

The Incredible Shrinking Interest Rate

Quantitative easing is finished. On October 29th, the Fed announced that it would no longer purchase new government and mortgage bonds thus putting an end to six years of unconventional monetary expansion. (They will maintain the current size of their balance sheet by rolling mature bonds however). While the current Fed funds rate remains unchanged at 0 – 0.25%, the median Federal Reserve Board projection for Fed funds is 1.375% by 2015, 2.875% by 2016, and 3.75% by 2017. Policymakers are expecting a return, albeit slowly, to a normal interest rate environment.

This back-to-normal story is not new. This round of quantitative easing (QE3) has two older siblings, QE1 and QE2, that similarly concluded with visions of a back-to-normal economy. In each case the US was back in a QE program in a matter of months. As a result interest rates have stayed consistently low since the credit crisis. A climb to 3.0% at the end of 2013 has proven to be no more than a prelude to another year of incredible shrinking for the ten year US government bond yield. Currently the rate hovers around 2.3%.

The snap conclusion is that there is only one direction to go from these low levels (up), but that pronouncement ignores some key variables. In this month's *Investment Bulletin*, we discuss the post-QE interest rate environment. We consider the Fed's motivations, the options for risk-free asset purchasers, and where forward interest rates are priced.

The Fed's Motivation

It's important to understand the Fed's (conventional) monetary policy toolkit. They buy or sell short-term bonds to influence the nominal interest rate for these types of securities. The idea is that short-term interest rates in turn influence the entire term structure of interest rates. Consumers and businesses are incentivized to borrow more (or less depending on the direction of rates) thus stimulating (or cooling) the economy.

The catch is that the Fed cannot directly impact *real*, or inflation-adjusted, interest rates. Theoretically consumers and businesses make decisions based on the *real* expected cost of borrowing. In an inflationary environment the Fed can compensate. If the desired real interest rate is 1% and inflation shoots up to 6%, Chairwoman Yellen can push the nominal rate to 7%. However, if the economy slips into a deflationary period the Fed is handcuffed. There is no conventional way to arrive at a 1% real rate if deflation is 2% – the required nominal rate of -1% is not achievable.

Currently inflation is running below the Fed's target and, as the dollar strengthens, cheaper imported consumer goods only help push that number lower. Inflation may still be the more likely outcome in today's environment, but deflation is far worse for the economy. If you were the Fed and got to pick the direction of your error, wouldn't it make sense to risk inflation rather than deflation, during which your toolkit is mostly useless? This read suggests the Fed will be late to raise rates.

Risk-Free Assets

Most buyers of US government bonds are seeking a risk-free place to park excess capital. Consider their alternatives: government bonds issued in the world's other major currencies might be appropriate. The weakness in such a strategy is that overseas yields are more meager than ours! See Table 1 for a rundown of the largest markets.

Table 1: World 10 Year Gov't Bond (GB) Yields
Yields as of 10/29/2014; Weights as of 08/31/2014
Sources: Bloomberg, Citigroup

	Yield	Share of World GBs
United States	2.3%	28.5%
United Kingdom	2.3%	6.4%
France	1.3%	} 35.1%*
Germany	0.9%	
Italy	2.5%	
Spain	2.1%	
Japan	0.5%	25.1%
Others	---	4.9%

*35.1% share of GBs is for entire euro area. Some constituents are not shown. Weights derived from the Citigroup World Government Bond Index.

When you consider the US dollar still enjoys reserve currency status and that the value of the dollar against the euro, sterling, and yen is trending upward, the result is reduced competition for the world's risk-free allocation. Further, the European Central Bank is embarking on an asset-backed purchasing program and the Bank of Japan just announced an expanded QE program. You can make a strong case that US yields should come in further to level the playing field with foreign government bond markets.

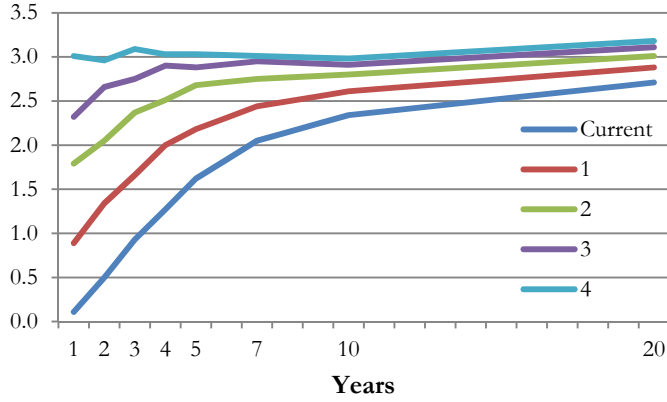
The Forward Interest Rate Curve

Let's turn to examine the interest rate levels implied by the current term structure of the yield curve. Figure 1 on the next page depicts the implied shape of the US yield curve one, two, three, and four years forward. The front end of the curve prices in an increase in

short-term interest rates. Over four years, shorter maturities dutifully move up by 2.9% in the case of one year bonds and 2.2% for three year bonds. When you move towards the middle of the curve, the move is less dramatic – the ten year only moves up 0.7%. The back end of the curve shows the least change.

Figure 1: Impied Yield Curves

Yields (%) at each maturity implied 1 to 4 years forward
 Source: Bloomberg



In short, the curve is priced to flatten by 2018. Such a scenario is a bad outcome for banks that make their money by pocketing the difference between the rates they pay on short-term funding and the interest they earn on longer-term loans. While not a positive for a bond investor this is also no tragedy. Bonds on a short-term schedule are not very sensitive to interest rates; the frequent maturities allow you to quickly adjust your coupon to the market level. Intermediate-term bonds would price lower, but the implied adjustment is not much different than what was experienced in 2013 – the Barclays Aggregate Bond Index sold off 2.0% on a total return basis that year.

Still an Asymmetric Risk

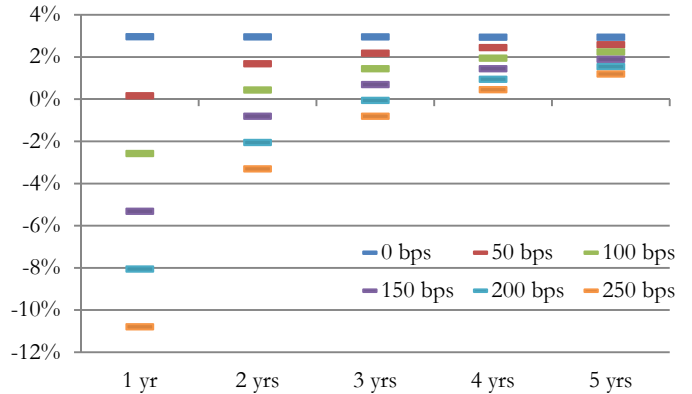
Of course there are good reasons why rates can rise meaningfully across the entire curve. We tested out a few interest rate scenarios on the Barclays Aggregate Bond Index, an industry standard benchmark which consists primarily of US treasuries (36%), US agency bonds (32%), and corporates (23%). Its yield as of September 30th was 2.3% and duration measured 5.5 years.

Figure 2 runs through the stress scenarios. Each dash gives the annualized total return you might expect from a position in a Barclays Aggregate Bond tracking portfolio assuming the yield curve increases

linearly over the time period. No other changes are assumed. Wrong on rates is painful in the short-term: a 250 basis point (2.5%) increase in one year drops the expected return from 3.0% to -10.8%. Over a five year period, during which a 250 basis point increase would be realized at 0.5% per year, the damage is somewhat diminished. The expected return drops from 2.9% to 1.2% on an annualized basis (15.6% vs. 6.1% on a cumulative basis). The downside could be worse; after all, we're only talking about a 5% US ten year bond in the 250 bps scenario. Your upside (not pictured) is bounded at a fall in rates to 0% hence the asymmetric nature of the investment proposition.

Figure 2: Impact of Interest Rate Increases on Bonds

Annualized Total Return of Barclays Aggregate Bond Index assuming indicated increase in 10 yr yield
 Source: Fidelity Yield Investigator



The Post-QE Interest Rate World

The synthesis of this analysis is that interest rates have a scary tail but the likelihood of that scenario is diminished. Investors have become accustomed to making decent money in bonds year after year as interest rates have steadily declined since the early 1980s. This mindset will need to change – the return potential for the asset class is paltry. However, there are still benefits to owning investment grade bonds in a portfolio: their uncorrelated return stream tends to hold up in times when other asset classes suddenly correlate very closely with falling equity markets. Our own view has been to tilt bond portfolios away from the Barclays Aggregate Bond space. As other bond sectors have performed well and, as a result, grown much pricier, the case for investment grade debt has strengthened. □

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