

Global Macro Trading for Idiots: Part Three

Short-Term Interest Rates



CITRINI

MAR 22, 2024

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Hello, idiots.

If you thought yield curves and FX were fun, we're about to go on a journey to the heart of global macro.

Short term interest rate (STIR) instruments add a whole new dimension to the excitement of “having opinions about what the Fed will do” (as we all know, people with opinions about what the Fed will do are some of the most interesting - and all very reserved about sharing these opinions with others).

In our previous installments, we covered the basics of trading the US yield curve and foreign exchange. By now, you should have a solid grasp on concepts like **curve steepeners and flatteners** (in both bonds and futures - steepener = long shorter maturity, short longer maturity and vice versa for flatteners), flies, why interest rate differentials matter so damn much in FX and the general fact that global macro is, in fact, the world's greatest guessing game.

If you don't, go to the remedial class and read the last two installments:

[LINK: Global Macro Trading for Idiots: Trading the Yield Curve with Bond Futures](#)

[LINK: Global Macro Trading for Idiots: The Brain Damaging World of FX](#)

You may be noticing a theme in these pieces, something along the lines of...



Yield curves, FX interest rate differentials, equity indices..directly, indirectly or in some third way it can all seem like one big rates trade circlejerk.

So; today, we're going to simply bypass the middleman and go directly to the source - **exploring how to trade these rate expectations using STIR futures, futures spreads and options.** Then, we are going to take your newfound basic knowledge of STIR and absolutely manhandle it by talking about stuff like swaps and repo.

And you can know for sure this is 100% human authored because the AI doesn't yet have the kind of brain damage nor mental illness necessary to express what it's like to trade Euribors in words.

Still, this is Global Macro Trading for Idiots, not “for idiots, by idiots”. And while I can certainly punt midcurves efficiently, I needed someone who understood both memes and STIR well enough to bring this to the next level.

There's a lot of stuff that's beyond my realm in terms of IR Swaps, FX Swaps, Cross-Currency Basis etc. that I needed a real expert in...

And then I saw this:



...

Just scrolled through my phone photo gallery and it is embarrassing.

50% Bloomberg screenshots, 50% Memes.

3:23 AM · Mar 10, 2024 · 44.8K Views

Bingo.

I'm going to take you from "what's a sofr" to "let's put on the z4z5 steepener" and he will take you the rest of the way down the rabbit hole with an overview that features such nonsense words as "cross currency basis" and "covered interest rate parity".

It's going to be really fun...interesting...STIRrific...

Okay, I'm not going to lie to you, you will hate both of us by the end of this article.

But at least you'll have a solid foundation in short term interest rate trading. Provided that, when it comes to trading STIR, you'd currently self-describe as an idiot or some synonym thereof.

Because that's where "Global Macro Trading for Idiots" comes in.

Just be forewarned that we'll be getting progressively less idiotic as the article goes on, thanks to the contributions of notorious non-idiot (in matters STIR related) Sir of Finance.

One more thing: normally I split the revenue generated from my articles with my collaborators. This is going out to everyone, free of charge, and because Sir of Finance is a gentleman (as the name infers),

We'll be donating half of all subscription fees generated through this article to [Doctor's Without Borders](#). Unfortunately, there was no charity set up ready to accept donations for traders who have brain damage due to trading Euribors.

Okay, with that said, let's begin...

The (Very) Basics of STIR and STIR Futures

For the uninitiated, STIR futures are derivative contracts that allow traders to bet on the future direction of short-term interest rates, typically tied to interbank lending rates like or central bank policy rates. They're the purest way to express your view on what central bankers will do (or won't do) in the coming months and years. And if you really want to get fancy, you can even trade options on these futures to create all sorts payoff profiles.

But before we get into the nitty-gritty of cross-currency basis, DV01 and midcurves, let's take a step back and understand why anyone would even bother with these instruments in the first place. Since central banks are the puppet masters of the global economy, pulling the strings of interest rates to keep inflation in check or promote growth, macro traders spend pretty much all their time anticipating their next move and position accordingly.

STIR futures provide a liquid and efficient way to do just that. And not just that, but ways to do that with accuracy you just can't get in other instruments.

If you think the ECB will be forced to cut rates into negative territory by the end of the year, you're going to want to be doing something with Euribors if that's the extent of your thesis.

The differential to SOFR won't matter like it would with EURUSD, and it won't matter whether it's a policy mistake that leads to a massive rally in risk assets or it's response to a previous policy mistake that put the EU in a massive, very-bearish-for-risk-assets recession (for believability the only certainty in this hypothetical is that of an ECB policy mistake).

Regardless of those confounding variables you'd have to deal with by expressing this thesis using other instruments, you'll make money if you're long December Euribor Futures (and a lot more money if you've got out of the money calls on them).

Maybe you think the market has gotten irrationally exuberant about the quantity of rate cuts the Fed will deliver in 2024? You can sell Z4 SOFR futures. In fact, you can sell some SOFR futures in December 2024 and buy some in December 2025 to isolate your trade to just rate expectations in 2025.

If you think the Bank of Japan will...nevermind actually we're not going to talk about Japanese rates in this one. (I miss you, Kuroda).



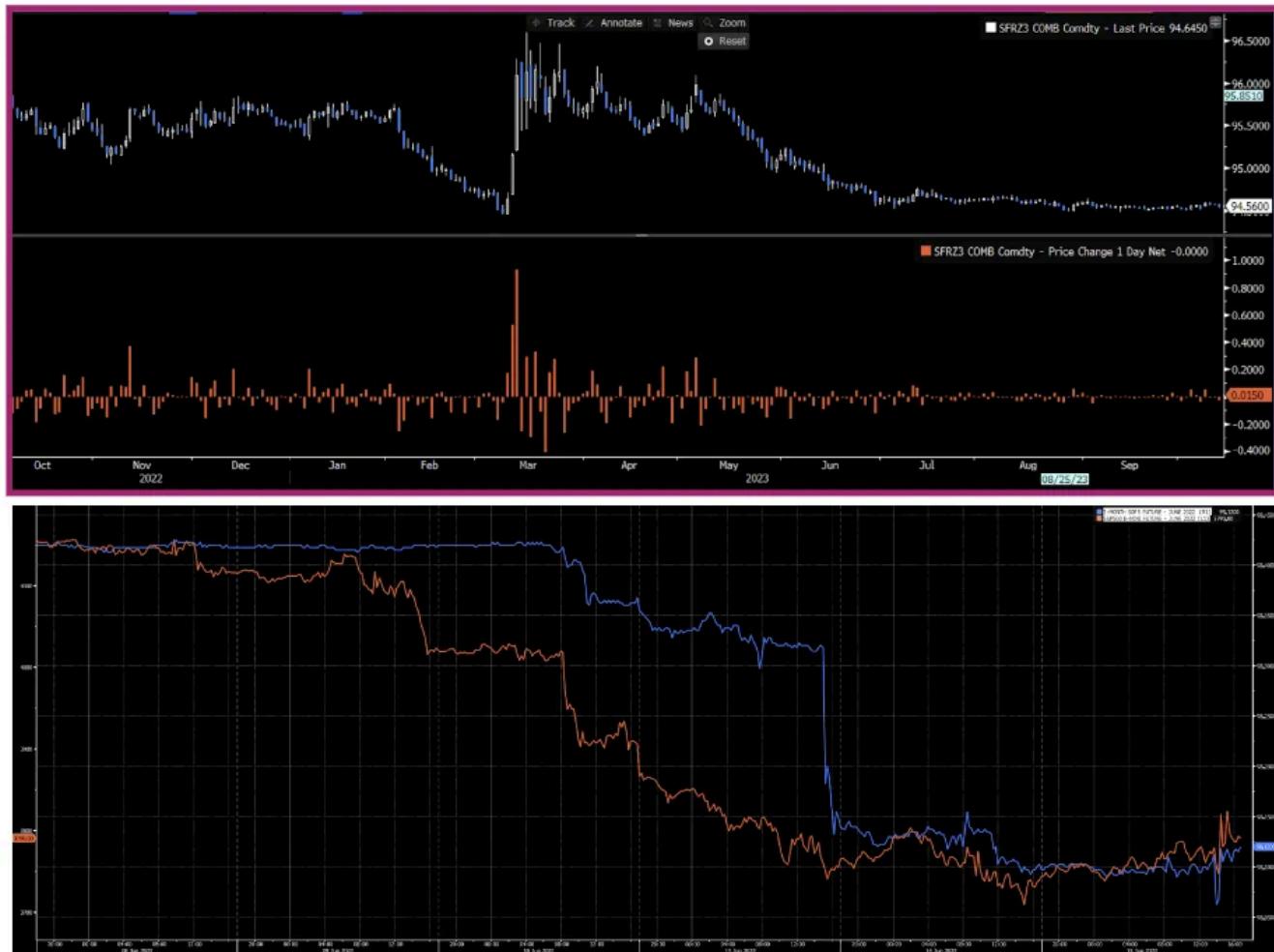
The possibilities are truly (perhaps unfortunately) endless for expressing your unique view on what the economists decide. We're going to go over some of the basics for doing that, but...

Before we get into it for real, you should be aware that trading STIR futures is not for the faint of heart. These markets are dominated by big banks, hedge funds, and other institutional players with deep pockets. They tend to act a lot differently than other asset classes.

You can go look at how SOFR futures react to headlines and data, unlike trading spoos the reaction in STIR sometimes tends to be much less something that can be described as “price action”. With some degree of regularity, it’s much more accurately described as “teleportation”.

Unlike equity index futures where your win condition is “market participants are currently wrong but eventually see the error of their ways and come around to my way of thinking”, STIR futures have an element of that but also the element of “then a bunch of economists decide whether you’re right or wrong, and sometimes you find out about this decision because one of the economists gets too chatty with the press” and other fun eccentricities.

Here are two examples, post Silicon Valley Bank collapse and the Nikileaks episode of 2022.



Even in significant selloffs in equity indices, there's some level of liquidity, meanwhile sometimes what you get in STIR is a result that's so unambiguous (this is the most extreme example of that, since it was literally a WSJ reporter telling the world the Fed would hike 75 and not 50) that between the current price and the correct price there will be zero bids (or zero offers if the scenario was reversed to deal with cuts).

Hence, “teleportation”, as you can see on the above chart showing the reaction of ES vs. SFRM22 to the tweet below from “Fed Whisperer” Nick Timiraos that earned him the nickname among STIR traders of “Nicky Leaks”. Whether that's an affectionate nickname or one filled with pure hatred is a function of the individual STIR trader's positioning exactly one second prior to the tweet:

From wsj.com

3:20 PM · Jun 13, 2022

That's something that you're going to want to keep in mind when you're trading and assessing how much risk you're taking. Obviously if you have a marketable stop order in on a position, you're going to be facing some level of slippage or generally getting out at

worse prices than you could have. If you have a stop order in a SOFR futures position and something like this happens, the only price you're going to get out at is in the range of the newly-teleported-to correct one.

Now that you're all sufficiently frightened by them, let's get into the basics of trading STIR, beginning with how STIR futures work.

STIR Futures

Futures for Short-Term Interest Rates are a bit different than those for bonds. Some common STIR contracts and the central bank / benchmark overnight lending rate that they are tied to are:

Fed Fund futures (United States/Fed Funds Rate),

SOFR futures (United States/SOFR),

Euribor futures (Eurozone/3M EURIBOR),

SONIA futures (UK/SONIA)

In recent years, there has been a major shift in the world of STIR futures.

LIBOR (London Interbank Offered Rate) has been phased out due to scandals and manipulations (honestly, who among us can say they have not rigged a few interbank rates for leftover sushi in their golden days).

Derivatives Trader A:	"can u put 6m swiss libor in low pls?"
White:	"NO"
Derivatives Trader A:	"should have pushed the door harder"
White:	"Whats it worth?"
Derivatives Trader A:	"ive got some sushi rolls from yesterday?"
White:	"it dont push inwards, thankfully"
Derivatives Trader A:	"id have ripped it off the hinges straight in ur face"
White:	"ok low 6m, just for u"
Derivatives Trader A:	"ooooooooooooo 0.01%?"
Derivatives Trader A:	"thatd be awesome"
White:	"1.33"
Derivatives Trader A:	"perfect u r a nice man"

In the US, the market has moved towards a new benchmark rate (SOFR), which is based on actual transactions in the Treasury repo market, and Eurodollar futures that tracked LIBOR are no longer used.

SOFR futures were launched in 2018 and have quickly gained traction as the go-to instrument for trading short-term US interest rates. They are now among the most actively traded futures contracts in the world.

SOFR futures, like all STIR futures, are cash-settled (i.e. no actual exchange of underlying securities takes place at the expiration of the contract).

Perhaps the most important of the basics in STIR futures is the concept of the IMM index.

In SOFR, the future price is based on this index, which is 100 minus the expected 3-month compounded SOFR rate at the time the contract expires.

We are only going to talk about the 3-month SOFR futures because one-month SOFR futures aren't really used and Fed Funds futures have worse liquidity.

A hypothetical: the market thinks SOFR will be 4.33% at expiration, the futures price would be 95.670 (100 - 4.33).

Each point of the IMM index is worth \$2,500, so a one basis point (0.01%) change in the expected SOFR rate translates to a \$25 change in the value of the contract. In directional terms only, you can think of it somewhat like a zero-coupon bond. And what happens to bond prices when interest rates go up? They go down.

Interest rate (expectations for a specific period of time) up by 1bps, contract price down by 0.01, total change in value down by \$25 per contract. Easy peasy, right?

SOFR Futures: Measuring Notional, Managing Risk and Understanding Spreads

When trying to compare STIR futures to something like equity index futures which have a very clear-cut notional value, there is a little complexity (which is why you should not do that).

Let me explain: if you are trading SOFR futures, and not using them to hedge rate exposure on, say, a loan book, the best way to think of the notional value of a contract is by using the DV01 multiplied by the IMM index value by the \$25 dollar value of a one basis point change. Thus, a contract from our example that's at 95.67 would be worth \$239,175 ($\$25 [DV01] * 95.67 [IMM Index] * 100 [Basis Points Per 1.00]$).

Traders with more complex purposes may think of SOFR futures as having \$1 million in notional, but I will let siroffinance@gmail.com describe why if he deems it necessary, for our purposes it's more important to think about exposures in terms of DV01 than in notional.

While it might seem to add complexity, it actually is a beautiful thing.

Remember part one of Global Macro Trading for Idiots, (I swear to god if you're this deep in the article and didn't read the first one...) where we had to deal with a ton of math to ensure that our bond futures curve steepener or flattener trade was long the correct number of 2s and 10s to make sure our PnL was tied to moves in the yield curve and not in individual rates on the curve?

Yeah, WE DON'T HAVE TO DO THAT HERE! You can still weight your spread based on your own view, but to make it neutral is quite simple. 1:1 on spreads and 1:2:1 on butterflies.

The beauty of this 1:1 ratio is that it keeps your spread duration-neutral. You're not betting on the overall direction of rate expectations, but rather on the relative difference between the two contract periods.

If rates move up or down in parallel, your long and short positions will offset each other, and your P&L will be driven solely by the change in the spread between H4Z4 and Z4Z5. And it's quite simple, because of the way the IMM Index works there is no complex math required to convert futures pricing into yield. Simple example: Z4 is at 95 and Z5 is at 96? Okay, bear with me if you're not mathematically gifted, here's the computation necessary:

$$95 - 96 = -1.00$$

Yep. Nothing is even denominated in 64ths.

In that hypothetical, the market expects 100bps of cuts (negative is cuts, positive is hikes) between December 2024 and December 2025. Disagree and think it is only 50? Long Z4, short Z5 (steepener). Disagree and think it is 150? Short Z4 and Long Z5 (flattener).

However, beware the specificity: you need to understand how cuts gets pulled forward and pushed out. If there's a Covid-like financial crisis tomorrow that's an insanely dovish scenario where rates go to 0 and are expected to stay ZIRPy or NIRPy for all of 2025, and Z4 and Z5 both go to 100, oops!

Now there's 0 rate cuts priced into 2025, and you're down 100*DV01. Even though the outcome was very dovish, it wasn't dovish in the way you'd expressed it. Sometimes betting on less rate cuts between some two times in the future doesn't necessarily mean "higher for longer" but rather means "lower a lot sooner".

So, know when your thesis is specific enough to require/benefit from these spreads. If your thesis is "massive financial crisis soon" then you're gonna wanna just be long wherever along the curve you can get the most upside.

And remember, just like oil futures can go negative, STIR futures can go >100. A -25bps policy rate (Negative Interest Rate Policy or "NIRP") would result in an IMM Index of 100.25.

Another useful thing to consider is that, when rates are > the perceived "neutral rate", rate cuts tend to be conserved along the curve. The curve will almost always price in a return to r^* , the natural rate of interest. It's kind of like conservation of energy, rate cuts cannot be created or destroyed just transformed. If the widely accepted natural rate of interest is 2%, rates are 5% and the Fed enters a public blood oath which prevents them entirely from cutting a single basis point before Z6, well, 300bps of cuts now have to get somehow priced into post-Z6 because we will eventually return to the natural rate as far as STIR is concerned. A caveat, however, is that the natural rate of interest is a) not constant and b) a highly academic concept.

Examining a Real-World Trade, our SOFR Fly from January 2024

I've shared more than a few SOFR future plays in the substack chat (and will continue to do so), but occasionally I like a trade so much that I write it up in one of my market memos. Instead of using some random hypothetical trade, we'll be explaining risk and spreads in SOFR futures using this trade we took in January as an example:

A Short Macro Insight

CITRINI · JAN 15

"At the end of the day, the only thing that matters is finding asymmetry. Maybe this rate path is correct, maybe it's an overreaction. What I see when I look at this situation is a market that may have gotten a bit carried away, and one that gives a pretty decent chance of pushing out a few of these cuts into 2025 if the current economic momentum we've got continues. TRADE: SELL Z4 ON H4Z4Z5 FLY..."

Citrini
A Short Macro Insight

WWW.CITRINIRESEARCH.COM

There's some confusion currently in macro, especially in STIR. You'll all recall that I've been pretty vocal on the need for cuts to be priced into 2024 since October. We owned Z4 and M4 calls on SOF...

[Read full story →](#)



In that article, I recommended that traders sell the belly on the H4Z4Z5 fly at -0.835 to take advantage of the market pricing in 3 to 4 more rate cuts in 2024 than 2025 (when I believed it should only be pricing in a maximum of one).

That trade actually worked better than I expected, and currently the market prices in more rate cuts in 2025 than it does in 2024.

Many of you, however, DM'd me in response to that article with a sentiment that can be quickly summarized as "...wait, what?"

The answer to that question in PnL terms was "a banger", but in technical understanding terms required an entire article.



So, those of you who weren't able to take advantage of this gross mispricing, this article is for you!

Now, let's say you wanted to get a bit more complex and do a butterfly spread, like long the Z4, short two Z5s, and long the Z6. In this case, you'd still use a 1:2:1 ratio to keep the trade duration-neutral. The constant DV01 makes it a breeze to construct these more intricate spreads without having to do a ton of complex calculations.

Let's take that example from our SOFR fly trade in January. We sold Z5 on the H4Z4Z5 fly, that's a H4Z4 steepener plus a Z4Z5 flattener. As you should know from the first part of this series on the yield curve, that would be long March 2024 / short December 2024 (H4Z4 steepener) and short December 2024 / long December 2025 (Z4Z5 flattener).

To put it as simply as possible, in honor of the namesake of this piece, a fly is a marriage of a steepener and a flattener and plays the relation of how they differ from each other. This is very useful when you think that one part of the curve has it wrong, and the way that it is going to be fixed is by altering a different part of the curve in the opposite manner.

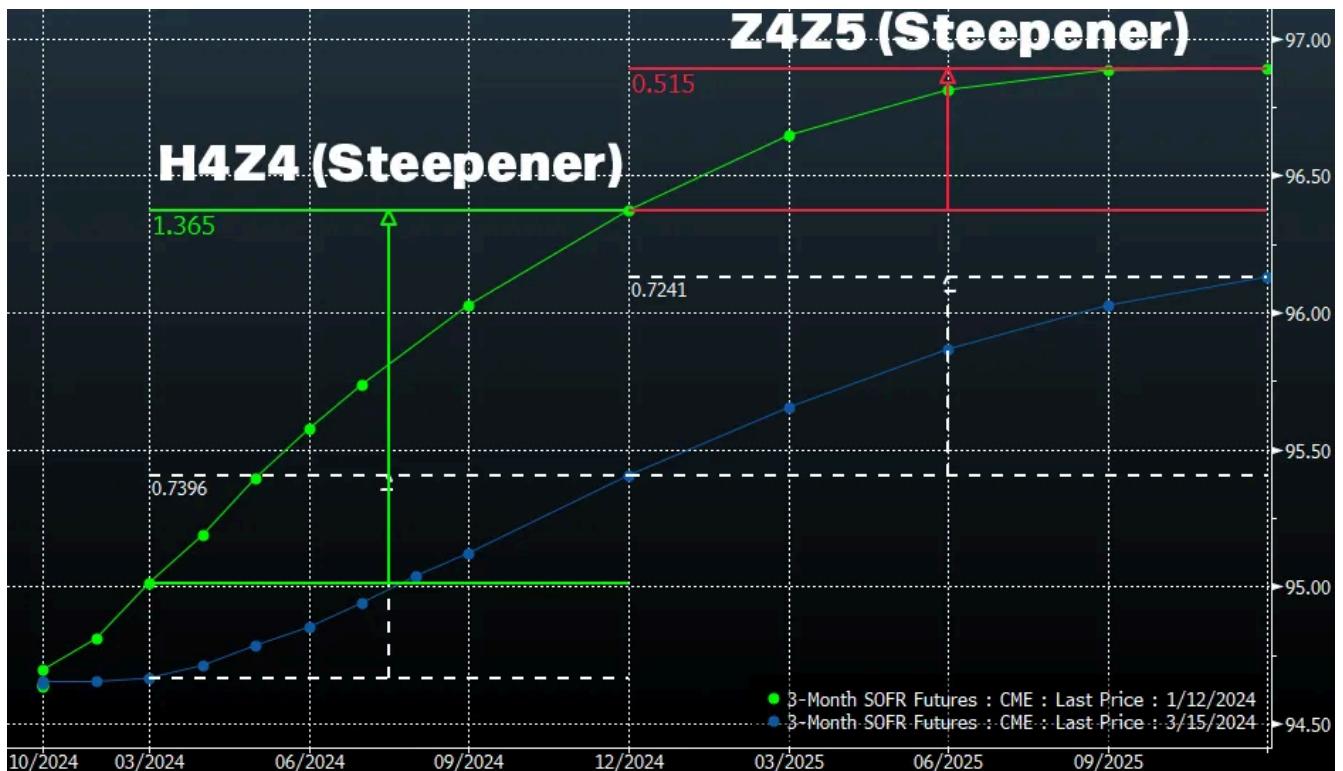
Take a look at what the rate expectations along the more front end of the curve was when we put this position on:

Feb24	5.1900s
Mar24	4.9900s
Apr24	4.8100s
May24	4.605s
Jun24	4.425s
Jul24	4.265s
Sep24	3.975s
Dec24	3.625s
Mar25	3.355s
Jun25	3.185s
Sep25	3.115s
Dec25	3.110s
Mar26	3.145s
Jun26	3.185s
Sep26	3.220s

And let's see what it looks like now:

Mar24	5.3325s
Apr24	5.2850s
May24	5.210s
Jun24	5.135s
Jul24	5.045s
Aug24	4.940s
Sep24	4.860s
Dec24	4.570s
Mar25	4.305s
Jun25	4.085s
Sep25	3.920s
Dec25	3.810s
Mar26	3.750s
Jun26	3.720s
Sep26	3.705s

Here's how that change looked on the curve using the SOFR IMM Index instead of rates, with the most recent values using dashed-white lines:



Some of you who read the first installment probably already get it, but just in case - the last time I'll explain this (sorry some of you idiots are slower than others):

Curve steepeners in STIR futures are bets that, during the period in question (March 24-Dec 24 in this example), the market will price in either less cuts or more hikes (in general, higher rates throughout the period). They are long the near contract and short the far contract.

Flatteners bet on more cuts (or less hikes, in general lower rates) being priced in during the period (Dec 24-Dec 25 in this example). They are long the far contract and short the near contract.

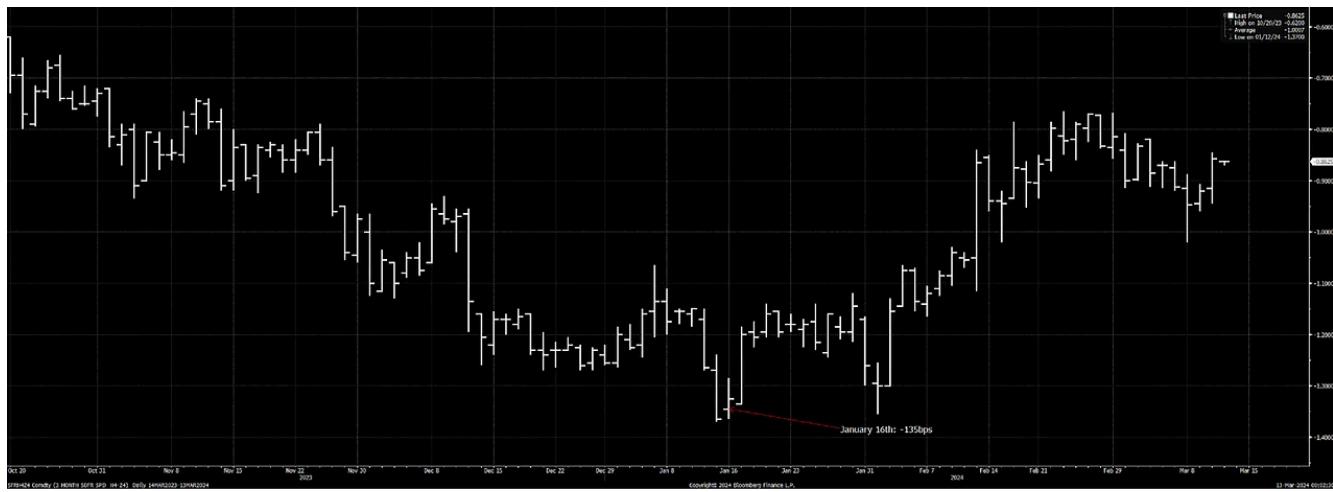
Now you might say, "Wait, Citrini, the curve along H4Z4 looks flatter and the curve along Z4Z5 looks steeper". Remember, a higher IMM Index in the far contract than the near contract implies rate cuts. So the IMM Index plotted curve is steepest when there are lots of cuts priced in, but if it were plotted using rates rather than the IMM Index, a higher value in the far contract versus the near contract would imply rate cuts.

Yeah, remember what I said about the yield curve - same thing applies here. The curve is essentially inverted.

When you're doing the steepener to you benefit when line of the spread as displayed as Front Contract - Far Contract goes up and when doing the flattener you benefit when that line goes down. Just keep it simple like that, imo.

We can find out how many rate cuts or hikes are expected over a period of time by simply looking at these spreads.

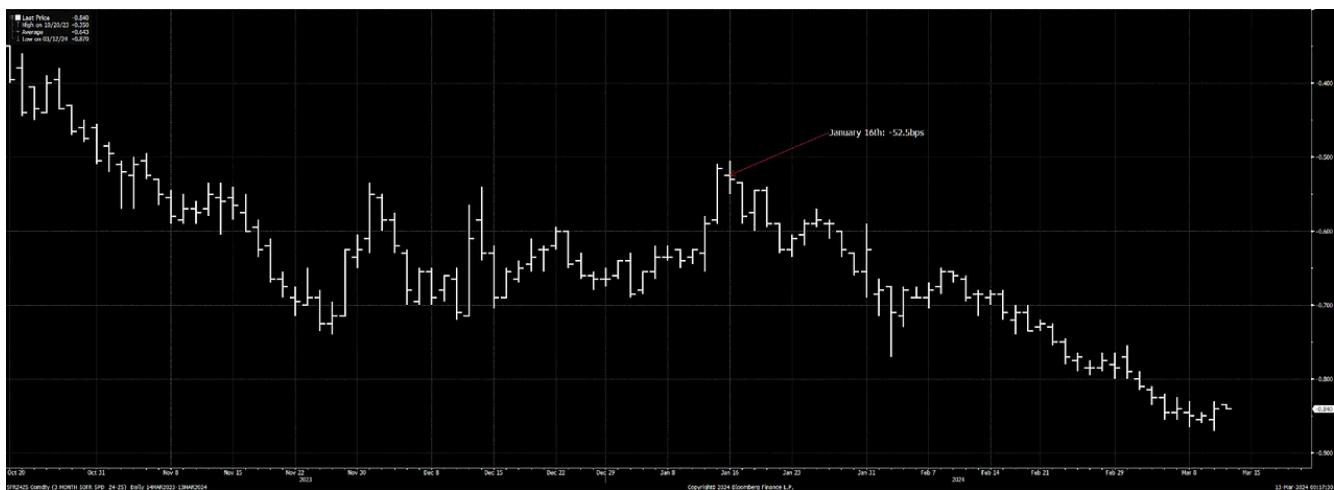
The H4Z4 spread is shown as SFRH4 (CME ticker would be SR3H2024) minus SFRZ4 (CME ticker SR3Z2024), the steepener is long the line below:



So, we can see, at the time we put on the trade, the steepener leg of our fly was a bet on SOFR futures which were pricing in 135bps of rate cuts between H4 and Z4. Since the Fed tends to cut or hike interest rates at 25bps increments, it can be expressed as “5 cuts with some chance of 6” (we’ll get into dealing with the probabilities later).

Our steepener leg was a bet on the Fed cutting less (in absolute terms). As of the writing of this piece, they are pricing in 86bps of cuts. So if we still had this trade on, our steepener leg of the fly would be up 49bps.

The Z4Z5 spread, which we had a flattener (short the below line) on...



...was pricing in only 52bps of cuts at the time. So two cuts for 2025. Now, it's pricing in 84bps of cuts (3 to 4 cuts for 2025).

The fly is simply the difference between the spreads (Steepener Plus Flattener), and just like how the spreads show the expected cuts/hikes for each period the fly shows the difference. It looks like this when plotted as a line ($H4 + Z5 - Z4 *2$)



So, when we put on this fly, the market was expecting there to be 3 to 4 more hikes (83.5bps) in 2024 than 2025. Now, the market expects that the Fed will cut (essentially) the same amount in 2024 as 2025, with 2024 pricing in 86bps of cuts and 2025 pricing in 84bps.

Our thesis was simply that the market had gotten ahead of itself pricing in cuts in 2024, and would price in less of them while pushing the ones they priced out of 2024 into 2025.

Hence, long the H4Z4 steepener, short the Z4Z5 flattener. Make sense?

Our trade, then, had 81.5bps of upside. When we put it on, our risk was 5bps (a stop loss level of -0.885). We know each point of the IMM index is \$2500 and that we are DV01 neutral to changes in the individual contracts, so let's calculate the expected risk we took and then our PnL in dollar terms per contract.

Starting Spread Value: -0.835

Max Risk Level (Stop-Loss): -0.885

Ending Spread Value: -0.02

Max Risk in spread value: $-0.885 - (-0.835) = 0.05$

Change in spread value: $-0.02 - (-0.835) = 0.815$

The spread value (aka the fly) increased by 0.815 points, while we risked 0.05 points.

To calculate, per contract, the risk we took (the loss if we would have been stopped), we simply multiply by the change in spread value by the the IMM point value (\$2500) and the number of spreads (or DV01 of \$25 times bps)

\$25 times our +81.5bps gain is +\$2,037.50 per fly

\$25 times our -5bps potential loss is -\$125 per fly

I know the majority of you idiots use IBKR, so I figured this might be useful to cover before we get into things you need an ISDA for. Let's look at what it looked like in IBKR for 75 flies.

Because the DV01 of SOFR futures is constant at \$25 per basis point per contract, regardless of the expiration date, it's very easy to calculate the risk and construct

spreads between different contracts - for example the DV01 of these 75 butterfly spreads was \$1875 DV01 to the fly (the spread's value is expressed as SR3H4-SR3Z4*2+SR3Z5):

Assets Held at Interactive Brokers

Symbol	Quantity	Mult	Cost Price	Cost Basis	Close Price
Futures					
USD					
SR3H4	75	2,500	94.900848	17,793,909.00	94.6725
SR3Z4	-150	2,500	96.104152	-36,039,057.00	95.5300
SR3Z5	75	2,500	96.705848	18,132,346.50	96.3700

Here's an example of the trade I made, which had a cost basis a bit higher than the -83.5bps I alerted to (I was in and got out and then got back in, I don't wanna talk about it).

SOFR3 Calendar Spread 1.2033 82,651 • 0.7650 -75

Mar'24/Dec'24 Calendar CME

SOFR3 Calendar Spread 0.602 31,556 0.770 75

Dec'24/Dec'25 Calendar CME

Legs

→ SOFR3 CME	96.706	96.215	-92,035	75
+1 SOFR3 Dec'25 @CME				
→ SOFR3 CME	96.104	95.445	123.1K	-75
-1 SOFR3 Dec'24 @CME				

Legs

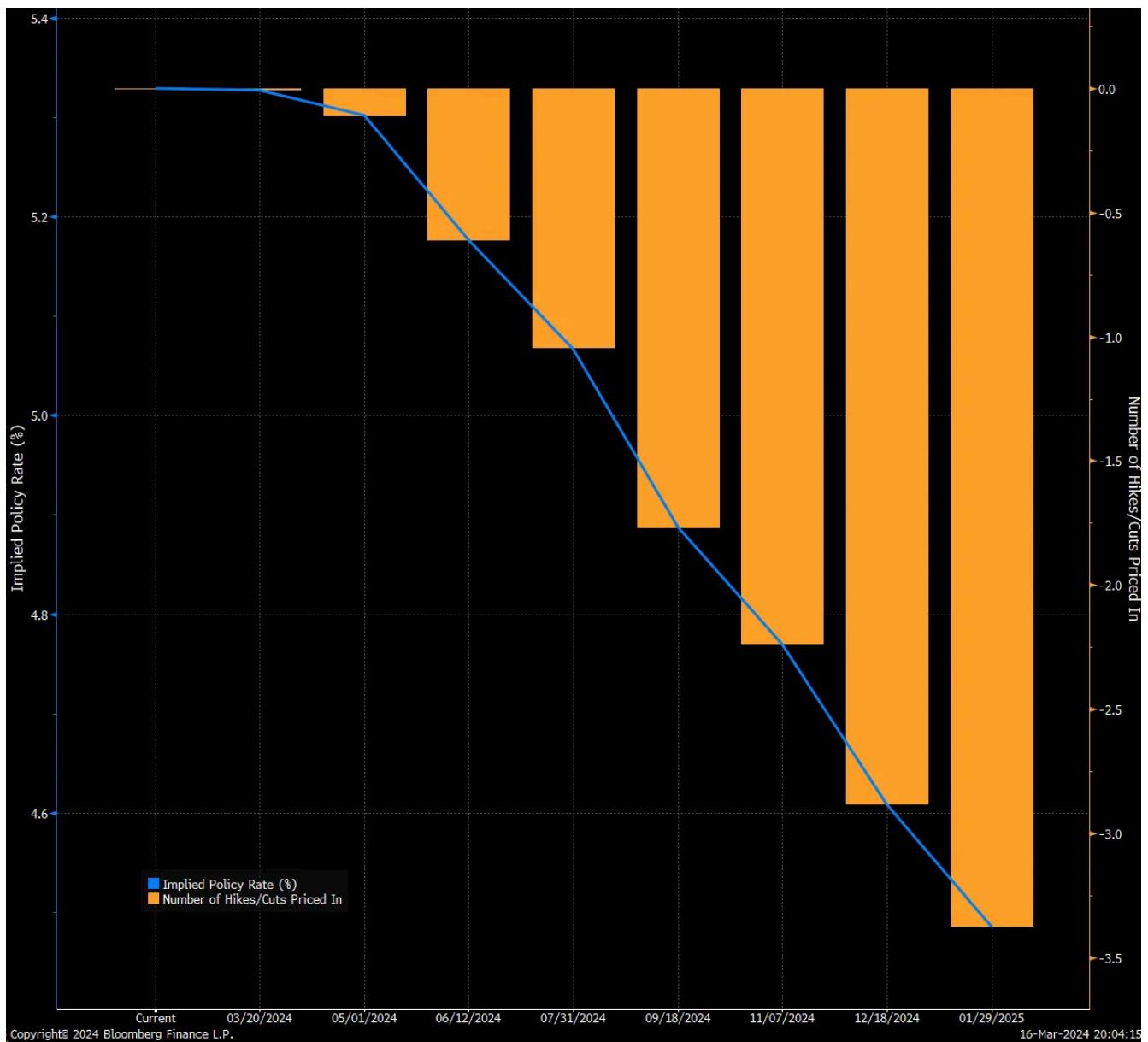
→ SOFR3 CME	94.9008	94.6675	-43,309	75
-1 SOFR3 Mar'24 @CME				
→ SOFR3 CME	96.104	95.445	123.1K	-75
-1 SOFR3 Dec'24 @CME				

Something important to understand with these kinds of spreads and flies is that you have to consider the environment.

In the current environment we can look at, say, the Z4Z5 steepener. We can see that more cuts were priced into this spread as cuts were priced out of 2024, and now less cuts are being priced in as a reflection of higher for even longer. That's two different directions on the same thesis broadly (more hawkish Fed that is going to wait on cuts) so, as you can see, the specificity of the spread can be a blessing or a curse.

Just like with options, don't overcomplicate things unless your thesis is very specific. This fly was perfect because my thesis involved a scenario in which BOTH the steepener and the flattener legs worked. If my thesis was simply "there's too many cuts priced in by Z4" and not "there's too many cuts priced in by Z4 but they will be conserved and moved slightly forward along the curve", it would have been more prudent to just go long Z4.

The futures curve, which is plotted as the IMM, can be used to infer the rates priced in along the curve simply by subtracting from 100:



We can also look at the value of spreads to see where the pricing is:

Description	Last
1) Spot	
2) Dec23-Dec24	-.7850s
3) Mar24-Mar25	-1.0275s
4) Jun24-Jun25	-1.050s
5) Sep24-Sep25	-.940s
6) Dec24-Dec25	-.760s
7) Mar25-Mar26	-.555s
8) Jun25-Jun26	-.365s
9) Sep25-Sep26	-.215s
10) Dec25-Dec26	-.120s

If we were doing that play we'd done in January now (I don't think it's as asymmetric now), perhaps we'd fade the 105bps of cuts priced between June 2024 and June 2025, or perhaps fade that and then bet on more cuts than 36.5bps between June 2025 and June 2026, that would be selling the belly on the M4M5M6 fly. You could also reverse it if you thought that the Fed was going to get all its cutting done by M5 and then keep rate steady or even go back to hiking.

Now, if you want to get into the probability of a hike/cut at each meeting etc. it is much better to use option implied probability, which we will get into later. First, a point of order:

The Value of STIR Instruments

I know this is Global Macro Trading for Idiots, but it's really Global Macro Trading for people who don't trade Global Macro as well...

STIR in general, honestly I see a lot of people act like this asset class doesn't exist! I had plenty of people who were perfectly capable of utilizing STIR instruments tell me that they thought there were too many cuts priced in.

I'm being totally honest when I say that many of them told me they **shorted either bonds or equities on this thesis** (obviously, those who were at macro shops or pods did not, but ostensibly they would not be reading "global macro trading for idiots").

If your mandate is wide enough to trade these, or you don't even have a mandate, and you tried to play instruments that weren't STIR on solely on the thesis that 6 cuts was far too many: you either got run over or didn't make as much money as they should have. Yields on the long end are pretty much exactly where they were back on Jan 16th (we are writing this on March 8th 2024, I don't know where they'll be by the time we publish). Equities are almost ten percent higher.

Tbh, you deserved it for trying to express a STIR trade using equity indices.

Nowhere except STIR (the actual instrument designed to trade this kind of thesis) could you have risked 1 to make 20 on the idea that the market had gotten ahead of itself pricing in rate cuts, unless your thesis involved those cuts getting priced out being wildly bullish for equities, something I did not hear from anyone at the time.

That should demonstrate the value of these contracts.

And even if you can't trade them, paying attention to them was enough.

Constantly getting surprised by bullish equity reactions to hottish CPI prints? You probably wouldn't have been if you were paying attention to STIR! Equities have continued rallying while cuts were continually priced further out along the curve - a great signal that the equity market had stopped caring much about macro in general.

You want a signal when it starts caring again, I'd say starting with looking at this stuff is a good idea.

Whether due to equities persistent optimistic disposition, or (as the bond traders would say) the fact that equities and dumber: STIR pricing and equity prices sometimes do not

align.

Investors who are typically equity focused mostly tend to be relatively unaware of this fact, when those that have the latitude could instead be taking advantage of it to formulate generally superior hedges and those that don't could be simply paying attention to get better info than the headline "market prices in blah blah blah" and they don't even know what "market" that refers to.

If that describes you, we've made a quick advertising campaign to dissuade these actions:

SOFR INFOMERCIAL

Hey, you.

Yeah, you, sitting in the dim light of a screen trying to turn yourself from macro idiot into macro slightly-less-idiot.

1. Have you let vaguely recessionary macro doomer concerns dissuade you from taking more risk in equities despite believing are priced quite attractively?
2. Have you shied away from rate sensitive plays with asymmetric upside because of a looming maturity wall that will only matter if we don't get any rate cuts by 2025?
3. Did you get suckered into the July 2022 bear market rally and then have an awful September and October, even though you knew the names you were buying would resume getting pummeled if the market resumed believing a higher for longer Fed would have to keep hiking in 2023?
4. Are you in a growth equity seat and definitely cannot trade STIR futures in your professional capacity but got taken violently offsides when the Fed began hiking in 2022?

Behold the ways either trading or paying attention to STIR could have helped:

1. Buying/rolling wingy OTM calls on SOFR as a hedge for an equity book significantly exposed to risk in a recessionary outcome (have real world example

from my book being net long a bunch of tech and semis during SVB collapse when M3 calls 70x'd).

2. Using ratio spreads like Z4 94.5/95c to hedge a book of small caps against an adverse refinancing environment / maturity wall concerns if the Fed keeps rates "higher for longer" and doesn't end up cutting in 2024. CME Designated SOFR MM PNT Options (@PntOptions on twitter, follow him) pointed out a great example of this that 7x'd in the lead up to the FOMC meeting, check this out:

PNT Options
@PntOptions

*SOFR TRADE ALERT**
BUY SFRZ4 95.00/94.625 put 1x2 for 0.5
With no Libor risk, this trade is perfect hedge if you believe that there is a chance that the @federalreserve remain on hold throughout 2024.
Roll down is Great - Worth 30 in March, 13.5 in June and 5 in Sep.

8:06 AM · 3/5/24 From Earth · 5.1K Views



PNT Options
@PntOptions

...

They pay 3.75 now 10000x and bid - RIP the put skew



PNT Options @PntOptions · 2d

Rates on hold play in SOFR

Paper buying SFRU4 95.00/94.625 put 1x2 ratio paying 3.25 - 12000x so far and bid..

12:36 PM · 3/19/24 From Earth · 933 Views

Me personally, I'm not a fan of ever being short more options than I am long. I'm not smart enough to work with the path dependency, and I like my options to primarily be an expression of two things: 1) these options are cheap 2) they're wrong and I'm right regarding the magnitude and direction of the move. As a fellow idiot, I keep things simple. But that, of course, is up to you. And if you are/were convinced there's no way the Fed hikes again this year but that there's a decent chance they don't cut at all in response to structurally higher inflation, and have some positions on that will suffer if that happens, this could look like a decent hedge.

3. Look at this play, which was so good I took a screenshot of it when Bloomberg highlighted it. This trader bet on less rate cuts for 2023 during peak July 2022 pre-Jackson Hole rate cut euphoria by putting the Z22-Z23 steepener on.



This trade continued to work even after equities had bottomed, with his entry implying 61 basis points of cuts in 2023. By October 2022, during the last really intense part of the equity sell off, this spread implied 0 cuts in 2023, and (as we witnessed) there were actually 100bps of hikes in 2023. Imagine how that could have smoothed out your equity curve and given you more firepower or confidence to be buying the bear market lows!

4. This one is pretty easy, look at how early STIR started pricing in hikes:



Yes, it was a woefully insufficient amount of hikes priced in, but just being aware of this could have informed your view a lot more than equities. In fact, I recall this specifically, if you remember the violent rally in March 2022 after the first hike, look at how SOFR futures acted vs. equities. There was a clear move to go back to pricing in hikes from SOFR futures that began before the rally in equities reversed!



SOFR futures were already done thinking the Fed was going to hike less than anticipated before the first hike occurred by March 1st, meanwhile equities staged a rally on that “Fed is only going to hike 150bps” thesis that began right after the meeting on March 15th and ended at the end of March despite SOFR futures seeing the hawkish writing on the wall.

SOFR, So Good...

Now we move on to the BORing part.

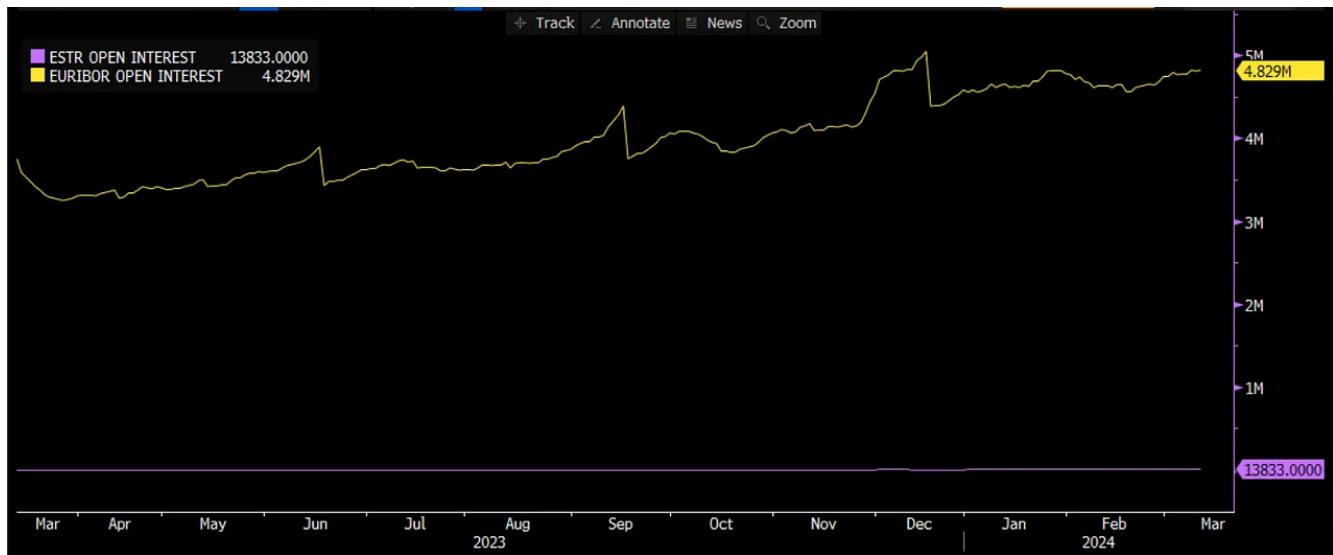
Non-US STIR

While the United States smoothly replaced its LIBOR family by SOFR under the guidance of the Alternative Reference Rate Committee, Europe opted for a more intricate path.

In a shocking twist for the EU, hindsight suggests that this decision may not have been the worst, but it's complicated. Europe's financial landscape is marked by the presence of two central clearing houses—LCH and EUREX (we will touch on these later)—and three (technically four) benchmark rates across different financial products: €STR, EONIA, 3M EURIBOR, and 6M EURIBOR, so bear with me.

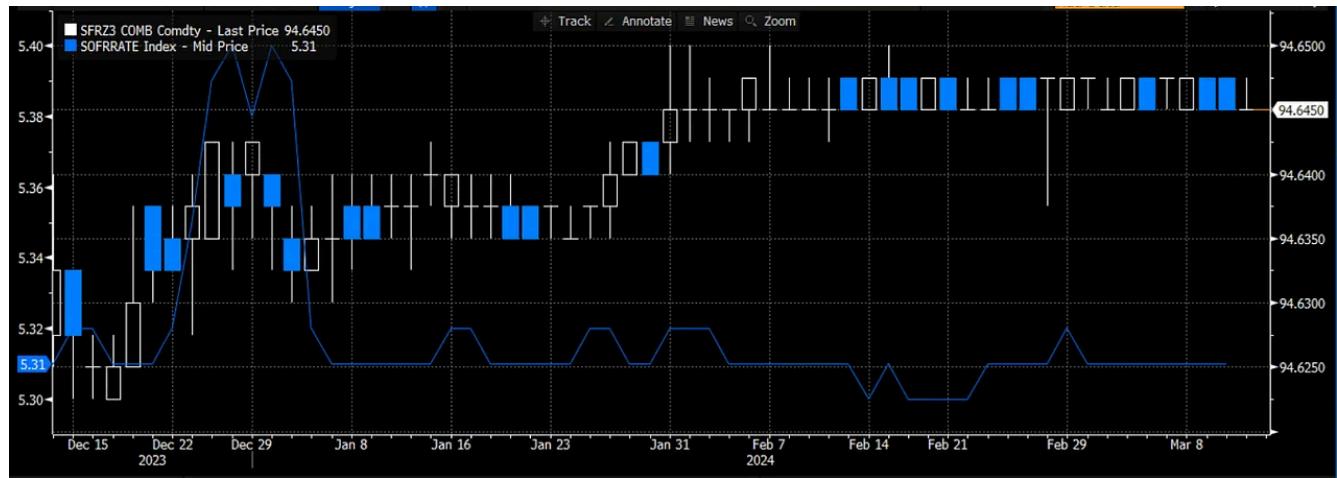
Let's delve into a scenario to understand this complexity further: imagine you're interested in trading a one-year vanilla swaption, where the reference rate is 3M Euribor. However, if you're eyeing a ten-year vanilla swaption, you're met with a roadblock—it requires 6M Euribor as the reference rate.

In the futures landscape in Europe, 3M EURIBOR are the behemoths of the industry, because of historical patterns but also because it is backed by real underlying economic activity. This chart showing the open interest in both contracts may seem very silly, but brings the point across very well: "No one cares about €STR futures".



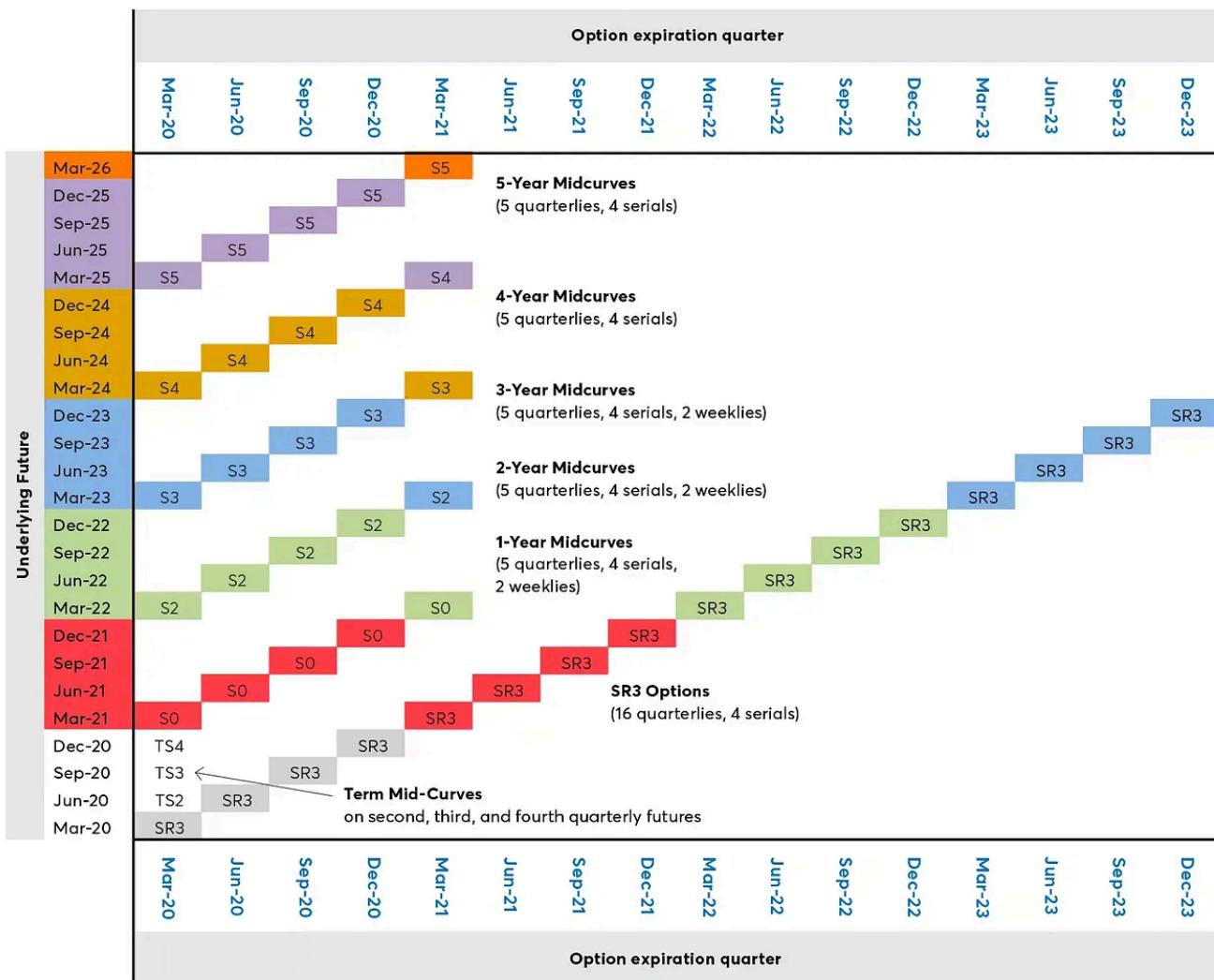
There exists a significant divergence in the fixing mechanisms between the 3M SOFR and 3M EURIBOR rates. Unlike SOFR, which represents a compounded rate over a 3-month period, EURIBOR futures are fixed two trading days before the third Wednesday of the due date month, based on the 3M EURIBOR published on that day. This distinction is crucial, as it delineates between a forward-looking rate (EURIBOR) and a backward-looking one (SOFR). The forward-looking nature of EURIBOR implies that market participants base their decisions on future expectations, whereas the backward-

looking nature of SOFR reflects past performance. This divergence in methodologies can lead to distinct behaviors in the respective markets. For instance, during the fixing of SFRZ3, volatility persisted as the SOFR rate spiked during the holiday season, highlighting the impact of its backward-looking calculation. Such intricacies underscore the necessity of comprehending the nuances of each rate and their repercussions on market dynamics.



STIR Futures Options

Exhibit 1 – Available Options on Three-Month SOFR Futures (SR3), effective 6 Jan 2020 launch



Alrighty, idiots, we are starting to go into distinctly non-idiot territory and it's only going to get tougher from here.

So you've got the basics of STIR futures down - SOFR, Euribor, SONIA, pricing, DV01, curve spreads, all that jazz.

As is the case with most things, options on the underlying are something of a final boss. You're feeling pretty good about your ability to trade the Fed's next move, aren't you? Well, buckle up, because we're about to take this STIR-fry to the next level.

When it comes to SOFR options, you've got a few different flavors to choose from. You've got your standard options that expire into the front month futures, and then

you've got your Mid-Curves (which we'll cover in a bit).

The first thing to understand is that SOFR options are quoted in terms of the IMM index, just like the futures. Quick refresher: IMM index = 100 - SOFR rate. So a price of 97.50 on a SOFR future or option is equivalent to a SOFR rate of 2.50%.

Now, let's talk ticks. For SOFR options, a tick is 0.0025 IMM index points (or 0.25 basis points in rate terms). So if you see an option quoted at 0.50, that means it's trading at a price of 0.50 IMM index points, or 50 ticks.

But here's where it gets a little tricky. The value of a tick depends on the underlying futures contract. For futures, each basis point is worth \$25, and each tick (minimum increment) changes based on how close to maturity the contract is worth \$6.25 on the closest months and half a basis point (\$12.50) on the rest.

But for Mid-Curve options, the tick value varies depending on the tenor. This is boring but pretty important, as we'll show later, when you can pick up close dated options for a single tick.

Here's a good, boring explainer:

	<p>Quoted in Underlying Instrument price points, at \$2,500 per point per Option contract, as follows:</p> <p>Outright — Quarterly Standard Options expiring in nearest March Quarterly Month</p> <p>0.0025 points (\$6.25 per contract) if Option is for nearest monthly Option expiration date, else</p> <ul style="list-style-type: none"> 0.0025 points (\$6.25 per contract) if Option premium is not greater than 0.05 points, and 0.005 points (\$12.50 per contract) if Option premium is greater than 0.05 points. <p>Outright — Quarterly Standard Options expiring in second-nearest March Quarterly Month, Serial Standard Options, and all Three-Month Mid-Curve Options</p> <p>0.0025 points (\$6.25 per contract) if Option premium is not greater than 0.05 points, and</p> <p>Minimum Option Premium 0.005 points (\$12.50 per contract) if Option premium is greater than 0.05 points.</p> <p>Increment</p> <p>Outright — All other Quarterly Standard Options, and all other Mid-Curve Options</p> <p>0.005 points (\$12.50 per contract), with Cabinet = 0.0025 points (\$6.25 per contract).</p> <p>Option Spreads/Combinations</p> <p>0.005 points, provided that it is 0.0025 points if:</p> <ul style="list-style-type: none"> (1) spread/combination comprises only Quarterly Standard Options expiring in nearest March Quarterly month, and any component Option contract is for nearest monthly Option expiration date, or (2) spread/combination trades at net premium not greater than 0.05 points and not less than -0.05 points, and any component Option contract is a Quarterly Standard Option expiring in nearest or second-nearest March Quarterly Month, or a Serial Standard Options. or a Three-Month Mid-Curve Option.
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For the options, the tick value depends on the specific contract and the option's delta (its sensitivity to changes in the underlying price). Without getting too deep into the option pricing weeds, just know that an option's value will change by some fraction of the tick value of the underlying futures contract, based on its delta.

Confused yet? Don't worry, it takes a while to wrap your head around. The key thing to remember is that option prices are quoted in IMM terms, but the actual dollar value of a tick depends on the specific contract.

Alright, enough theory. Let's look at some actual trade examples to show the real beauty of STIR options - the granularity they offer.

Example Trade 1: Betting on a dovish Fed in the immediate term

You think the Fed is going to cut rates by 50bps at their next meeting down from the current rate of 5.25%, while the market is only pricing in a low probability of this. You buy a call option on the front month SOFR future with a strike of 95.00 (implying a SOFR rate of 5%) for 2 ticks (or 0.05 of the IMM index). If rates spike, the IMM index will fall, and your put will go in the money and increase in value significantly.

This was basically the scenario that played out for me during SVB, in which my global macro trading book had even more significant gains than my core equity portfolio (in which I had been short SVB since >\$400). That was because of one solitary position that I had used to fade some extreme sentiment.

Here's what had happened, I went into Powell's congressional testimony thinking that the market had gotten a bit too certain that the Fed would only hike 25bps. I had on some puts I figured were asymmetric, paying about 0.03 for an option that would 10x if the Fed hiked 50bps. Well, Powell's testimony was widely regarded as putting 50bps "back on the table" and those puts were up about +400%.

At one point, the market was pricing in a 85% chance of a 50bps hike for the next meeting. So I said "well...I don't think he was THAT clear" and I lifted some calls for April 2023 (SFRJ3, which was tracking M3) on March 8th for 0.02



Citrini ✅
@Citrini7

Promote

...

Doing the stop and reverse on that 50bps asymmetric. Powell & crew hiking 25 is not a 20/80 thing. Much closer to 50/50.

10:59 AM · Mar 8, 2023 · 27.4K Views

View post engagements

4

3

27

2

↑

And then...Silicon Valley Bank collapsed. And this happened:



Which meant my calls went from 0.02 to 0.93



Citrini

@Citrini7

...

2 cents to 91 cents on the sr3j23 94.6875c



Citrini

@Citrini7 · Mar 8, 2023

Doing the stop and reverse on that 50bps asymmetric. Powell & crew hiking 25 is not a 20/80 thing. Much closer to 50/50.

3:25 PM · Mar 13, 2023 · 6,958 Views

And, if you were trading during this, you'll recall that OTM VIX calls really only did about 10-15x and SPX puts didn't do nearly as well as this as everyone began bidding up mega-cap tech in hopes of cuts. So, not to belabor the point, but this shows why SOFR is such a great and straightforward way to hedge. It's literally only going to move based on market expectations of cuts or hikes, no BS.

Midcurves

Mid-Curves are like the fancy garnish on top of your STIR sundae. They're options on deferred month SOFR futures, giving you even more precision in your rate bets.

Midcurves allow you to bet with an expiration in, say Z4, on what rates will be on Z5. This ranges on the long end from 5 year midcurves down to weekly options on one-year midcurves and term-midcurves. Those term mid-curves, the 3-month, 6-month, and 9-month Mid-Curves, they're the crème de la crème in my opinion, allowing you to make plays on the front end of the SOFR curve with style (and/or degeneracy).

Denoted by the symbols TS2 (3-month), TS3 (6-month), and TS4 (9-month), this number tells you how many months out the underlying SOFR future is. So a March TS2 option is going to be a play on June SOFR futures, while a March TS4 is betting on December futures. You can play what the market thinks SOFR will be in December 2024 by the end of March 2024. Get it?

LISTING OF TERM MID CURVES ON DECEMBER 15, 2023								
-DTE	OPTIONS CONTRACT MONTH	UNDERLYING FUTURE						
		MAR-24	JUN-24	SEP-24	DEC-24	MAR-25	JUN-25	SEP-25
30	JAN-24	SR3 JAN	TS2 JAN	TS3 JAN	TS4 JAN	SO JAN		
60	FEB-24	SR3 FEB	TS2 FEB	TS3 FEB	TS4 FEB	SO FEB		
90	MAR-24	SR3 MAR	TS2 MAR	TS3 MAR	TS4 MAR	SO MAR		
120	APR-24		SR3 APR				SO APR	
150	MAY-24		SR3 MAY				SO MAY	
180	JUN-24		SR3 JUN				SO JUN	
270	SEP-24			SR3 SEP				SO SEP
360	DEC-24				SR3 DEC			
450	MAR-25					SR3 MAR		

CURRENTLY LISTED THREE-MONTH SOFR
CURRENTLY LISTED 1 YEAR MID CURVES
TERM MC LISTINGS

Now, you might be thinking, "But Citrini, why bother with these when I can just trade the regular SOFR options?"

Well, my impatient little macro padawan, Mid-Curves give you the ability to make more targeted plays. On the other side, they allow you to be increasingly degenerate in your bets.

Maybe the market is pricing in a single rate cut in a given year during the June meeting, now let's say the Fed comes out and doesn't hike but signals they will hike twice by the end of December. With Mid-Curves, you can put that specific view on without having to worry about the noise from further out expirations. If the reaction of the market in that scenario is to believe the Fed and price those two rate cuts, and Z4 drops say 40bps over the next couple weeks, you're going to make a much bigger % PnL on June TS3 SOFR midcurve calls. Also, you can mix and match them with other SOFR options to create all sorts of fun spread trades. Just like futures spreads giving you the accuracy of making a play that's specific to what market expectations of rates will do in a smaller window

(than, say, the duration of a bond), you can get really granular mixing midcurves and vanilla SOFR options.

For example, you think the Fed's going to hike in the short term, but pivot to cuts later in the year. To profit from this, you could put on a calendar spread, buying a front month put and selling a 6-month Mid-Curve put at the same strike. If the curve flattens as short-term rates rise and long-term rates fall, your spread will print money.

Make sure you're aware of the midcurve option increments as described in the chart at the beginning of this section, especially if you're playing very wingy options.

Option-Implied Probabilities

Options also give us a handy method to derive the implied probability of cuts and hikes.

We will briefly describe how to extract these probabilities, so you can try to recreate it on your own. If you don't care for this (I can't blame you), feel free to skip to the next session of how to visualize the output.

Implied probability distributions, derived from tradable options (can be any, STIR, Commodities and Stocks), serve as an approximate representation of the risk-neutral distribution. Within the risk-neutral framework, characterized by indifference towards risk aversion, i.e. you are indifferent between losing or gaining money , the fair value for exposure to a particular event corresponds to the product of its occurrence probability and associated payoff. Based on this equation we can ascertain the likelihood of an outcome by dividing the cost of exposure by its corresponding payoff.

In options trading, the butterfly spread allows you to build exposure to a predefined range of price outcomes, i.e. I still expect the Fund Fund Rate to still be at 5.33 by December 2024. This strategy entails the simultaneous execution of a sequence of call options: acquisition of one call option at a lower strike price, the sale of two call options at higher strike prices, and the purchase of one call option at an even higher strike price. In our scenario, this would entail speculating on the assumption that the average FED Fund fixing remains relatively stable, likely within the range of 5.25 to 5.5.

To execute this strategy, you would:

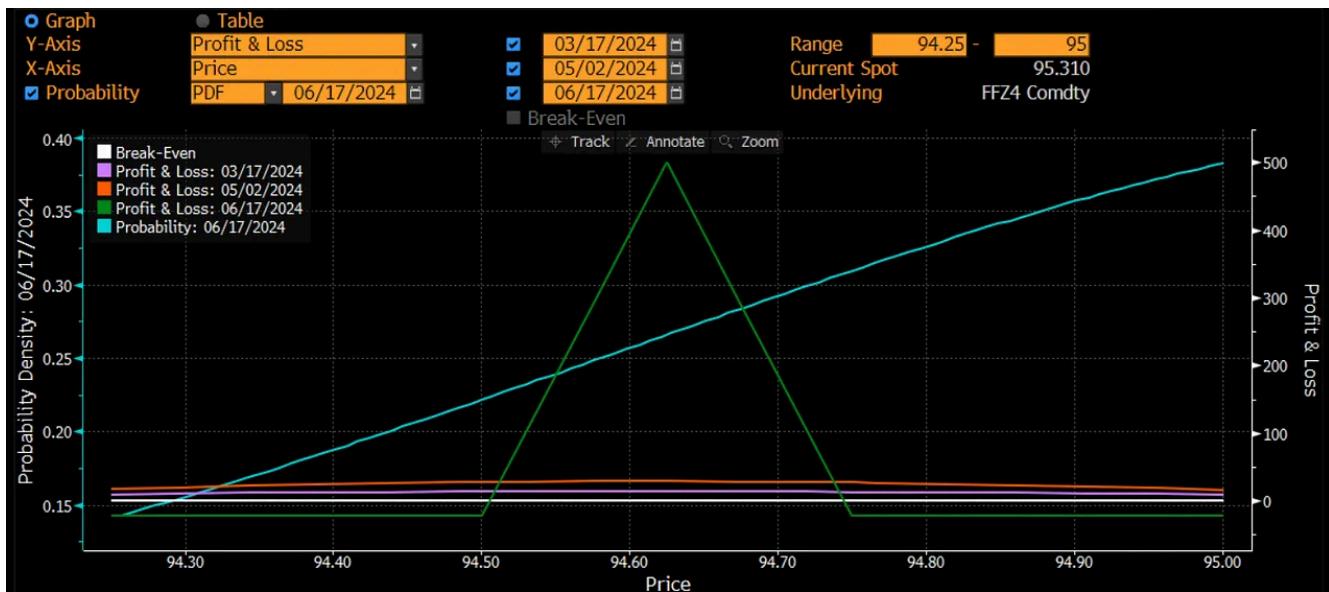
- Purchase one call option at a strike price of 94.5 (implied interest rate of 100 - 5.5)
- Sell two call options at a strike price of 94.625 (implied interest rate of 100 - 5.375)
- Purchase one call option at a strike price of 94.75 (implied interest rate of 100 - 5.25)

The resultant payoff structure exhibits a characteristic resemblance to the winged insect.



You can very easily re-build these and study these further using OVME <GO>.

Asset	Actions		Products		Views		Settings				
1) Solver (Leg 3 Vol)			13) Load			14) Save		15) Trade			
21) Deal 1		22) +		31) Pricing		32) Scenario		33) Matrix			
Underlying	FFZ4 Comdty		FED FUND 30DAY		Dec24		Trade	03/17/2024			
Und. Price	Mid		95.310 USD		Settle		03/17/2024				
Results											
Price (Total)	22.18	Currency	USD	Vega Yield	-0.01	Time Value	22.18				
Price (Share)	0.0053	Delta (%)	-0.72	Vega Price	497.11	DV01	-0.30				
Price (%)	0.0056	Gamma (%)	-0.0023	Theta	0.01	Gamma (1 bp)					
Three Leg	Leg 1		Leg 2		Leg 3						
Style	Vanilla		Vanilla		Vanilla						
Exercise	European		European		European						
Call/Put	Call		Call		Call						
Direction	Buy		Sell		Buy						
Strike	94.500		94.625		94.750						
Strike	% Money		0.85% ITM		0.72% ITM						
Shares	4,167.00		8,334.00		4,167.00						
Notional	USD		5,000,000.00		10,000,000.00						
Expiry	06/17/2024		23:00		06/17/2024						
Time to Expiry	92		09:44		92						
Model											
Vol	BVOL		143.224 bps		142.900 bps						
Daily Vol	9.022 bps		9.002 bps		8.982 bps						
Price Volatility	1.510%		1.504%		1.500%						
USD Rate	MMkt		5.333%		5.333%						
Leg Prc (Total)	3,524.41		-6,171.69		2,669.46						
Leg Prc (Share)	0.8458		-0.7405		0.6406						
Leg Price (%)	0.8874		-0.7770		0.6721						



Subsequently, the determination of the probability of the underlying settling within the specified range is achieved by dividing the cost incurred from implementing the butterfly spread by the prospective payout upon the underlying price settling within said range. It is not, in fact, the cover of Pink Floyd's Dark Side of the Moon (unfortunately).

Inferring Rate Path Expectations & Hike/Cut Probability

To construct a continuous and refined probability distribution, practitioners employ a methodology involving the pricing of theoretical call options across a spectrum of strike prices, all expiring simultaneously, utilizing an implied volatility surface interpolated from observable option prices. Subsequently, by leveraging these priced call options, a sequence of closely overlapping butterfly spreads is used. Dividing the expenses associated with these trades by their respective payoffs, while also accounting for the time value of money allows to build a forward-looking probability distribution of the underlying, as priced by the markets.

Ok so with the theoretical part out of the way, how can you check for these simply yourselves?

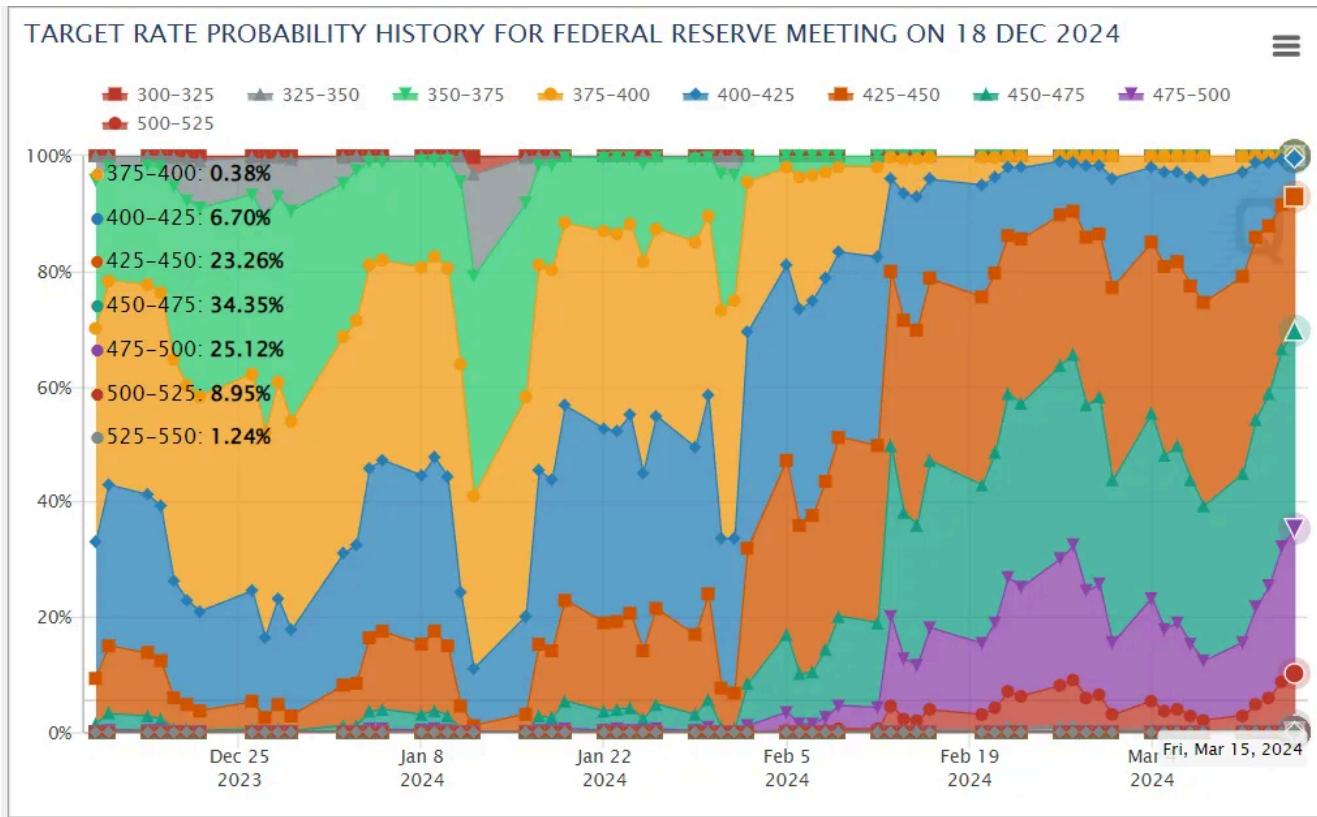
There are multiple ways to check for option implied probabilities. Four of which are listed below.

1. **The CME Fedwatch tool**, allows you to a) infer current probabilities and b) infer historical probabilities. For example looking at the end of day probabilities from Friday the 15th of March you could infer that the probability of the FED NOT cutting throughout 2024 is being priced at a likelihood of 1.2%. On the other side of the coin you could also infer that the probability of having two or more rate cuts by June is being priced at 3,7% ($3,6\% + 0,1\%$).

CME FEDWATCH TOOL - MEETING PROBABILITIES									
MEETING DATE	325-350	350-375	375-400	400-425	425-450	450-475	475-500	500-525	525-550
20/03/2024				0.0%	0.0%	0.0%	0.0%	2.0%	98.0%
01/05/2024	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	6.4%	93.6%
12/06/2024	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	3.6%	55.2%	41.2%
31/07/2024	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	27.1%	48.8%	22.4%
18/09/2024	0.0%	0.0%	0.0%	0.0%	1.2%	19.4%	42.3%	30.4%	6.7%
07/11/2024	0.0%	0.0%	0.0%	0.6%	10.1%	30.7%	36.4%	18.8%	3.4%
18/12/2024	0.0%	0.0%	0.4%	6.7%	23.3%	34.3%	25.1%	9.0%	1.2%
29/01/2025	0.0%	0.2%	3.6%	15.1%	28.9%	29.7%	16.9%	5.0%	0.6%
19/03/2025	0.1%	2.0%	9.6%	22.4%	29.3%	23.0%	10.7%	2.7%	0.3%

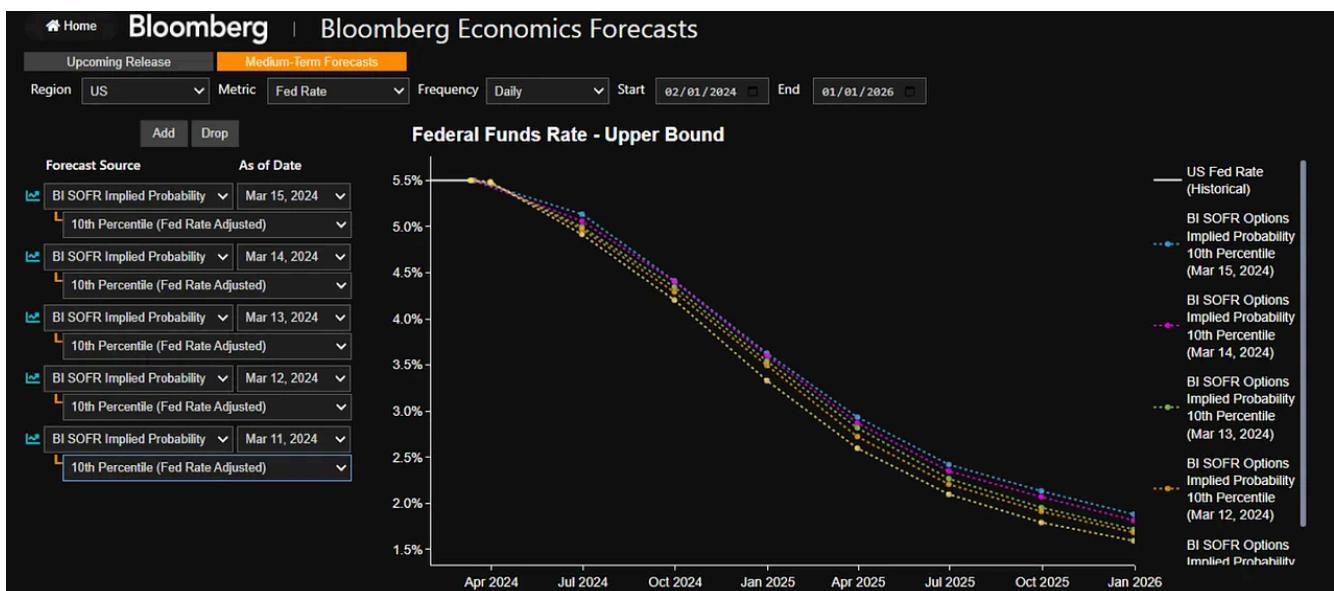
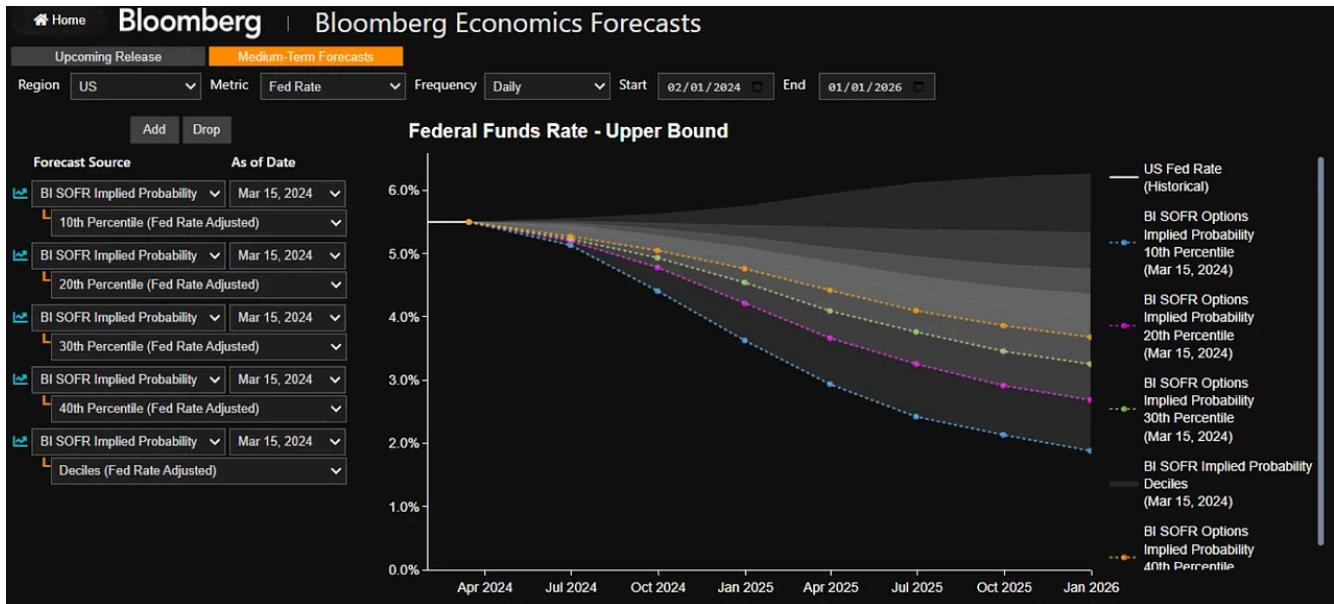
The best part in my opinion of this **FREE** tool is that you can not only infer end of day probabilities but also historical probabilities.

I personally find cumulative probabilities a little cumbersome but as soon as you get your head around those you will be good. Analyzing the chart you could infer a lot of things , such as the severe re-pricing of the left-hand side of the tail since the start of the year but also a pretty symmetric convergence towards the December dot plot.



2. **Reuters WIRP:** Reuters provides you with the option implied probabilities if you run the function World Interest Rate Probabilities

3. Bloomberg offers a tool similar to Reuters or the Fedwatch tool. However, in its current state, the tool has limitations, such as only allowing visualization of deciles rather than constant interest rate ranges. Additionally, setting up historical views can be cumbersome and time-consuming. These shortcomings highlight areas where the tool could be enhanced to provide more user-friendly and comprehensive features.

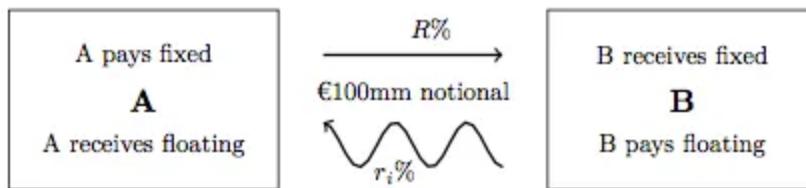


To be able to visualize this on yourself you will need to run BECO <GO> → Model → Forecasts.

4. Dont be lazy, build your own dashboard. It offers numerous advantages, including error prevention and the ability to customize every aspect to your specific needs. A small hint to get you started, just leverage Bloomberg's XLTP XOIP <GO> to get you kick-started.

Interest Rate Swaps

An interest rate swap (IRS) is a derivative contract established between two counterparties, outlining the terms of an exchange of payments tied to an interest rate index. The most prevalent form of an IRS is the fixed-for-floating swap, wherein one party commits to making payments based on a predetermined fixed interest rate, while receiving payments based on a fluctuating interest rate index. Each set of payments within the contract is referred to as a "leg," resulting in a typical IRS comprising both a fixed leg and a floating leg.



The floating index commonly utilized is either an interbank offered rate with a specific tenor corresponding to the currency of the IRS or an overnight rate. For instance, examples include the Fed Fund or the SOFR rate for USD, €STR, 3M EURIBOR or 6M EURIBOR, or the SONIA for GBP. These indices serve as benchmarks against which the floating leg payments are determined, ensuring transparency and consistency in the contractual agreements.

Within the space (and no this is not an official guideline) IRS are typically understood to reference a BOR rate. However, when the floating leg is based on an overnight index rate like €STR, SONIA, SOFR, and others, this specific type of swap is commonly referred to as an Overnight Indexed Swap (OIS).

The biggest difference, besides the implication of using different reference rates, between IRS and OIS are related to the fixing. Let's consider the example of 1y €STR OIS and 1y 3M EURIBOR IRS.

In the case of the 1y IRS there will be four reset dates:

- 1. Reset one:** The fixed rate is determined at the start of the swap ($T+2D$), and it remains constant for the next three months until $T+3M$.

2. **Reset two:** Occurs at T+3M, using the Spot 3M EURIBOR fix at that time. This rate remains constant for the subsequent three months until T+6M.
3. **Reset three:** Takes place at T+6M, utilizing the Spot 3M EURIBOR fix at that time, which then remains constant for the following three months until T+9M.
4. **Reset four:** Happens at T+9M, relying on the Spot 3M EURIBOR fix at that time, and remains constant for the last three months until T+12M.

If you initially don't understand this don't worry, this can be confusing at first. For the 1y ESTR OIS contracts it will be much easier, as it will simply be either the geometric or compound average of the daily fixings of the reference rate over the reference period.



The primary objective behind interest rate swaps is to mitigate exposure to fluctuations in interest rates or to capitalize on opportunities for obtaining a marginally lower interest rate compared to what would have been achievable without the swap. This strategic maneuvering helps participants manage their interest rate risk effectively and optimize their financing arrangements. Before dwelling much deeper into how to use interest rate swaps I will quickly dabble into the **Swap Data Repository (SDR)**.

The SDR serves as a central database for storing and managing information regarding swap transactions. Established in the wake of the 2008 financial crisis, SDRs aim to enhance transparency and oversight in the derivatives market. By collecting and storing

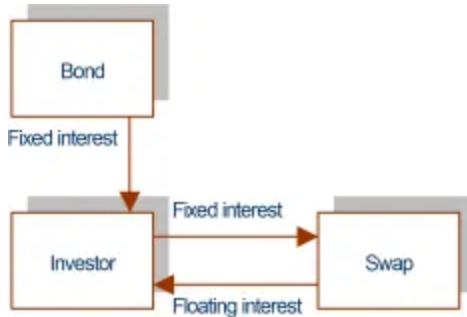
data on swap transactions, including counterparties, terms, notional amounts, and maturity dates, SDRs standardize reporting and ensure consistency across market participants. This standardization facilitates regulatory oversight, as regulators like the Commodity Futures Trading Commission (CFTC) in the US and the European Securities and Markets Authority (ESMA) in the EU have access to this data. Regulators use SDR data to monitor market activity, assess systemic risks, and enforce regulatory requirements. Moreover, SDRs promote market transparency by providing stakeholders with comprehensive and accurate information on swap transactions, reducing information asymmetries and improving market efficiency. Additionally, SDRs aid risk management by enabling market participants to assess counterparty risk exposure and monitor market developments. Overall, Swap Data Repositories play a crucial role in promoting transparency, stability, and regulatory oversight in the derivatives market by collecting, standardizing, and disseminating data on swap transactions. And the good thing is you can check it for yourself if you have a Bloomberg by running DSET DTCC <GO> or SDRV <GO>.





Before delving into the mechanics of asset swap spreads, it's essential to clarify some of the key terminologies prevalent in this domain. Market participants focus on the fixed leg of the IRS when expressing their directionality. This means that if an investor aim to speculate on rising interest rates, they opt to "pay" the swap. Essentially, they agree to pay the fixed rate and receive the floating rate in return. Those anticipating a decline in interest rates opt to "receive" the swap. In this scenario, they agree to receive the fixed rate and pay the floating rate.

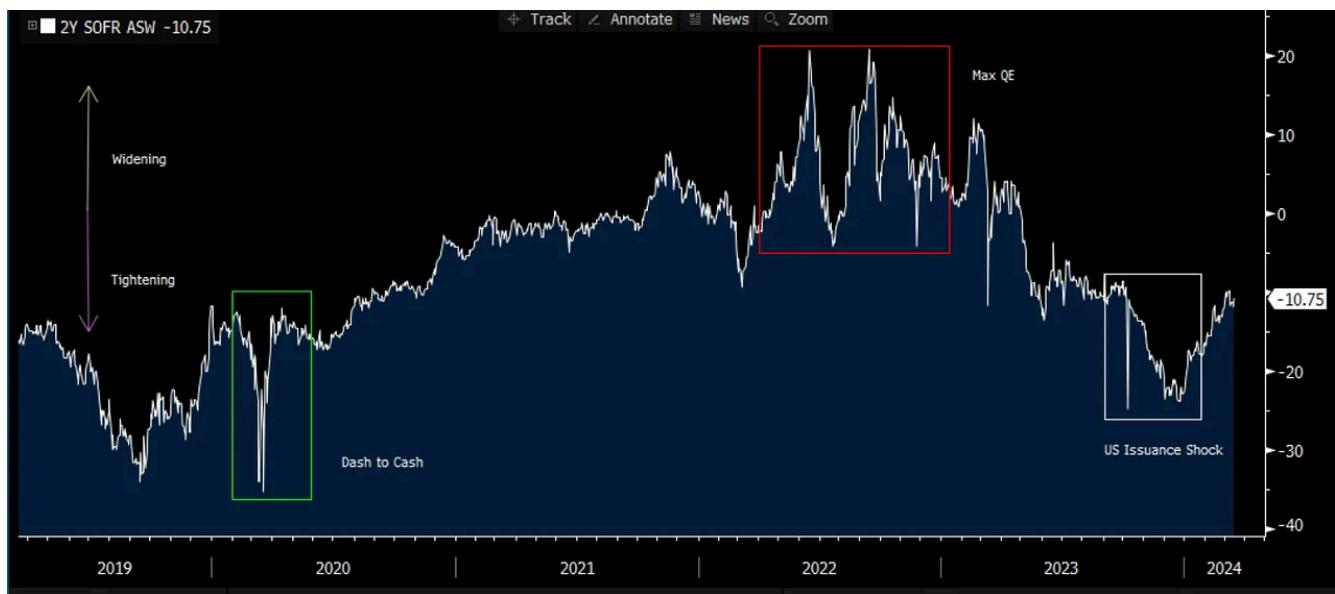
So now that we clarified this lets get back to the Asset Swap (ASW) Spread which involves two components: the fixed-rate bond and a swap contract. In our example we will consider a 2 year government note and a maturity-matcher SOFR OIS. Put very easily the ASW is the difference between the yield on the Swap minus the Yield to Maturity on the Bond.



A positive ASW spread indicates that the bond is trading rich relative to the benchmark rate (SOFR). In other words, this means that bonds are sought after. A negative ASW spread suggests that the bond is trading cheap relative to SOFR. This implies that

investors prefer receiving floating payments based on SOFR rather than holding the fixed-rate bond. The ASW spread is influenced by various factors, such as market conditions, perceived credit risk, liquidity, and the term structure of interest rates.

I have highlighted a few of the themes we have seen in the last five years, which have led ASW to move. Again I will just clarify the jargon so we can move forward without any problems. A higher ASW is said to be -widening, a lower ASW is said to be tightening.



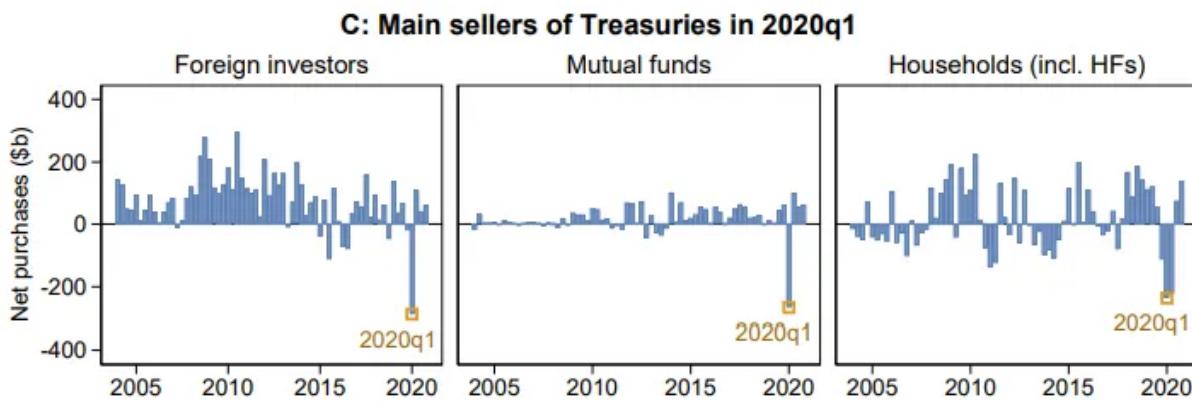
Dash to Cash: The "Dash to Cash" event unfolded amidst the backdrop of the pandemic, marking a period of heightened volatility and uncertainty in financial markets. As the crisis unfolded, market participants found themselves in a frenzied rush to secure liquidity, leading to widespread selling across asset classes.

This sudden surge in demand for cash placed significant strain on dealers' balance sheets. Despite their efforts to absorb this influx of capacity, dealers faced formidable challenges due to regulatory constraints imposed by the Federal Reserve (FED). These regulations, intended to safeguard the stability of the financial system, restricted dealers' ability to take on additional risk and provide liquidity during times of stress.

Consequently, the market witnessed a paradoxical situation where cash yields surged even as the FED implemented aggressive rate cuts in a bid to stimulate economic activity and stabilize financial markets. This divergence between the FED's monetary

policy actions and the dynamics of cash yields underscored the unprecedented nature of the crisis and the complex interplay between market forces and regulatory measures.

Overall, the "Dash to Cash" episode served as a stark reminder of the fragility of financial markets during times of crisis and highlighted the critical role of regulatory policies in shaping market dynamics and investor behavior.



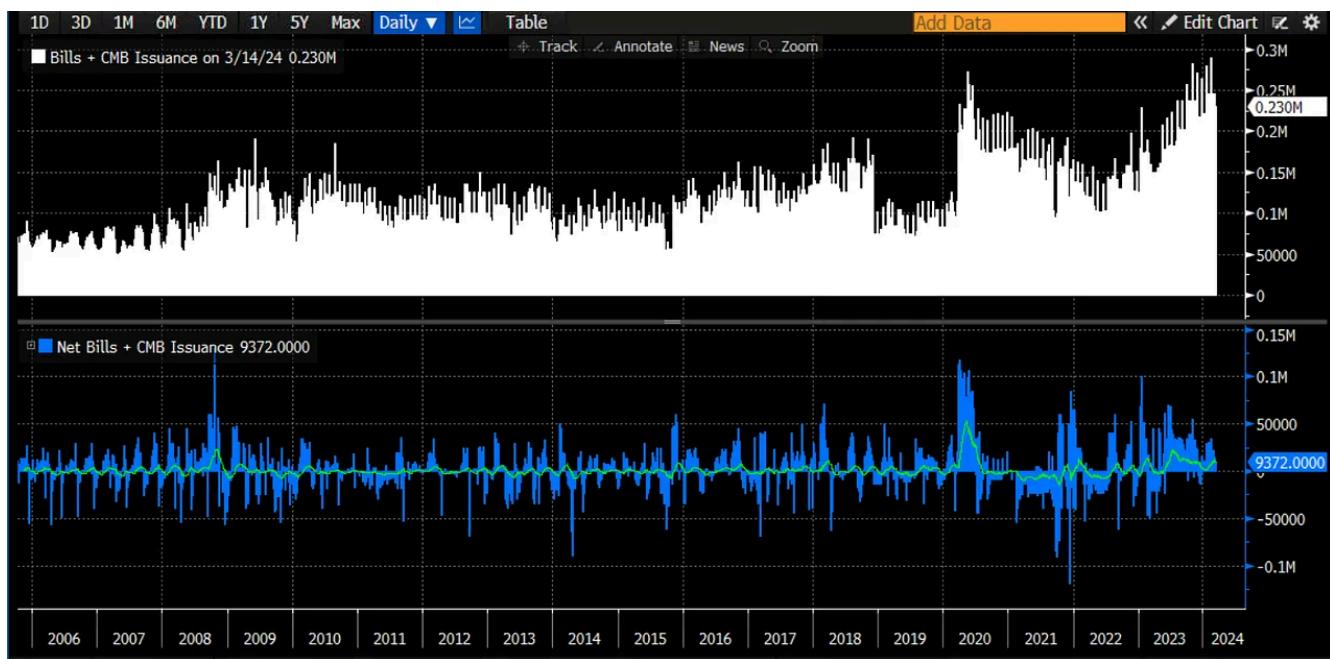
Max QE: During the Max QE period, central bank balance sheets reached peak levels, causing a significant portion of available collateral to be tied up. This abundance of cash circulating without sufficient investment opportunities was compounded by full dealer balance sheets, leaving little room for intermediation. Furthermore, the scarcity of bills available for cash management purposes exacerbated the situation.

In response to these conditions, market participants aggressively bid up collateral prices as they sought effective ways to manage their excess reserves. This heightened competition for collateral underscores the imbalance between the limited supply of safe assets and the heightened demand, impacting various financial markets and the broader economy.

US Issuance Shock

The "US Issuance Shock" marked the climax of fearmongering within the US media. It occurred during a period when central banks were engaged in QT. However, the most significant factor was the US Treasury's decision to increase issuance sizes following the resolution of bi-yearly debt ceiling shenanigans. As the FEDs RRP became increasingly depleted, concerns arose about the further ability to absorb the surge in

Treasury issuance. This apprehension led to a notable tightening of the ASW. Ultimately, despite initial anxieties, the situation proved to be much less severe than anticipated, resembling more of a tempest in a teapot than a substantial market event.

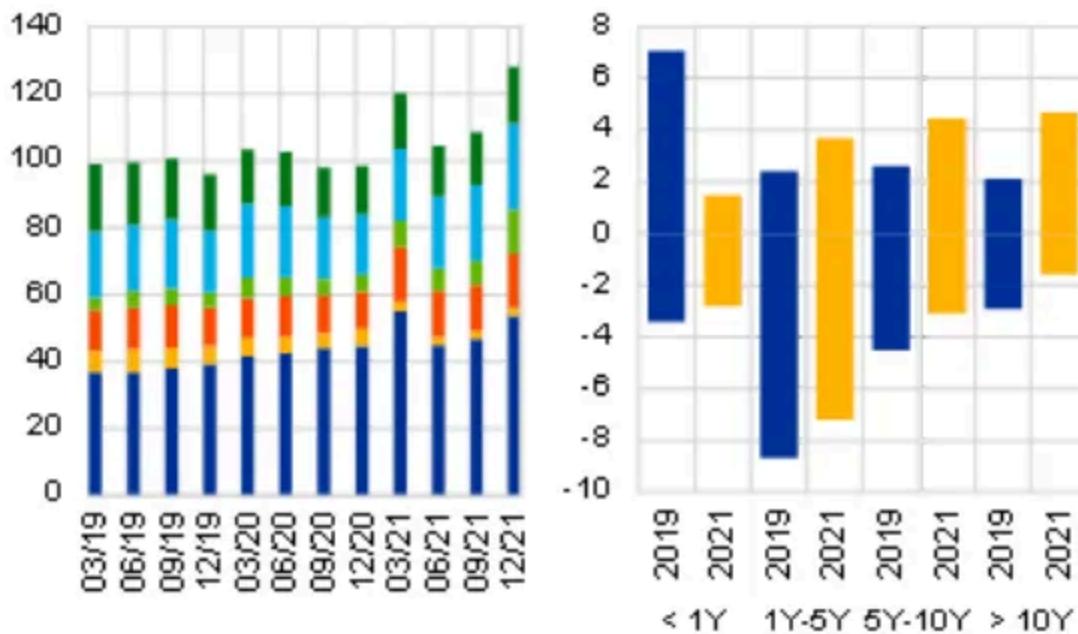


So now that we have ASW figured out lets move on to another important branch of the IRS family are basis swaps. Whilst they only make up a small relative share of the total amount of IRS volume they still are important, arguably much more in Europe than anywhere else.

a) Interest rate swaps traded by euro area banks

(left chart: Q1 2019-Q4 2021, € trillions, right chart: 2019, 2021, percentage points, net notional as share of total loans to NFCs and households)

- EURIBOR
- EONIA and €STR OIS
- Basis swaps
- Other-currency OIS
- Other-currency LIBOR
- Other IRSs



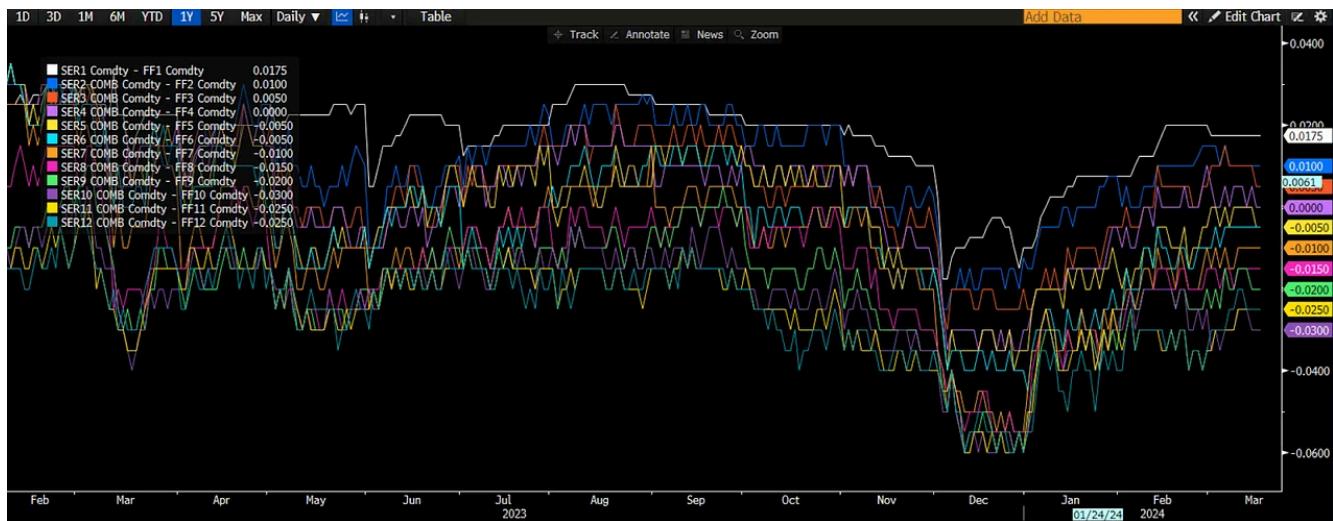
A **basis swap** is a contractual arrangement between two parties wherein they agree to exchange variable interest rates that are based on different money market reference rates. The primary objective of a basis rate swap is for a company to *mitigate the interest rate risk it encounters due to having disparate lending and borrowing rates*.

Illustratively, consider the relationship between 1-month SOFR futures and Fed Fund Futures, which reflects the basis between the SOFR and the Effective Fed Fund Rate.

A diminishing spread between these futures contracts signifies an anticipation of SOFR fixing higher compared to the Effective Fed Fund Rate, while an expanding spread

suggests the opposite. Towards the end of December, the narrowing spread indicated an expectation of an increase in SOFR relative to the Effective Fed Fund Rate. This trend can be attributed to repos trading more special, leading to higher SOFR rates, whereas fed fund rates stayed unchanged.

Those who foresaw this movement could have potentially capitalized on the trade, particularly by leveraging positions, thereby magnifying potential gains if the market moved as anticipated. It's worth emphasizing that while some may downplay the significance of these basis spreads, they serve as crucial indicators for informed market participants to make profitable trades. Consequently, paying close attention to these spreads can provide invaluable insights into expected interest rate movements, aiding traders in making well-informed decisions.



Back in Europe some of the most relevant basis curves will be €STR/3M EURIBOR and 3M EURIBOR/6M EURIBOR.

Nevertheless, there is one basis to rule them all, the EUREX/LCH basis. This basis stems from an inherent disparity in dealers' inventories at two central counterparty clearinghouses (CCPs), leading to varying initial margin costs. These costs cannot be easily netted and end up trickling down to clients, resulting in differential pricing for opposing sides of the trade. The Eurex-LCH basis, in particular, is significantly influenced by the tenor of transactions.

Recently, this basis has shown signs of resurgence in 2022 amidst the global take-off in rates. This resurgence is fueled by EUREX clearing's predominantly directional inventory, stemming from its concentration and consequent lack of diversified institutional clientele. As a result, margin costs at EUREX can escalate rapidly. This stands in contrast to LCH, where a more balanced two-way flow is typically observed. The widening of the EUREX/LCH basis to approximately 4 basis points presents an enticing opportunity for big dealers to intervene. At this threshold, dealers are prompted to intervene due to the basis sufficiently covering their margin costs. This phenomenon highlights the delicate interplay of supply and demand dynamics for the EUREX/LCH basis. As the basis widens, it signals a prime opportunity for arbitrage, attracting the attention of dealers who possess the resources and expertise to exploit such pricing disparities. Their intervention works to dampen the basis, bringing prices into closer alignment between the two clearinghouses.

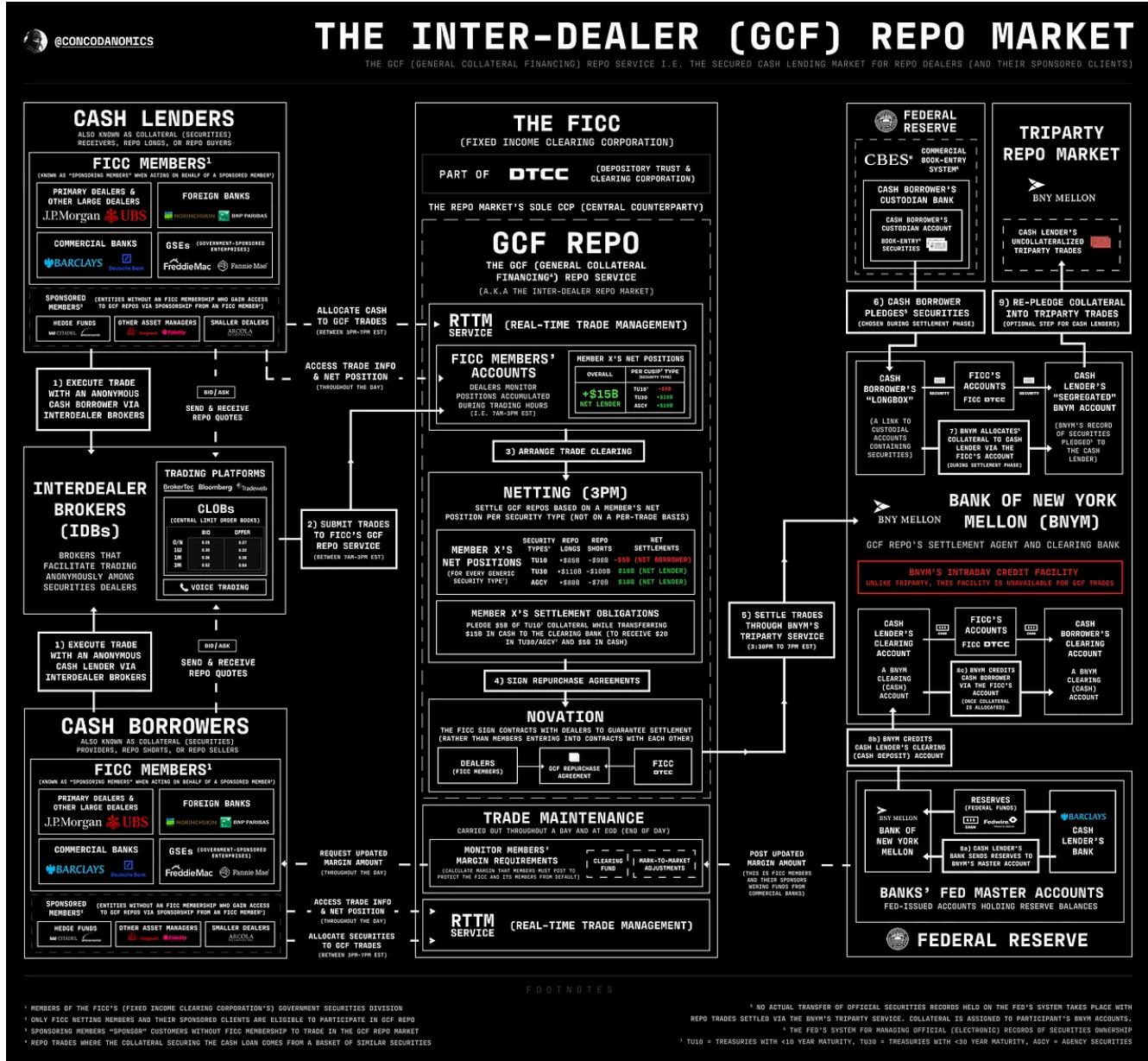
This dynamic underscores the importance of monitoring and managing basis risks, as they can significantly impact trading strategies and market dynamics, particularly in anticipation of interest rate adjustments. Understanding and navigating the nuances of the EUREX/LCH basis is essential for market participants seeking to optimize their positions and mitigate potential exposures.



Repo

The repurchase agreement, commonly known as the "repo," market is a vital yet often overlooked component of the financial system, which has garnered heightened attention in recent times. This market facilitates the trading of collateralized short-term loans, with daily trading volumes of multiple trillions.

But how does the repo market operate, and what dynamics are at play? Really, the answer is you should check out Concoda for updates on this and really exhausting schizo-looking but comprehensive infographics:



We'll try to distill it though:

At its core, a repurchase agreement involves two parties: the borrower, who needs short-term funding, and the lender, who provides cash in exchange for collateral. The borrower sells securities (usually government bonds or other high-quality assets) to the lender with an agreement to repurchase them at a later date, typically within a few days or weeks, at a slightly higher price. This higher price reflects the interest cost or fee for borrowing the funds.

Key players in the repo market include financial institutions such as banks, hedge funds, and money market funds. These entities engage in repo transactions for various reasons, including managing short-term liquidity needs, financing trading activities, or optimizing balance sheet operations.

The repo market is viewed as the veins of the financial system and serves multiple functions within the broader financial ecosystem. It provides a crucial source of short-term funding for market participants, allowing them to meet their financing requirements efficiently. Additionally, it serves as a mechanism for implementing monetary policy, as central banks often conduct open market operations using repos to adjust liquidity levels in the banking system.

To elaborate how important the REPO market let's review the events of 2019 when the repo market blew up. In mid-September 2019, the repo rate surged unexpectedly, reaching as high as 10 percent intraday. This spike was notable for its aggressiveness and debasement versus the fed fund rate. Despite financial institutions holding excess cash, *they were hesitant to lend*.

Several factors contributed to this unusual market behavior. First, there was a sudden surge in demand for cash from financial institutions, possibly driven by corporate tax payments, regulatory obligations, or quarterly funding needs. Concurrently, there appeared to be a shortage of high-quality collateral, such as U.S. Treasury securities, exacerbating liquidity strain in the market.

Moreover, heightened market uncertainty and risk aversion among participants may have further constrained lending activity, as institutions holding excess cash were

cautious about deploying it. This collective reluctance to lend exacerbated the shortage of available funds in the repo market, resulting in the unprecedented spike in rates.

Nonetheless the main culprit here was the Federal Reserve (hindisght bias) as they were recklessly implementing their new ample reserve framework. In January 2019, the FOMC, the Fed's policy-setting body, reaffirmed its commitment to this new regime. It stated its intention to continue implementing monetary policy in a manner where an ample supply of reserves allows the Fed to primarily exercise control over short-term interest rates through the setting of administered rates. Active management of the supply of reserves was deemed unnecessary under this approach.

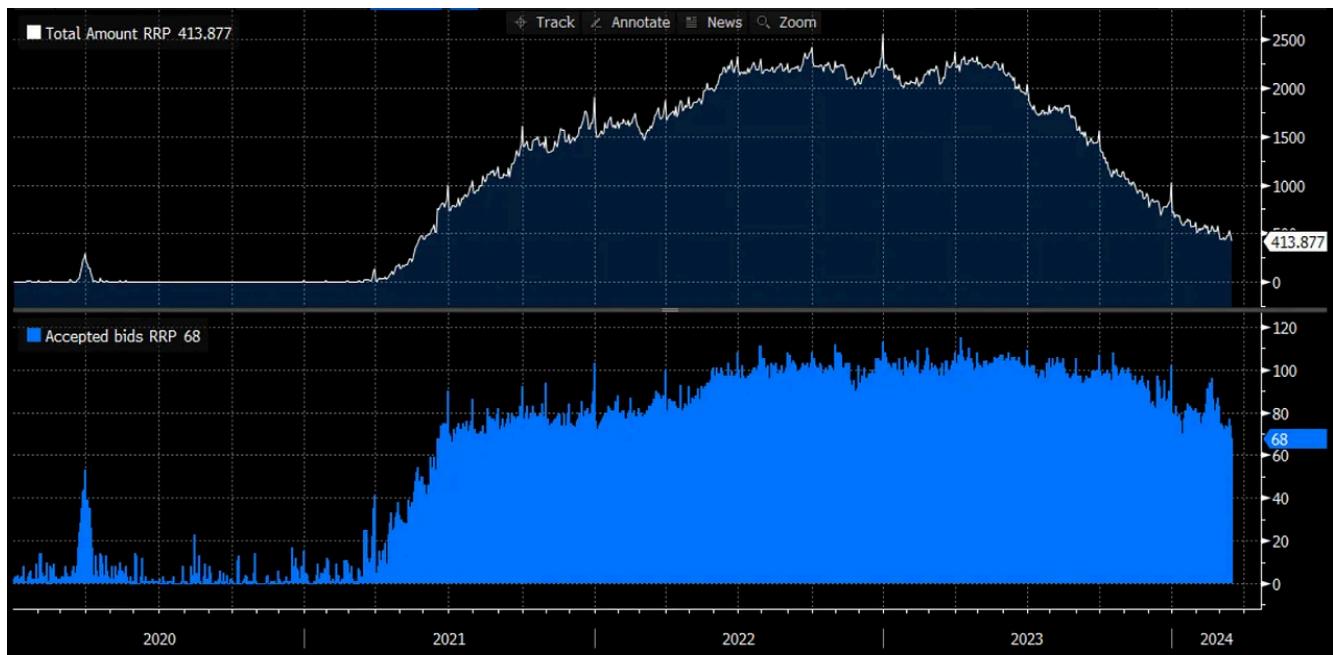
Following the cessation of its asset purchasing program in 2014, the supply of excess reserves in the banking system began to decline. Subsequently, when the Federal Reserve commenced reducing its balance sheet in 2017, the rate of reserve reduction accelerated. These actions further contributed to the adjustment of the reserves framework and the ongoing evolution of the Fed's monetary policy strategy.

Despite the Federal Reserve's shift to an "ample reserves" framework, uncertainties persisted regarding the optimal level of reserves deemed sufficient. Surveys conducted over the past year suggested that reserves would remain plentiful until they fell below \$1.2 trillion. However, it appears the Fed misjudged this threshold, partly relying on banks' responses in its surveys. In reality, banks exhibited a preference, or possibly felt compelled, to hold more reserves than initially estimated by the Fed. Additionally, they were hesitant to lend these reserves in the repo market, despite significant demand from participants seeking to use Treasury securities as collateral for cash. This discrepancy between supply and demand resulted in a sharp increase in the repo rate. With an abundance of individuals holding Treasuries and seeking cash, and a shortage of lenders willing to provide funds, the imbalance exerted considerable pressure on repo rates, culminating in the spike observed in September 2019. This event underscored the challenges associated with accurately assessing liquidity conditions and the intricacies involved in managing the reserves framework within the financial system. In response to this liquidity strain, the Federal Reserve intervened by injecting liquidity into the market through measures such as overnight repurchase agreements and Treasury securities purchases. These interventions aimed to alleviate market stress, restore

confidence, and ensure that short-term interest rates remained within the Fed's target range.

Overall, the unexpected spike in the repo rate in September 2019 highlighted vulnerabilities in the financial system and underscored the importance of effective regulatory oversight and central bank interventions in maintaining market stability and functioning.

Currently the most important repo facility has been the Fed ON Reverse Repo Facility (RRP), the liquidity valve of the system.



The RRP is a tool used by the Federal Reserve to manage short-term interest rates (providing a leaky floor to rates) and influence monetary conditions in the financial system (absorbing excess cash in the system). It provides a means for the Federal Reserve to absorb excess cash from the financial system temporarily, primarily by borrowing cash from eligible counterparties such as money market funds, government-sponsored enterprises (GSEs), and certain financial institutions.

Eligible counterparties submit bids specifying the amount of cash they are willing to lend. The Federal Reserve accepts bids based on its policy objectives and prevailing

market conditions. Market participants will not be able to place an unlimited of bids as the Federal Reserve imposes a limit per counterparty

Collateral for these transactions typically consists of high-quality securities, primarily U.S. Treasury securities, which mitigates credit risk. The interest rate paid by the Federal Reserve on reverse repo transactions serves as a floor for short-term interest rates in the financial system. By offering a competitive interest rate, the Fed incentivizes counterparties to lend cash, thereby draining excess liquidity from the market and exerting downward pressure on short-term rates.

The Fed Reverse Repo Facility plays a complementary role in the Federal Reserve's broader monetary policy toolkit. It provides an additional tool for managing short-term interest rates and implementing monetary policy adjustments, particularly in periods of heightened market volatility or when other policy tools are less effective. Monitoring it can provide signal value even to those who do not participate as counterparties.

FX Swaps

Next on the tour, let's delve into one of the pivotal short-term funding mechanisms for European Banks: FX Swaps. An FX Swap represents a simultaneous pre-agreed loan in one currency, secured by a deposit in another currency. Essentially, it involves a complete exchange of notional amounts at the onset and maturity, including accrued interest. The initial exchange occurs at the prevailing spot rate, while the final notional exchange takes place at the spot rate plus the forward rate. Now, if only we could afford Margot Robbie to explain the covered interest rate parity - I hear she's great at making even the driest financial concepts sizzle! Alas, our budget is tighter than a pair of jeans after Thanksgiving dinner. But hey, if you're up for a laugh and some financial enlightenment, check out the link (.) and pretend Margot's narrating it with her signature charm.



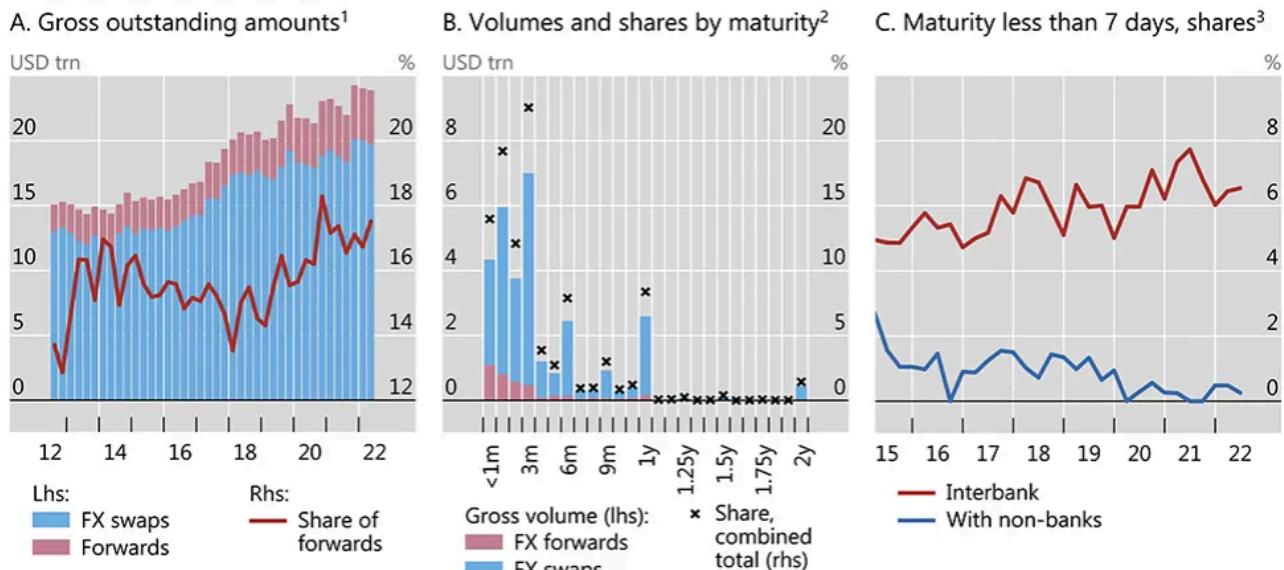
Our current budget is capable of producing the following, however:



FX Swaps are primarily utilized for short-term funding needs, with the majority of transactions having a duration of less than three months. Deals extending beyond a year are infrequent occurrences in this arena (I am in that arena though, trying things). An important characteristic of FX Swaps is their classification as derivatives, resulting in only the net value being recognized on the balance sheet at fair value. This treatment underscores their significance as an off-balance sheet item.

CLS-settled FX swaps and forwards, by maturity

Graph A1

¹ Quarterly averages. ² Data as of June 2022. ³ Share of gross FX swap positions with maturities of seven days or less.

Source: CLS.

© Bank for International Settlements

The primary market risks associated with FX Swaps can be categorized as follows:

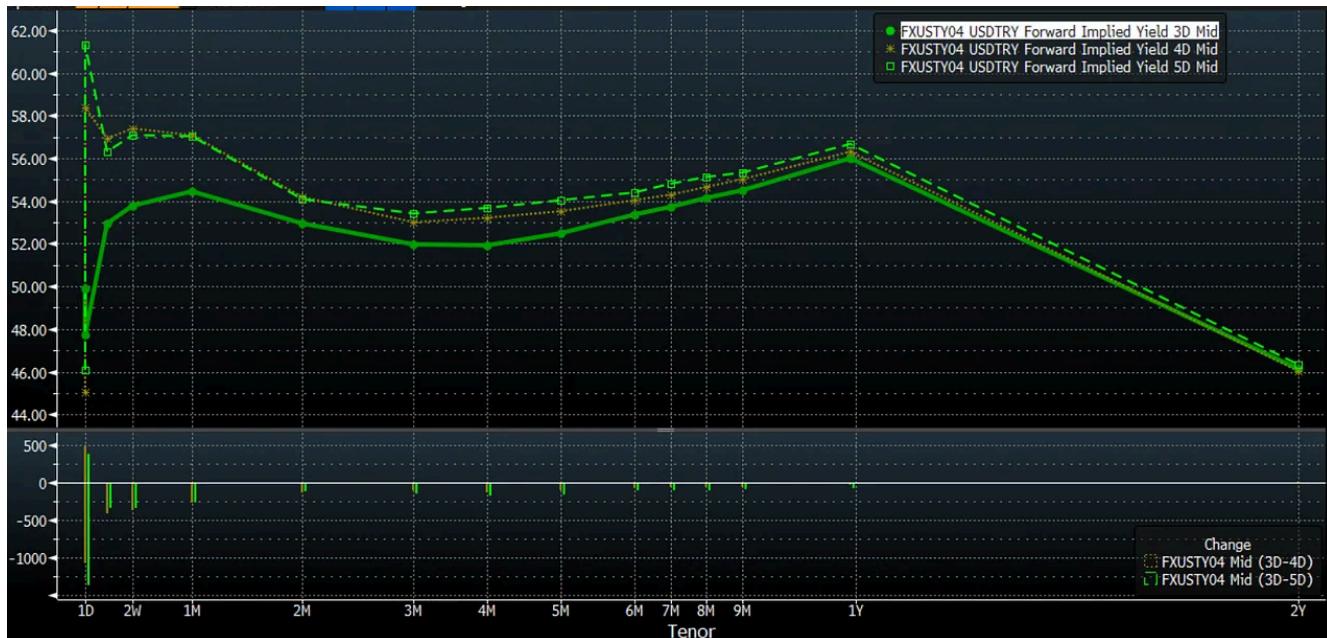
1. Spot Risk, expressed in notional
2. Sensitivity to interest rates in Currency 1 expressed in Dv01
3. Sensitivity to interest rates in Currency 2 expressed in Dv01
4. Cross-Currency Basis Risk, a topic we'll delve into further

Despite a significant push towards electronic platforms, particularly amidst the COVID-19 pandemic, much of this progress has been reversed since then, and the market still predominantly operates as an over-the-counter (OTC) interbank market facilitated by voice trading. FX Swap traders, a group I once belonged to, have their own unique terminology. Rather than quoting bid/ask prices, they refer to the left-hand side (LHS) and right-hand side (RHS). Interestingly, a simple mention of "urs" or "mine" can evoke strong reactions from them. The terminology used to denote your interest in a Swap will either be sell/buy (buy/sell) currency 1(currency 2). By running the command **FXFA <GO>** in Bloomberg you can see what an FX Forward curve looks like and infer what it means for the underlying funding.

Chart Refresh Export Settings ▾			FX-Interest Rate Arbitrage									
Same Currency Multi-Currency Central Bank			Pricing Date 03/18/24			Auto Refresh		Direct Input		Show Outrights		
Currencies EUR ↔ USD			RFQ CNF			FX Swap to EUR Depo						
Imply EUR Yield			7) FX Swap	Bid	Ask	8) EUR Yield	Bid	Ask	9) USD Yield	Bid	Ask	FX Swap to EUR Depo
Term	Date			Bid	Ask		Bid	Ask		Bid	Ask	
10 ON	03/19/24		1.247	1.292		3.8911	3.9185	5.3221	5.3306	1.0483	1.2083	-2.8428 -2.7102
11 TN	03/20/24		0.399	0.439		3.8911	3.9185	5.3221	5.3306	3.8700	4.0116	-0.0211 0.0931
12 SP	03/20/24		1.0885	1.0892								
13 SN	03/21/24		0.410	0.426		3.8911	3.9185	5.3221	5.3306	3.9139	3.9745	0.0228 0.0560
14 1W	03/27/24		2.91	2.95		3.8923	3.9198	5.3245	5.3329	3.9305	3.9569	0.0382 0.0371
15 MAR	03/28/24		3.77	3.85		3.8910	3.9178	5.3249	5.3333	3.7330	3.7734	-0.1580 -0.1444
16 BAPR	04/02/24		6.36	6.43		3.8879	3.9129	5.3264	5.3347	3.6894	3.7145	-0.1985 -0.1984
17 2W	04/03/24		6.35	6.44		3.8876	3.9124	5.3268	5.3350	3.8042	3.8327	-0.0834 -0.0797
18 3W	04/10/24		9.32	9.40		3.8903	3.9149	5.3300	5.3376	3.8472	3.8665	-0.0431 -0.0484
19 1M	04/22/24		13.60	13.71		3.8938	3.9182	5.3344	5.3415	3.9563	3.9735	0.0625 0.0553
20 2M	05/20/24		27.28	27.47		3.9031	3.9064	5.3399	5.3472	3.8418	3.8585	-0.0613 -0.0479
21 3M	06/20/24		41.22	41.42		3.8917	3.8968	5.3378	5.3438	3.8352	3.8474	-0.0565 -0.0494
22 IM2	06/20/24		41.23	41.44		3.8917	3.8968	5.3378	5.3438	3.8344	3.8471	-0.0573 -0.0497
23 JUN	06/28/24		45.00	45.30		3.8789	3.8846	5.3339	5.3401	3.8208	3.8360	-0.0581 -0.0486
24 BJUL	07/01/24		46.60	46.92		3.8747	3.8806	5.3310	5.3376	3.8090	3.8249	-0.0657 -0.0557
25 4M	07/22/24		55.05	55.36		3.8518	3.8587	5.3164	5.3244	3.8214	3.8367	-0.0304 -0.0220
26 EM	09/20/24		70.03	70.47		3.8019	3.8047	5.3030	5.3030	3.7401	3.7651	0.0497 0.0501

Additionally Bloomberg provides FX-implied curves which are very cool and can be very handy.

To visualize these I have used the TRY implied curve but you can really do it for most curves.



Cross-Currency Swaps

And lo and behold, we stumble upon the notorious cross-currency basis swap (XCCY), the big brother of the FX Swap, lurking ominously in the shadows of the financial world. Get ready to unravel the mysteries of this arcane beast as we spill the beans from the

depths of the internet, rubbing shoulders with the titans of Twitter (I refuse to refer to it as X).

The academic definition of an XCCY is as follows:

“A cross-currency basis swap is a floating/floating swap where two parties borrow from – and simultaneously lend to – each other an equivalent amount of money denominated in two different currencies for a predefined period of time.”

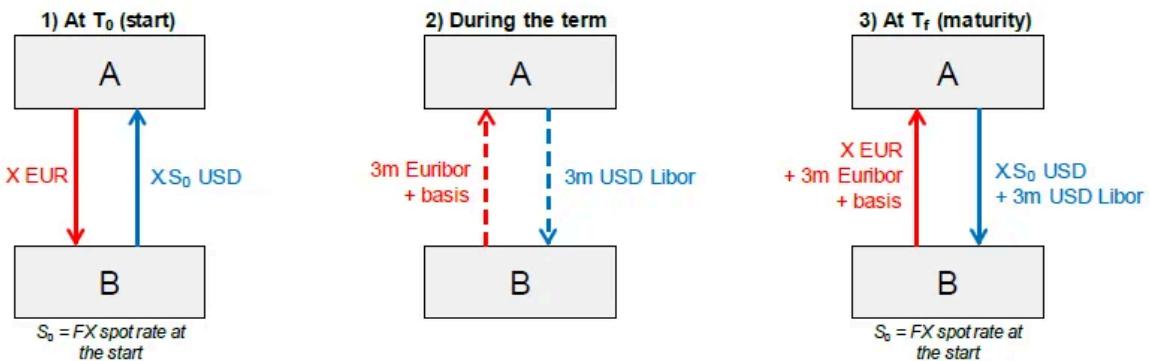
Whilst this might sound very fancy it really isn't. Peel away the layers of financial jargon, and you'll find it's not so different from its sibling, the FX Swap. Think of it like this: while an FX Swap is based on fixed rates, the XCCY prefers to keep things dynamic with floating currency rates. The most important difference is to clearly understand that FX Swaps are used to finance short-term funding needs and XCCY are used to finance longer-term funding needs.

Because the basis is quoted on the non-USD leg, ‘paying’ the basis means borrowing the other currency (non-USD eg, the GBP) versus lending USD; while ‘receiving’ the basis implies lending the non-USD currency versus borrowing in USD.

So let's actually consider how XCCY are being used.

On 30 SEP 2022, CITRINI SoF LLC – whose funding needs are in EUR – issued a 10y USD benchmark bond at ASW+65bp. At the time, the 10y EURUSD xccy basis was quoted at -30bp. By issuing in USD, cross-currency swapped back to EUR, CITRINI SoF LLC sold a 10y bond at an estimated cost of EUR ASW+35bp (excluding execution costs).

■ **Illustration: Flows involved in a EURUSD x-ccy basis swap:**



The mechanism of XCCY swaps becomes particularly pivotal during financial reporting periods, like quarter- and year-ends. Financial institutions, wary of the increased costs of expanding their balance sheets during these times, may shift to XCCY swaps as a preferred funding alternative. Much like FX swaps, the sensitivity observed in XCCY swaps stems from their classification as derivatives in accounting practices, resulting in them being treated as off-balance sheet items. This classification prompts banks to use xccy as preferred funding source, particularly during critical reporting dates such as year-ends, where the associated costs for balance sheet expansion can be punitive. In response to this, banks often refrain from expansion during these pivotal periods. Instead, they opt for alternative funding sources, such as rolling repos or term deposits into swaps. However, this strategic maneuvering places significant strain on both the XCCY and FX swap markets, causing a noticeable tightening in the XCCY basis. This tightening, in turn, leads to increased costs associated with obtaining funding in certain currencies, notably USD, especially around year-end. This effect is vividly demonstrated by observing metrics such as the 1W Implied JPY, which experienced a pronounced decline over year-end, indicating a sharp rise in the expense of securing USD funding during that period.



XCCY are susceptible not only to systematic market shocks but also to idiosyncratic shocks.

To illustrate, let's examine the SVB crisis and its ripple effects, including the breakdown of Credit Suisse, a prominent credit institution and former GSIB bank (white boy in the chart below).

The uncertainty surrounding Credit Suisse and the subsequent resolution of the crisis exerted immense pressure on the CHF XCCY market, as the capacity for intermediation by other banks was insufficient. Switzerland's financial landscape is characterized by a relatively well-functioning and stable market, albeit with a limited number of key players, including UBS, Credit Suisse, and ZKB. The dependence on a handful of institutions means that any disruption to one can lead to significant market turbulence. This phenomenon is exacerbated by the establishment of credit lines between banks, which may not be swiftly adjusted in response to sudden changes. To visualize this scenario, consider a hypothetical scenario where each bank has a credit line of 1 billion CHF, and you need to roll 3 billion CHF. If one of these banks, such as Credit Suisse, collapses, you're left with 3 billion CHF to roll but only 2 billion CHF in available lines. Consequently, market participants are compelled to go into the market and fire-sell their positions for longer terms until the credit limits are reassessed. This situation creates a bottleneck in the market, as everyone is trying to sell their position affecting all participants alike.



The main thing to understand about XCCY swaps is their dual utility in both hedging risks and providing funding flexibility across currencies for varying terms. They reflect not only market conditions but also regulatory and institutional actions, revealing their sensitivity to both systemic and idiosyncratic stresses. As such, XCCY swaps are a barometer for currency demand, funding costs, and financial stability, while serving as a critical tool for global financial management. Their strategic deployment, particularly around critical financial reporting periods, underscores their role as a key mitigator of balance sheet expansion costs and a facilitator of long-term, cross-border financing.

Traders not directly engaged in XCCY swaps can nonetheless extract significant value from an awareness of their dynamics, as these instruments are indicative of broader market sentiments and funding stress. The pricing and movement in XCCY swap markets can offer traders foresight into interest rate expectations and liquidity conditions in different currencies, which are crucial for assessing risk and making informed decisions.

For example, a widening basis in the XCCY market suggests increased demand for one currency relative to another, often reflecting a liquidity shortage or heightened credit risk. Traders can capitalize on this information by adjusting their currency exposures, hedging strategies, or by identifying arbitrage opportunities. In times of financial

turmoil, when the basis widens dramatically, it can signal opportunities to trade on volatility or take positions in anticipation of market corrections.

Moreover, an understanding of XCCY swaps can inform traders about the health of banking institutions and the overall financial system. Tightening conditions may lead to a reassessment of counterparty risk and necessitate adjustments in trading strategies across a variety of financial instruments.

In essence, XCCY swaps serve as a critical component of the financial ecosystem, offering traders valuable insights into the complex interplay of interest rates, regulatory impacts, currency liquidity, and institutional health, even if they do not participate in the swaps market directly.

Conclusion

Alright, we've covered a lot of ground here.

From the basics of STIR futures and how they let you trade central bank policy decisions with laser precision, to SOFR options and flies that can turn a hunch about the Fed into a high-conviction trade. We've delved into the nuances of options pricing and market implied rate hike/cut probabilities, the power of Mid-Curves, and even dipped our toes into the shark-infested waters of Euribors.

But the real takeaway here is this: if you're trading macro (or if you're a normally equity-brained person such as myself and trading on the back of a macro narrative) and you're not paying attention to STIR, you're doing it wrong.

The moves of the Central Bankers are unavoidable when trading pretty much anything, most of what you trade has either direct or indirect rate exposure. These instruments are the purest expression of market expectations about interest rates, and they offer opportunities that you simply can't find anywhere else. At the very least, understanding what they're pricing in is essential - and understanding when they are signaling stress can save you from a lot of...well...stress.

Sure, it's not always easy. STIR markets can be volatile, liquidity can evaporate faster than your P&L on a Fed day, and the learning curve is steeper than a 2s10s curve in a cutting cycle. But if you're willing to put in the work, to learn the quirks, the rewards can be immense.

Thank you for reading Citrini Research. This post is public so feel free to share it.

Happy Trading and May the Carry Be With You.

P.S. As you are all aware, I'm currently on vacation and this post was written in advance (figures are current as of March 14th 2024). Normally these articles include positioning for paid subscribers.

I will continue to share my SOFR plays in the substack chat for paid subscribers when I return. Enjoy this while I'm blissfully unaware of what SOFR futures are pricing in.

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Conks Conks Mar 22 Liked by Citrini

"schizo-looking"

yup, pretty much

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Slava Mar 28 Liked by Citrini

Damn, that was a long read. Will probably re-read it by parts later. Thanks a lot for your hard work

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