



F.I.T. Focus – September 2019

Bonds, Yield Curves, Recessions, Oh My!

You may have noticed that the financial press has been talking about the *yield curve* quite a bit lately. The reason the yield curve is getting attention these days, is because it has recently *inverted*. If you have no clue what the *yield curve* is, let alone what *an inversion of the yield curve* means, you are not alone. But we're here to help.

To do that, we first need to define what makes the yield curve what it is – the bond market. The bond market may not carry the excitement of stocks, but it is massively important as a means of financing just about everything in the world – governments, corporations, municipalities, mortgages, auto loans, credit cards, student loans – you name it, and it is probably impacted by the bond market. So let's talk about bonds, focus on the life of one of them and its friends, and why their interaction with one another is considered important and relevant in today's market environment.

What are bonds?

A bond is simply a loan, made from one person or entity to another. For example, the U.S. government issues what are known as Treasury Securities (Bills, Notes, Bonds or TIPS) regularly, which raise money to pay for government programs. People or institutions can lend money to the government by purchasing Treasury Securities. Given their importance and ubiquity in the financial world, we will primarily focus on U.S. Treasury Securities for the sake of our discussion.

How does a bond work?

When an investor purchases a bond, they are lending a certain amount of money known as their principal or *par value*, for a specific period, known as time to *maturity*. For lending their money, the investor will get paid an annual interest rate, called a *coupon*, each year. When the maturity date arrives, the lender/investor gets *par value* back. The par value price of a bond is typically \$100. For example, a 10-Year U.S. Treasury Note was issued on May 15, 2019. It matures on May 15, 2029 and pays an annual coupon of 2.375%, in two semi-annual payments. If you purchased the bond at par value for \$100, you are making a loan in that amount to the government. The government will then pay you \$2.375 per year in interest for 10-years. On May 15, 2029, you are then due your \$100 back.

How do bond prices and yields move?

Like stocks, bonds trade in the open market. Bond prices and yields will move up or down based upon supply and demand and interest rate adjustments. Using the same bond in our example above, we observe that its current price has gone up from \$100 to around \$108 since May. When a bond's price goes up, its *yield to maturity* goes down – and vice versa. So for an investor who now buys this bond at \$108, their expected yield if they hold the bond to maturity has dropped to 1.47%. Why? The investor will still get paid their coupon of \$2.375 per year, or 2.375%. But remember, they will only get par value of \$100 back. The extra \$8 they paid for the bond gets amortized away, and erodes the overall yield earned over the period the bond is held. Prices of bonds can go up and down for many reasons. In this case, investors might expect future interest rates for 10-year bonds to be lower than is being paid by the bond, and therefore are willing to pay a *premium* price for it today.

So what is this *yield curve* we've heard all about?

Our 10-Year Treasury Note has many friends, both younger and older, because the U.S. government issues bonds with different maturity dates. Some have very short maturities like a 3-month Treasury Bill. Some are intermediate-term maturities - like a 5-Year Note or our 10-Year Treasury Note described above. And some have much longer maturities of up to 20 or 30-years, which are Treasury Bonds. The yield curve represents the *yields to maturity* at a given point in

time, of the most recently issued government bonds across the full range of maturities – from the shortest maturity to the longest.

What does a normal yield curve look like?

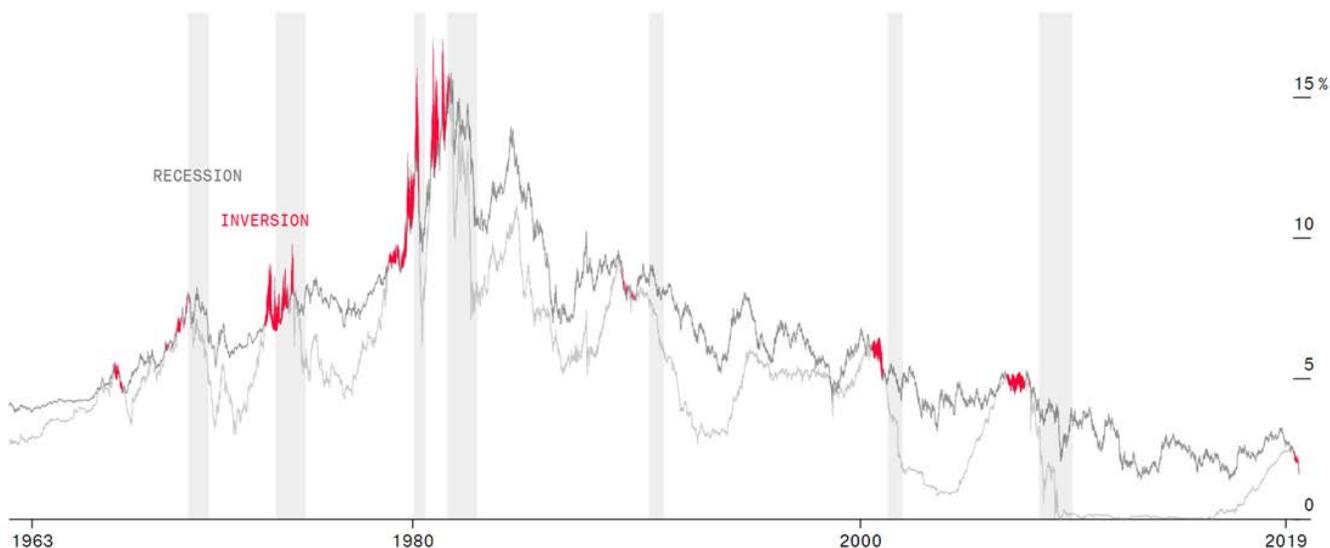
A normal yield curve slopes upward and to the right as the yields on shorter-maturity bonds are generally lower than the yields of longer-maturity bonds. For example, a 3-month T-Bill might have a yield of 1%, a 5-year note of 2%, a 10-year note of 3% and a 30-year bond of 4%. In general, investors want to be compensated with additional yield for holding bonds for more extended periods, since there is a higher chance that that interest rates could rise in the future if there are healthy economic growth and inflation prospects.

What happens when the yield curve inverts?

Sometimes, however, the yield curve does not maintain its standard upward sloping shape. When this happens, short-term yields rise above longer-term yields, causing the yield curve's shape to invert. For example, if a 3-month T-Bill yield is 2% and the 10-year Note Yield is 1.5%, the yield curve would be inverted. An inversion can happen when investors are not as confident about future economic growth prospects or the prospect of higher future inflation, and may expect interest rates to decline in the future as a result. In fact, before many previous economic recessions in the U.S., the yield curve inverted ahead of time and can often be seen as a reliable signal for a potential economic slowdown ahead.

Why is everyone talking about it now?

Yield Curve Inversions Can Precede Recessions



Source: Bloomberg Data, NBER 10-Year Treasury Yield – Dark Grey Line 3-Month T-Bill Yield – Light Grey Line Periods where 3-Month > 10-Year Yield

The yield curve has been a hot topic as of late, because it has recently inverted. The chart above shows both the 3-month T-Bill yield (light grey) and the 10-year Treasury Note yield (dark grey). The areas in red are highlighted to show when the 10-year yield drops below the 3-month yield, which would be considered an “inversion”. The shaded regions then show the periods when the U.S. has experienced a recession. You might notice that recessions have a habit of following inversions in the yield curve. You may also see that there is a red inversion that shows up today, on the far right of the chart. The inversion has many concerned about the prospects for continued economic expansion in the U.S. and elsewhere. While inversions are not necessarily fully predictive of the recessions, they have preceded each recession going back to the '60s.

Will this time be different? Only time will tell, and many believe that the signal has lost some relevance given the extreme monetary policies that have been in effect since the financial crisis, both in the U.S. and abroad. But as you can see, inversions have a reasonably good track record of leading recessions, which is why so many are paying attention to the recent activity in the bond market.

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If you have any questions regarding this report, please contact us at info@atwob.com or 914.302.3233

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