

Tradewell Macro Documentation
Everything you need to know about Tradewell Macro

Version 1.0

Last Updated December 19, 2023

www.tradewell.app

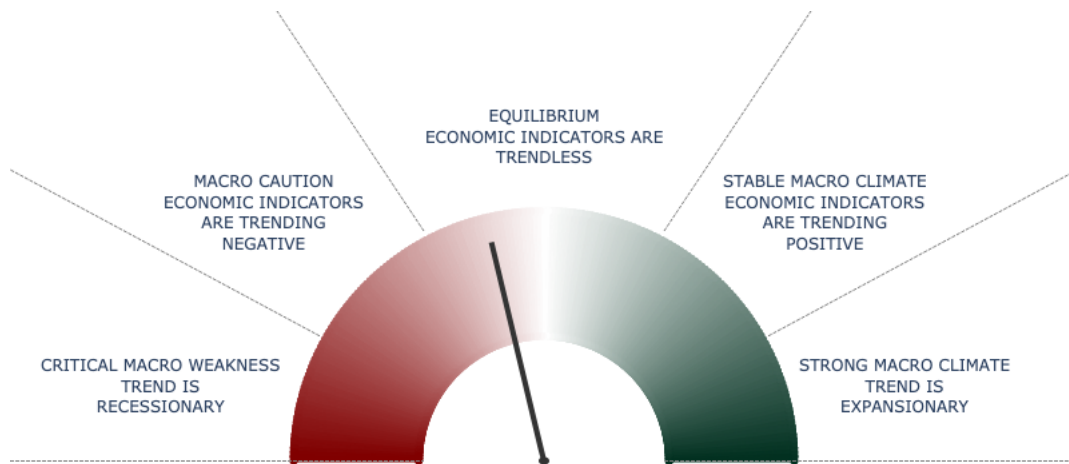
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The Macro Composite

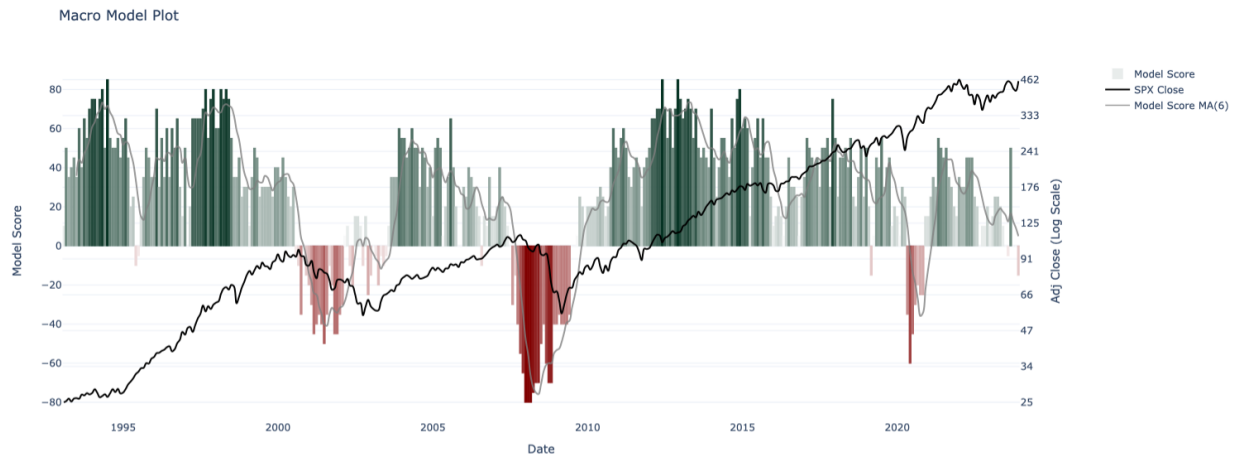
The Macro Composite serves as a definitive measure to determine the health of the broad US Economy. The macro composite is an equal weight measurement of various economic indicators across various employment, rates, housing, transportation and inflation metrics.

The purpose of the composite is to guide investors through the economic cycle by highlighting the composite trend amongst indicators and through classifying the current Macroeconomic regime. The composite score is updated once per month, at the end of each month – after all economic data for that month has been published. The needle points to the prevailing economic trend and the regime, classified below the composite dial is a reflection of the momentum of the composite score.



Macro Score: -15.0
Monthly Change: -15.0
Macro Regime: Pre-Recessionary
Prior Month Regime: Pre-Recessionary
Updated: 2023-11-30
Model v1.0 (December 12, 2023)

Though normally consistent, the composite score can experience significant fluctuations month to month. As such, the composite score utilizes a 6-month moving average to identify the overall trend in economic indicators. When the 6-month moving average crosses below 0 this indicates a change in trend from economic robustness (Risk-On) to economic weakness (Risk-Off). As this model trades on a monthly basis and is designed to avoid economic weakness, one of its limitations is that it will not capture market crashes, such as the one that occurred during March of 2020.



Macro Distributions

Overview

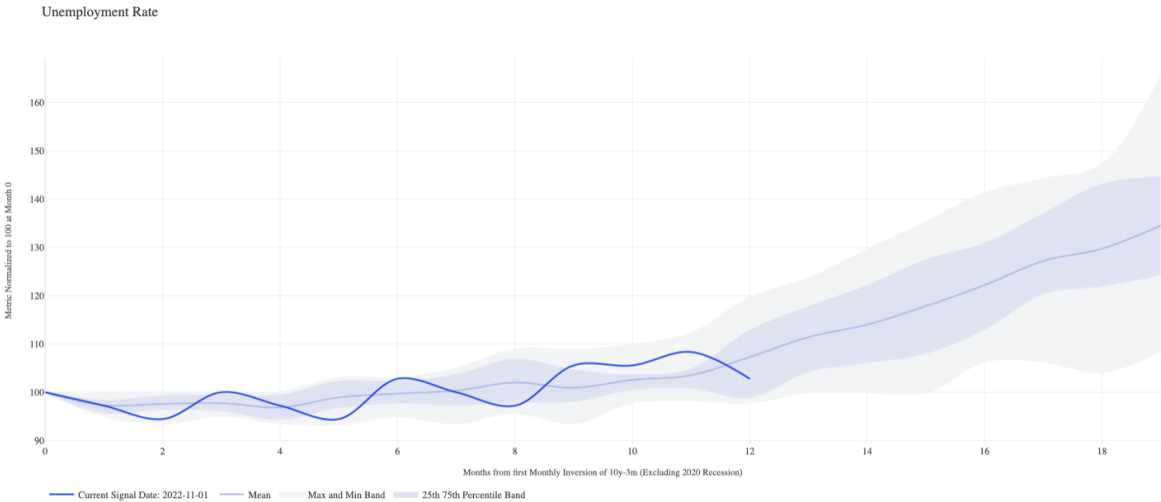
The macro distributions are designed to provide an unbiased context or the current path of economic indicators in relation to prior paths, compared to a predictive variable. We have curated a number of charts for users across Economic, Inflation, Employment, Financial and Housing indicators. We also have a Custom tab which is dialed into the FRED API and allows for the analysis of virtually any indicator they track.

These visualizations enable robust analysis of economic variables by answering questions such as:

1. Is the economic indicator behaving normally (or otherwise) at this stage of the macroeconomic cycle?
2. How might the economic indicator behave subsequently, given where we are in the cycle?

As an example, the chart below shows the U.S. Unemployment Rate subsequent to the First Monthly Inversion of the 10Y-3M yield curve spread. On the X axis, the months since the inversion has occurred are shown, spanning 0 to 18 months. On the Y axis, the metric is normalized at the start date to 100 percent. 12 months have passed since the first monthly inversion of the 10Y-3M yield curve spread in November of 2022. This particular chart shows a few notable things.

1. The Unemployment Rate on this chart pings back and forth between the max and minimum bands early on post inversion due to the base unemployment rate having been quite low, relative to other periods in history.
2. The unemployment rate is below the mean unemployment rate 12 months following the first 10Y-3M inversion.
3. Most importantly, 12 months and thereafter is when the unemployment rate starts to increase meaningfully following the 10Y-3M inversion.



Other Signals

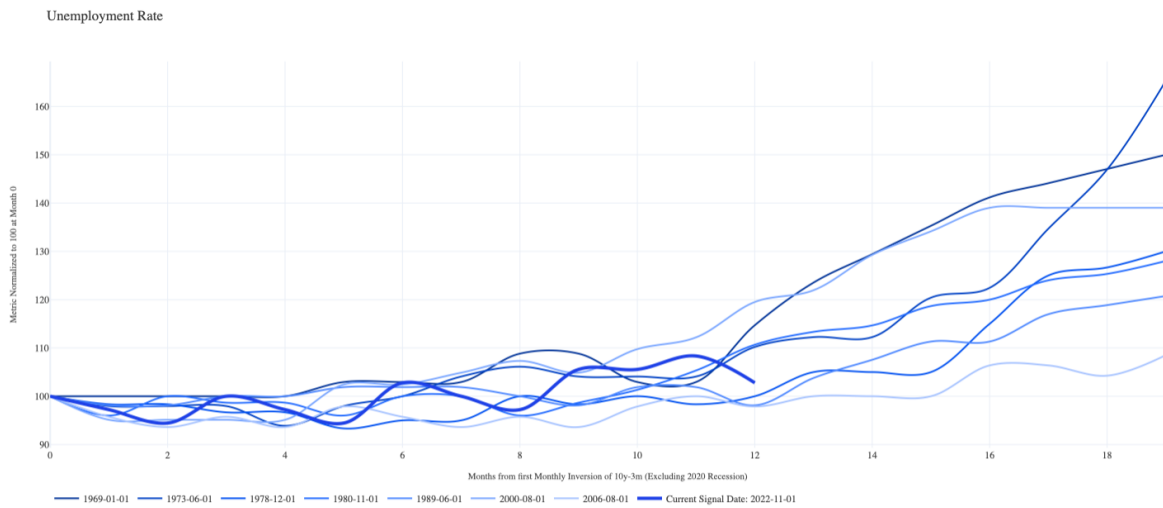
Other signals available to choose from in addition to the First Monthly Inversion of the 10Y-3M spread include:

1. The First Monthly Reversion of the 10Y-3M spread.
2. The Start of a Recession
3. The End of a Recession.

Analytical Transformations and tools

It is always useful to be able to view a dataset in different ways to best understand what it may be suggesting at any given time. As such, we enable data transformations and highlights to do just this.

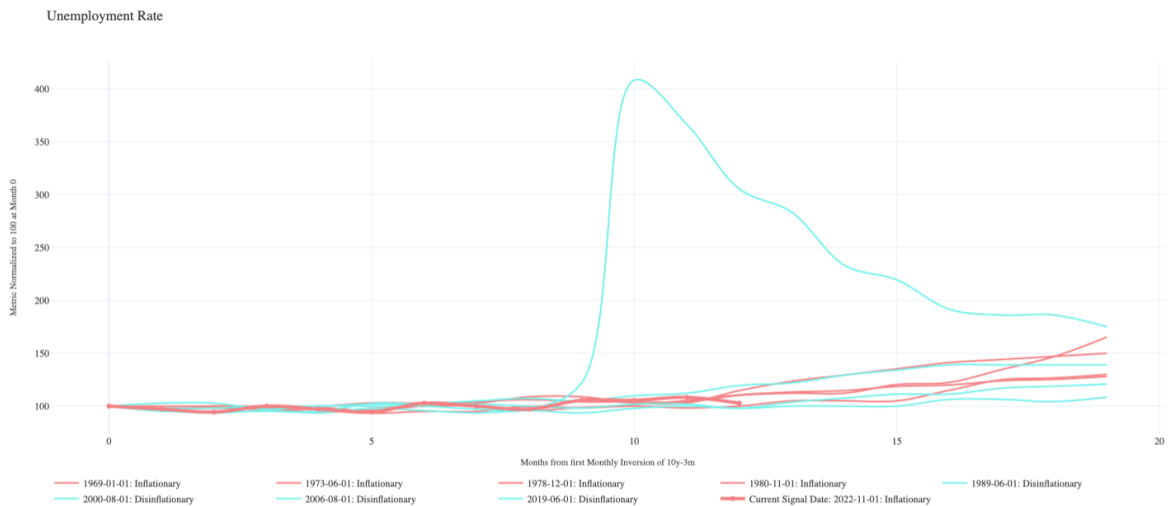
1. View Individual Dates: This button allows users to see each individual signal through history and gives a more detailed view than a simple distribution. It also allows users to see how many signals have occurred through history.



- View Inflation Regime: Different economic indicators may perform differently in inflationary and deflationary environments, for example, rates. The View Inflation Regime allows users to filter the signal by inflationary environment. Shown below is the Federal Funds Effective Rate. As we are in an inflationary environment, it makes sense that the Federal Funds Rate is par with the maximum of prior cycles.



- Remove 2020 Recession: Given that the 2020 recession was caused by a pandemic, it skews many economic indicator distributions. By default we normalize the distributions by removing the 2020 recession from the dataset, which enables an easier visualization of current conditions compared to past conditions. The screenshot below shows the Unemployment Rate with the 2020 recession included.



- Year over Year view: This toggle allows for a data transformation from the raw data to a year over year change of the data. For example, instead of tracking what is the Unemployment rate now, it will track what is the unemployment rate now, relative to 1 year ago.

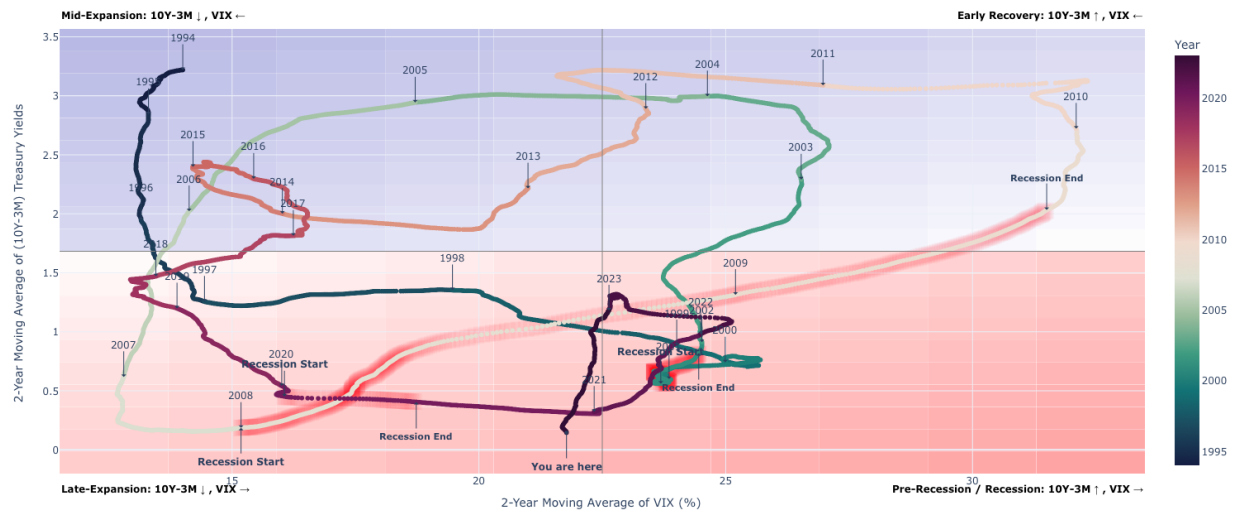
Macro Cycle

The Macro Cycle page is a collection of charts providing context on where the US Economy sits within the Macroeconomic cycle as well information about how long a recession might last and how deep a drawdown in equities might be.

VIX-Yield Curve Cycle Chart

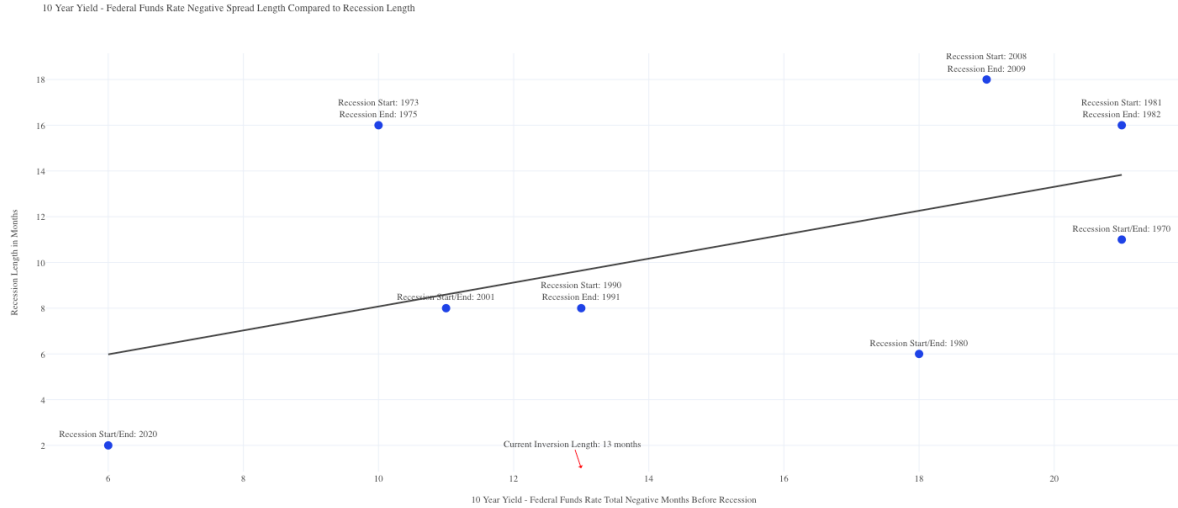
The first chart shown in the VIX-Yield Curve cycle chart which was originally conceived by the [CME group](#) and meant to serve as a better predictor of the economic cycle rather than the yield curve alone. The CME group proposes 4 phases to the cycle:

1. Recession (bottom right quadrant): The yield curve starts steepening and average equity volatility is elevated.
2. Early Stage Recovery (top right quadrant): The yield curve is steep and average equity begins to decrease.
3. Mid-stage expansion (top left quadrant): The yield curve is flattening while average equity volatility is low.
4. Late-stage expansion (bottom left quadrant): The yield curve flattens further and average equity volatility increases.



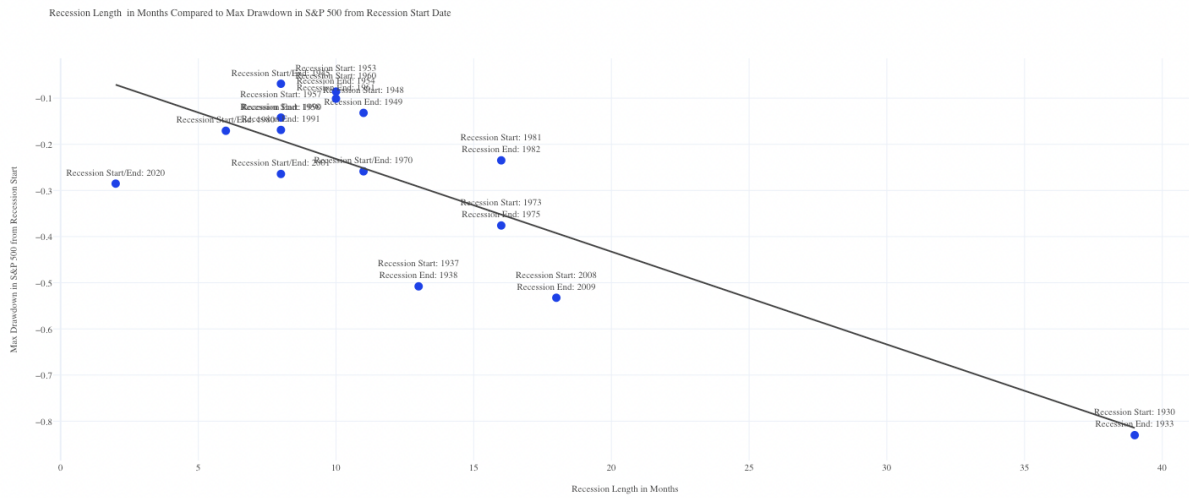
Recession Duration Chart

The recession duration chart shows the relationship between the length of an inversion between the 10Y-Federal Funds Rate and the duration of the subsequent recession. On average, the longer an inversion the longer that a recession can be expected to last.



Recession Drawdown Chart

The recession drawdown chart shows the relationship between the length of a recession and the drawdown in the S&P500. On average, the longer a recession lasts, the larger the drawdown that can be expected.



Macro Quant

The Macro quant page allows users to analyze the relationship between any variable tracked on FRED and subsequent S&P500 returns. Each dataset is tested by its reporting period length. For example, UNRATE (Unemployment Rate) will test monthly returns, CCSA (Continuing Claims) will test weekly returns and T10Y2Y (10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity) will test daily returns.

Weekly and monthly data is lagged by one full month to ensure there is no look ahead bias from a reporting date perspective. Daily data is not lagged. By default all of the data generated by the scatter plots and distributions is overlapping.

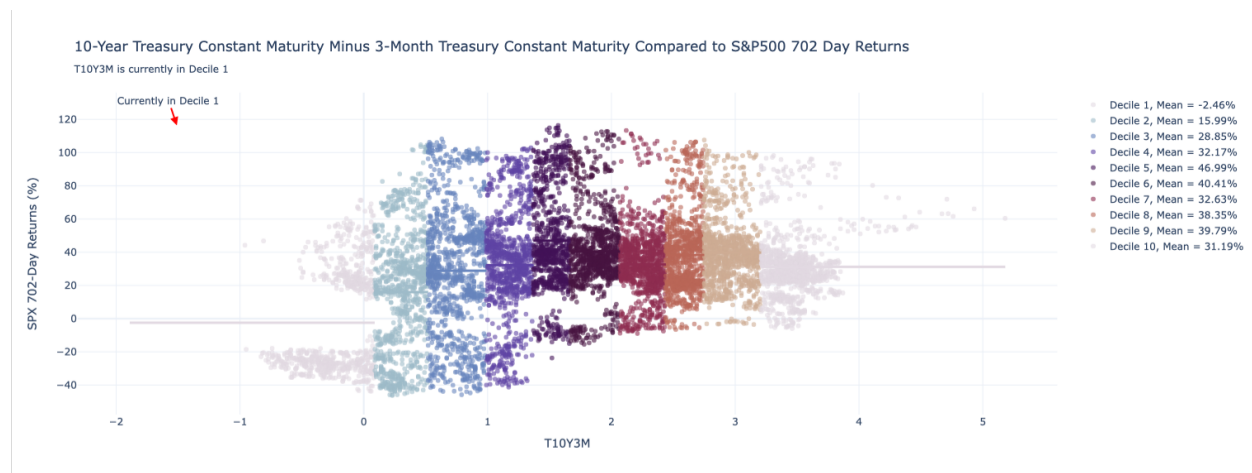
Economic data tracked by FRED is frequently revised and the revised data is shown by default on the FRED website. As a result, this creates a look-ahead bias in the data being observed. To remove this bias, there is an “Unadjusted Data” toggle in the application. By toggling the Unadjusted Data toggle “on”, you will be pulling the initial prints reported, rather than the revised data. This does not apply to daily datasets like yields.

The Scatterplot

The Scatterplot filters data for a single forward return period for the user by decile (X-axis) and highlights the mean returns for each decile (Y-axis). This allows a very quick identification of any return biases across the entire dataset.

In the chart below the 10 Year – 3 Month Yield Curve spread is being used to analyze subsequent S&P500 3-Year returns. A few things are notable from this chart.

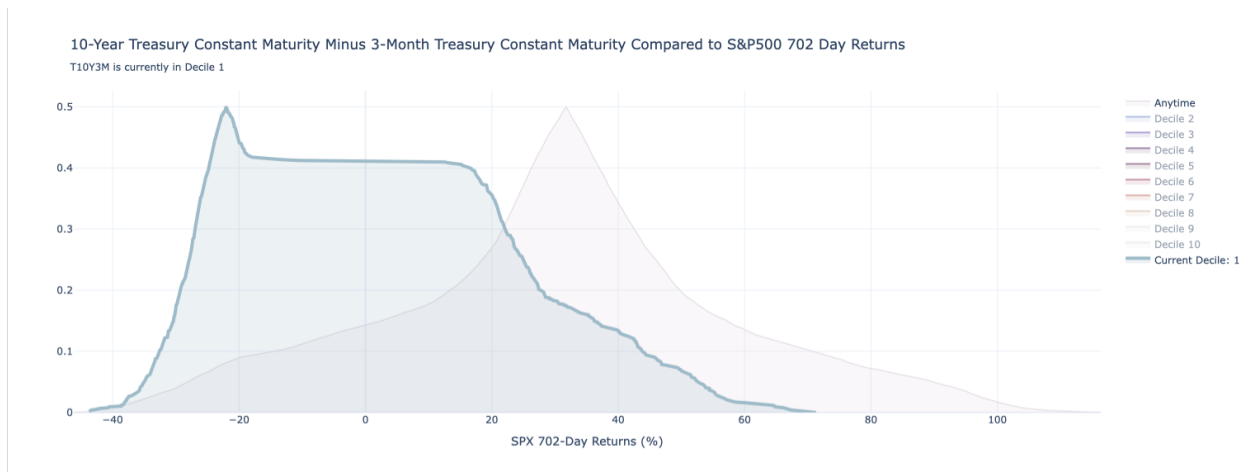
1. The 10Y-3M Yield Curve spread is currently in the 1st decile – where the curve is inverted.
2. The first decile has the weakest 3-Year mean returns (-2.46%) of any other decile where the returns end either highly positive, or highly negative.
3. As the curve steepens (higher deciles), the dispersion of returns narrows.



The Peaked Cumulative Distribution

The Peaked Cumulative Distribution takes the data from the scatterplot and, by default shows the distribution for the current decile compared to any decile. The chart below highlights that:

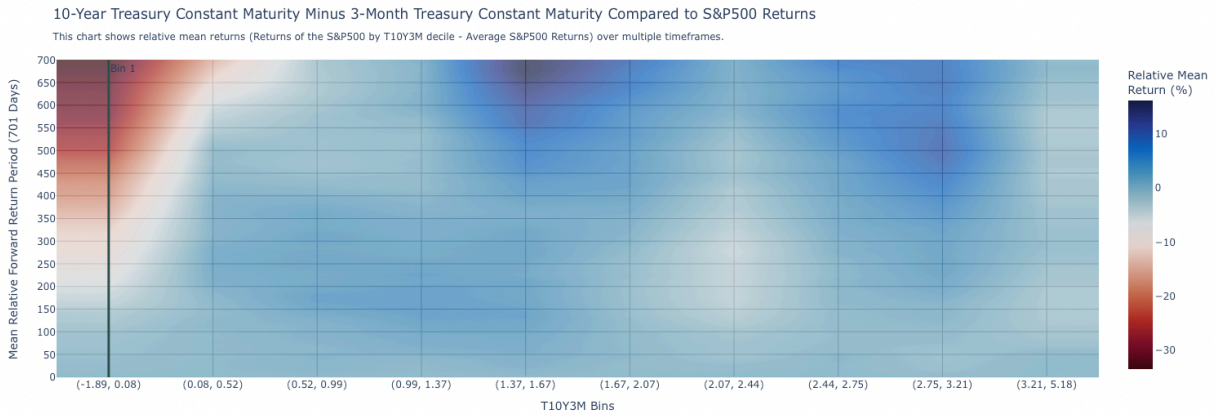
1. Compared to anytime 3-Year returns on the S&P500, the current decile (1) has most of its data landing around the -20% mark.
 - a. No data lies between -20% and ~+19%.
 - b. Data starts populating again at +20%.
 - c. This is highly different that anytime 3 year returns on the S&P500 where most of the data lies around the +30% mark.



The Relative Returns Heatmap

The relative returns heatmap enables the indicator decile analysis over multiple timeframes and allows for the very quick visual identification of S&P500 outperformance or underperformance.

The chart below confirms what the Scatterplot and Peaked Distribution charts revealed. The first decile has the weakest relative returns. We can see this starting at about 250 days forward and extending out all the way to 700 days forward. The chart analyses S&P500 forward returns on a relative mean basis. For example, on day 700, the S&P500 averages a return of ~30%. In decile one the relative mean return is -30%, or close to 0%.

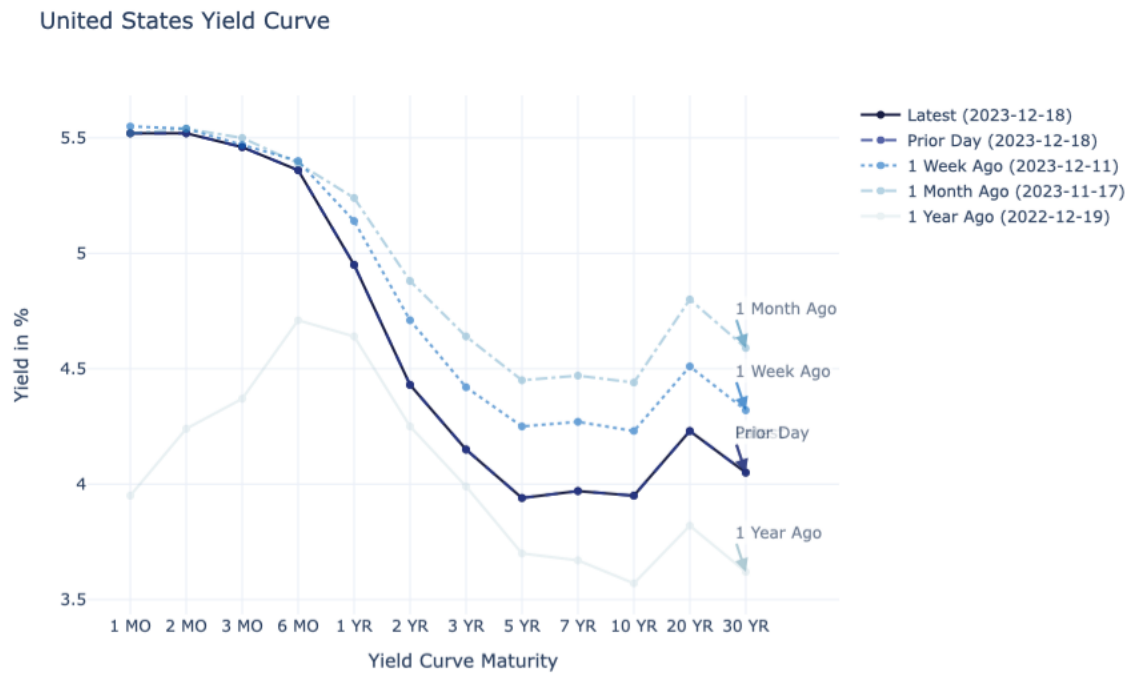


Yield Curve

The yield curve page contextualizes the yield curve relative to the recent past. Four charts are presented.

The Yield Curve

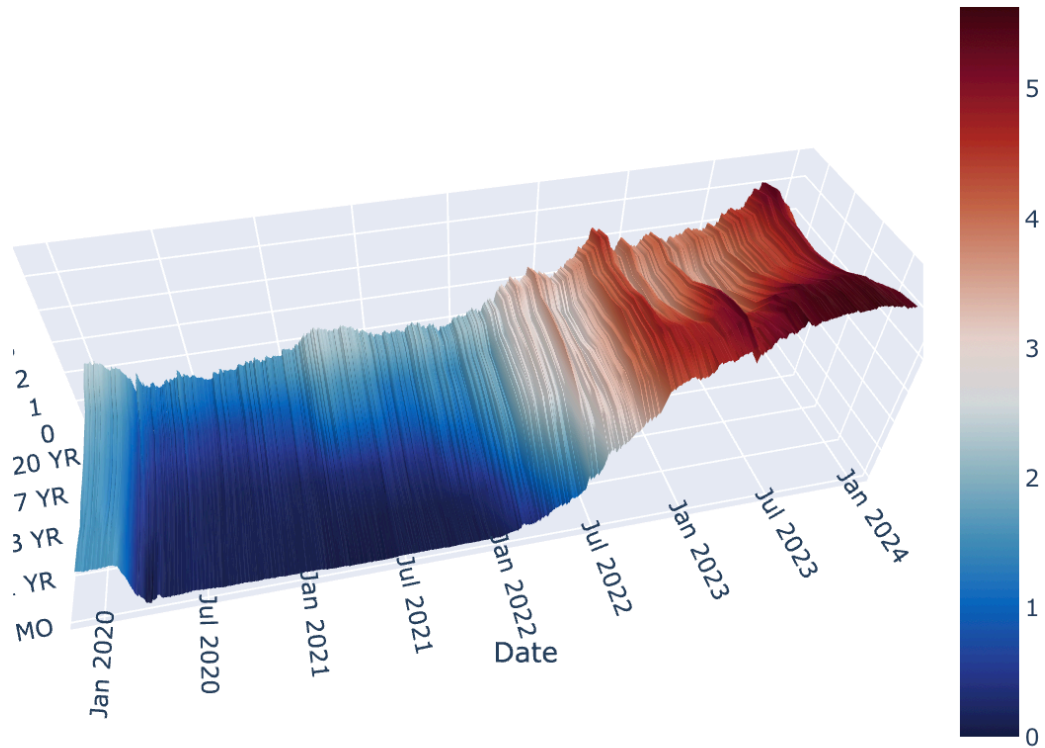
The first chart is the point in time yield curve which highlights the most recent print and compares it to 4 other prints go as back as far as a year. Below we can see a mostly inverted yield curve.



The Yield Curve Surface

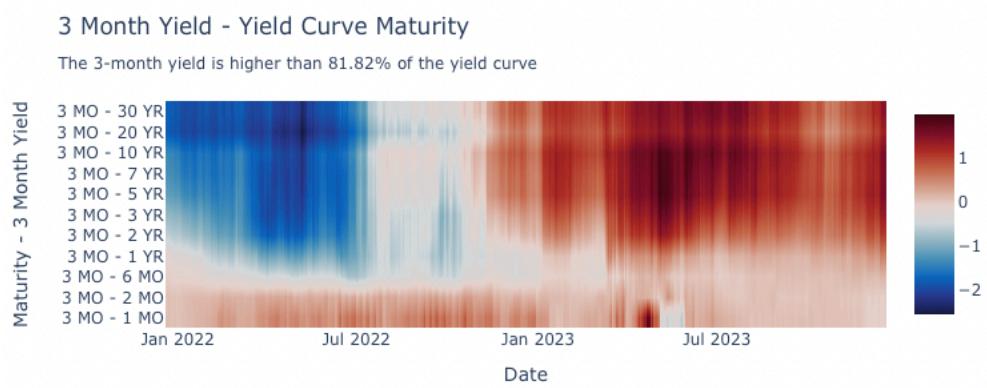
The second chart is the yield curve surface through time. In the chart below we can see a curve that is low and steep in 2020 and 2021 and a curve whose level has increased in 2022 and inverted in 2023.

US Yield Curve Surface



3M Inversion Chart

The third chart shows the 3M Yield – Each maturity through time. In the chart below it is highlighting that curve was steep in 2022 until November whereby the curve then inverted and the 3 month has been nearly 1% higher than the remainder of the curve since then.



Pair Inversion Chart

The pair inversion chart shows each maturity of the yield curve compared to the next maturity of the yield curve. In the chart below we see maturity pairs mostly in contango in 2022, and maturity pairs mostly in backwardation in 2023.

