

People Are Worried About Bond Market Liquidity

As you might have heard.

By [Matt Levine](#)

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Attentive readers have noticed that my [morning newsletter](#) often contains the sentence "People are worried about bond market liquidity." A Google search finds [16 instances](#) of that phrase, and we're adding at a frenetic pace. I had to double up on liquidity worries in both [today's](#) and [yesterday's](#) newsletters: You've got [ICAP](#), [JPMorgan and Deutsche Bank](#) worrying about Treasury volatility, [Gary Cohn and Anshu Jain](#) worrying about bond fund liquidity, and [Nouriel Roubini](#) worrying about all sorts of liquidity. And here's [Pimco](#) worrying about flash crashes, shortly after the cut-off for today's newsletter. People are worried about bond market liquidity, is the point I'm trying to make here.

Should they be? I don't know. I don't even entirely know [what the question means](#); it is really an assortment of interrelated questions. (What even is the "bond market"? Corporates? Treasuries? Loan ETFs?) Still I figured I would make a series of disconnected observations here, since this stuff keeps coming up. When I [first wrote about this](#) a few months ago, I said that I was looking around for a framework for thinking about the issue, and these observations might add up to a very rough framework. It's probably wrong! So, you know, please tell me about that.

Dealers.

A first observation is that bond trading is done between investors and dealers, and we know what a dealer is. [\[1\]](#) A dealer is someone who stands ready to buy or sell securities from investors. The dealer's function is to buy from investors who want to sell, and sell to investors who want to buy, without making the investors wait around until they find each other. This service is often called "immediacy," and the dealer charges for it in the form of a bid/ask spread (buying from sellers at a lower price than he charges buyers).

This service *sort of* looks like "buy when everyone is selling, and sell when they're buying," the motto of the contrarian value investor. It also *sort of* looks like "buy low and sell high," the motto of every investor. And since the dealer buys when people are selling, and sells when they're buying, he has a tendency to reduce volatility: If you really need to sell, and there are no dealers, you're going to slash your price to get rid of your bonds. Five minutes later, someone who really needs to buy will come along, and will have to really bid up the price to get any bonds. By intermediating in time, the dealer can reduce those wild price swings.

But the dealer's function is really about smoothing trading across time, not about preventing price moves. If someone is selling now, the dealer will buy, and if someone is buying in five minutes, the dealer will sell, and most of the time that is a reasonable, volatility-dampening business model. But if everyone is selling for days, it would be dumb for the dealer to keep buying all the way down. That is just not the function of a dealer: Dealers are the buyers and sellers of first resort, not of last resort, and their function is not to take huge contrarian risks on long-term fundamental positions. They're in the moving business, not the storage business, as the cliché goes.

The *actual* buyers or sellers of last resort -- the people who buy when everyone else is selling, or sell when everyone else is buying -- are longer-term value investors. [2] The dealer intermediates in time between fundamental buyers and fundamental sellers, but you need the fundamental investors for the system to be healthy.

This provides a simple way to understand a lot of the worries about bond market liquidity as it relates to *banks* and *corporate bonds*. Banks are the dealers of corporate bonds, and their willingness to take risks by buying and selling bonds has been shrinking. Capital regulations, the Volcker Rule and general bank risk aversion have shrunk dealer inventories and risk appetites. So dealers are less able to provide immediacy than they used to be, and immediacy in corporate bonds is more expensive. [3]

But in this model, a higher price for immediacy is just a *cost*, not a *risk*. It's more expensive to trade bonds, in terms of bid-ask spreads or volatility or the time to get a trade done. It's more expensive because banks are taking less risk, and banks are taking less risk because that's what regulators want. They are shifting risks from banks, which are fragile and government-supported and so forth, to investors, who know what they're getting into. In

fact, the higher costs of trading might be a good thing, because now investors *really* know what they're getting into. Regulators have worried about "what is widely perceived as a 'liquidity illusion,'" in which investors think that they will have an easier time selling bonds than they actually will. But this is a crazy worry! There are two articles every day about how bad bond market liquidity is! Who could possibly be left with any illusions? Disillusioning investors *before* there's a crisis seems like a sensible approach, and good lord are investors disillusioned. So here is Goldman's Gary Cohn:

The concern is bond investors looking to buy, or especially to sell, will face wide prices swings and higher costs to get a transaction done.

"The problem is on the days when you need liquidity, it probably won't be there," said Cohn at a Deutsche Bank investor conference on Tuesday.

But on the days when you *don't* need liquidity, it also won't be there, and instead there'll just be a pile of articles about how there's no liquidity. This is good! This is the warning! It's cool.

The *risk*, it seems to me, can't be located in the *dealers* (i.e. the banks). Volcker, capital requirements, etc., drive up the cost of *immediacy*, but they don't increase the risk of a *crash*, because bond dealers were never in the business of buying all the bonds all the way down. If there's a bond crash, the banks won't be buying bonds, but they would never have been buying bonds in a crash. That was never their job.

Investors.

The risk, if there is one, has to be located in what I've loosely called the *value investors* -- the people who provide the ultimate bid for assets. [4] Here there are obvious reasons for worry, which frankly I do not understand well enough to have any clear views. But the biggest worries revolve around the possibility of herding among bond investors and around those investors' funding models. The worry is that there is one dominant model of bond investing, in which giant mutual funds and exchange-traded funds buy and hold every newly issued bond that comes along. Those funds offer their investors the ability to withdraw money pretty much any time they want. But if bond prices crash, investors will want to take their money out, the funds will need to sell, and all those giant bond funds that provided the bid for bonds on the way up will turn into sellers on the way down.

So, first of all, this is not exactly a *liquidity* worry. Cohn also said, "I am concerned, like many others, that there is a rather large imbalance being created between the daily liquidity in the AUM world and the broker dealer liquidity available to that world." [5] But if your model of dealers is that they intermediate between investors over time, then the "broker dealer liquidity" isn't the thing that should worry you. What should worry you is the absence of long-term fundamental investors who will buy bonds -- intermediated by dealers, sure -- when everyone else is selling.

This absence is at this point mostly hypothetical. Big mutual funds have sold

out of big bond positions -- notably Pimco in the period around Bill Gross's departure -- without causing a major crash. [6] But the worry makes some sense. A trading executive at one big bank pointed out to me that the traditional long-term investors in the bond markets, the mutual funds, actually have shorter-term funding structures than the broker-dealer banks do: The banks now have lots of unsecured debt and permanent equity, but the long-term investors are mutual funds whose shareholders can redeem whenever they want. [7] This rather messes with the picture of dealers as being short-term intermediaries between longer-term and less limited investors. [8]

If this is your worry, what do you do about it? Some proposed solutions seem unrelated to this worry. BlackRock, for instance, has endlessly pushed electronic trading of bonds, but at most that would reduce the costs of immediacy by bringing buyers and sellers together more efficiently. It doesn't seem to do much to solve the problem of finding fundamental investors to buy when everyone else wants to sell.

Other solutions make a kind of partial sense. Regulators talk sometimes about regulating the big bond mutual-fund complexes as "systemically important" institutions, on the theory that liquidity requirements, stress testing, regulatory oversight, etc. could make them less vulnerable to herding and the shock of redemption requirements. This might be right, though the concern is really more that all bond investors might be moving in correlated and risky ways than that some individual investors are too big. A hundred small funds offering daily liquidity and buying bonds indiscriminately would be roughly as bad as five big funds doing the same thing.

One proposal that I find particularly delightful is to revive the market for synthetic collateralized debt obligations. The old CDO market created lots of opportunities for investors to bet *against* corporate credit, because CDOs created lots of single-name credit default swaps that relative-value investors could buy. The idea here is not so much that the big mutual funds could buy CDS to hedge their bonds (why? just don't buy the bonds?), but rather that the current market doesn't really offer ways to bet against credit (it is hard to short bonds), so there is too much herding in one popular style of investing: the buy-and-hold, long-only, buy-all-the-new-issues mutual fund. If you could buy single-name CDS efficiently (from correlation desks who source it from CDOs), then it would be easier to be a relative-value credit investor, and relative-value credit investors could provide a bid when all of the mutual funds buying credit now turn into sellers. The deep idea behind proposals to revive CDO trading is that bond investing might be too much of a monoculture, and that diversifying the pool of bond investors might make the market more robust in the next crash.

Obviously synthetic CDOs have their own problems! The way you fight the last crisis builds you the next crisis, I guess.

Treasuries.

People are also really worried about liquidity in the Treasury market, in

ways that seem to me to be mostly unrelated to the worries about the corporate market. One obvious thing here is: Treasuries look much more like stocks than corporates do. Treasuries trade a lot on electronic exchanges, and banks are relatively unimportant in intermediating Treasury trades. "For Treasuries, the share of transactions by primary dealers has dwindled by more than half to 4 percent since the end of 2008," with electronic traders like Citadel expanding their role as dealers, and the complaints about the Treasury market sound a lot like the complaints in the equity markets about human market makers being replaced by algorithmic traders. For instance:

Less trading has meant more volatility. This year, price swings for Treasuries are up almost 75 percent from their lows in 2013, data compiled by Bank of America Corp. show. The bank's MOVE Index of volatility in the world's largest bond market was at 82.7 on May 29, up from 75.3 at the end of April and compared with an average of 77.6 over the past five years.

"We've been splitting the trades into smaller pieces," said Thanos Bardas, a Chicago-based money manager at Neuberger Berman, which oversees \$104 billion of fixed-income assets.

Or here's Pimco:

The re-regulated, better capitalized global banking system allocates little of its balance sheet to making markets, resulting in greater likelihood of flash crashes, air pockets and trading volatility.

Smaller trades, higher price impact, more flash crashes: It all sounds exactly like equities. ^[9] Human traders are being replaced by algorithms, and algorithms are weird. They move fast, for one thing, and they are flighty. They open up the possibility of seven-sigma events: Electronic traders can turn off their algorithms, unlike classic human dealers. If you want to sell Treasuries, and the buyers have reached their risk limits and turned off their algorithms, the price can crater in the time that it takes you to call up Pimco and say "rates have blown out, wanna buy some bonds?"

But then ... then they do, right? And it's fine? The worries about the Treasury market seem to be largely microstructural; Pimco uses words like "flash crashes" and "air pockets," not "crises" or "crashes." The latest Treasury-market news is from ICAP, which "is studying the possibility of temporarily halting Treasuries trading following large price moves," a classic idea imported from the equity markets. The idea is that sometimes algorithms lose their cool, and rather than letting markets chase the algorithms all the way down, you turn off the whole market for five minutes until human investors can get to their desks and realize that Treasuries are going for bargain prices. People hate flash crashes, and obviously they cause some people to lose money, but they have always struck me as sort of non-systemic, a technical glitch rather than a major fear. A sharp permanent drop in asset prices is scary. A sharp temporary drop in asset prices is kind of funny, honestly. And it's not that hard to fix: Throw in a pause when prices move too much, and you can more or less eliminate flash crashes

with technology.

In our terms, there *are* value investors for Treasuries ^[10] : There are lots of natural buyers and sellers of interest rates, and if Treasury bonds crash dramatically someone will step in to buy them. ^[11] There seems to be more diversity in interest rate investing than in corporate credit investing, which makes the worries about Treasury market liquidity seem a bit smaller, even though the market is of course much larger.

- 1 My thinking about dealers in this post draws heavily, though loosely, on Jack Treynor's classic model in "The Economics of the Dealer Function." In this model, the dealer will buy or sell from investors at a relatively narrow spread, but he has limits on how much risk he'll take. If he gets long or short too many bonds, he needs to lay off risk, by selling to or buying from value investors. Assume the dealer's position limit is \$10 million, normal trade sizes are \$1 million, and he can sell to value investors at \$95 or buy at \$105 (the "outside spread"). Then if his position is zero, he will make a market for \$1 million at 99.75/100.25; his spread (the "inside spread") is the outside spread (\$10) divided by the number of units he can trade between those position limits (20 units of \$1 million, from limits of -\$10 million to +\$10 million). As his position goes up (down), he will raise (lower) his market to move closer to the outside spread at which he will have to lay off (and to encourage customers to move him back to neutral). The spread that he charges is proportional to the outside spread (the prices at which value investors will take the dealer's risk off his hands), and inversely proportional to his position limits: The more bonds he can hold, the cheaper his spread will be.
- 2 Or, in some models, central banks, but hey.
- 3 In the Treynor model, shrinking position limits with a constant outside spread would lead to wider bid/ask spreads charged by dealers. This is a very stylized view and seems not to be entirely borne out by the facts. Bid/ask spreads **aren't** really widening, as investors refuse to pay for the costs of liquidity; instead trading is sort of anecdotally harder. The Bank for International Settlements has some interesting statistics on this point. One very stylized fact is that corporate bid/ask spreads aren't **that** high, though they are higher than pre-crisis levels; instead the increased cost of liquidity seems to be passed along in just **less trading** rather than **more expensive** trading:

Liquidity premia and, hence, market-maker compensation remain largely unchanged in many markets. In the short term, for given risk-adjusted profitability targets, this implies that dealers will be less willing to take on large positions and the associated inventory risks. They may also be likely to reduce their exposure more decisively during periods of elevated market volatility. That said, their willingness to absorb major supply and demand imbalances has always been limited and should be expected to remain so (see Box 2).

The BIS tells a story of, in part, cross-subsidization to explain these economics:

Pullbacks by market-makers, in turn, provide opportunities for other market participants to step in as liquidity providers, mitigating the impact on market liquidity. But how will these alternative liquidity providers perform in strained markets? On the one hand, new liquidity providers are likely to have fewer incentives to support market liquidity under more stressed conditions, because they lack access to any ancillary revenues from their clients. On the other hand, a wider range of liquidity providers could make supply more reliable, especially in the context of electronic trading.

- 4 To put it in Treynor's terms: In his model, the outside spread (the prices at which value investors will deal) is fixed. One could worry that in corporates the outside spread is itself widening, perhaps asymmetrically. Are there value investors in investment-grade corporate credit? Is the outside bid fading, relative to other historical periods?
- 5 One assumes that "AUM" means "assets under management" and is a shorthand for the asset managers, mutual funds, etc. who offer daily liquidity to bond investors.
- 6 Bloomberg's Tracy Alloway has pointed out the parallels to John Brooks's account of the stock market crash of 1962, in which mutual funds, then a relatively untested and worrying sector of the market, actually bought when others were selling. Brooks:

Since no one has been heard to suggest that the funds acted out of sheer public-spiritedness during the crisis, it seems safe to assume that they were buying on Monday because their managers had spotted bargains, and were selling on Thursday because of chances to cash in on profits. As for the problem of redemptions, there were, as had been feared, a large number of mutual-fund shareholders who demanded millions of dollars of their money in cash when the market crashed, but apparently the mutual funds had so much cash on hand that in most cases they could pay off their shareholders without selling substantial amounts of stock. Taken as a group, the funds proved to be so rich and so conservatively managed that they not only could weather the storm but, by happy inadvertence, could do something to decrease its violence. Where the same conditions would exist in some future storm was and is another matter.

- 7 Obviously there are other long-term investors in corporate bonds, like insurance companies, commercial banks, etc., who could cushion the blow. The concerns tend to be about the rising importance of mutual funds and ETFs.
- 8 Treynor's article begins by noting the differences between dealers and value investors, including "in amount of capital, hence ability to absorb losses" (value investors have more) and "in length of holding."
- 9 It is **not** really borne out by the BIS statistics. See Graph 1 in this report: Average transaction sizes in U.S. Treasuries are up to around peak pre-crisis levels, and price impacts are not much higher than they were in 2006-2007. In my loose Treynor model, Treasury position limits have compressed, as in corporates. But this is not (just) about capital/repo/Volcker limits, at least some of which affect Treasuries less than corporates. (You can still prop trade Treasuries, for instance.) It is also about a move to an electronic-trading model, where dealers (banks or Citadel or whatever) make small spreads for taking less risk for less time. So unlike in the corporate-bond model, dealers don't deal with compressed position limits by widening spreads. They deal by lowering trade sizes so that they can quickly move their prices in response to market moves. You have more price impact and smaller trade sizes. Again, this is not quite what the BIS data shows, but it's the model, and people seem to think it.
- 10 Or in Treynor's terms, the outside spread isn't too wide, it's just that the people providing the outside spread -- the value investors -- aren't necessarily hooked up to algorithms, so it takes them a few minutes to react. And in those few minutes, algorithms could take trading well past the outside spread.
- 11 Obviously in the longer term, as central banks dump Treasuries, their prices will go down. But that's not a crash or a liquidity story; that's just a regular old monetary policy story. The Fed is **supposed** to be able to make rates go up!

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