

Is a recession in the US imminent?

The US Federal Reserve is unlikely to cut rates before mid-CY23

- With inflation posting a new high every month, the US Federal Reserve (Fed) is expected to hike the federal funds rate (FFR) by another 75bp next week, though a 100bp hike is not off the table. While it has pushed the three-month (3M) yield on the Treasury Bill to 2.5% (from ~1.7% in mid-Jun'22), the yield on the 10-year (10Y) bonds has fallen below 3%, down from its recent peak of 3.5% a month ago. Consequently, the spread between the two maturities (3M10Y) has fallen to just 0.5% from 1.6% a month ago. The spread between the 2-year and 10-year bonds has turned negative in Jul'22.
- An analysis of all US recessionary episodes since the mid-1960s suggests that the economy enters into a recession anytime between five and 16 months after 3M10Y spread turns negative, or between eight and 18 months after 2Y10Y spread (two-year yield available from CY76) turns negative.
- However, the Fed's response has been varied during different episodes, depending on the inflation trajectory. Although the Fed reduced FFR within two-to-three months from the start of recessions in several cases, the rate cuts were delayed during the mid-1970s and early-1980s recession – the only two episodes of high inflation in the US. In both episodes, the rate cuts were delayed – the peak rate was reached nine and four months into these recessions. They were also slow when they came, since the rates remained high for several more months.
- The Fed's strategy since mid-1990s has been to pre-empt the recessionary forces, leading to quick and pre-emptive rate cuts. The Fed had cut rates a few months before the recession started in CY01, CY07, and CY20 (and in CY98 as well, when the US recession fears didn't materialize). Thus, it will be interesting to see if the Fed continues with its recent strategy to pre-empt the slowdown and cuts rates or very high inflation (due to the overheating of the economy) makes it replicate its 1970s and 1980s approach.
- Based on historical evidences, the current movements in the Treasury yield curve suggest that the US may fall into recession in early-CY23. However, the real economic data, especially the very tight labor market, points to a delay in a recession this time. In any case, the highest inflation in four decades indicates that the Fed is unlikely to cut rates before mid-CY23.

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Things are getting panicky now

The Bank of Canada hiked its policy interest rate by 100bp last week. The Bank of Korea raised its policy rate by 50bp, and the central bank of Philippines (in an unscheduled meeting) hiked its policy rate by 75bp. Singapore has allowed its currency to appreciate further (the fourth time since Oct'21). On 21st Jul'22, the Eurozone, Japan, South Africa, and Indonesia will announce their monetary policy. While South Africa has hiked policy rates earlier, the other three are yet to begin hiking rates, which could very well change this week. The Fed's next meeting is on the 27th Jul'22 and many more countries, including India, will have their monetary policies between 3rd Aug'22 and 5th Aug'22.

The Treasuries market suggests a looming US recession...

With US inflation coming in higher-than-expected and posting fresh highs every month, concerns on the ability of the Fed to tame inflation are being raised. The Fed is expected to hike rates by 75bp on 27th Jul'22 and the market is expecting the FFR at 3.4% by CY22-end, in line with the Fed's projections. Nevertheless, with inflation in the US coming in at a fresh high of 9.1% YoY in Jun'22 (data released on 13th Jul'22), a 100bp hike is certainly on-the-table now.

What's interesting is that the 10-year bond yield in the US has actually fallen in the past month or so – to sub-3% at present from its peak of 3.5% in mid-Jun'22. After falling over 20% in the six months to mid-Jun'22, the S&P500 index has stabilized and rose ~4% in the past one-month. The US dollar (USD) is at a 20-year high, with the EUR at parity for the first time and the Pound Sterling (GBP) at record lows.

A fall in bond yields in times of very high inflation can be interpreted as a resurgence of recessionary fears

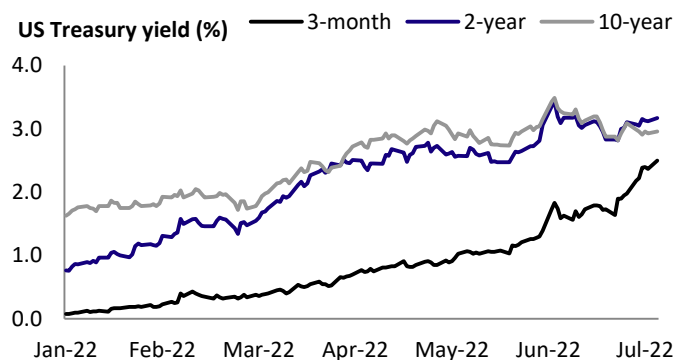
A fall in bond yield, at the time of very high inflation, can be interpreted as a resurgence of recessionary fears, raising the probability of lower than expected rate hikes in the near future and a reversal after few months and quarters. This interpretation is consistent with a strong USD as well, since other major economies such as the Eurozone, Japan, the UK, and China are displaying weaker growth.

...as is evident in the inverted yield curve

The spread between the three-month T-bill rate and 10-year yield has narrowed remarkably to only 0.5% at present from 2.27% a couple of months ago

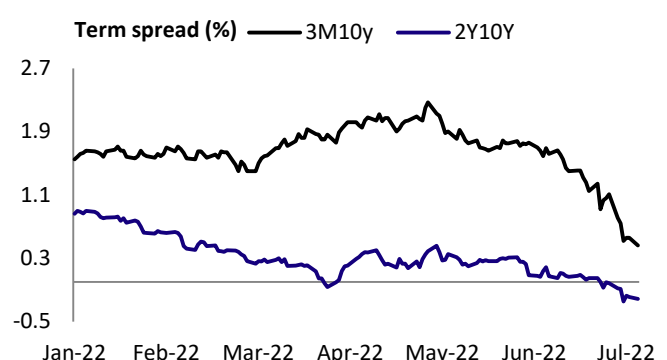
Although the long-end of the Treasury yield curve has fallen, the short-end yields have increased, in line with the rising federal funds rate. The three-month yield has risen to 2.5% and the two-year yield is above 3.1%. Many studies document the high relevance of the slope of the Treasury yield curve to predict a recession. In one of the clearest signs of worry, the spread between the two-year and the 10-year Treasury bond yield has turned negative in Jul'22 (refer Exhibit 1 and 2). From its recent high of 1.5% in Mar'21, the spread between the two-year and the 10-year (2Y10Y) yield has moved to -0.2% at present. Similarly, the spread between the three-month T-bill rate and 10-year yield (3M10Y), another spread widely tracked to forecast recessions, has narrowed to only 0.5% at present from 2.27% just a couple of months ago (and ~1.7% a month ago).

Exhibit 1: The US 10-year yield has fallen, while the short-term yield has risen recently...



All data updated as of 19th Jul'22

Exhibit 2: ...implying a sharp narrowing of the term spread in the US Treasuries market



Source: Bloomberg, MOFSL

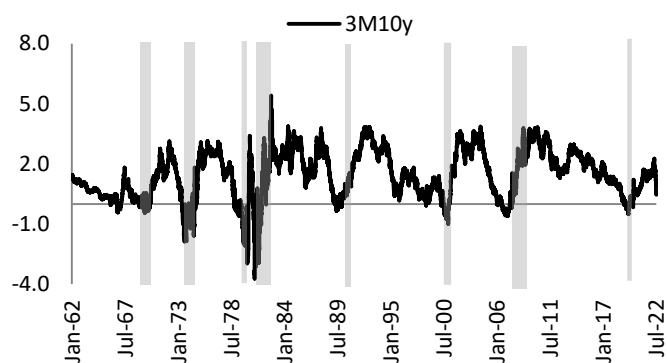
The 3M10Y spread has always moved into negative territory before every US economic recession since CY65

Which one of these is a more reliable spread, with a better predictive power to forecast recession? In one of its Economic Letters, [Bauer and Mertens](#), research advisors at the Federal Reserve Board of San Francisco (FRBSF), assert, “...the difference between ten-year and three-month Treasury rates is the most useful term spread for forecasting recessions...”. This conclusion is widely shared by Fed researchers.

A look at the long-term trend in the 3M10Y spread helps appreciate the predictability of this variable (refer Exhibit 3). The spread has always moved into negative territory before every US economic recession since CY65. Recently, an

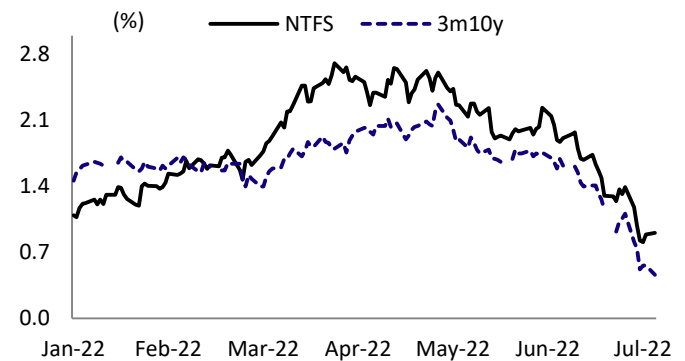
alternative spread called ‘near-term forward spread’ (NTFS), proposed by [Engstrom and Sharpe in CY18](#), exclusively focuses on the short-end of the Treasury yield curve. The NTFS compares the current three-month T-bill rate with bets on where it will be 18 months down the line – derived from the forwards market. Like 3M10Y spread, NTFS has fallen dramatically from its multi-decade peak of 2.6% in early-May’22 to sub-1% at present (refer Exhibit 4).

Exhibit 3: The 3M10Y yield spread has inverted before every US recession since CY65



The shaded region represents recessionary periods

Exhibit 4: The recently popular NTFS has fallen sharply in the past month



Source: Bloomberg, NBER, MOFSL

In a Mar’22 interview to [Bloomberg](#), Fed Chairman Mr. Jerome Powell said, “Frankly, there’s good research by staff in the Federal Reserve system that really says to look at the short -- the first 18 months -- of the yield curve... That’s really what has 100% of the explanatory power of the yield curve. It makes sense. Because if it’s inverted, that means the Fed’s going to cut, which means the economy is weak.”

Based on the Treasury yield curve spread, the probability of a recession in the US, [as estimated by the New York Federal Reserve](#), has been just 6% for Jun’23 (a year down the line), higher than 3.7% estimated for Apr’23, but not at a worrying level at all. This probability was much higher (at 10% or more) in late-CY18 and CY19. The problem, however, is that this recession probability is based on monthly average data. The 3m10y spread, which is used by the New York Fed, averaged 1.62% in Jun’22, but has fallen to 0.5% at present. It is very likely that the recession probability can witness a sudden jump when the next update is released in Aug’22.

Not only is the yield curve and New York Fed’s forecasts flashing warning signals, but some economic data is also worrying

It is not only the term spread that is showing recessionary fears. According to the [New York Fed dynamic stochastic general equilibrium \(DGSE\) model](#), which is not an official New York Fed forecast, but only an input to the research staff’s overall forecasting process, “the probability of a soft landing — defined as four-quarter GDP growth staying positive over the next ten quarters—is only about 10 percent. Conversely, the chances of a hard landing—defined to include at least one quarter in the next ten in which four-quarter GDP growth dips below -1 percent, as occurred during the 1990 recession—are about 80 percent.”

But this is in stark contrast to the current economic data

Not only is the yield curve and New York Fed’s forecasts flashing warning signals, but some economic data is also worrying. US real GDP contracted by 1.6% QoQ

(annualized) in 1QCY22 and is estimated to contract by 1.6% in 2QCY22 (updated as of 19th Jul'22), lower than -2.1% estimated a couple of weeks ago, as per the [GDPNow model of The Federal Reserve Bank of Atlanta](#). The housing market is also showing some signs of a deceleration in economic activity. New single-family house sales have eased sharply since Mar'22 and as much as seven months' worth of supply is available in the market, up from five-to-six months in mid-2019. Moreover, real personal disposable income has contracted for the fifth consecutive month in May'22 and the personal savings rate is down to about 5.5% from double-digit in mid-CY21, the levels last seen in the pre-2009 period.

These data certainly indicate towards losing steam and may make one worry regarding the US economic strength. Nevertheless, all of these have the other – brighter – side. While real GDP contracted in 1QCY22, the drag was entirely 'net exports'. Final sales to private domestic purchasers (sum of personal consumption expenditure and private fixed investments) grew 3% (QoQ annualized) in 1QCY22, up from 2.6% in 4QCY21 and 1.4% in 3QCY21. The average growth was 2.7% in the pre-COVID period (CY16-19). The same could be true for 2QCY22, when the advance estimates will be released on 28th Jul'22.

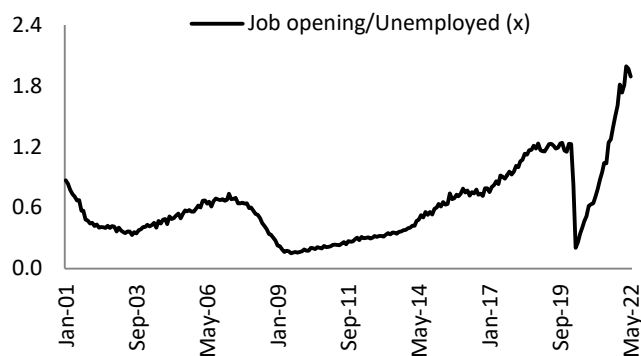
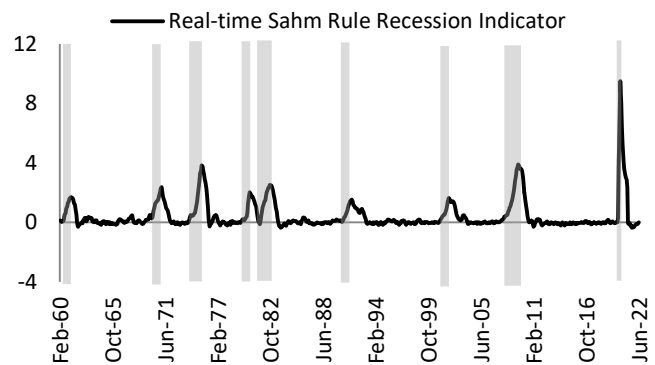
While home sales have softened in recent months, prices remain high. The median sales price of a new single-family house was USD450,000 in May'22, up 15% YoY and 22% QoQ (annualized). It appears that homeowners are taking full advantage of the current boom. Although supply has increased rapidly, houses remain in the market for less than three-months – a record low in the past six decades.

While real PDI has declined and the personal savings rate is falling, excess personal savings – owing to the huge government transfers – has fallen gradually. From its peak of USD2.5t in Dec'21, excess savings stood at USD2.3t as of May'22, falling by an average of just USD40b per month in CY22 so far.

Notwithstanding the technical recession, a combination of record low unemployment rate, very high inflation and record-high availability of job vacancy per unfilled post don't indicate any recessionary forces at work at this stage

While the New York Fed's models, based on the term spread and real GDP forecasts, suggest higher chances of a hard landing, the US economy remains too hot. Notwithstanding the technical recession, defined by two consecutive quarterly declines in GDP, a combination of record low unemployment rate (of 3.6%), very high inflation (headline PCE price index stood at 6.3% YoY each in the last three months), and record high availability of job vacancy per unfilled post (at 1.9x in May'22) doesn't indicate any recessionary forces at work at this stage (*refer Exhibit 5*).

The [Sahm Recession Indicator](#) signals the start of a recession when the three-month moving average of the national unemployment rate (U3) rises by 0.5 percentage points or more relative to its low during the previous 12 months. The indicator shows absolutely no concerns of an imminent recession (*refer Exhibit 6*).

Exhibit 5: There are almost two vacancies per unfilled job in the US...**Exhibit 6: ...and the recession probability based on the unemployment rate is almost zero**

The shaded regions indicate US recessions

Source: Bureau of Labor Statistics, FRED St. Louis, MOFSL

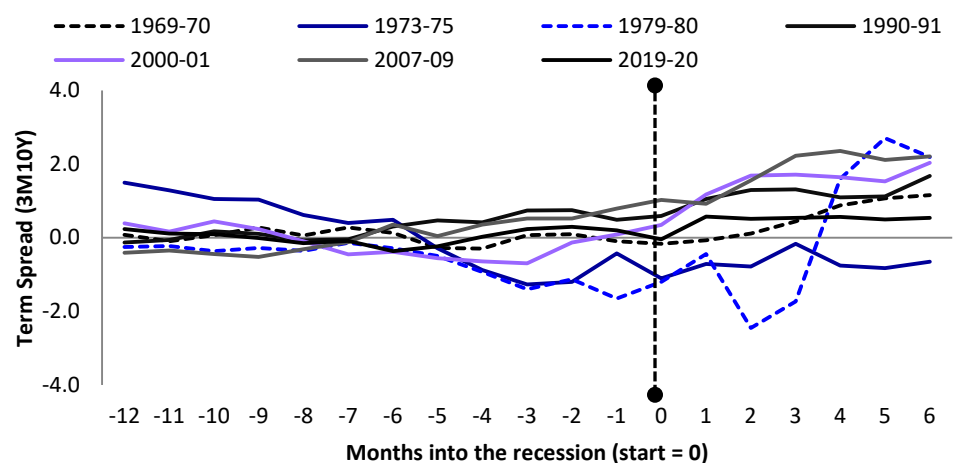
So, is a recession imminent in the US?

Financial markets are forward-looking, while real economic data such as the unemployment rate and inflation are lagging or backward looking indicators. Thus, one should give more credibility to the Treasury market indicators for their ability to predict economic recessions. The relevant question then is “*when can the US economy be in a serious recession?*” And more importantly, “*when will the US Fed cut its policy rate?*”

A recession in the US begins anywhere between five and 16 months from the start of inversion in 3M10Y spread

As mentioned earlier, the 3M10Y spread has inverted before every US economic recession. However, the timeline for the start of the recession from the start of the yield curve inversion varies across recessions (*refer Exhibit 7*). Overall, there are three key highlights:

- 1) A US recession (based on NBER dates) began anywhere between five months and 16 months from the start of the inversion of the 3M10Y spread,
- 2) The yield curve inversion was the strongest and most prominent during the inflation-led recessions in the US, i.e. CY73-75 and CY80, and
- 3) Although the yield curve inverted during all episodes, it had moved comfortably into positive territory before the actual recession began in some cases (three out of the seven episodes considered for this study).

Exhibit 7: Behavior of the 3M10Y spread before every US recession since CY62

The start of the recession (Month 0) is: Dec'69, Nov'73, Jan'80, Jul'90, Mar'01, Dec'07 and Feb'20

Source: Bloomberg, NBER, MOFSL

Similar results were obtained if we use the spread between the two-year and 10-year bond yield, or the difference between the overnight federal funds rate and the 10-year yield (FFR-10Y). Although the 2Y10Y curve has inverted and the FFR-10Y curve may invert soon, the beginning of the US economic recession is marked between eight and 18 months after the inversion of these curves spread.

How will the Fed react?

During the inflation-led recessions in the 1970s and 1980s, not only were the rate cuts delayed, but they were also slow when they came

Will the Fed cut rates as soon as the recession begins, or will high inflation be more restrictive this time? There are two relevant historical episodes to throw some light: the mid-1970s and the 1980s. During these two episodes, US' inflation was very high, which makes it more comparable to the current situation. Notably, the Fed was patient, with the peak policy rate being reached nine months after the recession began in CY73 and four months after the crisis began in CY80. In both cases, not only were the rate cuts delayed, they were also slow when they came, and the rates remained high for several more months.

For instance, the NBER puts Nov'73 as the start of the US recession, when the FFR was ~10% (double-digit for the first time since CY54). It touched a peak of ~14% in Jul'74 and didn't fall below 10% before Nov'74. Similarly, the recession began in Jan'80, as per NBER, when the FFR was ~13.5%. It touched a peak of ~20% in Apr'80 and stayed above 9% for the next three years.

In any case, from the monetary policy perspective, there are two key numbers to watch out for – headline PCE index (the targeted inflation measure) and the unemployment rate. Unlike most major global central banks, the Fed has a dual mandate to promote maximum employment and stable prices. It has a third objective as well, i.e. to maintain moderate long-term interest rates in the US. This can be achieved if the other two objectives are attained, and thus, it is effectively redundant.

It is interesting to note that while the objective of price stability has always been there, the FOMC adopted an explicit inflation target of 2% in Jan'12. There is no such target for the unemployment rate. However, the natural rate of unemployment (i.e., the rate of unemployment arising from all sources, except fluctuations in aggregate demand, also called NAIRU), which is evolving, can be considered as the unofficial target unemployment rate for the Fed. According to the [economic letter published by the Federal Reserve Bank of San Francisco](#) in Aug'17, US' NAIRU (which was renamed to the noncyclical rate of unemployment by the Congressional Budget Office in Jul'21) was remarkably stable over time, ranging between 4.5% and 5.5% over the past 100 years. The CBO, as per its [May'22 long-term economic projections](#), expects it to remain at 4.3%-4.4% over the next decade.

If so, a moderation in PCE price index inflation from 6.3% YoY each in the past three months towards 2% and/or the deterioration in the unemployment rate from the five-decade low of 3.6% now towards 4.5% will make the Fed think about a reversal in its monetary tightening. Without any of these two variables crossing the threshold, it is highly unlikely for the Fed to reverse its monetary policy.

As per the [FOMC's projections in Jun'22](#), PCE inflation is expected at 2.6%/2.2% in 4QCY23/4QCY24, down from 5.2% in 4QCY22, and the unemployment rate is anticipated to rise gradually to 3.9%/4.1% in 4QCY23/4QCY24 from 3.7% in 4QCY22. Of course, these projections can change, which will change the rate trajectory as well.

The Fed's strategy since the mid-1990s has been to pre-empt the recessionary forces, leading to quick and pre-emptive rate cuts

This is, however, not so straight forward. The US is facing high inflation for the first time in almost four decades. And a lot has changed during this long period. The Fed's strategy since mid-1990s has been to pre-empt the recessionary forces, leading to quick and pre-emptive rate cuts. The Fed had cut rates a few months before the recession started in CY01, CY07, and CY20 (and in CY98 as well, when fears of a recession in the US didn't materialize). Thus, it would be very interesting to see if the Fed continues with its recent strategy to pre-empt the slowdown and cut rates, or the very high inflation (due to the overheating of the economy) makes it replicate its 1970s and 1980s approach.

Conclusion: The US Fed is unlikely to cut rates before mid-CY23

The US Treasuries market is worried about a recession. The spread between the two-year and 10-year T-bill has already turned negative and other spreads such as the three-year and the 10-year T-bill, NTFS, and FFR-10Y have narrowed sharply in the past few weeks. At the time of a four-decade high inflation, such inversion and fall in the yield curve indicates recession fears.

This is, however, in sharp contrast to the real economic data. Although real GDP is expected to contract for the second consecutive quarter in 2QCY22, most other indicators suggest that the demand remains extremely good in the economy. The unemployment rate is at 50-year low, job vacancies are almost 2x of the total unemployed pool, the housing market is still very hot, and the excess household savings continue to remain very high.

Since the financial markets are forward looking and the economic data is lagging, it is important to pay sufficient attention to the former. Consequently, an analysis of the spread between the three-month and the 10-year bond yield since mid-1960s confirms that the curve has inverted before all US economic recessions. However, a recession in the US began anywhere between five and 16 months after the inversion of the yield curve. If so, it suggests that the US may fall into recession in early CY23. The real economic data, especially the very tight labor market, points to a delay in a recession this time around.

Even if the US enters into a recession in early-CY23, the Fed is unlikely to cut rates before mid-CY23

Considering the four-decade highest inflation in Jun'22, along with the Fed and markets' projections of it averaging 2.6%/2.3% in 4QCY23, the Fed may behave more like the 1970s and 1980s, rather than the past two decades. If so, even if the real economic data worsens substantially over the next six months and the US enters into a recession in early-CY23, the US Fed is unlikely to cut rates before mid-CY23.

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