portfolio construction forum

The investment implications of Fed tightening

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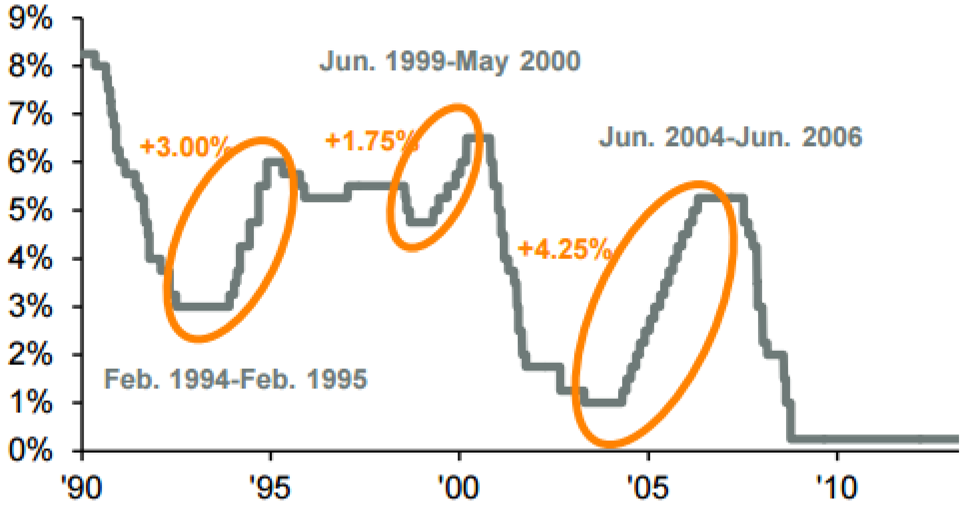
On 15 December 2008, the Federal Reserve (Fed) cut the federal funds rate to a record low range of 0% to 0.25%. This northern hemisphere summer, six and a half years later, it is likely to raise it. While this move is, by many historical benchmarks, long overdue, it raises a host of questions for investors. Most important is the potential impact of this action and subsequent further tightening moves on the US economy. However, higher short-term rates also directly affect fixed income markets and could indirectly impact the stock market, the value of the dollar and capital flows to emerging markets. This article briefly addresses all of these issues and considers their investment implications.

A POTENTIAL PATH FOR US INTEREST RATES

Any analysis of the impact of Fed tightening should start with some assumptions about how the Fed will conduct the tightening. It should be noted that Fed officials have repeatedly emphasised that its policies will be data dependent and so, lacking perfect foresight of future data, there is little chance the Fed will actually stick to the precise path we are assuming.

With this caveat, the first question is when the Fed will start to tighten. Last December, the Fed inserted language into its statement suggesting that it would be "patient" in raising short-term interest rates and Janet Yellen made it clear in that "patient" meant that they wouldn't raise rates for at least a couple of meetings, although its removal would not automatically imply an imminent rate hike. At its 17-18 March meeting, the FOMC removed the word "patient" but, true to their earlier commitment, confirmed that a rate hike at its April meeting was very unlikely. However, Janet Yellen noted that a first rate hike could be implemented in June or later. Exhibit 1 shows previous tightening cycles in the fed funds rate since 1990.

Exhibit 1: The Fed has historically raised rates in a steady pattern
Fed funds target rate, 1990–present



Sources: Federal Reserve, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

Despite this change in language, the Fed now seems even more cautious about raising interest rates than a few months ago. One reason for this change are revised forecasts, where the participating members of the FOMC have reduced their projections of economic growth and the long-run optimal unemployment rate, suggesting that the economy has more room to absorb slack than previously thought. Perhaps even more important in the Fed's thinking, although not fully acknowledged publicly, is concern about the potential drag on the US economy from the recent sharp rise in the dollar and uncertainty about how much further the dollar might climb. Regardless of their motivation, FOMC participants marked down their forecasts for the federal funds rate, with participants now expecting ranges for the end of 2015, 2016 and 2017 of 0.50% to 0.75%, 1.75% to 2.00% and 3.00% to 3.25% respectively, a trajectory running 0.50% to 0.625% below their previous forecasts.

Currently, the federal funds rate is in a range of 0% to 0.25%. In recent tightening cycles, the Fed has simply raised the target federal funds rate, usually at a regularly scheduled FOMC meeting. However, in this cycle, it will instead target a range for the federal funds rate. Consequently, a first move could be an increase in the federal funds rate to a range of 0.25% to 0.50% starting in June, July or September, with the behavior of the dollar and wage growth being the most important issues in determining the exact date.

Yellen has also emphasised that the Fed will not necessarily raise rates in a steady pattern and could well raise rates more slowly than in the past. The FOMC has eight meetings per year and the Fed has typically raised rates by 0.25% per meeting in previous tightening cycles. If the Fed started in June and raised rates by 0.25% at each subsequent meeting until it reached its estimate of the long-term equilibrium rate, (currently, according to FOMC forecasts, at 3.75%), the fed funds rate might be raised four more times in 2015, eight times in 2016 and once more in 2017, taking the rate to a range of 3.50% to 3.75% by the end of January 2017.

The FOMC currently expects a slower pattern of tightening, as is evident in its March 2015 forecasts. However, throughout the next two years, the Fed may well confront the same dilemma it has faced throughout most of this expansion, namely a faster-than-expected decline in the unemployment rate. The US economy is exhibiting neither the productivity growth nor the labor force growth to absorb even moderate GDP growth without pushing unemployment to levels normally consistent with accelerating wage inflation.

Over the past decade, output per employee has risen by 1.1% per year while annual labor force growth has been just 0.5%. If this were to persist over the next two years, even a modest 2.5% annual growth in real GDP would push unemployment to 5.0% by the end of this year and 4.1% by the end of next. This, in turn, has the potential to cause faster wage growth. While higher wages are generally welcome, monetary policy works with a lag and having an overly easy monetary policy while wages are already accelerating runs the risk of a more general inflation problem. Consequently, faced with a labor market tightening faster than it had expected, it is unlikely the Fed will be able to tighten more slowly than normal.

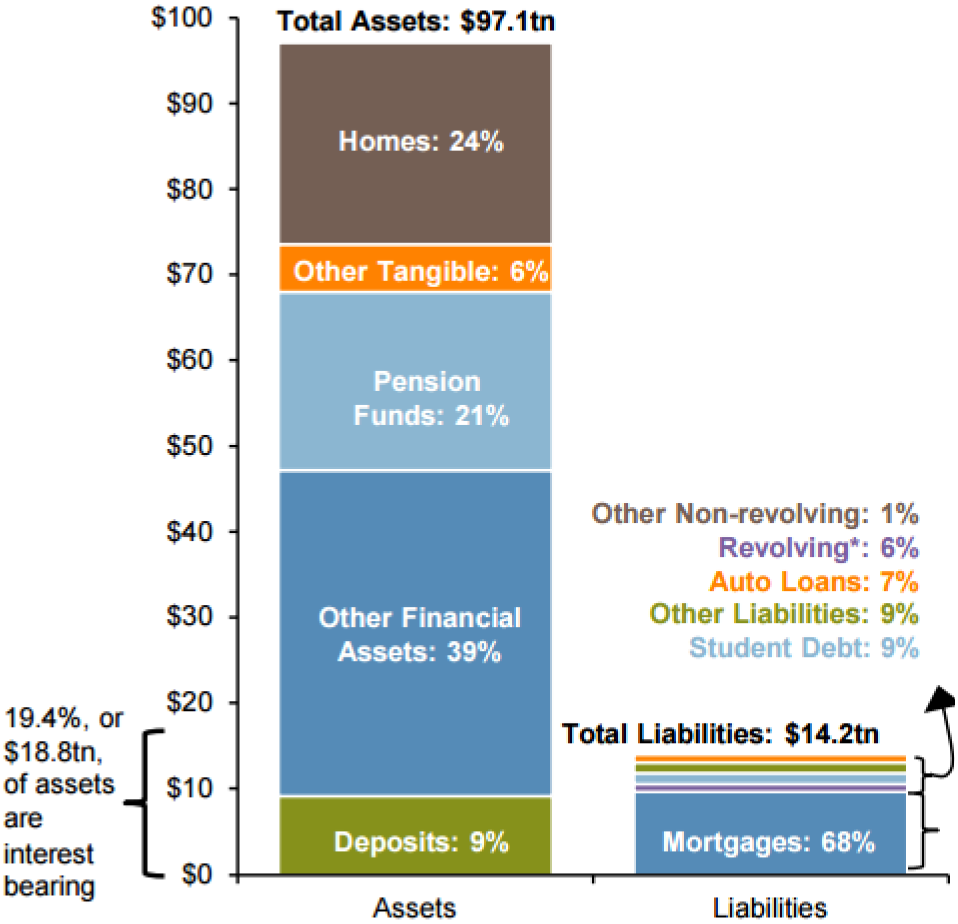
Because of this, a reasonable middle-ground assumption might be that, having started in July, the Fed skips two opportunities to tighten in the second half of 2015, two in the course of 2016 and none in the first half of 2017. If this transpires, the fed funds rate would end 2015 in a range of 0.50% to 0.75%, end 2016 in a range of 2.00% to 2.25%, and hit a range of 3.50% to 3.75% in the second half of 2017.

THE ECONOMIC IMPACT OF MONETARY TIGHTENING

Before investors worry too much about how Fed tightening could harm the economy, it is worth reflecting on how little super-easy money has actually done to help it. The most obvious circumstantial evidence for this is the fact that the 2.3% growth rate seen in the economy since the trough of the last recession makes this the weakest recovery seen in modern history, which is especially jarring given the depth of the recession from which we are recovering.

First, very low rates have actually squeezed consumer discretionary income since, as illustrated in Exhibit 2, consumers have almost twice as many interest-bearing assets as they have interest-bearing liabilities. Consequently, if the Fed now begins to raise interest rates, it will boost interest income more than interest expense, particularly if, short-term interest rates rise faster than long-term rates[1]. This is because consumer interest-bearing assets tend to be of shorter duration than their liabilities. Also, since more than half of household liabilities are in the form of fixed-rate mortgages, the increase in interest expense would be much less than the increase in interest income.

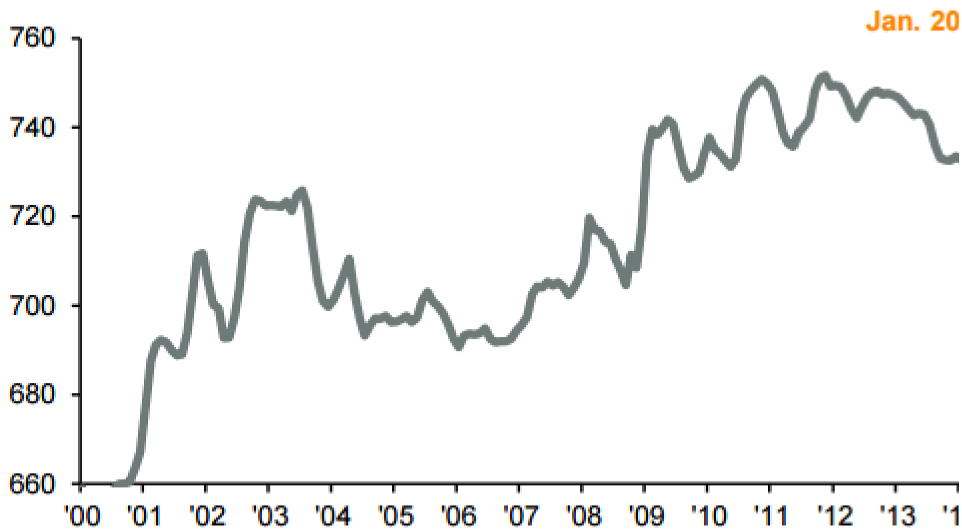
Exhibit 2: Consumers have far more "variable rate" assets than "variable rate" debt
4Q14, trillions of dollars outstanding, not seasonally adjusted



Sources: Federal Reserve, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. *Revolving includes credit cards. **Fixed Rate Mortgage share of Mortgages is as of 2011.

Second, a policy of depressing long-term interest rates through bond purchases, while making mortgages more affordable, has contributed to making them less available. Exhibit 3 shows the average FICO score on approved mortgages, illustrating that banks have become more careful about their lending standards, even as household finances improved. While increased regulation is clearly part of the reason, another factor is likely the very low level of long-term mortgage rates that the Fed itself has engineered. Put simply, it makes little sense to write a 30- year fixed rate mortgage at 4%, if you expect short-term rates to rise to close to that level within a few years (as the Fed itself projects). While an initial increase in long-term mortgage rates could dampen demand, over time it could increase mortgage supply, also leading to a healthier housing recovery. It is also worth noting, as illustrated Exhibit 4, that even if mortgage rates were to rise 2% from today's levels, mortgage payments would still represent a smaller share of income than has generally been the case over the past four decades.

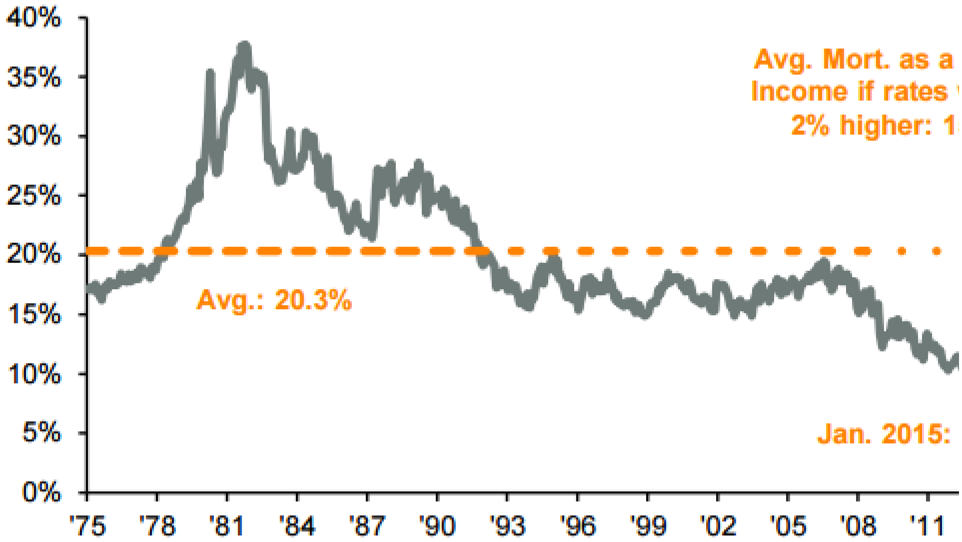
Exhibit 3: Banks remain reluctant to issue mortgages
Average FICO score on approved mortgages based onorigination date



Sources: McDash, J.P. Morgan Securitized Product Research, J.P. Morgan Asset Management. All data reflect most recently available releases. For illustrative purposes only. Data are as of 18 March 2015.

Exhibit 4: Mortgage payments absorb a much smaller share of income than they have in past decades

Average mortgage payment as a % of household income



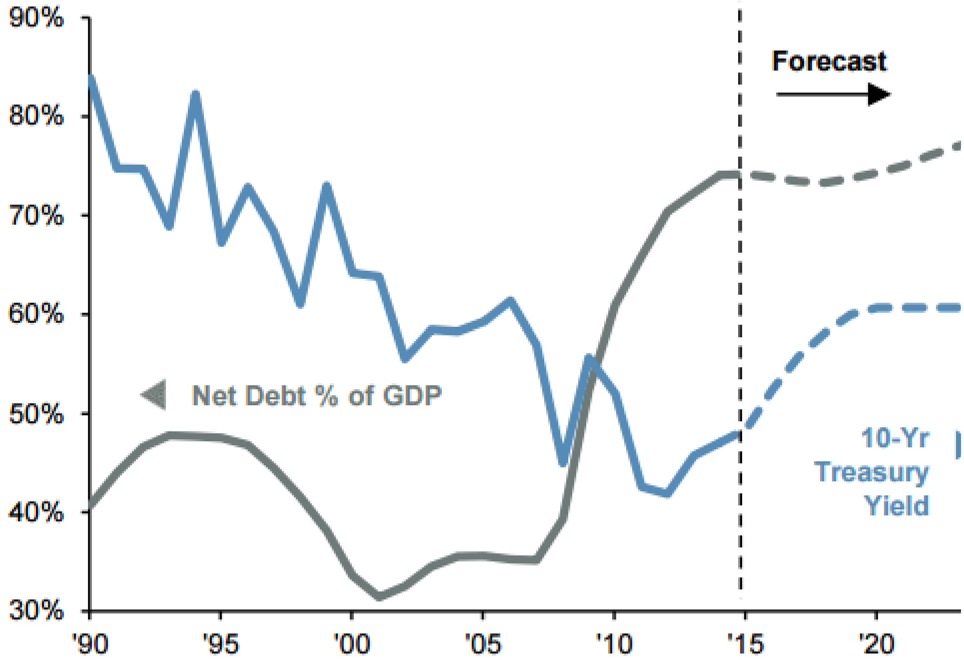
Sources: Census Bureau, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

Third, a constant assurance that interest rates will remain low for a considerable period of time may have reduced the urgency felt by both buyers and sellers to complete and finance transactions before rates go up. In addition, throughout this recovery, the psychological impact of being continually told that further emergency monetary policy actions are needed may have undermined confidence in the recovery itself. The Fed moving to monetary normalisation could help in both of these areas, thus stimulating demand.

Fourth, it is probably true that low interest rates have driven investor cash back toward the stock market and, by doing so, has helped a revival in wealth. However, higher wealth does not necessarily translate into higher spending, particularly if investors believe the income generated by that wealth in the future will be unusually low. To the extent that higher interest rates can provide savers with a greater income for a given level of principal, they may encourage some richer households to finally spend some of their stock market gains.

Fifth, some worry that rising interest rates will bankrupt the federal government. However, it is important to recognize that the federal budget deficit, which soared to 9.8% of GDP in fiscal 2009, has now retreated to a much more manageable 2.7% of GDP estimated for this fiscal year. Because of this and because of the growth in nominal GDP, the federal debt-to-GDP ratio should actually fall over the next three fiscal years (Exhibit 5). Moreover, according to the Congressional Budget Office[2], due to sharp cutbacks in the growth in discretionary spending, the debt-to-GDP ratio should remain stable into the next decade, even if, as the CBO assumes, 10-year Treasury yields rise to 4.4% by 2018.

Exhibit 5: Federal debt should not explode with higher rates
Debt % of GDP, 10-yr Treasury yield, 1990-2025, 2015 CBO Baseline, end of fiscal



Sources: : Federal Reserve, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

By far the most worrying aspect of Fed tightening for the US economy is its potential impact on the US dollar. In theory, tighter money boosts a currency as investors are drawn to currencies with higher overnight rates. A higher exchange rate should, over time, reduce demand by boosting imports and suppressing exports.

The reality is that the relationship between interest rates and currency movements is highly unstable and only tinged with economic logic. For example, the US dollar has now risen by more than 22% on a trade-weighted basis over the past year, largely in anticipation of Fed tightening in the face of easy money policies in Japan and Europe[3]. While some dollar increase might have been expected from these divergent monetary policies, a 22% move is entirely out of proportion. In fact, as shown in Exhibit 6 below, various estimates suggest that even a 10% rise in the value of the dollar has the potential to reduce US real GDP by between 1.0 and 1.5 percentage points.

Exhibit 6: A higher dollar will slow US growth
Dollar impacts on the economy

Change (%)	IMF	NY Fed
Exports	-3.7	-7.0
Imports	4.9	4.0
GDP	-1.1	-1.4

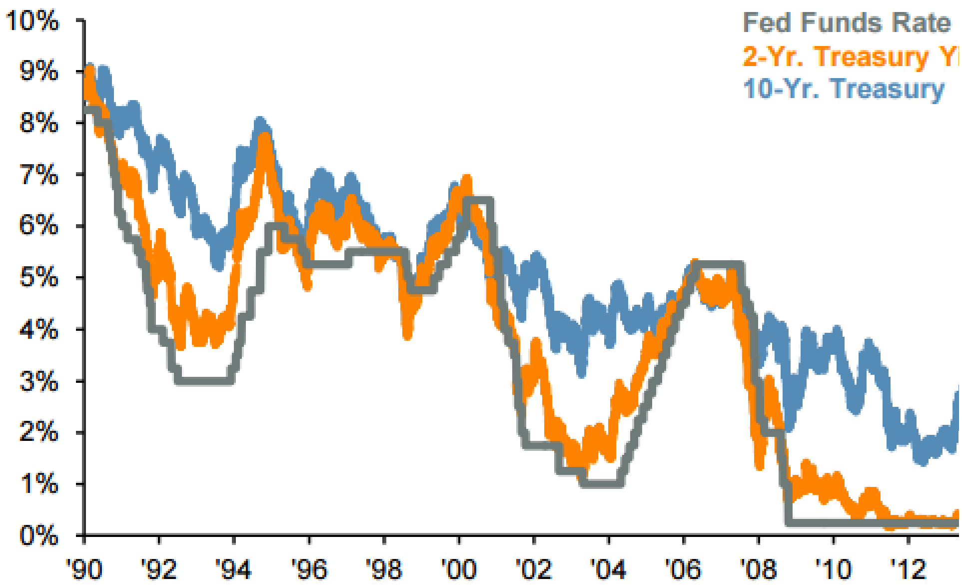
Sources: IMF World Economic Outlook, April 2007, Chapter 3, "Exchange Rates and Adjustment of External Balances,"; New York Federal Reserve, "Why a Dollar Depreciation May Not Close the US Trade Deficit," June 2007; Macro Advisors, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

Consequently, if the dollar move is added to the column of economic effects of Fed tightening, it does have an impact on the US economy and will likely widen the trade deficit and slow growth over the next two years. Overall, apart from the potential impact of Fed tightening on exchange rates, the US economy does not look that vulnerable to Fed rate hikes. But how what about financial markets?

FED TIGHTENING AND THE BOND MARKET

In theory, fixed income should be the area of financial markets most impacted by a Fed tightening cycle. In the past, as the fed funds rate rose, so did the yields on 2- and 10-year Treasuries. Indeed, over the past three tightening cycles, the 2-year Treasury yield and the federal funds rate rose almost in lockstep. Ten-year Treasuries followed the same pattern, though they neither rose nor fell to the same degree, particularly in the mid-2000s tightening cycle (Exhibit 7).

Exhibit 7: Long-term bonds have become less sensitive to fed moves
Bond safety cushions (1996-2013)



Sources: Barclays and Bloomberg, February 2013. The safety cushion represents how many basis points in yield rise would trigger a price decline that would wipe out one year's worth of yield.

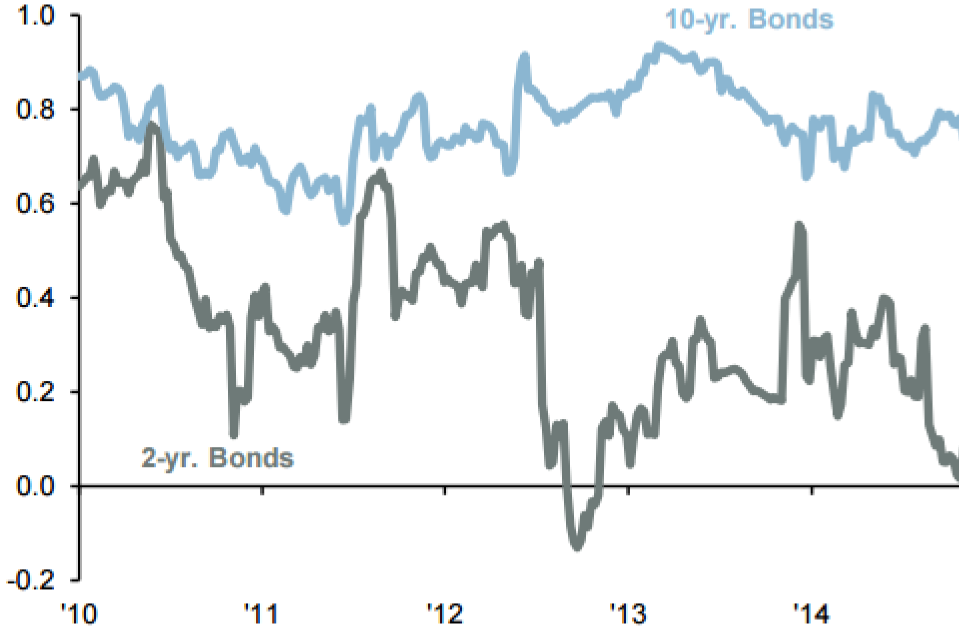
Today, longer-term yields could be anchored lower for some time - that is to say, the effects of tightening may more closely resemble the mid-2000s experience. However, it should be noted that the massive quantitative easing (QE) implemented in recent years by the world's major central banks has severely distorted fixed income markets, making history a particularly unreliable guide to what happens next.

The unpredictability of fixed income markets has been further exacerbated by a growing divergence among the central banks as the European Central Bank (ECB) launches QE, the Bank of Japan's (BoJ) balance sheet has grown to enormous size with no signs of slowing down and the Fed is setting the stage to tighten. While short-term interest rates are determined locally by central bank policy, long-term interest rates appear to be more influenced by global trends.

One illustration of this is the historic correlation between US and German government bonds, shown in Exhibit 8. The high and stable correlation means we can reasonably expect lower rates in Europe to be partially exported to the US leading to a flattening of the yield curve. As the Fed hikes the fed funds rate, yields on short-term bonds should rise. However, lower yields on longer-term holdings in economies also perceived as safe will keep longer-term US bonds anchored lower. That being said, rising short-term rates will eventually pull up the longer end of the yield curve.

Exhibit 8: Low yields overseas may dampen the rise in US long-term rates to some extent

6-month rolling correlation of weekly change in USTs and German bund yields



Sources: Federal Reserve, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

Of course, the impacts of Fed tightening will extend beyond Treasuries. In credit, rising rates will impact the stable investment grade class and riskier types, such as high yield, differently (Exhibit 9, next page). In particular, the improving economy (which is prompting the Fed tightening) should boost profits and reduce default rates, cushioning the impact on high yield. Higher-quality corporates also seem to weather Fed rate hikes reasonably well. However, municipal bonds and mortgages appear to be more vulnerable.

The bottom line for fixed income investors is that Fed tightening does not have to be a disaster. However, given low yields across all sectors, fixed income is vulnerable, making it more important than ever for investors to be discriminating in allocating their fixed income dollars.

Exhibit 9: Bond market reactions to previous tightening cycles

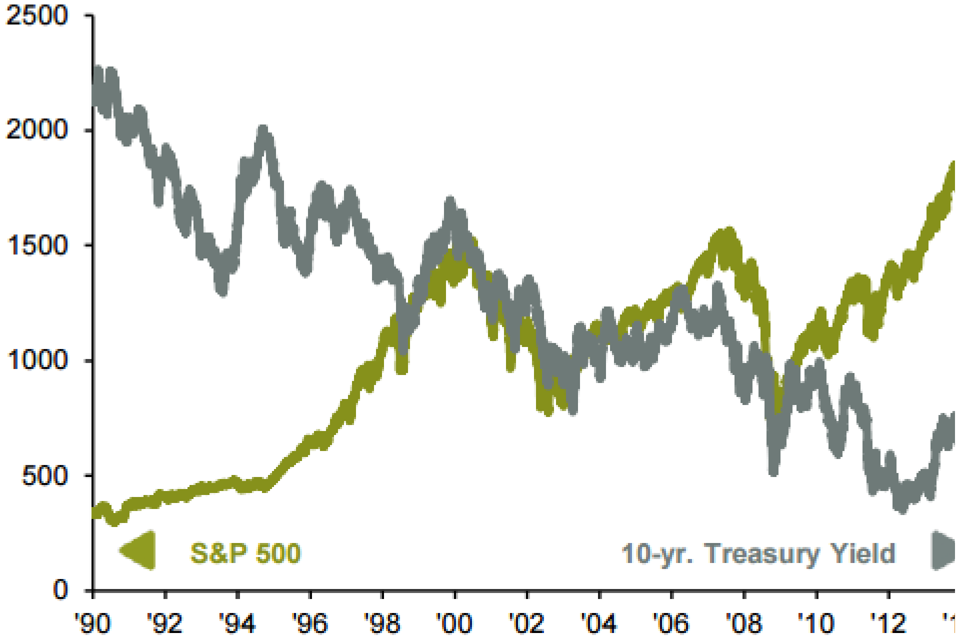
Cycle		2Y (bps)	10Y (bps)	BAA Corp Bond (bps)	Munis (bps)	Hi
1994						
	Initial Market Reaction*	77	78	56	109	
	Total Market Reaction**	243	138	102	99	
1999						
	Initial Market Reaction	-1	-4	5	18	
	Total Market Reaction	82	18	46	20	
2004						
	Initial Market Reaction	-41	-45	-29	-44	
	Total Market Reaction	208	23	-13	5	

Sources: Federal Reserve, FactSet, Barclays, Bloomberg, J.P. Morgan Asset Management. For Illustrative purposes only. *Initial impact of rate increases is calculated as the change between the day before the first rate hike to the day of the next Fed meeting. **Total reaction is calculated as the change in the index between the day before the first rate hike and the day of the first Fed meeting when there is no new rate hike. Data are as of 18 March 2015.

FED TIGHTENING AND US EQUITIES

Conventional wisdom suggests that when the stock market rallies, fixed income does poorly, and vice versa. The logic behind this theory is that when equities are doing well, investors pull money out of bonds to buy stocks; when the stock market is down, investors flee to the safety of bonds (Exhibit 10).

Exhibit 10: Recently, stocks and treasuries have rallied together
Yield on 10-year Treasury, S&P 500 price level

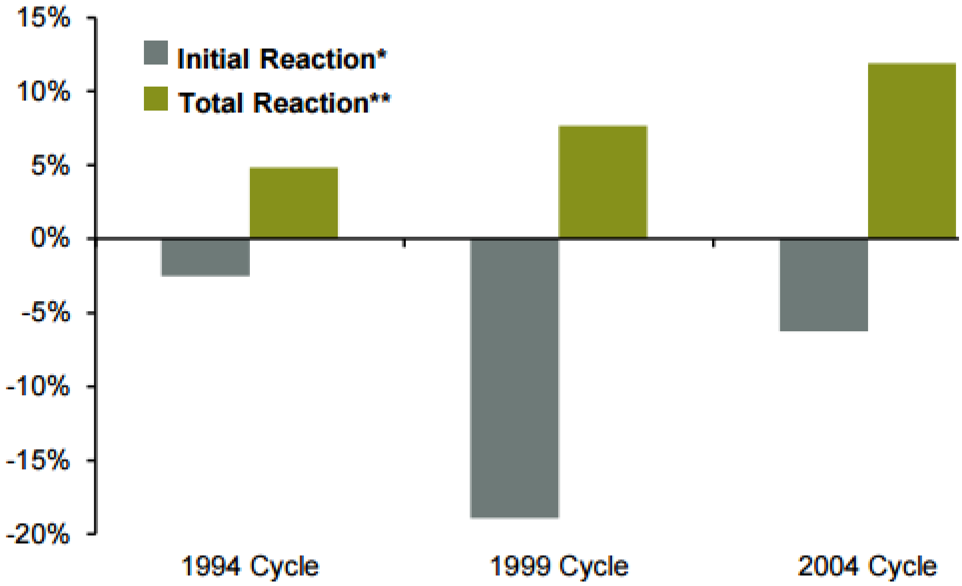


Sources: : FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 3/18/15.

However, since 2009, the markets for both stocks and bonds have been rallying together. We can attribute this to the unique economic situation immediately following the Great Recession. In an effort to stimulate the economy, the Fed cut interest rates and launched its QE program. This, in turn, boosted the housing market and spurred investment. As the economy recovered, it supported a strong stock market. However, with the Fed set to raise rates, this source of easy money is going away. As rates rise, we will eventually return to a more normal environment, but not without some pain first. For example, in the last tightening environment, 2004 to 2006, the S&P 500 rallied an annualised 16% (Exhibit 11).

Exhibit 11: The stock market typically swoons then recovers as the Fed begins to tighten

S&P 500 movements at first rate hike and over full tightening cycle



Sources: FactSet, J.P. Morgan Asset Management. For illustrative purposes only. *Initial impact of rate increases is calculated as the change between the day before the first rate hike to the day of the next Fed meeting. **Total reaction is calculated as the change in the S&P 500 between the day before the first rate hike and the day of the first Fed meeting when there is no new rate hike. Data are as of 3/18/15.

The Federal Reserve is pursuing a data-dependent approach to monetary policy decisions, giving it wiggle room to halt or change direction if the policy being pursued is no longer supported by economic factors. Still, many investors seem to perceive the first rate hike after a long spell of easy money as an apocalyptic event – a sentiment not borne out by recent history.

It is also important to distinguish between rates rising from very low levels – a sign of economic strength – and rates rising from already moderate or high levels – which can indicate an overheating economic climate. There are some who feel the Fed is already behind the curve on tightening, given the strength of the US economy, but nothing in the data suggests that the economy has begun to overheat.

Exhibit 12: Rate rises from very low levels usually accompany rising stock prices
Weekly S&P 500 returns, 10-year Treasury yield, rolling 2-year correlation, May 1963-February 2014

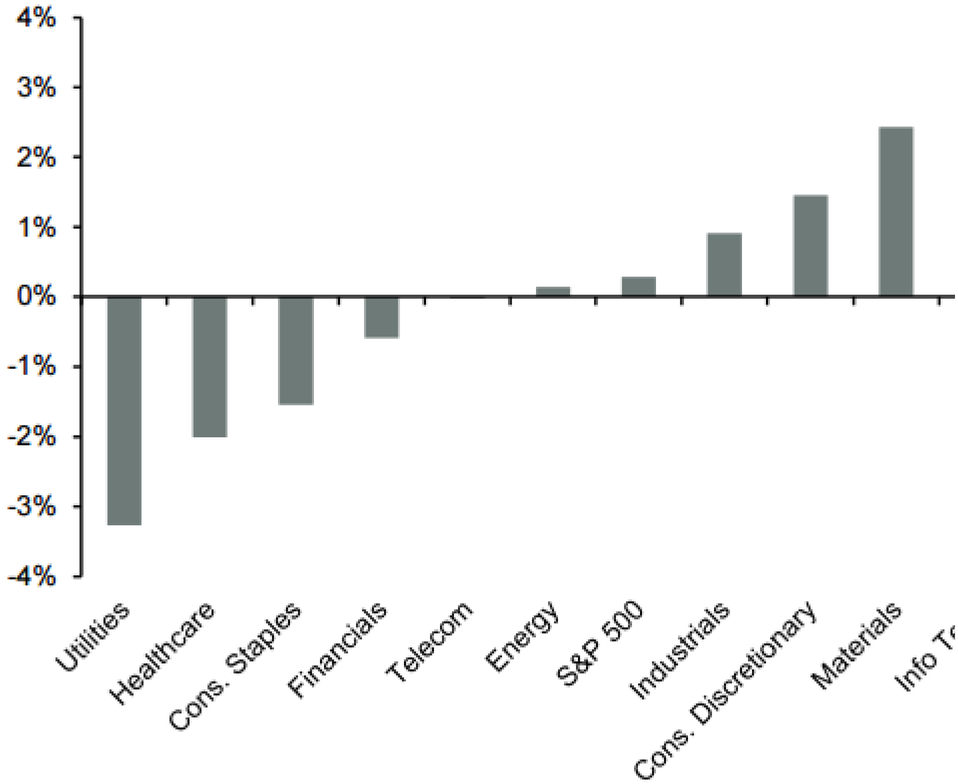
Sources: Standard and Poor's, US Treasury, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 3/18/15.

Market reactions vary widely based on expectations and the reasoning for Fed tightening. Initially after a rate hike, markets tend to sell off in a moderate fashion and then bounce back, especially when rates rise from very low levels. In thirteen of the last sixteen rate hikes, the market took a dip in the immediately preceding six months[4]. This scenario represents the conditions facing our current market.

It is important to distinguish between a rate hike when the market is expecting it, and one where the market is wholly unprepared. The Fed has stated it will raise rates, and a rate hike in the near to medium term should surprise no one. Through the use of forward guidance, the Fed has been attempting to manage expectations of a first rate hike for many months. As the Fed wound down QE, it used forward guidance to limit surprises and manage market reactions. The same process is being used to broadcast a rate hike in the near future very clearly and carefully, which should limit the overall potential damage to equities.

However, it needs to be recognized that equity valuations are no longer cheap, which means investors must be more selective than they were a few years ago. In the latter part of a cycle, sectors like consumer discretionary and technology tend to perform well. A healthy economy – where policy tightening is appropriate – features strong consumer spending. Rising rates will also likely benefit the financial sector, as lending becomes more attractive and businesses see greater return on capital, which could lead to strong performance by financial stocks. These sectors have historically done well in rising rate environments, whereas more rate-sensitive areas like utilities and REITs do not perform as well (Exhibit 13). Utility stocks have long been used as a bond substitute in the search for yield. Higher yields on bonds could siphon off cash from utilities and REITs, particularly because these are relatively defensive sectors in a now healthy economy.

Exhibit 13: Rising rates affect equity sectors in different ways
Reaction to 100 bps increase in 10-year US Treasury yields, percent, Jan. 1990-Dec. 2008



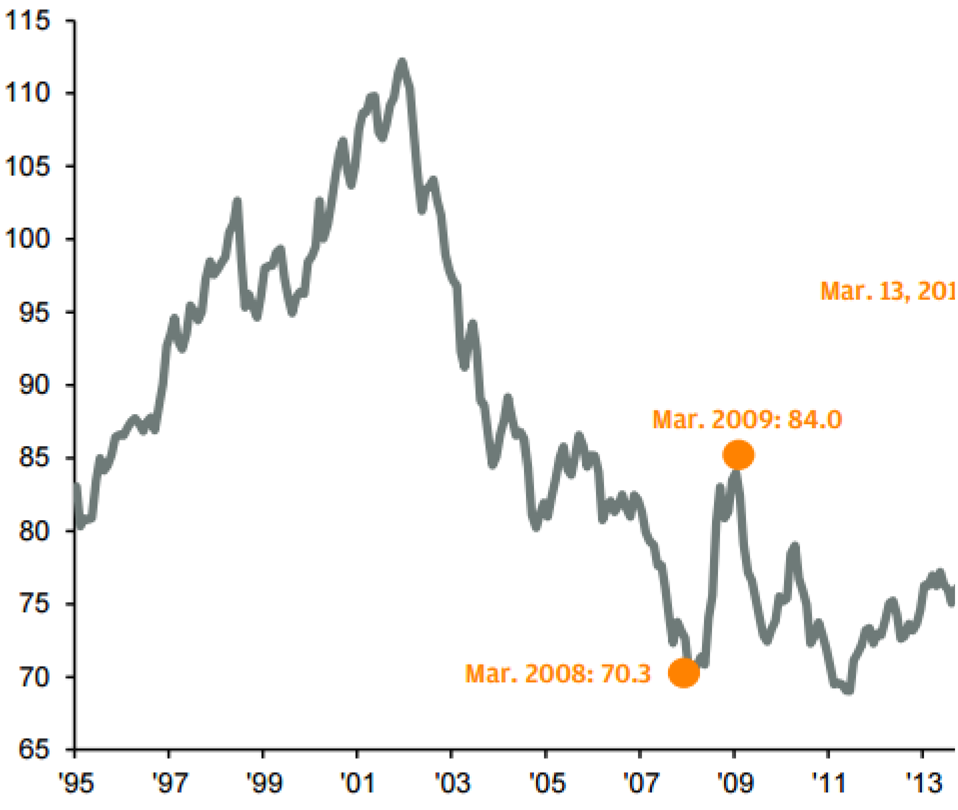
Sources: Standard and Poor's, US Treasury, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Cons. Staples - Consumer Staples, Cons. Disc. - Consumer Discretionary. Estimated Impact of a Rate Hike per S&P 500 Sector is estimated by regressing the month-overmonth percent change in the level of each sector on the level change in the 10-year US Treasury. Data are as of 18 March 2015.

Selectivity is key and investors should consider overweighting sectors that have proven to be less vulnerable to rate hikes (either at the short end or the long end) in the past.

FED TIGHTENING AND THE DOLLAR

In the long run, currency performance should be determined by economic fundamentals such as the balance of trade, the rate of inflation and the expected pace of economic growth. However, in the short run, expectations of relative interest rates appear to play a dominant role. In addition, in the case of the US dollar, its status as the "safe haven" currency and the fact that it has never been a key target for US monetary policy complicates the issue. Most confusing of all is the reality that dollar moves, both up and down, have frequently far overshot the rational prediction of any configuration of these factors, as financial market participants tend to pile on to whatever trend is being established in the market.

Exhibit 14: The dollar has soared to its highest level since 2003
Monthly average of nominal trade-weighted exchangeindex: Major currencies

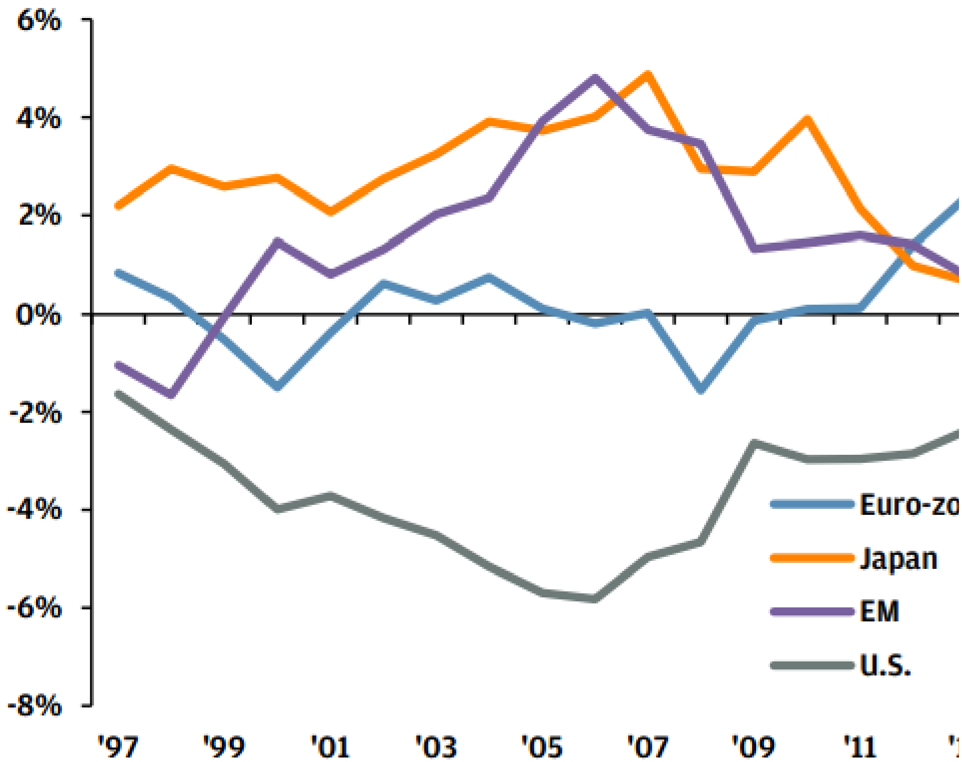


Sources: BEA, Federal Reserve, FactSet, J.P. Morgan Asset Management. Major currencies in the index are: British pound, euro, Swedish kroner, Australian dollar, Canadian dollar, and Swiss franc. For illustrative purposes only. Data are as of 18 March 2015.

Many have said it is inevitable that Fed tightening will cause the dollar to move higher still. However, it has already overshot a reasonable assessment of its long-term value, a statistical prediction of how much further it might climb or when it might begin to retreat is almost impossible, regardless of the exact path taken by the Fed. This being the case, investors may want to hedge currency exposure in the short run, or take a long-term view that fundamentals should eventually cause the dollar to fall, regardless of the path of Fed tightening.

Based on the fundamentals, it is easy to argue that the dollar is already too high. As shown in Exhibit 15, in 2014, the US ran a current account balance equal to roughly 2.3% of GDP, while the Eurozone, Japan and emerging markets (EM) as a group ran surpluses. Moreover, given the lags with which the exchange rate impacts trade, the trade statistics for 2014 could fairly be said to reflect the average exchange rate that prevailed in 2013, when the dollar was roughly 19% lower than it is today. Because of this, the US trade deficit is now likely to widen over the next couple of years, suggesting an increasingly overvalued dollar.

Exhibit 15: The US trade deficit is likely to widen
Current account balance as a % of GDP



Sources: IMF, FactSet, J.P. Morgan Asset Management. For illustrative purposes only. Data as of 18 March 2015.

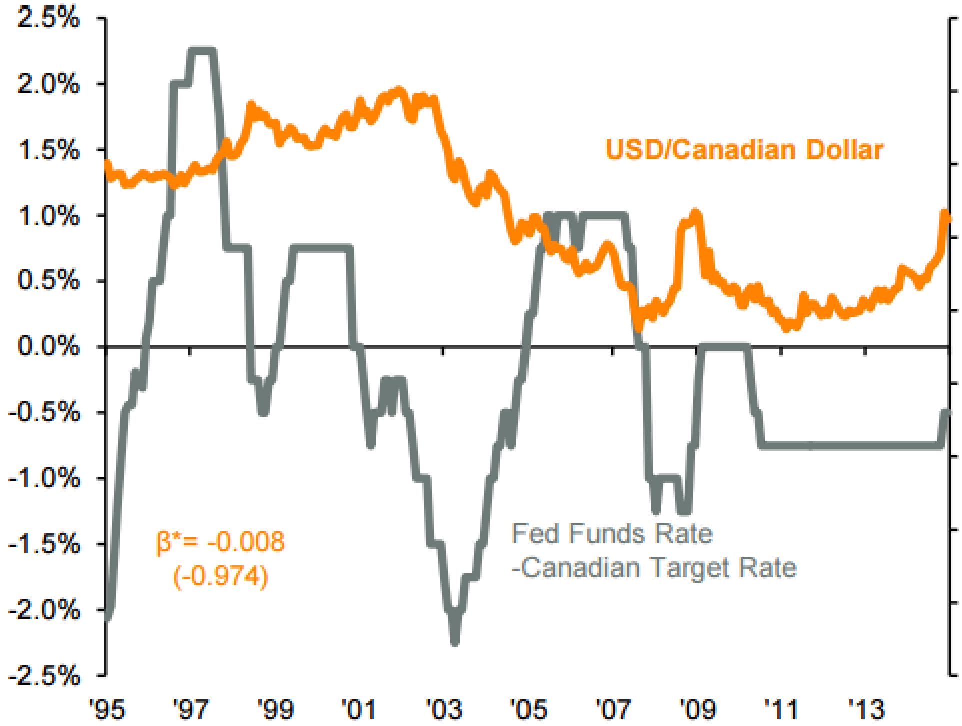
In addition, purchasing power parity argues that currencies with relatively high inflation rates should see depreciating exchange rates. While US inflation isn't high, it is higher than in Europe and Japan (excluding the impact of a onetime sales tax hike), which would argue for a lower dollar against the euro and the yen. Finally, while the US is experiencing above-trend economic growth right now, within about two years, that growth rate should fall below 2% even in the absence of recession, as the US runs out of labor force capacity. Europe, by contrast, is just embarking on what could turn out to be a long cyclical recovery, while EMs have naturally faster long-term growth rates than developed nations. Overall, the fundamentals don't support the current level of the dollar, never mind a further increase.

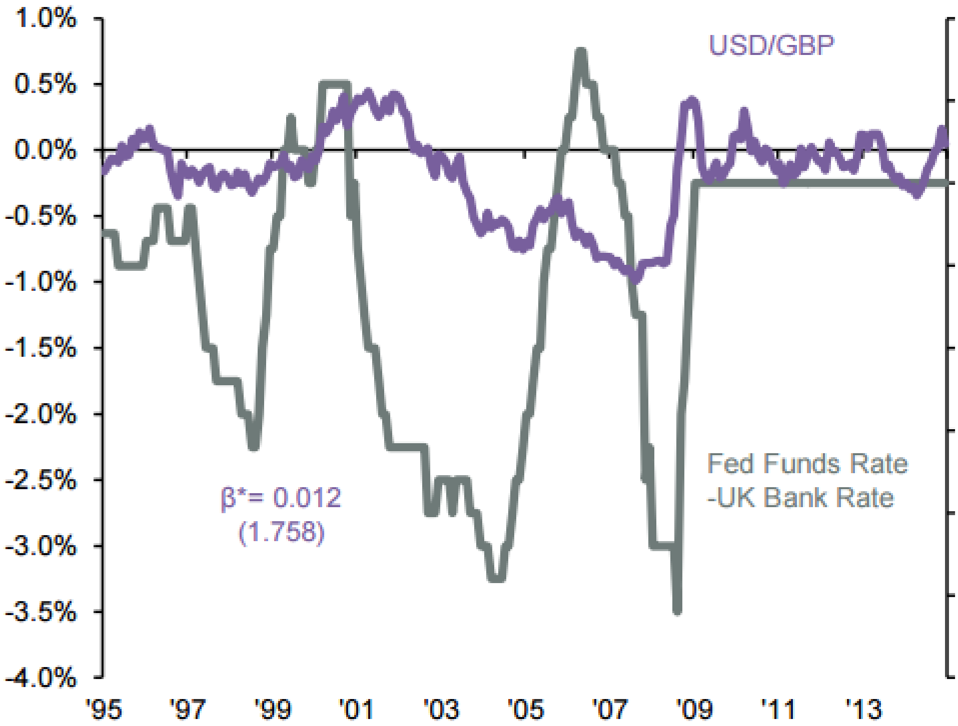
Having said this, in the short run, expectations of interest rate increases seem to be dominating currency market movements. Indeed the expectation of tighter monetary policy in the US is the primary reason cited for the extraordinary surge in the exchange rate over the past year.

However, as is shown in Exhibit 16, the correlation between the exchange rate and actual changes in relative short-term interest rates has been very weak over the years, making a further prediction about the direction of the dollar in response to Fed tightening highly speculative.

In addition to all of this confusion, investors need to be wary of two wild cards. First, the dollar has traditionally served the role of safe-haven currency in times of crisis and could rally further in response to any major geopolitical crisis. Second, the dollar rally to this point has been fueled by a pretty explicit policy of both the ECB and the BoJ to depreciate their own currencies. So far, the Federal Reserve has not responded in either word or deed. However, the Fed may decide that it would much rather slow the economy through a controllable monetary normalization rather than by allowing the export sector to get crushed by a ruinous exchange rate. How it would halt the dollar rise is a complicated question. However, even an explicit statement of policy that it intended to do so could radically change the currency market environment.

Exhibit 16: The relationship between interest rate differentials and currency performance is highly unstable
Difference between the federal funds rate and main policy rates of each country, currency value USD/local




USD/GBP
Fed Funds Rate
-UK Bank Rate
β*= 0.012
(1.758)
1.0%
0.5%
0.0%
-0.5%
-1.0%
-1.5%
-2.0%
-2.5%
-3.0%
-3.5%
-4.0%
'95
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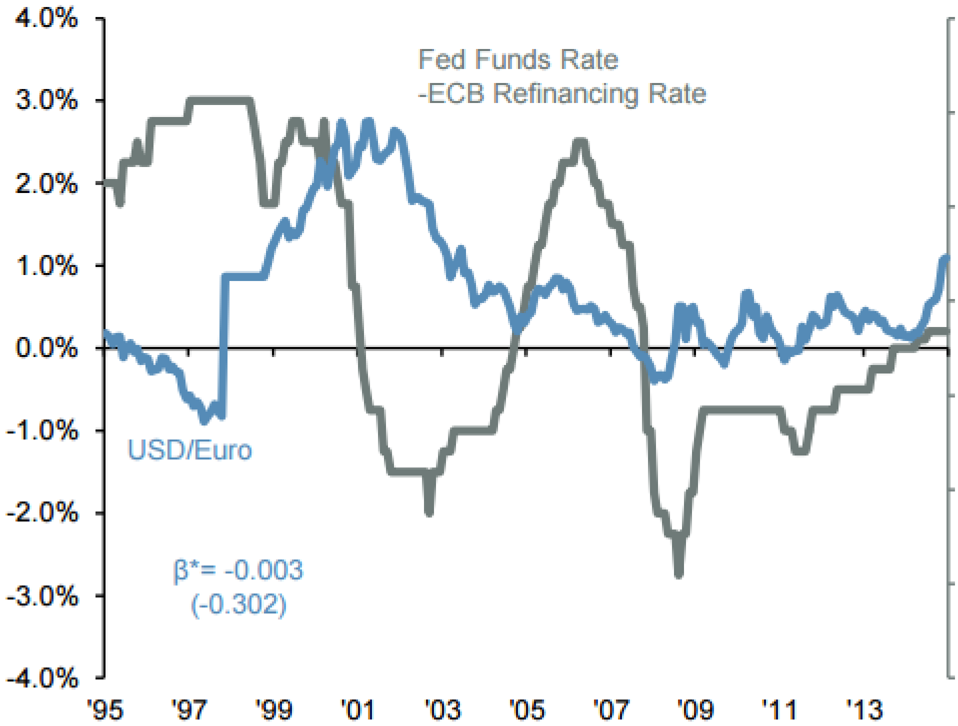
Fed Funds Rate
-ECB Refinancing Rate
USD/Euro
β*= -0.003
(-0.302)
4.0%
3.0%
2.0%
1.0%
0.0%
-1.0%
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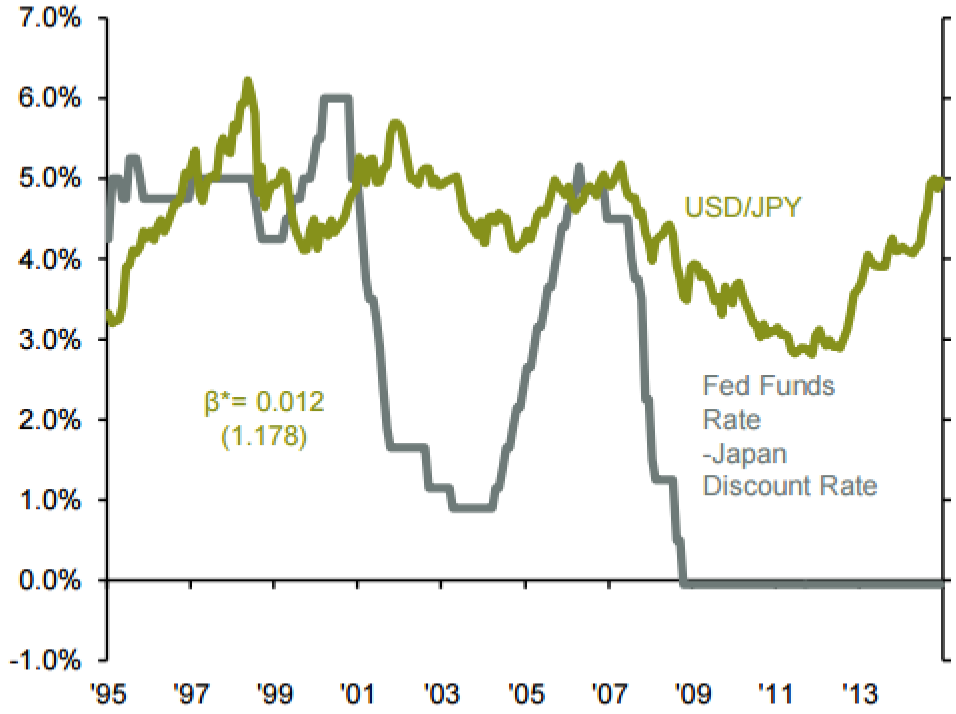


Sources: Federal Reserve, ECB, BOJ, BOE, RBC, Bundesbank, FactSet, J.P. Morgan Asset Management. *β is the coefficient of the impact of a change in the Federal Funds Rate-Main Policy Rate on the exchange rate, % change in exchange rate = α + β(FFR-Rate), t-stat is in parentheses. For illustrative purposes only. Data are as of 18 March 2015.

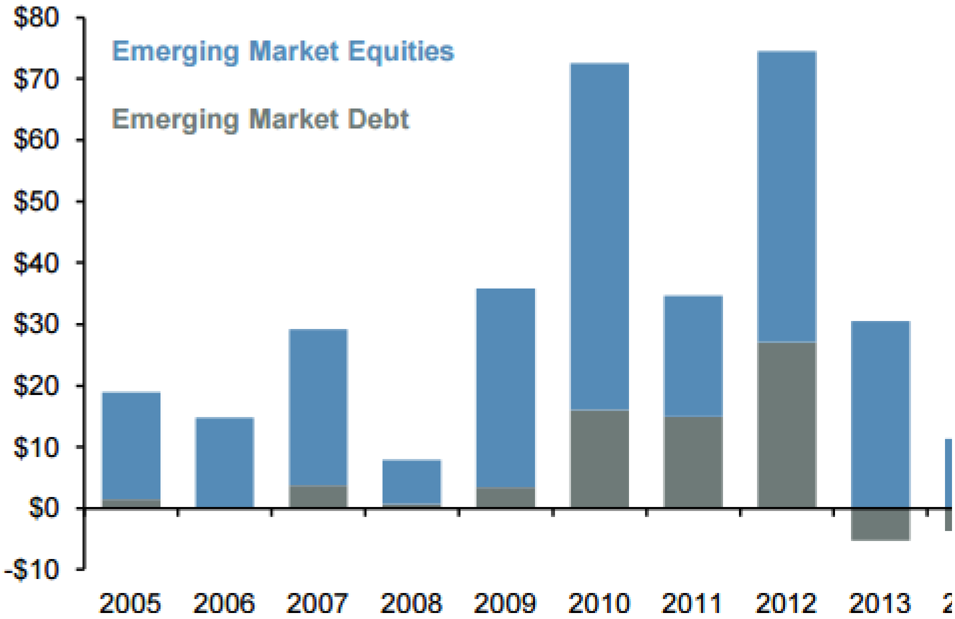
For investors, given the highly unstable nature of the currency markets, it is probably best to sit out the dollar hand. In other words, while it would be nice to calculate the impact of Fed tightening on the dollar, realistically doing so would be pure speculation. The best strategy may be to take advantage of current very low US rates to hedge currency exposure across the board in the short run or, for long-term investors, hedge nothing and wait a few years for fundamentals to eventually return the dollar to an exchange rate at or below current levels.

FED TIGHTENING AND EMERGING MARKETS

The biggest concern for EMs regarding Federal Reserve tightening is that investors may reallocate portfolios away from riskier EM assets and back toward those in the US, given a perception of better growth prospects, more safety and now higher yields. Such a reallocation could increase volatility, hurt returns and damage economic growth for EMs.

Since the global financial crisis, current account positions have worsened in many EM countries, as accommodative policies fueled domestic demand. This higher dependence on foreign financing for growth now leaves many EM countries more vulnerable to changes in financial conditions abroad. In addition, the composition of capital flows into EM has changed in an important way. In pre-crisis years, the greatest source of foreign capital to EM entered these countries through foreign direct investment. However, in the aftermath of the global financial crisis, as investors searched for yield and better growth prospects outside of developed markets (DM), portfolio inflows (especially into EM debt) increased dramatically (Exhibit 17). This is an important change because portfolio flows are much more liquid and susceptible to rapid change than direct investment. Given the substantial inflows to EM assets post-crisis, the potential outflows in a Fed tightening cycle could also be significant.

Exhibit 17: EM assets have seen strong inflows in recent years
Annual net flows into EM mutual funds & ETFs, billions, USD



Sources: Strategic Insight, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

So, how have EM assets reacted to past tightening cycles?

CAPITAL FLOWS

Given the significant increase in portfolio flows into EM over the past few years, in addition to actual historical Fed tightening cycles, it is worth reviewing the EM experience during the "taper tantrum" of 2013, when global financial markets responded violently to Ben Bernanke's first hints of a timetable for ending QE.

FIXED INCOME AND EQUITY RETURNS

Exhibit 18 shows how EM equities and sovereign debt responded to the last three Fed rate hike cycles, as well as the "taper tantrum" experience. Previous Fed rate hike cycles coincided with other important events for EM (such as the Mexican crisis during the 1994 tightening cycle or the "commodity supercycle" during the last two tightening cycles), blurring the reading of the impact of Fed tightening itself on EM asset performance. Looking at the "taper tantrum" experience, we can see that the initial reaction to changes in expectations of Fed policy tightening had a significantly negative impact on both EM equities and fixed income. However, looking over a longer-term horizon, we can see that investors began to focus more on fundamentals and performance stabilized, especially for EM equities.

Exhibit 18: After initial selloff, EM assets have handled recent episodes of Fed tapering quite well
EM equity and debt reaction to Fed tightening, percent change

	EME Price Return	EME Price Return	E
	1 Week After First Rate Hike	1 Month After First Rate Hike	C
Period	USD	USD	
1994-1995	0.5%	-7.4%	
1999-2000	4.2%	-2.4%	
2004-2006	0.9%	-1.2%	
"Taper Tantrum"	-7.1%	0.4%	

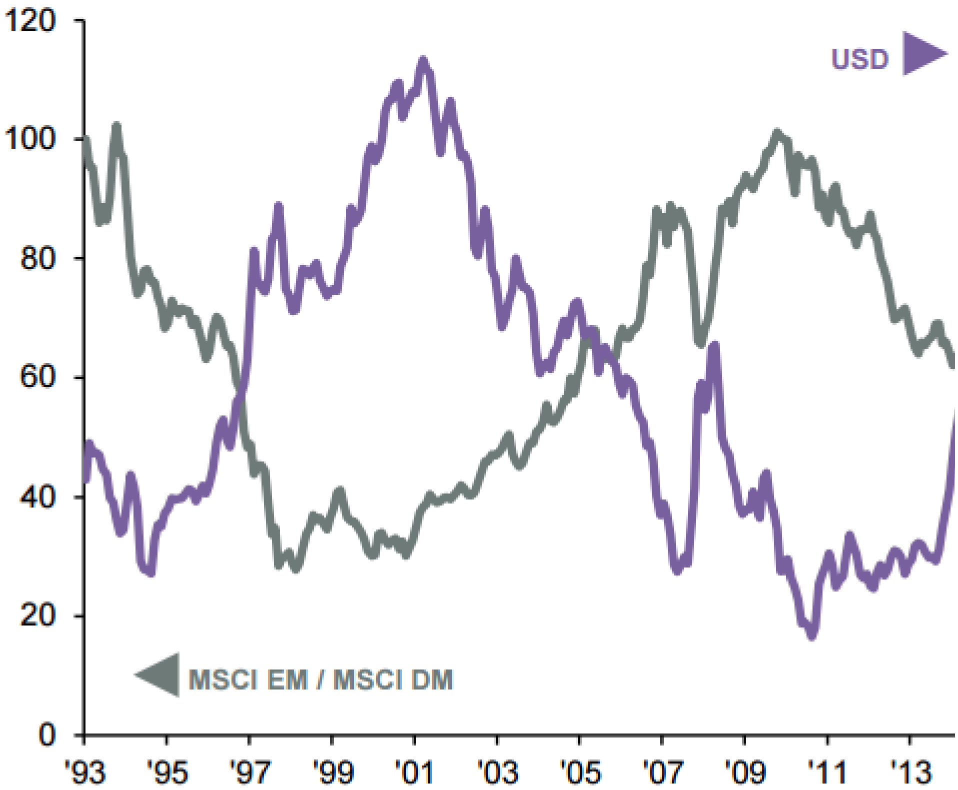
	EM USD Sovereigns	EM USD Sovereigns	EM
	1 Week After First Rate Hike	1 Month After First Rate Hike	C
Period	USD	USD	
1994-1995	-1.2%	-10.7%	
1999-2000	1.2%	-0.6%	
2004-2006	1.7%	3.4%	
"Taper Tantrum"	-5.2%	-0.6%	

Sources: MSCI, J.P. Morgan Global Economics Research, J.P. Morgan Asset Management. EME returns are based on the MSCI Emerging Market Index. EM USD sovereigns are based on the J.P. Morgan EMBIG Diversified Index. Initial impact of rate increases is calculated as the change between the day before the first rate hike to the day of the next Fed meeting. Total reaction is calculated as the change in the S&P 500 between the day before the first rate hike and the day of the first Fed meeting when there is no new rate hike. For illustrative purposes only. Data are as of 18 March 2015

US DOLLAR APPRECIATION

Historically, the behavior of the US dollar, more than the Fed's monetary policy itself, has been important for EM performance. Exhibit 19 highlights the close relationship between the relative performance of EM vs. DM and the strength of the US dollar: when the US dollar is strengthening for a sustained period of time, EM equities underperform those in DM. In a direct way, US dollar strength means lower returns once converted from local currency into US dollar. However, the implications of a higher US dollar can be far reaching for EM. A stronger US dollar tends to hurt commodity prices (which are priced in US dollars), hurting the earnings of commodity-exporting EMs. These lower commodity prices in turn cause capital outflows from EM, at times returning to the US, which in turn fuels more dollar strength—and the vicious cycle continues. In addition, at times US dollar strength is a result of lower global growth, another negative for EM performance.

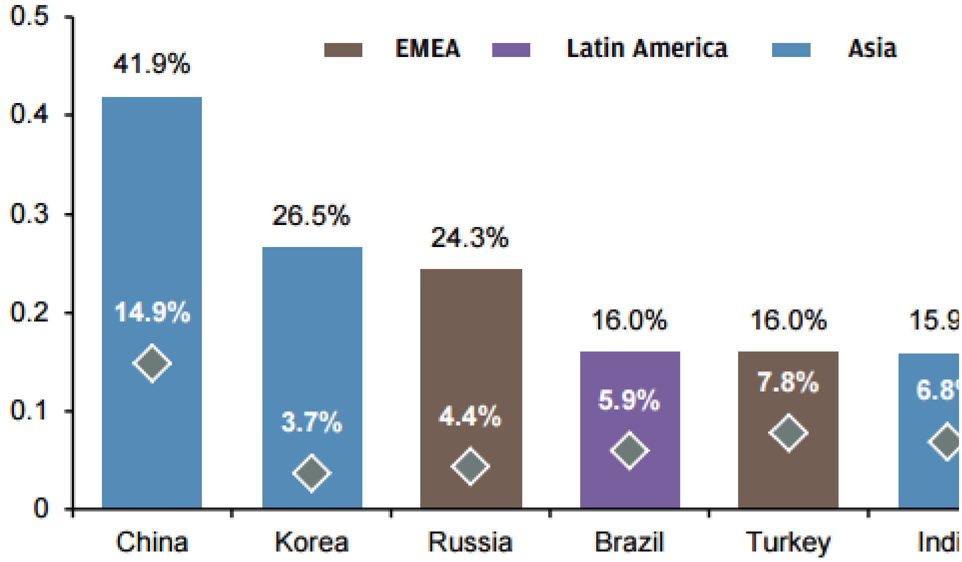
Exhibit 19: EM equities tend to underperform when the US Dollar is rising
Rebased to 1993 = 100, Federal Reserve real broad effective exchange rate



Sources: MSCI, Federal Reserve, FactSet, J.P. Morgan Asset Management. MSCI EM is the Emerging Markets Index in USD terms, MSCI DM is the MSCI The World Index in USD terms. For illustrative purposes only. Data are as of 18 March 2015.

When it comes to EM fixed income, US dollar strength is also significant. Since the crisis, the increase in appetite for EM debt encouraged EM countries and especially corporations to issue debt in US dollar terms. A stronger US dollar versus EMs' local currencies makes it more difficult for EM sovereigns and corporates to service their US dollar-denominated debt. A mitigating factor is the fact that various EM countries have significantly more foreign currency reserves now than during the late '90s when EM currency depreciation was very much a concern for EM solvency.

Exhibit 20: Emerging markets have bolstered their reserves
EM reserve holdings, balance as a % of GDP, diamonds = 1997, bars = 2013

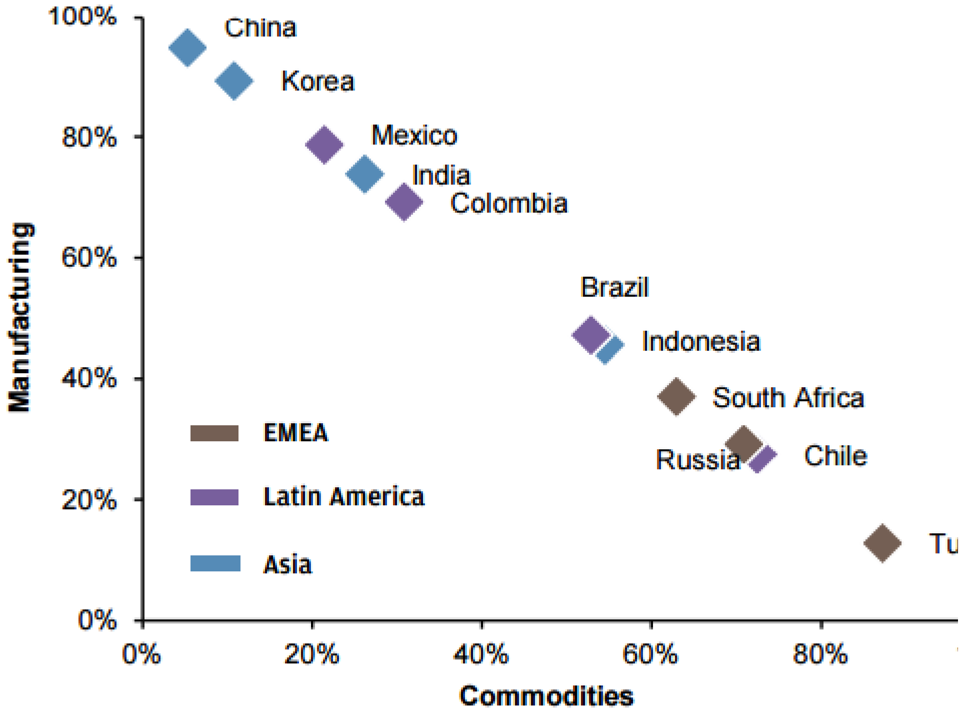


Sources: World Bank, IMF, J.P. Morgan Asset Management. International reserves are total reserves (including gold). For illustrative purposes only. Data are as of 18 March 2015.

DIFFERENTIATED INVESTING IN EM

While EM debt and to a lesser extent equities may be vulnerable to Fed tightening, some countries are clearly more vulnerable than others. One measure of that vulnerability is whether the country is a more manufacturing or commodity intense economy. Given the lackluster outlook for commodity prices going forward, commodity exporting countries could suffer. On the other hand, manufacturing- and service-oriented countries are poised to benefit from two tailwinds: 1) months of dollar appreciation feeding through to higher exports and 2) better global demand, especially from the US (a precondition for Fed tightening). These countries tend to be located more in Asia than Latin America (with the exception of Mexico).

Exhibit 21: Commodity producers may be more vulnerable than manufacturers
Percent of exports of goods and services in manufacturing and commodities



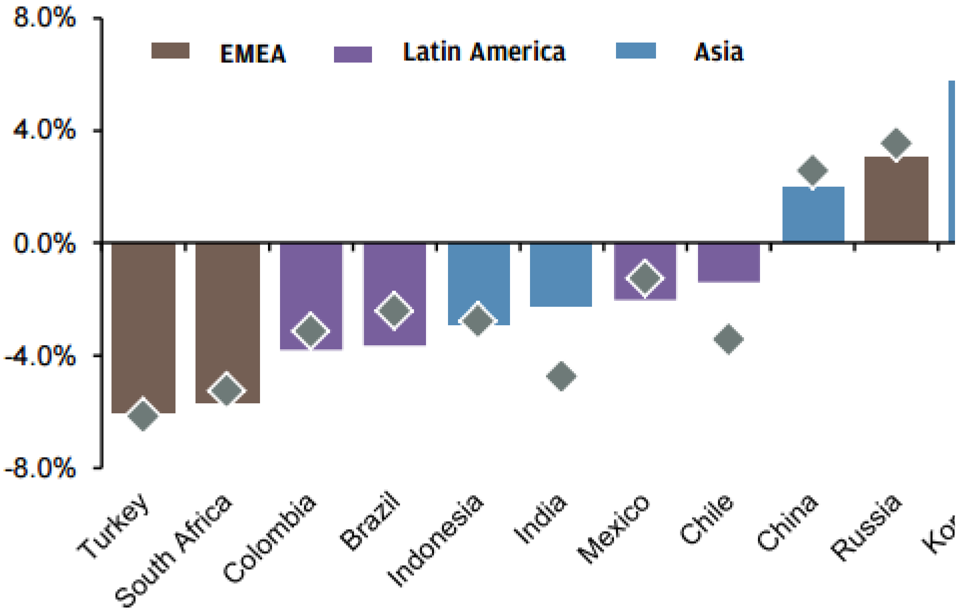
Sources: World Bank, Comtrade, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 18 March 2015.

Additionally, another factor to consider is the country's financial vulnerability to global capital flows. As previously mentioned, the current account position for EM as a whole has deteriorated since the crisis, but this is particularly true in certain countries which have developed wide current account deficits over the past few years. These countries depend on foreign capital to finance domestic growth and hence are vulnerable to investors reallocating capital.

Looking at the "taper tantrum", once the initial indiscriminately negative reaction subsided, investors clearly differentiated between the more vulnerable countries with wide current account deficits (the so called "fragile five") and those with more manageable external positions. Going forward, investors will likely continue to make this distinction, also taking into account which countries have improved their current accounts in anticipation of upcoming Fed rate hikes (such as India). A mitigating factor now compared to 2013 is the quantitative easing programs being implemented by the Bank of Japan and European Central

Bank, ensuring that there will still be plenty of liquidity available even as the Fed begins to normalise policy.

Exhibit 22: Current account positions could also impact sensitivity to Fed rate hikes
EM current account balance as a % of GDP, diamonds = 2012 actual, bars = 2015 estimate



Sources: IMF, J.P. Morgan Asset Management. For illustrative purposes only. Data are as of 3/18/15.

Lastly, investors may also take note of other measures emerging economies have taken or will take to reduce their vulnerabilities to capital outflows during the upcoming Fed tightening cycle. These include 1) previous and potential monetary policy tightening in local markets to decrease potential capital outflows, 2) introduction of liquidity measures in money markets to dampen negative shocks, 3) implementation of sound economic policy to drive more balanced domestic growth, 4) potential intervention in FX markets to ensure a more orderly depreciation of the local currency, and 5) accumulation or stabilization of reserves in order to respond to potential stresses.

Investors should expect an increase in volatility for EM assets during the beginning of the Fed tightening cycle. Short-term, both EM equities and fixed income can be negatively impacted, while longer term performance is dependent on a multitude of factors outside of US monetary policy. The taper tantrum of 2013 illustrated the particular vulnerability of EM debt compared to EM equities. In addition, it underscored the increasing role that differentiation will play in investing in EM assets. Investors would be advised to consider a host of factors when making their allocation decisions within EM. On net, these considerations suggest opportunities in Asia relative to Latin America overall.

CONCLUSION

After more than six years of near zero interest rates, the Fed appears set to embark upon the long journey back to a more normal monetary policy. In many ways this policy shift is long overdue. Moreover, the US economy seems very well prepared to handle it, although policymakers need to grapple with the problem of how to prevent an already overvalued US dollar from appreciating further while still implementing policy normalisation.

For investors, history suggests that while US stocks may react negatively to a first move, they generally weather a tightening cycle pretty well, particularly because monetary tightening is usually a response to economic strength. Fixed income markets are generally more vulnerable and could be even more so today because of current very low yields. However, the continued super-easy policies of other major central banks should dampen the rise in long-term yields overall and make gauging the bond market reaction more difficult than normal. Emerging market assets could also be threatened by Fed tightening, although the direction of the dollar is likely to be particularly important in determining the performance of EM stocks.

However, in all markets the key will be to distinguish those assets which can benefit most from healthy growth and those which, for reasons of valuation or interest-sensitivity look most vulnerable to rate increases.

The Federal Reserve, in raising interest rates, will be attempting to achieve a soft landing - that is, trying to slow the economy to a sustainable pace of growth so it avoids asset bubbles and inflation late in an expansion. In monetary policy, as in flying, a soft landing is hard to pull off.

Similarly for investors, following years of recovery gains, most markets are no longer cheap. Because of this, it will be important to disengage the autopilot of simply being long risk assets in favor of the more manual task of focusing on those assets best able to handle a return to normal interest rates.

ENDNOTES

1. Due to complications caused by its massive balance sheet, the Fed's primary instrument will be the interest paid on excess reserves, with a secondary role being played by the rate offered in the Fed's reverse repo facility. These two rates should serve as upper and lower bounds for the fed funds rate.

2. See *Updated Budget Projections*, 2015-2025 Congressional Budget Office, March 2015.

3. Change between July 2014 average and March 13, 2015, Federal Reserve Daily Nominal Major Currency Trade Weighted Index.

4. Source: Standard and Poor's, Federal Reserve, J.P. Morgan Asset Management

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