

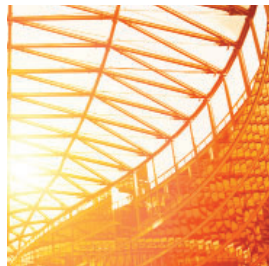
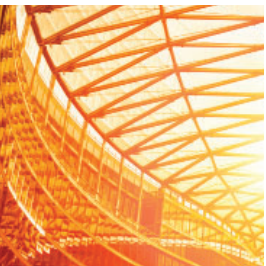
## Echoes of 2007?

**Ominously familiar warning signs beg the question of whether a replay of 2007 is at hand; the answer is complicated**

- Recent market activity has seemingly combined some of the excesses of 1999 with those of 2007. On a more general level, investors have grown more bullish and volatility across asset classes has collapsed.
- In contrast to 2007, when virtually all asset classes appreciated in unison, current excesses are largely centered in the US equity market and global credit markets; global policy rates near zero today is another difference.
- From a financial and economic standpoint, we see a much lower risk of looming crisis than in 1999 and 2007. We expect the current environment to end with a reckoning for investors that reach for return and yield, but the timing and nature remain highly uncertain.
- The big difference between 1999, 2007, and today is the lack of a fundamental trigger to upset the apple cart. The current environment is potentially more dangerous *and* more durable than the prior two periods.

Seemingly high price risk across asset classes, as well as some ominously familiar warning signs in credit and initial public offering markets, begs the question of whether a replay of 2007 is at hand.

The short answer is yes ... and no. As in 2007, markets are riding a wave of liquidity created by policymakers attempting to “solve” a prior problem, the ultimate resolution of which is likely to be a dislocation in market prices. Further, recent market activity has seemingly combined some of the excesses of 1999—with biotech and social media stocks playing the role of dot-coms—with those of 2007, as high-yield and leveraged loan issuance has soared, including the return of “covenant-lite” loans and other suspect structures of days gone past. On a more general level, investors have grown progressively



more bullish, while a pervasive belief in the “Yellen put”—and, more broadly, the willingness and ability of central banks to control any and all market and economic outcomes—has contributed to a collapse in volatility.

Nonetheless, something *feels* different today. Whereas in 1999 and 2007 we felt quite comfortable warning about heightened danger,<sup>1</sup> the current environment seems more benign. And while one could argue this is yet another warning sign—have we joined the complacent crowd?—there are fundamental reasons to believe the day of reckoning may lie further in the future. Put simply, the big difference between 1999, 2007, and today is the lack of a *fundamental* trigger to upset the apple cart.

In contrast to 2007, when virtually all asset classes appreciated in unison, current excesses are largely centered in the US equity market and global credit markets. Indeed, some markets—e.g., emerging and European equity markets—look cheap, particularly on a relative basis. This is in contrast to 2007, when the world witnessed a global credit bubble that drove up prices of equities, real estate, commodities, and even bonds in virtually all countries.

Thus, while the current environment is almost certain to end with a reckoning for investors that

<sup>1</sup> See, for example, our March 2007 Market Commentary *It's Getting Late—Risks Are Rising*. In November 1999, we created a new category in our valuations matrix called “Dangerous Bubble” to draw attention to the extreme risks in technology stocks; early- and late-stage US venture capital were added to the category in February 2000.

reach for return and yield, the timing and nature remain highly uncertain. In the meantime, investors remain in the frustrating position of being forced out of the risk curve by central banks willing and able, at least for the moment, to do “whatever it takes” to keep risk assets levitated.

### Another Bubble?

The word bubble has lost much of its meaning in recent years, with everything from gold to Treasuries to biotech stocks pegged with the moniker. That said, certain areas of the market do remind us of the halcyon days of 1999. Biotech and social media stocks, for example, exhibit all the classic signs of being in a bubble, with rampant investor enthusiasm driving stocks to extreme valuation multiples, while companies and insiders quietly—or sometimes not so quietly—sell their shares.

Further, similar to how dot-com valuations were justified by “eyeballs” rather than actual profits, investors are coming up with creative ways to discount these pricey stocks. In one egregious example, the price-earnings (P/E) ratio for the exchange-traded fund (IBB) that tracks the Nasdaq Biotech Index has been recalculated to show a far lower ratio than actually exists. How much lower? As of the end of March, the index P/E was calculated at an already steep 40.9. However, according to the fund factsheet, “negative earnings are excluded, extraordinary items are excluded, and P/E ratios over 60 are set to 60.” An enterprising blogger dug into the index and discovered that as of early May, only 25 of the 122 companies in the index had

a P/E multiple under 60 (and above 0), with 86 (70% of the total) posting losses. With these companies included, the index P/E jumps to an eye-watering 82.5.<sup>2</sup>

Such thinking has also spilled over into broader valuation measures. Most notably, the Shiller, or cyclically adjusted, P/E (CAPE)—which seeks to smooth out the ups and downs of

<sup>2</sup> “What Is the PE of the iShares Biotech ETF? It Depends on Whether You Read the Fine Print,” Zero Hedge, May 8, 2014.

the business cycle by averaging ten years of inflation-adjusted profits—has come under fire for “underweighting” recent strong profits. Yet analysts failed to raise a similar furor in 2009, when the Shiller (and our composite normalized metric<sup>3</sup>) showed attractive valuations even as the post-crisis collapse in profits drove the trailing 12-month multiple higher (Figure 1).

<sup>3</sup> The composite normalized P/E ratio combines three normalized earnings metrics—ten-year real earnings (the Shiller P/E), trend-line earnings, and return on equity-adjusted earnings.

**Figure 1. Various Price-Earnings Ratios for the MSCI US Index**  
December 31, 1989 – June 30, 2014



The increasing chatter around the “low” levels of forward P/Es, meanwhile, has little merit—the current forward P/E (16.0) is actually *higher* than it was at the 2007 peak.<sup>4</sup> And while many observers point out that broad market multiples are lower than at the 2000 peak ... is this really the right standard? Recognizing that markets can run further, it should be clear valuations can be excessive without returning to those levels. Our current return-to-normal real return estimates for US and global equities, for example—which estimate ten-year returns based on valuations

<sup>4</sup> It is also worth noting that the very concept of forward P/Es is a bit silly given analysts’ well-documented tendency to be overly optimistic.

reverting to long-term means among other factors<sup>5</sup>—are a sobering 1% and 3%, respectively (Figure 2).

Further, while cap-weighted index multiples are below their 2000 peaks, the median price-to-sales multiple of the S&P 500—which effectively adjusts for current record-high profit margins as well as the distortions caused by cap weighting—is at its highest level since our data begin in 1979 (Figure 3).

<sup>5</sup> Our valuation-based scenario return projection models assume mild inflation, moderate real earnings growth, and low corporate default rates, as well as a return to “fair value” for equity multiples, government bond yields, and credit spreads. Values for these assumptions are largely based on historical averages.

**Figure 2. Real Returns in Our Valuation-Based Return-to-Normal Scenario**  
As of June 30, 2014

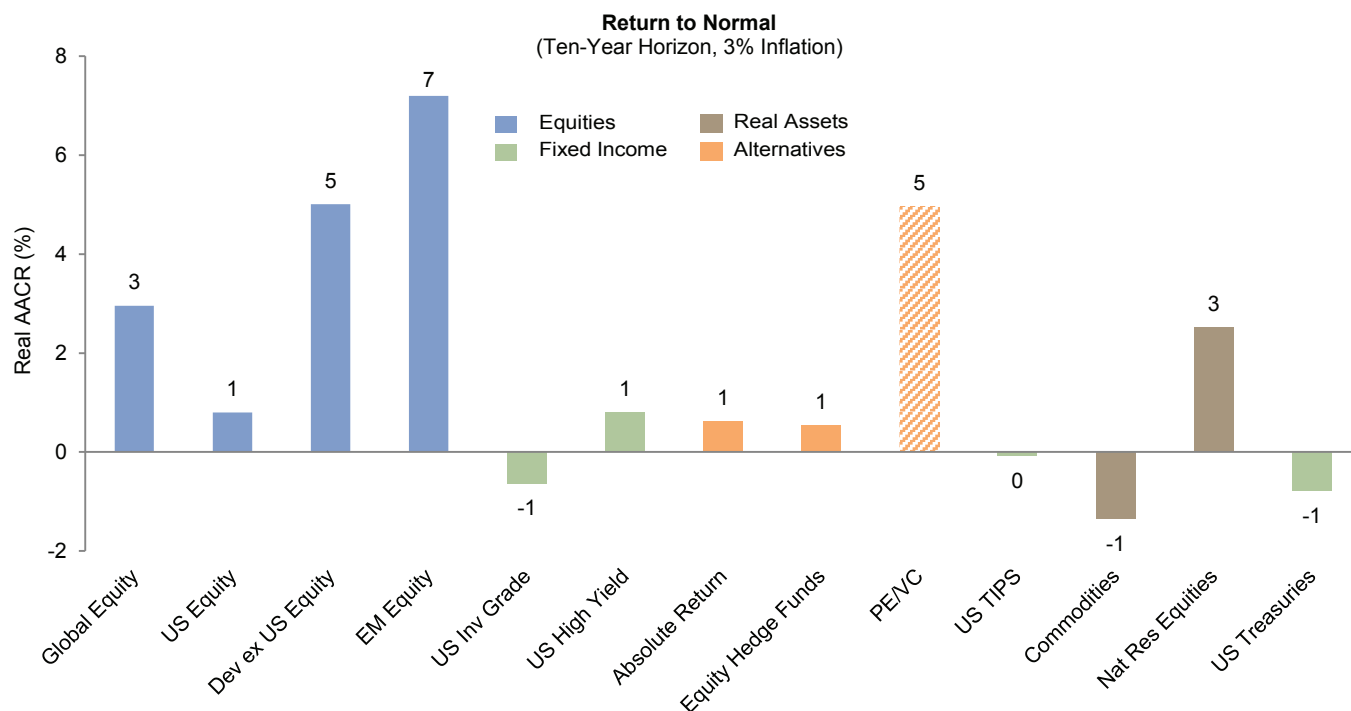
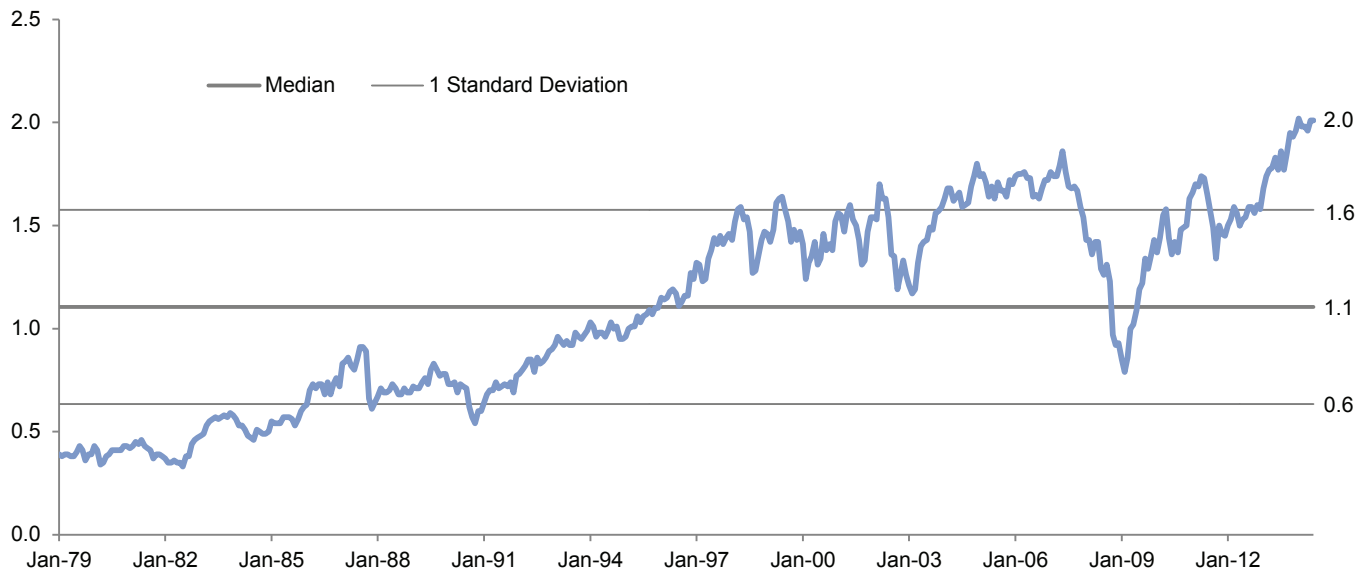


Figure 3. S&P 500 Median Price/Sales Ratio  
January 31, 1979 – June 30, 2014



## Gimme Credit

The most obvious parallels to 2007 are occurring in US credit markets, where high-yield, collateralized loan obligation, and covenant-lite issuance have soared (Figure 4), while yields have plunged (Figure 5). That said, the current structures seem less frightening than the CDO-squared craziness of 2007, not to mention AAA-rated mortgage-backed securities (MBS) where defaults began almost as soon as the securities were issued.

The surge in issuance has also made defaults *less* likely for the next two or three years, as there are few maturities until at least 2016. And so long as the easy money environment persists, there is little reason to believe those maturities will not also be rolled forward. The downside, of

course, is that companies that would otherwise go bust or be forced to restructure are able to continue as going concerns, eerily reminiscent of Japanese “zombie corporations” that have helped short-circuit efforts to redeploy capital to more productive uses.

Non-US credit markets are not displaying the same level of “enthusiasm” with regard to issuance, but yields have plunged across the globe in sovereign and corporate markets. European corporates, for example, yield 1.5%, while Spanish and Italian ten-year sovereigns yield under 3%, and French ten-years, 1.7%. Greek ten-year sovereigns, meanwhile, yield 6%, a mere 18 months removed from the country’s latest bailout despite few substantive economic reforms.

Figure 4. High-Yield and CLO Issuance and Covenant Light Loan Issuance as a Percent of Leveraged Loan Issuance 1985–2014

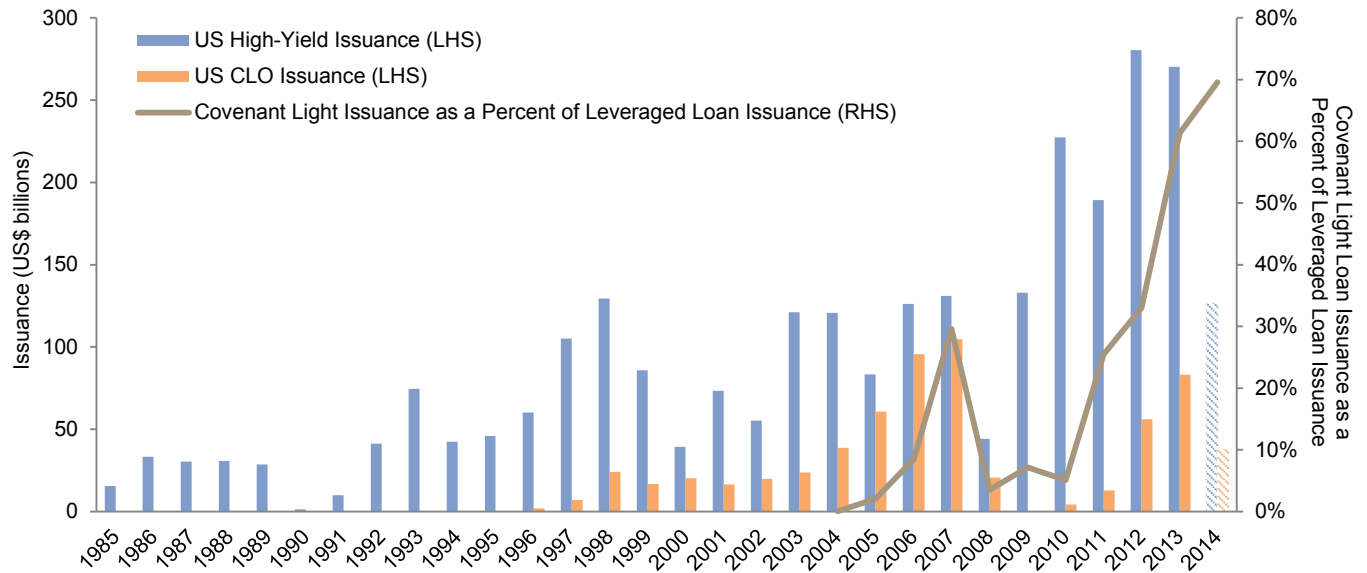
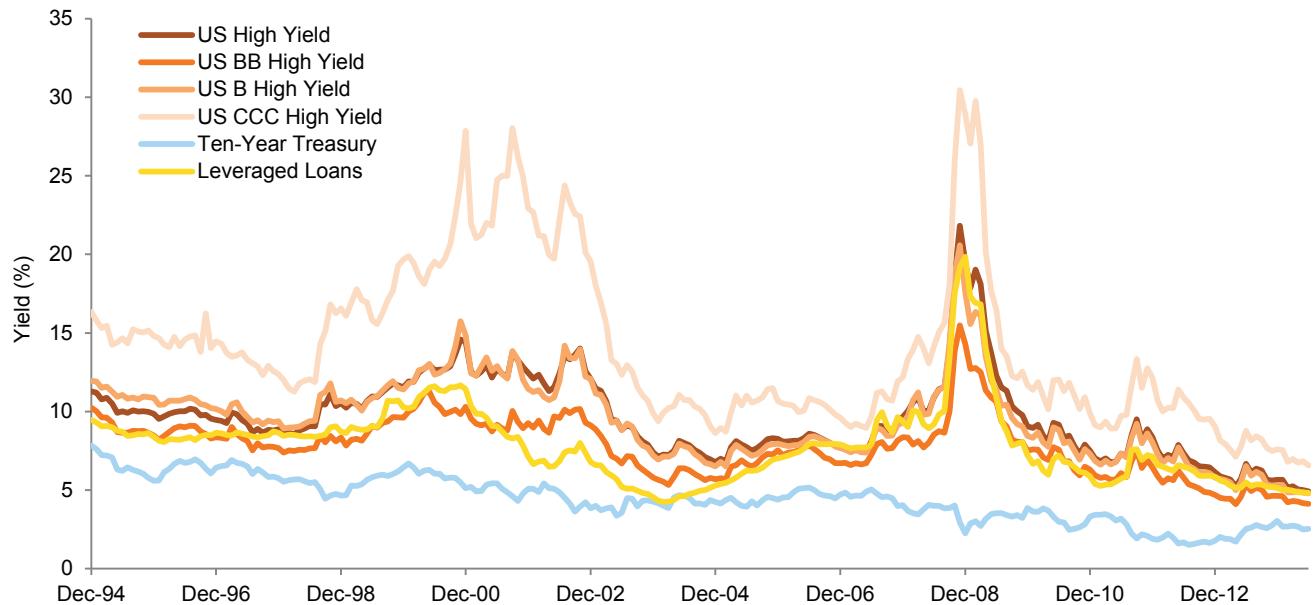


Figure 5. Yield Comparison: US High-Yield Indexes, Ten-Year Treasury, and Leveraged Loans December 31, 1994 – June 30, 2014



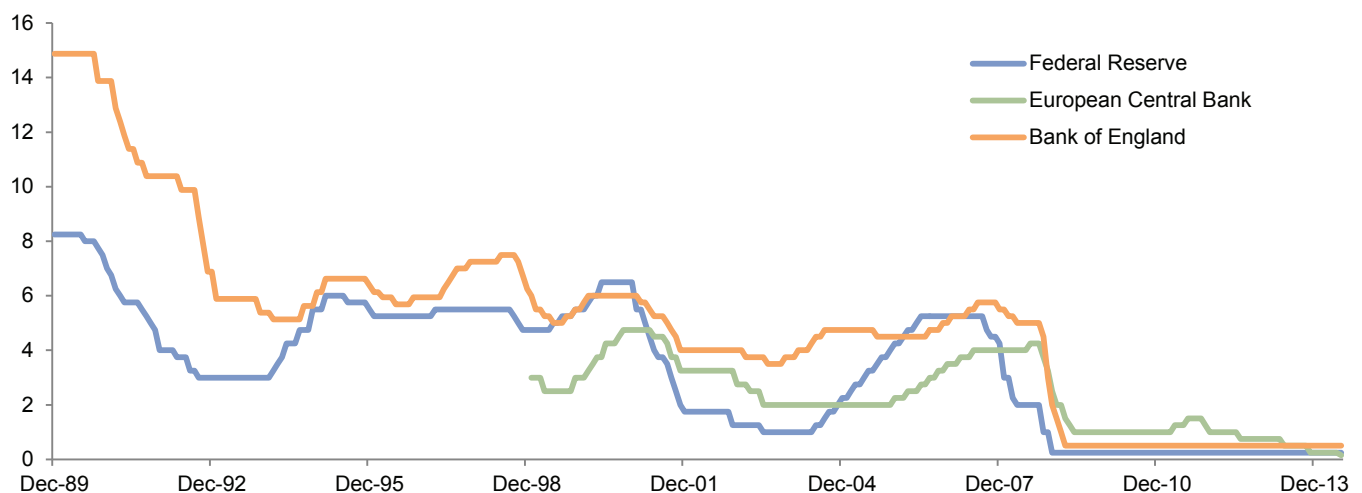
## Interest Rates

Perhaps one of the least-discussed differences between today and 2007 is the level of policy rates. In contrast to today—when most major central banks’ policy rates are zero and expected to remain there for the foreseeable future—in 2006 central banks were hiking rates, and as late as September 2007 (i.e., just before the market peak) the Federal Reserve and Bank of England had rates above 5%, and the European Central Bank at 4% (Figure 6). While central banks cut rates aggressively in 2008—the Fed, for example, slashed the funds rate from 4.25% at the beginning of the year to zero in December—the underlying economic deterioration began with rates at much higher levels.

It is difficult to overstate the importance of low rates to the current economic environment. In the United States, for example, any increase in

mortgage rates above 4.5% seems to throw a serious crimp into mortgage originations—also true for refinancings, although many people able to do so have already refinanced—all the more remarkable considering the average rate in 2008 was 6%. (The most recent data have shown a sharp drop in applications with rates in the 4.3% range.) The longer-term ramifications of higher rates impacting mobility—i.e., current homeowners unable to move—should also not be ignored. Auto loans, meanwhile, have continued to increase in both size and length, with the average car loan now just shy of \$30,000 and more than five years in length, with 20% of new loans longer than six years. In Europe, meanwhile, rock bottom sovereign yields—particularly for peripheral countries such as Italy, Spain, and even Greece—have effectively tabled worries of a debt crisis despite only modest fundamental improvement in the underlying economies.

**Figure 6. Global Policy Rates**  
December 31, 1989 – June 30, 2014 • Percent (%)





By contrast, productivity-enhancing activities such as capital expenditures remain largely moribund, perhaps due in part to the “zombie-company” effect mentioned above. Bluntly put, global central bank policies are encouraging/forcing investors and corporations to eat their seed corn. The current stance of the Fed and other central banks is so at odds with historical norms that we find it difficult to analyze. So far as we are aware, there has never been another period in human history during which all currencies were fiat, and the majority of central banks (virtually all major central banks) were committed not only to sub-1% interest rates, but also to quantitative easing and a dramatically asymmetric policy stance, in effect actively supporting higher prices for risk assets. The stated goal of central banks in recent years has been to drive risk asset prices higher by eliminating “left-tail” risk, which begs the question of what happens if/when risk

assets begin to fall; what if central bankers’ gas tanks are running on empty?

Another result of this policy has been collapsing levels of volatility not only in equity markets, but across asset classes (Figures 7 and 8). Herein lies yet another contrast with 2007. The 2007 bubble was a period when all boats rose simultaneously as the economy boomed, with predictable consequences for investor confidence. Today, on the other hand, markets continue to march higher even as the global economy barely limps along. One explanation is that the current low volatility is less indicative of broad-based optimism among investors than of a rational response to central bank policies and stated intentions. In other words, rather than signaling dangerous levels of investor enthusiasm, muted volatility reflects investor faith in central banks, and can likely persist so long as that faith abides.

**Figure 7. CBOE Volatility Index**  
December 31, 2006 – June 30, 2014

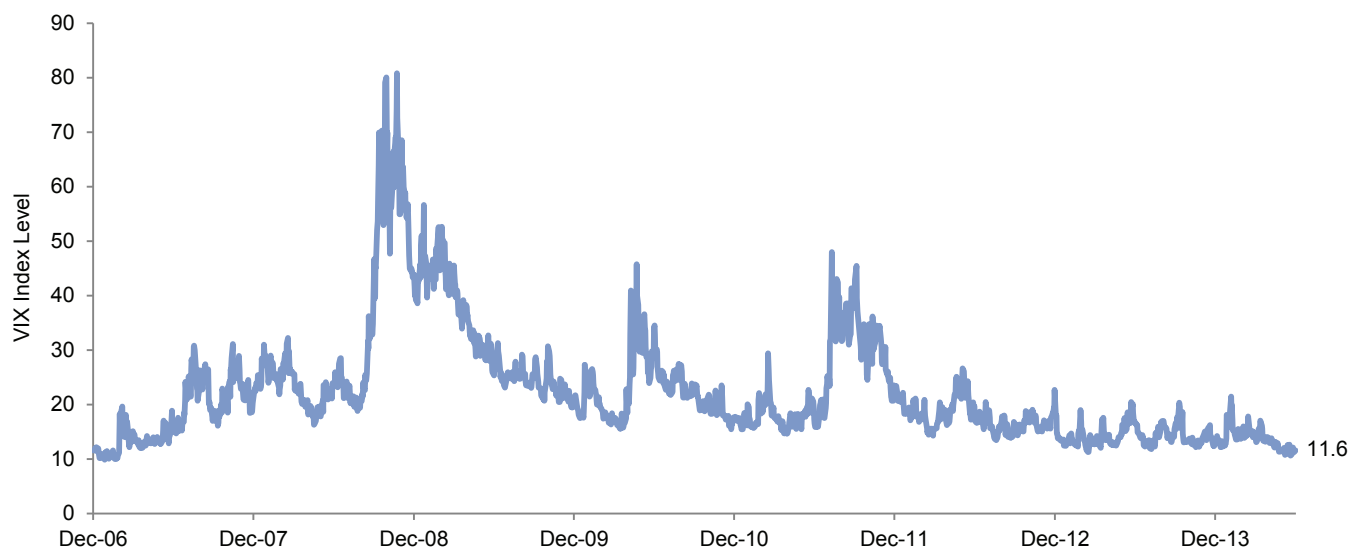
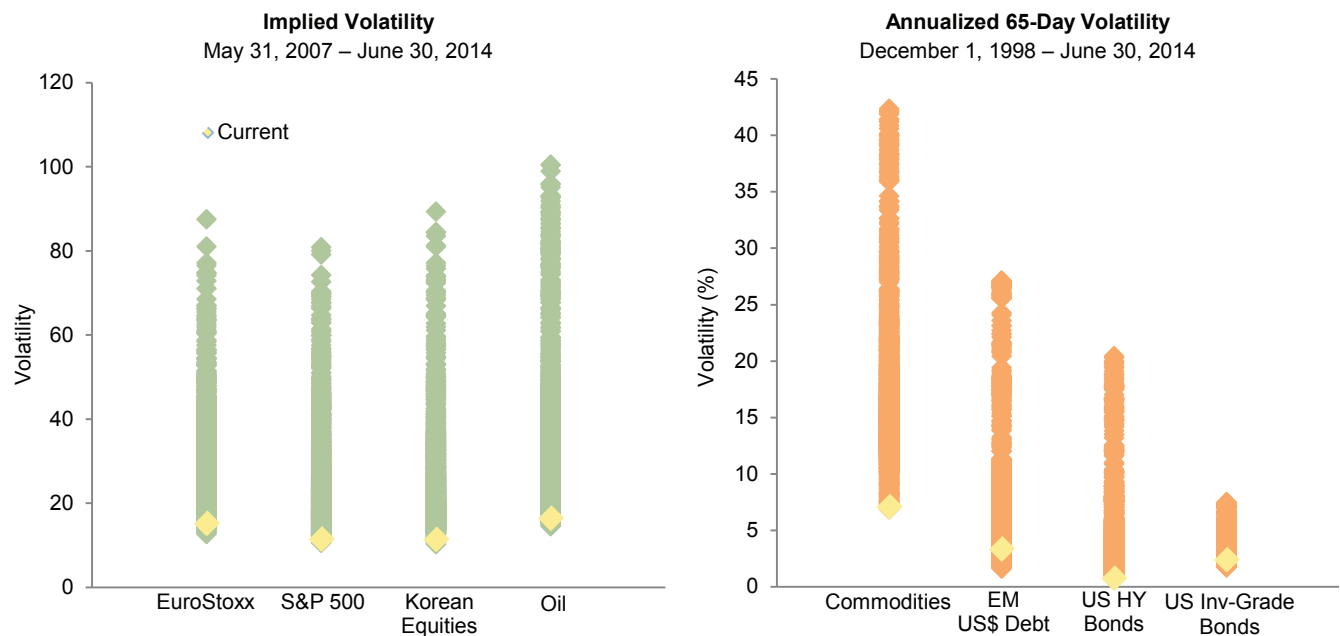




Figure 8. Implied and Realized Volatility of Various Markets



## Balloon, Seeks Pin

Clearly the current environment has much in common with the 1999 and 2007 periods. A cynical observer might posit that it is worse than both, given that it incorporates both the kamikaze craziness of 1999 and the broad overvaluation and credit excesses of 2007. However, the question of what will cause things to unravel is hard to answer at this point. Short of an exogenous geopolitical event (more on which below) or some sort of “emperor’s new clothes” moment for central banks (e.g., Janet Yellen caught admitting they’re making it up as they go along), we are hard pressed to come up with a specific catalyst.

To be clear—we and many others said similar things in 2007, and we all know how that envi-

ronment turned out. But the difference between then and now was that we had a great deal of faith that the real estate bubble would come unglued at some point, even if we couldn’t say exactly when or how. As it happened, people began to walk away from homes they clearly could not afford, causing rippling defaults in MBS structures. Similarly, in 1999–2000, dot-coms began to run out of money (and/or growth expectations were revealed as delusional), undermining investors’ hyper-growth expectations.

Further, while both periods were well into the era of central bank puts, there was still a perceived modicum of responsibility among policymakers—we well remember discussions in 2007–08 about which firms would or would not

be “rescued,” whereas today the suggestion that anyone above a certain size would be allowed to fail verges on the comical. The “lesson” learned by policymakers—and hence investors—is that it was a mistake to allow Lehman to fail, and they won’t let it happen again.

Also, while 1999 and 2007 saw debt expansion at the individual and corporate level, the growth in debt since 2007 has (a) been concentrated on public, rather than private or corporate balance sheets (Figure 9), and (b) to the extent it has been on private balance sheets, benefited from low rates and extended maturities (Figure 10), both of which have effectively taken the risk of cascading defaults off the table for the next few years. Thus, from a financial and economic standpoint, we see a much lower risk of looming crisis than in the 1999 and 2007 episodes, although we fully expect a similar, and likely even more painful, endgame. Put simply, the current environment is potentially more dangerous *and* more durable than the prior two “periods of excess.” In this environment the possibility of a continued risk asset “melt-up” remains, as investors that have stayed cautious eventually walk out the risk curve. Investors may assume central banks stand ready to step in if markets falter, *and that may indeed be the banks’ intent*. The difference between intent and result, however, can be catastrophic.

## Where Could We Be Wrong?

Our biggest worry is that we are too complacent about short-term drawdown risks. All the ingredients are certainly in place, with stretched valuations, increasingly bullish investors, a collective belief system vulnerable to the scales falling from investors’ collective eyes, and even the elevated risk of a geopolitical exogenous event. Perhaps the relevant comparison is not 2007 or 1999, but rather 1987 ... or 1929. Both periods saw risk assets crash despite (or perhaps because of) conditions largely similar to today, most notably the iron-clad belief that *such an event could never happen*. Further, neither crash has ever been suitably “explained”; the most likely explanation for both is that markets, being complex adaptive systems, were in a so-called critical state, and the responsible event was not particularly noteworthy but simply the pebble that caused the rockslide.<sup>6</sup>

We could also, of course, be too cautious (and not for the first time). There is a growing meme that central banks have “nailed it,” threading the needle to not only rescue the global economy from a depression in 2008, but “buying time” for economies and markets to return to a sustainable growth path. While we find this argument implausible—if correct, it suggests a problem created by too much debt can be solved with more debt, and it also recalls the widespread belief in 2002–03 that a housing bubble would perform a similar function—we cannot

<sup>6</sup> Those interested in this topic are encouraged to read Mark Buchanan’s 2006 book *Ubiquity: Why Catastrophes Happen*.

Figure 9. Debt Levels Around the Globe

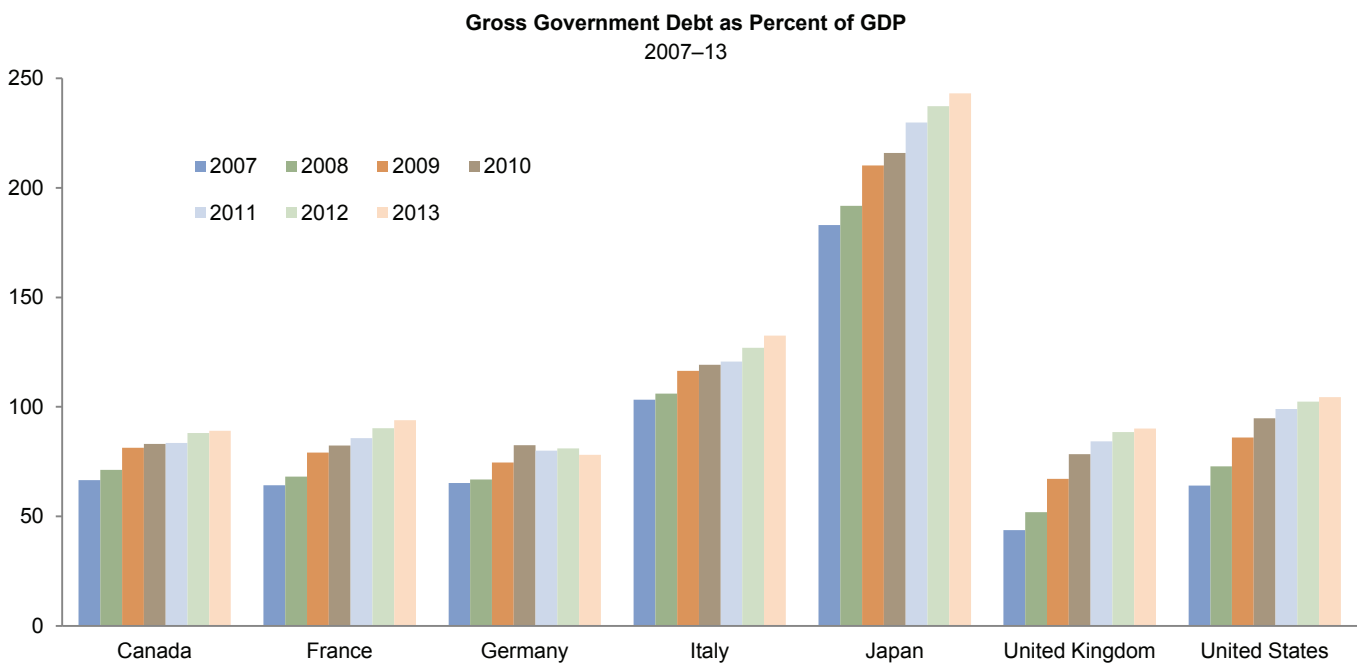
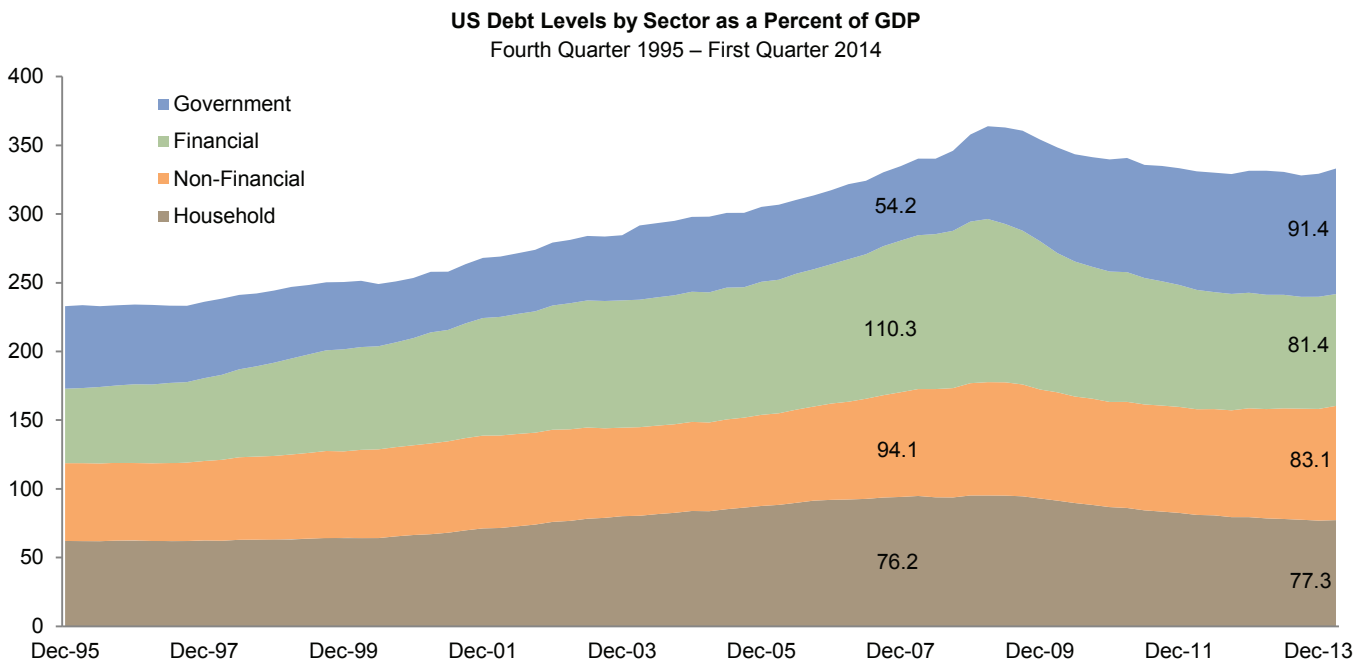
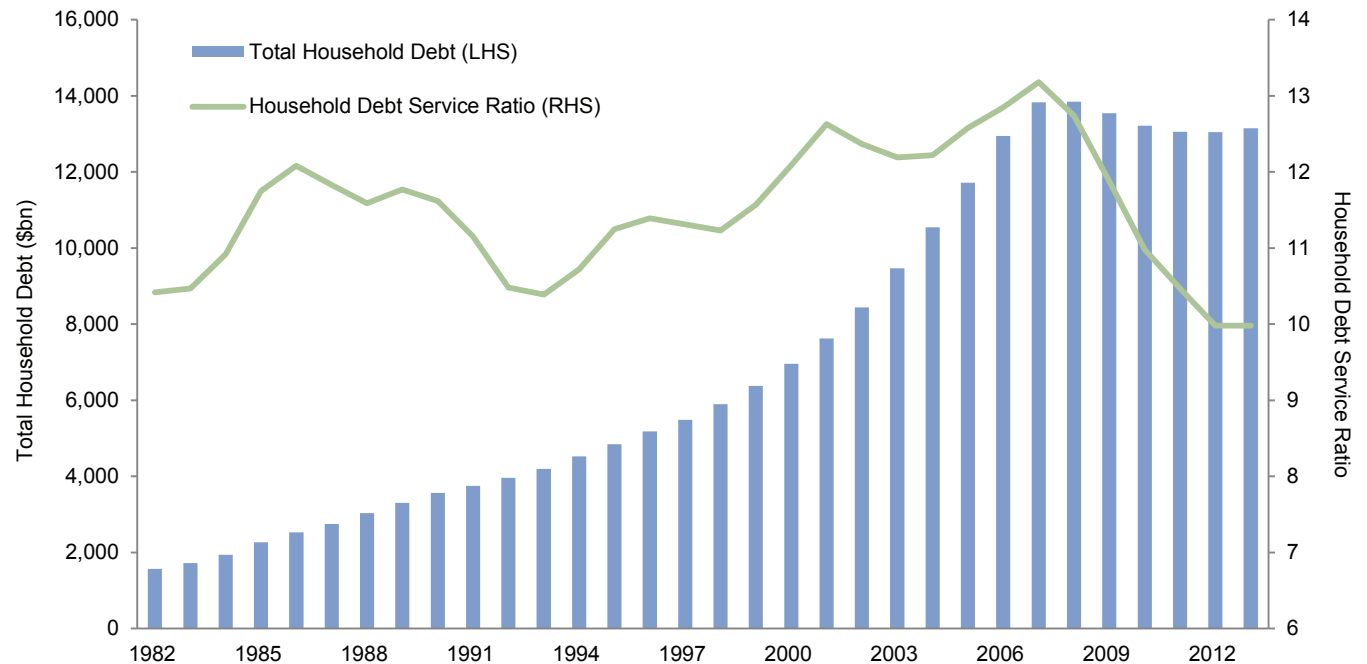


Figure 10. Total Household Debt and Debt Service Cost Ratio  
1982–2013



rule it out. As mentioned, current central bank policy is such a historical anomaly that it makes historical and fundamentals-based analyses of little use.<sup>7</sup> In this worldview, staying invested in risk assets is logical, as is using call options to participate further on the upside.

One key difference between the current environment and the prior two episodes is the growing willingness of “bad actors” to challenge what is increasingly seen as a weak and disengaged

<sup>7</sup> Reports that Ben Bernanke has said he does not expect policy rates to return to 4% in his lifetime, as well as that the Fed’s balance sheet was too small before the crisis, certainly strengthen our belief that central bankers are making it up as they go along.

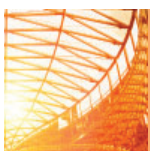
United States. The consensus view on current hot spots such as Iraq, Ukraine, and Vietnam is that things will “work themselves out”—which has been the general experience of the past few decades—but a less benign outcome is clearly possible. Further, there is no guarantee markets would “anticipate” such an outcome. To use an admittedly extreme example, global bond markets (including the United States) were remarkably complacent right up until hostilities broke out in 1914 ... at which point they *closed* for four months.

## Conclusion

Comparisons of the current market environment with 2007 or 1999 are not specious, but neither are they convincing. Clearly there are similarities between the periods, but the next crisis will, like Tolstoy's unhappy family, be unique. The most frustrating aspect of trying to make asset allocation decisions in this type of environment is that one is forced to make guesses not only about what non-economic actors (read: central banks) will do, but *how other investors will react to them*. Thus, our strong belief that central banks will continue to do “whatever it takes,” for however long it takes, is useful only to the degree it gives us some insight into how markets will react. Unfortunately, the answer to the latter is ... not much. This again begs the question—if risk assets begin to fall with policy rates this low, what can central banks do other than purchase risk assets directly?

Generally, when everyone is on the same side of the boat—and rarely if ever has consensus been as strong as the current belief in central bank omnipotence—the smart trade is to take the opposite side. And maybe we are being too clever by falling for the four most dangerous words in finance.<sup>8</sup> But we would be remiss to not acknowledge the possibility (we will not go so far as to call it a probability) that markets continue to levitate not just for the next quarter or two, but for the next year ... or three. ■

<sup>8</sup> This time is different.



## Contributors

**Eric Winig, Managing Director**

Urosh Milojkovic, Investment Associate

## Exhibit Notes

### Various Price-Earnings Ratios for the MSCI US Index

Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided “as is” without any express or implied warranties.

Note: The composite normalized P/E is calculated by dividing the inflation-adjusted index price by the simple average of three normalized earnings metrics: ten-year average real earnings (i.e., Shiller earnings), trend-line earnings (the level of earnings based on a linear regression of real earnings growth), and ROE-adjusted earnings (adjusts current earnings for the ratio of current ROE to long-term average ROE).

### Real Returns in Our Valuation-Based Return-to-Normal Scenario

Sources: Barclays, Cambridge Associates LLC, Global Financial Data, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided “as is” without any express or implied warranties.

Notes: All projections are in local currency terms. Projected global equity returns are based on a weighted average of the projections for US, developed ex US, and EM equities using June 30 weights for the MSCI All Country World Index. Projected hedge fund returns are intended to reflect market-wide performance as defined by particular HFRI indexes, and not the performance or potential for value-added of a specific program. The return projection for private equity/venture capital is shaded to reflect that it is not calculated using the same “bottom up” methodology as the other asset classes. The PE/VC return is calculated as the projected global equity return plus 2%.

### S&P 500 Median Price/Sales Ratio

Sources: Ned Davis Research, Inc. and Standard & Poor's.

### High-Yield and CLO Issuance and Covenant Light Loan Issuance as a Percent of Leveraged Loan Issuance

Sources: BofA Merrill Lynch and Wells Fargo Securities, LLC.

Notes: CLO issuance data for 2014 is through May 6. High-yield and covenant light data for 2014 are through June 30.

### Yield Comparison: US High-Yield Indexes, Ten-Year Treasury, and Leveraged Loans

Sources: Barclays, Credit Suisse, and Thomson Reuters Datastream.

Note: Yields for leveraged loans are represented by three-month Libor plus the three-year discount margin.

### Global Policy Rates

Source: Thomson Reuters Datastream.

### CBOE Volatility Index

Sources: Chicago Board Options Exchange and Thomson Reuters Datastream.

### Implied and Realized Volatility of Various Markets

Sources: Barclays, Bloomberg L.P., Chicago Board Options Exchange, J.P. Morgan Securities, Inc., and Thomson Reuters Datastream.

Note: EuroStoxx is represented by the VSTOXX Volatility Index, S&P 500 by the CBOE VIX Index, Korean equities by the VKOSPI Volatility Index, oil by the CBOE Crude Oil Volatility Index, commodities by the Dow Jones-UBS Total Return Commodity Index, emerging markets US\$ debt by the JP Morgan Global Diversified Index, US high-yield bonds by the Barclays US Corporate High Yield Index, and US investment-grade bonds by the Barclays US Aggregate Index.

### Debt Levels Around the Globe

Sources: International Monetary Fund and Thomson Reuters Datastream.

### Total Household Debt and Debt Service Cost Ratio

Source: Federal Reserve.



Copyright © 2014 by Cambridge Associates LLC. All rights reserved. Confidential.

This report may not be displayed, reproduced, distributed, transmitted, or used to create derivative works in any form, in whole or in portion, by any means, without written permission from Cambridge Associates LLC ("CA"). Copying of this publication is a violation of US and global copyright laws (e.g., 17 U.S.C. 101 et seq.). Violators of this copyright may be subject to liability for substantial monetary damages. The information and material published in this report are confidential and non-transferable. Therefore, recipients may not disclose any information or material derived from this report to third parties, or use information or material from this report, without prior written authorization. This report is provided for informational purposes only. It is not intended to constitute an offer of securities of any of the issuers that may be described in the report. No part of this report is intended as a recommendation of any firm or any security, unless expressly stated otherwise. Nothing contained in this report should be construed as the provision of tax or legal advice. Past performance is not indicative of future performance. Any information or opinions provided in this report are as of the date of the report and CA is under no obligation to update the information or communicate that any updates have been made. Information contained herein may have been provided by third parties, including investment firms providing information on returns and assets under management, and may not have been independently verified. CA can neither assure nor accept responsibility for accuracy, but substantial legal liability may apply to misrepresentations of results made by a manager that are delivered to CA electronically, by wire, or through the mail. Managers may report returns to CA gross (before the deduction of management fees), net (after the deduction of management fees), or both.

Cambridge Associates, LLC is a Massachusetts limited liability company with offices in Arlington, VA; Boston, MA; Dallas, TX; and Menlo Park, CA. Cambridge Associates Fiduciary Trust, LLC is a New Hampshire limited liability company chartered to serve as a non-depository trust company, and is a wholly-owned subsidiary of Cambridge Associates, LLC. Cambridge Associates Limited is registered as a limited company in England and Wales No. 06135829 and is authorised and regulated by the Financial Conduct Authority in the conduct of Investment Business. Cambridge Associates Limited, LLC is a Massachusetts limited liability company with a branch office in Sydney, Australia (ARBN 109 366 654). Cambridge Associates Asia Pte Ltd is a Singapore corporation (Registration No. 200101063G). Cambridge Associates Investment Consultancy (Beijing) Ltd is a wholly owned subsidiary of Cambridge Associates, LLC and is registered with the Beijing Administration for Industry and Commerce (Registration No. 110000450174972).

