Twitter Thread by I'm just a doggie boi



I'm just a doggie boi
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I'm sure someone else has explained this, but it is just so cool and I want to explain how this works.

> https://t.co/ooF6BFVclF
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> — Andre Cronje (@AndreCronjeTech) January 15, 2021

So Curve is awesome for swaps between similar assets, right? The fact that they trade very close to each other is a key part about how Curve works, using it's custom swap invariant function.

That's step 1

Step 2 is that Synthetix is awesome for creating "synthetic assets" (aka synths) which are assets that trade like other assets, that are backed by another, entirely different asset. Basically, a plastic banana that I can buy and sell like a real banana.

Synthetix has a feature that lets you swap between any two synths with zero slippage and a flat fee. That's because it is simply converting the sythentic asset into another synthetic asset, the backing for the synth doesn't change it just uses a different price oracle now.

This is important. Absolutely no slippage, at any size

Swap $1m sUSD for $1m sBTC? flat 0.3% fee

Swap $10m sUSD for $10m sBTC? flat 0.3% fee

swap $100m sUSD for $100m sBTC? Well, there isn't that many synths in Curve, yet but you get the point. The only limit is the pool depth

Okay, so that's awesome. We have two building blocks:
1. Curve lets you swap like-assets with extremely low slippage and a low fee
2. Synthetix lets you convert synths to other synths, with no slippage and a low fee

What happens if we just... combine them?

So here's the flow:
1. I swap my "real asset" (e.g. USDC) for a "synthetic" one (e.g. sUSD)
2. I exchange one synthetic asset for another (e.g. sUSD -> sBTC)
3. I swap my new synthetic asset to a "real" asset again (e.g. wBTC)

"But, that's so much more complicated than swapping on another AMM!"

It is. It's not cheap either, at over 1m gas to execute. And to make matters worse, due to how a Synthetix swap works, you actually have to wait a few minutes between the swap, so it isn't even full atomic!

"It's not fully atomic! Why would I do this???"

The answer is capital efficiency. AMMs with a curve that allows trading assets that are dissimilar are inefficient with larger and larger swaps.

For example, a $10m USDC -> wBTC swap on Uniswap right now has >13% slippage!

Conversely, with this feature, a $10m USDC -> sUSD/sBTC -> wBTC swap has less than 1% slippage (you actually even get a boost right now, due to the balance of sBTC/wBTC pool)

Of course you would pick this option now!

There's lots of limitations to this, and it's really only efficient with large swaps (~$1m or more), but as Curve and Synthetix (and AMMs like Uniswap) grow, the range where this is profitable will change.

But on principle, this will be the best way to perform a high-value swap!

Why is that important?

I think as we have seen, gas fees are just going up and up and up. Optimism soft-launched their L2 today, but Ethereum's success means that block space will always be at a premium.

The gas costs will not be coming down as much as you'd think!

Instead, what we will see happen is that with the increase of cheap transactional capacity on L2, Ethereum will be at *more* of a premium (not less) as it will be used by high-valued settlement transactions and large capital movements (and exchanges, etc.)

So this is my prediction:
This more efficient means of large-value swaps will see a lot of use on base layer Ethereum, as gas prices continue to grow. Hobbyist/frequent traders will move to Layer 2, where smaller value trades will be economically more efficient.

(Potentially) We will see these two boundaries blur using this building block: a popular, lower-value, high-frequency AMM operating on L2 will settle activity back to Ethereum, with large capital movements settling between these L2s using this new swap primitive.

This is the natural progression of things. The ecosystem will only get more complex as this year moves forward, and navigating from a purely synchronous/atomic environment to newer primitives that play with atomicity and/or asychnronous behaviors is the major DeFi story of 2021

I hope this is helpful to people. This is a really complex new feature from @CurveFinance, but one that unlocks something really awesome, and plays to it's strengths as a high-valued swap engine (and popular yield lego!)