The Liquidity Crisis Scenario and Some Attenuating Solutions

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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 Feared Liquidity Crisis
The Liquidity Crisis Scenario

• When interest rates rise, long-term bonds melt down as fearful sellers exhaust available liquidity.
  – The recent withdrawal of traditional dealers exacerbates the problem.
• Spiking interest rates cause or threaten a recession, and the Fed responds by pumping more money into the economy.
• People afraid of inflation spend to preserve wealth, and inflation ensues.
Have I scared you?
Possibility versus Probability

• Our risk aversion causes us to assign greater subjective probabilities to fearful possibilities.
  – Risk aversion is a natural response to unbalanced type I and II errors.

• But good decisions require good probability distributions.

• Our discussions at this conference should improve our understanding of the feared crisis scenario.
The Scenario’s Compound Statement

• **(1)** When interest rates rise, **(2)** long-term bonds melt down as **(3)** fearful sellers **(4)** exhaust available liquidity.
  - **(5)** The recent withdrawal of traditional dealers exacerbates the problem.

• Spiking interest rates **(6)** cause or threaten a recession, and **(7)** the Fed responds by pumping more money into the economy.

• **(8)** People afraid of inflation **(9)** spend to preserve wealth, and **(10)** inflation ensues.
My Primary Purpose Tonight

• Discuss fixed income market structure and policy to obtain a better understanding of Statements 4 & 5 in the feared crisis scenario.
  
  (4) “… exhaust available liquidity”
  (5) “The recent withdrawal of traditional dealers exacerbates the problem”

• The discussion is important without the feared crisis scenario because we care about bond transaction costs.
But First Some Quick Observations about

“(1) When interest rates rise, ...”
Our Favorite Time Machines

• Financial markets are time machines in which people move money forward (investing) and backward (financing) in time.
  – Interest rates balance the investment demands with financing demands.

• Demographic issues strongly suggest that long-term real interest rates will remain low for a long foreseeable future.
Demographic Trends

• Populations are aging throughout the developed world due to
  – Lower birthrates
  – Better healthcare

• The undeveloped world remains unsecure and thus not like to grow as much as desired.
  – Besides commodities, immigrant workers are its greatest contribution to the world economy.

• These trends are highly stable and predictable.
Investment Demand

• Aging populations throughout the world are saving for their retirements.
• Economic uncertainties in the undeveloped world cause their risk-averse aristocracies to save in the developed world.
  – Why are the Saudis still pumping oil?
Aging Consumption Demands

• Aging populations consume less capital-intensive goods.
  – Durable good acquisitions and replacements decline as aspirations for more die, the peacock effect ends, and improved products last longer.
  – People downsize as they realize that their assets own them rather than the converse.
  – Consumption bundles shift from capital-intensive goods toward services.

• Retirement savings also reduce consumption.
Financing Demands

• Anticipating less future capital-intensive consumption, producers finance less investment in new plants.
  – Medical goods and devices for the infirm are the main exceptions.

• Fewer young people borrow for schooling.
  – Rising tuitions are an offsetting effect.
The Bottom Line

• I expect to see near zero real interest rates for the long foreseeable future (much of the rest of my lifetime).
  – If another world war does not destroy capital.
• I don’t expect interest rates to rise much.
  – (The Feared Crisis Scenario never gets triggered.)
What is Normalization?

• The Financial Crisis hid the effects of these demographic trends.
  – Did interest rates drop because of the Crisis (and the policy responses of the Fed) or because of these demographic trends?
• Normal interest rates very likely will be lower than they were in the past.
• Conservatives try to conserve a familiar past.
  – The Fed is caught in a vise.
Now My Main Topic: Corporate Bond Market Structure

(4) “... exhaust available liquidity”
The Issues Relevant to this Conference
Who Can Offer Liquidity?

• 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.

• Buy-side traders can not easily serve other buy-side traders.
My Study
What I Did

I compared 3 million TRACE trades to about 464 million contemporaneous NBBO records aggregated by Interactive Brokers from quotes reported to it by various electronic trading venues to

• Measure transaction costs,
• Identify trade throughs, and
• Determine which trade throughs are RPTs.
What I Learned: The Main Empirical Results
Electronic Trading

• Markets are increasing electronic.
  – The median bond had a bid (offer) present for 98.9% (77.4%) of the trading day.
  – 10% of all bonds had a two-sided market during more than 98.9% of the trading day.

• Many bonds look like small and mid-cap NASDAQ stocks from the 1980’s.
  – 1% (229) of all bonds traded more than 22 times per trading day, on average.
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 still 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.

• Many trade-throughs are due to net pricing.
  – But the price dis-improvement is much greater than normal commissions.
  – 77 bp dis-improvement for the 30.5% of all trades with dis-improvement > 10 bp.
Riskless Principal Trades

• 42% of all reported trades appear to be RPT pairs for which the time between trades is less than 1 minute.
  – Less than 2 seconds separate the trades in 73% of these 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.
  – Total transaction costs are higher.

• 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 riskless principal trades.
  – The correlation between the markup and the price (dis-)improvement is -86%!

➡ The dealers often act as brokers.
Full Year Projections

For the year ended March 31, 2015,

• Total customer bond transaction costs were $26B.
  – Investors paid these costs 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.
  – Requiring brokers to post limit orders of willing customers to order display facilities (ODFs) that widely disseminate these prices.

• Before class action attorneys create a Manning Ruling for bonds.
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.
Hedging Costs: Another Important Issue

(5) “The recent withdrawal of traditional dealers exacerbates the problem”
Capital Costs of Hedging

• Hedging is essential for moving liquidity among similar instruments.
  – For example, between a newly issued 15-year on-the-run bond versus a 14-year seasoned issue, both from the same issuer.

• Capital requirements are based on
  – gross positions for dealers in commercial banks.
  – net risk positions for hedge funds and others.

→ Traditional dealers have been withdrawing.
  – (They also exit due to low volatility.)
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 substantially increase liquidity provision by buy-side traders.
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.
• Cheap buy-side liquidity will reduce systemic risks.
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.