

# The Yield Curve: An Economic Crystal Ball



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In August 2006 the Dow hit 11,381 and the unemployment rate was 4.7%.<sup>1</sup> The economy had added 188,000 jobs and grown 2.5% in the prior quarter.<sup>2</sup> All of this was pretty good news.

But the Treasury bond yield curve *inverted*. This means that interest rates for long-term Treasury bonds dropped below the rates of short-term Treasury bonds. While inverted yield curves are rare, this event did not lead the news. There was no banner headline in *The Wall Street Journal*. But it mattered, because in six previous recessions, the downturn was preceded by an inverted yield curve.

Despite its significance as an economic crystal ball, the Treasury bond yield curve is virtually unknown inside the Beltway. This paper strives to demystify this crucial market indicator—explaining exactly what it is, why it has such a predictive value, and what it can tell us about the U.S. economy.

## What is a Yield Curve?

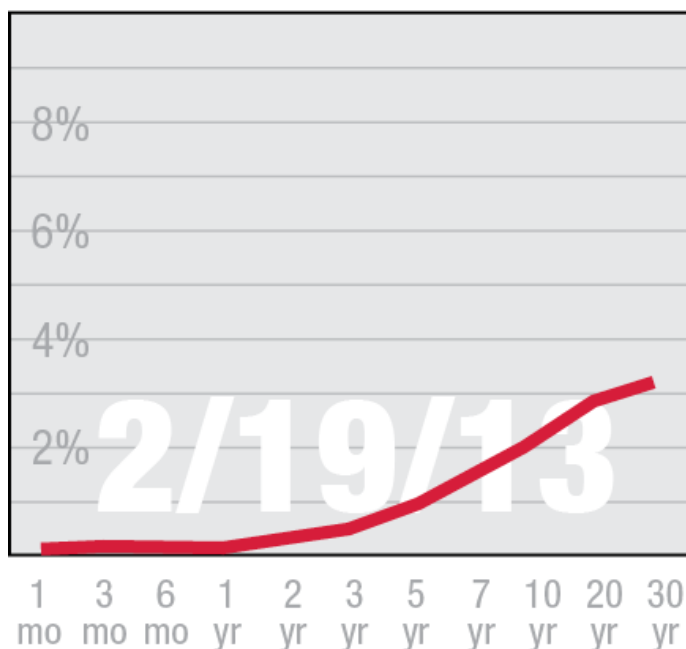
A yield curve plots interest rates for a bond against various time horizons until maturity. While a yield curve can be constructed for any bond, the Treasury bond yield curve is the most important market indicator. Maturities on these bonds range from 30 days to 30 years. A yield curve can also be used to represent interest rates for any group of similar bonds—such as those of highly-rated banks (the LIBOR curve) or blue-chip corporations. A yield curve displays interest rates on the vertical axis and time until maturity on the horizontal axis.

A typical yield curve has a positive slope with interest rates rising the longer the bond takes to reach maturity. Yield curves tend to have a positive slope because long-term loans are generally considered riskier than short-term loans. By risk, we don't necessarily mean the risk that the bond will default; instead it's the risk that the investment won't do well compared with other things people can do with their money, such as purchase stocks or real estate. That is why investors typically demand higher interest rates to compensate for that uncertainty—it is much easier to estimate economic conditions on January 1, 2014 as opposed to January 1, 2023. Investors want more compensation for greater risk. When long-term rates are higher than short-term rates, it is said to be a normal yield curve.

## What Does the Yield Curve Tell Us?

As mentioned, the yield curve tells us a lot about interest rates—reflecting both the actions of the Federal Reserve and the expectations investors have of future Fed actions and economic conditions. As a result, it can be a very accurate indicator of the future direction of the economy.<sup>3</sup>

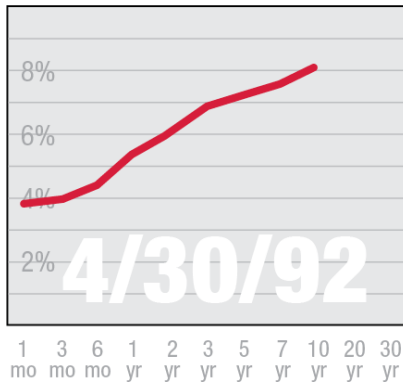
Experts can disagree about what a particular shape of the Treasury bond yield curve means at a particular moment in time; there are no iron laws of yield curve interpretation. Yet there are some general conclusions we can make.



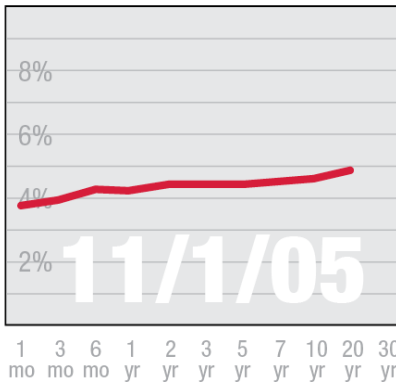
In this yield curve from mid-February 2013, the short-term 2-year interest rate is 0.29%, while the 10-year interest rate is 2.03%.<sup>4</sup> That 1.74% difference in interest compensates the investor for investing over a longer period of time. This difference between short-term and long-term rates is known as “the spread.”

When investors refer to the spread, they are usually talking about the difference between the 2-year and the 10-year Treasury bond yields. The spread reveals a lot about the current and future state of the economy, especially with reference to historical trends.

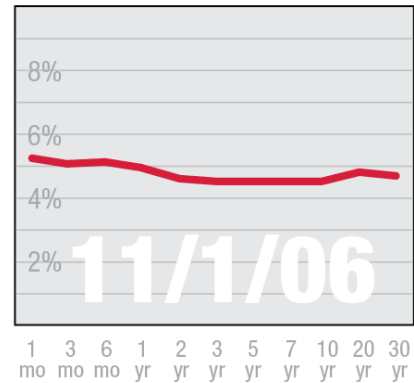
### The Steep Curve



### The Flat Curve



### The Inverted Curve



**The Steep Curve.** A steep curve has the same upward slope as the normal curve, yet the spread is wider. Steep curves are usually a positive sign for the economy, and are sometimes apparent when an economy is coming out of a recession. They usually indicate that short-term interest rates are low and are expected to remain low due to Federal Reserve policy.<sup>5</sup> In addition, it shows that investors are confident about putting money into stocks and private sector bonds, because long-term government bonds have to offer higher yields to attract buyers.

In April 1992, the interest rate for 2-year Treasury bonds was 5.46% while the 10-year rate was 7.61%—a spread of 2.15%.<sup>6</sup> Spreads over 2% are generally considered steep. As predicted, the economy soon took off and remained strong through the decade. In this case, the yield curve proved to be a crystal ball predicting future robust growth.

In the graph above, the 10-year bond rate is signaling investors that the market thinks stocks will return at least 7.6% over the coming decade—otherwise they would be willing to buy 10-year bonds at lower interest rates.

**The Flat Curve.** A flat curve means that the spread between long-term and short-term interest rates is very small. Flat curves often indicate the economy is slowing down. Short-term interest rates are high and expected to remain high due to the tightening of monetary policy from the Federal Reserve.<sup>7</sup> Investors are uncertain about the future path of the economy, including the future value of stocks and bonds. With potentially stormy seas ahead, Treasuries represent a safe bet.

In November 2005, the 2-year Treasury offered a 4.42% rate of return compared to a 4.58% rate for the 10-year—a very flat spread of 0.16%.<sup>8</sup> In this case, investors were only demanding an extra \$16 per year on a \$10,000 Treasury bond to lock up their money for eight additional years. Market players were signaling great uncertainty in the market, with the narrow spread indicating that stocks might not be a good buy.

**The Inverted Curve.** An inverted yield curve is to the economy what a plunging barometer is to the weather—batten down the hatches.

It means that short-term interest rates are higher than long-term rates—i.e. it happens when a flattening curve actually flips. In November 2006, the 2-year Treasury bond offered a rate of 4.66% while the 10-year rate was 4.57%, a -0.09% spread.

Investors had so little faith in the economy that they were willing to receive less (and compared to the three-month Treasury, far less) in interest payments just to get their money into a safe port.

Inverted yield curves had predicted the last 6 recessions and were about to predict the 7th.<sup>9</sup> Historically, the yield curve inverts roughly a year before the onset of a recession.<sup>10</sup> In the case of the Great Recession, the yield curve initially inverted in August of 2006, a little over a year before the official onset in December 2007.<sup>11</sup>

The Federal Reserve cautions that the yield curve is a better predictor of a recession when it remains inverted for a significant time over a period of months, as opposed to inverting for only one or two days.

## How the Federal Reserve Can Shape the Yield Curve

The Federal Reserve has a box of tools at its disposal to affect interest rates and, thus, the yield curve. The federal funds rate is the most common tool. It is the rate that banks lend to each other on an overnight basis, and it allows the Federal Reserve to directly control short-term interest rates. This rate also influences long-term rates, but its impact is less direct.

After the financial crisis, the Fed dusted off a rarely used tool to more directly influence long-term rates. Known as quantitative easing, the Fed has been printing money (\$85 billion per month) to buy mortgage-backed securities and long-term Treasuries to lower long-term interest rates, make borrowing cheaper, and spur economic activity.

This has a direct effect on the shape of the yield curve, but the unknown is how much—that is, what would the yield curve look like without massive intervention by the Federal Reserve? Would long-term rates be 5 basis points (.05%) higher or 50 basis points (.5%) higher? It matters because the Fed will someday stop buying long-term bonds—likely when the economy approaches full strength. That will put upward pressure on long-term rates. It will

have to sell its portfolio of long-term mortgage securities. That, too, could raise long-term rates.

The Fed now has \$3 trillion in assets on its balance sheet. When the Federal Reserve will stop buying securities and how fast it will unwind its position are the questions investors and economists are asking themselves. There is no consensus now. But how they answer these questions will influence their view of future economic conditions.

## Conclusion

Every morning, policymakers fire up their computers and quickly scan the horizon for news and data that situates them for the day. What's on the floor? What are the polls saying? What has the White House announced? This information is second nature to policymakers, but Esperanto to nearly everyone else. The same is true in the world of finance. Leaders in finance pore over data to orient themselves for a day in the market—seeking to uncover short-term opportunities and long-term trends.

The Treasury bond yield curve is an important gauge for financial markets. Investors use a variety of tools when assessing economic conditions, and don't rely on any single measure. However, policymakers can use this crystal ball to better understand the future course of the economy.

### TOPICS

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## ENDNOTES

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