ELECTRONIC TRADING

The Continued Evolution of the Corporate Bond Market

Robert Barrett,
Investment Director

Fixed Income Portfolio Analyst and Corporate Bond Trader

TRADITIONALLY, corporate bond trading has required direct communication between dealers and investment managers. While most trading still occurs in this manner, technological advances are transforming this space and electronic trading is growing in importance. As new trading platforms emerge, corporate bond trading is beginning to shift from over-the-counter trading between dealers and investment managers to electronic marketplaces. Within this 'Fixed Income Insights' we will explore the driving factors of this evolution in secondary trading, the current state of the electronic marketplace, and how we view and use electronic trading at Galliard Capital Management.

GALLIARD CAPITAL MANAGEMENT is an independently operated wholly owned subsidiary of Wells Fargo & Company, through a holding company and its primary U.S. banking subsidiary. Founded in 1995, Galliard specializes in architecting fixed income and stable value investment solutions for institutions nationwide. Galliard manages more than $93 billion in assets for more than 230 institutional clients nationwide.

DIMINISHED DEALER LIQUIDITY: A DRIVING FACTOR FOR THE EXPANSION OF ELECTRONIC TRADING

Investment grade corporate bond issuance set another record in 2016, at $1.3 trillion in new corporate issuance. For 2017, the estimates for new issue are expected to be relatively the same as 2016. Despite these high levels of investment grade issuance in the primary market, secondary dealer inventories remain at diminished levels. In the fourth quarter of 2016, dealer corporate bond inventory averaged just $8 billion and inventories have increased only slightly in 2017, to $10-15 billion. Current levels of bond inventories are far from the $100 billion dealer inventory levels held during the 2008 financial crisis. Following the financial crisis, increased investment banking regulations such as the Dodd-Frank Act and Basel III were some of the primary contributors to this decline. Regulatory reform efforts suppressed financial institutions' ability to grow their balance sheets and banks became less inclined to support inventory, resulting in reduced corporate bond liquidity within these regulated institutions.

Diminished dealer liquidity—a driving factor for the expansion of electronic trading.

FIGURE 1 INVESTMENT GRADE NEW ISSUE[1]

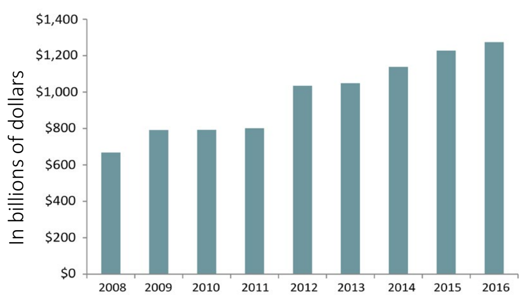
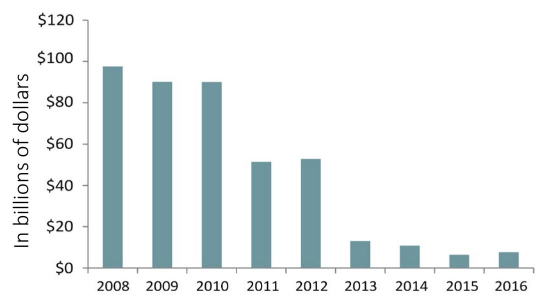


FIGURE 2 DEALER INVENTORIES[2]

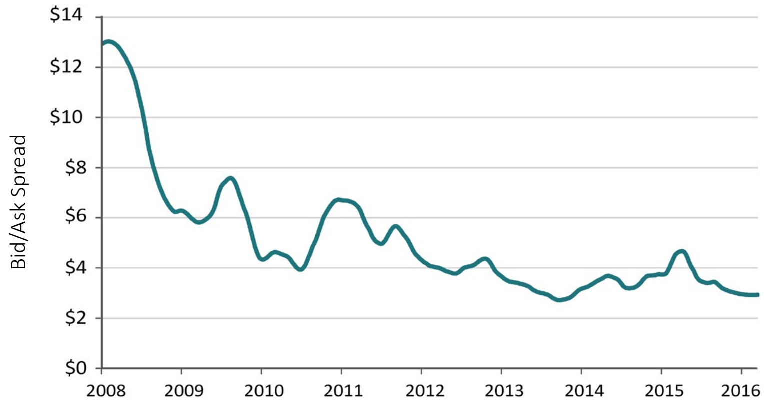


TRACE: INFLUENCING DEALERS TO ACT AS AGENTS RATHER THAN PRINCIPALS

In addition to government regulation, greater transparency in bond pricing through the Transaction Reporting and Compliance Engine (TRACE) has discouraged dealers from maintaining inventory. TRACE launched in 2002 and was fully implemented for corporate bonds by 2005. As bond pricing transparency increased, the bid/ask spread shrunk to an average of 3 basis points on trades of at least $5 million for investment grade corporate bonds. As a result of declining bid/ask spread levels, dealers are not incentivized to store corporate bonds in inventory, and they have shifted from acting as principals to acting as agents. As agents, dealers pre-determine both the customer buyer and customer seller prior to a transaction taking place, committing minimal balance sheet risk and capital to trading secondary corporate bonds.

1, 2 Endnotes are located on page 6

FIGURE 3 INVESTMENT GRADE BID/ASK SPREADS ON $5MM+ TRADES[3]

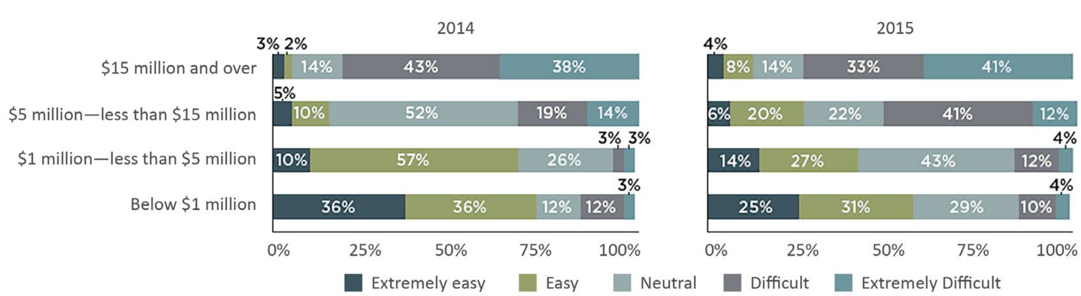


MARKET PERCEPTION: DIMINISHED LIQUIDITY REMAINS A CONCERN

Another driving factor for the shift toward electronic trading is market perception of diminished liquidity. A 2015 Greenwich Associates study[4] on the difficulty of completing trades found that a majority of 58 investment managers indicated that completing trades of $1 million or more was either "Neutral," "Difficult," or "Extremely Difficult." We would categorize our own experience as "Easy" for trades of less than $5 million and "Difficult" for trades of $5 million or more. Most of the difficulty in completing trades of $5 million or more stems from an unwillingness of investment banks to allocate balance sheet capacity. Market participants' opinions reflect the difficulty of completing trades within market context, and sources of dealer provided liquidity may be limited.

Market perception of diminished liquidity reflects the difficulty of completing trades within market context.

FIGURE 4 HOW HARD IS IT TO TRADE BY TRADE SIZE?[4]



We believe that over time most fixed income investment managers will utilize electronic trading platforms and we anticipate the overall share of secondary trading to significantly increase in size over the next several years.

ELECTRONIC TRADING: A SMALL, BUT GROWING SHARE OF SECONDARY TRADING

Amidst the lack of perceived liquidity in the corporate bond market, dozens of electronic trading platforms have emerged. While some existing electronic trading platforms have expanded into the corporate bond market, there are also instances of new corporate-bond-only electronic trading platforms. According to the same Greenwich Associates study from 2015, 76% of investment managers were using electronic trading platforms and 20% of all secondary trades were completed on electronic platforms. Based on industry research and our own market observations, we believe that over time most fixed income investment managers will utilize electronic trading platforms, and we anticipate the overall share of secondary trading to significantly increase in size over the next several years.

FIGURE 5 ELECTRONIC TRADING ACTIVITY IN INVESTMENT-GRADE CREDIT[4]

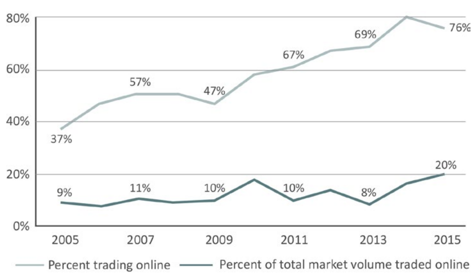
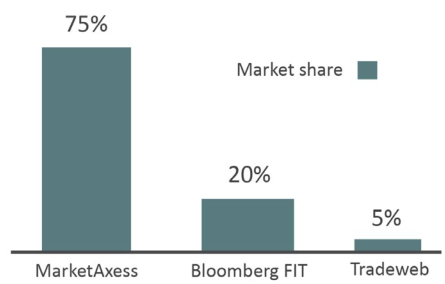


FIGURE 6 MARKET SHARE IN ELECTRONIC TRADING OF INVESTMENT-GRADE BONDS: MULTI-DEALER SYSTEMS[4]



Within electronic trading, MarketAxess is the clear industry leader with a 75% share of electronic trading in investment grade bonds. MarketAxess has established its dominant position through its relatively long history, large network of participants, and innovative approach to electronic trading. With more than 1,000 institutional credit participants, MarketAxess is expanding bond market liquidity, with investment managers acting as the source of liquidity in 46% of trades. MarketAxess is achieving success by providing price improvement, facilitating all-to-all trading, and allowing new sources of liquidity to enter the secondary marketplace. All-to-all trading is a new concept in fixed income trading, where all market participants, including investment managers, hedge funds, and dealers can actively participate directly with each other.

Bloomberg FIT (Fixed Income Trading) is another industry-leading electronic trading platform. Within Bloomberg, electronic trading in corporate bonds occurs primarily through the ALLQ (All Quotes) function, where dealers post live markets that are executable. While not as robust as the all-to-all trading of MarketAxess, Bloomberg ALLQ does provide market clarity and efficiency.

4 Endnote is located on page 6

The electronic marketplace is evolving. We have already seen an example of consolidation between Trumid and Electronifie, which were struggling to gain share. We will likely continue to see the consolidation of other smaller players, and we believe that MarketAxess and Bloomberg will be the dominant electronic trading platforms for the foreseeable future.

PRIMARY BENEFITS TO ELECTRONIC TRADING: EFFICIENCY, LIQUIDITY, AND INFORMATION

A dynamic shift in trading is happening at Galliard Capital Management and in the industry as a whole. Electronic trading currently represents approximately 30-40% of our total secondary volume. MarketAxess has become our number one trading partner and counterparty for secondary trading, with approximately 60% of our volume conducted with MarketAxess as the counterparty.

We have used electronic trading to capture efficiencies by sourcing bonds for new portfolios and efficiently placing bids on bonds that suit our portfolio needs. We also use electronic trading to conduct sales for liquidations, allowing us to efficiently receive bids on bonds that we want to sell in a timely manner.

In addition to efficiency, we have found opportunities to act as a liquidity provider and sell corporate bonds at attractive levels relative to theoretical or quoted markets. These attractive opportunities to sell will continue to occur as long as dealers have limited inventory or an unwillingness to short a less liquid corporate bond.

Lastly, we have found that electronic trading provides better clarity of trading in our specific corporate bond holdings. We are able to see the market flow of trading in our issues and better adjust our liquidity premiums for specific corporate bonds that we hold in our clients portfolios. We also found that electronic trading provides a greater perspective on the depth of the market by highlighting and recording instances where Galliard has submitted a level that is not trading in the marketplace. The direct information we gather from electronic trading enhances our traditional trading with dealers by allowing us to better understand the flow and depth of the market. We will continue to engage in electronic trading to benefit the portfolios we manage.

The direct information we gather from electronic trading enhances our traditional trading with dealers by allowing us to better understand the flow and depth of the market.

GALLIARD'S VIEW AND USE OF ELECTRONIC TRADING

We anticipate that the vast majority of fixed income managers will use some form of electronic trading in the near future and secondary trading volume could significantly increase to 40% or more over the next several years. We believe existing regulations and transparency in trading will remain, acting as a deterrent to dealer supported liquidity in the market. We also believe dealers will continue to play a vital role in secondary trading

FOR MORE INFORMATION CONTACT:

For other Fixed Income Insights, please contact your Galliard relationship manager or email Galliard.

galliardclientservice@galliard.com

You can also visit the Galliard website at www.galliard.com

as the primary source for both quoted and established markets in the near-term. Over the long-term, we believe electronic trading will become more important as more investment managers realize its benefits. As electronic trading becomes more prevalent, we believe a convergence of investment manager and dealer roles will occur in the marketplace, with investment managers acting as a source of liquidity and dealers acting as underwriters to achieve higher bid/ask spreads in less liquid corporate bond issues.

SUMMARY

We anticipate the continued evolution of the secondary market and a shift towards electronic trading. We expect electronic trading to gain share versus traditional forms of trading, and will likely expand the marketplace by providing new avenues of liquidity. By staying at the forefront of this evolution in electronic trading we believe that we can further help our clients achieve their long-term investment objectives.

[1] Source: SIFMA
[2] Source: NY Fed
[3] Source: MarketAxess
[4] Source: Greenwich Associates 2015 North American Fixed Income Research study.

Galliard Capital Management | 800 LaSalle Avenue Suite 1100 | Minneapolis, MN 55402-2054 | www.galliard.com | 800-717-1617