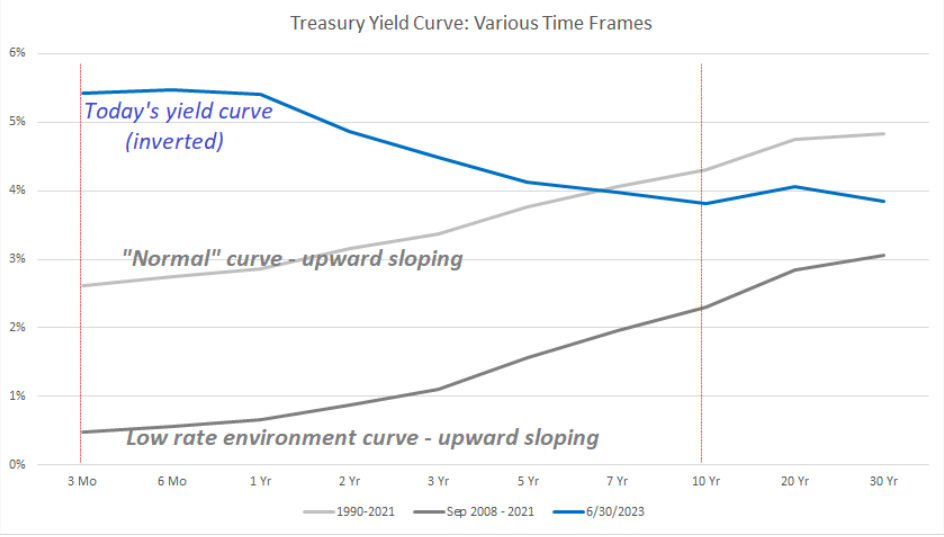
Market Commentary: Inverted Yield Curve: Business Affects and Recessionary Record

June 2023

Ever wonder how a yield on a loan is determined? Let's say my neighbor thinks he has the best business idea ever. He wants to borrow $100,000 from me. He needs the money immediately but believes he can secure a bank loan within three months. As a result, I am presented with two options: (1) lend him the money for three months; or (2) lend him the money for 10 years, essentially taking the place of a loan from a bank (or, of course, not lend him anything). Given my background in financial markets he tells me to come back with an interest rate to charge.

In a normal environment, the analysis comes down to liquidity and risk. Generally, over a longer time frame, you'd expect to be compensated for both. After all, over the next ten years I will not have access to the $100,000 (liquidity = opportunity cost), and any number of events can result in my neighbor not being able to pay back his debt and for the collateral not to be effective in mitigating that risk.

Accordingly, I would take my above analysis of how risky the proposition is and calculate a yield premium over the current "risk free" rate. US government issued debt is considered risk free,[1] so looking at the rate on three-month T-bills and 10-year Treasury notes is the place to start. What I would find is that the investing public is currently demanding 1.5 percentage points ***less*** to provide the government with a 10-year loan than a three-month loan. How is that the case? And what might the current inverted shape of the yield curve mean for future markets?



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[1] We can use this rate to figure out the right interest rate to charge without concerning ourselves conceptually with the possibility of a government default. An actual government default would result in a whole host of other problems!

[2] Source: US Department of the Treasury daily Treasury Par Yield Curve Rates. Note that there are long periods of time where the Treasury did not issue either 20- or 30-year bonds. During those periods we estimated the rate using the shape of the curve.

The light grey line above shows the average yield curve[3] over the last 30+ years while the dark grey line shows the average yield curve during one of the lowest rate environments in history where the Fed was worried about a lack of growth and a potential deflationary environment. The grey curves are considered "normal" in that the annualized interest rate demanded increases with the length of the time period. The blue line represents the pricing of the yield curve as of June 30, 2023. As you can see, it is quite inverted, with longer-term interest rates significantly lower than current rates.

The chart above shows that typically investors demand a 1.75%+ premium for providing a ten-year loan to the government as compared to a three-month loan. Yet, today, the market is providing a 1.5% discount! The spread is priced 3.25% below the typical level.

The reason for the front of the curve (shorter dated yields) being elevated is directly due to the federal reserve ("Fed") raising interest rates to fight inflation. One of the Fed's primary jobs is to keep both inflation and deflation in check—a spiral in either direction is really difficult to fight for a variety of reasons, inclusive of self-reinforcing behavior by consumers.[4] Therefore, today the Fed has no choice but to speak hawkishly and raise rates as necessary, regardless of what one may believe the future portends.[5]

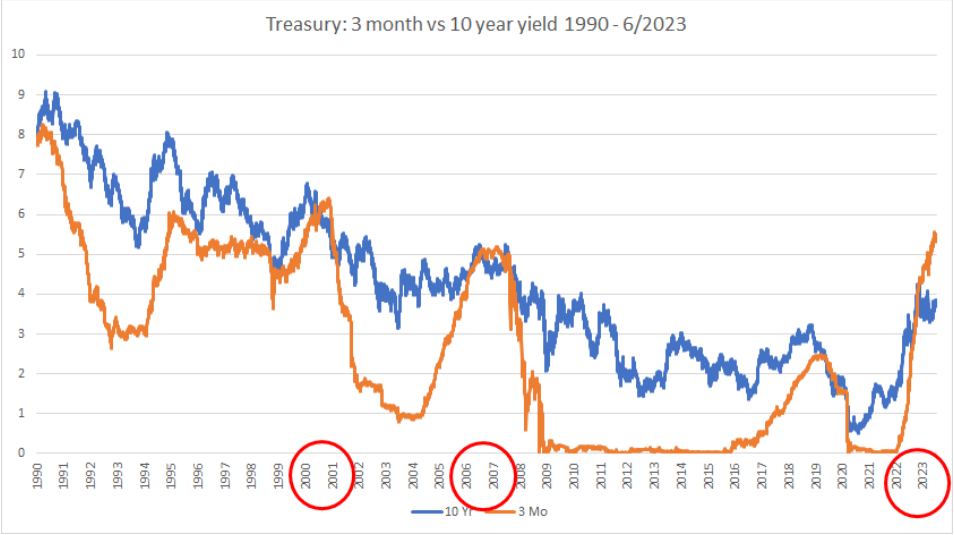
When the Fed raises rates, they are tightening business conditions by making debt more costly. Both inflationary pressures and interest rate increases should result in downward pressure on the economy as the costs of conducting business (e.g., debt, purchases) increase. The cost of capital for my neighbor should be significantly higher today than it was two years ago, resulting in margin pressures for his business.

Unfortunately, the Fed's tools are quite blunt, do not affect participants of the economy equally, and take a bit of time to play out. For example, a family in a 30-year fixed mortgage with no intention of selling their house or taking further loans out on their house will arguably not feel any effect of fed tightening in relation to their current mortgage. Often, the Fed can therefore overshoot in tightening, which results in a recession. Remember, the Fed is attempting to keep the economy in a very narrow band of growth and inflation targets over the longer term in maintaining a healthy economy. Some would argue it's an impossible job.

[3] Displays the market interest rate relative to the remaining time to maturity of debt.

[4] If one believes that their dollar will be significantly more valuable in the near future (deflation) one will push off purchases; if one believes their dollar will be significantly less valuable in the near future (inflation) one will spend those dollars as quickly as possible.

[5] Our first Podcast featured a debate on the future of rates based on inflation expectations: Investment Wars: 1: Debate on Inflation on Apple Podcasts



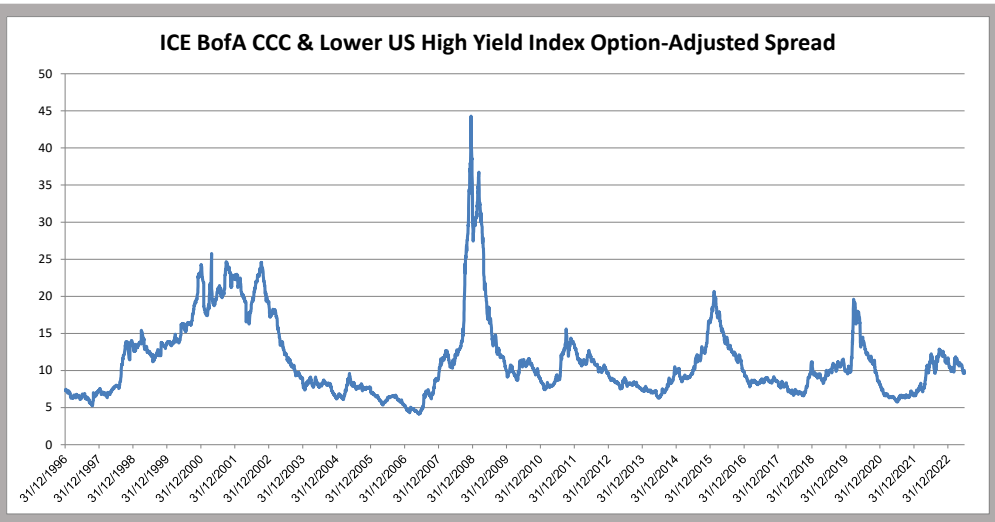
The chart above shows the daily yields from 1990 through the end of June for both 10-year rates (blue) and 3-month rates (orange). Periods where the Fed raised rates materially are evident in the sharp upward move in the orange line, further highlighted by having the years circled in red. One can see that the curve was somewhat inverted at the peak and that those inversions pre-dated an economic contraction and drop in market value. Notably, the last two jumps in the short-term yield occurred prior to the dotcom bust and the financial crisis. The yield curve normalized through the front end, dropping as a result of the Fed lowering rates to fight a drop in growth due to recessionary pressures.

Is this time different? An inverted yield curve has traditionally been a very strong indicator for a forthcoming recession. It makes sense because inversion is almost always due to the Fed tightening credit, which results in harder business conditions. This time the Fed is fighting inflation rather than an overheated market as in 2000 and 2007. Does it make a difference? The outcome is still the same—tightening credit conditions. Yet, some of the source of the inversion is simply the market believing that inflation will decline relatively quickly to 3% and then slowly move back, perhaps lower than the expected 2%, due to a number of long-term negative growth trends (e.g., aging demographics).

While our last podcast guest (Matthew Miskin on "Will We Have a Hard Landing?") thought we were in for a recession of some sort, some of the analysts we have been speaking to believe we will get by relatively unscathed and that this inversion will sort itself out with inflation dissipating. To throw one more wrench into those market timers: the market itself is a *leading* indicator and tends to rally at the point of recession, with that point of recession typically declared six months after the fact....

As for my friendly neighbor, I would go with a friendly 10% 3-month loan. It is unlikely that he would get anyone to make a 10-year loan on a startup – equity is more the way to go. But carrying through the analysis a bit further, banks are looking at the same risk-free curve that we just analyzed. Their source of capital is depositors demanding rates along the front of the curve while their loans are

longer term in nature. If rates remain elevated, does it mean inflation is back? If rates drop does it mean a recession occurred? How will a longer-term loan look when rates do normalize? These are all reasons for a bank to tighten its own credit standards.



Analysis of that Risk Premium

To add one more dimension to the equation, one can see the risk premium assessed on different asset classes which can further assist in triangulating on a reasonable rate for debt. Above is the risk spread data associated with smaller, riskier public companies, one of the lowest credit quality levels of high yield debt. The current spread is roughly 10% (right side of chart above 2022) which would be added to the risk-free rate of roughly 5%, resulting in a 15% yield demanded by those investors. For my neighbor, we would need to go a few rungs below even these quality companies, with realistic yields easily being upward of 30%. Of course, a start-up does not have cash on hand to pay that sort of coupon so they would "PIK" it – payment in kind[1]. Yet another reason start-ups use equity as a source of funding.