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Summary

- Despite claims that persistent inversion of the US 10s/2s yield curve in 2022/23 makes a US recession inevitable in 2023, closer inspection of yield curve dynamics since 1980 suggests this is not necessarily so.
- Previous cycles required confirmation in inversion of the 30s/10s yield curve for a recession to materialise, in all but the Covid “Lockdown” recession in 2020, and a period of falling yields, but the 30s/10s curve has not yet inverted definitively.
- Variable lags between 10s/2s curve inversion and recession are also a feature.
- Apart from the slowdown in US house prices, which has characterised approaches to previous recessions, other asset classes do not offer decisive evidence of imminent recession.
- In the US equity market, growth stocks outperformed more often in the Russell 1000® Index in the 12 months before previous recessions (back to 1980), but value has outperformed growth in the Russell 1000 by nearly 22% in the last 12 months.
- Nor is there evidence of the pronounced weakening in small cap stocks relative to large, that characterised the approaches to the GFC and Covid recessions in 2007, and 2020, when financing issues became paramount.

The inflation scare of 2022 and central bank monetary tightening to tame inflation, are now giving way to issues around the inflation-control/growth trade-off. Arguably the biggest question investors are asking at the start of 2023 is: Will there be a recession in 2023? If so, how severe will the recession be?

We look at some forward-looking indicators from the two biggest asset classes, fixed income and equities, to find clues to the answer. We focus in this paper on the US, as the sample, though there may be some cyclical implications for other economies from the US analysis. This is a substantial topic, and we will analyse additional issues in subsequent papers.

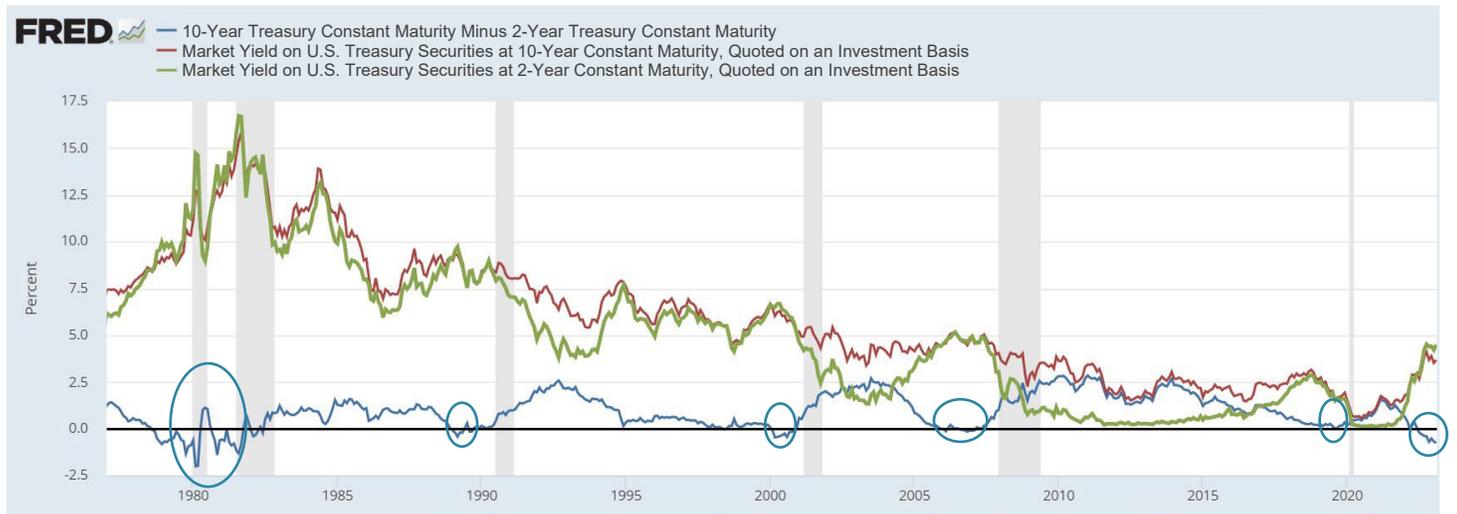
10s/2s yield curve inversion raises questions about recession and recovery

Persistent inversion of the US 10s/2s yield curve (YC), and its strong record in predicting US recessions since the 1970s, raises key questions for both investors and policymakers. Does history show predictable lags between curve inversion and recession, and does YC steepening reliably predict recovery? Is the 10s/2s YC the best leading indicator, or is 30s/10s more reliable? Does the scale of YC inversion have a bearing on the severity of the recession? Does the length of time the curve stays inverted tell us something? Have there been confirmatory signals in other asset classes in advance of recession, and do these signals work symmetrically in signaling economic recovery?

History tells us not all curve inversions and steepenings are born equal...

Analysis of the US YC inversion as a leading indicator of recession often omits mention of variable lags between inversion and US recession. Chart 1 below, shows lags have indeed varied, between four and 24 months, with a mean of about 14 months. So although recessions reliably followed YC inversions, the 10s/2s YC has been less help on timing. Conversely, YC steepening has occurred in advance of GDP recovery, so the curve has always been positively sloped at the time of recovery, but the length of the lag is uncertain.

Chart 1: The US 10s/2s Yield curve and US recessions (bar shaded)



Source: St Louis Federal Reserve data, January 2023.

...and the degree of inversion is not a great guide to the severity of recession

Recessions mostly follow negative and random economic shocks of differing severity, from the oil shocks of the 1970s to the GFC and Covid recessions. This may explain why the degree of inversion is not strongly correlated with the severity of the recession that follows, e.g., the 10s/2s YC inverted only modestly in January 2006, to a maximum of just 16bp, some 24 months before the deep, and long-lasting GFC recession in 2008/09. In contrast, the inversion of September 1980 reached a maximum of 117bp and was followed by a deep recession 10 months later.

But all recent recessions were preceded by declining Treasury yields...

However, Chart 1 also shows that all recessions since 1990 followed a bullish phase of declining 10-year yields, as markets anticipated Fed easing, and also followed a bear¹ flattening and inversion of the curve. Also note the YC steepened early in all recessions, signaling an economic recovery. Thus, in the so-called reflation trade in 2020/21, 10-year yields bottomed out in July 2020, almost 20 months before the Fed first raised rates, in March 2022.

...even if the focus was on the “wrong” yield curve

Furthermore, the long end YC has tended to lead the front end into inversions and steepenings, even if the market focus has generally been on the front end 10s/2s, or even 10s/3 month YC (including the Fed’s). This can be seen in Chart 2 below, where the Russell US indices for the long end versus medium maturities, and mediums versus shorts are shown. It is true the 30s/10s YC did not invert before the Covid recession in Q2 2020, but it might be argued this was not a genuine recession, since it was imposed by Federal and State lockdowns, and not a spontaneous collapse, or contraction, in economic activity. Chart 2 also shows there is not yet conclusive signaling from an inversion of the long end versus medium maturities in 2022/23, despite the protracted inversion at the front end of the YC.

Chart 2: FTSE Russell 20yr+ yields minus 7–10yr, and 7–10yr yields minus 1–3yr; long end tends to lead front end



Source: FTSE Russell data, January 2023.

Economic signals from the long end of the curve may also be more reliable

Indeed, economic signals from the long end YC may be more genuine, and less distorted than the 10s/2s YC, since volatility in market expectations about Fed rate policy drives large swings in 2-year yields and the 10s/2s YC (which far exceed movements in longs vs mediums). So 10s/2s

¹ In a bear flattening, yields rise more in those of 2 years than 10 years, and in a bear inversion, 2-year yields rise above 10-year yields. A bull flattening of the curve is one in which yields fall more in 10yrs than 2yrs if the curve is still positively sloped. In a bull inversion, 10-year yields fall below 2-year yields.

steepening pre-recovery is dominated by the Fed easing short rates, and its impact in reducing 2-year yields, e.g. when the Fed first adopted zero rate policy in 2009, the 10s/2s YC quickly rebounded from an inversion to a gradient of 250bp by year-end.

History suggests confirmation from long end inversion required for recession

Empirical evidence provided by the YC since the mid-1970s is shown in Chart 3 below. Although the 30s/10s YC gave false signals of recession when inverting in the mid-1980s, these have been rare since, whereas the 10s/2s YC inverted twice before both the 2001 recession and the GFC recession in 2008. So there is some empirical evidence of the 10s/2s “over-predicting” recession, which would support the view that the economic signaling from the long end may be more genuine.

Chart 3: US 30s/10s YC and 10s/2s; 30s/10s signal confirmation is key



Source: St. Louis Fed data, January 2023.

Some, but not all, multi-asset class indicators now point towards recession

A comparison of current indicators, from different asset classes, with previous recessions is shown in Table 1 on the next page. There are some striking similarities in fixed income, notably YC inversions, evidence of declining yields since the initial bear inversion, and falling inflation expectations. Longer dated yields have fallen since the October 2022 peak, as markets anticipate a Fed policy pivot towards easing later in 2023 (much like the 2018/19 transition to lower yields). There is an exception in credit; spreads tightened in Q4 2022 and credit default rates also remained historically low. This exception could well be due to the extremely easy liquidity of recent years, which led to cash accumulating on corporate balance sheets, and refinancing that kept the maturity wall a year or two away. Looking at real estate, the sharp slowdown in US house price inflation is another similarity, as Table 1 shows.

Equity market recession signaling is far from clear-cut

However, turning to the US equity market, current signaling from both style performance (value vs growth) and size (large cap stocks vs small cap stocks) is far from clear-cut about an imminent

recession. Table 1 shows growth has outperformed more often than value in the Russell 1000 (R1000) index in the 12 months before previous recessions (going back to 1980), but value has outperformed growth by nearly 22% in the last 12 months.²

Deeper recessions may raise questions about the survival of some value stocks?

The potential depth of a recession may also be relevant. In the 12 months before the Volcker recession of 1980, when US prime rates reached 20% as the Fed sought to control double-digit inflation rates, growth still outperformed value in the Russell 1000 and Russell 2000® indices. This may reflect investor concern about value, or lower growth stocks, being at risk of not surviving in a deeper recession, like 1980. It also casts doubt on the notion that higher discount rates on future cash flows from Fed tightening automatically cause growth stocks to underperform value; the conclusion often drawn from the performance in 2022.

Table 1: Checklist of market indicators for recessions since late 1970s

Recession dates (NBER)	10s/2s YC inversion pre-recession	30s/10s confirms 10s/2s signaling	10yr yields start to fall, pre-recession	10s/2s curve gradient pre-recovery	Credit spreads widen & tighten pre-recovery	House prices slow pre-recession, rally pre-recovery	Inflation b/evens fell pre-recession	Growth outperformed value in 12 months pre-recession (Russell 1000)
Jan–Jul 1980	Yes, 17 months prior	Yes	No, not until two months into recession	Yes, steepened through recession	Yes	n/a	Yes	Yes, by 3.4%
Jul 1981–Nov 1982	Yes, 10 months prior	Yes	No, not until two months into recession	Yes, steepened through recession	Yes	n/a	Yes	No, by 2.2%
Jul 1990–Mar 1991	Yes, 18 months prior	Yes	Yes, 22 months prior to recession	Yes, steepened through recession	Yes	Yes, prices slowed from +7% yy to +2% on recession	Yes	Yes, by 15.8%
Mar 2001 – Nov 2001	Yes, 11 months prior	Yes	Yes, 14 months prior	Yes, steepened through recession	Yes	Yes, modest slowing from +9% yy to +7% on recession	Yes	No, by 47.8%
Dec. 2007–Jun 2009	Yes, 24 months prior	Yes	Yes, seven months prior	Yes, steepened through recession	Yes	Yes, prices crashed from +14% at peak to -5% on recession	Yes	Yes, by 9.5%
Jan 2020–May 2020	Yes, four months prior	No	Yes, 15 months prior	Yes, steepened through recession	Yes	Yes, but only briefly from +6% to +3%, and bounced pre-recession	Yes	Yes, by 9.8%
Q1 2023	Yes, 10s/2s has inverted for six months	Not conclusive	10yr yields falling for four months	n/a	No, spreads below H1, 2022 levels	Yes, sharp slowdown since April 2022 from +20% to +9%	Yes	No, value outperformed by 21.6%

Source: St Louis Fed/FTSE Russell/Refinitiv data on yield curves, credit spreads, breakevens. Case Shiller on house prices.

² FTSE Russell data to January 24, 2023.

Fixed income has offered stronger US pre-recession signals than equities...

Drilling down further into the performance of the Russell 1000 (R1000) and 2000 (R2000) indices, shown in Table 2 below, it is much harder to find strong empirical regularities in either the approach to recession, or actual recessions, than in yield curve moves in fixed income. This may be because fixed income is a more homogenous asset class (at least government bonds are). But we note growth has often outperformed in actual recessions apart from those, which followed, or accompanied the bursting of extreme valuation “bubbles”, like the Tech boom in 1999/2000. The recent outperformance of Russell 1000 and 2000 value in 2021–2022 may also reflect the bursting of the extreme valuation levels, and index concentration, reached in growth stocks in 2021. And Russell 1000 and 2000 growth still outperformed value in the 2020 recession, which may be due to fears about the survival potential of some “value” sectors during Covid lockdowns, e.g., airlines, energy sector, banks.

...but value, and smaller cap stocks have outperformed in economic recoveries

Table 2 shows more empirical regularities during recoveries. Smaller caps (Russell 2000) outperformed large (Russell 1000) in all economic recoveries (defined here as the 12 months after a recession) since 1980, and both Russell 1000 and 2000 value have generally outperformed in economic recoveries. One possible explanation for the outperformance by smaller cap stocks in recoveries is the easing of fears about their access to bank finance and capital raising, which may depress their performance during recession. Similarly, if fear and uncertainty depress the stock prices of value stocks in recessions, driving them to low valuations relative to fundamentals, this may increase the probability of outperformance during recoveries, as investor risk appetite recovers.

Table 2: Performance of the Russell 1000 and Russell 2000 indices in economic cycles since 1980

Key: R1 = Russell 1000, R2 = Russell 2000

Recession dates (NBER)	Performance in 12 months before recession			Performance during recession			Performance in 12 months after recession		
	Small caps- Large caps performance (R2–R1)	R1 Value minus Growth	R2 Value minus Growth	Small caps- Large caps performance (R2–R1)	R1 Value minus Growth	R2 Value minus Growth	Small caps- Large caps performance (R2–R1)	R1 Value minus Growth	R2 Value minus Growth
Jan–July 1980	+20.7%	-3.4%	-15.5%	+0.9%	-3.6%	-5.4%	+16.9%	+3.7%	+0.5%
July 1981–Nov 1982	+27.7%	+2.2%	-5.5%	-1.2%	-1.3%	+17.3%	+8.3%	+12.7%	+15.1%
July 1990–March 1991	-11.4%	-15.8%	-11.3%	-5.1%	-5.7%	-2.8%	+8.3%	-2.5%	+4.5%
March–Nov 2001	-7.1%	+47.8%	+62.7%	+5.7%	+4.7%	+13.1%	+5.5%	+13.1%	+18.6%
Dec 2007–June 2009	-9.0%	-9.5%	-14.3%	+3.2%	-7.7%	-2.0%	+6.2%	+3.3%	+7.1%
Jan–May 2020	-5.9%	-9.8%	-6.1%	-11.0%	-20.9%	-19.0%	+21.9%	+4.5%	+29.2%
2022/23	-1.3%	+21.6%	+11.9%						

Source: FTSE Russell data.

Overall, US recession signaling is ambiguous despite the 10s/2s inversion...

In summary, and as noted earlier, the strongest US recession signaling in 2022/23 is in fixed income, in persistent inversion in the front end of the US yield curve (10s versus 2s), and declining yields, which occurred in advance of all previous recessions since the late-1970s. Despite the attention the inverted curve has received, it does not guarantee a recession, as the false signaling in advance of the 2001 and 2008 recessions shows, and the inversion is not yet confirmed at the long end of the US Treasury curve, unlike previous recessions. So reports of the death of the post-Covid recovery may be exaggerated?

Evidence from the equity and credit markets is far from clear-cut. Looking at the Russell 1000 and 2000 indices, growth has not outperformed value in the last 12 months, which it did in the approach to most previous US recessions since 1980. Small cap versus large cap performance is also inconclusive in the last 12 months. Smaller cap stocks have given strong economic signals during previous cycles, and shown consistent outperformance during recoveries, as risk appetite recovers, and these stocks recover from undervalued levels. But there is little sign to date of the pronounced weakening in small cap stocks relative to large, that characterised the approaches to the GFC and Covid recessions in 2007, and 2020, when financing issues became paramount. This is confirmed in credit spreads, which have not widened as they did during the approach to those recessions, and default rates, which remain low.

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