

## Interpreting Benchmark Yields

### Separating Inflation Expectations from Central Bank activity

All markets are linked, and have been so for decades. However, the traditional interest rate training one gets in Economics classes and MBA programs does not delve into the linkages, and numerous investors do not expand their understanding beyond single dimensional analysis.

**This leads to a knee-jerk reaction every time US treasuries move suddenly – to most market participants this is a change in inflation or deflation expectations.** Such a belief is also based in an assumption that the market is fully efficient, and that market liquidity for US treasuries is deep.

**An equally important factor is the demand and supply of US Treasuries, which, without any change in inflation expectations, can move US Treasury yields.** While this should elicit a ‘Duh’ from most readers, I find it surprising how many market participants do not pay attention to this important determinant of yields, or try to isolate its impact.

### The Traditional Understanding of Fixed Income Yields

As an example, here is the CFA’s understanding of the ‘components of interest rates’.

1. Real Risk Free Rate
2. Expected Inflation
3. Default-Risk Premium
4. Liquidity Premium
5. Maturity Premium

<http://www.investopedia.com/exam-guide/cfa-level-1/quantitative-methods/time-value-money-interest-rates.asp>

Since short US rates are the benchmark for Risk Free Rates, in the conventional thinking, #2, Expected Inflation, becomes the default factor for explaining benchmark interest rate movements.

### TIPS – Inflation Expectations

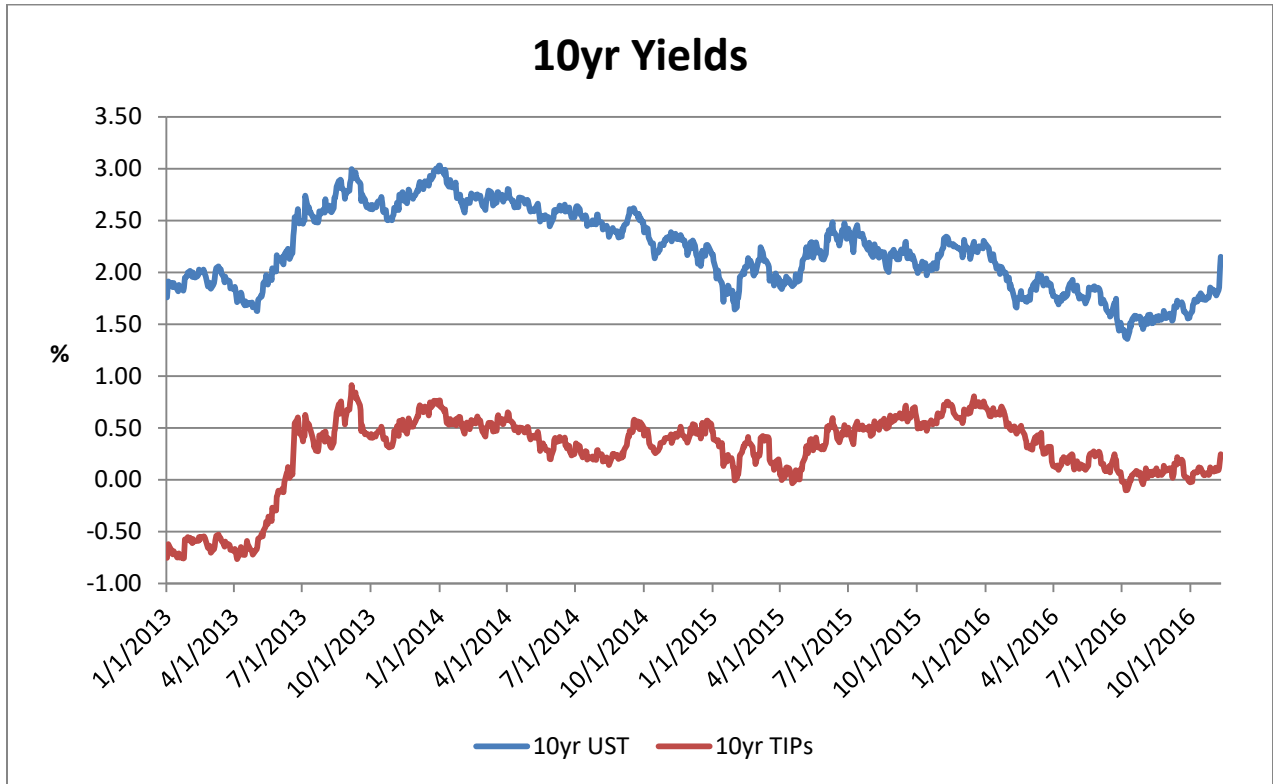
One can extract Inflation Expectations from the TIPS market.

TIPS change their principal to reflect changes in the CPI. The spread between a Treasury Yield and a TIPS yield should therefore reflect Inflation Expectations (subject to liquidity issues). We have seen this in action this past week.

I will use only the 10yr sector of the market for this analysis.

The next graphs show UST 10 years and 10yr TIPS yields since 2013.

**10 year UST and TIPS yields**



Source: Bloomberg, MBS Mantra

**Inflation Expectations – 10yr UST Yields – 10yr TIPS yields**



Source: Bloomberg, MBS Mantra

As you can see, the recent spike in 10yr UST yields after Mr. Trump’s nomination was a result of a spike in Inflation Expectations.

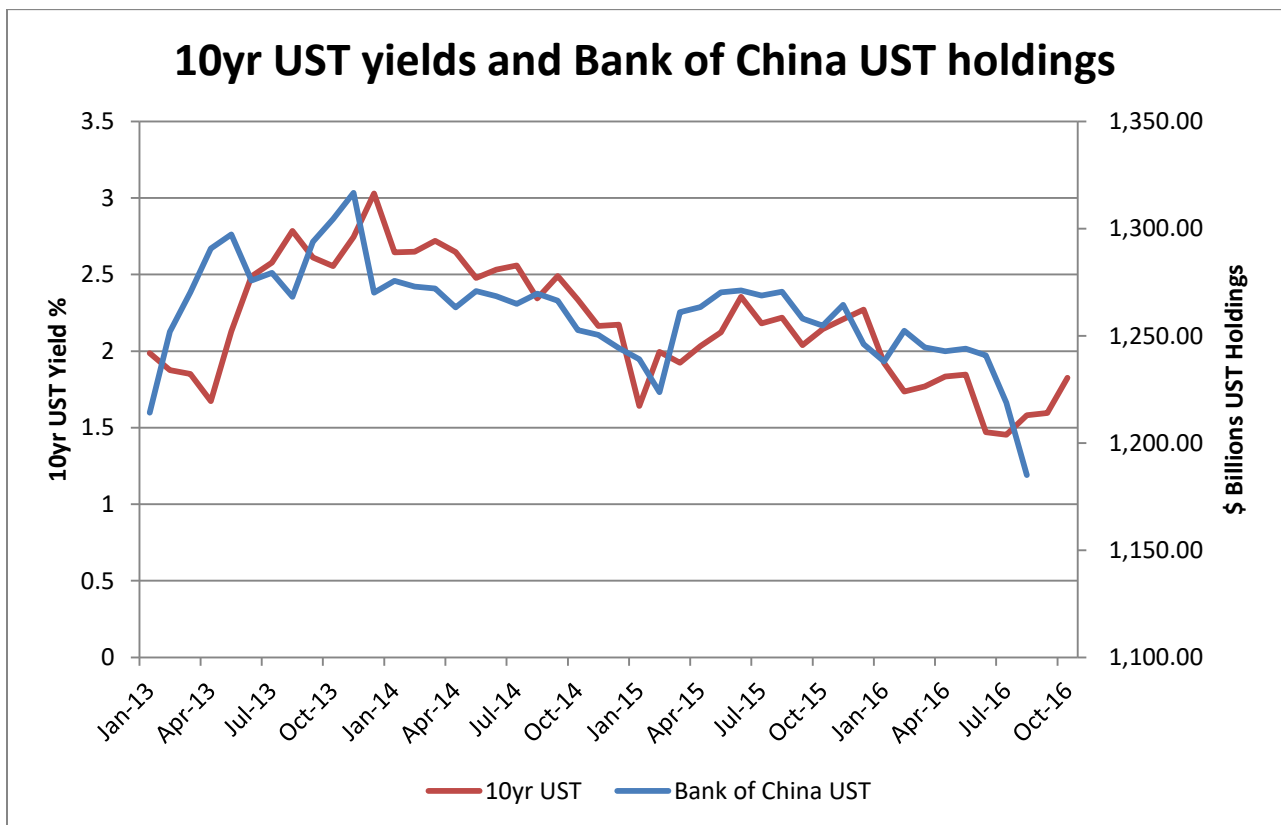
However, the last time yields rose, in 2013, after Mr. Bernanke’s Taper Tantrum, there was no spike in Inflation Expectations; to the contrary, inflation expectations actually declined.

As UST yields started declining in 2014, inflation expectations stayed flat for the first half the year, but declined in the latter half of the year, coinciding with a decline in UST yields.

Again, in the first half of 2015, yields rose, along with inflation expectations. **However, in the second half of 2015, inflation expectations declined, while yields stayed stable. This was unexpected.**

**In order to understand the movements in UST yields that are not explained by Inflation Expectations, we need to look at global demand and supply of USTs.**

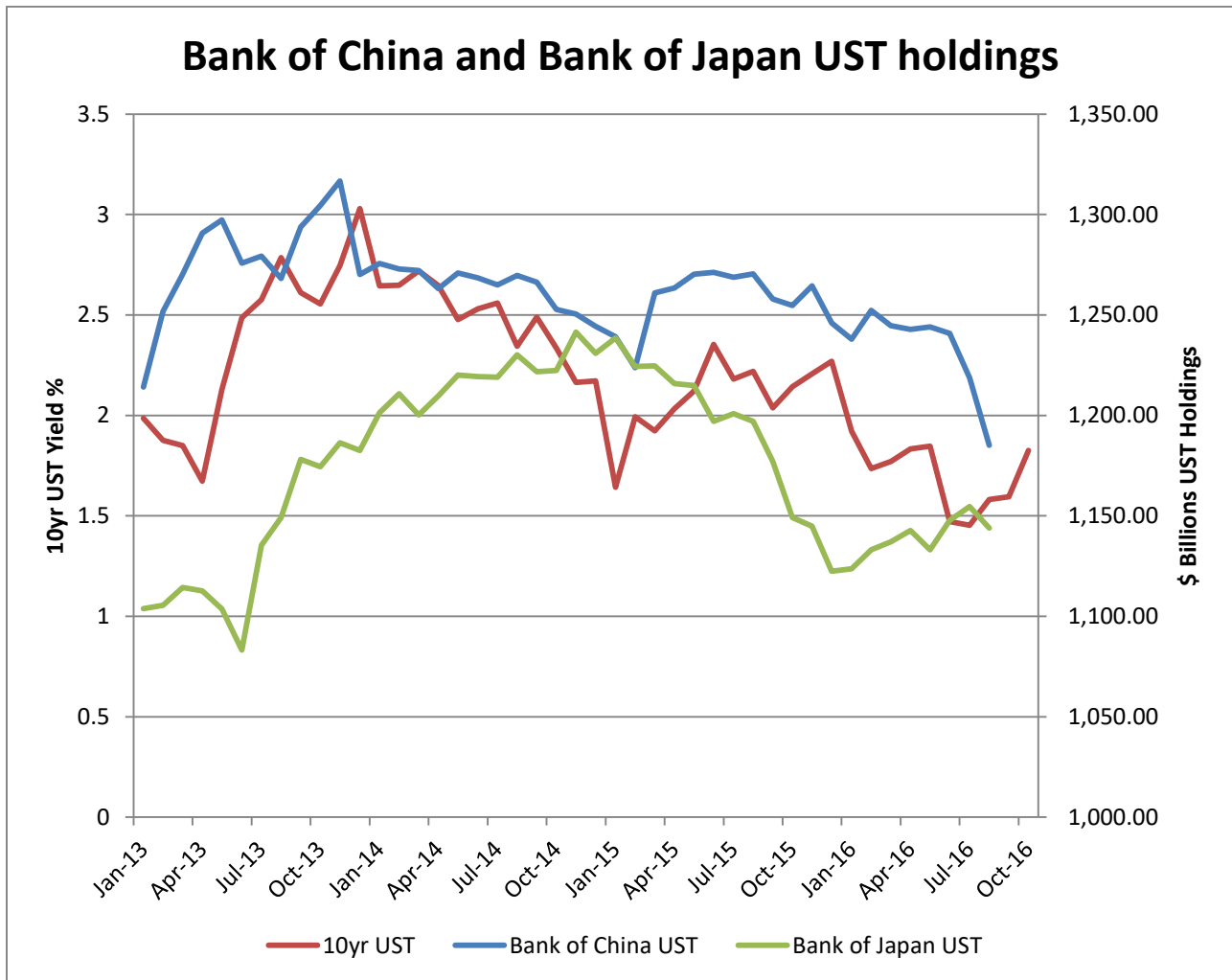
The following graph shows UST holdings of the Bank of China (“BOC”) against 10yr UST Yields.



Source: Bloomberg, MBS Mantra

It looks like the Chinese are active traders of USTs, and were selling USTs as yields went down, and bought as yields rose! Unfortunately, since this is end of month data, it is not very useful for identifying which came first.

Adding the Bank of Japan’s (“BOJ”) UST holdings to the picture gives us some interesting insights.



Source: Bloomberg, MBS Mantra

**In 2014, the Japanese appear to have been buying the USTs that the Chinese were selling!**

Since most of us do not have access to the flow information about Central Bank purchases of USTs till well after the fact (2-3 month delay in reporting), we have to look elsewhere to extract this information in a timely manner.

**Adding Interest Rate Swaps to the Analysis**

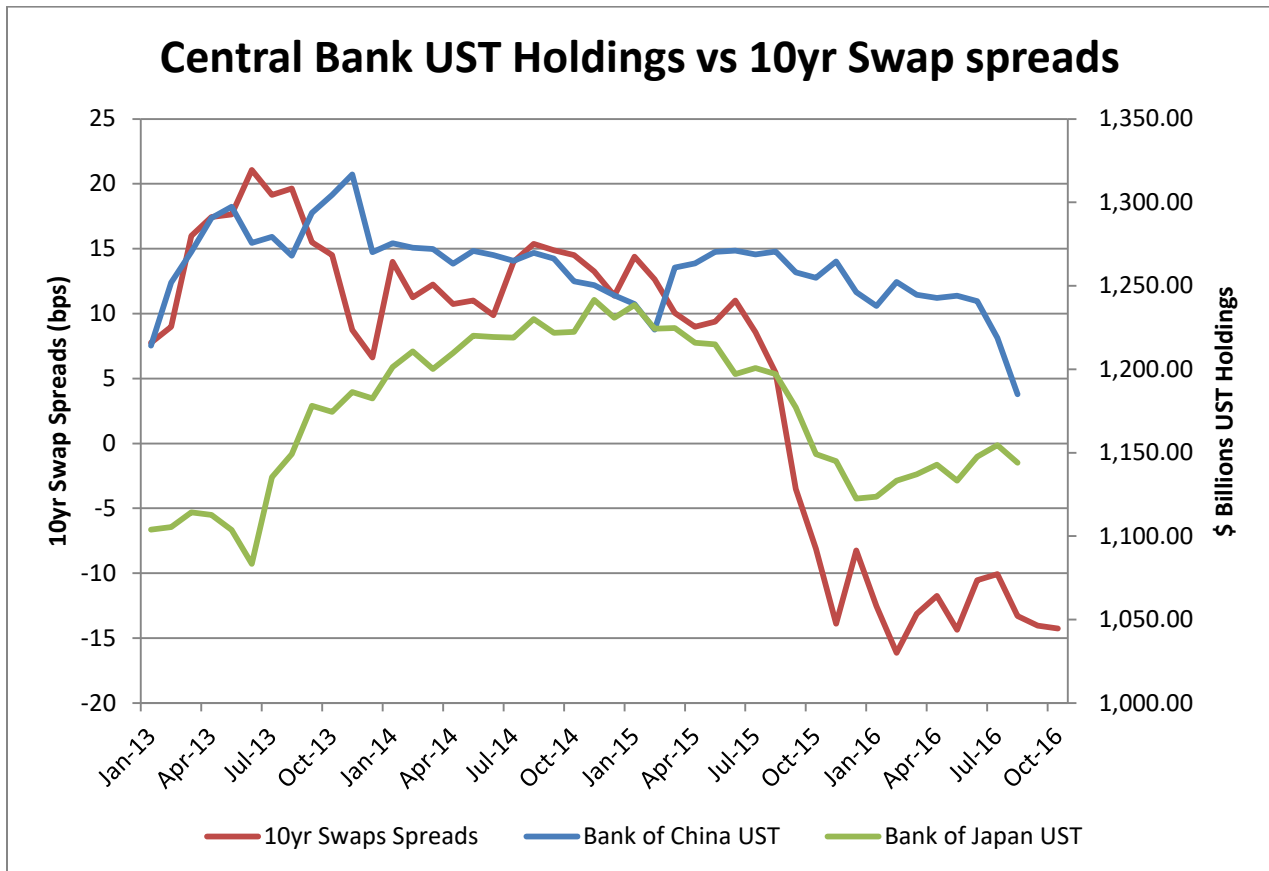
Like USTs, Interest Rate Swaps are also a relatively risk free benchmark, as they are usually collateralized, and are now exchange traded. Swap yields have traditionally represented the cost of private money or capital – Term LIBOR as it were.

Swap spreads are defined as the spread between Term LIBOR yields and US Treasury yields of the same maturity.

**One would expect changes in inflation expectations that impact US Treasury yields to also be transmitted to Swap yields. Thus, if yields change, but swap spreads stay stable, then the change in market yields is likely a result of changes in inflation expectations.**

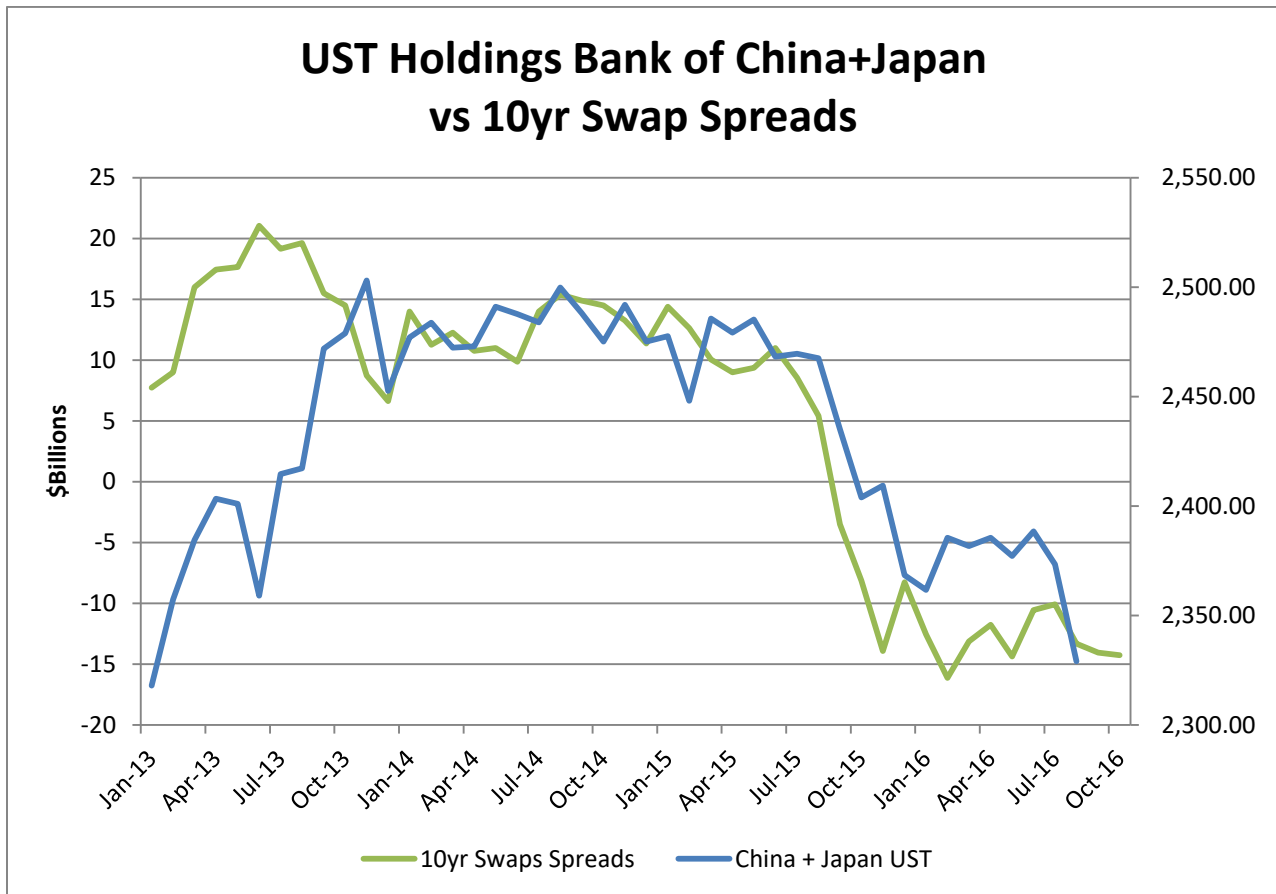
**On the other hand, if swap spreads change, they likely reflect excess supply or demand, respectively, of US Treasuries, or conversely, of private debt.**

**In 2014, we see that 10yr Swap spreads were relatively stable, but declined precipitously in June 2015, going negative in September 2015. Looking at the BOJ and BOC holdings individually does not demonstrate a strong relationship or necessarily explain the decline in swaps. BOC's holdings remained mostly steady for much of 2014 and 2015, while the BOJs holdings started declining in Jan 2015.**



Source: Bloomberg, MBS Mantra

Combining the UST holdings of the Bank of China and the Bank of Japan is enlightening!



Source: Bloomberg, MBS Mantra

Now, we can clearly see that the decline in the combined Central Banks holdings of USTs is related to the tightening of Swap Spreads by 25 bps in late 2015, forcing them negative.

I have previously discussed this in an analysis I published in February 2015, which led me to the conclusion that Swap Spreads are an instrument with which to bet on Central Bank activity and flows.

<http://www.mbsmantrallc.com/swaps.shtml>

In previous studies I have also shown that the interest rate movements of the 2000 to 2004 period can be explained by the Bank of Japan’s QE-related purchases of USTs, which impacted both US yields and swap spreads during the period, in addition to significantly altering the course of US economic history.

Similarly, in 1991, tightening of Swap Spreads was caused by the US Treasury’s issuance of T-bills to fund the bailout of the 1980s S&L crisis, the reversal of which in 1997 caused swap spreads to widen back out, causing an economic shock that caused many financial failures due to mis-hedging and misunderstanding of risk.



## Conclusion

**There are many different factors that determine market yields for US Treasuries. Inflation Expectations can be extracted from the spread between TIPs and USTs. Information about Central Bank demand and supply can be extracted from Swap Spreads, which are also impacted by debt issuance by the US Treasury.**

**Since all markets are linked, in order to understand and anticipate risk, it is important to view them as an integrated system.**

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