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## Investment Newsletter – September 2014

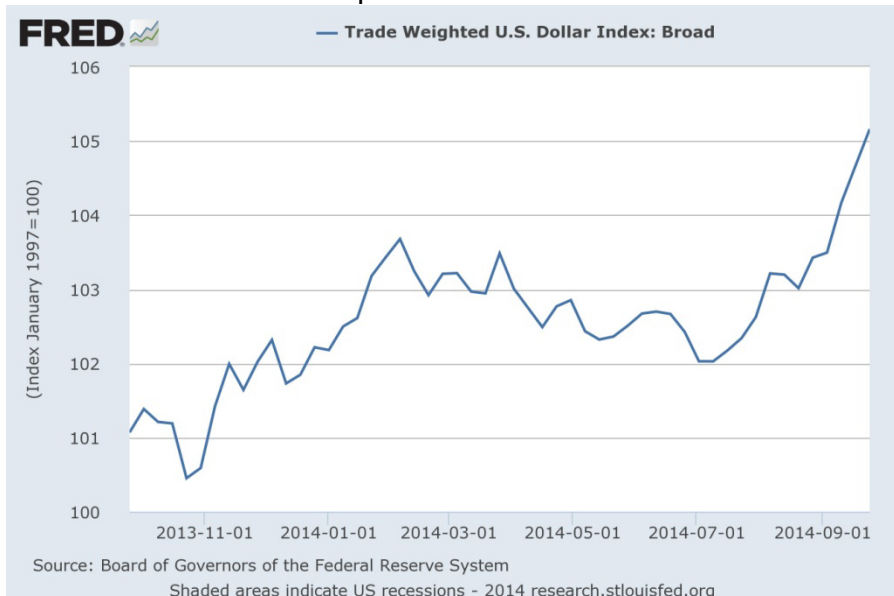
As we near the end of the Federal Reserve Bank's quantitative easing era, this newsletter will examine some possible scenarios for what may come next. We will then review returns and strategy of The Long Term Income portfolio which reached its 5 year anniversary this month.

### After Quantitative Easing – Some Scenarios to Consider

After its September meeting, the Federal Reserve Bank confirmed that its quantitative easing program will end in October. This does not mean they are going to start reducing the money supply any time soon by selling bonds. But they will stop actively suppressing long term interest rates and pumping up the money supply through open market purchases of long term bonds.

### Foreigners Pushing up the Dollar and Holding Rates Steady

First, let's look at some international linkages. Despite the coming reduction in Federal Reserve bond purchases, long term rates won't necessarily rise. The graph below shows the dollar's value against a basket of our trading partners' currencies. China and Japan continue to buy U.S. treasury bonds - which pushes the value of the dollar up relative to their own currencies. Both countries hope this



can boost exports to compensate for weak domestic growth. The Euro area economies are also very weak and like Japan their interest rates are even lower than ours. Unlike China, the European central bank is not actively buying U.S. bonds to manipulate their currency. But low Euro zone interest rates produce the same

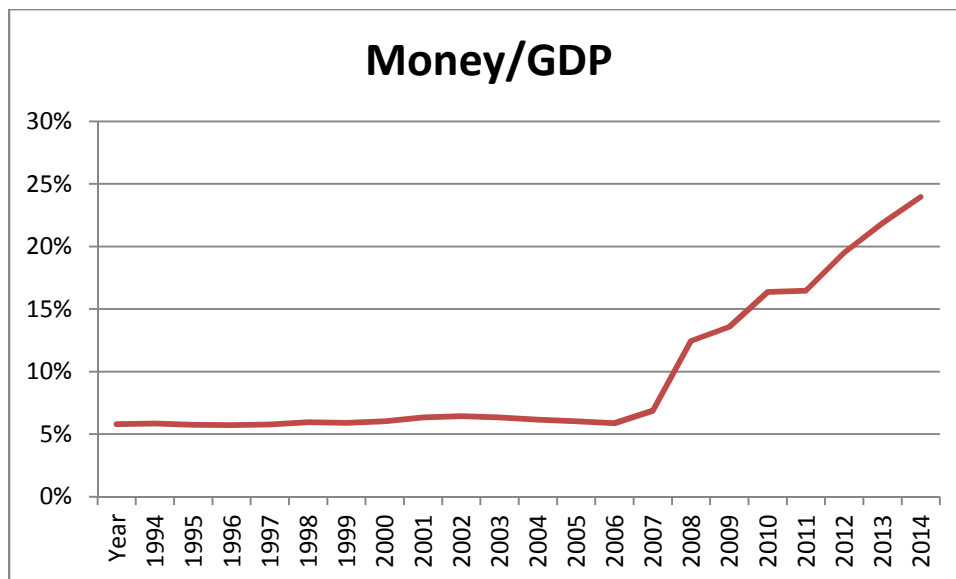
result because European investors are moving money to higher yielding U.S. bonds. All these actions are combining to push the U.S. dollar's value higher versus currencies of our major trading partners. As the dollar's value rises, export competitiveness declines, taking away a recent driver of U.S. economic growth. This also reduces the dollar value of U.S. companies' foreign profits.

The other effect of foreigners stepping in to keep U.S. long term interest rates relatively low is that interest rate sensitive sectors of the economy should continue to do well. Home prices have risen enough that home builders can make good profits and they are raising production.

We are also starting to see more growth from business investment. Record levels of profit margins combined with a continuing low rate environment should lead to more investment as businesses seek to capture a larger share of profits. Ultimately this will push profit margins back down towards more normal levels; that will be good news for the economy (but perhaps not for the stock market).

### **Economic Impact of Higher Short Term Interest Rates**

Rising short term interest rates on cash equivalents (i.e. money market funds) may increase the velocity of money in the economy and trigger inflation. As of 9/17/2014 the Fed has increased the money supply to \$4.15 trillion. As you can see in the chart below we are in unprecedented territory in terms of money supply relative to gross domestic product (GDP).



Source of Data: Federal Reserve Bank

In the past, the mechanism for raising interest rates has been a reduction in the monetary base. The Federal Reserve Bank would sell treasury securities to reduce bank reserves (i.e. money). In the current situation they cannot do this because they would have to sell at least \$3.1 trillion worth of bonds to retire the excess money. Doing so would drive up interest rates, crash the economy, and probably lose several hundred billion dollars of taxpayer money. Therefore their plan is to raise the interest rate they pay on the money reserves held by the banks – essentially turning the banks' cash reserves into loans from the banks to the government. This has never been done before in the U.S.

Historically there has been a strong relationship between the level of interest rates and the public's willingness to hold money. As interest rates rise, we face a higher opportunity cost to holding non-interest bearing accounts; thus money tends to move faster through the economy. We hurry a bit more to convert our cash into other assets or spending. We refer to the speed of money circulation as Velocity of money. It is the turnover of money over a time period (a year). More specifically, the algebraic relationship between prices, money supply, GDP, and Velocity is given by the Exchange Equation:

$$M * V = Y * P \text{ where}$$

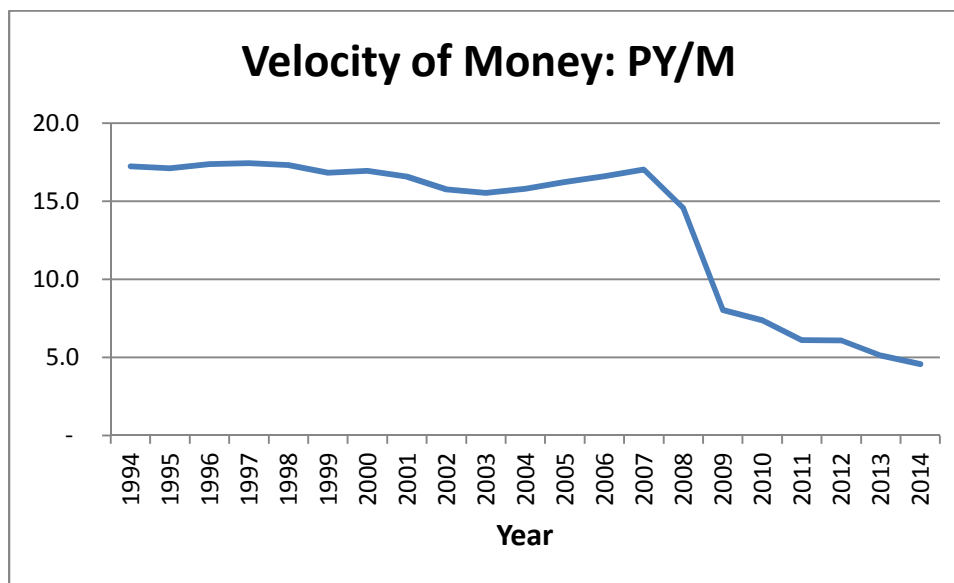
M is the monetary base (i.e. money)

V is the velocity of money

Y is real gross national product (before applying price level)

P is the price level

– so that  $Y * P$  is nominal gross domestic product in dollars for the given price level. Because the money supply is less than nominal GDP, it must circulate V times so that all goods may be traded via money as an exchange mechanism. Thus velocity is just the inverse of the money to GDP graph previously shown. As the Fed pumped up the money supply and lowered interest rates, velocity fell dramatically:

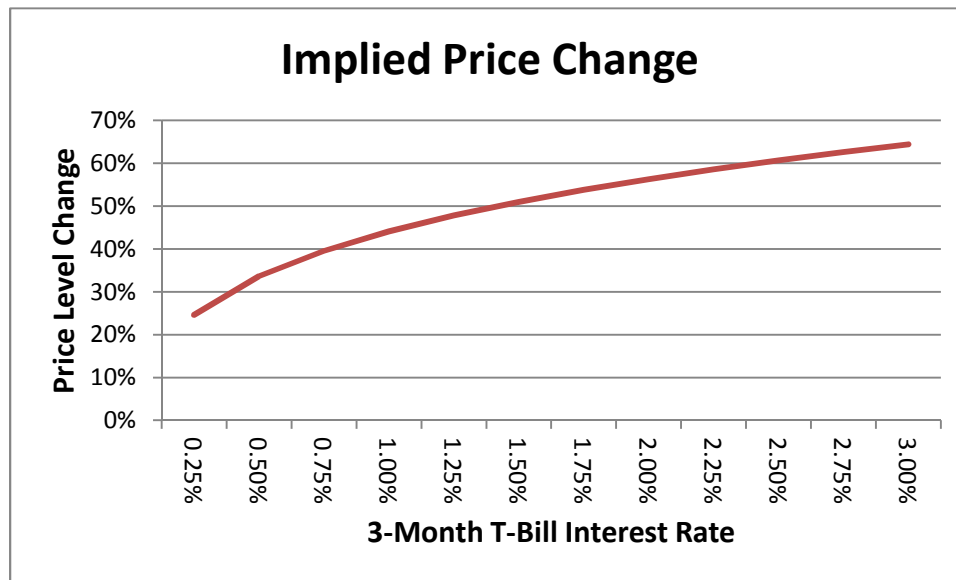


When economic risks increase as they did in 2007-2008, there is increased demand for money balances as a precaution; this drives down velocity. For a given interest rate target, the Fed would need to increase the money supply. As things got worse they continued to increase the money supply so as to lower interest rates and decrease velocity further. By lowering interest rates they made holding money less costly and thus the money turns over more slowly in the economy. Therefore the increased money supply doesn't lead to big changes in prices or real GDP.

Now let's consider what happens as we reverse this process. Empirically we can estimate the relationship between Treasury Bill interest rates and velocity. This can give us some idea of what the impact might be as interest rates and velocity move back towards more normal levels.

If velocity of money increases because rates are higher, while the money supply itself stays the same, (because the Fed won't be able to reduce it) then

there would have to be a rise in prices, or real GDP, or both. Since there are real limits on actual economic output, large changes would come mostly in the form of changes in the price level– we’d see increasing inflation. The chart below shows the implied price level change for various levels of interest rates (assuming real GDP doesn’t change) based on the relationship of interest rates and money velocity found in post-war historical data from the U.S. This chart shows that a rise in the three-month Treasury bill rate from the current level of .02% to 1.50% would correspond with a 51% increase in prices.



Of course this doesn’t happen right away. The relationships describe what happens in long run equilibrium. There can be large time lags while the economy adjusts to the new combination of interest rates and monetary base. There is also another big caveat here: we are extrapolating outside the range of historical data. The U.S. has never had this combination of large money supply relative to GDP and interest rates above .02%, so we can’t really know what will happen.

Another complicating factor is the Fed’s new policy of paying interest on the monetary base (excess reserves). This effectively eliminates the difference between money and government debt from the point of view of the banking system. If the government will effectively pay the banks to hold this new version of money, it may keep velocity from rising because it reduces the incentive to exchange money for other assets. Still, the Fed will not have direct control over the money supply, or velocity, or long term interest rates. Rising short term rates could set off an inflationary chain reaction. In fact, given the nation’s heavy debt load to foreigners, this may be the government’s policy goal. It would enable the U.S. to repay our debt with lower value dollars.

Higher short terms rates will also directly impact companies’ cost of capital and therefore profitability. Higher short term rates will also directly increase the government’s budget deficit.

### **Impact on Floating Rate Investments**

Most floating rate investments will benefit from higher short term rates and this will provide higher income to their owners. The exceptions are floating rate

loans and bonds that are currently subject to a minimum interest rate (a “floor”) on the floating rate index. In this situation the interest earned will not increase until short rates rise above the minimum guaranteed level. Rising short term rates could also reduce income on securities that include embedded leverage. For example, many closed-end funds borrow money at short term rates magnify the rate they pay on their own securities. Higher funding costs will likely lower their payouts if the interest they earn doesn’t rise as quickly as the interest they pay.

### **Impact on Fixed Rate Investments**

The impact of rising short rates on fixed rate investments is ambiguous. If long term rates rise along with short term rates, fixed rate securities will lose value in the short run but their owners will have the opportunity to reinvest in higher yielding securities at maturity. Thus rising rates can still provide benefits in the long run even if a portfolio shows a loss in the short run. The other possibility is that the market concludes that the economy cannot withstand further rises in short term rates (or that there is no political will to raise rates further). In that case, long term rates may not move at all; they could even decline. I think it very unlikely that the Fed can raise rates more than 2.5% without triggering another recession or causing a political fight over interest rates.

### **Impact on Real Estate**

Increases in short term interest rates by themselves would have little impact on real estate. If such increases led to higher long term interest rates, it would be a negative for real estate prices as an increase in long term cost of capital reduces value unless the higher rates are tied to higher growth in rents. If rising short rates do trigger higher inflation, this could create large profits for real estate owners who financed their purchases with long term fixed rate debt.

### **Long Term Income Portfolio Strategy and Performance**

Berkeley Investment Advisors uses several different strategy portfolios to manage client assets. The Long Term Income portfolio focuses on intermediate to long term maturity bonds. Longer maturity bonds provide higher interest rates (yields) than shorter maturity bonds and are more sensitive to changes in interest rates. A bond’s interest rate sensitivity risk, known as its duration, tells us how big a change in price we can expect when interest rates change. Typically a long term bond fund strategy would own bonds with durations above 8, but we have chosen to keep duration lower – currently at 4.3. This is because there is a significant chance of long term interest rate increases when the Fed raises short term rates - probably in 2015. If we hold a bond with duration of 4 when rates went up 1% we would expect the bond’s price to decline by 4%. Of course there is also a chance that long term rates decline or stay the same when short term rates go up. This could happen for a number of reasons, but the main one is that the rise in short term rates could cause a decline in economic activity which, in turn, tends to push longer rates down.

Besides interest rate risk there is also default risk in this portfolio. Bonds with a higher probability of default (relative to other corporate bonds) compensate investors with higher interest payments – hence they are called high yield bonds. High yield bond default risk is like stock market risk - it is correlated with the

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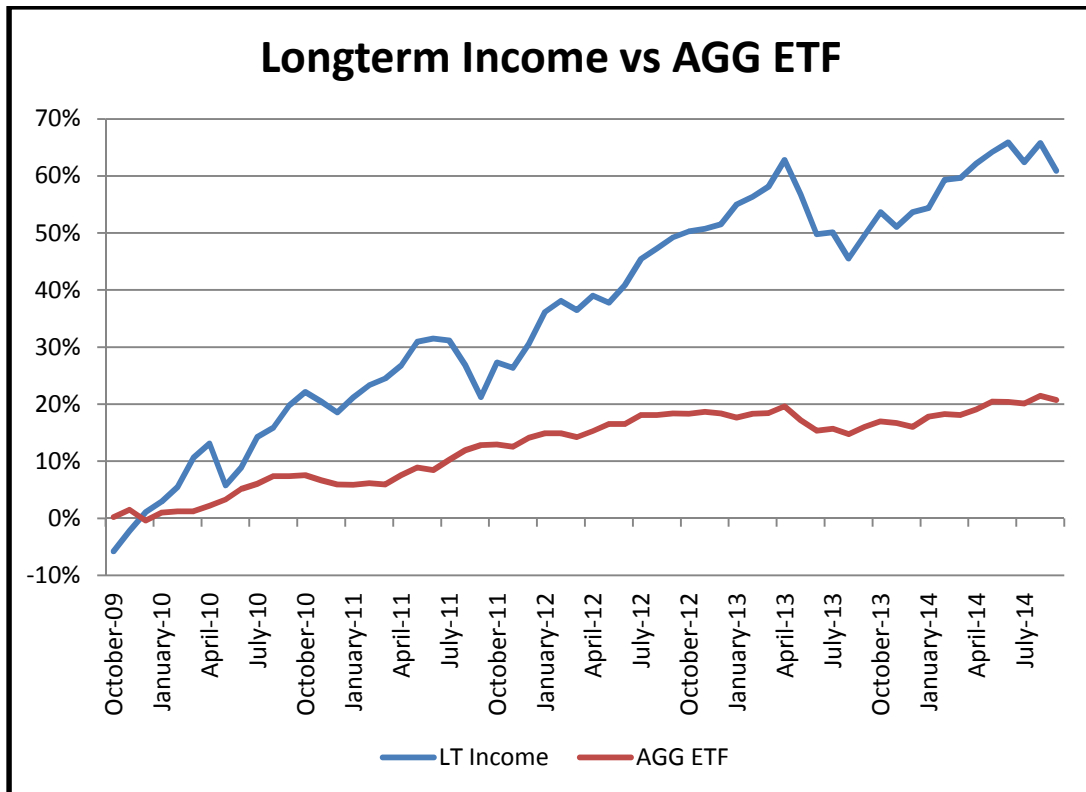
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performance of the economy. At the portfolio level we diversify away individual company default risk by diversifying across a large number of issuers. This insures that the extra premiums earned won't be lost due to a few companies defaulting. Our strategy is to accept market correlated credit risks to earn those extra returns.

We also pursue incremental yield by buying closed-end funds. These securities can be bought at a discount to the underlying bond values (and occasionally sold at a premium). These funds also enhance returns through embedded leverage. Using these securities means we must endure more price volatility in down markets because most retail investors want to sell more at lows. Current market conditions are providing about 1.19% higher yield on our portfolio than if we held the underlying bonds directly.

The portfolio is diversified across virtually all sectors of the fixed income market, including government bonds and mortgage backed securities. A good comparison index is the Barclays U.S. Aggregate Bond Index as represented by the iShares Core Total U.S. Bond Market exchange traded fund (ticker AGG). This is meant to represent the total overall U.S. bond market.

Although we first created this portfolio in February 2008, it was not continuously invested until September 2009. Therefore we cannot calculate performance further back than the last 5 years. The graph and table below show total returns including price and interest payments in comparison to the bond index mentioned above as implemented in the exchange traded fund (ticker AGG).



Our portfolio returns calculated here are based on a particular client's account and have been reduced by annual fees of 1.25% which would apply to new accounts above \$500,000 but below \$1 million.

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Year	Long Term Income	AGG Bond Index	Difference
1	19.8%	7.4%	12.4%
2	1.2%	5.0%	-3.8%
3	23.1%	5.0%	18.1%
4	0.2%	-2.0%	2.3%
5	7.5%	4.1%	3.5%
5 Year Total	60.9%	20.7%	40.2%

Thus the annualized compound rate of return over 5 years has been 10.0% despite the dramatic pullback from the high hit in April last year. The table above makes it clear that the strategy exhibits significant volatility in returns. My expectation is that current yields and prices are at sustainable levels – at least for the economic environment over the next 3 to 4 years. Therefore I don't expect to see the high returns we had in years 1 and 3, nor the low returns we had in years 2 and 4. Of course, anything can happen but it seems reasonable to expect annual returns in the range of 6.0% to 7.0% (net of fees).

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