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WEALTH MANAGEMENT ◆ SPECIALTY FINANCE ◆ RETIREMENT PLANNING
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THE FLAT OUT TRUTH

Recessions, Yield Curves and Predictions

Much has been published and reported about inverted yield curves and predictions of recessions over the past few months. Are recessions predictable? What are the effects on the US stock markets?

Is a Recession in Our Future?

The cycles of the US economy that include expansions and recessions are normal economic cycles. The National Bureau of Economic Research (NBER) is a non-profit research organization that determines when the US economy has started and ended periods of economic growth and recession. According to the NBER, a recession is a “significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real

GDP, real income, employment, industrial production, and wholesale-retail sales."[1] There have been 11 recessions since the end of World War II and on average, the US sees a recession about every 6 to 7 years. These recessions have lasted 6 to 18 months in duration. The periods between recessions have lasted from 12 months before the recession starting in July 1981 to 10 years before the March 2001 recession. As of May 2019, it has been almost 10 years since the end of the last recession.

It can be difficult to tell if and when the US economy has started or ended a recessionary period. In December 2008, the NBER stated a recession had started 12 months earlier in December 2007. In September 2010, they stated the recession had ended – 15 months earlier in June 2009. this recession ended, but the NBER didn't say so until 15 months later. Earlier recessions took between 6 and 21 months to be determined.

At some point in the future, there will likely be a recession. But, even the organization responsible for determining when they start and finish struggles with the timing.

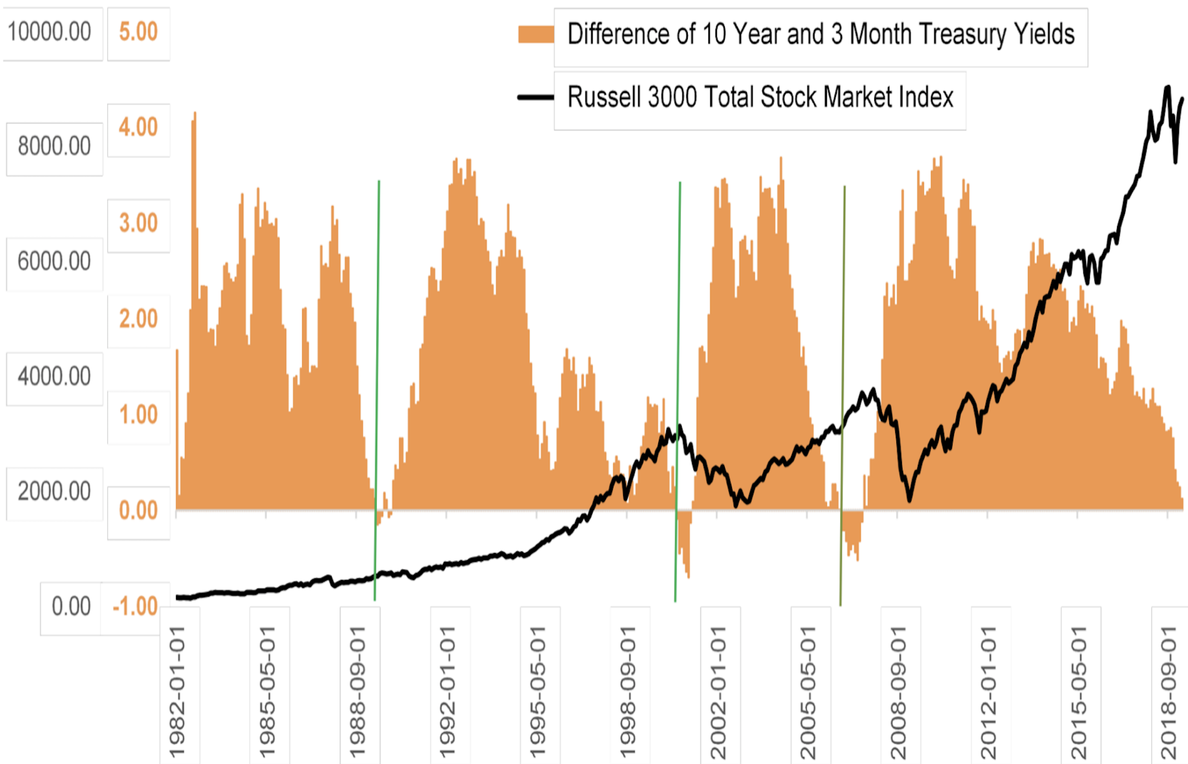
The Yield Curve

A yield curve provides a snapshot of a specific point in time on how yields vary across bonds of similar credit quality but have different maturities. For example, the US Treasury yield curve indicates the yields of US Treasury bonds across a range of maturities. Bond yields change as markets digest news and events around the world, which also causes yield curves to move and change shape over time.

Historically, yield curves have mostly been upwardly sloping (short-term rates lower than long-term rates), but there have also been several periods when the yield curve has either been flat or inverted. One question often posed by investors is whether inverted yield curves can predict a future stock market decline. While the handful of instances of curve inversions in the US may concern investors, the small number of examples makes it difficult to determine a strong connection, and evidence from around the world suggests investors should not extrapolate from the US experience.

Exhibit 1 *illustrates the growth of the Russell 3000 Total Market Index since January 1982 plotted against the difference between 10-year and 3-month Treasury yields. This difference is referred to as the term spread2 and is a commonly used measure of yield curve steepness. Also marked on the chart are the onset of the three periods when the yield curve inverted for at least two consecutive months, and short-term rates began to exceed long-term rates.*

Exhibit 1: Treasury Yield Curve and Russell 300 Total Market Index; January 1982 – March 2019

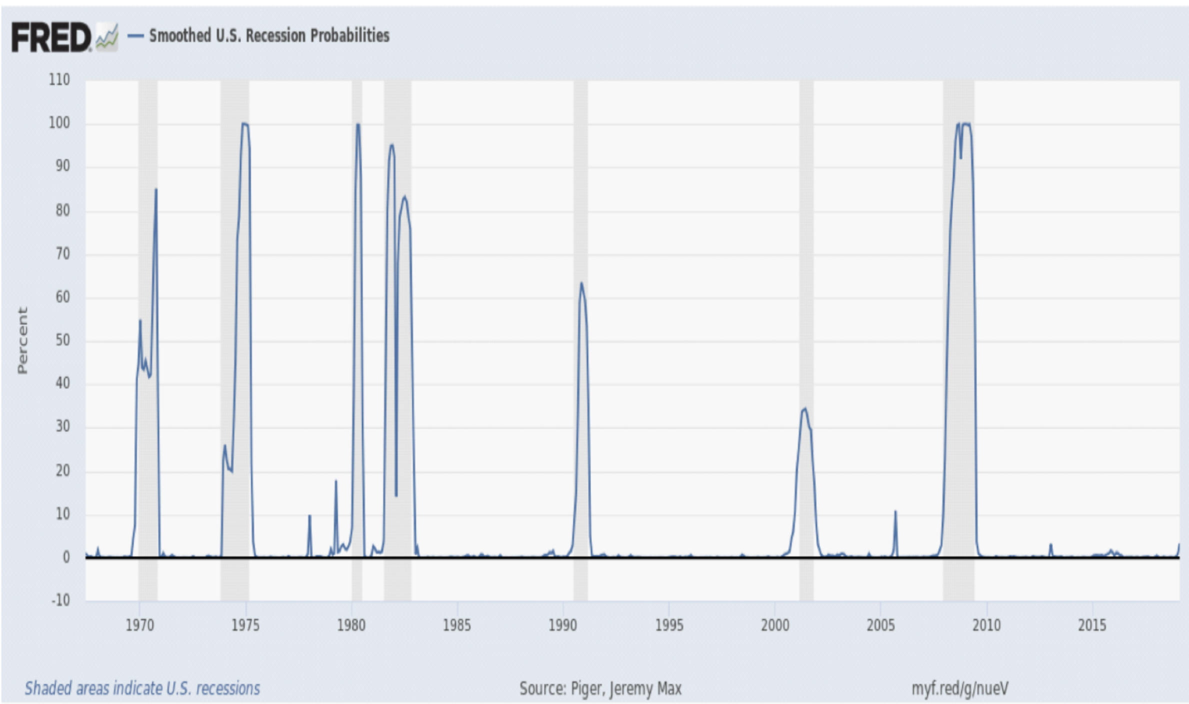


The inversion prior to the 2008 financial crisis is interesting to review. After the US yield curve inverted in February 2006, the Russell 3000 Index posted a positive 12-month return. The yield curve's slope became positive again in June 2007, well prior to the market's major downturn from October 2007 through February 2009. If an investor had interpreted the inversion as a sign of an imminent market decline, being out of stocks during the inverted period could have resulted in missing out on stock market gains. And if the same investor bought additional stock once the curve's slope became positive, they would also have been exposed to the stock market weakness that followed.

Predictions

The Federal Reserve Bank of Saint Louis tracks the probability of recession as shown in **Exhibit 2** below. Historically, three consecutive months of probabilities above 80% has been a reliable signal of the start of a new recession, while three consecutive months of probabilities below 20% has been a reliable signal of an expansion. When this model was last updated the end of February 2019, it showed a low 3.32% probability a recession. The Federal Reserve Bank of Saint Louis also says on their website "it is difficult to compute any forecast in a timely fashion" and adding that there can be a 3-month delay in the forecast.

Exhibit 2: Probability of Recession[1]



Stock Returns and Recessions

We often hear in the media that the stock market is a predictor or leading indicator of recessions. The table in **Exhibit 3** shows the returns of the S&P 500 the year before, during, one year and 3 years after a recession.

Exhibit 3: S&P 500 Returns Before, During and After Recessions[1]

Dates of Recession	1 Year Prior	During Recession	1 Year After	3 Years After
11/1948 – 10/1949	+5%	+5%	+33%	+23%
7/1953 – 5/1954	+2%	+19%	+44%	+67%
8/1957 – 4/1958	-2%	-5%	+40%	+59%
4/1960 – 2/1961	+1%	+15%	+16%	+33%
12/1969 – 11/1970	-12%	-1%	+14%	+29%
11/1973 – 3/1975	-9%	-17%	+26%	+19%
1/1980 – 7/1980	+17%	+11%	+13%	+52%
7/1981 – 11/1982	+13%	+8%	+25%	+54%
7/1990 – 3/1991	+12%	+6%	+13%	+32%
3/2001 – 11/2001	-17%	-3%	-18%	+8%
12/2007 – 6/2009	+6%	-37%	+19%	+45%
Average	+1%	-1%	+20%	+38%

The returns during the year prior to a recession have been mixed, with 6 out of 10 being positive. Even some returns during the recession have been positive. Does this mean that the stock market returns for the next recession will be positive? No. But all stock market returns 1 year and 3 years after the recession ended have been very strong.

Conclusion

At some point in the future, there will be another recession. It would be nice to have a perfect model or even a crystal ball to predict when the next recession will start or end. With all the economic data available to them, the Federal Reserve Bank and the National Bureau of Economic Research have delays from 3 months to 21 months in their predictions. It is unlikely that the media can reliably predict recessions either. The yield curve may not be a timely predictor either with an almost 2-year delay between the inversion in February 2006 and the start of the recession in December 2007. In fact, the yield curve had turned positive for 6 months before the recession started.

At Prato Capital Management, we do not try to predict when a recession will start or end. Our focus is to collaboratively build with you an appropriate Financial Life Plan using long-term investment strategies inside a diversified portfolio to best meet your financial goals. You have certainly heard us say it before (many times) but it's worth repeating: tune out the noise of the latest 'crisis of the day' and stay focused on the long-term.

1. National Bureau of Economic Research. US Business Cycle Expansions and Contractions. [ONLINE] Available at: https://www.nber.org/cycles/cyclesmain.html . [Accessed 22 April 2019].

2. Term spread is the yield difference between bonds with different maturities but similar credit quality.

3.Piger, Jeremy Max and Chauvet, Marcelle, Smoothed U.S. Recession Probabilities [RECPROUSM156N], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/RECPROUSM156N , April 25, 2019.

4. Historical S&P 500 Data retrieved from Schiler, Robert, U.S. Stock Markets 1871-Present and CAPE Ratio, http://www.econ.yale.edu/~shiller/data.htm.

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Our mailing address is:
pratocapital@pratocapital.com