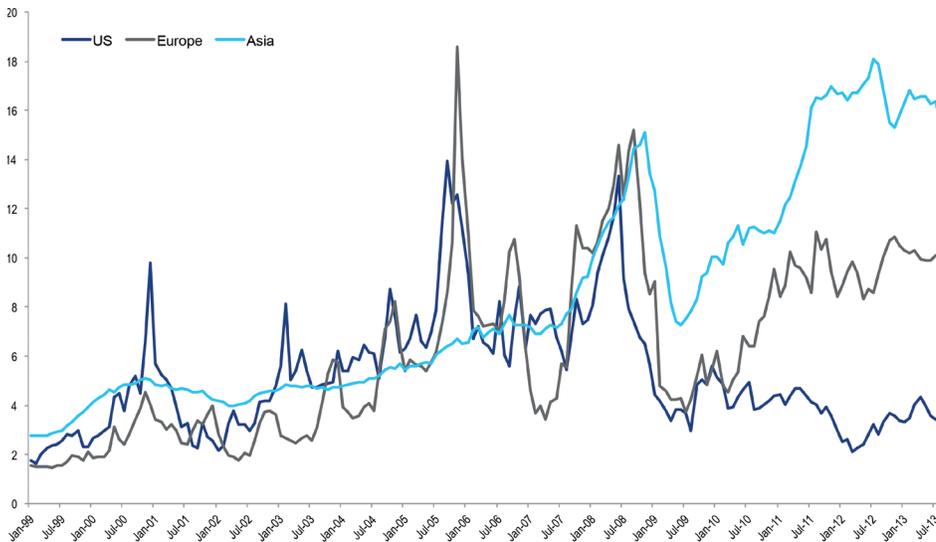
The 'Golden Age of Gas' is set to continue in 2014

The epicenter of the energy revolution has been well-documented. In North America, the combination of favorable geology, technological advancements and significant capital expenditure has enabled the commercially viable extraction of shale gas and oil. The net effect is a significant comparative advantage for the US, leading to a plentiful supply of cheap energy. Who would have imagined a few years ago that the US would be a net petroleum exporting country, edging Russia out as the world's largest refined petroleum exporter? Or equally, that the US now generates more electricity from gas than from coal? Or that the state of North Dakota, which contains the Bakken shale reserve, would have a GDP per capita 29% above the national average in 2012, when back in 2001 it was ranked the 12th lowest state?²

The boundless supply of natural gas in the US stands in stark contrast to the fortunes of the EU, which now imports over 60% of its supplies, as well as China, which over the last ten years has shifted from being a net exporter to a large net importer of natural gas.³ The changing supply and demand dynamics across geographic regions are perhaps best exemplified by the divergences in natural gas prices, creating export potential for the US (see Figure 1).

2013 saw a notable shift for liquefied natural gas (LNG) export terminals in the US, with the Department of Energy (DOE) approving three facilities within the year. This brings the total number of facilities approved to export LNG to countries without a free-trade agreement within the US at four, with more than ten LNG export projects currently pending DOE approval.⁴ Some price convergence is therefore anticipated. However, the high marginal cost of natural gas transportation and liquefaction will be a protective barrier for domestic beneficiaries in the US.

Figure 1. Dispersion of natural gas prices across geographic regions (USD / MMBtu)



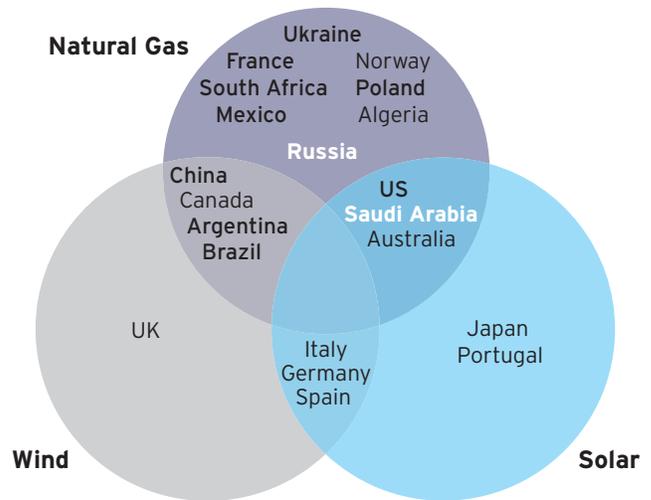
Source: Citi Private Bank Global Investment Lab using Bloomberg as of November 2013.
 Note: Natural gas is measured in MMBtu = 1 Million BTU (British Thermal Unit).

Renewables - into the energy mix?

The perception of renewables as an expensive and therefore uneconomic source of electricity has shifted significantly in recent years, with technological advancements leading to dramatic reductions in the cost of electricity produced by wind, solar and related technologies. The most compelling example is the rate at which the price of solar panels has fallen, exceeding all expectations, and resulting in cost parity versus other conventional energy sources in Germany, Italy, Spain, Portugal, Australia and the Southwest US. Crucially, this rate of technology is projected to continue, further enhancing solar's appeal.

Other renewable sources are not quite there yet. Wind technology continues to evolve, but is doing so at a slower rate than solar. However, wind has the advantage of a more consistent process time (i.e. wind turbines can run for longer than just during daylight hours). For now, only Italy and Brazil are estimated to have cost parity, but we expect the competitiveness to increase further for other countries (UK, Canada, Argentina, Germany, Spain and China) by 2020. Figure 2 shows how different countries are embracing these new energy sources.

Figure 2. How different countries are embracing natural gas and renewables



Source: "Shale and Renewables: a Symbiotic Relationship," Citi Research, September, 2012.

For countries that are not sitting on abundant shale resources, the development and success of renewables within the context of a sustainable energy policy is clearly critical for their global competitiveness.

It is worth noting, however, that the oscillating demand for energy throughout a standard day and annual seasons, coupled with concerns over minimizing supply-side risks, often leads countries to seek a diversified portfolio of energy sources. Thus we view a symbiotic relationship between shale gas and the intermittent nature of renewables in tandem, as we progress further to a lower carbon world.

What does this mean for investors?

Investors are scouring energy and related industries to take advantage of these groundbreaking developments. A direct private equity investment into pipelines or photovoltaic cell manufacturing may not be to everyone's liking. A more suitable access route could be achieved by investing through an asset manager or various structured products.

Another strategy that may interest many investors is investing in the bonds and/or equities of companies favorably exposed to the effects of this 'Energy Revolution.' Investors should focus on strong and undervalued companies that stand to potentially benefit from either their contribution to the supply expansion or their access to cheaper energy.

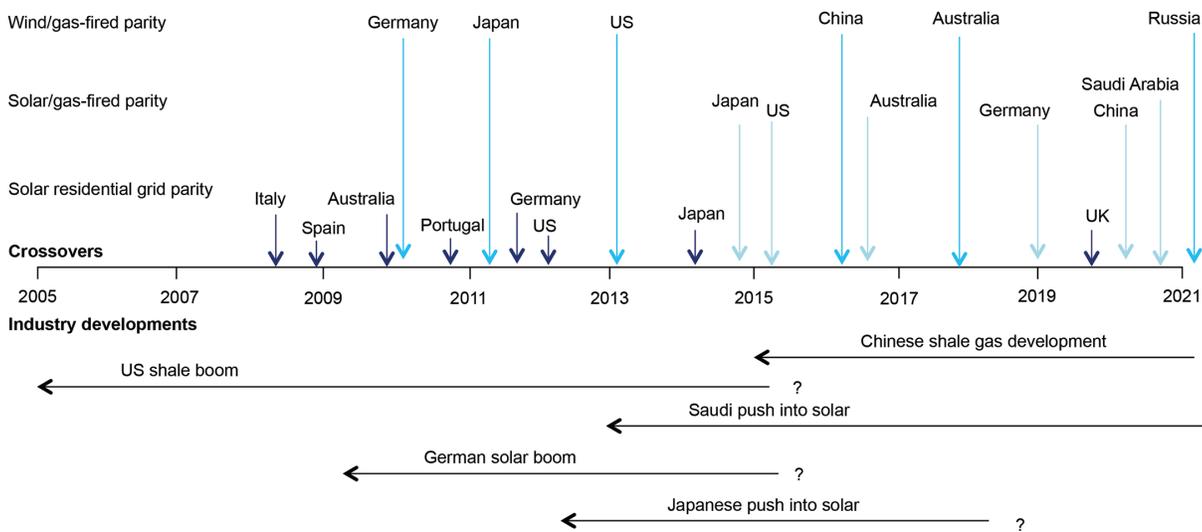
Our framework for the three main beneficiary categories and identifying opportunities is as follows:

- **Producers:** these are companies that convert or extract new energy sources and/or provide the support infrastructure. Water suppliers, a key component in the hydro-fracking process, would be an example of a beneficiary sector to the shale revolution.

- **Distributors:** this includes ports, transportation and storage companies that are involved in the distribution of petroleum and natural gas. Downstream processing of natural gas, for example, involves substantial infrastructure investment. This can benefit a variety of equipment producers and servicing firms.
- **Consumers:** these are energy-intensive industries (end users) that will benefit from cheaper energy costs, as well as companies that are able to convert one energy source for a cheaper alternative (such as power plants and transportation).

Investors should position for a longer-term investment strategy based upon this evolution in global energy use. We would recommend the investment timeline illustrated in Figure 3. This begins with investing in US shale-exposed stocks and then moves into renewable developers as parity is reached for different technologies, as well as manufacturers of renewable equipment, once short-term political uncertainties and oversupply issues are resolved.

Figure 3. The parity and investment timeline for renewables and shale



Source: "Shale and Renewables: a Symbiotic Relationship," Citi Research, September, 2012.

As a Middle East oil minister once quoted, "The stone age didn't end for a lack of stones."⁵ Something better, more efficient, cleaner or cheaper always comes along. We believe that the pace of energy change is happening faster and to a greater extent than is broadly recognized. This means that we are still in the early stages of a multi-year, energy structural cycle. Both shale gas and renewables are set to transform the global energy dynamic and geopolitical landscape. However, an understanding of the succession to the energy revolution is critical for navigating through the transitory stages, and is thus critical for the positioning of investment portfolios.

1. "Energy Darwinism: the Evolution of the Energy Industry," Citi Research, October, 2013.
 2. US Energy Information Administration, July 2012.
 3. "Shale and Renewables: a Symbiotic Relationship," Citi Research, September, 2012.
 4. Wall Street Journal, September 11, 2013.
 5. "The End of the Oil Age," The Economist, October 23, 2003.

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Asset Class Index Definitions

Asset classes	Benchmarked against
Global equities	MSCI All Country World Index represents 48 developed and emerging equity markets. Index components are weighted by market capitalization.
Global bonds	Barclays Capital Multiverse (Hedged) Index contains the government-related portion of the Multiverse Index, and accounts for approximately 14% of the larger index.
Hedge funds	<p>HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It comprises all eligible hedge fund strategies including, but not limited to, convertible arbitrage, distressed securities, equity hedge, equity market neutral, event-driven, macro, merger arbitrage and relative value arbitrage. The strategies are asset-weighted based on the distribution of assets in the hedge fund industry.</p> <p>HFRI Fund Weighted Index is designed to be representative of the overall composition of the hedge fund universe. It includes over 2200 constituent funds, both domestic and offshore. The strategies are equal weighted.</p>
Private equity	<p>NCREIF Townsend Opportunistic Index includes the performance information of private equity real estate funds pursuing opportunistic investment strategies, using both open-ended and closed-ended structures. In 2Q 2013, the Opportunistic Index included 239 funds.</p> <p>NAREIT All Equity REITs Index is a free-float adjusted, market capitalization-weighted index of US Equity REITs. Constituents of the Index include all tax-qualified REITs with more than 50 percent of total assets in qualifying real estate assets other than mortgages secured by real property.</p>
Commodities	Dow Jones-UBS Commodity Index is composed of futures contracts on physical commodities traded on US exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange (LME). The major commodity sectors are represented including energy, petroleum, precious metals, industrial metals, grains, livestock, softs, agriculture and ex-energy.
Cash	Three-month LIBOR is the interest rate that banks charge each other in the international inter-bank market for three-month loans (usually denominated in Eurodollars).

Asset Class Index Definitions

Equities	
Developed market large cap	<p>MSCI World Large Cap Index is free-float adjusted and weighted by market capitalization. The index is designed to measure the equity market performance of the large cap stocks in 23 developed markets. Large cap is defined as stocks representing roughly 70% of each market's capitalization.</p> <p>The EURO STOXX 50 Index provides a Blue-chip representation of supersector leaders in the Eurozone. The index covers 50 stocks from 12 Eurozone countries.</p>
US	<p>Standard & Poor's 500 Index, which is a capitalization-weighted index that includes a representative sample of 500 leading companies in leading industries of the US economy. Although the S&P 500 focuses on the large cap segment of the market, with over 80% coverage of US equities, it is also an ideal proxy for the total market.</p> <p>Chicago Board Options Exchange SPX Volatility Index (CBOE) measures the expected average correlation of price returns of S&P 500 Index Components, implied through SPX option prices and prices of single-stock options on the 50 largest components of SPX.</p> <p>The MSCI USA Index is a free float adjusted market capitalization index that is designed to measure large and mid cap US equity market performance. The index is member of the MSCI Global Equity Indices and represents the US equity portion of the global benchmark MSCI ACWI Index.</p>
Europe ex UK	<p>MSCI Europe ex UK Large Cap Index is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in each of Europe's developed markets, except for the UK.</p>
UK	<p>MSCI UK Large Cap Index is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in the UK.</p>
Japan	<p>MSCI Japan Large Cap Index is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in Japan.</p> <p>The Nikkei-225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange.</p>
Asia Pacific ex Japan	<p>MSCI Asia ex Japan Index is free-float adjusted and weighted by market capitalization. The index is designed to measure the performance of large cap stocks in Australia, Hong Kong, New Zealand and Singapore.</p>
Developed market small and mid cap (SMID)	<p>MSCI World Small Cap Index is a capitalization-weighted index that measures small cap stock performance in 23 developed equity markets.</p>
Developed market large, mid and small cap.	<p>Euro STOXX 600 Index is a subset of the STOXX Global 1800 Index. It represents large, mid and small capitalization companies across 18 countries of the European region.</p>
China	<p>The Shanghai Stock Exchange Composite Index is a capitalization-weighted index. The index tracks the daily price performance of all A-shares and B-shares listed on the Shanghai Stock Exchange.</p>
Brazil	<p>The MSCI Brazil Index measures the performance of the large and mid cap segments of the Brazilian market. With 75 constituents, the index covers approximately 85% of the Brazilian equity universe.</p>
Emerging market	<p>MSCI Emerging Markets Index is free-float adjusted and weighted by market capitalization. The index is designed to measure equity market performance of 22 emerging markets.</p>

Asset Class Index Definitions

Bonds	
Developed sovereign	Citi World Government Bond Index (WGBI) consists of the major global investment-grade government bond markets, and is composed of sovereign debt denominated in the domestic currency. A minimum credit quality of BBB-/Baa3 by either S&P or Moody's is required. The index is rebalanced monthly.
Emerging sovereign	Citi Emerging Market Sovereign Bond Index (ESBI) is composed of debt in Africa, Asia, Europe and Latin America. Emerging markets are classified as sovereigns with a maximum foreign debt rating of BBB+/Baa1 by S&P or Moody's. Defaulted issues are excluded. The Emerging Market Bond Index (EMBI) is JP Morgan's index of dollar-denominated sovereign bonds issued by a selection of emerging market countries.
Suprationals	Citi World Broad Investment Grade Index (WBIG) – Government Related is a subsector of the WBIG and includes fixed-rate investment-grade agency, supranational and regional government debt, denominated in the domestic currency. The index is rebalanced monthly.
Corporate investment grade	Citi World Broad Investment Grade Index (WBIG) - Corporate is a subsector of the WBIG and includes fixed-rate global investment-grade corporate debt within the finance, industrial and utility sectors, denominated in the domestic currency. The index is rebalanced monthly.
Corporate high-yield	Barclays Global High-Yield Corporate Index provides a broad-based measure of the global high-yield fixed income markets. It is also a component of the Multiverse Index and the Global Aggregate Index.
Securitized	Citi World Broad Investment Grade Index (WBIG) - Securitized is a subsector of the WBIG and includes global investment-grade collateralized debt, denominated in the domestic currency. The index is rebalanced monthly.

Appendix A-1

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