

## Why are bond yields so low?

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Dr Robert Gay | Fenwick Advisers | 11 November 2014

At first blush, this question seems to have an obvious answer – Western central banks have driven interest rates to historic lows with zero interest rate policies (ZIRP) and by buying bonds for their own accounts (Large Scale Asset Purchases or LSAP), also known as Quantitative Easing (QE). On deeper consideration, though, neither of these extraordinary policies in themselves can explain why long-term yields on German bunds are less than 1% and US 10-year Treasury bonds yield only 2.32%.<sup>1</sup> Central banks can affect yields on very short-term instruments by setting the cost of funds near zero for banks and, indirectly, other financial institutions, but zero short rates do not automatically translate in low long-term yields. Indeed, one can imagine just the opposite result – zero rates could encourage governments and the private sector to borrow beyond their means until debt levels reached unsustainable levels and trigger a vicious circle of higher yields and greater possibility of default. With a few notable exceptions including Argentina and Venezuela, most governments are not yet close to that tipping point, so the complex and dynamic linkages between short-term policy rates, economic conditions and long bond yields are worth contemplating in greater depth. Part of the story hinges on low and still falling inflation expectations in most countries. Yet, the latest downdraft in yields also suggests more complicated forces are at work that have reduced real interest rates far below their historic norms and may keep them very low for many years to come.

### INFLATION EXPECTATIONS AND LONG-TERM RATES

Nominal long-term interest rates reflect both expectations of future inflation and a so-called term premium (or real component) to compensate for many unforeseen events that might affect either circumstances or creditworthiness over the life of the bond. Clearly, the impetus for the latest decline in long-term rates was a sizable drop in inflation expectations, especially in Europe where many countries have experienced outright deflation over the past year. A 20% decline in crude oil prices has reinforced the perception that more disinflation is yet to come<sup>2</sup>. Figure 1 shows the five-year forward inflation-linked swap five years ahead. In September, this measure of EU inflation expectations fell sharply to 1.8%, more than 0.5% below its norm of 2.4% and well below the ECB's target inflation of 2%. EU inflation now stands at 0.3%, so a further decline seems probable.

Figure 1: Eurozone Inflation Expectations



In the US, a measure of inflation expectations shown in Figure 2 declined to 1.9% in October – a clear break from what had been a remarkably stable range of 2.2% to 2.4% throughout the recovery, despite persistent readings on actual inflation well below 2%.

Figure 2: US Inflation Expectations

US 10-year breakevens (updated October 2014)



Sources: Bloomberg, Eric Platt/FT

The question is why the market suddenly expects inflation to remain below targets set by central banks for the foreseeable future. Weak oil prices alone do not seem to be an adequate explanation. Besides, it is clear that real yields have contracted, not just in the US and Europe but most everywhere, even in the face of rising debt levels.

The answer, I believe, can be found in two interrelated developments: 1) the way in which Western QE policies affect long-term interest rates; and, 2) a growing realisation that secular stagnation is a real possibility that could hold back global growth and inflation for a very long time.

#### **FED ASSET PURCHASES AND LONG-TERM US TREASURY YIELDS**

Although the herd behavior associated with carry trades is well known, the transmission channels from ZIRP and LSAP to long-term rates are less understood. A recent study by the IMF<sup>3</sup> attempts to quantify how much those policies have affected US Treasury yields.

The first channel is the direct effects of Fed asset purchases themselves. Even though the US Treasury market is the largest (at US\$17 trillion) and most liquid in the world, the Federal Reserve nonetheless qualifies as a large buyer that holds its position for a long time. As such, its purchases of long-dated Treasuries tucks away otherwise marketable bonds, thereby shrinking the overall size of the market – a so-called portfolio balancing effect. The key point is that much of the reduction in long-term yields stems from the stock of Fed holdings – that is, as the Fed's portfolio of Treasuries grows larger, so does the impact on long-term interest rates. Note that this view is contrary to the perceptions of many market participants, especially during the volatile months of 2013. At that time, surveys indicated that the market believed the flow of purchases affected interest rates more than the stock of Fed holdings. Although that perception may have seemed plausible at the time while fund managers were rushing into, and subsequently out of, US Treasury carry trades, a longer perspective and the benefit of hindsight supports the research view that the size of the Fed's balance sheet has the principal enduring impact on long-term interest rates.

Figure 3 shows estimates of the impact of Fed's Treasury holdings on the 10-year bond yield attributable to each of the various phases of QE. During the crisis period up to May 2013, the 10-year yield declined 217 basis points and Wu estimates that more than half of that decline (113 basis points) was attributable to the Fed's purchases of almost US\$4 trillion of US Treasuries, agency mortgage-backed securities and agency debt.

Figure 3: Determinants of UST 10-year yield (Sept 2008 – May 2013) in basis points

Cumulative change in Fed Asset Holdings (LSAP)	12.8
Contribution to changes in holdings during:	
QE I Phase (Nov 2008 to Mar 2010)	14.9
QE II Phase (Nov 2010 to Jun 2011)	8.6
Operation Twist Phase (Sep 2011 to Aug 2012)	9.1
QE III Phase (Sep 2012 to May 2013)	16.1
Periods w/o Active Purchases (Apr–Oct 2010 and Jul–Aug 2011)	14.1

Source: Tao Wu, “Unconventional Monetary Policy and Long-Term Interest Rates”, IMF Working Paper 14/189, October 2014, Table 2, p34.

Here is where the story becomes more complicated – because the effectiveness of LSAP depends critically on how long the Fed is expected to hold onto those securities.

During the early years of QE, market participants anticipated that the Fed would sell the assets and would gradually reduce its balance sheet to normal by 2016, according to the Survey of Primary Dealers at the time. Expectations of such a brief holding period meant that any impact on long-term rates would be transitory in somewhat the same way that the ECB's LTRO programs in late 2011 and early 2012 were perceived as temporary by providing three-year funding for European banks to buy government bonds. The ECB program helped to ease the financial woes facing some of the EU's debtor countries, notably Greece, Ireland, Italy and Spain whose banks took most of the loans, but it had limited lasting effect in stimulating the broader EU economy. As Europe's recession dragged on and the US recovery proved tepid, market participants extended their horizons on when the Fed might sell assets and hence the benefits of the initial purchases became permanent and those of subsequent purchases became cumulative. By late 2010, participants thought the Fed would allow a passive runoff of LSAP assets (i.e. no reinvestment of principal and interest) to begin at "some point in 2012" and outright sales to begin in 2013 and continue until 2018.

Needless to say, those dates have been pushed much further into the future with the advent of forward guidance and QEIII. In June of 2011, the FOMC announced its 'exit principle' that closely ties any sale of assets to the Board's 'forward guidance' on when the eventual normalisation of policy rates would begin, which is sometimes referred to as the liftoff date for the federal funds rate.

Moreover, the FOMC indicated that the exit from QE and normalisation of rates would occur in a definite sequence – first, asset purchases would be wound down (tapering) then, with some delay, the FOMC would initiate a first rate hike and move to a passive run-off in assets as they mature before considering any outright asset sales.

For better or worse, the FOMC's exit principles have intertwined the market's perceptions of the asset holding period with forward guidance on the fed funds rate. As a result, forward guidance has become a key transmission channel to long-term interest rates. Indeed, other results in Wu's paper estimate that one-third or more of the impact of LSAP on long-term rates stems from extensions of the holding period for the Fed's assets and most of those changing perceptions result from the FOMC pushing back the lift-off date for the first rate hike.

One other result that is not evident in Figure 3 is Wu's finding of diminishing returns to each successive phase of QE with QEIII delivering only one-third the impact on long-term rates as QEI. Several FOMC members voiced that concern during 2013 and apparently the Board reached a consensus later that year that above US\$4 trillion, the risks of ZIRP and LSAP had begun to outweigh the benefits.

#### THE EXIT FROM QE

Given that the effect of asset purchases by Western central banks on long-term interest rates critically depends on how long the assets are held, the question becomes why central banks would sell.

Two scenarios in particular would force the issue: 1. if financial institutions actually deployed the excess reserves underlying the assets to make loans and otherwise extend credit to the private sector, central banks might feel compelled to rein in credit growth; and, 2 if, in normalising policy rates, central banks raised short-term rates such that they exceeded the yield on their long-term assets.

The first scenario might seem welcome given the tepid economic recovery, but high household debt levels in most Western economies limit the wherewithal to raise more debt. The second scenario – namely, that rate normalisation might raise the fed funds beyond the yield on the Fed's portfolio, currently about 3% – would raise the spectre of negative arbitrage i.e. the Fed would be subsidising banks by paying more on excess reserves than their assets yield. Clearly, the two scenarios are interrelated – excessive growth in credit often is the root cause of overheating the economy and of accelerating inflation. Or, the Fed simply could become alarmed at rising debt levels, as now is the case in China, and feel tighter policy is warranted.

The first scenario is unlikely in the foreseeable future. Although US households have deleveraged significantly over the past five years, debt levels still are high. Apart from the disturbing new trend of securitising subprime auto loans, households have been content to

take advantage of low interest rates to refinance old loans rather than to take on more debt. Both household and corporate cash balances are at record levels, and domestic demand is not strong enough to generate compelling investment opportunities outside of the energy and technology sectors.

#### **FORWARD GUIDANCE AND THE NEW NEUTRAL RATE**

By contrast, there still is considerable speculation about what might happen to the term premium when the Fed normalises its policy rate, which in my opinion will begin in May of 2015.

Forward guidance on the timing of subsequent rate adjustments is not likely to provide the same message as it did in the past. Namely, by repeatedly stating that it would maintain zero rates "for a considerable period," the Fed was able to reassure financial markets that it was postponing the date of any future asset sales. As long as the funds rate was zero, the Fed in effect was declaring that it had no reason to sell. By contrast, once the Fed begins to lift-off rates, forward guidance will need more dimensions to assuage markets. Specifically, the issue for long-term interest rates will be the Fed's timetable of future rates hikes and how far the FOMC is willing to raise them. No central bank should be so definitive on future policy – circumstances can change unexpectedly and central banks need flexibility to respond accordingly. Besides, some uncertainty is essential to preclude unbridled speculation.

Yet, there is great advantage to dispelling market uncertainty on asset sales themselves and hence the risk of a reversion in the term premium. The FOMC directive on 29 October addressed this issue for the near term by reaffirming its intention to reinvest principal and interest on the current portfolio:

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

In other words, the Fed's asset holdings will continue to increase about 3% per annum, which is the current yield on the portfolio. For Treasuries, the Fed's reinvestment of principal and interest in 2015 still will represent a significant portion of next year's new issuance now that the US budget deficit has shrunk.

As we approach rate lift-off next spring, though, markets will begin to worry more about the endgame for the policy rate. One way to address this issue is to make a convincing case that the neutral policy rate has declined substantially from the norm of the past several decades.

So far, the FOMC has been reluctant to take a definitive position on the neutral rate and one can see strong differences of opinion among Board members in the minutes and in their forecasts of the fed funds rate. Nonetheless, the FOMC directive on 29 October clearly has moved in the direction of lowering market expectations on the endgame for the policy rate.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of two percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

This statement is surprisingly close to a declaration that the Fed is not inclined to raise the funds rate beyond 2% to 2.5% as long as the global economy is languishing.

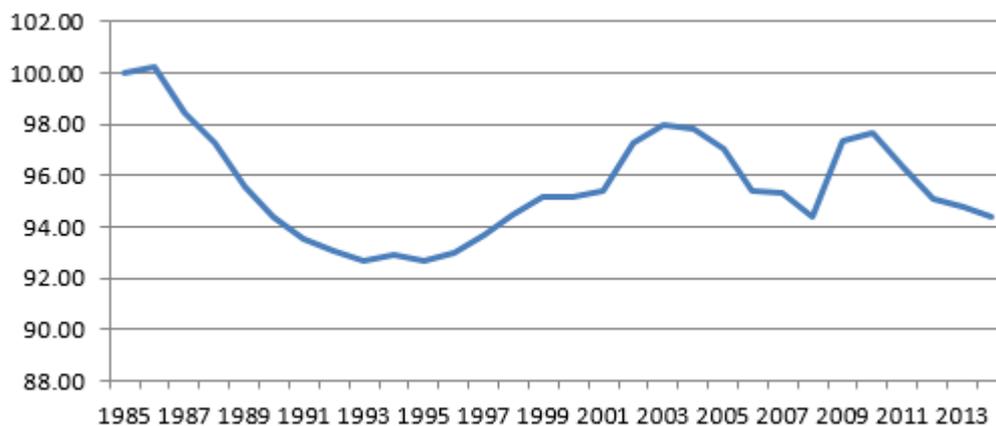
#### **WAGE COMPETITION AND SECULAR STAGNATION**

On that count, the risks of 'secular stagnation' – a theme that Larry Summers writes a lot about – are rising. Fourteen of the 34 OECD countries have experienced outright deflation over the past year, up from six this summer. Granted, thirteen of them are in Europe where wage competition has just begun to bite. Average inflation among OECD countries that account for more than 90% of world output fell to 1.7% as of September. Lower oil prices almost assure that number will decline in the year ahead. Normally, disinflation would translate into higher real wages and hence provide the wherewithal for a recovery, but that is not happening. Instead, all of the industrialised Western economies are experiencing wage competition from the emerging world, especially China.

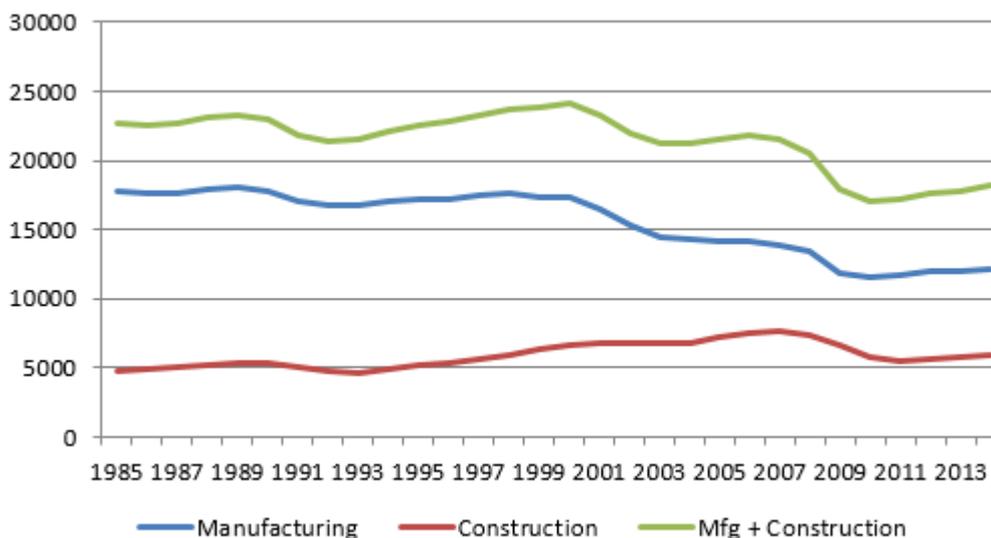
It began as a trickle in the US during the deep recession of the 1980s when many unions broke with traditional wage formulas and work practices and accepted multi-year concessions. Studies attributed the initial stagnation in real wages to intensified foreign competition, first from the Japanese auto, steel and electronics industries and deregulation of some high-wage domestic industries during the 1980s.<sup>4</sup> Wage competition intensified during the 1980s when low-wage Chinese manufacturers began to make huge inroads into US markets. By 1995, real wages in US manufacturing had dropped 8% (see Figure 4). Not even the strong expansions of the late 1990s and early 2000s would allow factory workers to regain their once-comfortable living standards of two decades earlier. Also, note the wage competition seemed to accelerate in the aftermath of recessions when the combination of import penetration and slack domestic demand precipitated huge job losses for factory workers (Figure 5). Despite the wages cuts and strong productivity gains of the 1990s, US manufacturers cut almost 4 million jobs when demand faltered during the mild recession of 2001–2. The nascent housing boom was undaunted, however, and provided an alternative

source of employment for unemployed factory workers. Together, these two sectors managed to hold total blue-collar employment close to 22 million which was the average level of the previous decade, thereby masking the continued loss of manufacturing jobs that cumulated to seven million by the time the Great Financial Recession hit in 2007. In that severe downturn, four million more factory jobs were cut and few workers have been rehired in the languid recovery. The combination of job losses and declining real wages has left a major hole in the country's income generation capacity that is unlikely to be regained by money stimulus alone.

**Figure 4: US Manufacturing Real Wages (1985 = 100)**



**Figure 5: US Manufacturing and Construction Employment (in thousands)**



Japan has suffered much the same fate. Real wages stagnated during the 1990s and almost one-fourth of the country's manufacturing jobs were shifted to East Asia in the aftermath of

the Asian crisis of 1997–98. Since then, Japanese real wages per capita have risen only 4% over the past 17 years. Following suit, German unions began to change their wage formulas in the mid-2000s with a path-breaking IG Metall contract. Spain and Ireland have deflated wages 25% since the financial crisis began. Most of the rest of the industrialised world, however, has yet to respond and all those economies are stuck in deep recessions. Italy and France face the biggest challenges on wages; Australia and New Zealand fall into this category as well.

The reason markets and policymakers are belatedly catching onto this story is that the asset and property bubbles of the 2000s helped to mask the hollowing out of the industrialised economies – construction offers an alternative to unemployed factory workers. The Global Financial Crisis, by creating a global recession, not only shrank the global market for manufactured goods and but also ended the property building boom, thereby accelerating factory layoffs and wage competition. Note that the causation does not go the other way – China's low wages and global imbalances did not cause the Global Financial Crisis, whose root causes were regulatory failure and financial excesses. Ironically, now that China's wages are much higher than they once were, wage competition has become more pervasive and belatedly has spread to parts of Europe.

In short, one of the proximate causes of secular stagnation is the current pressure for internal devaluations amongst high-wage industrialised nations that in turn has diminished income generation and job alternatives for blue-collar workers. In this context, the contrasts with the Depression era of the 1930s may be more edifying than the similarities. The root causes of deflation of the 1930s were demand shocks and the ensuing gross monetary policy blunders engendered by the restrictive gold standard. Prerequisites for a country's recovery were to abandon the gold standard and to apply monetary and fiscal stimulus to stabilise the economy. The resulting external devaluations, often labeled beggar-thy neighbor, in truth were a precondition to restoring the competitive conditions that would warrant a rise in real wages and households' spending<sup>5</sup> and, indeed, those countries were the ones to lead the global economy out of the Depression.

By contrast, the root causes of the current stagnation were supply shocks in the form of China's rapid industrialisation – made possible by revolutionary advances in information and telecommunications technology that facilitated the globalisation of production, supply chains and distribution – along with subsequent regulatory blunders that engendered the Great Financial Recession. Moreover, companies and workers subject to the new global competitive pressures have responded differently than they did during the Depression. For one thing, workers in many high-wage industrialised economies, notably the US, Japan and Germany, have proven to be much more flexible (i.e. nominal and real wages have been much less 'sticky'). Second, global competition has not forced more of this wage restraint to be passed along into lower prices or, in other words, it is surprising that we have not seen more deflation than we have so far. Instead, globalised companies have captured the

economic rents from the windfall in technology and profit shares in GDP along with wealth inequality have soared to record levels.

To some extent, the medicine for secular stagnation due to a supply shock is the same – monetary and fiscal stimulus – but, at best, one should expect no more from those policies than was the case in the 1930s, namely to set the stage for a sustainable recovery rather than to engineer one. Only structural reforms in the high-wage countries and consumption-oriented policies in the newly industrialised economies of Asia will lift the world economy out its current malaise. Those 'solutions' are likely to take a long time and deflationary tendencies are likely to persist. In the interim, though, one should expect those countries that have shown the most flexibility in adjusting real wages – US, Japan and Germany – to outperform the laggards, notably in Europe.

## CONCLUSIONS

The implications, especially those of wage competition, for financial markets and monetary policies are very different from the Keynesian critique of the 1930s. My conclusions are:

1. Wage competition means that Western economies are not generating sufficient income to pull themselves out of the recession. The only exceptions are the US, which has made some progress at reinventing itself thanks to energy and technology, and the UK, whose recovery seem to be entirely about capital flows and immigration of skilled workers to London (or emigration and capital flight from EU and Russia, whichever way you wish to look at it).
2. Absent new sources of income generation, Western economies will continue to languish.
3. Secular stagnation translates into low inflation for a long time.
4. Monetary stimulus is ineffectual in combating wage competition and secular stagnation. As a result, the so-called neutral policy rate for Western central banks is declining.
5. In my opinion, the Fed's new neutral rate now has dropped to 2.5%, which is less than the current yield on the Fed's portfolio of 3%. This means the FOMC will not feel any pressure to hike rates much beyond 2.5% even at full employment and, hence, will not need to sell assets. A passive run-off is the most likely scenario.
6. Absent asset sales, the current impact of the Fed's portfolio on long-term rates, which studies estimate at 115 basis points, will not diminish anytime soon. The size of the Fed's portfolio (relative to the outstanding amount of marketable securities) is what determines the effect on long-term rates.
7. If you believe in the secular stagnation story – even a weak version of it – then long duration bonds offer better value than short duration. Moreover, debtors eventually

will struggle in this environment even though debt service itself is low. By contrast, creditors tend to gain strength, so the term premium on better quality bonds should tend to contract.

8. A potential danger for bonds is that central banks could repeat the mistakes of the 1930s – namely, they overreact to a cyclical recovery as inflationary when in fact wage competition has created a long-term deflationary bias to the world economy.
9. The fact that wage competition has not translated into lower prices despite sizable gains in productivity means that margins and ROE have soared for many global companies. If this disparity is semi-permanent, then valuations of developed-market equities are not unjustified and fears of bubbles in equities are at least premature.
10. China's best strategy to combat the repercussions of secular stagnation on its large industrial base is to allow the renminbi to appreciate. As a creditor nation with a current account surplus, capital flows will favor appreciation.

In short, the big picture is that weak credits get weaker in an environment of secular stagnation and strong credits get stronger. Both inflation and the term premium on bonds stay low. Moreover, the short end of the yield curve bears the brunt of credit risk as the likelihood of default draws nearer. The trouble with this story is that low debt service can mask the deterioration in creditworthiness for a long time and only rears its ugly head when some unexpected event brings it into focus. Investors are worried that that unexpected event will be a sudden rise in the Fed's or some other central bank's policy rate. I think it is much more likely that the unexpected event will have something to do with deflation itself – i.e. sales of an industry or exports of a country or prices for a product deteriorate so much that the risk of a major default will become more imminent. Although we are not yet close to that day of reckoning, it is time to rethink why bonds yields are low even as the Federal Reserve is ending its innovative initiative in quantitative easing.

## ENDNOTES

1. A flight to quality during the stock market's October swoon explains the temporary collapse in the US Treasury 10-year yield to 1.86%. The yield after the FOMC announcement on 29 October was 2.32%.
2. The OECD reported that the annual inflation rate among its 34 members, which account for more than 90% of global economic activity, fell to 1.7% in September – the third consecutive month of decline.
3. See Tao Wu, "Unconventional Monetary Policy and Long-Term Interest Rates", IMF Working Paper 14/189, October 2014 at <http://www.imf.org/external/pubs/cat/longres.aspx?sk=42408.0>
4. See Robert S Gay, "Union Settlements and Aggregate Wage Behavior", Federal Reserve Bulletin, December 1984, pp 843–856 and "Profits, Concessions and the Wage Equation", Economic Activity Section Working Paper #54, Board of Governors of the Federal Reserve, January 1985.
5. See Ben S Bernanke and Kevin Carey, "Nominal Wage Stickiness and Aggregate Supply in the Great Depression" and other articles reprinted in Ben S Bernanke, *Essays on the Great Depression*, Princeton University Press, 2000. Sticky wages meant that real wages rose as prices fell and aggregate supply contracted along with aggregate demand in a downward spiral.



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