Transaction Costs, Trade Throughs, and Riskless Principal Trading in Corporate Bond Markets

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Disclaimer

• I only speak for me.
  – Not Interactive Brokers or USC

But I hope that lots of people are listening!
The Issues
What Do Broker-Dealers Do?

• Most broker-dealers trade net.
  – They profit on markups.
  – Few broker-dealers act as pure agency brokers who profit from commissions.

• The markup on riskless principal trades (RPTs) is identical to adding on a commission.

• Broker-dealers who arrange RPTs while filling customer orders effectively act as brokers.
Pre-trade Transparency Issues

• Unlike commissions, customers do not see dealer markups before they trade.
  – They can see them after the fact by examining TRACE data, but doing so is time-intensive.

• Customers generally do not see best bid and best offer prices before they trade.
  – They must query multiple dealers which is prohibitive for small traders.
Market Structure Issues

• Most investors cannot effectively offer liquidity in these dealer markets.
  – Even through electronic new order-driven venues.
  – No trade-through rules protect standing orders.
  – Few brokers let customers use these venues.

• Payments for order flow effectively prevent most retail customers from benefiting from innovative trading technologies.
The Net Result

• Small traders and many institutional traders trade at a disadvantage because they do not know market prices as well as dealers do.

• Transaction costs are high in bond markets in comparison to transaction costs in equities.
  – Risk considerations suggest the opposite.

• Greater pre-trade transparency makes trading bonds in Europe cheaper than in the US.
My Study
What I Did

I compared 3 million TRACE trades to about 464 million contemporaneous quotes from electronic venues to

• Measure transaction costs,
• Identify trade throughs, and
• Determine which trade throughs are RPTs.
Quote Data from Interactive Brokers

• Interactive Brokers provided me with a record of the best bids and offers that it saw in 17,000+ corporate bonds between December 15, 2014 and April 15, 2015.

• IB consolidated the best bids and offers reported by several electronic market centers including BondPoint.

• Similar data have never been analyzed before.
Main Empirical Results
Trade Activity

• The median bond only traded 0.34 times per trading day.
  – No surprise here.

• But 1% (229) traded more than 22 times per day, on average.
  – Like small- and some mid-cap stocks.
Quote Activity

The median bond

• Was quoted to IB 116 times per trading day.
  – Some double counting likely.
• Had a bid present for 98.9% of the trading day and an offer present for 77.4% of the day.

10% of all bonds had a two-sided market during more than 98.9% of the trading day.
• This surprises everyone but traders.
Transaction Costs

• The average customer roundtrip transaction cost was 125 bp, or about 4 months interest for a 4% bond.
  – Equivalent to 50¢/share for a $40 stock!

• Costs are smaller for bigger trades.

• Recent results from the NY Fed using cruder (but reliable) methods show that these costs have been declining.
  – See its Liberty Street Blog.
Trade Through Frequencies

• 47% of all trades trade through a standing quote when a two-sided quote was standing 2 seconds or more.
  – The 2-second restriction ensures that the quote was available to the trader.
  – It does not affect the results much.

• Many trade-throughs are due to net pricing.
  – But the price dis-improvement is much greater than normal commissions.
  – 77 bp for the 30.5% with dis-improvement > 10 bp
RPT Identification Method

• Using TRACE data only, I found all adjacent trade reports with the same size.
• A potential RPT is an adjacent pair involving
  – A customer trade and an interdealer trade, or
  – Two customer trades on opposite sides.
• I do not double count trades.
Riskless Principal Trades

• 42% of all trades are potential RPT pairs for which the time between trades is less than 1 minute.

• Less than 2 seconds separate the trades in 73% of the potential RPT pairs.
RPTs Markups

• 46% of all RPT pairs have no markup.
  – Agency trades by Interactive Brokers and others.
• The average markup for non-zero RPTs is 54 bp.
• Markups are greatest for retail trades, which are most common.
• The total markup value is $667M for the year ended March 31, 2015.
Trade Throughs by RPT status

• 32% of all trade throughs are also non-zero-markup RPTs.
• For these trades, the median difference between the markup and the price (dis-)improvement is zero.
• The correlation between the markup and the price (dis-)improvement is -86%!
Full Year Projections

For the year ended March 31, 2015,

• Total customer bond transaction costs were $26B.
  – Investors paid these costs (plus some exchange fees) for bond liquidity.

• Total trade-through value is about $700M based on reported quotation sizes.
Policy
Recommendations
Greater Pre-Trade Transparency

• At a minimum, the FINRA should require that brokers disclose their RPT markup rates on a pre-trade basis, and certainly always post-trade.
  – FINRA and MSRB currently propose post-trade disclosure.

• Bond markets would benefit greatly from having a NBBO (National Best Bid or Offer) facility.
Better Market Structure

• The SEC should consider enacting a trade through rule for bonds.
  – Before class action attorneys create a Manning Rule for bonds.

• Requiring brokers to post limit orders of willing customers to order display facilities (ODFs) that widely disseminate these prices also would prevent many trade throughs.
More about ODFs

• Competition improves prices.
  – Any investor could effectively offer liquidity in an ODF.
  – National exposure of customer orders would allow any dealer or buy-side trader to fill these orders.

• Similar order handling rules in the equity markets vastly improved those markets.
  – Consider the evolution of NASDAQ.
The Dealer Response to ODFs

Western Civilization as we know it will end!
The Dealer Argument

• Dealer profits will fall.
• Dealers will withdraw.
• Liquidity and markets will dry up.
• Issuer funding costs will skyrocket.
The Truth About ODFs

• The existence of one or more ODFs whose prices constrain trades will indeed decrease dealer profits, and they will withdraw.
• But only because buy-side traders will be able to effectively offer liquidity to each other.
• Cutting out the middleman saves costs.
• Volumes will increase as liquidity increases.
• Funding costs will decline.
Can We Live with Fewer Dealers?

• Yes, if they are displaced because other traders provide their services at lower costs.

• What about during market crises?
  – Markets always exist at some price.
  – In extremis, most dealers disappear anyway.

• Electronic dealers who provide better service at lower cost will replace traditional dealers.
  – The large number of issues ensures that dealers always will be important in bond markets.
Poster in Dinosaur Dealer’s Office

Larry Harris
Conclusion
The Long-View Perspective

• Bond markets are increasingly electronic.
  – Spreads are narrowing
  – But markups remain high.

• Small changes by FINRA, MSRB, and SEC can push bond markets into the 21\textsuperscript{st} Century.
What If We Don’t Regulate?

• Sophisticated institutions will demand more and better access to ATSSs like BondPoint.
• Interactive Brokers will continue to vacuum up sophisticated retail and institutional clients.
• Someone will publish a private NBBO, but most brokers will not make it available to most of their clients.
• Most retail clients will continue to trade as they do.
Why Regulate?

• Dealers won’t support pre-trade transparency.
  – They make more money in opaque markets.
• Brokers won’t support ODFs unless required.
  – They get too much payment for order flow.
• But investors will benefit, and they will pay more for their bonds when first issued.
• Class action attorneys may step in.
A Telling Observation

• Exchange-listed bond trading was quite liquid in corporate bonds before the mid 1940s and in municipal bonds before the late 1920s.

• Transaction costs then were substantially lower than they are now.
  – See Biais and Green (2007).
Another Telling Observation

• Practitioners recognize that bonds represent interest risk plus some credit risk.
• Pure interest risk trades in highly liquid and transparent Treasury and futures markets.
• Pure corporate credit risk trades in highly liquid and transparent stock markets.
• Why should the combination trade in opaque markets?
A Final Observation

• Greater pre-trade transparency makes trading bonds in Europe cheaper than in the US.
  – International Index Company disseminates indicative quote indices from many dealers on an intraday basis every minute for every bond in the iBoxx universe.
  – See Biais and Declerck (2013).

• But they also have long way to go.
Q and A