



# ALM INSIGHTS

Volume 4, Issue 2 // Editors: Cliff Reynolds, CFA and Ryan Craft, CFA

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Acropolis was born  
from a simple idea:

**In an industry where high  
quality, objective advice is  
hard to come by, we make a  
difference by putting the client's  
interests above our own.**

## Key Rates:

Fed Funds Target	0.25%
Discount Rate	0.75%
Prime Rate	3.25%
3-mo LIBOR	0.33%
2-yr Treasury	0.70%
3-yr Treasury	0.99%
5-yr Treasury	1.45%

10-yr Treasury	2.15%
2-yr Swap	0.80%
5-yr Swap	1.50%
10-yr Swap	2.14%
5-yr A Corp Yield	2.43%
5-yr A BQ Muni Yield*	2.04%
* Tax Equivalent Yield	

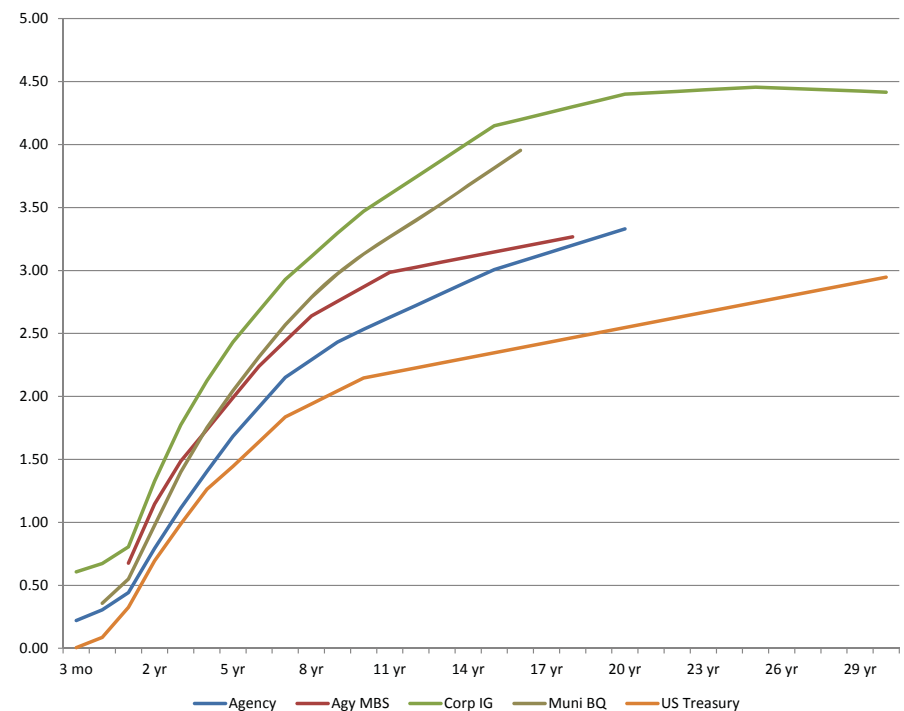
## Economic Data:

Q2 GDP Growth	3.7%
August CPI YoY	0.2%
Unemployment Rate	5.1%

## Upcoming Events:

Next FOMC Meeting	Oct 18
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## Yield Curve *All data as of 9/23/2015*



# Janet Blinked

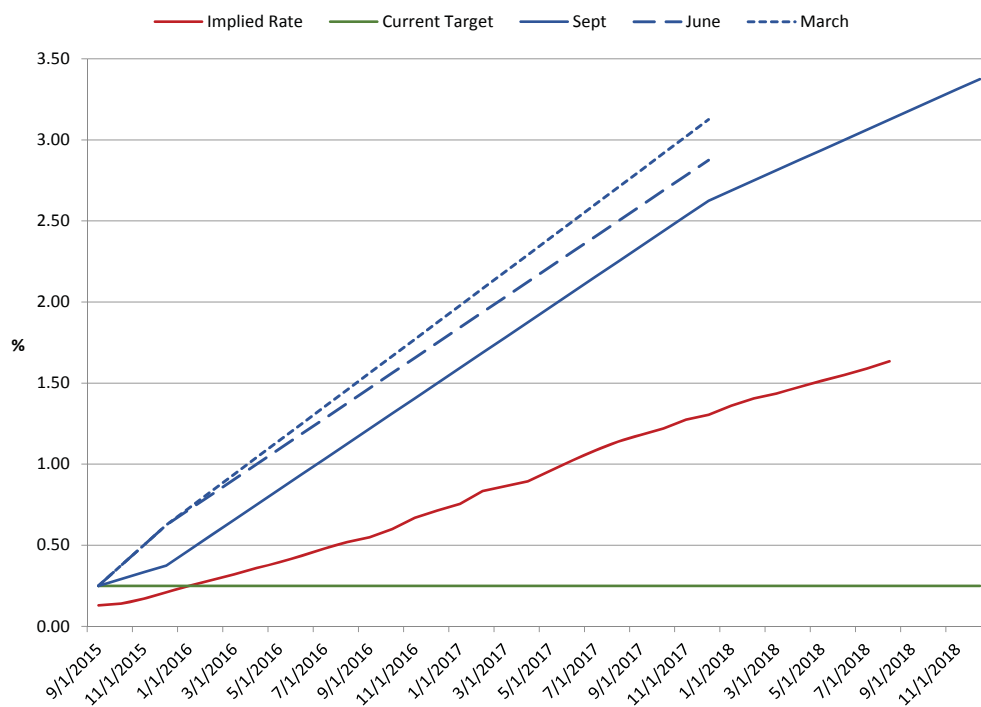
By Ryan Craft, CFA

The Fed has been preparing the market all year for a September rise in the Fed Funds rate. GDP has grown sufficiently. The Unemployment Rate has fallen to the Fed's historic definition of neutral. Inflation remains below the Fed's 2% target, but deflation is not a threat. All signs pointed to the Fed beginning the normalization process.

Then China happened. In August, China devalued the Yuan, destabilizing global markets in the process. Global equity markets experienced heightened volatility. US Treasury markets rallied in a flight to quality, despite rumored sales of \$100 billion US Treasury bonds by China. With no change in economic data, the market's expectations for a rise in the Fed Funds rate rapidly dissipated. Ultimately, the Fed lost the staring contest with the markets once again.

From a long term investor's point of view, whether the Fed hikes in September or December doesn't really matter. The most important questions are: what is the terminal value of Fed Funds and what is the pace for getting there? Currently, there remains much debate about these questions along with when this whole process will finally begin. The Fed, economists, and market participants all have different answers to those questions. To see the Fed's view of the magnitude and pace of tightening, one must look at the quarterly released economic projections that were updated at the September meeting.

Over the past year, the Fed has lowered its expectations for the path of Fed Funds in each of its quarterly releases. The chart nearby shows the Fed's average forecast (Blue lines) for Fed Funds from the economic releases in March, June and September. The market's expectation (Red line), as implied through the futures market, is still for a much lower and slower rise. The market has remained fairly consistent in its expectations, while the Fed has slowly been moving its projections lower and closer to the market.



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To understand the Fed's actions, it is important to understand their worldview (which can be quite different than the way in which most people view the economy). I recently attended a conference in Washington D.C. hosted by Macroeconomic Advisors that featured many policy makers and economists who run in the same circles and share the same thought process as the FOMC participants. While many there expected the Fed to raise rates in September, most of the time was spent debating how to combat the current low inflation rate and where the natural level of unemployment resides.

The case for raising rates now is based on the Phillips Curve ideology, where declining unemployment leads to higher inflation. They believe there is a level of unemployment that, once crossed, will result in increasing inflation. This Non-Accelerating Inflation Rate of Unemployment, or NAIRU, had traditionally been thought to be around 5%. Using this model, the Fed should look to raise interest rates to combat looming inflation caused by further declines in the unemployment rate. One of the many problems with this model is that the NAIRU is unknown and appears to be different for different periods. The biggest problem is that most of the data historically shows that the Phillips Curve does not hold up, but our Fed and economists look to its merits nonetheless, so we must consider it when trying to guess their next move.

The other raging debate is what the Fed should do about the "zero-bound" problem. In their models, the monetary policy prescription to reach the Fed's 2% core inflation target would require negative interest rates. Negative interest rates will not work in a fractional banking system as depositors will just demand cash rather than lose money holding cash balances at banks, thereby risking a liquidity crisis across the banking sector. The academic economist looks at the math and says that the Fed should target a 4% rate of inflation in order to have a larger buffer in monetary policy and avoid hitting the floor of zero. In academic circles, it is not the rate of inflation, but the volatility of inflation that creates problems. Therefore, in their minds, a 4% target is just as good as a 2% target from a price stability standpoint.

Many economists (including those at the Fed) believe that low unemployment drives inflation. With the unemployment rate falling to their historic NAIRU, their initial reflex is to raise rates. However, inflation remains stubbornly low and has not reacted as the Phillips Curve would suggest to the falling unemployment rate. This leads other economists to argue that the economy needs more inflation, so they should not be concerned with a falling unemployment rate.

This is why the FOMC is divided. The traditional hawks are ready to normalize rates to ward off inflation now that the unemployment rate is at 5.1%. However, the more academic circle of the FOMC wants higher inflation and therefore is ready to keep rates at zero for longer. In the September forecast, one Fed bank actually forecasted negative interest rates at the end of 2015 and 2016. This means that one participant in the FOMC sees the next move by the Fed as easing (QE4 anyone?) rather than raising rates.

Personally, I find this logic quite concerning. Doubling the rate of inflation would have a very negative effect on lenders, savers, and consumers. The only group helped by this is borrowers (check out the nearby article on US debt and maybe we have found the reason the Fed sees inflation as a friend).

However, as investors, we cannot invest based on what we think should happen, but rather on what we think will happen. In this case, what will happen will be determined by the thoughts and opinions of a very small group of individuals who are experimenting on the broad economy with competing economic theories. What is becoming apparent, though, is that rates will remain very low for a long time even after the Fed begins the process of hiking short term rates.

# What if You Called The Market Perfectly? Part II

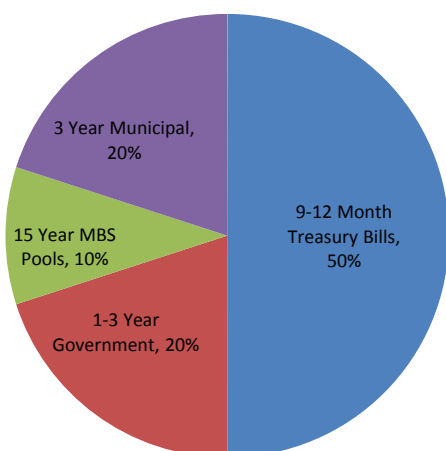
By Cliff Reynolds, CFA

It's been a year since I first looked into what portfolio returns would look like if you called the bottom in interest rates. In that article, I compared the performance of two hypothetical bond portfolios, (a short portfolio and a long portfolio), starting in July 2012 – the month that the ten-year Treasury bottomed out at 1.39%.

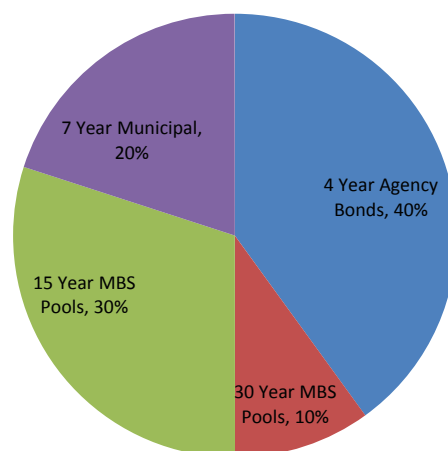
The data showed that over the first year the shorter portfolio had higher returns, but over the second year the longer portfolio made up for the shortfall (and then some) thanks to higher interest income over time. Calling the bottom in yields perfectly was nice for a while, but even while interest rates did rise, they didn't rise fast enough to outweigh the added yield of the longer portfolio.

Now that we have 3-years of data for our experiment I thought it would be cool to revisit our two portfolios to see what, if anything, has changed.

**Short Portfolio**  
Duration: 1.62 Years  
Yield: 0.44%



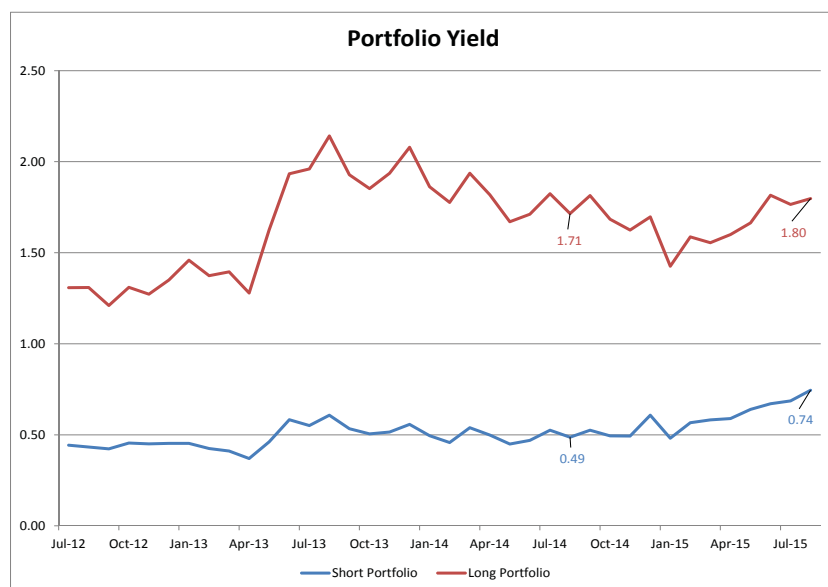
**Long Portfolio**  
Duration: 3.49 Years  
Yield: 1.31%



The two graphs above show how the two portfolios purchased in 2012 differ. They both have a 20% weight to municipal bonds, but have different levels of interest rate risk. The yield curve was upward sloping so the long portfolio has a higher yield at the time of purchase. Just as before, we will assume that the portfolio is rebalanced monthly to maintain a constant weight to each sector. Also, just to make things neat and clean, I will ignore the effect to trading costs in the simulation.

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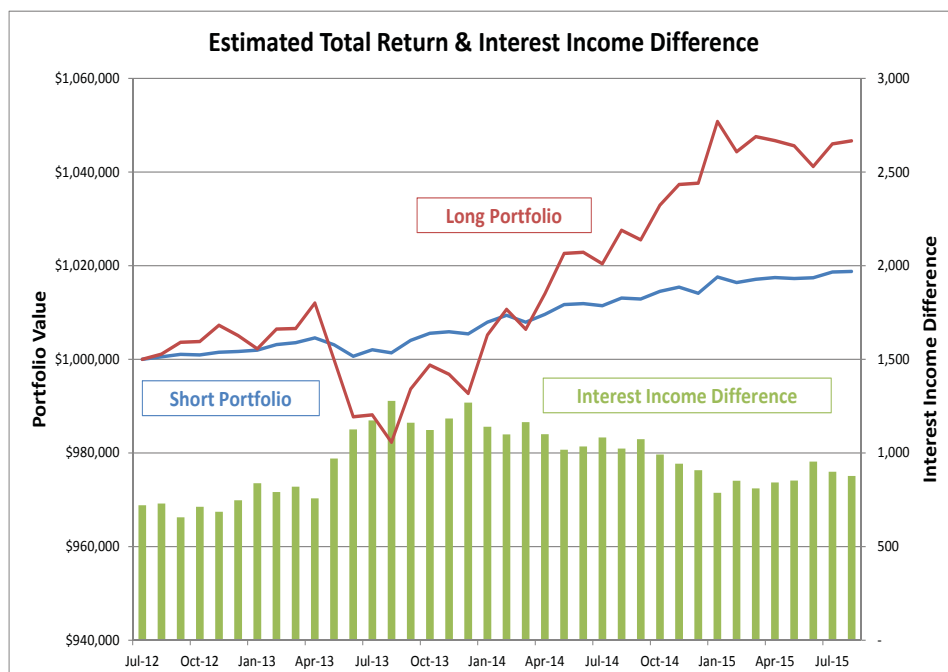


Since we first compared the two portfolios, yields have moved higher, but not evenly. The yield on the longer portfolio has risen from 1.71% to 1.80% over the past year, (a 9 basis point increase). The short portfolio experienced a more dramatic increase in yield from 0.49% to 0.74% (a 25 basis point increase).

In a way this shouldn't come as a surprise. We have inched closer to the first rate increase from the FOMC, a move that is understood to have more impact on shorter-term interest rates. Meanwhile, measures of inflation and economic growth, understood to have a greater impact on intermediate and longer-term interest rates, have remained tepid. But how does this translate into performance?

portfolios over the last three years. The green bars at the bottom correspond to the right axis and show the added interest income earned each month by the long portfolio, (per \$1mm of portfolio value).

Over the last three years the total return performance of the long portfolio is more than double that of the short portfolio, even when each portfolio is implemented right before rates go up. By itself, the performance of the short portfolio doesn't look terrible. It has earned a steady return. But the additional return from investing in the long portfolio represents the opportunity cost of being invested so conservatively.



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Like I said the first time I compared these portfolios, the purpose of this isn't to say that the longer portfolio is the most appropriate portfolio for every bank. While the long portfolio returned more than double what the short portfolio returned, it has also been more volatile. Without the proper risk tolerance, an investor wouldn't be able to remain invested in the long portfolio through the rising rate environment – missing the added interest income over the remaining period.

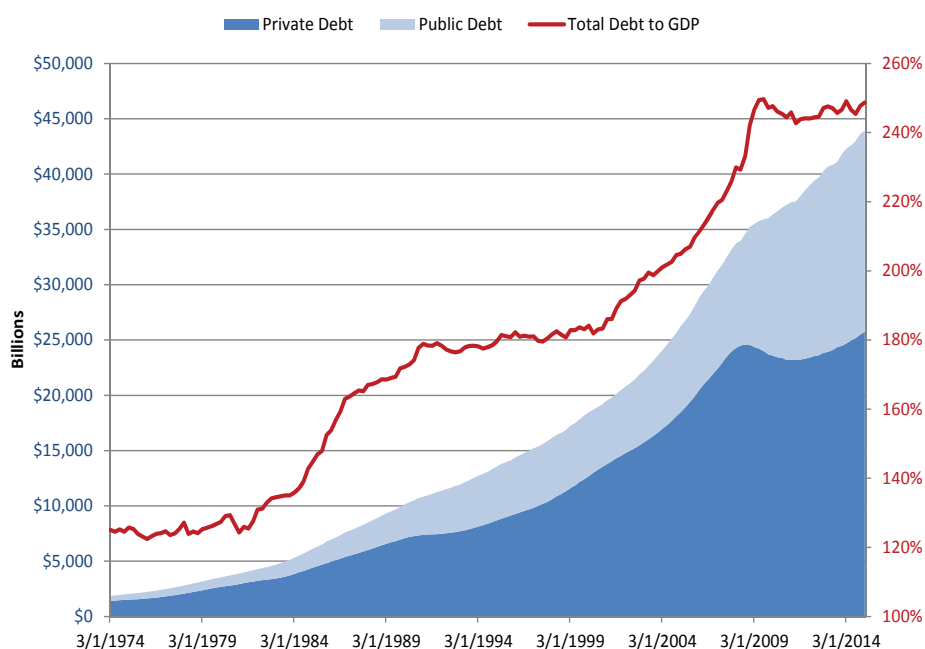
I concluded the article last time by saying that a sharp move in intermediate interest rates could reverse this outcome and move the short portfolio ahead on total return. While that is still the case, the long portfolio has built a larger cushion so that has a smaller likelihood of happening at this point. But the recommendation taken from this exercise should be the same. Instead of trying to be tactical with portfolio allocations, a proper investment strategy should focus on modelling more than just the most likely scenario and making sure that the risk in the portfolio is being considered in the context of the overall balance sheet.

## Another Debt Crisis?

By Ryan Craft, CFA

It appears there is a debt crisis around every corner of the world these days. Greece has defaulted again and threatens to pull Europe in a depression. China is struggling with a debt fueled over-building. Now seven years removed from its worst debt crisis since the Depression, how does the US balance sheet look?

Despite what is espoused in the media about declining deficits and improving household balance sheets, the fact is that the US is more indebted as a nation now as ever. The chart nearby provides some context. The dark blue shaded area is the total amount of private debt outstanding in the US. This includes all debt issued by corporations, businesses, and households. As seen in the chart, private debt declined immediately following the financial crisis and has recently begun to expand again. Within the total private debt, household balance sheets have made much improvement while corporations have increased debt to lock in historically low interest rates. The net effect is relatively unchanged since 2008. That makes sense, as private debt caused the financial crisis and households needed to deleverage.



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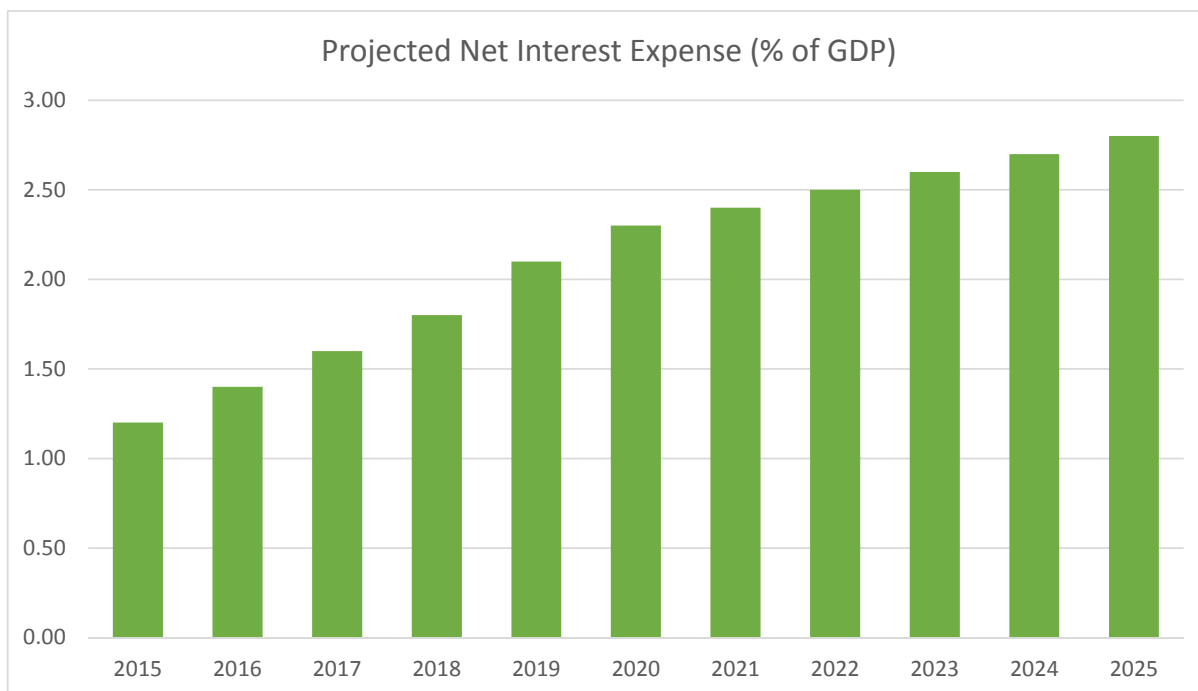
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The public sector is a whole different story. Public debt outstanding has increased at a rapid pace as the Federal government ran historic deficits for years following the financial crisis. This is seen in the light blue shaded part of the graph. While budget deficits are in fact declining, they are only declining from historically high levels and are still projected to run above average for the next 10 years. The US Federal Debt has recently eclipsed 100% of GDP, which is an alarmingly high level.

We mention this as it has the potential to have massive effects on US growth and interest rates in the future. The red line on the chart tracks the total debt, both public and private, as a percentage of US GDP. While the composition changes, the total amount of debt in the US relative to GDP has remained over 240% since 2007. This elevated leverage in the economy will magnify any interest rate increases. When interest rates do rise, it will have a larger effect on consumption as disposable income declines and corporate profits are hurt due to increasing interest expense. While those are a concern and could certainly hurt economic growth in the short term, private debt as a percentage of GDP is actually smaller now than it was in 2008. The dollars are the same, but GDP has increased.

What could cause a bigger problem is on the government side as the federal debt has almost doubled over that time. Net Interest Expense for the US Government is now more than 1% of GDP. According to CBO projections, Net Interest Expense is expected to grow to a staggering 2.8% of GDP by 2025. That forecast assumes GDP growth and interest rates similar to the Federal Reserve projections. It also assumes no new government spending from what is current law (pause for laughter...). As it stands, assuming a modest increase in interest rates, moderate budgetary increases and fairly generous growth projections, the cost to just pay US Treasury coupons will be equivalent to the expected growth rate of GDP. This is simply not sustainable.

This shows how a small increase in interest rates could prove to be a large fiscal drag on the economy. This issue is not lost on all lawmakers as there may be another government shutdown this year as Congress debates the debt ceiling which could hurt growth in 2016. These higher debt levels may also impede the government's ability to provide aid the next time the economy stumbles. In recessions, the government runs a deficit as revenues contract and expenses increase due to automatic stabilizers such as unemployment benefits.



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Adding this all up, one can see that times are changing. The only way for the economy to grow its way out of this is through another productivity boosting technological revolution. Otherwise, the economy is likely to remain sluggish, with low growth, low wage increases and low inflation as debt service requires a larger chunk of productive capital. For much of the past 35 years, economic growth has been fueled by debt. That no longer looks sustainable.

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