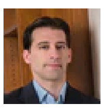
THIRD WAY

REPORT *Published February 27, 2015 • 16 minute read*

The Bond Market: How it Works, or How it Doesn't



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Takeaways

- Because most bonds do not trade on exchanges, investors have less access to information about prices. The push for increased transparency has boosted interest in electronic trading platforms for bonds.
- Bond market participants have become increasingly concerned about deteriorating liquidity—the ability to quickly sell an asset without affecting its price—since the financial crisis.
- A record high amount of corporate debt outstanding has many wondering if there is a bubble in the corporate bond market.

- As the Fed raises interest rates, many are worried that bond investors will stampede to the exits, which would drive down bond prices across the wider economy.

When it comes to finance, the stock market is the star of the show. The NYSE is one of America's most iconic images. Newspapers and cable shows are full of discussion about IPOs and the latest information affecting the direction of stock prices. Every day you know whether it's up or down.

Yet, over the past 25 years, the bond market has been on average 79% larger than the stock market.[1] The fact is Americans borrow. We're the biggest borrowers in the world. In a good year, the federal government issues *only* $500 billion in new debt through bonds. Corporations borrow hundreds of billions of dollars each year through bonds—with bond maturities ranging from a day to many years.

A well-functioning bond market provides crucial funding that allows companies and governments to borrow more affordably, creating jobs and economic growth. A malfunctioning bond market—a market in which lending suddenly ceases and loans are called in—is an absolute disaster.

This paper explains how bond markets work, what can go wrong, and why it matters for policymakers.

What is the difference between a stock and a bond?

Let's start with the basics. A stock is an ownership stake in a company. When you buy one share of General Electric, you are a part-owner of the company. A bond is an IOU. When you buy one General Electric bond, you have loaned money to the company.

Both stocks and bonds entitle the owner (you) to cash flow from the issuer (in this case, GE). The difference is that the payments from a stock are more volatile than those from a bond. When you own GE's stock, you receive a dividend from the company every quarter, but the company decides how much it will be each time. Most recently, GE announced that it will pay a 23-cent dividend on April 25, 2016. Ideally, the next dividend, in the third quarter, will be greater than 23 cents. However, there are no guarantees.

A bond, on the other hand, is a contract. You have agreed to lend money to a company (or country) with the stipulation that it will be paid back on a certain date and you will receive a specific, pre- determined interest payment at regular intervals for making that loan. If they don't pay you back, they've violated the contract.

Each bond has three key components: The loan amount (principal), the rate of return the purchaser of the bond will receive (yield), and the date when the bond issuer will return the full amount of the bond to the investor (maturity date). A bond's yield is based on the perceived likelihood that the issuer will be able to fulfill the contract.

Common Types of Bonds

Sources: SIFMA, U.S. Quarterly Highlights, Fourth Quarter 2015; MSRB, Electronic Municipal Market Access (EMMA); TreasuryDirect, Announcements and Results by Auction Year; FINRA, Trade Reporting and Compliance Engine (TRACE)

How do you buy bonds?

We'll start with the ***primary market*** and by this we mean the offering and sale of a brand new bond. There are two ways that a company or country initially issues and sells their bonds to investors: a "bought deal" or an "auction."

In a bought deal, an investment bank (like Goldman Sachs or Morgan Stanley) buys the entire lot of bonds at a set price. Usually, the different investment banks submit bids to the bond issuer indicating how much they would pay for all the bonds being offered. The issuer chooses the best deal for them—based on price, experience, and the ability to resell to other investors.

In a bond auction, buyers bid to purchase a portion of the bonds for sale. In a "single-price auction," all winning bidders pay the same price for the bonds being issued. In a "multi-price auction" winning bidders may pay different prices. Bond issuers conduct auctions to access investors directly and design them to raise capital at the lowest possible rate of interest. Of course, bond issuers don't always succeed in this endeavor—whether an auction or bought deal is the best option depends on individual circumstances. [2]

Demand for a bond auction is judged by what is known as the ***bid-to-cover ratio***. The bid-to-cover ratio is the total dollar value of all bids divided by the dollar value of the bonds being auctioned. If there is $300 million worth of bids for $100 million worth of bonds, the bid-to-cover ratio is 3. A bid- to-cover ratio above 2 is considered strong demand for a bond issue. Thus, if you read a story about the latest issuance of, say, Spanish sovereign debt and demand is considered weak, it reflects a low bid-to-cover ratio.

Buying bonds over the counter

After being initially issued, bonds then trade in ***secondary markets***. This is where ordinary investors purchase them alongside large investors. However, there is a key difference between how stocks and bonds are traded on secondary markets: stocks are traded on exchanges while bonds are traded over the counter.

Stock exchanges centralize all buying and selling orders in one place, and every investor can see these orders. Orders to buy are called ***bids***, while orders to sell are called ***asks*** or ***offers***. All traders can transact at the best available price, and once a trade takes place it is immediately recorded publicly so everyone can see the latest trade and price at which it was transacted. Exchanges aren't without their problems, but they generally encourage wide participation, promote transparency, and help create a level playing field.

But most bonds don't trade on an exchange. They trade over the counter—which means that investors engage in one-off deals with each other often through informal networks of bond dealers. Unlike exchanges, bids to buy and sell a particular bond are not centralized or seen by all market participants. Dealers can quote different bid and ask prices to different customers, and the latest trades aren't centrally posted for all bonds immediately after a trade takes place. The Financial Industry Regulatory Authority (FINRA), a self-regulatory body with jurisdiction over many over-the-counter bond dealers, posts the transaction prices for many corporate and municipal bonds with a slight delay through its TRACE system. TRACE stands for Trade Reporting and Compliance Engine, and bond dealers are required to submit trade records for many different types of bond transactions to this system. Yet TRACE does not display bids and offers from dealers pre-trade and excludes certain types of bonds, such as those with a maturity of less than one year. [3] Over-the-counter markets remain less transparent than exchanges.

Why are bonds traded over the counter?

First, there are a lot more bonds than stocks. GE has only one stock but more than 1,000 types of bonds with different yields, maturities, and even currency denominations. [4] There are roughly 5,000 stocks trading on major exchanges in the U.S., while there are likely hundreds of thousands of different bonds. [5] An exchange for all of them would be enormous.

Second, bond trades are typically much larger than stock trades. The average size of a stock trade is less than $10,000. [6] The average bond trade exceeds $500,000, which means most bonds are purchased by large institutional investors. [7]

Third, bonds trade much less frequently than stocks. Stock exchanges tend to have a steady supply of buyers and sellers in the market every day, but the same daily demand to trade does not exist in the bond market. Typically, the trading volume of a bond—that is, the number of times a bond is sold in a given period—is high during the first few days after it is issued, but then it drops off significantly. Sometimes, a bond might not trade at all for several months, or even years, making it hard to sustain exchange trading.

Taken altogether, this means the bond market is a different kind of retail market than the stock market. Bonds rely largely on ***institutional investors*** such as pension funds, mutual funds, insurance companies, and endowments. ***Retail investors*** have a presence in the secondary bond market—but it's smaller. Navigating the bond market takes more specific knowledge that only market experts tend to possess. In fact, only 1.4% of households hold bonds directly. But in 49% of American households, at least one person has a retirement account, and it's common for those investments to contain bonds.[8]

Presence of Retail Investors in the Bond Market

Note: Corporate bond market data excludes nonfinancial sector debt. Source: Federal Reserve, Financial Accounts Guide

> ***What's Going On***
>
> *This chart shows the ratio of institutional investor holdings to retail investor holdings for three common types of bonds. In 2014, U.S. households invested directly in $1.5 trillion of the $3.7 trillion municipal bond market.[9] But the municipal bond market is dwarfed in size by the Treasury and corporate bond markets, and these two categories are dominated by institutional investors.*

How do bond buyers and sellers find each other without an exchange?

As financial blogger Felix Salmon explains, "If you want to buy or sell a bond on the secondary market, there's really only one way to do it: phone a bunch of [bond dealers], ask them to make you a market, and either accept the best price you find, or don't." [10]

The bond dealers in these over-the-counter markets are called ***broker-dealers***. They tend to be large investment banks, though hedge funds and high-frequency traders can also act as broker- dealers.

These bond dealers in the over-the-counter market serve the role of ***market makers***. A market maker is an entity that is willing to quote a price to buy or sell a security at any time—even if the market maker doesn't have another buyer lined up. They make money on the difference between the bid and ask prices they display—this is known as a ***bid-ask spread***. This compensates them for the risk that the securities they buy and hold in their inventories will drop in value before they find a buyer.

Because there is a much lower volume of bond trades than stocks, market makers play a particularly crucial role in bond markets by providing ***liquidity***. Liquidity is the ability to buy or sell a security quickly without having to take a penalty in terms of price. Without a market where investors can sell their bonds before their maturity date, investors would be hesitant to tie up large amounts of money in bonds for an extended period of time. (Few people would buy a 30-year Treasury Bond if they had to hold it for all 30 years.) This would reduce the overall amount of money available to borrow in the bond market, which in turn would make borrowing more expensive.

Market makers in stocks generally never leave the playing field, but because bonds don't trade on exchanges with set rules, market makers in bonds have the option of leaving the market any time. When this occurs, liquidity can disappear. We saw this during the financial crisis, when markets for mortgage-backed securities—bonds backed by mortgages from across the country—dried up very quickly.

The bond markets may be changing

Electronic trading has revolutionized stock trading, and some hope it will revolutionize bond trading as well. There have been many efforts made by bond traders to move secondary market activity to electronic platforms and exchanges to improve liquidity. While there have been a variety of proprietary electronic platforms where investors can see bid and ask prices for bonds in a broker-dealer's inventory, the most popular platforms are multi-dealer platforms. These platforms allow investors to get bid and ask quotes from multiple broker-dealers and other market participants, including institutional investors. MarketAxess—an independent multi-dealer platform connecting investors with a number of broker-dealers—is the most popular, with 13% of all corporate bond trades taking place there. [11]

Trades on multi-dealer platforms have been increasing each year, which is a positive step in adding liquidity to secondary markets. Yet the move to electronic trading has been gradual, and it is not clear how much of the market will move in this direction. Treasury bonds are mostly traded on electronic platforms, but most other bonds are still traded over the counter, and there remains a lack of liquidity and transparency in secondary bond markets compared to stock markets. It can still be hard to find bid and ask prices for some bonds—particularly complex bonds and lower-grade corporate bonds.

The bond market post-crisis

Liquidity—the ability to quickly sell an asset without affecting its price —has always been a concern of bond market participants. Broker-dealers don't have to play the role of market makers and, as we've discussed, it historically has been harder to trade bonds than stocks. However, liquidity was not a problem from 2000 to 2007. The largest broker-dealers significantly increased the amount of bonds they held on their balance sheets by 800%. [12]

Broker-dealers with large inventories increase liquidity because they make it easier for investors to buy and sell bonds. Not only do dealers have plenty of bonds readily available to sell, but they also have the balance sheet space to purchase lots of bonds from investors if they don't have a buyer already lined up—making it easy for other investors to sell quickly, even in large blocks.

This, of course, did not last. During the financial crisis, liquidity dried up, and broker-dealers that held large inventories of securities in their portfolios were under significant financial pressure. Unlike stocks, which can absorb a price decline, bonds are contracts that must be paid.

Post-crisis, the largest broker-dealers have significantly reduced their inventories. In part, Dodd- Frank and Basel III reforms (international banking rules), which were designed to make the financial system safer, have made it more expensive for banks to hold inventories of bonds on their balance sheets. The Federal Reserve reports a 70% decrease in the value of corporate bonds on the balance sheets of broker-dealers from 2007 to 2013, and regulatory changes may lead to further retrenchment. [13]

The bond market and the Fed

This reduction of bond inventories comes against a background of unprecedented central bank activity. The Federal Reserve responded to our deep recession by providing massive support to the economy, including three bouts of quantitative easing (QE)—central bank asset purchases designed to reduce interest rates and stimulate the economy. One of the goals of QE was to make interest rates for Treasuries so low that investors would instead put money into riskier bonds that finance business. "Riskier" is a relative term since any bond is riskier than a U.S. Treasury note. The Fed also bought mortgage bonds to keep mortgage rates low to support the housing sector and kept interest rates down to keep corporate borrowing cheap. This way, builders would build, corporations would get cheap money to expand, and employment and the economy would grow.

The concern among some market watchers is that we've created a new bubble in the corporate space. The amount of corporate borrowing today is unprecedented, with over $8 trillion of debt outstanding. [14] In particular, investors have flocked to junk bonds—riskier bonds that offer higher returns for the increased risk of default they pose—to achieve higher returns in a low-return environment. [15]

The question is what happens as the Federal Reserve continues to tighten monetary policy. Two major steps toward "normalizing" interest rates have been taken: the end of QE in October 2014 and the first interest rate hike since the financial crisis in December 2015. The Fed is expected to continue raising interest rates this year.

Why does this matter to the bond market? Unlike stock prices, bond prices are directly affected by interest rates. The price of a bond has an inverse relationship with interest rates, meaning that when interest rates rise the prices of bonds fall, and vice versa. Some market participants are concerned that as interest rates start to rise, investors may try to sell their bonds at the same time.

Will there be enough capacity in secondary markets to buy all of the bonds being sold? The worry is that secondary markets don't have the capacity to handle so many investors wanting to sell bonds at the same time—that there aren't enough institutions capable of buying when everyone is selling. Without enough market making-capacity, investors could be forced to take steep discounts on the price of the bonds they sell. This not only hurts investors, but such sales could affect the economy due to mark-to-market accounting. Financial institutions holding those assets on their books must mark down their value to the current market price—whether or not they have any intention of selling those assets in the near future. This means losses in the bond market could spread through the wider economy.

Not everyone feels this way. Other market participants feel the potential lack of liquidity in the bond market has been vastly overstated. It has always been harder to sell bonds than stocks, and the liquidity available before the crisis was an aberration. Secondary bond markets worked fine before the flood of liquidity, and will not break down now.

For one, there are other financial institutions and pools of private capital—such as hedge funds— that can step into the market should traditional broker-dealers withdraw. If bond prices begin to drop and yields start to rise, these entities have the balance sheet space and long-term investing horizon to play a market making role. The presence of these financial institutions will prevent a steep fall in bond prices or contagion to the wider economy. [16]

Additionally, even if less liquidity in the bond market leads to a rise in yields, it might not be that bad of an outcome. As Felix Salmon explains, "Over time, those extra trillions of dollars are going to find their way into the pockets of bond investors. It's never nice to see rates rise, but once they've risen, the extra yield will surely be very welcome to savers. And for the time being, at least, borrowing costs are not really a problem for most issuers with market access. If companies have to pay an extra 50 basis points (0.5%) to borrow money, so be it—they'll live." [17]

Conclusion

Debt is a four-letter word. So is bond. We are an economy that is tethered to debt more than most. The value of our bond market is nearly double the value of our stock market. Yet the bond market remains a bit of a mystery to consumers and policymakers. Going forward, the test of financial regulations will be to see that this bond market operates smoothly and efficiently, but not dangerously.

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