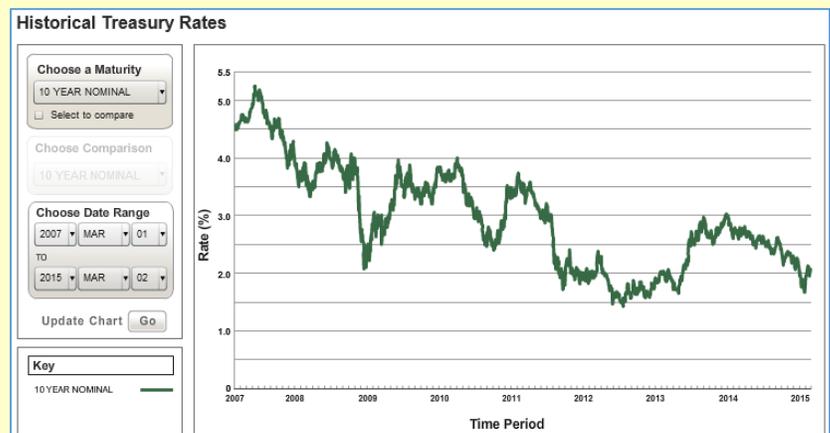


# US Treasury Bond; To Short or Not To!!!

Capital markets are tainted as a gambling arena due to the regular occurrence of booms and busts. Obviously, the formation of bubbles that causes booms and bust is based primarily on investor sentiment. Money flow in to or out of an asset class causes values to inflate or deflate. Again, there is no empirical evidence that at certain specific value a bubble will burst or a bottom is formed. A bubble can continue to become a bigger bubble and vice versa. Well, this may sound like babble but I will get to the point.

I believe that the US debt market has been in a bubble territory for sometime. The adjacent chart<sup>1</sup> clearly shows that the US 10 year bond has declined from an average yield of approximately 5.5% in 2007 to 2% range currently. The primary reason for that has been the accommodative policy adopted by the Federal government. Federal Fund Rate (rates charged by the Federal govt. to loan money to major US banks) are trading at unprecedented levels of approximately 0-0.12%.



Since the recession of 2008-09, Fed Fund Rates have been reduced to almost zero, with an intent to boost liquidity in the financial system hence bolstering the ailing economy. In addition to the monetary policy, the Federal government introduced a bond buying program (US mortgage bonds) known as Quantitative Easing ; QE). Since this program was introduced, the US Treasury's balance sheet has inflated to approximately \$2.5 trillion with the accumulation of these mortgage bonds.

The average Federal Fund Rate over the last 40 years has been in the range of 3.5%. If and when these rates start to gravitate towards their long term mean, they will have significant ramifications on the the US economy. Following are some important aspects that I believe should be considered in case rates increase:

## 1) US Employment Market:

Currently, the US Unemployment rate is approximately 5.5%. The Federal Open Market Committee's (FOMC) mandate is to contain inflation and help boost US employment. The FOMC is aware of the impact of higher employment. More jobs means a higher rate of disposable income. Higher incomes can lead to higher consumption which can incentivize higher prices and hence higher inflation. The FOMC could be concerned about the declining unemployment and would be pre-emptive in recalibrating rates to contain wage inflation.

<sup>1</sup> Source: US Department of Treasury

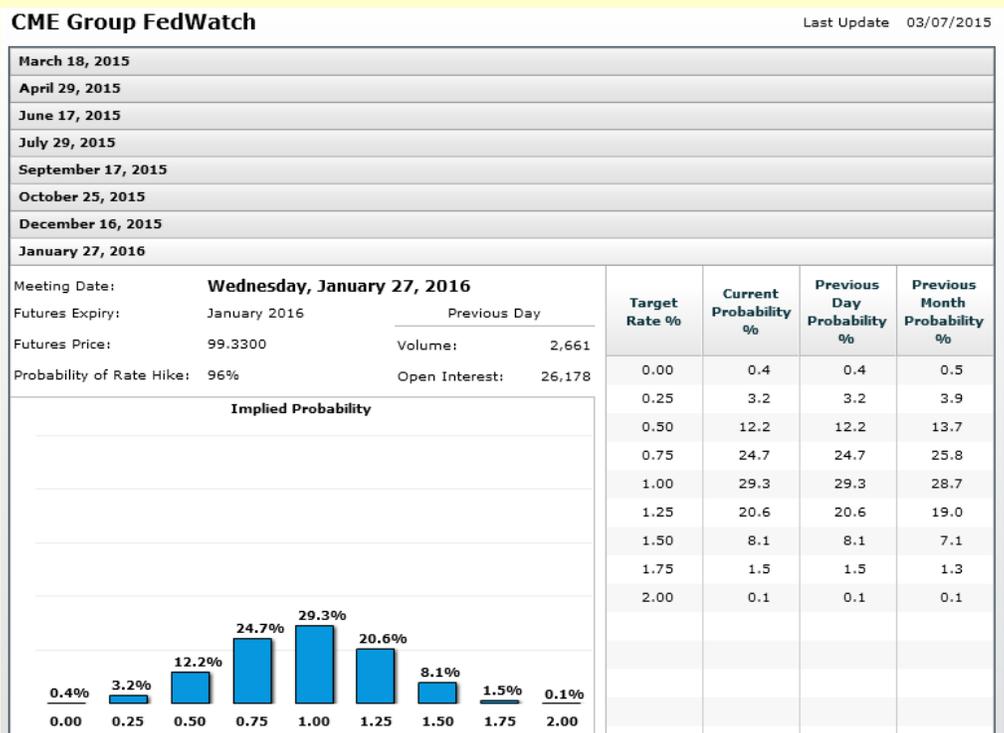
- 2) Inflation:
  - a) Commodities are trading at lower levels relative to Global GDP growth (last 5-6 years). This is true especially for the energy sector. Oil has lost almost 65% of its value since mid 2014. Oil is currently trading at approximately \$50 per barrel, down from \$147 in mid 2014.
  - b) Wage inflation is tame as well. Even though US wages have started to grow, they are not anywhere close to alarming levels.
  - c) If inflation remains below 2%, the FOMC has room to keep rates low for an extended period.
- 3) There is an unspoken clause in the FOMC's mandate. FOMC has been cognizant of the US economic recovery and will not be rash to jeopardize it by raising rate prematurely.
- 4) As mentioned above, the federal government now owns almost \$2.5 trillion of US mortgage debt. If rates start to go up, it will obviously put pressure on bond prices. In this case the Federal government will have to manage the ownership of bonds and will have trouble disposing this debt off. Again, the FED's are not in the debt management business. In other words, the Federal government can not ignore this technical nuance of rate calibration.

Considering the factors stated above, it seems premature for the FOMC to consider raising rates. On the other hand, the rhetoric from the FOMC has been insinuating the impending scare of rate increase.

Following is an illustration of the probability of rates being raised. This is aggregated by using FedWatch futures for the year 2016. The horizontal axis portrays the Fed Fund Rate level. Each bar has an implied probability of rates reaching that particular level.

Currently, the Fed Fund Rate is at 0-0.12%. The adjacent chart<sup>2</sup> illustrates the market expectations of rates by Jan 2016. Rates are expected to rise to .50% at a probability of 15%. But the probability of rates being raised to 1% is approximately 70%. In other words, most market experts are expecting rates to rise by 80 bps by January 2016.

Currently, the 10 year treasury is trading at 2%. If fed fund rates move to 1%, the 10 year treasury could trade between 3-3.5%. At that point the the 10 yr bond could loose 25-30% in value. Following is an analysis of the products one can use to benefit in case rates start their accent.



<sup>2</sup> Source: [www.CMEtools.com/FedWatch](http://www.CMEtools.com/FedWatch)

## Comparitive Analysis

### TLT (iShares 20+ year Treasury Bond Fund)

- 1) TLT is an exchange trade fund that comprises primarily of US treasury bonds with average maturity of over 20 years.
- 2) Top 10 holding (62% of the fund) of the funds are comprised of US Treasury bonds with maturity of 2040-43.
- 3) Weighted Average life of bonds; 27.04 years
- 4) Effective Duration ; 17.74 years.
- 5) Portfolio Equity Beta; -0.22 (this is the correlation with the S&P 500).

### (Shorting TLT Vs PUT Options on TLT)

TLT (iShares 20+ Year Treasury Fund)= \$123.29, down -\$2.79 or -2.2%.

TLT January 2017 Puts = 14.45 (Ask) +\$1.37 or +9.48%.

- TLT value is derived from actual quotes traded on 3/7/2015 on the NYSE.
- The Delta (the movement of the option based on the underlying security) of TLT PUT options for Jan 2017 is 0.50. In other words, for every \$1 move in the TLT, the option is expected to move 50 cents.
- Due to the time value (almost 2 years, March 2015 – Jan 2017), the delta can grow quickly if the value of TLT starts to decline soon. **NOTE: Probability expectations of rates are based on Jan 2016.**



The Chart<sup>3</sup> above shows the correlation between, the S&P 500 and the Treasury fund (TLT) under consideration. We can observe that there are short phases when the TLT shows negative correlation with the index, but overall the index has been moving in relation to the index. This phenomenon is due to the fact the interest rates have declined since 2009 boosting the market index immensely. TLT has also gained in value based on the ascent of US bonds values which move inversely to interest rates. In addition, following is a table (Appendix I) **illustrating Regression statistics for the S&P 500 and the TLT.** The main variable, R<sup>2</sup> shows that approximately 40% movement of the S&P 500 is explained by the TLT.

Recommendation:

- 1) TLT Puts could be a beneficial opportunity if Feds start to raise rates.
- 2) The net downside of the investment is contained as rates can not fall further and the Option contains almost 2 years of time value.
- 3) The risk reward on the investment is favorable.

<sup>3</sup> Source: [www.yahoo.com](http://www.yahoo.com)

## Appendix I

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.637661							
R Square	0.406612							
Adjusted R Square	0.406425							
Standard Error	16.59677							
Observations	3173							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	598530.4	598530.4	2172.896				0
Residual	3171	873461.28	275.4528					
Total	3172	1471991.68						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	20.825632	1.314244	15.84609	1.75E-33	18.24	23.40	18.24	23.40
X Variable 1	0.045994	0.000987	46.61433	0	0.04	0.047	0.04	0.04
40% of the movement of the S&P 500 is explained by the movement of TLT.								

PLEASE REMEMBER: Each investor is unique and should invest to compliment their respective financial conditions and objectives.

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