Alternative Theory on Corporate Bond Market Liquidity

The first step to understanding bond market liquidity is to first articulate what "liquidity" is as a construct.

The current metrics used to define market liquidity are often misleading, however, describing liquidity as an "opportunity to trade" appears to be a reasonable and flexible framework for discussion.

In the US corporate bond market, there is a current debate regarding the existence of a liquidity problem since the crisis of 2008.

Translation: **Over the past 9 years, has there been a material reduction in available trading opportunities in the corporate bond market?**

Regardless of your position, settling this debate is critical because the US corporate bond market is the most systemically important market in the financial world. If there is a liquidity problem, it is vital that we identify the causes and begin to implement solutions.

VIABLE MKTS

September 2017

Why is there a disagreement on corporate bond liquidity?

What's really impacting the trading process?

Author: Chris White

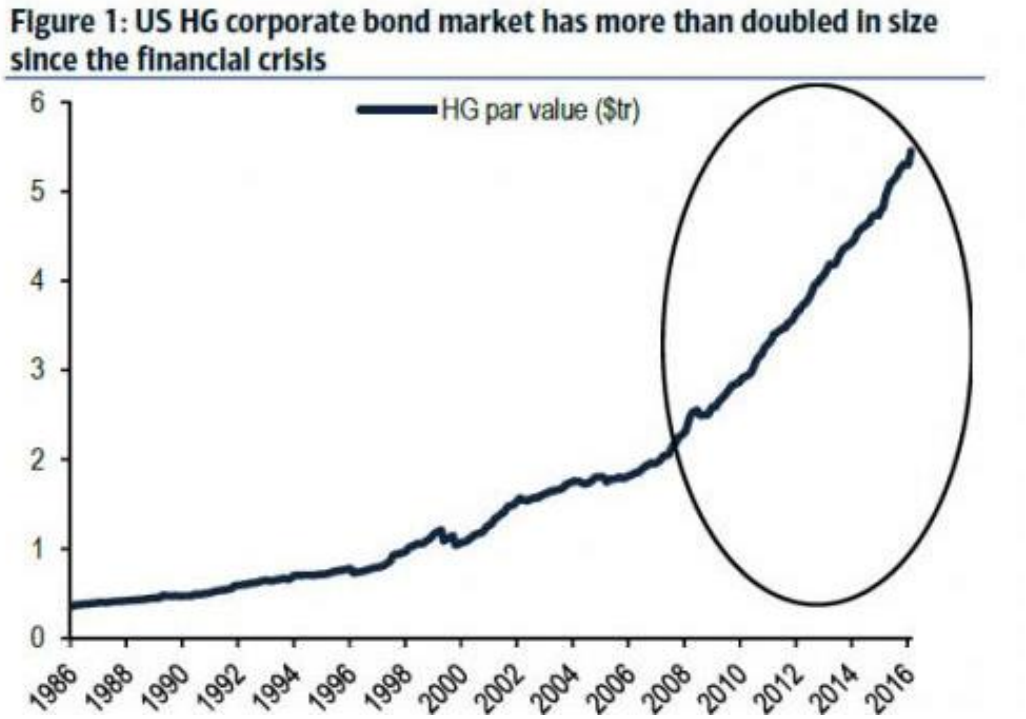
CEO ViableMkts

chris@viablemkts.com

Market Size

Prior to examining corporate bond market trading data, it must be acknowledged that the **outstanding size of the US market has undergone rapid expansion** since 2008.

Central Bank interest-rate policies, and bond purchase programs have been a major growth catalyst. The BOJ, ECB, BOE, and US Fed have used bond buying as a tactic to protect and stimulate their respective, regional economies.



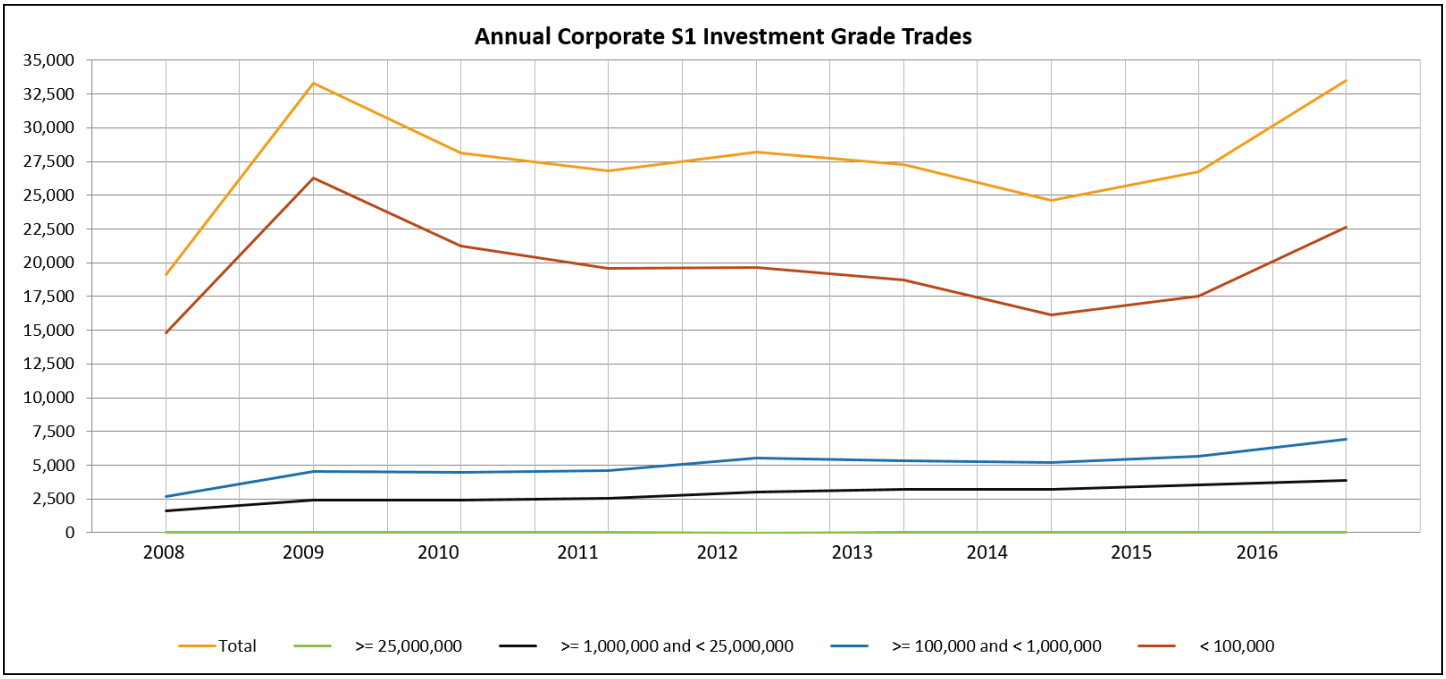
This activity has suppressed interest-rates which have encouraged enthusiastic borrowing by both sovereign nations and corporations. This 2013 article on Apple Computer's borrowing behavior perfectly illustrates the mania that the Fed intended:

> *"The Fed's $2.2 trillion and counting purchases of Treasury and mortgage-backed bonds are pushing private money into other segments of the debt markets. And corporate debt has been one of the biggest beneficiaries. Those investors who the Fed is squeezing out of the market for Treasury bonds are buying high-rated corporate bonds instead, and that's actually by design;"*

Current **analysis of corporate bond liquidity must be in the context of a market that has more than doubled in size in the past 10 years.** Therefore, transaction metrics like number of trades or volume should reflect a similar growth pattern.

Trade Size Matters

TRACE provides excellent insights that demonstrate how the market has changed over the past 10 years. Transaction data indicates that there has been a 74% increase in the average number of daily trades in the investment grade market from 2008 (19,146) to 2016 (33,497).

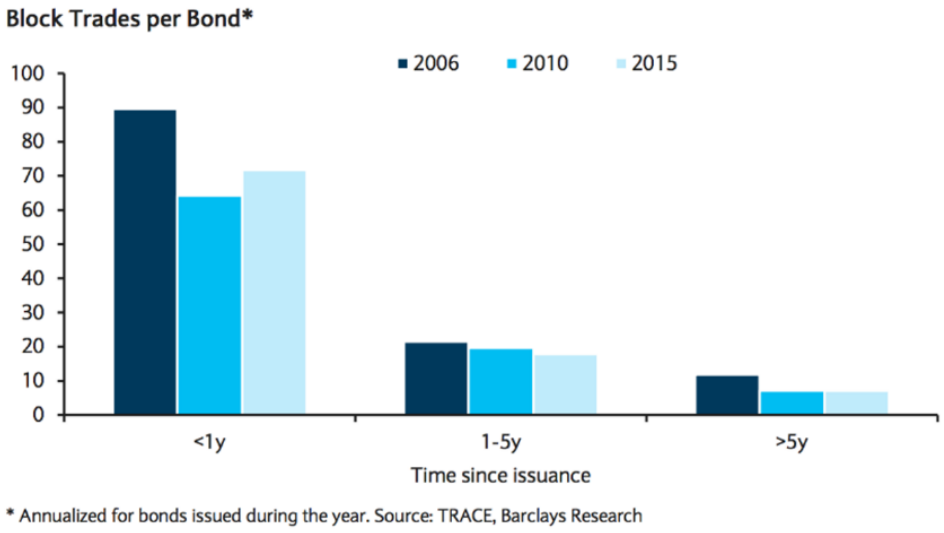


Upon further examination, it appears that **84% of the increase in average daily trades is generated by <$1MM transactions**. This information suggests that liquidity for <$1MM trades has been growing in proportion with the expansion of the overall market. However, as the chart clearly indicates, the institutional institutional (>=$1MM - <$25MM) markets have seen only slight increases in average daily trades. Most importantly, **"super-block" (>=$25MM) transactions have completely stagnated.**

This divergence explains why there are differing views on the state of corporate bond market liquidity. **From a retail perspective, corporate bond markets provide ample trading opportunities; however, the institutional market has seen a reduction in trading opportunities relative to the growth in the outstanding market.** In other words, there definitely is a liquidity problem.

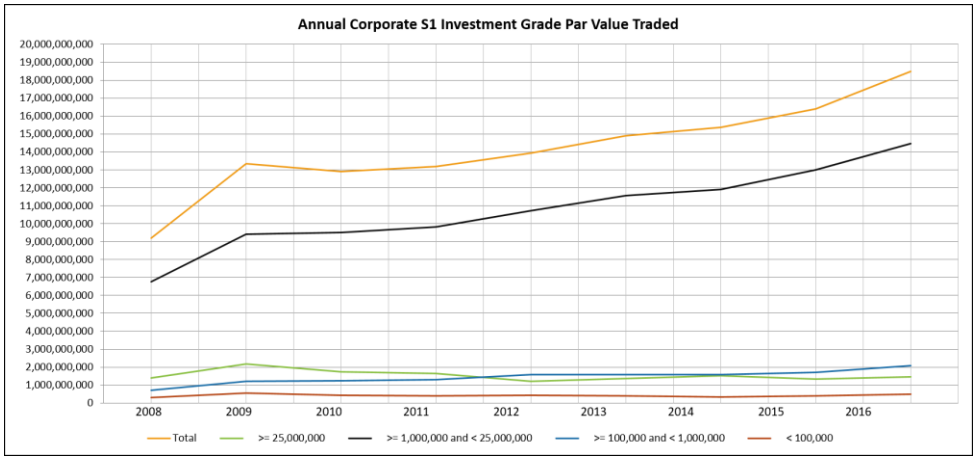
Block Liquidity Drought

A closer look at block trading activity produces some alarming trends. For example, once a bond has been available in the secondary market for more than a year, block trading (>=$1MM) activity in that bond wanes dramatically.



* Annualized for bonds issued during the year. Source: TRACE, Barclays Research

On a comparative basis, block trading activity for older bonds was higher in 2006 despite the market being less than half the size of the current market.

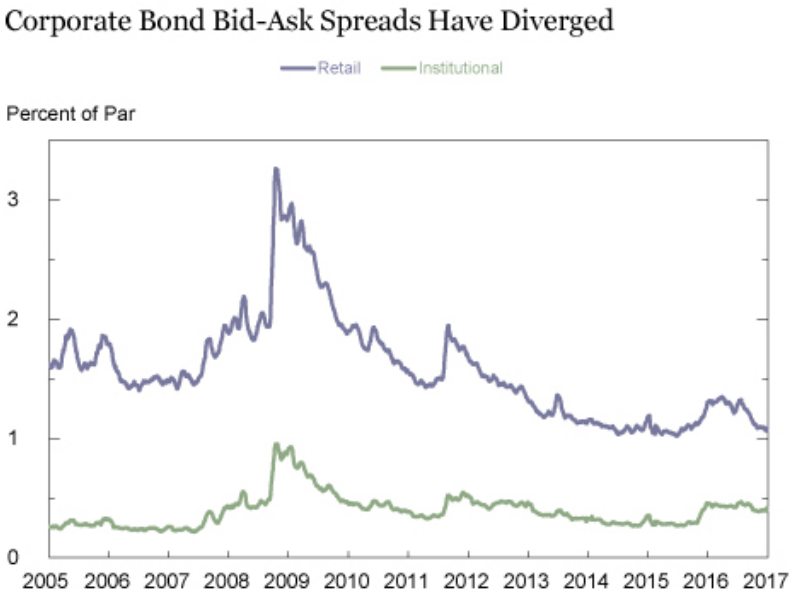


Finally, according to historical TRACE volume data, the growth in trading volume for trades >=$1MM to <$25MM has been accompanied by a reduction in the average trade size. In 2008, the >=$1MM to <$25MM trades were on average $4.15MM, that size has declined by 11% in 2016 ($3.7MM).

From the evidence, it is clear that **rapid growth in the outstanding size of the corporate bond market has actually impaired the ability of institutions to complete larger sized trades.**

The dangers of over utilizing TRACE

A frequent statistic used to make the case against a corporate bond liquidity problem has been the reduction in observable bid/ask spreads according to TRACE.



Source: Authors' calculations, based on data from the Financial Industry Regulatory Authority (FINRA), Trade Reporting and Compliance Engine (TRACE) supervisory database.

Note: The chart shows the twenty-one-day moving average of realized bid-ask spreads for retail (under $100,000) and institutional ($100,000 and greater) trades of corporate bonds. The spreads are computed daily for each bond and trade size grouping as the difference between the average (volume-weighted) dealer-to-client buy price and the average (volume-weighted) dealer-to-client sell price, and then averaged across bonds using equal weighting.

It is important to note that the calculation of bid/ask is done using transaction data, which is highly unusual since bid/ask is derived from pre-trade data. **Using this method to declare that transaction costs have been diminishing for both retail and institutional trades is highly suspect.**

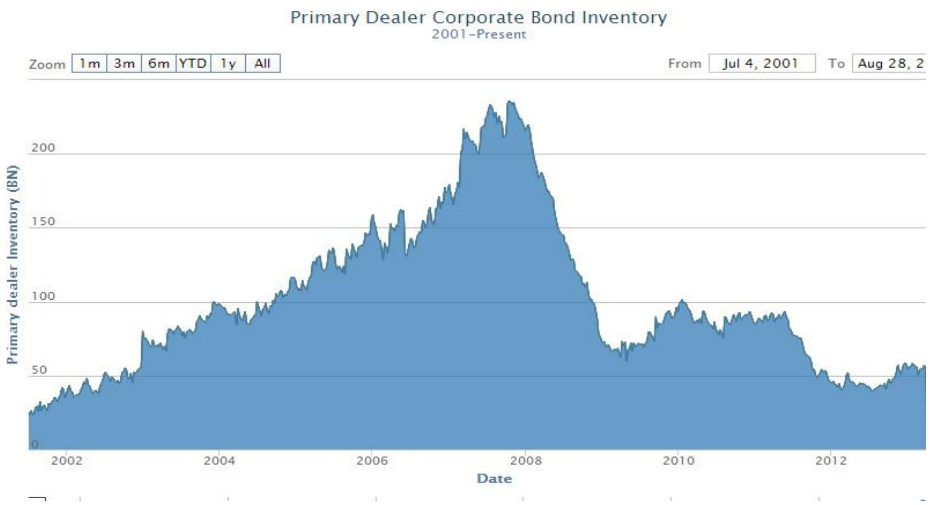
Focusing on transaction driven bid/ask spread data indicates that liquidity or "the opportunity to trade corporate bonds," has been ample. However, exclusively using transaction data metrics to assess market liquidity has several significant limitations:

1) Transaction data cannot account for the time required to trade
2) Transaction data cannot measure the liquidity of bonds that do not trade
3) The most actively traded bonds are too heavily weighted in data analysis

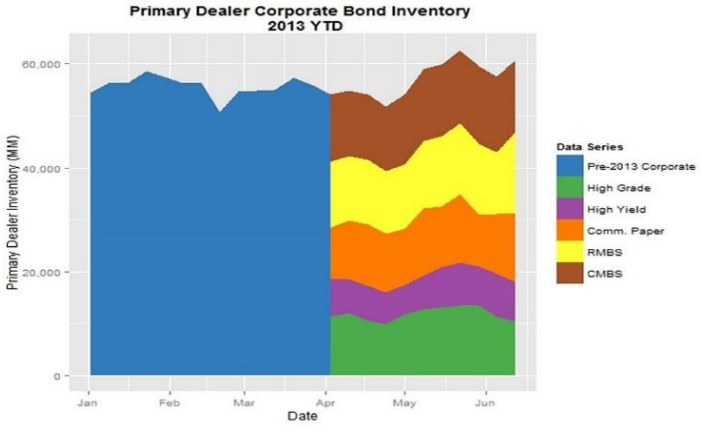
High-quality pre-trade data is critical to truly understand bond liquidity.

False Narrative on Corporate Bond Liquidity

Up until 2013, the Fed distributed data on the aggregated primary dealer corporate bond inventory. Unfortunately, this **data was highly inaccurate and has led to a false narrative on US corporate bond liquidity**.



According to the false information provided by the Fed, primary dealers once held close to $230 billion in corporate bond inventory. Given that inventory levels seemed to drop below $50 billion a mere five years later, it is not difficult to understand why most discussions on potential corporate bond liquidity issues immediately assumed that the dramatic reduction in dealer balance sheets were the cause. (source for both charts)



In 2013, the Fed upgraded their aggregated primary dealer inventory data to include bond categories. What had been labeled “Corporate Bond Inventory” included Commercial Paper, Residential Mortgage-Backed Bonds, and Commercial Mortgage-Backed Bonds. The inclusion of these non-corporate bonds means that the initial statistics on dealer balance sheets for corporate bonds was dramatically inflated. Further analysis by Goldman Sachs’ Research Division in 2014 revealed that the peak of aggregated corporate bond inventory holdings was approximately $38 billion in 2006. Therefore, **theorizing that bond market liquidity has been adversely impacted by a dramatic reduction in dealer balance sheets is not a factual argument.**

An Alternative Theory on Bond Liquidity

A key trend that has practically gone unnoticed since 2008 has been the increase in the concentration of trading activity with fewer institutional market participants. According to data from Greenwich Associates, buy-side firms have increased their portion of secondary trading with the top 5 dealers from 50% in 2006 to 65% in 2015. It must be noted that this increase has occurred during a period when the outstanding size of the market has more than doubled. **Despite the presence of more bonds, the market is becoming less competitive from a market making perspective. Lack of diversity and competition amongst market makers could explain why institutional market liquidity is stagnating**.

TRACE data provides information that supports this view. According to the participant data, the top 5 and top 10 most active firms have gradually become more dominant in secondary trading.

Percentage of Corporate S1 Activity Captured by the Most Active Firms Reporting Trades Less than $25,000,000 and Greater than or Equal to $1,000,000 in Par Value to TRACE (excluding equity CUSIPs)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Unique Firms Reporting	654	724	739	729	693	685	640	628	598
Average Reporting Firms per Day	138	184	189	182	195	191	191	184	189
% of >=1,000,000 and <25,000,000 S1 Trade Activity Captured by									
MOST ACTIVE 5 Firms	29.1%	28.0%	27.3%	27.8%	29.0%	30.5%	31.4%	33.1%	31.4%
MOST ACTIVE 10 Firms	48.9%	47.8%	46.4%	46.1%	48.0%	49.0%	50.1%	53.9%	51.7%
MOST ACTIVE 25 Firms	77.8%	71.3%	71.5%	72.0%	72.0%	72.9%	74.8%	74.7%	73.4%
MOST ACTIVE 50 Firms	90.2%	86.2%	85.9%	85.8%	86.2%	87.0%	88.1%	87.9%	88.2%
% of >=1,000,000 and <25,000,000 S1 Par Value Activity Captured by									
MOST ACTIVE 5 Firms	33.2%	32.4%	31.1%	31.8%	32.8%	34.7%	36.2%	**38.2%**	36.5%
MOST ACTIVE 10 Firms	55.8%	53.7%	53.3%	52.4%	54.2%	55.5%	56.8%	60.4%	59.2%
MOST ACTIVE 25 Firms	81.8%	76.7%	76.7%	77.2%	76.9%	77.6%	79.3%	79.6%	78.9%
MOST ACTIVE 50 Firms	92.3%	89.2%	89.1%	89.0%	89.2%	90.0%	90.8%	90.7%	91.1%

Conclusion

Typically, **<$1MM trades account for ~85% of daily market transactions in the corporate bond market, but are less than 18% of daily market volume**. Therefore, it is the >=$1MM market that represents the majority of the US corporate bond market. Transactional data clearly indicates that growth in the overall size of the market has produced ample trading opportunities in the <$100k trade sizes, but this trend has not permeated to the institutional (>=$1MM) market.

The evidence that points to potential liquidity issues in the >=$1MM market should be of most concern to buy-side institutions, sell-side firms, and regulators. Given the complexity of trading positions with large notional sizes, professional intermediaries (dealers) are essential to the trading process.

While the impact of market regulations on corporate bond liquidity is debated, an unintended consequence of new rules has been to change the competitive dynamics of market making. As the market has grown, the market share of the top dealers has increased, which has led to greater concentration of trading activity. Throughout history, resolving systemic financial market liquidity issues has required broader participation from a larger group of market makers. Unfortunately, the trend in the US corporate bond market is in the opposite direction. **Without participation from a more diverse group of market makers, it is unlikely that the institutional corporate bond trading environment will support the growing liquidity needs of the buy-side institutions** that represent the investing public.

What is most dangerous about falsely believing that the reduction in dealer balance sheet is the primary catalyst for corporate bond liquidity problems is that it propels the market towards solutions that don't address the core issue. **All to All trading and client to client networks have never improved institutional liquidity in other markets**, yet we are led to believe that these are the future market solutions that will improve block trading conditions for corporate bonds.

What has been proven, through ample history, is that institutional market liquidity can be improved through the organization of pre-trade data (NASDAQ) and the development of a competitive market making environment.