What Does An Inverted Yield Curve Mean For Your Portfolio? *

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ABSTRACT

Does an inverted yield curve truly spell doom and what does it mean for your portfolio? While the yield curve has been a very good indicator of recessions over the past 50 years, if we go back to the early part of the 20th century, it doesn't do nearly as good a job portending recessions. For investors looking to position their portfolio during such times, if historical returns can offer any direction, safety (e.g. short term bonds) may prevail as the best strategy for one's portfolio should the curve actually invert.

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I Introduction

With the yield curve (the difference between longer-term and shorter-term Treasury yields) this past week falling to its flattest structure since the onset of the Great Recession 11 years ago, pundits are eager to predict that gloom and doom are near for the U.S. economy. Yet, how great of an indicator is the yield curve for a coming recession, and what assets historically hold up should the yield curve actually flip?

While the yield curve has been a very good indicator of recessions over the past 50 years, if we go back to the early part of the 20th century, it doesn't do nearly as good a job portending recessions. Using monthly yields going back to the start of the Great Depression to explore whether a negative yield curve (10 year T-Bond yield - 2 year T-Note yield) was followed by a recession within one year's time, paints an interesting picture over time.

Between 1966 and 2018, an inversion of the curve was followed by a recession within a year's time on seven occasions and only once was there a false positive. Yet, from 1926 to 1966, eight recessions occurred and only twice did an inverted yield curve manifest within a year prior to a given recession. All told, this implies that the yield curve is an accurate predictor of a recession in just about half the cases over the past one hundred years.

So given its less than perfect predictive capability, what should investors do if faced with the dreaded downward sloping yield curve? If historical returns can offer any direction, safety may prevail as the best strategy for one's portfolio should the curve actually invert.

Over the ten inversions that have occurred since the build up to the Great Depression, large cap equities have delivered just an average annual rate of return 1.5% in the two years following the inversion. Even worse, small cap equities have averaged just -3.1% over the same time-frame.

Counter to this, traditionally safe assets like long term bonds and short term bonds have fared a bit better following yield curve inversions. Following the ten inversions, long term bond

portfolios have averaged an annual rate of return of 6.2% and short term bond portfolios have averaged 5.5% in the two years following an inversion.

Not only do equities appear to deliver the lowest returns following yield curve inversions but they also deliver the greatest volatility in these time periods as well. For instance, large cap stocks lost over 50% of their value in a two year period following the 1929 yield curve inversion (leading into the Great Depression). On the positive side, large cap equities delivered over 20% in the two years following the 1981 inversion.

It is important to note that while the historical evidence seems to suggest that safer assets perform better on average following a yield curve inversion, once we consider that inflation averaged 4.5% following these events, this further reduces the attractiveness of all these investments. In fact, once we consider this inflation rate, the only asset class that historically has even a positive real rate of return following an inverted curve are bonds, which come in with a paltry 1.3% annual real rate of return.

Despite all the frenzy about the flattening yield curve, it does not mean that one needs to head out and immediately turn their entire portfolio on its head for the coming recession. Brendan Murphy, head of global and multi-sector bonds at Standish, a brand of BNY Mellon AMNA notes that 'A flattening yield curve denotes the market's expectation that monetary policy is too tight, yet the yield curve is just one of many inputs to consider when deciding asset allocation, and a number of the other indicators are still strong for equities.'

'Further, timing is important in the sense that a yield curve inversion may happen years before the U.S. economy actually turns south.' And in fact, on average following all yield curve inversions that we have had going back to and including the Great Depression, it takes a full 12 months for a recession to officially follow.

This paper proceeds as follows. Section II highlights the data construction and empirical analysis. Section III concludes the paper.

II Data Construction and Empirical Analysis

In this section, I first detail the construction of the dataset used in this investigation and provide summary statistics. Following this, I summarize the empirical methodology and results.

A Construction of the Data

The dataset used in the proceeding analysis was produced via the Morningstar Direct database, CRSP, Ken French's database on yields, FRED, and MacroTrends long-term bond yield data. CRSP data is used for all equity prices. FRED, Ken French's data, and MacroTrends are used to define the yield curve going back to the 1920s. MacroTrends data is also used for historical returns to commodities and bonds.

B Empirical Analysis

First to examine the relationship between yield curve inversions and recessions, I look at whether a yield curve inversion (10 year rate minus 2 year rate turning negative) is followed by a recession within a year's time. False positives denoted yield curve inversions where no recession followed. The historical results are noted below in Figure 1.

Next, following each of the ten yield curve inversions which have occurred since the Great Depression, I calculated the average return for various assets for a one-year and two-year period following the inversion. Included in these calculations are small cap equities, large cap equities, short-term bonds, long-term bonds, gold, and international stocks. All returns to various asset classes are denoted below in Figure 2.

Did An Inverted Yield Predict a Coming Recession

"Correct" denotes a yield curve inversion preceeded a recession;
"False Positive" denotes a yield curve inversion but no recession followed;
"Missed it" denotes that the yield curve did not invert prior to the recession

Date	Correct	False Positive	Missed it
October 1926	1		
August 1929	1		
May 1937			1
February 1945			1
November 1949			1
July 1953			1
August 1957			1
April 1960			1
September 1966		1	
December 1969	1		
November 1973	1		
January 1980	1		
July 1981	1		
July 1990	1		
March 2001	1		
December 2007	1		

Figure 1: Predictive Power of Yield Curve Inversions

	Average Annualized Return 1 year Following Inversion	Average Annualized Return 2 years Following Inversion
Large Cap Equity	-0.061	0.015
Small Cap Equity	-0.108	-0.031
International Equity	-0.092	-0.012
Short Term Bonds	0.059	0.055
Long Term Bonds	0.054	0.062
Gold	0.056	0.041

Figure 2: Returns to Various Asset Classes Following Yield Curve Inversions

III Conclusion

Does an inverted yield curve truly spell doom and what does it mean for your portfolio? While the yield curve has been a very good indicator of recessions over the past 50 years, if we go back to the early part of the 20th century, it doesn't do nearly as good a job portending recessions. Using monthly yields going back to the start of the Great Depression to explore whether a negative yield curve (10 year T-Bond yield - 2 year T-Note yield) was followed by a recession within one year's time, paints an interesting picture over time.

Between 1966 and 2018, an inversion of the curve was followed by a recession within a year's time on seven occasions and only once was there a false positive. Yet, from 1926 to 1966, eight recessions occurred and only twice did an inverted yield curve manifest within a year prior to a given recession. All told, this implies that the yield curve is an accurate predictor of a recession in just about half the cases over the past one hundred years.

For investors looking to position their portfolio during such times, if historical returns can offer any direction, safety (e.g. short term bonds) may prevail as the best strategy for one's portfolio should the curve actually invert.

Over the ten inversions that have occurred since the build up to the Great Depression, large cap equities have delivered just an average annual rate of return 1.5% in the two years following the inversion. Even worse, small cap equities have averaged just -3.1% over the same time-frame.

Counter to this, traditionally safe assets like long term bonds and short term bonds have fared a bit better following yield curve inversions. Following the ten inversions, long term bond portfolios have averaged an annual rate of return of 6.2% and short term bond portfolios have averaged 5.5% in the two years following an inversion. All told, investors shouldn't hold out much hope for monumental returns across any asset class they choose to go into should the yield curve actually invert.

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