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Inverted Yield Curves, Recessions, and Equity Market Performance

Assumptions/Notes:

- Data for S&P 500 returns is sourced from WRDS, and the rest of the data is sourced from St. Louis Federal Reserve. (Links are in the top of Jupyter Notebook)
- The frequency of the data is daily, and the investment returns plotted assume no trading cost.

For the purpose of this analysis, an inverted yield curve is defined as when the 2-year interest rate on U.S treasury notes is greater than the interest rate offered on 10-year U.S treasury bonds.

In the below plot, periods where the economy was in a recession are shaded in light gray, and dates when the yield curve initially inverted are indicated by the vertical red lines. The first big takeaway that can be seen by examining the graph is that many of the recessions do appear to be preceded by yield curve inversions. Some take this as a sign that inverted yield curves are predictors of recessions and because of this relationship, a profitable investment strategy would be to take money out of the markets when a yield curve inverts. There are a few problems with this thought process, but the most problematic is that by following such a strategy you would spend too much time out of the market. As the graph depicts below, the yield curve sometimes inverts years before a recession occurs and this period of waiting can coincide with significant equity market appreciation.

To further see this dynamic, plotted below are the cumulative, total returns from investing in the S&P 500 Index alongside the cumulative returns from an alternate investment strategy where the investor withdraws their money from the S&P 500 fund while the yield curve is inverted. You can see that such a strategy will underperform the S&P 500 which supports the previous conclusion that such a simple trading strategy will likely not be profitable as your downside mitigation is more than offset by the opportunity cost of sitting out of a rising equity market.