



November 1, 2022

A retrospective on FOMC policy pivots: Last (hike) to first (cut)

By Warren Lovely & Taylor Schleich

Few believe the FOMC's November 2nd rate hike to be the last move in what is already an extraordinary monetary policy tightening cycle. Nevertheless, with Powell & Co. driving fed funds further into restrictive territory (and the U.S. economy expected to lose considerable altitude), many are searching for clues/signals regarding the all-important and much-anticipated monetary policy pause/pivot.

In addition to studying the tone and slant of the Chairman's every word, we offer this *In Focus* report, which seeks to identify what if any parallels can be drawn from the empirical performance in rates, equity and credit markets to the conditions prevailing today. Specifically, we compare and contrast the current (and ongoing) FOMC tightening cycle with those that came before, keying on five distinct tightening episodes from 1988-89 to 2016-18. We're particularly interested in the period spanning the final few FOMC rate hikes through to the subsequent policy pivot to lower rates, the intervening period of policy rate stability not typically lasting all that long (less than 8 months on average).

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By no means are we attempting to shoehorn the current tightening cycle into some average template. That would be folly, since current economic conditions (most notably inflation) differ so fundamentally from what prevailed in the 1980s, 1990s, 2000s and 2010s. There's no question that the FOMC policy reaction function since March of this year looks and feels a fair bit different than tightening cycles gone by. That in turn suggests that the historical behaviour of financial markets evident at the conclusion of past policy tightening cycles may not be as informative/reliable. This is a risk that we openly accept/acknowledge. Nonetheless, judging from ongoing client engagement, many are seeking to understand how markets have reacted to prior policy pauses and pivots. To be clear, we don't require readers to embrace our specific FOMC call. Rather, it's our hope that the empirical analysis rendered here will be of some value as we approach (and ultimately arrive at) the Fed's policy rate terminus. When and where that happens remains a subject of intense debate.

Of policy postures, pauses & pivots: An examination of past FOMC behavior & market reaction

Table: Assessing the length & magnitude of FOMC tightening cycles, including how long until pivot to lower rates?

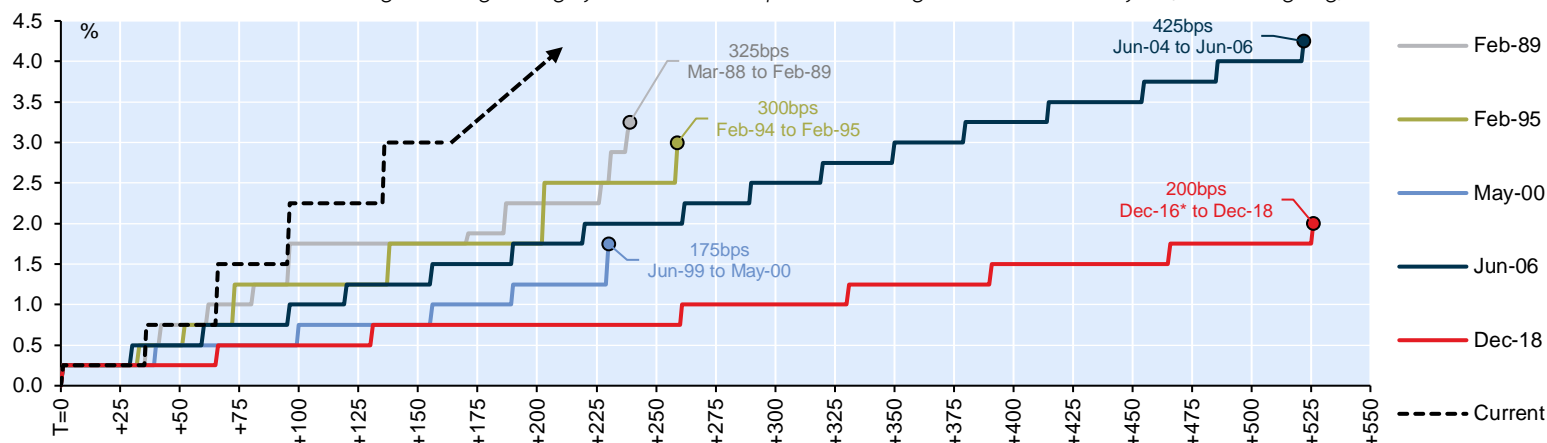
Details & timing of FOMC tightening cycles: 5 historical episodes starting 1988-89 to current cycle (which is ongoing)

FOMC tightening cycles since 1988-89, including existing/ongoing cycle																
FOMC Chairman	Dating		Length		FF upper		Total tightening, including last hike					Delay to first cut		First cut		
	Start	End	Wk days	Months	Start	End	Change	Pace	Scale	Hikes	Non-25	Last	Wk days	Months	Start	Cut
Start of cycle	Day	Day	#	#	%	%	bps	bps/mnth	% of start	#	#	bps	#	#	Day	bps
Greenspan	29-Mar-88	24-Feb-89	239	10.9	6.50	9.75	325	30	50%	12	3	12	71	3.3	5-Jun-89	-12
Greenspan	4-Feb-94	1-Feb-95	259	11.9	3.00	6.00	300	25	100%	7	4	50	111	5.1	6-Jul-95	-25
Greenspan	30-Jun-99	16-May-00	230	10.6	4.75	6.50	175	17	37%	6	1	50	166	7.6	3-Jan-01	-50
Greenspan*	30-Jun-04	29-Jun-06	522	24.0	1.00	5.25	425	18	425%	17	0	25	318	14.7	18-Sep-07	-50
Yellen*	14-Dec-16	19-Dec-18	526	24.2	0.50	2.50	200	8	400%	8	0	25	160	7.4	31-Jul-19	-25
Avg of 5	Avg of prior 5 cycles		355	16.3	3.15	6.00	285	19	202%	10	2	32	165	7.6	-	-32
Powell	16-Mar-22	31-Oct-22	163	7.6	0.25	3.25	300	40	1200%	5	4	75	TBD	TBD	TBD	TBD

Source: NBF, Bloomberg, FRB

Chart 1: Visualizing past & current FOMC tightening cycles

Cumulative increase in fed funds during FOMC tightening cycles: 5 historical episodes starting 1988-89 to current cycle (which is ongoing)

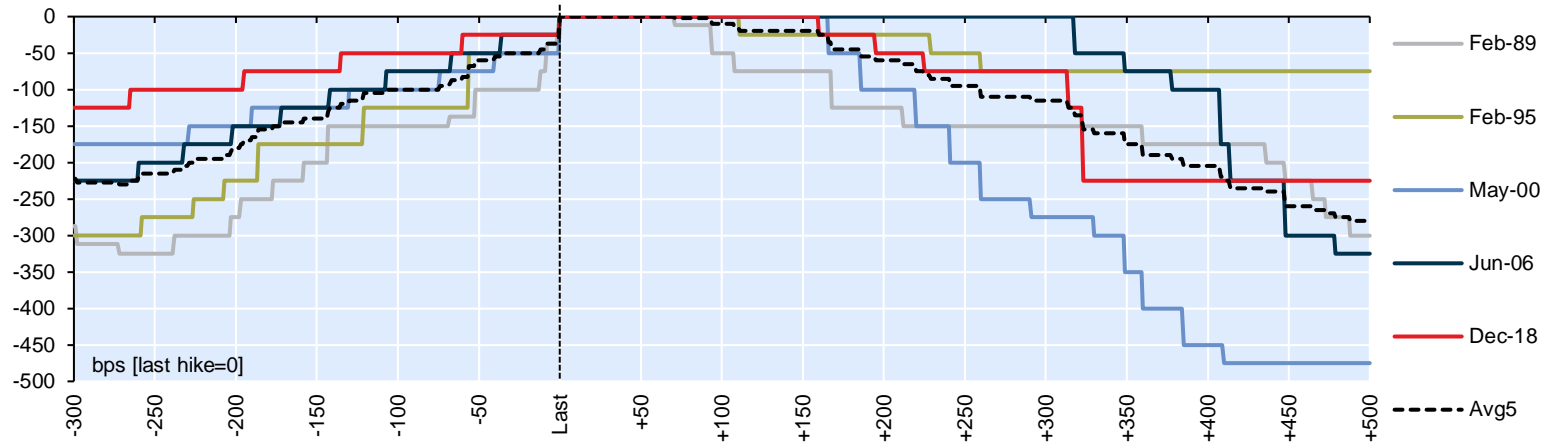


Source: NBF, Bloomberg, FRB

This Fed hiking cycle has seen the policy rate climb at the fastest clip in over 30 years. Though the pace of tightening will soon be dialed down (maybe Dec?), cumulative rate hikes will easily dwarf all other recent episodes. Consider the only other experience where rates rose comparably was in the mid-2000s. Then, it took 2 years to get 425 bps. This cycle, we're set to match that in 9 months!

Chart 2: Charting the path from last FOMC hike to first cut... we typically don't have to wait too long

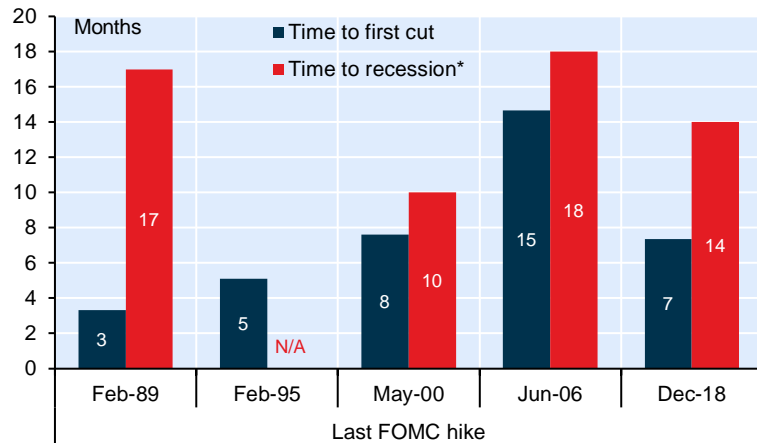
Evolution of fed funds going into/coming out of last FOMC rate hike



Source: NBF, Bloomberg, FRB

Chart 3: How long has the Fed (and economy) held on?

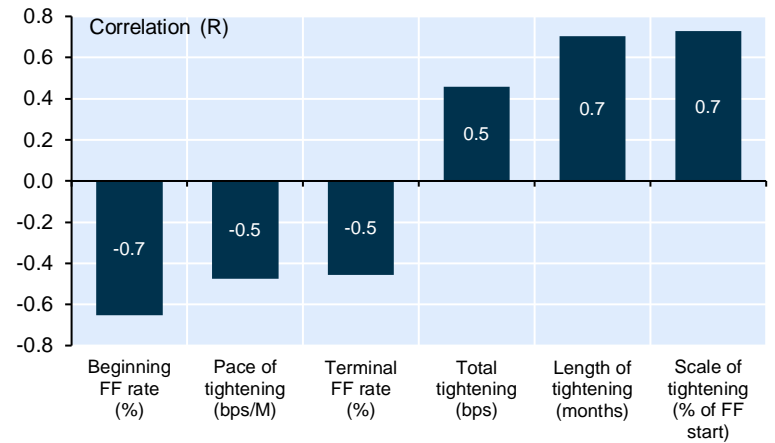
Delay from last FOMC rate hike to (i) first rate cut & (ii) economic recession



Source: NBF, Bloomberg, FRB, NBER

Chart 4: What influences delay from last hike to first cut?

Correlation in delay from last FOMC hike to first cut & select tightening metrics

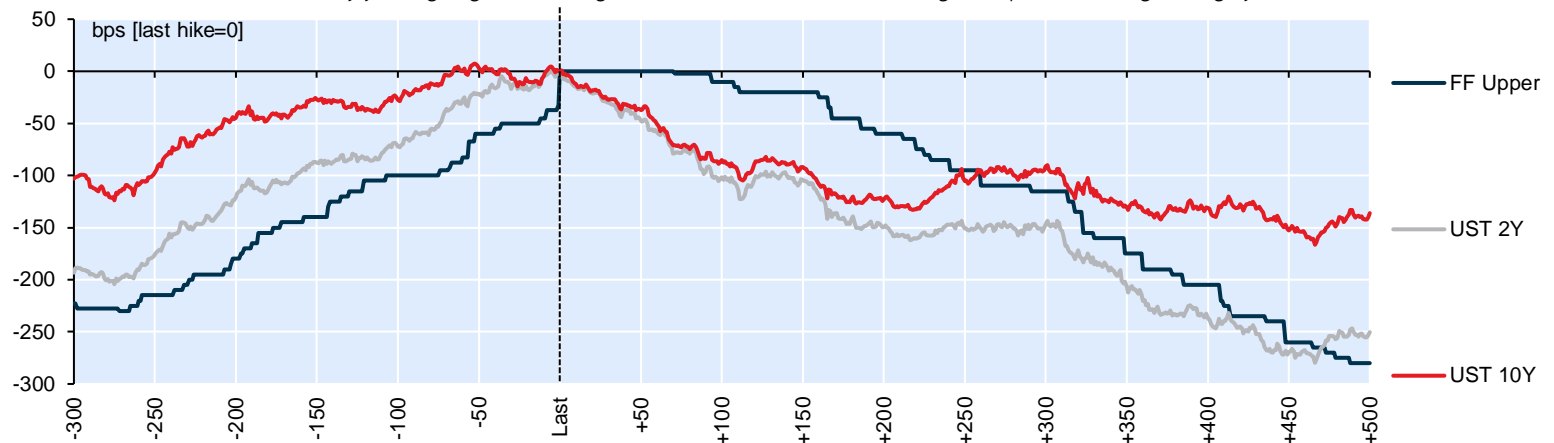


Source: NBF, Bloomberg, FRB

The Fed hasn't been able to avoid cuts for long after it terminates its hiking cycle. The initial rate decrease came within a year of the last hike in all but one episode, the average hold period lasting just 7-8 months. Intuitively, aggressive hiking cycles are correlated with shorter hold periods, while longer, more gradual hiking cycles have been associated with longer hold periods. We'll go out on a limb and classify this one as of the shorter and more aggressive variety. Combined with rates terminating well above neutral, this helps explain why we don't see the Fed holding much longer than the 7-month empirical tendency in 2023. Historically, cuts haven't been trivial either. In the 300-day lead-up to the last hike, there's been an average rate rise of 230 bps. 300 days after the last hike, half has been unwound. And despite the Fed quickly cutting in the past, recessions have been hard to avoid. We hold a sliver of hope that one can be avoided, but it's clear where the balance of risk lies.

Chart 5: Historically, Treasuries reluctant to rally until Fed actually delivers final policy rate hike

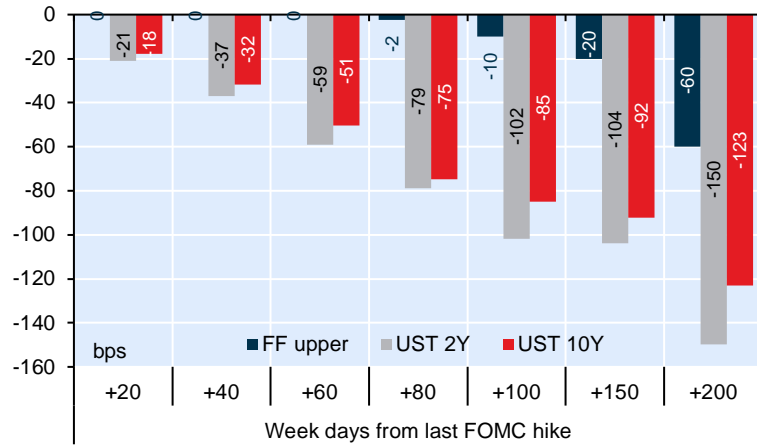
Evolution of fed funds & US Treasury yields going into/coming out of last FOMC rate hike: Average of 5 prior FOMC tightening cycles



Source: NBF, Bloomberg, FRB

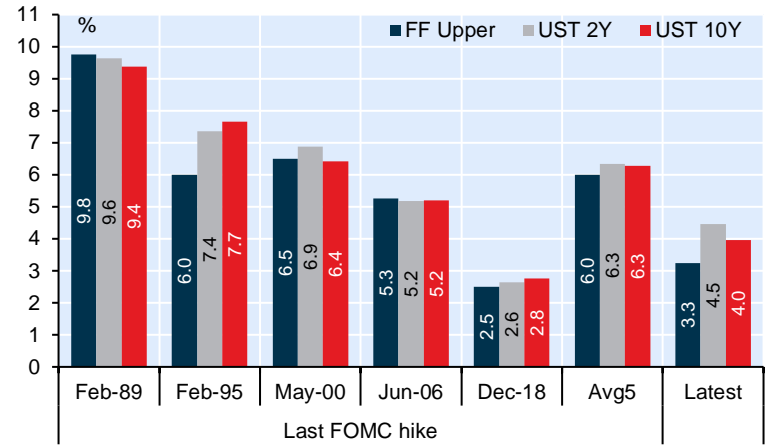
It's not the first cut when yields start to rally. No, on average, a broad-based rate rally has taken hold as soon as the last hike was notched. 1 basis point per day is the rough rule of thumb for 2Y & 10Y USTs at first, with more definitive steepening taking hold once the Fed meaningfully shifts to easing. We see this cycle's terminal rate drawing near, so duration increasingly looks attractive to us.

Chart 6: For US 2s, it's been 20 in 20, 40 in 40, 60 in 60 & so on
Avg chg in fed funds & UST yields after final FOMC hike



Source: NBF, Bloomberg, FRB

Chart 7: Level of interest rates has varied considerably
Fed funds & closing UST yields on day of final FOMC hike

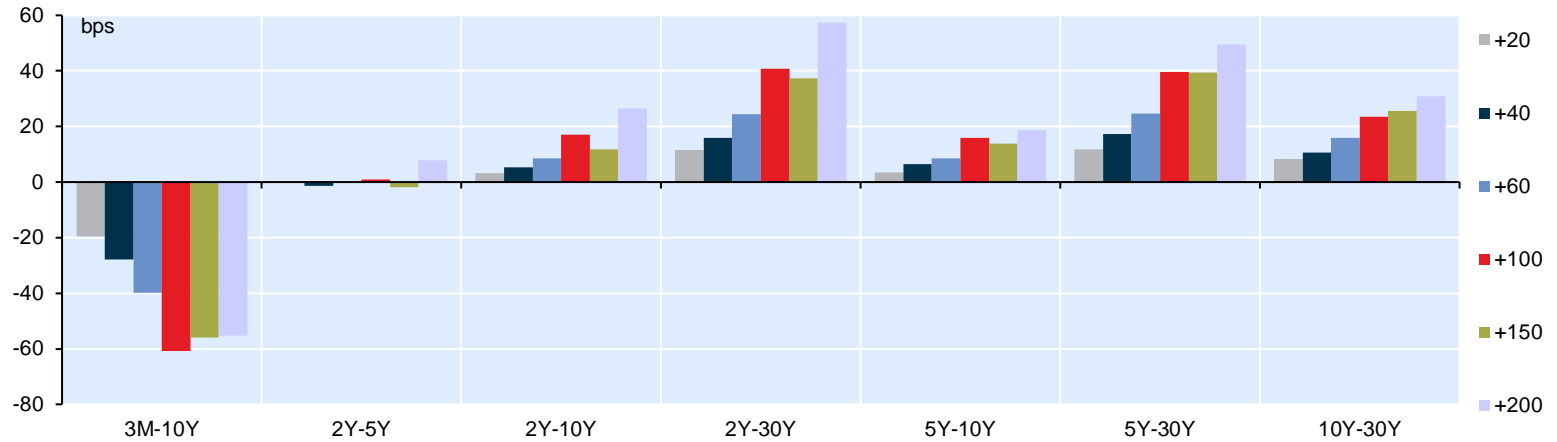


Source: NBF, Bloomberg, FRB

In the weeks following the final Fed hike, the yield curve tends to shift down parallelly as markets price eventual easing and a weaker growth outlook. Once the Fed actually begins crystalizing cut expectations, 2Y outperformance takes hold. Of course, yield levels vary greatly over past cycles (we're still historically low) but in all cases, the curve has been very flat (<30 bps) after the final hike.

Chart 8: Visualizing the end-of-hiking cycle steepener

Avg change in UST yield curves in days after final FOMC hike

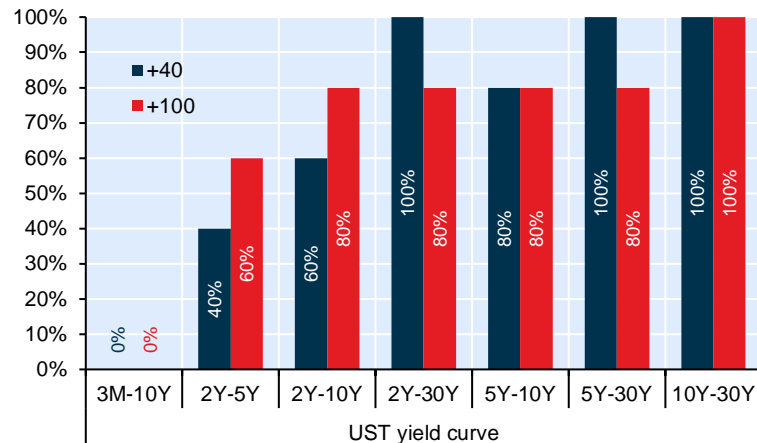


Source: NBF, Bloomberg, FRB

Steepening isn't unique to 2s-10s. It's evident across the bond curve (excluding 2Y-5Y) and only intensifies with time. Today's deep inversions creates scope for the overall curve to act in accordance with the trend; steepening taking hold in coming months. Bucking the trend is the 3M-10Y, which flattens further after the last hike. But as soon as cuts actually begin, this forcefully steepens too.

Chart 9: How successful have steepeners been in past?

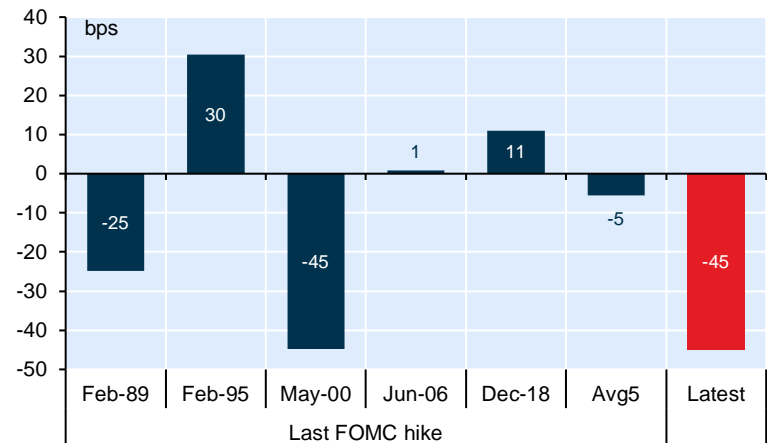
Avg success rate of UST yield curve steepeners in days after last FOMC hike



Source: NBF, Bloomberg, FRB

Chart 10: For 2s10s (& other yield curves), location important

UST 2Y-10Y yield curve on day of final FOMC hike

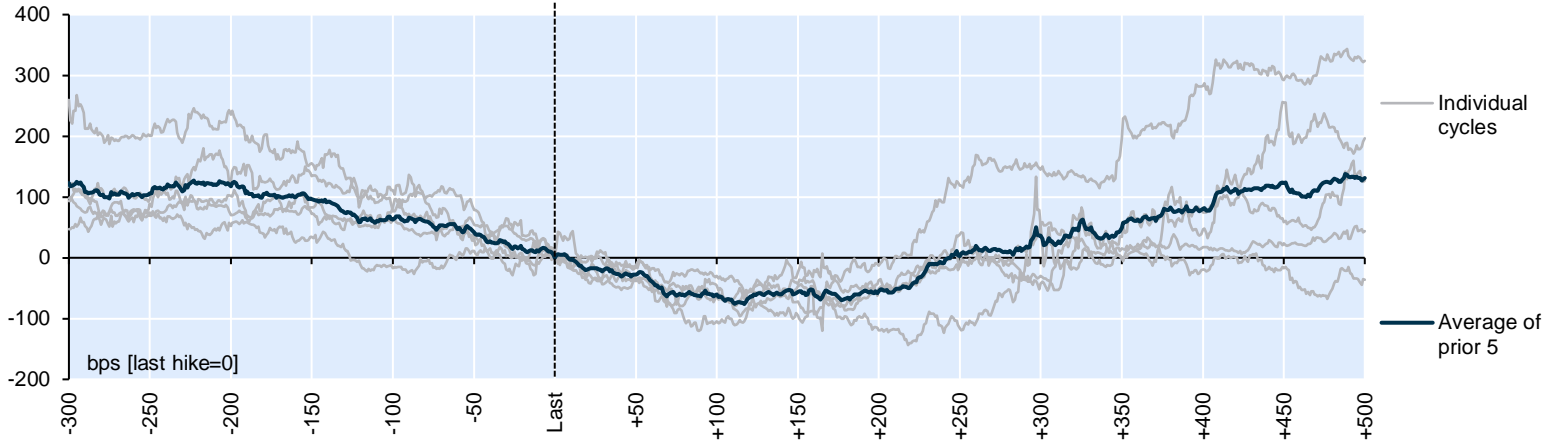


Source: NBF, Bloomberg, FRB

It's true averages only tell part of the story and are susceptible to outliers. Nonetheless, steepening 'success rates' are quite high and, in some cases, as high as 100%. Moreover, the scope for steepening is dependent on the starting point. This also lends conviction to our call for curve steepening in 2023 as the curve today is as flat/inverted as it has ever been at the end of Fed hiking cycles.

Chart 11: A look at past behaviour of important 3M-10Y yield curve

Evolution of UST 3M-10Y yield curve going into/coming out of last FOMC rate hike

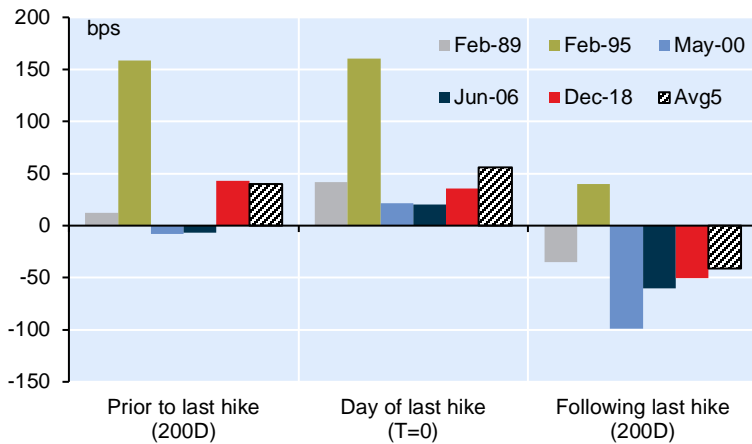


Source: NBF, Bloomberg, FRB

Perhaps no curve gets more attention than 3M-10Y given its ability to 'forecast' recessions. How has this curve typically behaved in/around the end of tightening cycles? Unsurprisingly, it's flattened meaningfully as the hiking cycle progresses. That trend continues for the ~100 business days following cycle termination (as long-term rates fall), before quickly and aggressively steepening thereafter.

Chart 12: Not unheard of for 3M-10Y to invert prior to last hike

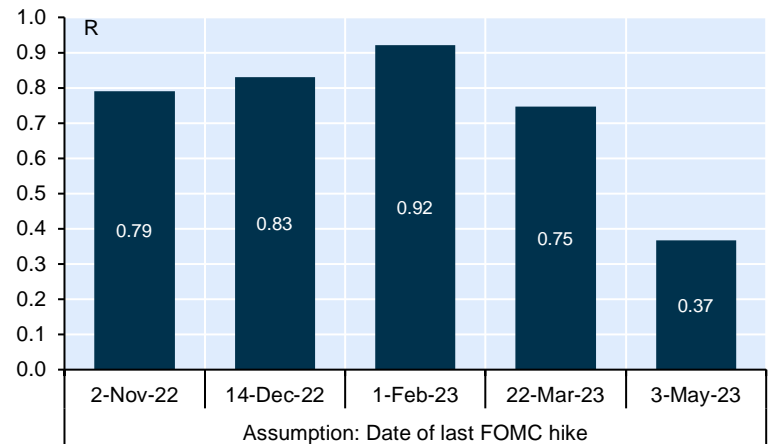
Flattest level for UST 3M-10Y yield curve prior to/after last FOMC hike



Source: NBF, Bloomberg, FRB

Chart 13: What do recent curve moves imply (in terms of last hike)?

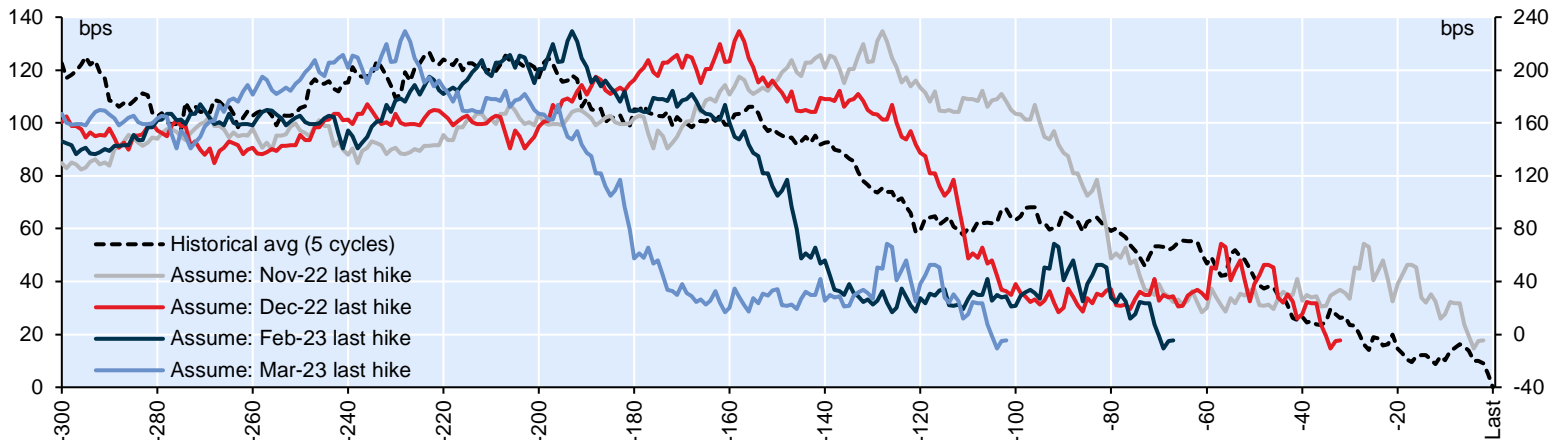
Implied 200D correlation btw current UST 3M-10Y curve & historical pattern



Source: NBF, Bloomberg, FRB

Chart 14: Using 3M-10Y to search for best implied fit when it comes to end of FOMC tightening cycle

Avg UST 3M-10Y yield curve going into final FOMC hike vs. current implied curve, adjusted to control for different FOMC tightening end dates

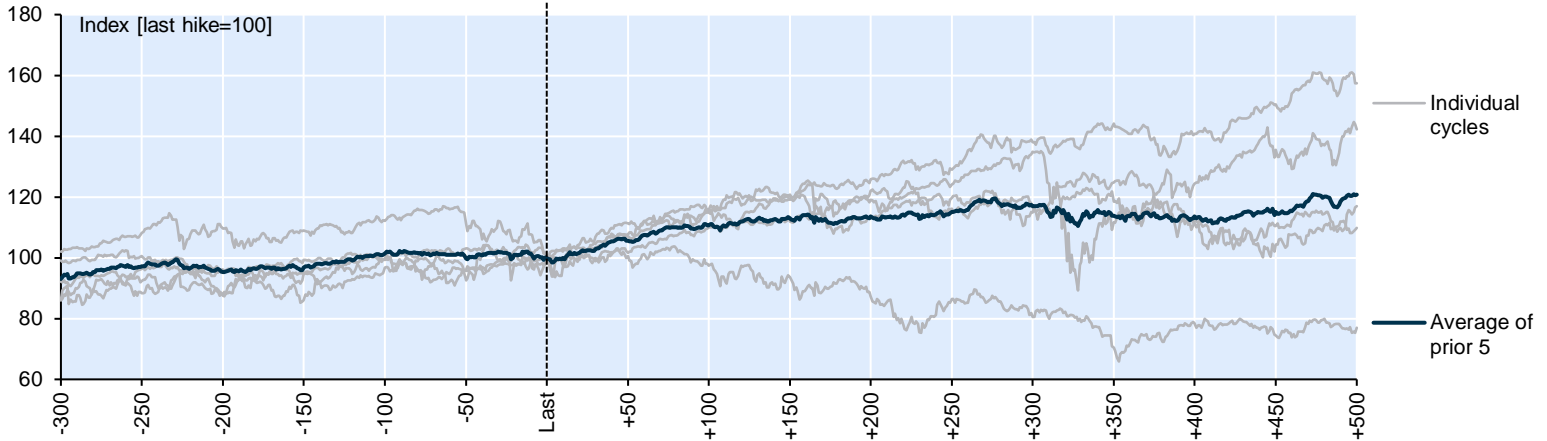


Source: NBF, Bloomberg, FRB

In the past, very flat (albeit positive) 3M-10Y curves have prevailed when hiking cycles ended. And while inversions prior to cycle termination aren't unprecedented, it's well after the final rate increase when 3M-10Y inversions grow more definitive. Only once was 3M-10Y not inverted 200 days after the final hike. Unsurprisingly, this was the one episode that *didn't* culminate in a recession. With fed funds set to rise further still, today's inversion is likely to deepen—an ominous sign for the economy. As we try to gauge when this cycle will end, it's useful to compare recent 3M-10Y behavior with prior cycles. Doing so indicates recent trading is most consistent with the cycle terminating in Dec or Feb. While others may see the Fed going higher/longer, our view is more aligned with the empirics.

Chart 15: How much relief in equities once FOMC waves all clear?

Evolution of S&P 500 going into/coming out of last FOMC rate hike

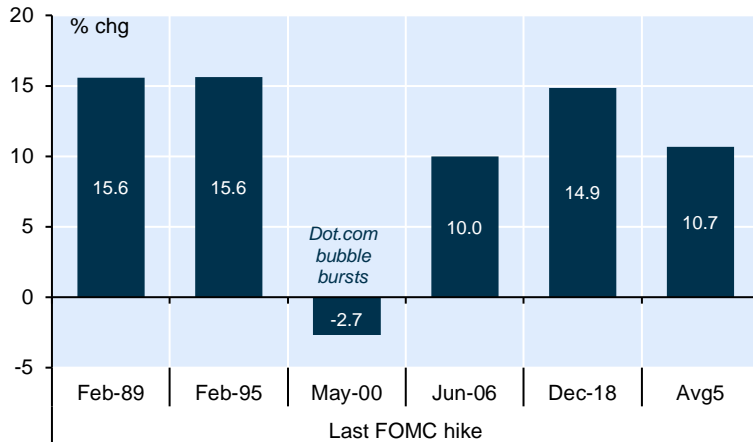


Source: NBF, Bloomberg, FRB

Not surprisingly, the relief evident in UST yields/curves following the final FOMC rate hike is reflected (in its own way) in risk assets. US stocks have tended to cheer the end of policy rate tightening. Looking back over the prior 5 tightening cycles, the S&P 500 banged out an average 5% gain within 40 trading days, the average advance moving into double-digits with 100 trading days. Mind you...

Chart 16: Stocks tend to breathe sigh of relief after final hike

Chg in S&P 500 in 100 week days following final FOMC hike

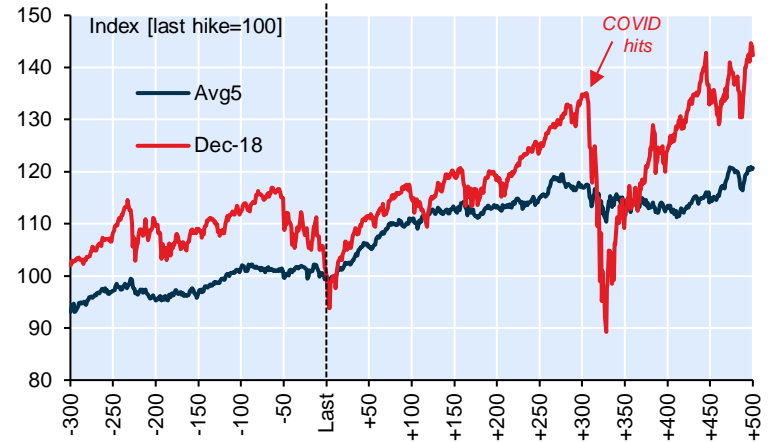


Source: NBF, Bloomberg, FRB

... a rate hike pause in spring 2000 arguably came too late, as the bursting of the dot.com bubble let a lot of air out of the market. Back then, as now, higher rates did the tech sector no favours. Stocks were quick to regain lost ground as the FOMC moved to the sidelines in December 2018. The S&P 500 was ~30% higher just one year removed from the last hike before COVID snuffed out the rally.

Chart 17: Market rallied hard last time... until COVID hit that is

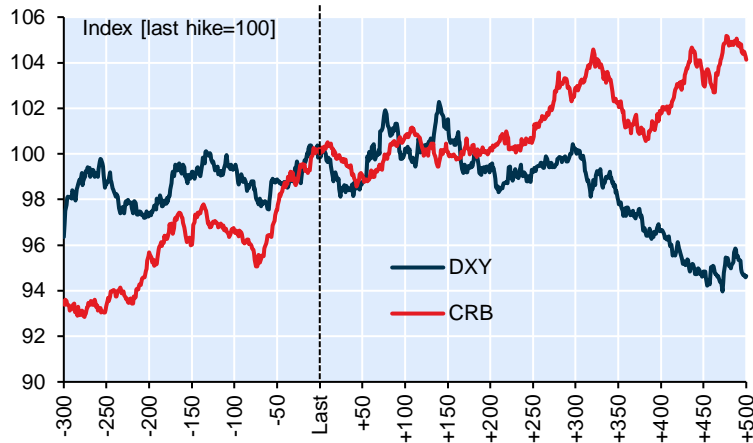
Evolution of S&P 500 going into/coming out of last FOMC rate hike



Source: NBF, Bloomberg, FRB

Chart 18: Searching for patterns in FX & commodities

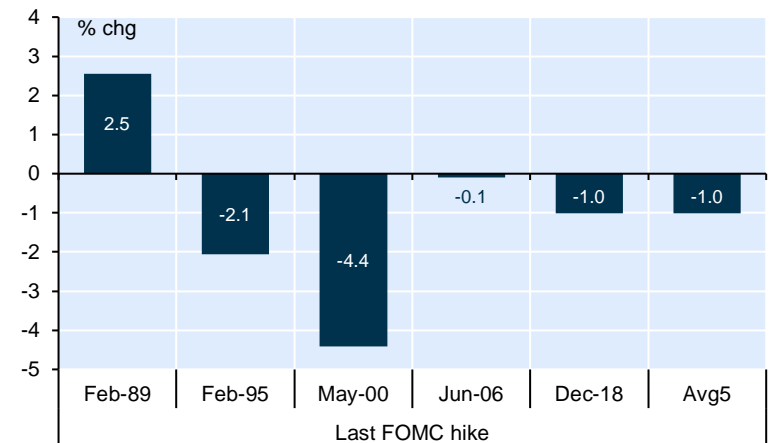
USD & commodities going into/coming out of last FOMC rate hike



Source: NBF, Bloomberg, FRB

Chart 19: Short-term cheapening of US dollar after pivot

Chg in US dollar (DXY) in 20 week days following final FOMC hike

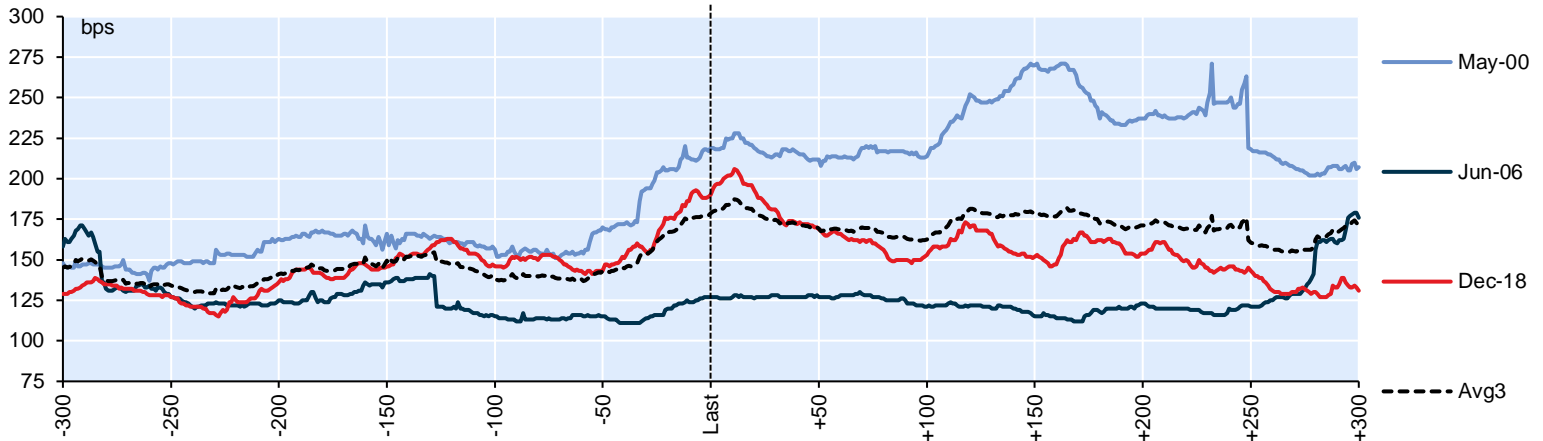


Source: NBF, Bloomberg, FRB

Unlike equities, definitively/predictable patterns are harder to come by in currency and commodity markets. One observes a tendency towards modest US dollar depreciation in the days following the final FOMC hike, with 20D success rate of 60-80% based on the past five cycles. Understandably, the bigger relief often arrives months later, as rate cuts come more clearly into focus.

Chart 20: A somewhat mixed bag in credit markets, although Fed pivot (& early end of QT) keyed material rally last go round

Evolution of ICE/BofA BBB US corporate index OAS going into/coming out of last FOMC hike

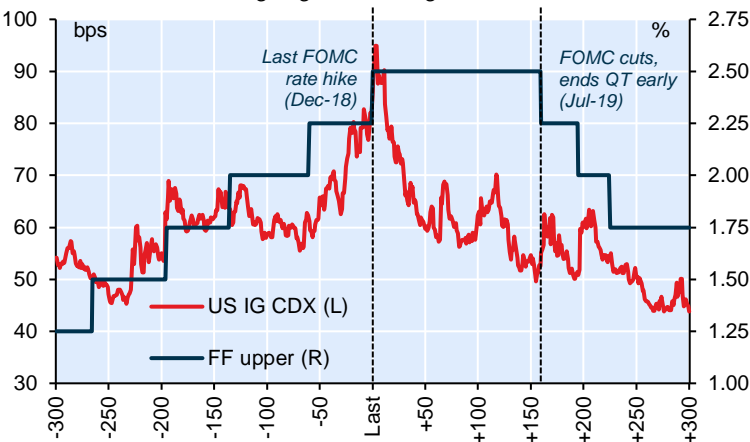


Source: NBF, FRB

Consistent with earlier studies, you'd have a hard time distilling credit market developments into one neat and tidy narrative. Spreads continued to languish at wide levels throughout 2000, as equities were on the back foot. Credit markets were more or less indifferent to a mid-2006 pause. But the end of hikes in late 2018 (at lower levels than we have today) sparked a relatively quick/material rally.

Chart 21: A closer look at 2018-19 policy pivot

Fed funds & US 5Y IG CDX going into/coming out of FOMC's Dec-18 hike

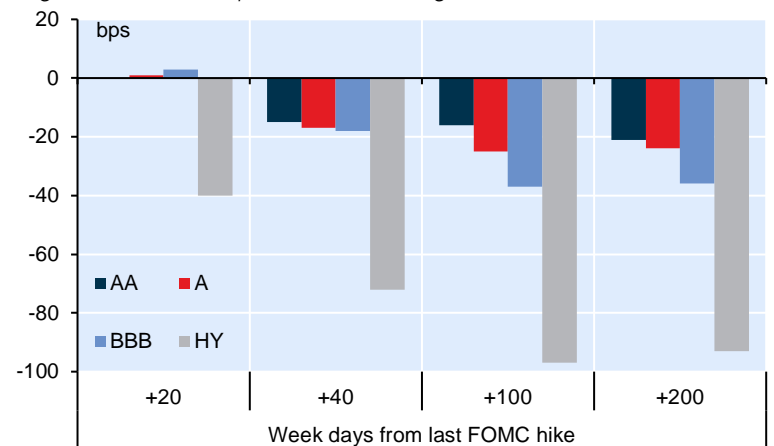


Source: NBF, Bloomberg, FRB

Relief was most immediately apparent in US IG CDX following the FOMC's final hike in Dec-18. Subject to temporary bouts of consolidation, CDS spreads generally recovered much/all of the damage done in the latter stages of the tightening cycle. High beta names/sectors benefited. Credit was further invigorated 8 months after the final hike, as the FOMC pivoted to cuts and ended QT early.

Chart 22: The last 'pivot rally' clearly favoured high beta

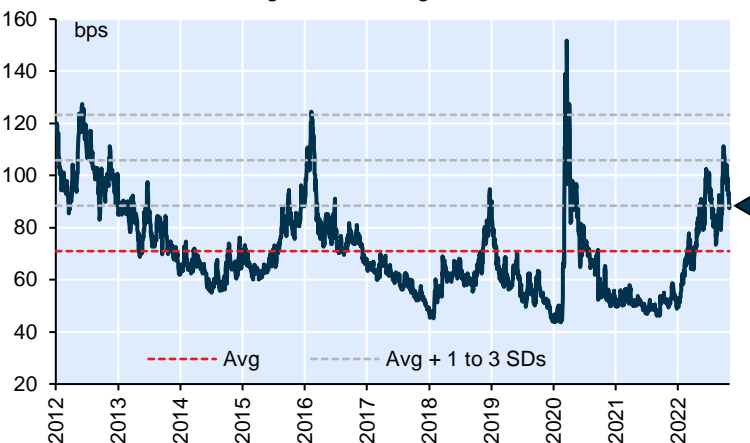
Chg in ICE/BofA US corporate OAS following FOMC's Dec-18 hike



Source: NBF, FRB

Chart 23: Corp credit has already recovered some ground

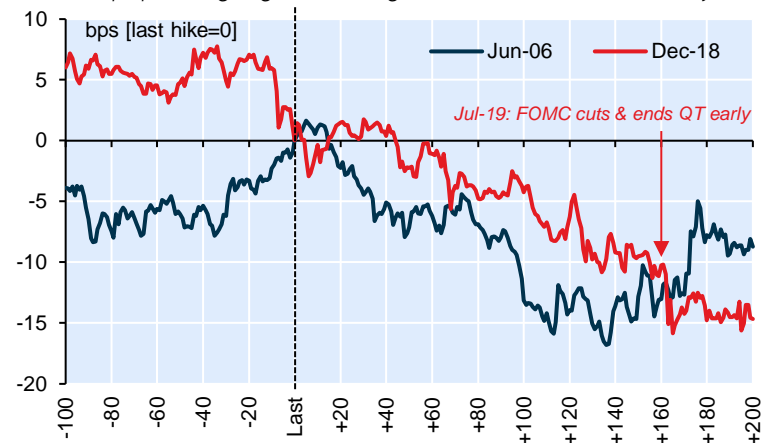
US 5Y IG CDX relative to longer-term average



Source: NBF, Bloomberg

Chart 24: In past, swap spread narrowing aided credit

US 5Y swap spreads going into/coming out of final FOMC hike (last 2 cycles)



Source: NBF, Bloomberg, NBF

To be clear, the correlation between CDS and cash spreads remains imperfect. Moreover, IG CDS indices have recovered material ground in the past couple of weeks, which could blunt/diminish the overall rally potential on a dovish Fed signal, all else equal. Meanwhile, QT efforts (only recently hitting their stride) aim to drain excess liquidity, which could complicate the near-term road for credit.

Some concluding thoughts & caveats...

We offer this empirical analysis of FOMC tightening cycles pursuant to any number of caveats. First off and as should be abundantly clear, no two FOMC policy cycles are the same, as underlying economic conditions have varied from one cycle to another. As a result, the scale and speed of tightening and the resulting terminal policy rate has also varied over time, the current cycle offering a powerful reminder that historical tendencies don't always hold. Nor is five a particularly large sample with which to conduct empirical analysis, but FOMC policy cycles (whether aimed higher or lower) simply don't occur with the greatest frequency.

What are we trying to do here? More than simply stacking up the current FOMC tightening cycle against historical episodes, we're really seeking to identify historical tendencies in financial markets as monetary policy transitioned from tighter to stable to less restrictive levels. Our primary focus, and where the bulk of our analysis centres, is rates. Moreover, for the purposes of this report, we have focused exclusively on US Treasury yields and curves, setting aside a discussion of relative/cross-market levels (which are partly a function of policy rate differentials). Notwithstanding the rates focus, we have selectively extended the empirical analysis to equity, currency, commodity and credit markets with a view to demonstrating the evolution in risk sentiment as FOMC policy rate tightening pauses/pivots.

What does the historical record tell us? For starters, the FOMC generally hasn't held the policy interest rate at its upper or terminal level for all that long. Based on five historical tightening cycles, the FOMC was, on average, pivoting to lower interest rates within eight months of delivering its final hike. So assuming the Fed is able to slow its tightening pace by the end of the year, moving to the sidelines not too far into the new year, it wouldn't be entirely unreasonable to see a pivot towards easier (or less restrictive policy) before the end of 2023... at least based on historical policy patterns. Of course, the ultimate timing and location of any FOMC pause and subsequent pivot hinges critically on the evolution of inflation, with our expectation of material/timely inflation relief spelled out [here](#).

Traditionally, markets haven't needed the Fed to embark on easier policy for longer-term interest rates to start declining. Rather, all markets have generally needed is a clear sign that policy rate tightening is complete. Indeed, the average trajectory for yields is a basis point lower per day, as soon as the final rate hike is notched. What at first is a parallel shift lower for the yield curve, gives way to a bull steepening once the Fed finally gives in and reverses prior rate increases. Despite clear and obvious differences between this current cycle and some of those in the past, we see Fed/interest rate dynamics playing out in a similar fashion. That means a 'hold period' lasting less than a year and a steepening/disinverting track taking hold in early 2023. Location, as always, is important, many big curves (e.g., 2Y-10Y) more inverted today than during the dying stages of prior tightening cycles. If, like many, you're eying a freshly inverted 3M-10Y curve, note that we've typically lived with flat or inverted levels for a good 6-9 months after a policy rate pause—this closely watched curve really only re-steepening with the onset of FOMC easing. Patience may therefore be required here.

We'd refer you to our detailed equity call [here](#). Simply put, inverted yield curves (and the economic anxiety they reflect) are hardly bullish for stocks. In the face of heretofore aggressive Fed action and mounting/broadening inversions, we have embedded an increasingly defensive posture in our recommended asset allocation. When overlaid with still-elevated inflation, the souring of consumer/business sentiment and mounting recession risks are not particularly conducive to equity market gains or credit spread tightening... at least in the near term. When it comes, however, a clear signal from the Fed that they're prepared to slow and ultimately end their tightening crusade should ease some strain, with an eventual re-steepening of the yield curve establishing more favourable conditions next year. Looking back, equities have generally cheered FOMC policy rate pauses, save for the 2000 episode, when the bursting of the dot.com bubble weighed. (To be fair, there may be some parallels to the recent tech wreck.) More recently, credit markets roundly cheered the FOMC's late-2018 policy rate pause, as spreads rallied smartly and almost immediately after the final hike. Not surprisingly, that rally was led by higher beta names/sectors, a trend that was reinforced following the Fed's July 2019 decision to cut rates and end Quantitative Tightening early. For the moment, we remain defensive of credit, having favoured lower beta and more liquid names/sectors. Still, the credit market playbook from 2018-2019 could prove informative as 2023 dawns, even if today's interest rate environment is clearly more restrictive than what we saw four years ago.

More than the policy rate, the bond market must also contend with the liquidity draining effects of QT, which only hit its strides in the Treasury market in September. To judge from market moves (or Secretary Treasury Yellen's recent remarks), signs of stress are apparent. Underlying market strains could limit the scope of credit spread recovery from here. Moreover, we'd note that certain credit market bellwethers have recouped some lost ground more recently, which could dull (but not fully derail) the tightening move that one might to materialize on an eventual monetary policy pivot.

Notes on charts:

Table: Provides details of historical FOMC tightening episodes, starting with 1988-89 cycle; in some cases chairmanship changed during tightening cycle; start/end dates based on observed changes in fed funds (ff) rate; current cycle is ongoing, with length/magnitude/change/pace/scale of fed funds adjustment shown as of 31-Oct-22 | Chart 1: Reflects cumulative change in ff during five historical tightening cycles; current cycle is ongoing, with 300 bps of cumulative tightening through 31-Oct-22 & more expected; horizontal axis refers to week days | Chart 2: Indexes ff to day of last FOMC hike (where level=0); horizontal axis refers to week days | Chart 3: Time to first cut based on observed ff rate; time to recession based on NBER business cycle dating; no recession following Feb-95 ff peak | Chart 4: Correlation coefficients based on sample of 5 historical FOMC tightening cycles | Chart 5: Based on average of 5 historical FOMC tightening cycles; indexes ff & UST yields to day of last FOMC hike (where level=0); horizontal axis refers to week days | Chart 6: Chg in ff & UST yields based on average of 5 historical FOMC tightening cycles | Chart 7: Latest ff & UST yields as at 31-Oct-22 | Chart 8: Yield curve changes based on average of 5 historical FOMC tightening cycles | Chart 9: Success rates based on 40/100 week day change relative to final FOMC hike; steeper curve indicates success; based on 5 historical FOMC tightening cycles | Chart 10: Latest curve as at 31-Oct-22 | Chart 11: Indexes curve to day of last FOMC hike (where level=0); horizontal axis refers to week days | Chart 12: Represents flattest/minimum observed level for curve in 200 week days prior to & following last FOMC hike | Chart 13: Correlations derived by aligning current curve with average based on 5 historical FOMC tightening cycles; in each case, curve aligned to history based on assumed end date for current FOMC cycle (from Nov-22 through May-23) | Chart 14: Average curve based on 5 historical FOMC tightening cycles; current curve adjusted/shift forward & backwards based on assumed end date for current FOMC cycle (from Nov-22 to Mar-23); for current curve, last data point refers to 31-Oct-22 | Chart 15: Indexes SPX to day of last FOMC hike (where index=100); horizontal axis refers to week days | Chart 17: Indexes SPX to day of last FOMC hike (where index=100); average based on 5 historical FOMC tightening cycles; horizontal axis refers to week days | Chart 18: Indexes DXY & CRB to day of last FOMC hike (where index=100); average based on 5 historical FOMC tightening cycles; horizontal axis refers to week days | Chart 20: Horizontal axis refers to week days | Chart 21: US 5Y IG CDX is generic index; horizontal axis refers to week days | Chart 22: US 5Y IG CDX is generic index | Chart 23: Daily data to 31-Oct-22; horizontal axis refers to week days



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