

## Where is the Recession the Yield Curve Promised?

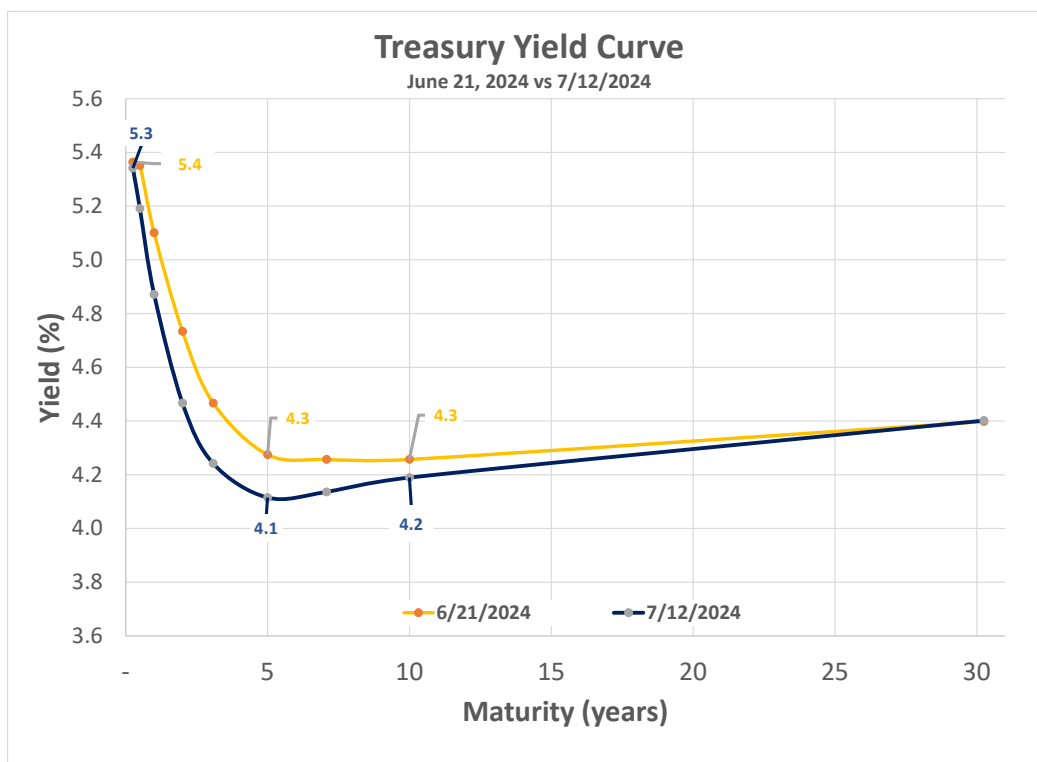
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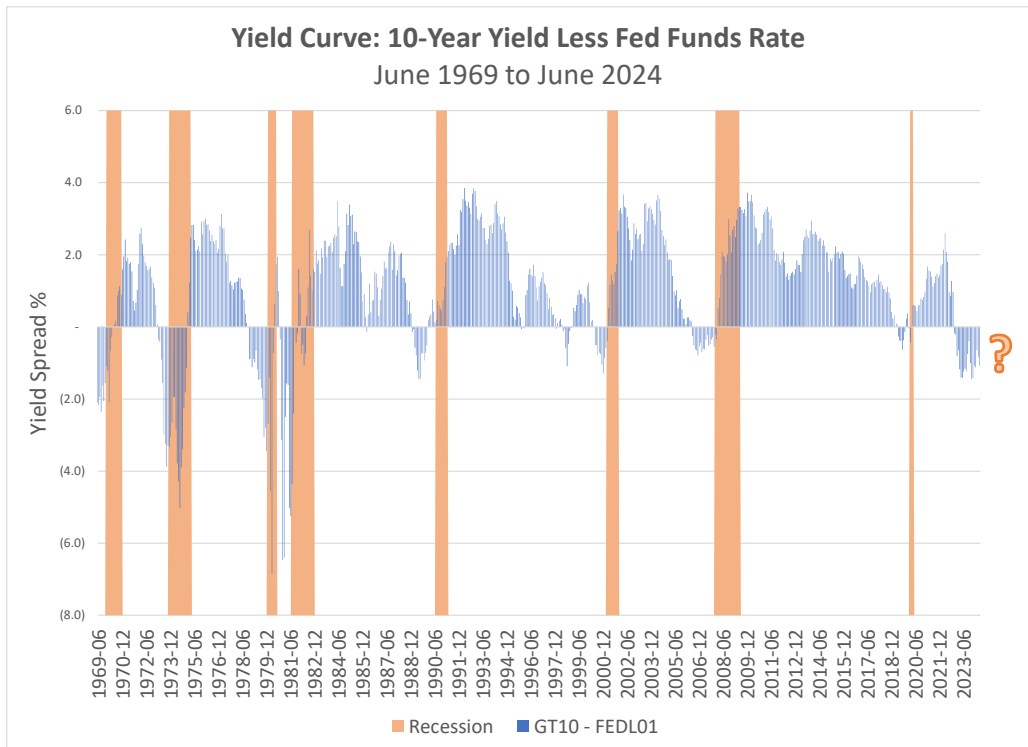
### The Inverted Yield Curve

The chart below shows two Treasury yield curves from 3-month T-bills to 30-year T-bonds, one as of Friday, June 21st, and the other as of Friday, July 12th. On June 21st, the 3-month rate of 5.4% was 1.1% *above* the 5-year rate of 4.3%. After Thursday's CPI report showed inflation falling to 3%, which was better than expected, the curve further inverted to 1.2% between 3-months and 5-years. This is a sharp inversion. Normally, on average since 1983, the 3-month rate has been about 1.1% *below* the 5-year rate.



So, for the yield curve to normalize between three months and five years, the three-month rates would have to fall by 2.3% while the 5-year yield remained unchanged. Is this a plausible scenario? More on that later.

For now, let's return to the question of the yield curve inversions and recessions. There are many ways to measure a yield curve inversion. In the following chart, we focus on the spread measured by the 10-year yield less the effective Fed funds rate.



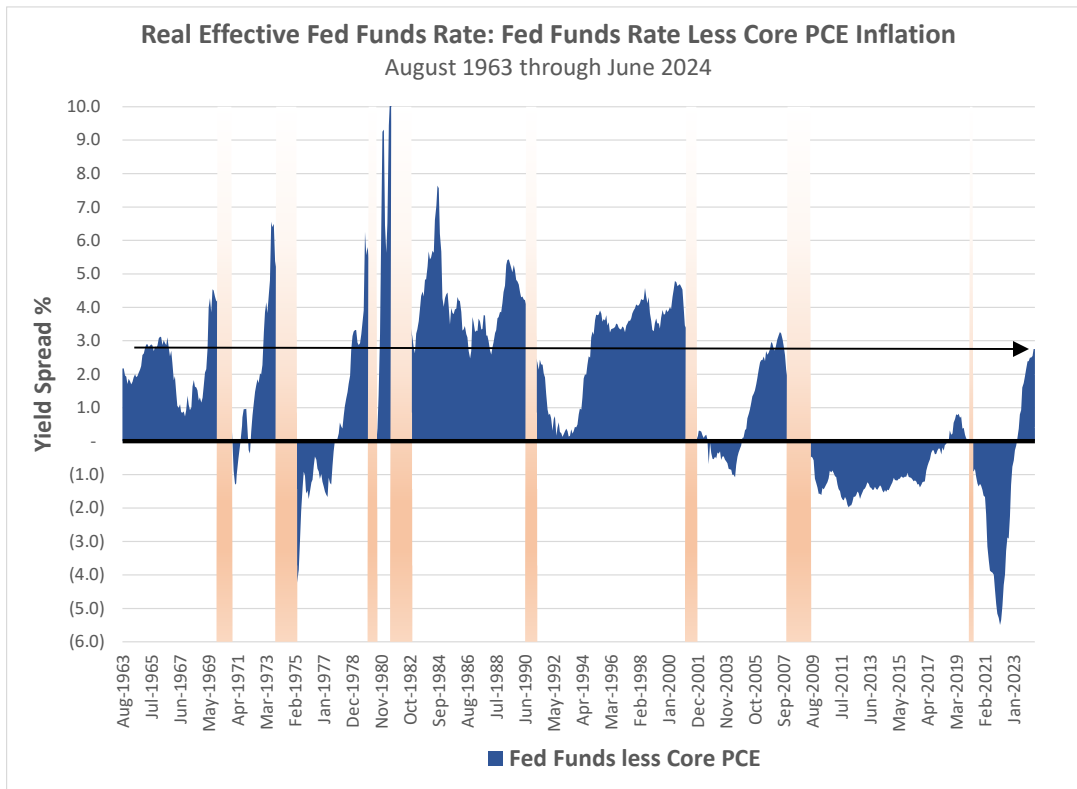
When the 10-year yield less Fed Funds rate difference goes negative, we have a yield curve inversion. The 10-year–Fed Funds inversion has preceded every recession since 1969. **We can understand why an inversion’s power-to-predict recessions became a promise-to-predict by those forecasting a recession.** Can we blame them?

It had a perfect track record until the most recent inversion. Still, here we are with no recession, more than 20 months after the inversion began. This is not about transmission lags. This is the longest period of inversion without recession, going back to 1969. Something else is going on.

### Monetary Policy Tightening vs Tight Monetary Policy

Simply put, this inversion without a recession (thus far) reflects a tightening of monetary policy but not a tight money policy. If this inverted yield curve does not reflect tight monetary policy, what does? High real rates. The Fed began tightening in March of 2022 when the real effective funds rate was a negative 8.3% (Fed Funds less CPI inflation). A negative real yield of that magnitude is a massive incentive to borrow. It stimulates growth. **It wasn’t until May of 2023, 14 months after the Fed began raising rates that the real rate began to turn positive. During those 14 months, the Fed raised rates by 5.0%. A 5% rise in rates is a lot, but barely positive real rates do not reflect a restrictive monetary policy stance.**

Using the Fed’s preferred measure of inflation, core Personal Consumption Expenditures (PCE), the next chart shows the real effective Fed Funds rate turning positive, then rising substantially to nearly 2.8%. This gets us close to tight monetary policy. The chart shows it usually takes at least a 3% real yield for tight policy to precipitate a recession. So, as of the end of June, real rates were just 0.2% below the lower limit of recession-inducing monetary policy.



So, based on history, the Fed has little room to let the real rate rise without inducing a recession. The Fed does not want a recession, so we don't expect a 3.0% real Fed Funds. The next PCE report comes July 26<sup>th</sup>. Currently, economist surveys point to an unchanged year-on-year core PCE of 2.6%, and to a 0.1% drop in the headline rate to 2.5%, unlikely enough to cause the Fed to cut at their July meeting. Absent a downside surprise in PCE or the jobs data, we will likely have to wait for another month of data to support a rate cut in September.

**The most plausible path from here is that as inflation declines, causing real rates to rise, the Fed will cut to keep real rates below levels that have historically induced recession. Expect this to be a slow process. Don't expect to get to a stabilized 2% PCE inflation anytime soon.** If inflation surprises significantly to the upside, rate hikes could return. What real rate the Fed targets will vary based on its assessment of the economy's strength.

### Uneconomic Investor Behavior

So, we have established that for at least the first 14 months and 500 basis points of rate increases, the Fed was tightening but not tight. Real rates were still too low. Yet, just four months after the tightening began, bond market participants inverted the Treasury curve between 2-year and 10-year maturities. I have to say I was perplexed by this at the time. **Who would want to own a 10-year Treasury (lend money to the government) at yields far below the rate of inflation?** How do we explain this uneconomic investor behavior? Two words: Cognitive biases. In particular:

1. Recency bias: a cognitive bias that favors recent events over historical ones
2. Anchoring: a cognitive bias whereby an individual's decisions are influenced by a reference point in the past
  - As you can see, if the anchor point is in the recent past, anchoring and recency bias overlap.

So, how does cognitive bias apply to the negative-real-rates-across-an-inverted-curve conundrum?

Bond investors could not/cannot see the new inflation conditions while looking through the lens of the recent past. They have been *anchored* to the most *recent* ten years that preceded COVID when core PCE inflation averaged just 1.6%, and the Fed was struggling to prop inflation up with its zero interest rate policy (ZIRP).

Here are some article references from 2022 supporting the market's anchoring and recency bias:

1. July 2022. Morningstar. Just four months after the Fed began raising rates. Headline: "Federal Reserve Hikes: But Will it Cut in 2023?" First sentence: "Although the Federal Reserve is still hiking interest rates for now, *we expect the Fed to pivot to cutting rates in 2023 in order to boost an ailing economy.*" No rate cuts yet.
2. July 2022. Bloomberg.com. Headline: "Fed Pivot in September Floated by Strategists..."
3. August 2022. The Hill. Headline: "Are investors right in expecting a dovish Fed Pivot?"
4. August 2022. Patrick Saner, Head of Macro Strategy, Group Economic Research and Strategy, Swiss Re, on Twitter/X: "***When people call for a Fed pivot when inflation is 9% and payrolls print >500k, it just means that after a decade of ZIRP and QE, investors can't think straight anymore.***"
5. November 2022. Bloomberg News. Headline: "Hawkish Fed Talk Dismissed by Options Traders Betting on a Pivot." An example bet from the article: "***On Friday morning, a \$4.5 million trade in options tied to the Secured Overnight Financing Rate hedged the risk that the Fed will cut its overnight rate to about 2% by September.***" How do we get on the other side of trades like that?

Let's look at where the bond market has been pricing inflation expectations:

1. After COVID, CPI inflation peaked at 9.1% in June of 2022, and the bond market, based on Treasury-TIPS yield spreads, was pricing CPI inflation to average:
  - (a) just 2.3% over the next 10 years
  - (b) just 2.6% over the 1<sup>st</sup> 5 years (2022 – 2027)
  - (c) just 2.0% over the 2<sup>nd</sup> 5 years (2027 – 2037)

Seems like a complete denial of inflation conditions at that time. From June of 2022 to June of 2024, year-on-year CPI inflation averaged 5.0%. To hit the market's 5-year forecast of 2.6% average annual CPI inflation, CPI inflation would have to average just 1.0% for the next three years. Not happening. As a reminder, the Fed's 2% inflation target is for personal consumption expenditures (PCE), not CPI. PCE has averaged about 0.5% lower than CPI over the past 50 years. If the difference holds, then the 2.3% 10-year CPI inflation expectation that was priced into TIPS two years ago implied a 1.8% PCE inflation rate.

The Fed does not want to see PCE inflation below 2%. At levels below 2%, shocks to the system risk outright deflation. What is driving the bond market to this 1.8% PCE inflation pricing? Anchoring is a plausible explanation.

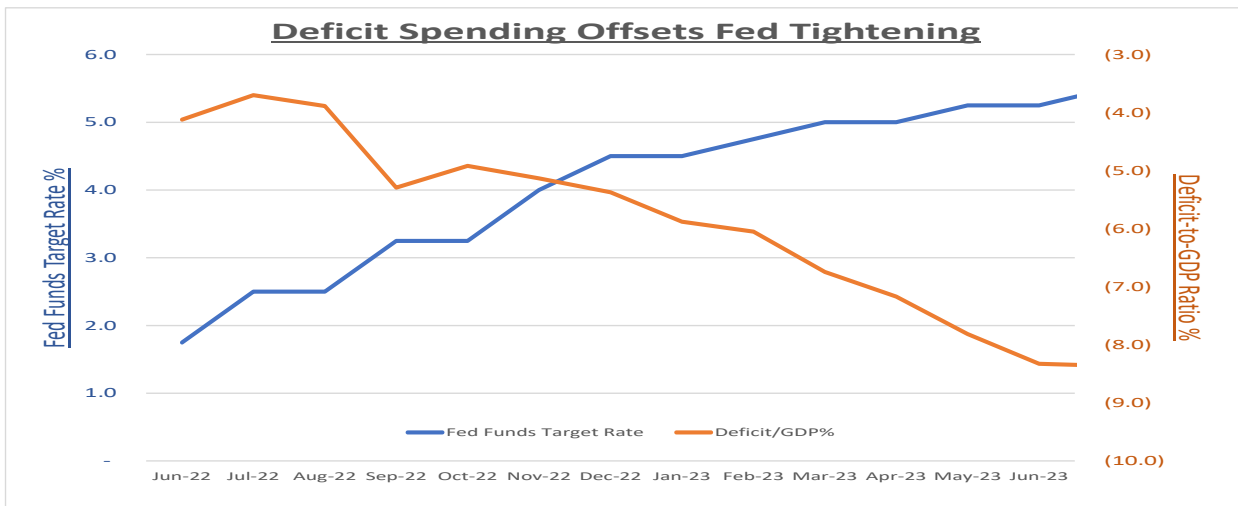
2. What is the market pricing for CPI inflation today (as of June 30, 2024)? Based on Treasury-TIPS yield spreads:
  - (a) 2.3% over the next 10 years
  - (b) 2.3% over the 1<sup>st</sup> 5 years (2022 – 2027)
  - (c) 2.3% over the 2<sup>nd</sup> 5 years (2027 – 2037)

Seems like another denial of inflation conditions. The market has priced CPI inflation as if the Fed has already achieved its 2.0% inflation target and then some. Annual CPI inflation as of the end of May was 3.3%. Core PCE inflation was 2.6%. Year-to-date, ending June 30th, annualized CPI inflation was 3.0%.

When actual inflation is systematically higher than the rate the market is pricing, TIPS can be expected to outperform nominal Treasuries. Since March of 2021, when actual inflation rose and stayed above the inflation rate priced into TIPS, the TIPS market has outperformed the Treasury market by more than 2.0% annualized.

### Loose Fiscal Policy

During the period when the Fed was ramping up rates to slow inflation, the federal government was ramping up deficit spending, offsetting much of the Fed tightening. The Federal Deficit as a percentage of GDP more than doubled from June of 2022 (-4.1%) through July of 2023 (-8.4%).



However, since July of 2023, the deficit has averaged “just -6.0%” of GDP. This reflects fiscal tightening from July’s deficit of -8.4% and has contributed to the recent rising unemployment rate. I put “just -6.0%” in quotes because that is a large deficit if we look beyond the recent data. From 1970 through 2008, the deficit as a percentage of GDP averaged a comparatively low -2.2% and the worst deficit for that period was -5.4%, all well below current levels.

If we were to return to a pre-COVID, pre-GFC (Global Financial Crisis) fiscal stance, there would be significantly more fiscal tightening to come, giving room for the Fed to slash rates. However, given the expected policies of our two presidential candidates, a significant fiscal tightening is unlikely.

### Path Forward

Let’s begin with the end in mind. On June 12<sup>th</sup>, the Fed released its updated projections for growth, inflation, and the Fed Funds rate, as shown in the table below:

Fed Median Projections				
as of 6/12/2024	2024	2025	2026	Longer-Run
GDP	2.1	2.0	2.0	1.8
Unemployment	4.0	4.2	4.1	4.2
PCE Inflation	2.6	2.3	2.0	2.0
Fed Funds	5.1	4.1	3.1	2.8

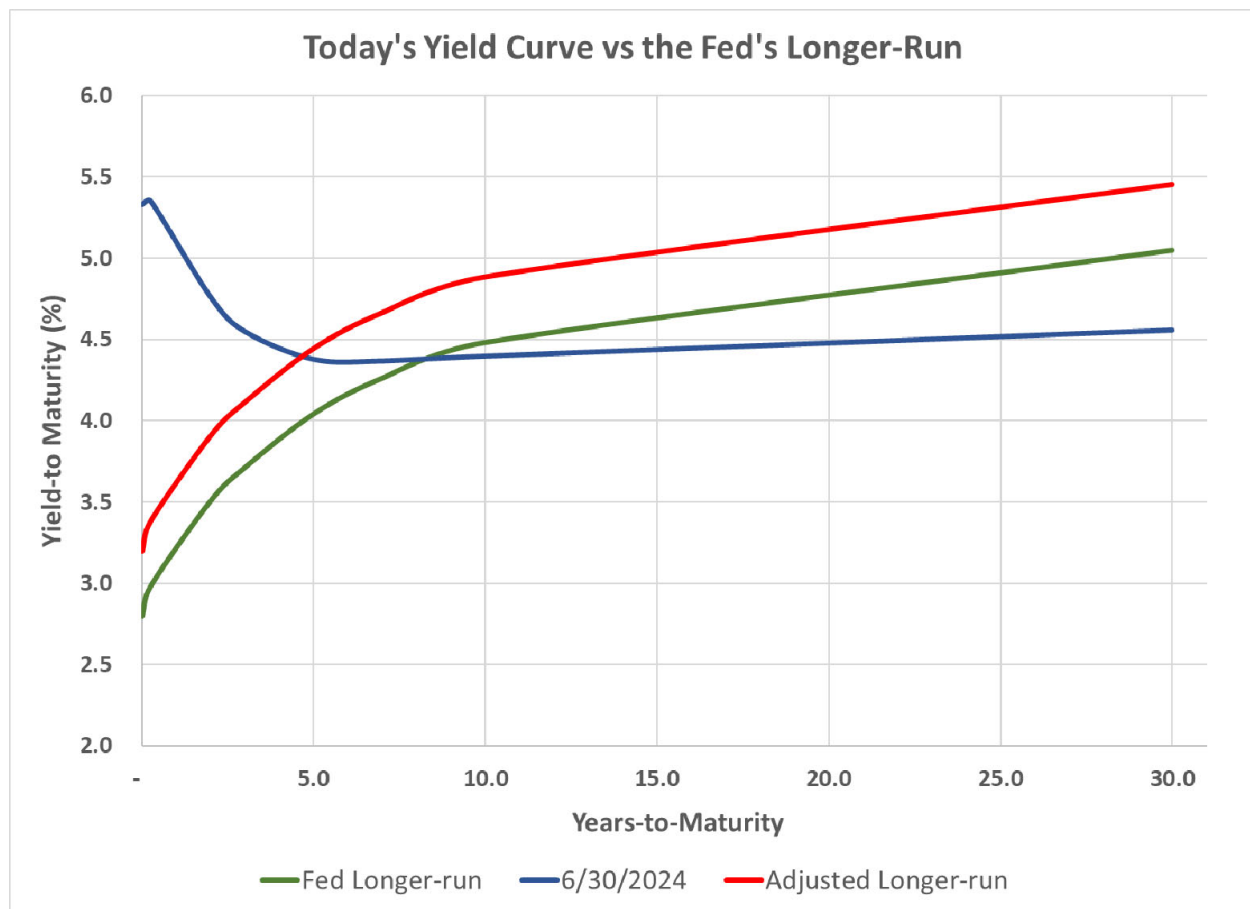
A few observations:

1. The Fed expects to cut rates one time this year, four times next year, another four times in 2026, and then one more 25 basis point cut to hit the longer-run target.
2. The Fed expects to hit its 2.0% inflation target by the fourth quarter of 2026.
3. The Fed expects a soft landing, achieving its inflation goal without a material rise in unemployment, and without a recession
4. The Fed has modest expectations for longer-run real economic growth. The Fed's longer-run projections represent a steady-state "under appropriate monetary policy and in the absence of further shocks to the economy."

Taking the Fed's "longer-run" forecast for Fed Funds and using historical yield relationships, we build out two "steady-state" or normative yield curves, that is yield curves the market is expected to converge on, absent further shocks to the economy. One yield curve accepts the Fed's longer-run expectations for growth and inflation. The second adds 20 basis points to growth, which may be understated given the productivity potential of AI, and another 20 basis points to inflation, on the assumption that once the Fed "re-establishes" its inflation fighting credentials, it may guide us to a higher target inflation level. The chart that follows illustrates.

It offers two implications for 5-year and 10-year yields:

1. The 10-year yield will be higher than it is today under either longer run scenario.
2. In the higher inflation and growth regime, the 5-year yield will also be higher than the current level.



Early in this paper, I posed a question based on historical averages: Was it plausible for the 3-month T-bill yield to fall by 2.3% while the 5-year note yield remained unchanged? The yield curves above suggest that it is, but it is likely that the 5-year note yield falls modestly.

## Implications for Investors

The path to the Fed's longer-run expectations may be bumpy, with risks to the upside and downside for inflation, growth, and longer-term yields. Still, the "steady-state" expectations act as a magnet and will likely keep the 10-year Treasury in a range of 3.75% to 4.75% as economic events unfold. We are in the middle of that range today. We do not recommend playing the range as there are much better opportunities for your time and investment resources, such as private market and equity strategies. That said, the "belly" of the curve (3-year to 7-year maturities) is likely to benefit the most in a yield curve steepening environment.

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