Inverted Yield Curves and Stock Returns

The yield curve has been inverted for a full quarter producing a red alert for recession. What does this mean for stock returns? Indeed, since June 30, 2019, the stock market has gone up. I explore what has happened both before and after each of the seven last yield-curve inversions (back to the 1960s). The historical evidence suggests that inversions are, on average, bad news. Many people have reached out to me since my article last week. Let me try to answer some of the new questions:

If the yield curve is a reliable forecast of a recession, what does that mean for my stock market investments?

Harvey: Recessions are bad for stock returns in two ways. First, recessions are by definition associated with slower economic growth, which is a negative for companies’ cash flows. Second, recessions are times of much uncertainty, and heightened risk is almost always associated with lower stock prices. It is important to realize, however, that the yield curve inversion is just a forecast of a recession.

What is the historical performance of the market before and after inversions?

Harvey: We have not had many inversions (measured as the difference between the U.S. 10-year Treasury bond yield minus the 3-month Treasury bill yield). Since 1968, there have...
Yield curve is inverted for a full quarter month. I reproduce the average returns observed in the first month after an inversion. I look at cumulative returns one year after the inversion and three years before the inversion.

Given the positive track record of yield curve inversions in predicting recessions, it is not surprising that market returns are not impressive after inversions. The average excess return (broad market return minus a Treasury bill return) over the first year following an inversion is $-8.7\%$. Nothing much happens over the next year and the cumulative two-year return is $-7\%$. The cumulative three-year return is $-8.1\%$. Notice that before the inversion, the cumulative three-year excess return is about $+21\%$.

*Should we look at each recession individually or at the average of all inversions?*

**Harvey:** It is important to look at it both ways. It is true that each recession was different. For example, the global financial crisis was very different from the recession of 2001. However, I have reproduced my event study for each of the last seven inversions—plus the current one—to get a more detailed picture of the episode. One difference stands out. I have highlighted in red the duration of the recession following the inversion. Technically, the yield curve is inverted at time $t-3$ to $t-1$ too. However, the timing is not as relevant to investors, however, because we are only interested in what happens before the yield curve becomes inverted.

Source: Research Affiliates, LLC with data from Kenneth French website and the Federal Reserve Bank, St. Louis.

Notice the large amount of variation. Stock returns were positive following the inversion in the fourth quarter of 1968. Returns were also positive (at least for two- and three-year horizons) after the inversion in the second quarter of 1989. The global financial crisis is also interesting. The yield curve produces a very early signal in the first quarter of 2006. The recession does not officially start until the fourth quarter of 2007, so over the first year the market return was positive, but in the second and third years, we experienced the largest drawdowns of any of the inversions.

*How should I position my portfolio?*

**Harvey:** My work can only provide a historical perspective. What happens in the future is always uncertain—especially when it comes to the stock market. Let’s consider a value portfolio, which I represent by the Fama and French HML factor. Its performance before inversions is unimpressive, but after inversions, on average, it provides positive returns.
In the first year, the cumulative return is +9.9%. Holding for two years generates an average, a return of 12.4% and for three years 19.0%. Also note that the value long–short portfolio, has lower volatility than the market excess return (it is as volatile as the market). Similar to the previous analysis, variation occurs during recessions, with value underperforming after the inversion in 1989 Q2. Value performance, however, following the 1980 Q4 inversion as well as the 2000 Q4 inversion.

*Is anything significant? That is, how much confidence should we have in this historical analysis?*

**Harvey:** Stock returns are volatile and it is hard to make statements about statistical significance in such a volatile environment. Further, we really only have seven recessions. Nevertheless, the differences between average value returns and market excess returns are economically large. For the one-year returns, value delivers 9.9% compared to a market excess return of –8.7%; the difference is 18.6%

Using the 36 monthly stock returns that follow each recession, I form a portfolio by buying the value factor and short the market. I test whether this difference is statistically significant and find that the difference is 1.5 standard deviations. Usually for 95% confidence, we want 2 sigma. This is only 1.5 sigma. With only seven samples, collectively spanning 252 months of data, these results fall a little short of statistical significance, but the economic impact is impressive. I also calculated the three-year average returns after each inversion. I have seven average returns for the market and seven for value. I do a simple difference in means test (allowing for different variances). The result is 1.85 sigma. Again, caution needs to be exercised. Past experience is not always replicated in the future.

*How do factor portfolios perform after yield curve inversions?*

**Harvey:** I have shown that the value factor has historically performed well after inversions and is negatively correlated with the market return. Value is not the only factor that performs well after inversions, however. I recently wrote “Alice’s Adventures in Factorland: Three Blunders That Plague Factor Investing” with Rob Arnott and others at Research Affiliates. This paper looks at many different factors and provides some additional details. As for the other factors and yield curve inversions, stay tuned!
7 Comments

Aman Roj
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Excellent, Clear, convincing and relevant as per your usual style. Bringing together Macro and Bond ideas with just think that we are now in a different regime of low interest rates, low inflation, low growth. It is not what you say, its how you say it.
Like Reply 1 Like 1 Reply

Campbell Harvey
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Aman, yes, this time could be different. My opinion is that the Fed had more influence in the 60s and 70s than now - even with QE. The reason is the size of the Treasury market.
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