



Reading the Bond Market

Understanding bond market movements

An excerpt from T-Leaf Reading

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3/12/2019 version

Warren Buffet's Rule No. 1: Never lose money. Rule No. 2: Never forget rule No. 1.

Summary

- **We present a new toolkit that adds Macro Economics, Money Supply, Foreign Central Bank activity, Currencies, Equity markets, Swaps, and Inter-Market concepts to the traditional Yield curve and TIPS-based measures** for anticipating inflation, recessions and understanding asset pricing and Beta
- **We share the MBS Mantra Market-Macro Framework** and explain why current asset pricing theory is incomplete, and needs to incorporate the actions of Central Banks

This toolkit and framework can help CIOs and portfolio managers:

- **Avoid drawdown events, allowing returns to continue compounding**
- **Make Alpha Capture Systematic**
- **Identify false positives (selloffs in asset prices that are temporary), allowing one to buy dips, or avoid selling**
- **Make markets rational**

Modern Toolkit required to interpret a US Treasury bond or bill yield movement

- **Traditional**
 - US Treasury Yields
 - TIPS or TII (Treasury Inflation Protected/Treasury Inflation Indexed bonds) Yields
 - 0yr-2yr, 2yr-5yr, 2yr-10yr, 2yr-30yr and 10yr-30yr yield curve spreads/slopes
- **Modern, in addition to the above**
 - T-Bill and Note/Bond supply
 - Central bank holdings and purchases of USTs
 - US Interest Rate Swap spreads
 - Yen currency rate Y/\$
 - S&P 500 Index

Readers of our Crisis Notes and other Macro analysis will be aware of the remaining tools required to complete the analysis of Asset Prices. These have been extensively analyzed previously in [*The Failure of Macroeconomics*](#), so detailed explanations will not be repeated here. They are:

- **Policy Interest Rate Differentials between US Fed Funds and Japan, ECB and China**
- **Issuance of foreign currency denominated US borrower bonds, primarily Samurai bonds, and now CLOs, that inject capital into the US.**

The MBS Mantra Market-Macro Framework

Our framework is based on the following understanding:

- Prices are set by microeconomic actions – the intersection of marginal demand and supply
- Demand and supply actions by Rational economic Actors – those who act for their own benefit for the profit motive – will result in prices that aggregate the collective view of all such actors

So far, so good – Rational Actors determining prices is why markets are assumed to have predictive power. This is the basis for Fama’s Efficient Market Hypothesis.

We add two more crucial insights:

- **Governments and central banks are Non-Economic Actors, and conduct actions that are not motivated by profit.** Some of their actions (QE) overwhelm the actions of Rational Actors, while others (Policy Rate setting) **set in motion a feedback loop**, where Rational Actors respond rationally to incentives and undo the intended action of the central banks, leading to systematic export of capital and unintended money supply consequences
- Countries are no longer closed to capital flows, and **the Keynes/Hicks IS/LM framework works in reverse**

It is the failure to understand or anticipate the last points that leads to surprises in the market. Once these are taken into account, almost all market price movements and risks can be understood, and even predicted.

All the so-called Black Swan events of the recent past have been predictable. Yes Virginia, there are no Black Swan events – just failures of anticipation and interpretation.

T-Leaf Reading

We will first focus on modernizing the interpretation of movements in US Treasury (“T”) Yields and Yield Curves by introducing Macro Economics, Money Supply, and Inter-Market concepts to your toolbox. The goal is to update and bring into the 21st century the very naïve, simplistic, and pre-1990s T-leaf reading performed by most Fixed Income analysts, economists, and journalists.

The tools described in detail here are a subset of the toolbox required for comprehensive asset valuation and Beta understanding – we initially only focus on the US Treasury markets.

We will start with recent areas of market concern – recession predictions from the shape of the yield curve, and inflation expectations from the spread between TIPS and Treasuries. These will demonstrate how to use a broader and more comprehensive toolbox.

We will then study two periods of the last 30 years to understand what caused specific movements in US Treasury markets. This will allow readers to expand their understanding of risk, and how to anticipate and interpret events that the popular press and economists designate as Black Swan events, and potentially portend such events.

Much of what I share below is drawn from my previous writings, with analysis consolidated in this paper. Links to the original documents and analysis are scattered through the document.

Traditional Thinking – Yield Curve Flattening portends Recessions

The flattening of the yield curve in November and December 2018 has brought out every Fixed Income research analyst and quotable portfolio manager, who continue to write in newspapers and white papers, and give warnings on TV about the impending recession that the yield curve is signaling, based on their analyses of history.

An example:

<https://www.nytimes.com/2018/06/25/business/what-is-yield-curve-recession-prediction.html>

From this NY Times article: “Every recession of the past 60 years has been preceded by an inverted yield curve, according to research from the San Francisco Fed. Curve inversions have “correctly signaled all nine recessions since 1955 and had only one false positive, in the mid-1960s, when an inversion was followed by an economic slowdown but not an official recession,” the bank’s researchers wrote in March.”

Traditional Thinking – TIPS Breakevens portends Inflation

The standard and tradition process to gauge Inflation expectations is from ‘TIPS Breakeven Rates’ – Nominal UST yield – TIPS yield of the same maturity. Quoting the Fed via Bloomberg’s analyst, Ira Jersey, in a 2/12/19 article

‘The lack of trading volume in TIPS is one of the reasons the Federal Reserve tends to cite in explaining why TIPS breakevens are one -- but not necessarily the only or best -- indicator of how the market views inflation.’

Both these measures are rather simplistic, and do not account for the global nature of money, capital flows, and investors. The structure of the markets has changed relatively recently, since the mid-1990s, and Fixed Income, Finance, Economics and Macro education has not kept up. International flows were miniscule, until Japan’s “[Big Bang](#)” in 1996 exposed international markets to gigantic flows of capital, reversed the workings of macro-economic policy, and distorted money supplies.

Some definitions – TED spreads and Swap spreads

- **TED:** Treasury (bill futures prices) over Eurodollar (futures prices). However, it is usually quoted in the difference in discount rate implied by the futures prices, and called the TED spread. Eurodollar rates are the short end of the LIBOR curve. The TED spread is thus interest rate spread of LIBOR over US Treasury yields/rates typically under 1 year maturity.
- **Swaps:** Interest rate swaps are contracts to exchange a fixed rate for a floating rate. The fixed side is usually quoted as a spread over US Treasury yields of the same maturity, has a fixed

payment, and mimics a bond. The floating side is usually 1-mo or 3-mo LIBOR. The fixed side is thus term-LIBOR of longer and different maturities, and is (or was) a benchmark for bond valuations of different maturities, reflecting yields for credit risk. Because swaps form the 1+ year part of the LIBOR curve, movements in TED spreads flow through into swap spreads. By buying a swap, one is long a synthetic fully levered bond, funded with LIBOR (spoiler alert: LTCM’s downfall); by shorting a swap, one can hedge a long position in a bond.

The table below is copied from my 1988 Merrill Lynch booklet [An Analytical Guide to Interest Rate Futures Spreads](#), and summarizes the factors that impact the TED spread (and thus Swap spreads) that I identified at the time.

Factors Affecting The TED Spread

Fundamental Factors	Expected Reaction of TED
“Flights to Quality”	Widen
Reduction in Confidence in the Banking System	Widen
Euro Financing Increases	Widen
Yield Curve Flattens	Widen
Yield Curve Steepens	Narrow
T-Bill Supply Increases	Narrow
T-Bill Supply Decreases	Widen
Fed raises Reserve Requirements	Widen
“Significant” Open Market Security Purchases	Narrow
“Significant” Open Market Security Sales	Widen

This led me to analyze the relationship between swaps and bond prices in my 1990 Morgan Stanley MBS Research article [Hedging Costs Can Drive MBS Relative Value](#), creating the concept that is known as LIBOR OAS, that the market did not discover or embrace till well after LTCM, in the 2000s.

December 2018: A recent usage of the toolkit – understanding the Yield Curve flattening



In [MBS Mantra's November 2018 newsletter](#), (Dec 11, 2018) I wrote the following:

There has also been much prognostication from various sources that the flattening, and indeed slight inversion (to 5 years), of the yield curve portends a recession.

We disagree. ...

I fully expect that, in two months' time when the data is released, we will discover that the Bank of Japan purchased a significant amount of US Treasuries in Nov/Dec, to offset the Yen strengthening that should have resulted from the equity market selloffs in November and December 2018. ...

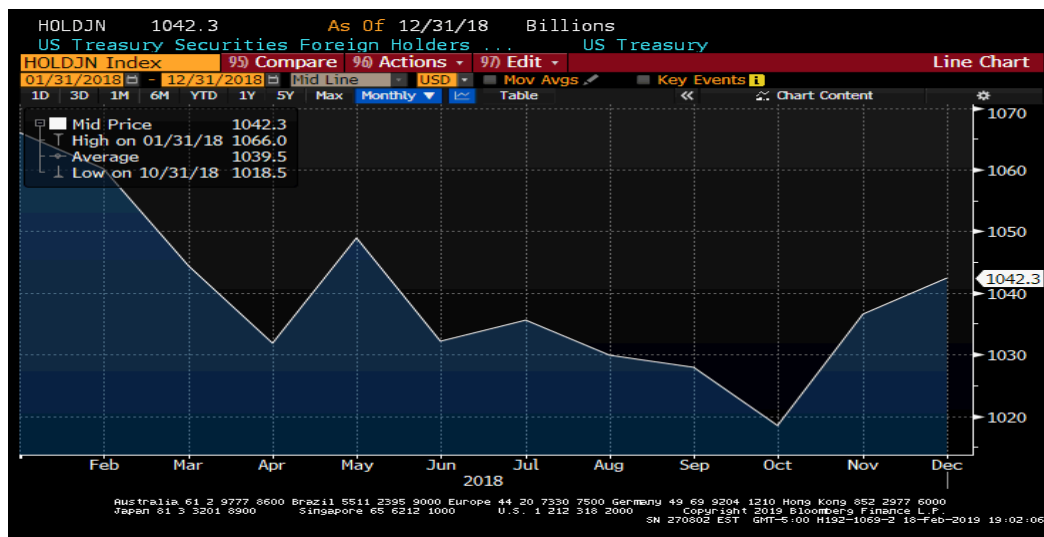
To me, this smells of a Japanese intervention to keep the Yen weak. We last saw this in 2014.

In [MBS Mantra's January 2019 newsletter](#), (Feb 10, 2019) I wrote the following

The data for November was released on Jan 31, 2018. (Treasury International Capital or TIC data, released by the US Dept. of the Treasury. HOLDJN Index on the Bloomberg.)

As I expected, the BOJ was indeed a net purchaser of US Treasuries in November, by \$18.1 Billion, increasing their holdings to \$1.036T. This demand for USTs is what flattened the curve, and triggered a lot of business-TV gobbledegook about historical data showing that flattenings usually predicted recessions, etc.

The graph below, from end of month TIC data, shows that Japan added to their UST holdings in November and December 2018, bringing their recent purchases to \$23.8b. The Treasury classifies most of Japan's holdings as 'Long-Term' in bond maturity.



In addition, total UST holdings by Major Foreign Holders increased by \$65.2b between Oct and Dec 2018. <https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticsec2.aspx>

As an unintended consequence, Japan's (and other Foreign) purchases of USTs amount to QE to the US, and increase our money supply (primarily M3, no longer published), directly manifesting in

asset inflation. In today’s world, such changes can offset the Fed’s QT, or can exacerbate it if foreign holdings are reduced.

This QE injection from foreign UST purchases explains the rally in the S&P in 2019 that is attributed to Chairman Powell ‘blinking’ on interest rates.

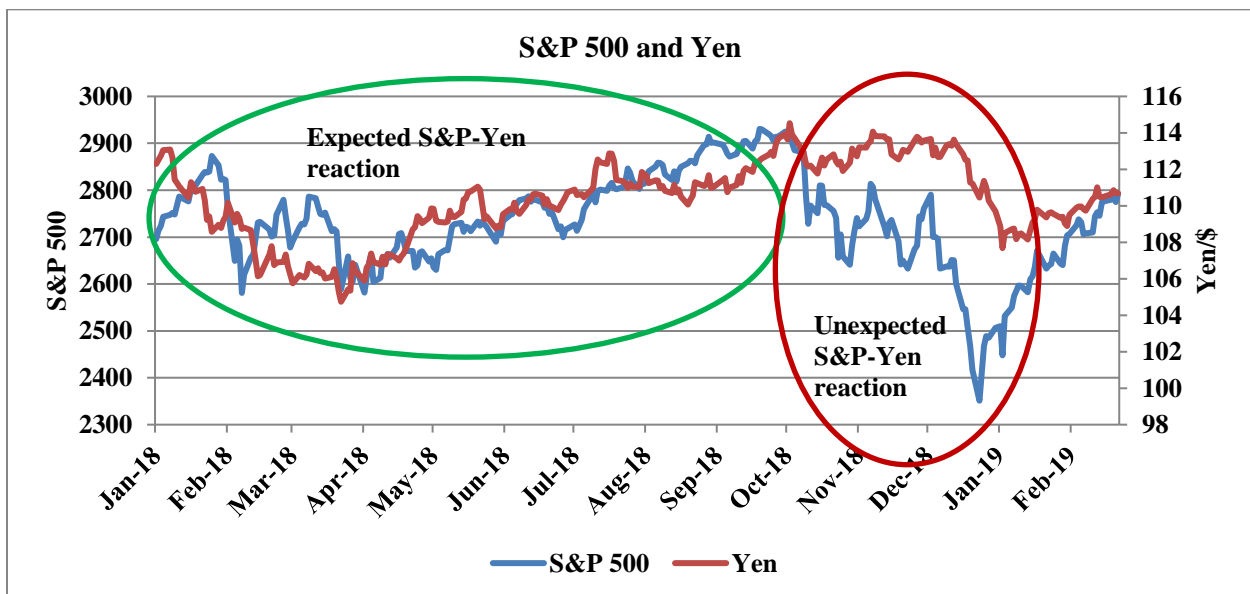
As will be discussed in more detail later, Japan has supplied us with QE before, when they dramatically increased their US Treasury holdings between 2002 and 2004, and implemented US QT as well, when they unwound their holdings. A study of this period gives us a roadmap of what to expect.

We prefer to follow Japan’s UST holdings to draw conclusions about movements in Treasury yields, as they tend to be the largest marginal foreign actor in the UST markets. In addition, their motivations can be understood, as I will describe below.

Yen strengthened to 75 Y/\$ during the Crisis, and would have gone to 50 Y/\$ had Prime Minister Abe not been re-elected. Since 2012, there appears to be a strong policy to keep the Yen weak. **In essence, what Japan is doing now is providing the US with ‘Plunge Protection’, by injecting US money supply when it is needed.**

How did we anticipate this:

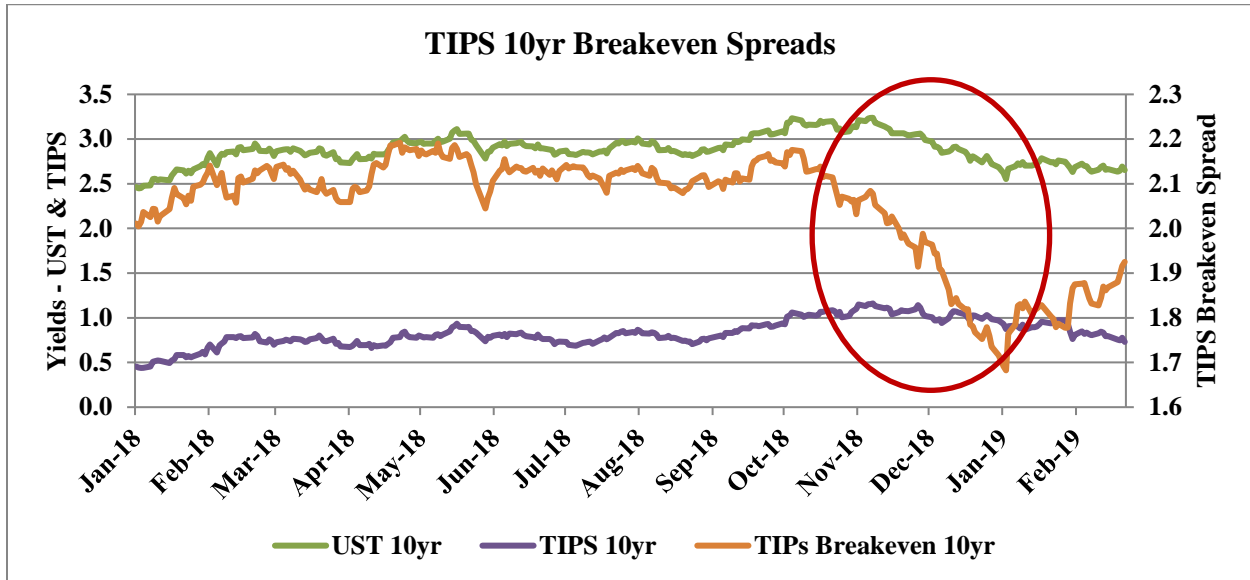
In December 2018, the S&P declined from 2790 to 2351, a 15% move! However, the Yen only strengthened from 113.8 to 112.7, barely responding. **This lack of Yen response, to me, smelled of an intervention by the BOJ, who probably bought USTs to keep the Yen weak (selling Yen).**



We verified the purchase of USTs by looking at TIPS breakeven spreads.

External demand for USTs should tighten TIPS spreads (since USTs always yield more than TIPS). 10yr USTs went from 2.65% yield to 2.55% yield, while 5yr USTs declined by 75 bps from Nov to the end of

Dec. 10yr TIPS breakevens started declining from over 2% to 1.68% at the end of December as UST yields declined.



The outsized tightening in “inflation expectations” in November/December 2018 corroborated the information from the S&P/Yen moves, leading to my conclusion.

Central Bank UST buying – Impact on Swaps and Inflation Expectations

Inflation expectations, or TIPS breakeven spreads, are defined as a subtraction of 2 yields: UST yields – TIPS yields. In a closed economy, where primarily domestic investors that are concerned about inflation in their economy drive purchases and sales of US Treasury securities and TIPS, the TIPS breakeven spread is a plausible explanation for market expectations (this also applies to the curve flattenings).

The traditional understanding of fixed income yields tends to focus on inflation. As an example, here is the [CFA Society’s understanding of the ‘components of interest rates’](#).

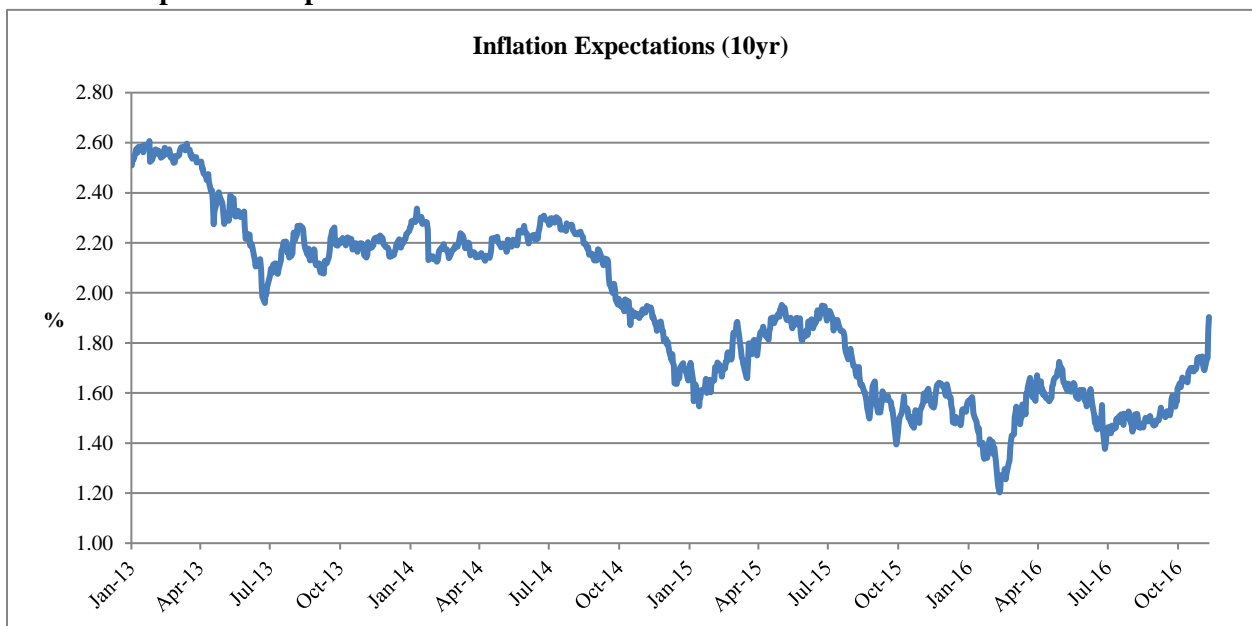
1. Real Risk Free Rate
2. Expected Inflation
3. Default-Risk Premium
4. Liquidity Premium
5. Maturity Premium

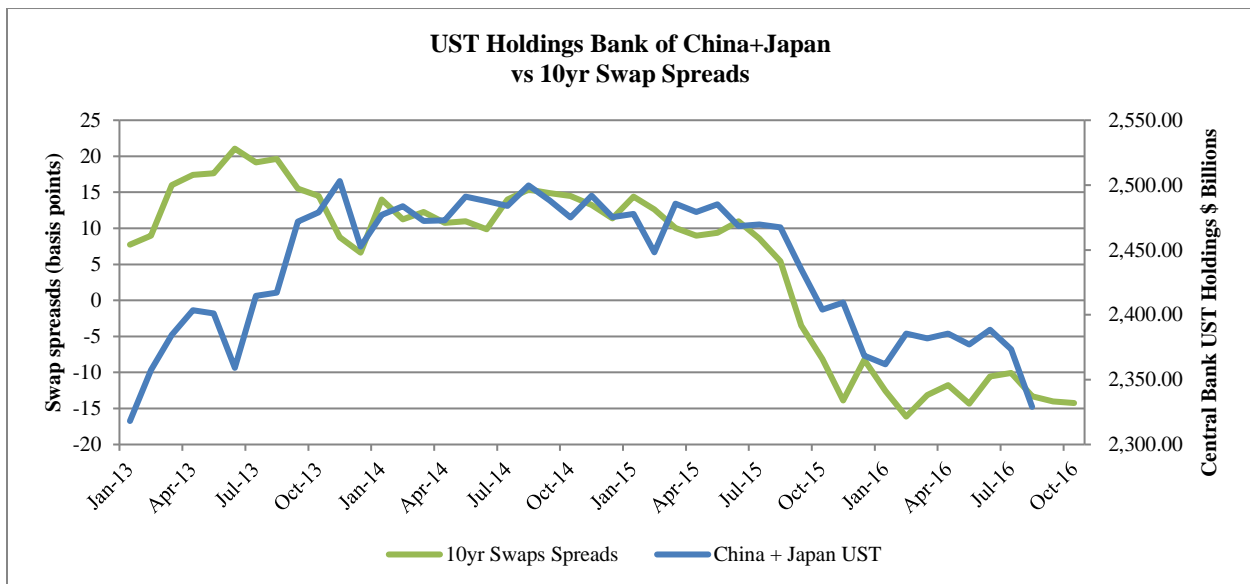
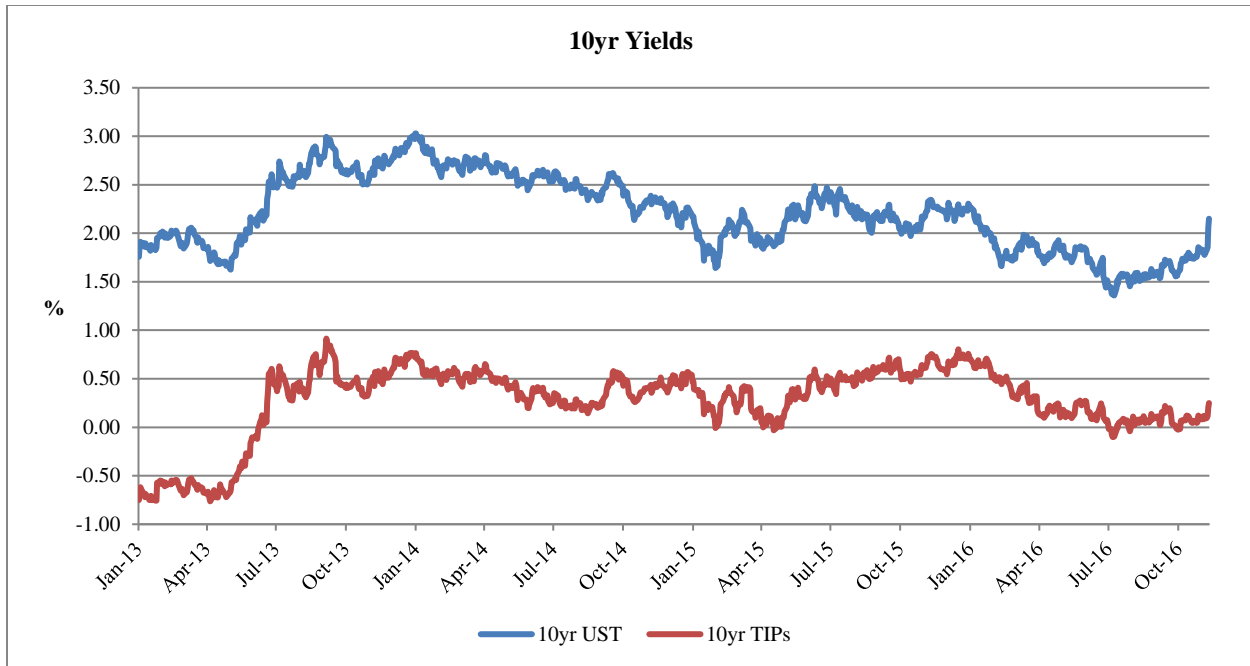
Since short-term US rates are the benchmark for Risk Free Rates, in the conventional thinking, #2, Expected Inflation, becomes the default factor for explaining benchmark interest rate movements.

However, during periods when foreign central banks are active, movements in Breakeven spreads are likely to generate false readings regarding expected movements in inflation. This also has an impact on Swap spreads, which result in incorrect assessments of credit risk. (UST yields decline when Central Banks are buying, and rise when they are selling)

I have discussed this previously in my 2016 papers [Interpreting Benchmark Yields – Separating Inflation Expectations from Central Bank Activity](#) and [Interest Rate Swaps as a Benchmark](#). I will not go into a detailed discussion here, but here are some graphs.

Inflation expectations spiked in Oct 2016.





In the 2016 event above, the spike in “Inflation Expectations” (which brought out analysts and CIOs to express their concern) was a result of net US Treasury selling by the combination the BOJ and Bank of China, raising UST yields, and identified by a tightening in swap spreads, which went negative.

All markets are connected. Looking at a single factor, such as the slope of the yield curve, or TIPS “inflation expectations” is not sufficient to draw conclusions.



Thanks for reading this. I hope this analysis can help you navigate markets better. I would love to hear your comments.

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