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Liquid Insight

US rates curve dynamics and USD

15 March 2023

Rates and Currencies Research
Global

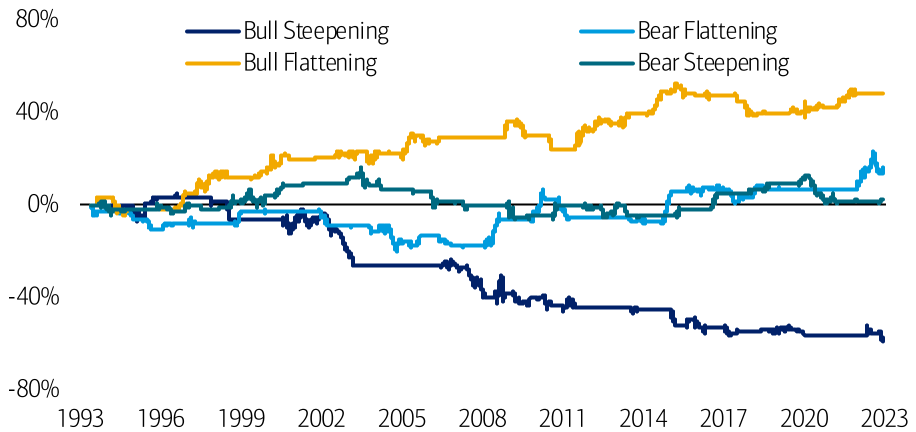
Key takeaways

- We examine the historical relationship between US Treasury curve dynamics and USD.
- Among the four curve regimes, USD historically saw most gains under bull-flattening and most losses under bull-steepening.
- In the current cycle, we expect a weaker USD amid transition from bear-flattening to bull-steepening over medium term.

By Vadim Iaralov, Howard Du, and Bruno Braizinha

Chart of the Day: Cumulative DXY returns under different curve dynamics since 1993

USD gained the most under bull-flattening regime, followed by 5s30s bear-flattening; USD weakened the most under bull-steepening dynamic



USD to fall on eventual Treasury bull-steepening dynamic

Earlier this month, the 2s10s curve for US Treasury reached the most-inverted level over the past 40 years, and the 5s30s curve was also at a historically inverted level. The US Treasury curve has been under the bear-flattening dynamic for the majority of the past year, as the Fed has been aggressively hiking rates. A bear-flattening regime historically has been more bullish than bearish for USD (Chart of the Day). But looking ahead, as we expect the curve dynamic to shift to a bull-steepening regime over the medium term, it would likely be accompanied by further USD sell-off, in our view. USD historically experienced the most strength under a bull-flattening and the most weakness under a bull-steepening regime, in particular vs JPY and EUR (Exhibit 7).

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Four regimes of US Treasury curve dynamic

There are four distinct modes for the dynamic of the Treasury yield curve, and they generally map well to different stages of the US economic cycle (Exhibit 1). Normally one sees the following sequencing over the cycle (see [Postcard from Canada & Mexico](#)):

Bear steepening where the backend leads the underperformance on the yield curve. This dynamic tends to dominate in the early expnsion phase of the cycle. Macro fundamentals improve out of the recession and push backend yield higher, but inflation lags growth rebound and the Fed stays credibly on hold, anchoring frontend yields.

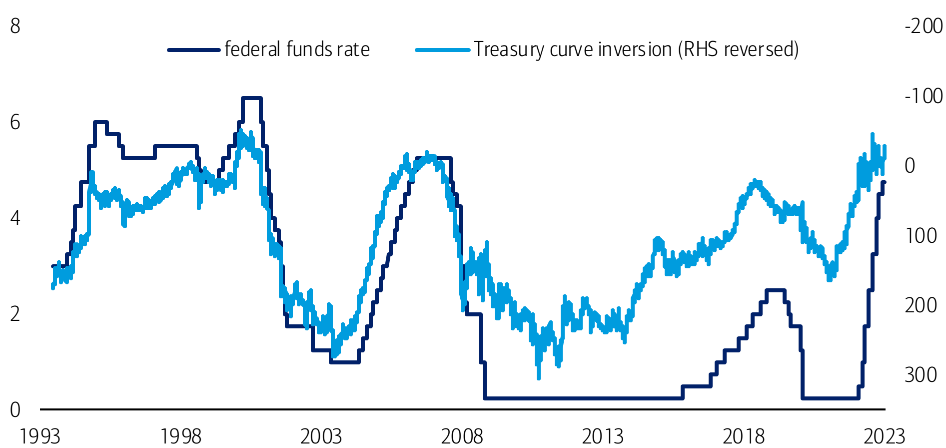
Bear flattening where the frontend leads the underperformance on the yield curve. This dynamic tends to dominate in the mid-expansion phase of the cycle. As inflation starts to react to a pickup in growth in the early cycle, the Fed starts to lose credibility on its on-hold stance, first in the belly of the curve leading to the 5s30s curve to bear-flatten, and closer to the Fed liftoff at the frontend, leading to the 2s10s curve to bear-flatten.

Bull flattening where the backend leads the outperformance on the yield curve. In the transition between the mid- and late-expansion phases of the cycle, the Fed overshoots the neutral rate, the yield curve inverts, and financial conditions tighten materially. The backend of the curve starts to reflect those tighter financial conditions and expectations for deteriorating fundamentals ahead and, in the broader flattening dynamic, one starts to see a higher frequency of bull-flattening moves.

Bull steepening where the frontend leads the outperformance on the yield curve. As the economic cycle enters a decisive slowdown, the Fed reacts by cutting frontend rates and the curve bull-steepens.

The Fed monetary policy largely determines the frontend of the curve and is the major force between bull-steepening and bear-flattening moves, while risk sentiment and the broader dynamic of demand generally drive price actions at the backend of the curve and are the major forces behind backend-led moves (bear-steepening and bull-flattening).

Exhibit 1: Treasury curve typically inverts amid Fed hiking cycle and steepens amid Fed cutting cycle
Federal funds rate vs Treasury curve inversion



Source: BofA Global Research, Bloomberg. We used the daily 2y10y Treasury yield spread from 1993 to 9/28/2008, and the 5y30y Treasury yield spread from 9/28/2008 onward to illustrate Treasury curve inversion.

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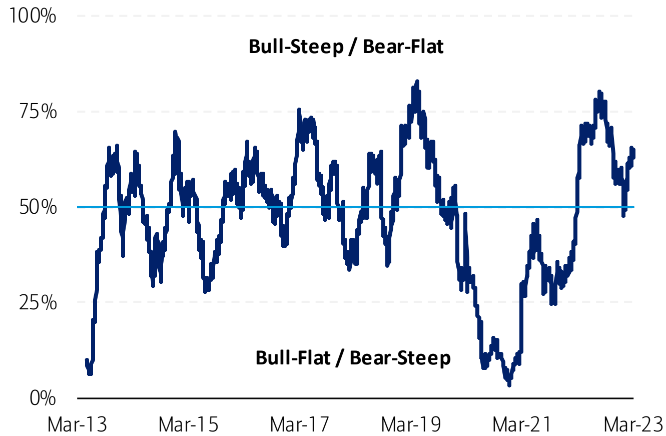
Transitioning from bear-flatten to bull-steepen for current cycle

The current cycle saw the transition from the early to the mid-expansion phase of the cycle by 2Q21 – our index for the 5s30s curve directionality (see Exhibit 2) shows the un-anchoring of the 5y part of curve in 2Q21 (and prior to that in the 2013 taper tantrum), with the 5s30s curve entering a bear-flattening dynamic. In line with the above sequencing, the 2y part of the curve only anchored in 4Q21 (see Exhibit 3), closer to the Fed liftoff.

Exhibit 2: 5s30s curve directionality
Un-anchoring of the belly in 2Q21 marks transition to mid-cycle dynamic



Source: BofA Global Research

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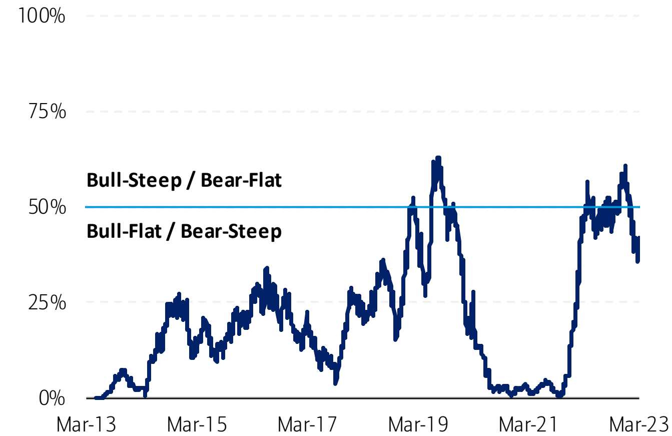
Exhibit 3: 2s10s curve directionality
Bear-flattening pressures in 2s10s curve only appear closer to Fed liftoff



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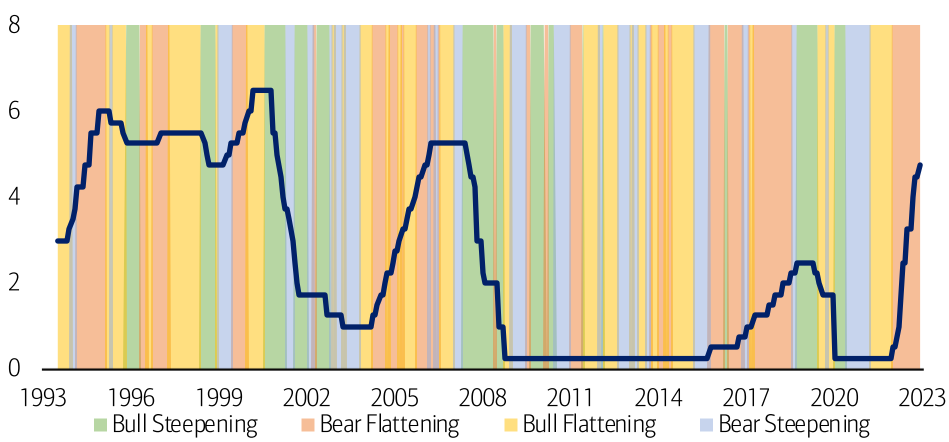
The transition from the mid- to the late-expansion phase of the cycle happened in early 3Q22, as the Fed was priced to overshoot the neutral and the yield curve inverted decisively. The curve dynamic started to exhibit a slightly higher frequency of bull-flattening moves (particularly in late-2022). In our view, the potential for the curve to express a bull-flattening dynamic in the current cycle is capped by a higher inflation context that tends to create anchoring pressures at the backend of the curve.

In the current cycle, therefore, the US Treasury curve has been in a dominant bear-flattening dynamic since 2Q21 (see Exhibit 4). With growth likely to enter negative territory by 3Q23 (see FX Viewpoint: 16 February 2023), we expect the curve dynamic to start exhibiting bull-steepening pressures over the medium term (see Postcard from London, Scandinavia & Peru: 06 March 2023). Price action over the past week suggests the transition to a bull-steepening regime may already be underway. Under a typical cycle, the curve would first transition from bear-flattening to bull-flattening, and then to bull-steepening. Historically since 1993, the relative probability of transitioning from bear-flattening to bull-flattening has been 55% and, alternatively, from bear-flattening to bull-steepening has been 27% (Exhibit 5). However, as we noted above, a backdrop of high inflation likely limits the frequency of bull-flattening moves, and we find it likely that we see a higher transition probability into a bull-steepening dynamic in the current cycle than it has historically been the case.

Exhibit 4: 2s10s Treasury curve bear flattens on Fed rate hikes and bull steepens on Fed rate cuts
Federal funds rate vs Treasury curve dynamic



Source: BofA Global Research, Bloomberg

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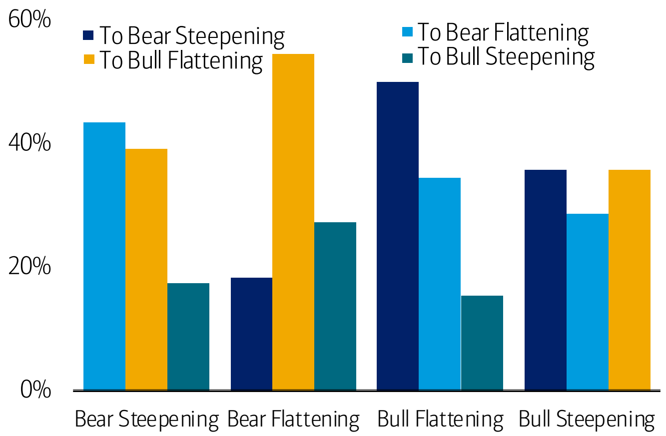
Exhibit 5: Bear flattening tends to be followed by bull flattening but we expect a transition to bull steepening for this cycle

Historical monthly transition probability, conditional on transitioning to a different regime



Source: BofA Global Research, Bloomberg

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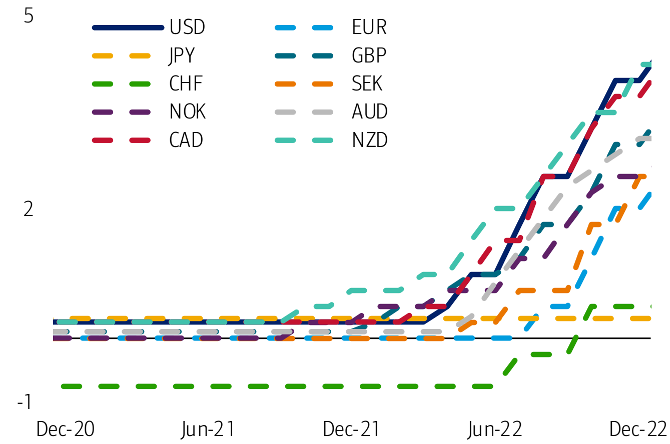
Exhibit 6: The Fed was the most hawkish G10 central bank in this cycle

G10 central bank rate hikes 2021-22



Source: BofA Global Research, Bloomberg

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USD to fall should bull-steepening regime materialize; upside risk if bull-flatten

USD historically has gained the most under a bull-flattening regime and depreciated the most under a bull-steepening one since 1993 (Chart of the Day). Under bull-flattening regimes, the demand for the backend of the Treasury curve increases on the back of rising recession concerns, while the front-end yields stay anchored at a higher level, which means that financial conditions remain tight. This typically leads to risk-off shocks for the market and has generally benefitted USD demand.

On the other hand, investors position for a more accommodative Fed through a bull-steepening dynamic for the curve, and USD sells off as a result. The bear-flattening regime over the past year has also been bullish for USD but to a lesser extent than bull-flattening in the past. The outsized USD rally from 2021 to 2022 likely had less to do with US Treasury bear-flattening but more so driven by the Fed's more aggressive tightening monetary policy stance vs its peers (Exhibit 6), in our view.

Our current FX forecast expects more room to the downside for USD by year-end 2023 (see World at a Glance: 22 February 2023), in line with the rates view that Treasury curve would likely shift to a bull-steepening regime next. USD historically has sold off under a bull-steepening curve dynamic, particularly vs EUR and JPY (Exhibit 7).

Exhibit 7: Under Bull Steepening (Bull Flattening), USD tends to see the most loss (gain) vs JPY and EUR

Cumulative returns (pp) during different curve regimes from 1993 to 2023

	DXY	USD/EUR	USD/JPY	USD/GBP	USD/AUD	USD/CAD	EUR/AUD	JPY/AUD
Bull Steepening	-57.0	-63.8	-100.4	-2.5	-22.4	-22.7	44.0	77.7
Bear Flattening	15.6	10.9	41.8	24.2	1.6	1.5	-10.5	-40.6
Bull Flattening	48.4	49.2	64.2	22.8	58.8	33.1	13.2	-5.1
Bear Steepening	2.5	10.8	20.8	-24.9	-36.1	-7.1	-49.3	-56.5

Source: BofA Global Research, Bloomberg

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Uncertainty for Treasury curve dynamic means FX volatility to remain high

While our baseline view is for weaker USD and US Treasury curve to bull steepen over medium term, the risk of entering a bull-flattening regime should not be overlooked. The Fed has been communicating a "higher for longer" policy rate guidance. Should inflation remain sticky amid growth downturn later in 2023, the stagflationary backdrop would likely cause systemic shock for the market and for USD to rally.

Taking the US dollar-Treasury curve historical relationship (Exhibit 7) together with the curve-transition probability matrix (Exhibit 5), the subsequent curve regimes would likely be either the most bullish for USD (bull-flattening) or the most bearish for USD (bull-steepening).

The elevated uncertainty for the Treasury curve regime should be reflected in FX implied volatility, in our view. The current level of implied volatility in FX market is likely underpricing the risk of a hard-landing and we like to own 6m AUD/JPY vol to hedge this scenario (see FX Viewpoint: 16 February 2023).

Notable Rates and FX Research

- **Global Rates, FX & EM Year Ahead 2023 – Year Ahead 2023: Pivot ≠ Peak**, 20 Nov 2022
- No easy way down, **Global FX Weekly**, 10 Mar 2023
- Data'll do it, **Global Rates Weekly**, 10 Mar 2023
- Back to USD selling..., **Liquid Cross Border Flows**, 6 Mar 2023

Rates, FX & EM trades for 2023

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Global FX Weekly: No easy way down 10 March 2023

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