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Corporate Bond Trading
A New Approach to an Old Question

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MARKETAXESS ON is a forum for thought leadership and discussion on the subjects and issues that are shaping the evolution of electronic trading in the credit markets. With internal resources and third party experts, we are developing research, insights and ideas aimed at bringing new levels of innovation, connectivity and efficiency to the MarketAxess community of clients and dealers.

A **NEW** APPROACH TO AN OLD QUESTION

Trade Cost Analysis and Electronic Corporate Bond Trading

INTRODUCTION

Through the recent economic downturn, one common theme amongst institutional credit market participants –investors and dealers alike – has been cost savings. Headcounts have been pared down and trading desk support areas have been consolidated within centralized groups. Despite this environment, relatively little attention has been paid to minimizing trading costs. A buy-side firm's trades might be scrutinized from the somewhat limited perspective of whether an institutional corporate bond trader executed at the best prices available given his dealer coverage, or compared to other executed trades in the market. However, the advent of FINRA's TRACE reporting, greater adoption of electronic trading, and new methodologies to analyze market data allow us to objectively examine trading costs in new and compelling ways.

THE IMPACT OF TRACE ON THE CORPORATE BOND MARKET

A number of academic surveys in recent years have highlighted the reduction in corporate bond bid-ask spreads following the introduction of FINRA's TRACE reporting in 2002. Bessembinder and Maxwell (2008) noted that "investors have benefited from the increased transparency, through substantial reductions in the bid-ask spreads that they pay to bond dealers to complete trades." Goldstein, Hotchkiss and Sirri (2006) commented that "using two alternative methods, we find evidence that spreads decrease for bonds whose prices become transparent and that this effect is strongest for intermediate trade sizes."

However, the academic studies also show that while trade execution costs have been reduced, overall liquidity in the corporate bond market remains relatively low and price dispersion remains relatively large. In examining the determinants of bond spreads, Bao, Pan and Wang (2010) conclude that during a normal market period, illiquidity is equally important as credit risk in driving credit spreads, while during the credit crisis of 2008 and 2009, illiquidity overshadowed credit risk.

Although transaction costs have decreased following the implementation of TRACE, the academic evidence to date suggests bid-ask spreads remain high, particularly in smaller trade sizes. Given the greater transparency brought about by TRACE and the increased adoption of electronic trading, a deeper analysis of transaction execution costs is warranted.

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COMPONENTS OF TRANSACTION COST ANALYSIS

The concept of analyzing trading costs is relatively new in the fixed income space. Much of the industry's focus has been on meeting best bid/offer pricing requirements and quantifying best execution rather than first attempting to minimize implicit trading costs. By contrast, in the equity market there are a number of sophisticated approaches to measuring the main components of trading costs, which include: the commission, market impact, execution delay and opportunity costs. However, key differences in the market structure and behavior of the credit market render an equivalent approach to trade cost analysis impossible.

Can electronic trading in a multi-dealer environment reduce investor trading costs?

With over 40,000 individual bond issues, many of which infrequently, if not rarely trade, the relative difficulty of price discovery in the fixed income market makes it difficult to estimate the market impact and execution delay costs of bond trading. Despite the lack of these traditional trade cost components, greater transparency enabled by TRACE and electronic trading do allow us to develop a methodology to test the hypothesis: Can electronic trading in a multi-dealer environment reduce investor trading costs?

METHODOLOGY

Without Market Impact and Execution Delay components, we are left with a more straightforward approach where the embedded costs consist of the dealer mark-up and any fee associated with executing the trade. To begin our analysis, since we can calculate the trading fees on an electronic trading platform such as MarketAxess, we can determine the cost of execution by comparing the electronically executed trade to a prevailing market price using the TRACE dataset.

For the purposes of trade cost analysis, evaluating market data—either on or off the MarketAxess platform—presents unique challenges. Presumably, the most straightforward way to calculate a "prevailing market price" is to look at all the trades in the market that are comparable to the MarketAxess trade (the observation). First, we analyzed a sample of around 900,000 U.S. corporate high-grade bond trades over a 24 month period (January 2009 to December 2010) and attempted to match each electronic trade on MarketAxess with voice trades in the TRACE dataset in the same bond, on the same side of the market, of the same relative size, and on the same day. Using the comparable TRACE trades we calculated a volume weighted average spread (VWAS) which served as our prevailing market price or proxy for voice execution. We then removed all of the observations from our sample where there were no comparable TRACE trades or the VWAS was calculated with less than three TRACE trades. The remaining sample represents more than 150,000 trades, giving us a robust dataset from which we could make precise statistical inferences. The restrictions on our sample dataset ensured that our approach was quite conservative in that we were comparing electronic trades to a sufficient number of TRACE prints.

Using the final sample dataset we then determined the difference between a traded level from MarketAxess and the VWAS calculated from TRACE. The resulting difference was the cost savings for the observation. These individual values were then aggregated to infer the overall cost savings for trading on MarketAxess.

RESULTS

We were able to estimate, at a 95% confidence level, that the average cost savings of electronic execution for all trades was between 5.1 bps and 5.2 bps, with a point estimate of 5.2 bps, compared to the calculated VWAS. More specifically, we saw cost savings at the short end of the curve (2 years to maturity and in) of 7.1 bps decreasing to 2.7 bps at the long end of the curve (30 years and out). This finding makes sense in light of the increasing dollar value of a basis point given a greater time to maturity.

Although significant savings were present in all trade size buckets, the highest cost savings was concentrated among trades sized $1MM and under.

AVERAGE COST SAVINGS BY TRADE SIZE

Size Bucket	Average Cost Savings (bps)	Standard Error of the Mean	Dollar Value of a Basis Point
<$100,000	5.6	0.03	0.047
$100,000-$1MM	3.8	0.04	0.023
$1MM-$5MM	0.9	0.10	0.063
$5MM+	1.4	0.66	0.073
Grand Total	**5.2**	**0.02**	**0.042**

More importantly, in every single size bucket and maturity bucket, the average cost savings eclipsed any comparable trading fee incurred, indicating that there are both statistically and economically significant cost savings when trading bonds electronically.

AVERAGE COST SAVINGS BY MATURITY

Maturity Bucket	Average Cost Savings (bps)	Standard Error of the Mean	Dollar Value of a Basis Point
2 Years	7.1	0.06	0.011
3 Years	5.8	0.07	0.029
5 Years	5.0	0.04	0.037
10 Years	4.1	0.03	0.062
30 Years	2.7	0.08	0.117
Grand Total	**5.2**	**0.02**	**0.042**

CONCLUSION

The most important factor in creating additional cost savings via an electronic protocol is the ability to request executable quotes from multiple dealers.

In a traditional voice-driven scenario the dealer group receiving inquiry was limited by the time it took a given trader to physically call each dealer. With the advent of an electronic request for quote (RFQ) protocol, a client requesting inquiry can simultaneously disseminate that request to a much larger group of dealers. The increased competition from a larger dealer group means that the client is more likely to receive more potential prices back, and given the increased competition, more aggressive prices in an attempt to win the trade.

The implication of the analysis for firms interested in reducing trading costs introduces the larger question of how to get market-wide best execution; electronic trading is one change with demonstrable upside. The analysis shows cost savings for all trade sizes, maturities and ratings. Electronic trading also results in additional savings by reducing trading times, processing times and errors. All of these cost savings can result in both incremental trading gains and a measurable improvement on portfolio level performance.

In conclusion, within the context of the broader question of how to achieve best execution, electronic trading is an attractive addition to a trading desk's workflow given its potential to reduce overall trading costs.

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