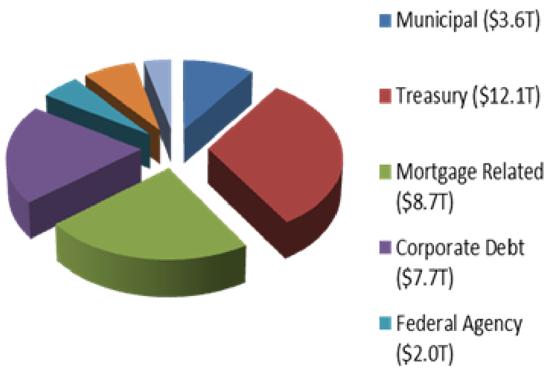
MBS Mantra's view of Economics, Finance and MBS Markets

Where are the Bonds?



I am writing in response to the following article on Business Insider that discusses Vanguard's proposals to improve the bond markets.

http://www.businessinsider.com/vanguard-on-what-needs-to-happen-in-the-bond-market-2016-10

Vanguard, like most large asset managers, has missed an important issue in the Fixed Income Markets that leads to significant underperformance for investors - **fragmentation of bond holdings**.

One of the biggest complaints of large institutional buyers is that there are not enough bonds for them to buy. But, the bond market is huge, and much of it turns over.

So, ***where are the bonds?***

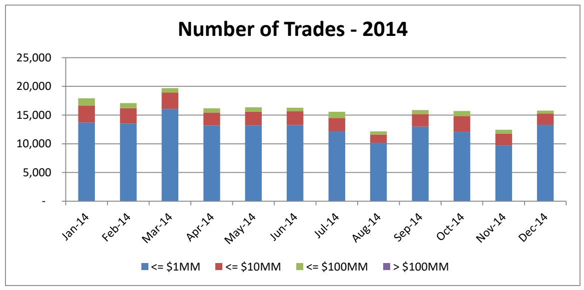
Overview of the US Bond Markets

I published an Overview of the US bond markets in 2015. Please refer to it for details. The data is from 2014, mostly from SIFMA or FINRA TRACE reports.

I have focused on the Non-Agency RMBS ("RMBS") market, but I suspect the same issues apply to most other bond sectors.

- Outstanding US Bond Market Debt was $38.1T, compared to $24.6T for listed equities (Page 5).
- US Treasury debt is the largest sector ($12.1T in 2014) surpassing Mortgage Related debt ($8.7T) in 2011. Corporate debt was $7.7T (Page 6).

- Non Agency RMBS had been the largest structured sector within MBS, but was rapidly shrinking. However, in 2014, it was still $980B (Page 7).
- Choosing a random month (October 2014), Fixed Income average daily trading volume was $768B, of which US Treasuries were $530B, and Non Agency MBS (including CMBS) was $3.5B (Page 12).
- Aggregating RMBS TRACE data for 2014, there were 190,952 trades, totaling $335+B - a significant percentage of all outstanding bonds, and certainly a majority of the bonds that are not locked up in held-to-maturity accounts at banks and insurance companies (Page 14).
- However, 153,437 (80%!) of these were less than $1mm in size (totalling $14B), and only 9165 were greater than $10mm in size (totalling $196B, averaging 45 per day), explaining the complaints from large institutional investors. 28,295 trades totalling $114B were between $1mm and $10mm in size (Page 14).
- Similar stratification is also seen in dealer offerings, and Bid Wanted In Comp ("BWIC") auction supply - only a small fraction of the supply is "block-sized" (pages 13 and 17), with the rest fragmented.



<u>Why are Bonds in the secondary markets fragmented</u>

Bonds are created in bulk - large institutions buy them as blocks.

Yet, as described above, when one studies the TRACE data, only a fraction of all trades (at least in Non Agency RMBS) are blocks.

Understanding the holders sheds some light on this:

- Insurance companies: From an NAIC report - "As of year-end 2015, the insurance industry held $252.996 billion of agency RMBS and $124.613 billion of private-label RMBS or 14.2% of total RMBS outstanding."
- Banks: From a Fed data series - (ALCBLOTC Index on Bloomberg) - as of 10/2016 banks hold $97.7B in Non Agency MBS.
- Banks and Insurance companies holdings of Non Agency MBS total approximately $350B. Given that the total size of the market has shrunk from 2014, due to almost non-existent new issuance, and continued prepayments and default related shrinkage, and might now be approximately $700B market size, this is still ~ 50% of all Non Agency MBS holdings.
- The rest must therefore be held by Money Managers and Hedge Funds - $300B to $400B. (Compare this number to the total RMBS traded volume in 2014).

Banks and Insurance companies tend to keep the bonds they purchase as blocks, and tend not to trade their portfolios much - they mostly have a investment problem, are usually hunting for assets to purchase to deploy cash, and rarely sell bonds.

Most Money Managers, on the other hand, purchase blocks of bonds and allocate them to many thousands of Institutional Separately Managed Accounts - SMAs - fragmenting the bond positions into tiny pieces, with each client getting an allocation of the purchase. This is done as most clients are promised "Fair Allocation" and "Diversification".

Thus are created what is known in the industry as "Oddlots" - Money Managers create Oddlots through the process of allocations to SMAs.

Oddlot holdings from Money Managers regularly enter the marketplace - there are many BWICs everyday with oddlot sized bonds! (See Page 17 of the Overview).

In my experience, Money Managers mostly sell Oddlots when (a) SMA clients instruct them to sell bonds to raise cash or change strategies; or (b) they inherit bonds to manage from the migration of a client account from another manager. (A sub-industry of Brokers has emerged to facilitate this - they are known as "Transition Managers".)

There is no question that these Oddlot bonds do not trade in an orderly manner. They often have wide discrepancies in prices, for many reasons that I will discuss below. In essence, they trade at "Oddlot Prices" that are usually at higher yields (discounts) to benchmark "market yields" or "Block Prices".

One large Money Manager has this statement in their SMA marketing publication: *"Investment managers generally combine trades across their clients' accounts, allowing them to 'buy in bulk', which can potentially lead to better pricing due to a smaller spread."* This document goes on compare their allocated costs vs the typical markup costs on Municipal bonds, stratified by size, published by the MRSB. What is not addressed is whether the savings in transactions costs can offset the lower yields of the client in essence purchasing Oddlots at Block Prices, as compared to paying higher one time transaction costs when purchasing Oddlots in the secondary market at higher yields. Also not compared is whether those transaction cost efficiencies can be achieved when selling bonds - unlikely, since most Money Managers do not sell entire blocks to provide liquidity for a single SMA.

I am not going to focus on the implications that Oddlot sales at Oddlot Prices have on the Realized Total Return Performance of SMA clients, where the allocated bonds were purchased at Block Prices. Please contact me offline if you would like to discuss this.

Why do Oddlots trade "cheap"?

Over the course of 20 years of trading Oddlots with Money Managers, I have heard and identified most of the reasons:

Sell side reasons

- The primary business of large dealers is creating and moving new issues. They mostly do not bid on secondary positions unless it is for a large favored client. Secondary bonds in position are not focused on by their salesforce. Oddlots get even less focus, and orders are often shunted to their "regional dealer" desks that transact with smaller dealers.
- Small ("Regional") dealers end up providing much liquidity in Oddlots. However, Regional dealers have limited capital and balance sheet size available, and often cannot consistently bid.
- Most large buy side managers will not "approve" smaller dealers or transact with them, increasing their transactions costs of going through 2 or more dealers, including Transition Managers that will broker bonds to Regional Dealers. An ancillary effect is that large managers often are not offered cheap oddlots.
- There are many fixed costs of doing a fixed income transaction - ticket costs, cancel and corrects of tickets, expensive analytics, etc. The smaller the bond, the larger the margin required to cover costs.

Buy side reasons

- Money Manager Excuse: "it wont move the needle. I only buy blocks".
- Money Manager Excuse: "I have 20 new issues I am buying this week, call me next week".
- Money Manager excuse: "I sold a small bond and got lousy bids. My bid for your bond is back of your offering, in spite of it being a matcher". The bid from an owner of the bond defines future bids for the

same bond, potentially leading to a downward spiral in the price an oddlot bond will trade at when liquidity is needed.

- Some Money Managers have gotten Wells notices from the SEC for purchasing oddlots cheap and letting their pricing services mark them at roundlot levels, showing instantaneous gains, discouraging them from purchasing oddlots.
- Regional dealers are not approved for trading by many managers, in spite of MBS having DVP (delivery versus payment) settlement. Bids for oddlots often involve multiple parties, each needing to cover costs.
- Most Institutional bond investors do not buy Oddlots in the Secondary Markets due to the marginal costs of a new position. Banks and Insurance companies have accounting costs, reporting, and basis issues to consider. A new position triggers a new round of costs, making oddlots, even if they already own them, non-economical. Money Managers, too, have costs associated with purchasing Oddlots that they do not already own. Bond holdings generate a perpetual cost stream to money managers: costs of surveillance, as well as marking costs. The costs associated with a portfolio of new cusips can overwhelm the fees earned from managing that account. This also explains why managers usually liquidate "inherited" bond portfolios - they prefer to manage and allocate bonds they already own, with no marginal costs for marking or surveillance.
- Matchers - when a cusip is already owned, there is no marginal cost to a money manager for owning more of that cusip. However, most bonds are unique, and tend to be owned by a few holders. Usually a manager with a matcher should be the best bid for a bond, and dealers bid accordingly. If an existing holder does not support the prices of bonds he already owns,

prices for oddlots of that bond will suffer in the secondary market, as non holders will only buy oddlots if they are more than compensated for the costs associated with doing so.

- Leverage and competition - in today's low yielding rate environment, with many hedge funds competing for new issue bonds with real money accounts, hedge funds deploy leverage in their quest for double digit returns from 1.5%-3% yielding bonds. This lowers the yields on blocks. In addition, there is strong demand from overseas buyers that are confronted with negative yields in their local economies. In contrast, most oddlots cannot be leveraged, and trade at more fundamental unleveraged yields due to limited competition.

It is unlikely that Electronic Bond Trading and other exchange-like solutions will mitigate the performance, liquidity, and pricing issues that arise from fragmentation of most bonds. Even Oddlots of bonds that are fungible, such as US Treasuries or Agency MBS, often trade at discounts, in spite of substantial electronic trading in their markets.

Given the large size of the market for secondary bonds, with inexhaustible supply of Oddlots for the foreseeable future, MBS Mantra has chosen to embrace this inefficiency by investing for clients in SMAs at Oddlot prices, thus achieving superior returns to comparable SMAs that have purchased bonds at Block prices.

The longer term solutions to fix this Institutional flaw involve Institutional Managers managing assets either in mutual fund formats rather than allocated SMAs, or having client SMAs invest only in sector mutual funds, thus allowing Blocks of bonds to remain Blocks so that they can be sold efficiently when liquidity is needed.

Back to Vanguard

Not surprisingly, most of Vanguard's recommendations have to do with transparency and liquidity in large block trading between large managers - Vanguard is already bypassing many of the issues of bond fragmentation by focusing on Mutual Funds.

- **Limit trading fragmentation.**
- **Further develop all-to-all networks**.
- **Integrate trading and order-management systems**.
- **Provide greater price transparency**.
- **Protect against information leakage**.

In the current environment, these are not significant issues in my opinion.

As far as demand goes, one hears anecdotal evidence that most new issue bonds are oversubscribed by many multiples. I heard more examples of this at an S&P conference called "Making Sense of Malformed Global Bond Markets", so this is clearly not a demand issue.

Lack-of-liquidity concerns seem to arise from secondary market considerations - who will provide liquidity if and when everyone wants or needs to sell at the same time.

To me, this is a leverage issue, and central bank QE has made this worse. Bond price widening and illiquidity will likely occur when levered investors are all trying to delever at the same time, as they did in the Taper Tantrum of 2013, and in the Crisis years of 2007-2008. **When all bond investors are going in the same direction, the proposals listed above will not work.**

My recommendation to the Fed, SEC, FINRA and other regulators is to focus on providing emergency balance sheet vehicles at the Fed to absorb excessive supply of bonds from the secondary markets in the event of a run.

As importantly, Central Banks need to recognize that they have opened up

Pandora's box by initiating QE, low rates, and negative interest rates, and that it is unlikely that they will be able to unwind these in the short run. **Reducing market volatility through stable expectations will be the key to preventing an unintended crisis, and possibly having a 30 year plan for QE, to gradually allow bonds to mature.**

Samir B. Shah
Chief Investment Officer
MBS Mantra, LLC
sshah@mbsmantrallc.com
203-388-8356

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