

## Alternative Trading Systems: Solving the Liquidity and Pricing Transparency Problems in the Municipal Market

### INTRODUCTION

The municipal market is inefficient and illiquid, leading, in theory, to a higher cost of funds for public agencies. Electronic trading through alternative trading systems (ATS) presents opportunities for municipal market participants to improve liquidity, trade efficiently, and increase market transparency. These opportunities are likely to translate to improved pricing for both issuers and investors. Despite these opportunities most municipal bonds continue to trade without taking full advantage of the benefit of technology, in a marketplace controlled by a limited number of participants who often lack the requisite information to transact efficiently. There are a number of potential ways to increase the efficiency in this market; and regulatory and technological advances are improving the likelihood that these will take hold in the future. But there are still many obstacles to overcome. Ultimately, issuers play an important role in promoting efficiency and helping to

advance the adoption of technologies that drive better pricing, efficiency, and liquidity.

### INEFFICIENCIES IN BOND TRADING

In simple terms, the less a borrower has to commit to interest costs and fees, the more it can commit to financing improvements and services. Since greater liquidity is believed to lower the cost of funds, a liquid market enables public issuers to finance more public goods. In early 2015, the Commissioner of the Securities and Exchange Commission (SEC) recognized that the municipal market is illiquid, opaque, costly, and unfair.<sup>1</sup> Most recognize it as a highly fragmented market comprised of competing interests, with participants trying to acquire securities that trade infrequently. This is particularly true of secondary market trades between investors after the initial sale of the securities.

The greatest share of secondary market trading of municipal securities occurs over-the-counter (OTC) through dealers in a decentralized market. Three factors contribute to this market's opacity and drive transaction costs.<sup>2</sup> First, the framework of existing regulations requires less disclosure of financial and risk information from municipal issuers than corporate issuers. Investors value information that allows for a quick and easy discovery of an issue's risks. Securities lacking comprehensive, frequent, and easily acces-

sible disclosure documents are considered by investors to carry more risk and higher costs. Second, there is essentially no pre-trade price transparency. Investors can only determine the trade prices by contacting dealers. Unlike other securities markets, there is no centralized display of the range of prices dealers are willing to pay for securities. Finally, there are difficulties in accessing and understanding post-trade prices. The Municipal Securities Rulemaking Board (MSRB) provides the post-trade prices on its Electronic Municipal Market Access (EMMA) website. However, this tool is underutilized by retail traders and when used, it can be difficult to analyze.<sup>3</sup>

Electronic trading platforms offer significant value and currently account for more than a quarter of all trades. Although bond trading costs in electronic markets are substantially lower than OTC markets, the availability of electronic resources varies widely depending on the market.<sup>4</sup> The platforms now operating are dealer-centric but they may increasingly provide a means for clients to access the market without the participation of a dealer. Bond exchange-traded funds (ETFs) offer a practical model for electronic trading platforms.<sup>5</sup> ETFs are more transparent than OTC as evidenced by the availability of quotes, and large bond ETFs typically trade intraday within a centralized market, providing deep liquidity with tight bid-ask spreads. Finally, there is considerable evidence that bond ETFs can assist in price discovery.

<sup>1</sup> Aguilar, Luis A., U.S. Securities and Exchange Commission (SEC), *Statement on Making the Municipal Securities Market More Transparent, Liquid, and Fair*, Feb. 13, 2015.

<sup>2</sup> *Overview of Market Structure, Pricing, and Regulation*, U.S. Government Accountability Office, Municipal Securities, Jan. 17, 2012; see Green, Richard C., Burton Hollifield, and Norman Schürhoff, *Dealer Intermediation and Price Behavior in the Aftermarket for New Bond Issues*, *Journal of Financial Economics*, Oct. 2006.

<sup>3</sup> The MSRB launched its EMMA Price Discovery Tool in mid-2014 which enables users to access and understand post-trade prices. However, the Price Discovery Tool does not eliminate all difficulties. For instance, users must know a security's CUSIP number in order to access price trade information.

<sup>4</sup> Hendershott, Terrence, and Ananth Madhavan, *Click or Call? Auction versus Search in the Over-the-Counter Market*, *Journal of Finance*, Feb. 2015.

<sup>5</sup> Bond ETFs contain a portfolio of bonds, trade like stocks, and are typically traded daily, offering high liquidity.

## POTENTIAL APPROACHES TO ADDRESS INEFFICIENCIES

The inefficiencies in trading may be addressed by a number of potential approaches, leading to greater liquidity, better prices for issuers, and lower funding costs. The first approach is to improve pre-trade price transparency. This could be achieved by aggregating and disseminating a National Best Bid or Offer (NBBO) for municipal securities.<sup>6</sup> Several electronic markets are now aggregating electronic actionable quotes for many municipal securities, but most customers do not see these prices. When investors see an aggregate of prices, they derive a higher value from opting for the best price. One objection to this proposal is that the large volume of municipal securities would make computing and disseminating an NBBO challenging. However, the system would still be easier to maintain than the NBBOs that equity options markets currently disseminate. Another objection is that dealers would be harmed if forced to quote continuously. It may be that the system would not force dealers to quote, but allow market forces to reward those that did quote with more order flow than those that did not.

Pre-trade price transparency could also be achieved if regulators chose to mandate that brokers post all customer limit orders in an electronically accessible order display facility (ODF) in order to improve pre-trade price transparency.<sup>7</sup> Access to customer orders through ODFs would allow any dealer or buy-side trader to fill an order. Many dealers object to using ODFs and claim that using them will cut into their profits causing many dealers to withdraw from the business, an outcome that would likely produce less liquidity and higher municipal funding costs. Indeed, ODFs whose prices constrain trades would decrease dealer profits causing some to withdraw from the market. This is due in part to ODFs enabling buy-side traders and

efficient dealers to effectively offer liquidity to each other. Yet balance may be restored by electronic dealers who provide better service at a lower cost and replace traditional dealers.

A second approach to improving trade efficiency is to limit the diversity of available bonds. Complexity is counterproductive to creating greater liquidity, yet many municipal bonds have unique features that make pricing them difficult. These characteristics favor well-informed traders but hurt retail and some buy-side traders. Issuing simpler bonds drives down transaction costs and makes researching and trading those issues easier for many market participants.

Third, efficiency and liquidity may be enhanced if there are simply fewer bonds in the market. Liquidity improves when there are more buyers and sellers interested in the same bond issue. An abundance of small issues divides markets, making it difficult for buyers and sellers in different issues to trade with each other even when their issues are excellent substitutes for each other. Some states have formed state bond banks to consolidate small bond issues from multiple local agencies into one pooled issue. The pooled bond often receives a higher rating, produces less spread risk and better interest rates, and lower issuing costs. Absent a state bond bank, issuers can issue a few standard bonds differentiated primarily by length of term.

A fourth approach, establishment of a central municipal bond exchange platform, combines aspects of the first three potential solutions. The current market structure skews pricing and transaction costs. An exchange might lessen fragmentation and pricing discrepancies in the municipal market and provide the inventory and data to support secondary market trading. Because today's electronic trading is transacted on a number of different platforms, the market would benefit from a central exchange. It can help to illuminate the similarities among bonds and increase liquid-

ity for similar issues. A central exchange could organize and group comparable bonds, based on a number of factors, including sector of issuance, date of maturity, and credit rating, and produce a daily potential price range for all active municipal bonds.<sup>8</sup>

A central exchange offers the considerable benefit of eliminating the inefficiencies of OTC trading that requires traders to place multiple calls in an effort to comply with fair pricing regulations. It would allow dealers to quickly access and analyze an aggregate of bids. Although not every issue has depth of market, for those that do, the full extent of that market should be accessible to market participants in order to ensure competitive and fair pricing.

Finally, issuers may create greater liquidity if they improve their disclosure. Investors need to be able to identify which securities are risky and the extent of those risks. Lacking this information they are encouraged to buy the bonds at a lower cost, forcing issuers to pay a premium. If applied across the municipal market, these potential approaches could greatly change the landscape of trading and increase efficiency and liquidity.

## REGULATORY AND TECHNOLOGICAL ADVANCES IN THE MARKET

While these five approaches have yet to transform the market, recent regulatory and technological advances have begun to incrementally move the market forward. First, the development and widespread use of EMMA has improved investor access to offering information and disclosure relating to securities. EMMA's Price Discovery Tool also facilitates greater transparency in allowing market participants to access post-trade prices. Additionally, fair pricing rules and best execution rules as well as the Financial Industry Regulatory Authority's (FINRA) active regulation of markups has led to narrower spreads.

<sup>6</sup> Harris, Larry, *Transaction Costs, Trade Throughs, and Riskless Principal Trading in Corporate Bond Markets*, Sept. 15, 2015.

<sup>7</sup> Harris, Larry, Albert Kyle, and Erik Sirri, *Statement on the Structure of Trading in Bond Markets*, Financial Economics Roundtable, May 11, 2015. See generally Hendershott, Terrence, *Electronic Trading in Financial Markets*, IT Pro, July/August 2003.

<sup>8</sup> See, e.g., Bergstrom, Evan, Justin Marlowe, and Ron Valinoti, *A Groupings Methodology for Municipal Securities: Theory, Application, and Evidence*, July 21, 2014.

In the future, regulators can continue to offer value to the municipal market in a few ways – first, by requiring dealers to disclose markups on trades. Even if prices do not change, markup disclosure gives investors more confidence that dealers are conducting business fairly. Second, regulators may clarify best execution rules by identifying a reasonable range of prices at which dealers may trade based on the market for and features of the bond. Finally, regulators may continue to push for improved disclosure within the limits of the Tower Amendment.

New technology complements the existing regulatory developments and has enabled issuers and other market participants to more quickly and efficiently analyze market conditions as well as issue and trade municipal securities. ATSS are platforms used by purchasers and sellers of securities. Existing platforms, including Bloomberg Municipal Bond Platform, Ipreo, TMC Bonds, and Clarity BidRate Alternative Trading System (Clarity Bid), have offered market participants improved transparency, market efficiency, and fairness. Each system is registered with the SEC and regulated as a broker-dealer or securities exchange.

Bloomberg Municipal Bond Platform is a non-trading platform that provides market monitoring, news, analytics, and a database of securities. This platform can be used by any market participant with a subscription service, including issuers, dealers, and municipal advisors. The platform contains new issuance information including comprehensive bond features. For secondary market trading, Bloomberg offers access to all information needed to evaluate a trade, including the bonds' trade histories with prices, bids wanted listings, and electronic trade confirmations.

Electronic platforms also serve the primary market. Ipreo is the preeminent platform tailored to facilitate new municipal bond

issuance. The platform allows issuers to manage new issuance through a competitive bid calculation system, document delivery system, and provision of a complete audit trail. Ipreo also enables the financing team to share documents, market the securities to investors, and receive retail and institutional orders. The platform also delivers deal information to investors. Finally, Ipreo shares data with and connects to other platforms.

There are also ATSS that operate primarily in the secondary market.<sup>9</sup> TMC Bonds is an ATS selling fixed income securities. TMC is involved in both the primary and secondary markets but the majority of its business is conducted in the secondary. The platform is used by a wide array of participants including broker-dealers, registered investment advisors, mutual funds, ETFs, insurance companies, credit unions, and municipalities. TMC comprises between a quarter and a third of interdealer trades in the secondary market on a daily basis. Dealers can post new issuance offerings on the platform and receive, manage, and respond to bids.

Specialized ATSS also exist for security subsets. Clarity Bid is an ATS platform that focuses solely on variable rate demand obligation (VRDO) and variable rate demand note (VRDN) trading.<sup>10</sup> The platform attempts to respond to problems in the variable rate market raised by the financial crisis in part by replacing the pricing role of traditional remarketing agents. Like other ATSS, Clarity Bid hosts a competitive bid process which aims to improve execution and lower volatility. Because of the broader buying base using this platform innovative products are better able to reach and gain traction in the market.

These platforms offer transparency in displaying municipal securities, their features, and pricing information. Additionally, the ATS platforms improve liquidity in the secondary market by more efficiently matching buyers and sellers. These platforms can also

assist dealers in meeting their best execution obligations by listing bid prices and they promote efficiency by offering a faster approach to conducting market research and trading.

## IMPEDIMENTS TO ADOPTION

Municipal securities do not trade as efficiently as securities in other financial markets. The characteristics of the market may present obstacles to efficiency that cannot be overcome through regulatory and technological advances. Additionally, the sweeping changes anticipated by a fully operational ATS might be constrained by market realities.

Fair pricing and best execution regulations may have a minimal effect on retail investors. The assumption that retail investors want to trade more frequently and would do so if the cost of trading were cheaper may be false. The retail community is composed of many buy and hold investors that do not want to trade away stable, long-term investment income. The original purpose in buying a bond may be to hold it to maturity as a regular source of income rather than to attempt to trade it at a profit. Lower trading costs do little for these retail investors.

Additionally, trading in the municipal market is more costly by its nature than in other markets. One reason is that dealers cannot hedge positions in the municipal market. Taxable fixed income and equities markets have futures, options, and derivative products which allow dealers to sell in the short-term. The municipal market lacks, to a large extent, that variety of short-term products and as a result dealers are exposed to risk by holding only long-term securities. That risk is carried as an expense that is passed on to a dealers' customers.

These realities also make it difficult to improve liquidity through technological advances. Although regulations are evolving to enable a more robust trading environment in the secondary market, this may be dif-

<sup>9</sup> In 2006 The Muni Center changed its name to TMC Bonds to reflect its expansion in offering non-municipal fixed income securities. Similar bond trading platforms include Tradeweb Direct and KCG BondPoint (formerly Knight BondPoint).

<sup>10</sup> VRDOs are securities with interest rates that reset periodically and which may be liquidated at par through puts or tenders. VRDNs are debt instruments payable on demand that accrue interest based on a prevailing money market rate.

difficult to achieve because of the mismatch between buyers and sellers. A bid wanted process, such as in an NBBO, may not provide better prices. In the current market, an issue may receive multiple bid wanted offers without resulting in a trade because bids are not fairly priced. The presence of a consolidated bidding platform might result only in more transparency in the submitted bids without producing better bids.

## THE ISSUER'S ROLE IN PROMOTING EFFICIENCY

Despite the unique difficulties in the municipal market, municipal issuers are well-positioned to promote efficiency and achieve better bond pricing. In particular, the advancement of technology enables issuers to take a more active role in issuing and pricing bonds.

In 2014 the Commonwealth of Massachusetts introduced a program to provide investors with direct access to the state's general obligation bonds. The bonds were offered on a rolling basis for the last two weeks of every month for a six month period through TMC Bonds. Each month fixed rate tax-exempt general obligation bonds were offered. The offerings were repriced and allotted daily to account for demand. For each two week period, the bonds issued were the same; they had the same denomination, credit rating, and CUSIP. The bonds sold through this program represented a twelfth of Massachusetts' annual bond issuance.<sup>11</sup>

Massachusetts had several goals in launching this program. The first was to expand its investor base and democratize the market by giving retail investors the same access to purchasing securities that is normally reserved for institutional investors. The second goal was to make it convenient for retail investors to buy the bonds. Massachusetts achieved this in two unique ways: (1) offering the bonds daily for each two week period and (2) displaying the

bonds on an open architecture platform. The platform expanded access beyond institutional dealers to reach independent dealers. Third, the state aimed for lower prices through enhanced transparency. The structure of the issuance – continuous provision of bonds over a two week period – necessitated greater sensitivity to investor concerns about risk. Massachusetts addressed these investor concerns by voluntarily filing financial and risk information on an almost daily basis through their investor site. Finally, the program attempted to determine the true demand for the state's general obligation bonds. The concern was that the typical model of coming to market a few times a year with a large offering overwhelmed the market with supply and resulted in higher prices. A baseline of \$10 million in bonds were offered each day, but this amount was adjusted to match demand.

A number of other municipal issuers have devised creative solutions to increase liquidity and improve prices. The Israel Direct Bond Program offers bonds to investors worldwide and 75 percent of investments are held by retail investors.<sup>12</sup> The Denver Mini-Bond Program offers bonds in smaller denominations to individual investors that are Colorado residents.<sup>13</sup> Kenya recently offered M-Akiba treasury bonds exclusively on mobile phones and in lower denominations to encourage retail investment.<sup>14</sup>

Additionally, new platforms have been developed for direct community investment. For example, Neighborly provides citizens with access to investment in public projects in their communities.<sup>15</sup> Neighborly democratizes access to the municipal market and simplifies the process of investment. The site allows users to identify their location and interest in public issues (e.g., education, clean energy) and matches them with pertinent investment opportunities. This service contrasts with the traditional method of investing in the municipal market through the use of a broker which can be more costly and time-consuming.

The evolution of bond markets is driven primarily by big issuers, such as large state governments. Yet smaller issuers can be open to new technologies and communicate with investors about their needs and expectations. The greatest asset to issuers in approaching and utilizing new technology is adaptability. Outside of new innovations, issuers of all sizes can reference the above section, *Potential Approaches to Address Inefficiencies*, to develop better methods of communicating and interacting with the market. Issuers can actively work to improve pricing by issuing simpler bonds, fewer bonds, and improving their financial and risk disclosure. One way for issuers to provide value to investors is by posting disclosure information on an investor website and regularly updating that site with financial data supplemental to the requisite annual reports and material events notices.

## CONCLUSION

The municipal market is relatively inefficient and illiquid compared to other markets, and these challenges result in higher borrowing costs for issuers. Regulatory and other professional groups encourage increased transparency and fairness in the secondary trading market as a means of achieving greater liquidity and pricing. Technology has been at the forefront of efforts to improve the market. ATs and other electronic resources improve transparency and efficiency and decrease fragmentation in the market. Absent a central exchange platform or other sweeping change to the market, ATs will continue to provide this value. In tandem with regulatory initiatives to ensure fair pricing and best execution, ATs are improving market efficiency. Ultimately, issuers can use technology and other strategies to improve their position in the market and achieve more competitive prices on their debt.

*This issue brief was written by Lauren Herrera of CDLIAC's Research Unit and reviewed by Angel Hernandez and Mark B. Campbell.*

<sup>11</sup> The Commonwealth of Massachusetts offered \$250 million of bonds through its MassDirect Notes program, and its annual bond issuance is approximately \$3 billion.

<sup>12</sup> For more information on Israel's Direct Bond Program, see [www.israelbonds.com/home.aspx](http://www.israelbonds.com/home.aspx).

<sup>13</sup> For more information on Denver's Mini-Bond Program, see [www.denvergov.org/content/denvergov/en/denver-department-of-finance/cash-risk-capital-funding/better-denver-mini-bond-program.html](http://www.denvergov.org/content/denvergov/en/denver-department-of-finance/cash-risk-capital-funding/better-denver-mini-bond-program.html).

<sup>14</sup> For more information on Kenya's M-Akiba bonds, see <http://kenyabusinessideas.com/2015/10/15/invest-in-m-akiba-bond/>.

<sup>15</sup> See <https://neighborly.com/how-it-works>.