



Sifting Through the Junk

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Follow the Money

In our previous report, we mentioned how changes to pension accounting rules may induce pension fund managers to change their over-weighted equity allocation. Some analysts estimate that between \$250 billion and \$600 billion could flow out of the stock market and into the fixed income arena due to changes in pension accounting rules. Furthermore, we've witnessed inconsistent behaviors in yields offered on various maturity classes – particularly the flattening and inversion of the yield curve. This report will discuss the various factors that affect rates on yields and the current issues that may have been playing an influential role in the U.S. fixed income markets.

Credit Analysis

Three primary types of risk make up what's known as credit risk. These risks include default, credit spread, and downgrade risk. Default risk considers the borrower's ability to meet obligations on a timely manner. Credit spread risk questions whether the credit or yield spread on a particular fixed income security will widen compared to a benchmark yield (i.e. Treasury yield). Downgrade risk weighs the effects on the price of the fixed income security when downgraded by credit rating agencies.

One of the first things considered when conducting credit analysis, one goes over the "four C's of credit analysis." They include character, capacity, covenants, and collateral.

- *Character* – Management's quality and its ability to make right decision (particularly on the commitment to repay loans).
- *Capacity* – Company's financial flexibility and liquidity (i.e. cash flow influences and short-term assets).
- *Covenants* – Agreed terms and conditions between the borrower and lender. Two types of covenants include affirmative covenants (promise of the borrower to meet certain promises like paying interest, principal, taxes, etc.) and negative covenants (restrictions to the borrower regarding what actions are prohibited)
- *Collateral* – Uncommitted assets offered as security.

Several key financial ratios are utilized to examine the borrower's ability to meet debt obligations. These ratios may encompass variety of solvency ratios, capitalization ratios, among others. An analyst would compare these ratio results with some benchmark range. This process resembles much like a comp analysis. However, using ratio analysis has drawbacks such as it typically applies historical or current numbers. To conduct forward-looking analysis, some of these numbers could be adjusted for projections.



Cash flow analysis applies future influences into calculations. Numerous cash flow models exist, however, the key is to use the appropriate cash flow measure for whatever is being analyzed or valued. For debt analysis purposes, discretionary cash flow represents the appropriate cash flow, which is the cash flow available after funding basic operating requirements.

High-Yield Corporate Bonds

High-yield (junk) bonds typically offer the highest rates among the fixed income securities. Despite the relatively high yields offered, these instruments have higher probability of default. Before buying into these instruments, purchasers thoroughly review the issuer's debt structure, corporate structure, and covenants.

The usual debt structure of high-yield issuers encompass bank debt, bridge loans, reset notes, senior debt, senior subordinated debt, and subordinated debt. Bank loans are typically short-term, have floating rates, and have highest claim against the issuer's assets. Brokers typically underwrite bridge loans, which represent intermediate-term loans. Coupon rates on reset notes reset periodically, affecting cash flows with changing interest rates. Senior debt involves the use of coupon bonds, deferred coupon bonds or zero-coupon bonds, and maturity of such bonds is closely monitored. Senior subordinated bonds have one higher priority to assets than the subordinated bonds. Analysts observe how issuers service subordinated debt, especially if the company pays coupon with proceeds from additional bonds.

Why is the corporate structure of the issuer important? Well, it is critical to understand who does the borrowing, where the funds go, and who generates the debt payments. The usual high-yield issuer has a holding company structure. Remember, the parent company borrows the money, but its subsidiaries generate the cash flow to pay the obligations. Simply looking at the parent's financial does not reveal the issuer's true ability to pay its obligations. Therefore, a thorough analysis of each subsidiary remains a vital part.

A look at the issuer's (including the subsidiaries') covenants may distinguish fact from fiction. The covenant will dictate what the company can, cannot, or must do. Covenants also provide clues as to what management will do if faced with potential problems.

Other Fixed Income Securities

Asset-Backed Securities

Asset-backed securities (ABS) differ from corporate bonds, mainly because collateral represents the most important aspects of an ABS. Cash flow comes from such collateral and flow through the various tranches (bond classes) of the ABS. The collateral pool of assets may consist of mortgages or some other securitized assets. The quality of the ABS depends highly on the ability of the underlying debtors to pay their obligations and the ABS servicer to administer the collection and payment efforts.



Mortgage-Backed Securities

Mortgage-Backed Securities (MBS) resemble ABS; however, real estate properties back MBS. Mortgage borrowers typically make monthly payments that get channeled to MBS holders who have the right to the property in case of default.

Municipal Bonds

Municipal bonds come in two forms: tax-backed (General Obligation or “GOs”) debt and revenue bonds. Tax-backed bonds typically depend on the municipality’s overall debt burden, budgetary policy, tax base, and other local economic environment. State and local governments use revenue bonds to finance particular projects. These bonds resemble corporate bonds in that the quality of the issue depends on the ability to generate revenue. Therefore, analyzing revenue bonds is similar to the process involved with corporate bonds.

Sovereign Bonds

Sovereign debt involves the obligations of governments of nationalities other than the U.S. Economic, and political risks mainly influence the ability of these governments to meet their obligations. These governments’ integrity may also play a role in their willingness to repay their debt. This was one of the risks that materialized the downfall of LTCM. Russia’s default on their debt in the summer of 1998 pushed LTCM’s woes into a death spiral. Exchange risk poses another concern, particularly for those issued as foreign currency debt.

Looking at Interest Rates

The present value of future cash flows (coupons) discounted by the bond’s yield determines the price of the bond. This implies that prices and yields move in opposite directions. However, the degree of the changes depends on coupon rate, term to maturity, and initial yield. Lower coupon rates, longer term to maturity, and lower initial yield tend to experience greater price volatility with changes in interest rates.

Measuring interest rate risk involves computing prices of bonds under different required yields. Computed results are compared to current market prices to determine the degree of price changes. This simple technique provides a basic approach to assess interest rate risk for option-free bonds.

Some bonds have callable and puttable features that allow the issuer to call (buy back) the bond at some agreed price or allow the bondholder to put (sell back) the bond at a set price. Such options place a boundary to which the bond prices move with interest rate changes. The duration/convexity approach offers the appropriate method to estimate interest rate risk for portfolio of bonds and bonds with embedded options.

Duration estimates the rate of change of the bond price to changes in interest rates. Since duration reflects a linear estimate, duration has limitations when measuring larger changes in interest rates. Additionally, bond price-to-yield relationship has a curved shape – not linear. Therefore, duration is adjusted by incorporating convexity, which captures the divergence



resulting from the curvature. The combined effect leads to a better estimate of the percentage price change of the bond.

Term Structure of Interest Rates

The inverted yield curve brings concerns to some of those who focus on what bond yields may say about the economic outlook. An inverted yield curve occurs when longer-term yields drop below that of the shorter-term. Historically speaking, an inverted curve has corresponded with a decrease in economic activity. However, several situations differ from previous cases. As we, and many others, have pointed out, foreign influences may have contributed to the decrease in long-term rates (i.e. Asian central banks and institutions buying up their favored 10 year Treasuries, thus driving up prices and lowering yields). Combine this with the Fed consistently driving rates up, and then you have the inverted yield situation.

The yield curve typically has a normal yield curve (positive sloping) with longer-term rates higher than short-term yields. This may be known as “normal” because bondholders typically command higher rates for holding assets for longer periods. Flat yield curves occur when all maturities have the same yield.

As we can see, various forces impact demand for particular Treasuries; therefore, yield curves undergo a variety of curve shape changes and curve shifts. Furthermore, several methods exist for constructing yield curves. The most common method involves plotting market yields on recently issued Treasuries (On-the-Run Treasury Issues). This method is relatively simple; however, the available Treasuries limit the data points and do not include the yields in between the standard maturities. Including off-the-run (bonds issued before the recent issued bonds) helps overcome this gap issue. Linear interpolation and “bootstrapping” can be used to estimate missing yields and calculate a theoretical spot rate, respectively, to fill the leftover gaps. Another method consists of the inclusion of all Treasury issues (excluding callable issues and bond prices with distortions) to construct a theoretical spot rate curve. Few problems occur when attempting to apply this technique, such as unavailability of some Treasuries. The final approach encompasses the application of Treasury strips (zero-coupon securities by “stripping the coupons). Problems using Treasury strips include lack of liquidity for strips (which cause higher premium in rates) and tax treatment disadvantage (accrued interest on strips despite no realized cash flows, causing higher yields).

Term Structure Theories

Several theories attempt to explain the shape of the yield curve and include pure expectations, liquidity, preferred habitat, and market segmentation. So how do these theories explain an inverted yield curve? Pure expectations theory considers only the expected future interest rates in explaining the shape of the yield curve. Therefore, an inverted yield curve suggests that long-term rates will fall in the years ahead. However, various factors impact the shape of a curve, not just forward rates.



Liquidity theory states that long-term bondholders are compensated for holding longer-term maturities. Longer-term maturities generally have higher premiums. This would imply that an inverted curve indicates lower long-term interest rates than would be the case if liquidation risk was not incorporated.

Preferred habitat theory rejects the idea that liquidity plays the sole role in determining rates. Instead, bond purchasers may prefer to match assets with liabilities in terms of duration. Under such conditions, supply and demand determine the premium or rates.

The concept behind market segment theory seems parallel to that of the preferred habitat theory. The main difference comes from the assumption that under the market segment theory investors consistently stay within their preferred maturity range.

For instance, Asian countries typically have conservative views when it comes to handling their assets. This may have influenced them to strictly stay within the longer-end of Treasury purchases and lock in the rates (besides, Treasury rates remain much higher than those offered within their own countries). The imbalance between the supply of short and long-term maturities would allow short maturity rates to outgrow long maturity rates here in the U.S. On the other hand, preferred habitat theory assumes that higher rates on short-term Treasuries will entice investors to shift away from the longer maturities. Perhaps if the short-term rates rise high enough, the imbalances will settle out over time.

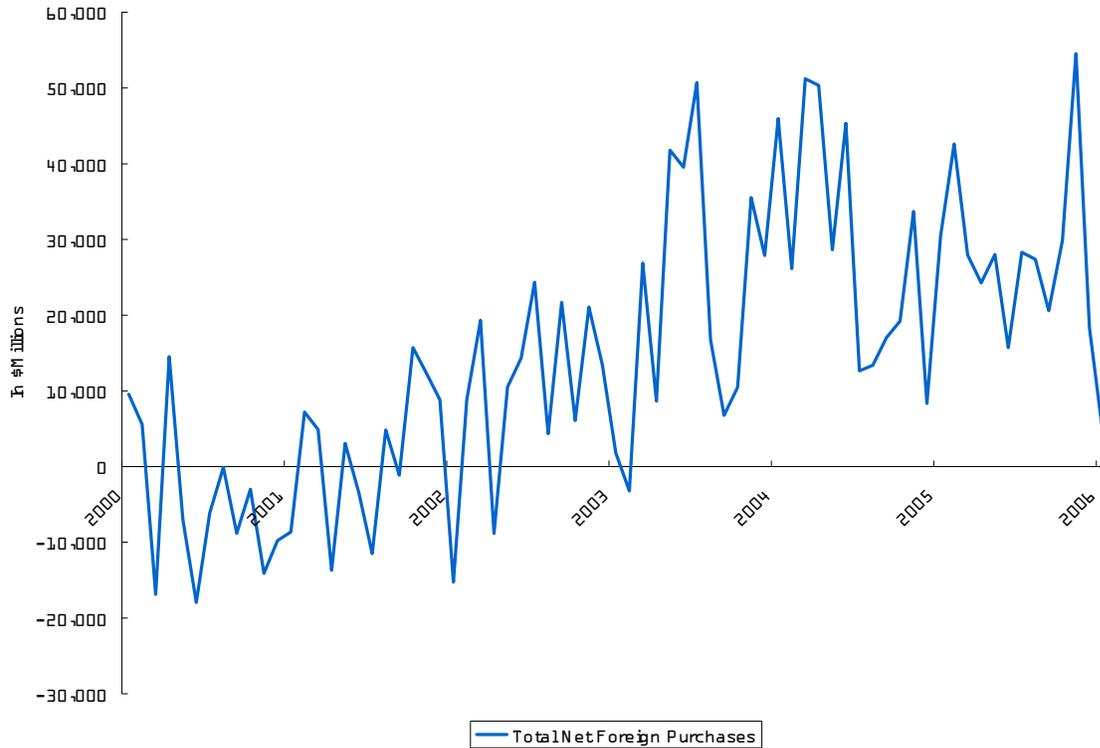
Current Environment

Recently we have seen the yield curve flatten and slightly invert for a short period of time. Most notable reasons for the inversion came from the consistent increases in short-term rates (influenced by the Federal Reserve) and growing purchases of longer-term bonds by foreign entities. We believe further rate hikes by the Fed will continue in the near future. The fed fund futures indicate that market participants expect the fed fund rate to reach 5 percent by the time summer comes around.

The current 2-year Treasury yield remains slightly higher than the 10-year yield. We believe this trend will continue until the Fed decides to halt their rate hikes and foreign entities decrease their demand for longer-term Treasuries. We do not expect the Fed to move much beyond the 5 percent mark in the foreseeable future; therefore, a deceleration in the short end of the yield curve will likely come once we enter summer of '06.

The picture of the longer end of the yield curve presents more complex issues. The following table illustrates the net purchases of long term Treasury by foreigners.

Foreign Purchases of Treasuries

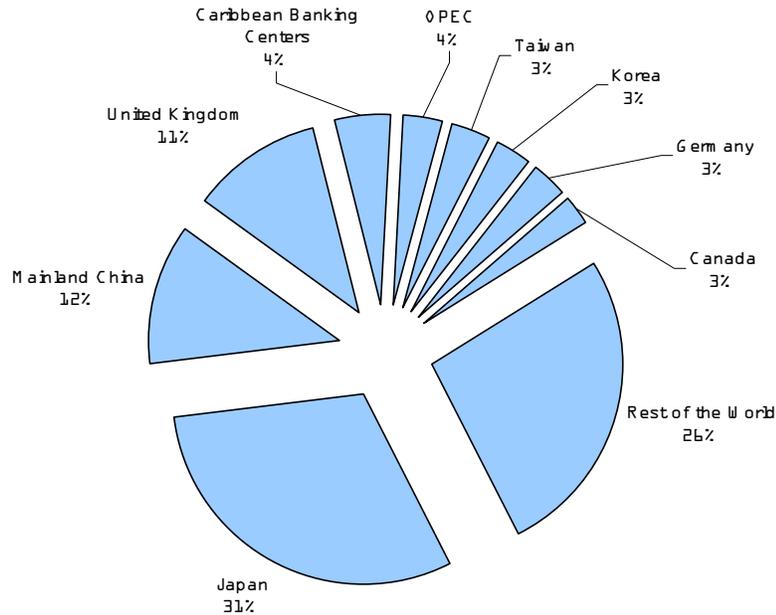


Source: U.S. Treasury

Positive figures indicate more purchases than sales of long-term Treasuries by foreigners and imply capital inflow to the U.S. economy. On the other hand, negative figures would indicate more sales and capital outflow. We can see that long-term Treasury net purchased had dramatically increased since 2003. This foreign demand for long-term Treasuries may have played a large role in keeping the long-term yields relatively low.

So, who are really buying these securities? The next chart breaks down the major foreign holders of U.S. Treasury securities as of January 2006.

Treasury Foreign Holders

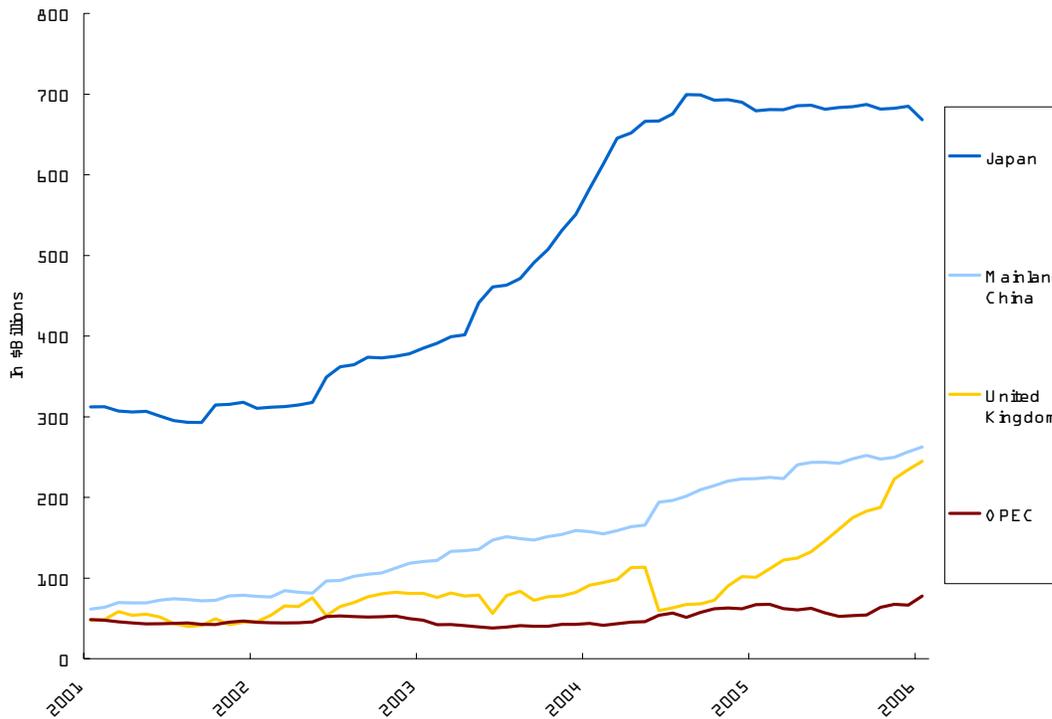


Source: U.S. Treasury

As of January 2006, foreigners held approximately \$2.2 trillion in Treasuries (out of almost \$4.5 trillion outstanding). Among the foreign countries that own U.S. Treasuries, Japan holds a whopping 31 percent, whereas China and U.K. represent the next two largest holders with 12 and 11 percent, respectively. The above chart indicates which countries have influential impacts on interest rates in the U.S. However, a look at the Treasury purchasing patterns of top foreign holders reveals more insight.

The following graph reveals the Treasury purchasing patterns of these top four major entities (excluding Caribbean Banking Centers).

Top Foreign Purchasing Pattern



Source: U.S. Treasury

This graph uncovers many things above the noise that has been surrounding the thoughts around the financial community. It appears true that Asian countries have been steadily buying Treasuries (especially Japan), but two notable factors can be seen from the above chart. One of those notable factors includes the accelerating Treasury purchases by the U.K. The other worthy mention involves the lack of petroleum dollars funneling back into Treasuries.

We can see that China has been steadily accumulating Treasuries. This may be the result of China's policy of fixing the yuan, by holding vast amount of dollars. This trend may reverse as China had indicated that they will move towards floating the yuan and as the regime has indicated their intentions to diversify away from the dollar. The move away from the dollar will depress the currency, and the decrease in appetite for Treasuries will likely lead to higher interest rates.

As mentioned, dramatic Treasury purchases from the U.K. cannot go unnoticed. The above chart indicates that purchases rose significantly since mid-2004. A Bloomberg News report points out that Middle East investors and hedge funds have channeled their money to British managers,

who in turn have tactically purchased U.S. Treasuries.¹ The report also notes that the prevalent hedge fund industry in the U.K. causes wide volatility in U.S. Treasury purchases. Another key observation should be focused on nominal interest rates in the U.K. The yield curve in the U.K. remains inverted with the one and two year nominal rates above 4.35 percent and the ten-year rates around 4.25 percent.² On top of the inverted curve, British rates remain lower than corresponding rates in the U.S. Such discrepancies allow hedging opportunities.

We shouldn't forget about what OPEC has been doing with its oil revenue. OPEC purchases of U.S. Treasuries have risen by more than 50 percent, which reflect the similarly drastic rise in crude oil price. However, with \$77 billion, OPEC holdings of U.S. Treasuries are modest compared to the top three holders. In 2004 alone, OPEC made \$349 billion in petroleum exports.³ So where's all that money going? As the previously mentioned Bloomberg report had indicated, Middle East investors have channeled money to British money managers. Therefore, the recent dramatic increase of U.K. purchases of U.S. Treasuries may be influenced by the large oil profits from the oil producing nations. Higher crude prices have lead to higher petroleum revenue for oil producing nations, and these petroleum profits appear to have made their way into U.S. Treasuries. On the flip side, lower crude oil prices may lead to decelerating purchases of U.S. Treasuries.

Wrapping It Up

Investors in fixed income securities look at various factors aside from the rates promised on such assets. We have mentioned several types of fixed income securities available to investors with different risk tolerance levels. Many factors have an effect on these securities, and how such asset classes are affected depends on the structure of these securities.

Several tools exist to measure and analyze the risks associated with fixed income securities. We have briefly explained some methods investors consider when deciding which asset classes to purchase. As China has shown signs of diversifying outside U.S. Treasuries, the financial authorities in China may be considering some of the points we've mentioned. Although foreign entities have options to purchase a variety of fixed income assets in the U.S., acquiring U.S. companies may be another story. Nevertheless, who knows how long Congress can declare security threat to block foreign takeover of U.S. companies.

With all said and done, signs point towards higher interest rates on U.S. Treasuries. For one, China is expected to move away from Treasuries, and perhaps into other assets classes mentioned in this report, or even into other currency denominated assets. This drop in demand for Treasuries would push down prices, which in turn result in higher yields. Another factor that may contribute to rising yields comes from the hedge funds in England. U.K. hedge funds may move out of Treasuries when they anticipate the U.K. yields to reverse or find assets with better

¹ <http://www.iht.com/articles/2006/02/16/bloomberg/bxinvest.php>

² Bank of England

³ OPEC Annual Statistical Bulletin 2004



returns than yields on U.S. Treasuries with comparable risk assessment. One thing is for sure – everyone will follow the money.

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