Subject: A DeFi crash course for normies: Crypto markets since 2017

Received on:

Body: View this post on the web at https://email.mg2.substack.com/c/eJxV0DtuxCAQBuDTLJ0tHjbggiJNrmFhGHtJbEA8suvbh10XUSQGip-ZkT6jC2whnSqGXNDrmssZQXl45B1KgYRqhjQ7q0YsGZFCIqsGS-QokcvzmgAO7XZVUgUU67I7o4sL\_tXBRjaM6K4GIaYVFpDCEE6JAS2xHInQehmBGH7t1dU68AYU\_EA6gwe0q3spMd\_Yx41-tuODvkfn2\_Q-1yUXbb57E46WxFa6s7C6ziSd750JNWXo1pA6H9LhILfgjCUgpyimFJNWHGPGe9pzzqaFDXrinArNpn6D5yOW\_es24GOj\_5ahpCw8m4ucco2QllDar-1l8I4bwdzeo3pXzhm8Xnawl065kN9e8wYeUsO3sy6K8IE2XIbxOA2XRuMbxIgnQSRq-21oXV79CfwCTO6Wng

I’ve been slowly writing and thinking more [https://email.mg2.substack.com/c/eJxV0M1uhCAQAOCnWW5rEBTlwKGXvobhZ1RaBQJjd337suuhacIAyTAz5LMaYYn5VCkWJK9twjOBCvAoGyBCJkeBPHmnejrydhxG4lTn2rEfiS\_TnAF27TeF-QCSDrN5q9HH8KrgPe96sipDeyNbLQyd7axHwQboZuZa65yxUrbXXH04D8GCgh\_IZwxANrUipnLjHzf2WVeIek0-1O5NOUxBbb8bG\_eaSTVsPhPGuw7ujivcly0avd1nH3Swvt7KWRB24hWjjNG2hqCUi4Y1QnBpeKelqF\_TXDYLPB8Jt69bR\_eF\_RtGsnLwrC6jLEeCbCLWV8vL4J2uBFM99yN4PCcI2mzgLh28kN9e0wIBcsV3k0bVio5VXE5pL7tLo\_J1Q0\_l0I6kznexVgX1J\_ALGimXRg] about cryptocurrency. One very interesting area that I haven’t really plumbed much is DeFi, or decentralized finance. I’m especially interested in how DeFi might change the way projects — companies, governments, mortgages, or whatever — get financed. So because I don’t know much about this space, I asked my friend Ming Zhao — who regularly writes fun and informative Twitter threads [https://email.mg2.substack.com/c/eJwlkEmSgyAUQE8TlhajwoJFb7LrM1goP4ZuBQs-nXj7xljFWPyB92aHsKR82D0VJOcy4rGDjfAqKyBCJrVAHoO3imrB9KCJt9IzrTQJZXxkgM2F1WKuQPY6rWF2GFI8M4QSUpGndVoxo4QC5t1jMoozw2dK1QDAeyPN1ddVHyDOYOEP8pEikNU-EfdyE183fm8DX-H8UTenrd3ubgq1fEOea24HEiynnFPWZk-p6Dve9b0wk5DO9D0fnDDdAu\_XjuvPTdJt4V2pU0E3\_54VSbYe3q28NqXukKeELWo54T7PjW1s-1ZjwGOE6KYV\_IWNl72PiHGBCLlZ9aNDy3rJmzXRYI28MJsXOShqBqZJ6-9Ty4o2JvfcQ2zi\_gG1hoey] on both finance and crypto — to write me a guest post about DeFi. My main question was: What kind of things is DeFi financing, and in what ways is it taking over from traditional finance?

Bio: Ming is an ex- Wall Street quant and cybersecurity whitehat turned founder & fintweeter. She's currently building a new trading platform to forever change how retail trades "TradFi" (and possibly DeFi!) options. Launch date TBD in 2022.

Anyway, Ming’s post ended up being about more than DeFi — it’s really a short, fun history of how the crypto world has changed since the big bubble and crash of 2017. It even has a section explaining crypto memes! But it also does answer my basic question above. So far, most of what DeFi is financing appears to be “the crypto sector itself” — crypto startups, crypto trading, and crypto asset management. But the final section of the post offers some very interesting ideas for how it could expand.

So you got burned buying BTC in 2017. You swore you’d never ever fall prey to Internet hype again.

Then some crazy world virus hits in 2020 and suddenly your nerd friends are babbling away about “ZK SNARKS,” “yield farming,” and “impermanent loss protection” while your Uber driver’s shilling some dog coin ape jpeg flashing his (3,3) T-shirt.

What the hell’s going on?? you think. All these buzzy meme-words, the gravity-defying pumps, the WAGMI-defying dumps… is it all just ponzi economics (again) or is the opportunity “real” this time to rewrite our global financial system?

Whether you’re new to crypto or just playing catchup, here’s a 5 minute crash course on everything that's happened in DeFi since 2017.

👇 [https://email.mg2.substack.com/c/eJwlkMluwyAQhp8m3GJhwCwHDr30NSxsJjatDQjGTfz2JbE0izSr\_m92CEsqp82pInmHEc8MNsKzboAIhRwVyhi8HajmvVaaeCt8rwdNQh0fBWB3YbNYDiD5mLYwOwwpvjf4wMVAVttz5tTMZuMEMC45f1CjOShQ06AkVddfd\_gAcQYLf1DOFIFsdkXM9ca\_buy7GezpJ2TwwXWpLK0wufl3ddHfQ\_TwuucUIoa43H16xtYmwTLKGO2bS0q57FgnJTcTF85IyZTjplvg9cy4\_dwE3RfW1WOq2M52c9pJse1sY6BNPTKUKWGbWt56P-0md2x5P2LAc4Topg38RQIvoB824wIRSgPtR4e2l4I1kJzSwYhLeUMl1ECN6jVp\_31qW9HG5NYcYmP5DyPdjio]

At First It Was Just A Pipedream

“DeFi” is Born: stablecoins & AMMs

Solving Scalability: L2s, proof-of-stake, Solana

Solving Liquidity: accelerating institutional adoption

DeFi Summer: lending, liquidity mining, liquid staking

IT’S ALL ABOUT THE DANK MEMES

Some Speculation on the Future of DeFi

1. Crypto Pipedream in 2017

Let’s start real OG. Here’s what the crypto landscape looked like in 2017: there was Bitcoin (“digital gold”), Bitcoin pizza [https://email.mg2.substack.com/c/eJwlkE2ShCAMhU\_T7LT4UdAFi9nMNSyQaDOjYAGObZ9-YkvBS1FJ6iXfaArMMZ16i7mQS4ZybqADHHmBUiCRPUMavNMt7QTrVEecbhzr2o74PEwJYDV-0SXtQLbdLn40xcdwdYhWNC15ajqBtI5b1dCec2WpU-3kjLKTmxjr5e1rduchjKDhD9IZA5BFP0vZ8kN8Pfg33uM4artnHyCjZO8g1WNcMWN9GaMP1ebfb1MxiufSavXLgsNUnDJVMUa85pTjB5-kVMia11KK3orG9FJyZURfz\_A6trL8PBq6zrzOu83FjL-XE0nawQuhdH3eN0g2FqyaLwCfNO4\_YFz34Ms5QDB2AXejKTfhD6xhhgAJybvBFM1kw5GsoLTtmxsFsmtUS3vFOoL-LmJX0CGa5-YD7vMPprqTHw], Ethereum (the platform on which people wrote logic to build apps like kittie-trading [https://email.mg2.substack.com/c/eJwlkUGShCAMRU\_T7LQQFHXBYjZzDQshKjM2UBCn29tPbKuAXxA-SR7WIKwxnzrFguxaJjwT6ACvsgMiZHYUyJN3uuODbIZ-YE63rhm6gfkyLRngafyuMR\_A0jHv3hr0MVwO2cm2Y5teZtEsPSwLjEYqM3SmAyWdsJbL2Sh55zWH8xAsaPiDfMYAbNcbYioP-fUQ3zRsDAVCOUsdAGk\_73EluWolwQ0qH4p3UBWklqq4VNeZzWfC-OsRPZSK3lihXBVSwBd\_OZnXggvBG5qKc6lqUSslx1m2ZlRK9EaO9QrvV8L959Hy5yrqcswFjf2tbXyyrB28idUwliNBniPSrfXi8gkTlon0eQSP5wTBzDu4mxje4D8MpxUCZPoQNxnUjWoFAZecd2N7EyKkbd\_xsW8GRvldJFfQIZot-UAd\_QPBgJ6h]). And that was pretty much it.

“DeFi” wasn’t a thing yet 🤯. We had speculators, market makers, and centralized exchanges (Coinbase, Gemini, Mt. Gox [https://email.mg2.substack.com/c/eJwlkMuOhCAQRb-m2Y1BXuqCxWzmNwyPUplWMFBOt38\_2CY8AtSlco4zCHPKp95TQXItI5476AivsgIiZHIUyGPwWtKet33XE6-Fb3vZk1DGKQNsJqwa8wFkP-wanMGQ4pXgkgtJFm2sYI45o6R0QigqjJugnWzXTdxNlN59zeEDRAca\_iCfKQJZ9YK4lwf\_frCfOuya3DPFtIXGpa1ebPg1p\_fXYtyznkjQjDJG2zoVpVw1rFGKD5YLMyjFOsOHZob3a8f19yHoNrOmHLZgjV8fkqw9vCtyP5Rjh2wT1qr5wvs8V7qx7tsRA54jRGNX8Dc43v4-KsYZIuTq1Y8GdasEq944pXIQN2g1IzpJh67tSe3vU01FHZNZ9hCrun8reIh0]… RIP). But we pretty much lacked every other practical ingredient to build a new financial system from scratch. Like: (a) scalability greater than 15 transactions per second, (b) reasonable transaction costs, (c) stable assets, (d) liquidity bridging, (e) lending markets, (f) institutional buy-in, (g) hedging markets… and the list goes on.

To quote @arjunblj, “It’s not worth reflecting on this bygone time further; thank you to the early builders who got us here.”

2. “DeFi” is Born: stablecoins & AMMs

What happened next? Barely four weeks went by in 2018 before BTC plunged 65%. “It’s the Chinese government’s fault!” said some people. “It’s the reflexivity of fear and greed!” said others. Well ya sure but the 800-lb gorilla in the room was still how f\*\*\*ing useless the entire crypto ecosystem was, except to buy drugs & Bitcoin pizza. No wonder markets got paper hands 🙄 ​​🧻🤲.

To become the new financial infrastructure of the future, at the very least it needed some functional money markets. And thus began the stablecoin race: a prolific epoch to create the default stable base currency.

Initially people thought, “Let’s just peg some coin to the dollar! For every $1 in as collateral, we’ll issue 1 stablecoin out.” 👋 [https://email.mg2.substack.com/c/eJwlkEtuwyAQQE8TdrUwP-MFi256DWswE5vWBgQ4iW9fEkvAiPlo9N4MFZeYT5NiqeT9TPVMaAI-y4a1YiZHwTx5ZyTVvNeDJs4I12upiS\_TPSPu4DdT84EkHXbzM1Qfw3uCSy4kWQ1ai0KDRNe7u9b3Gbi1SjpsQTA6X3vhcB7DjAYfmM8YkGxmrTWVG\_--sZ92cI-\_PqHz0MW8tMQTHj4sXysE137EG0YZo327ilKuOtYpxUfLBYxKsQH42C34eqa6\_d4E3RfWlcOWCvNfN8edZOPw1ZD1WI6E2cbaupY33qfc6KYW9yP4ek4YwG7oLvB6-fuomBYMmJtXN0E1vRKseeOUylFcoM2MGCQdh16Ttt\_FNhVMiLAmH5q6fzOdiWU]Tether [https://email.mg2.substack.com/c/eJwlkM1uhSAQRp\_msjT8iwsW3fQ1DMqotAoUxt7r25dbk2GGBL5MzpkdwprKZXOqSN5txCuDjfCsOyBCIWeFMgZvFTWCmd4Qb6VnRhkS6rgUgMOF3WI5geRz2sPsMKT4TgglpCKbVVwxkFLPzOuFL57N1CtD-4VNRjuv7r3u9AHiDBZ-oVwpAtnthpjrQ3w8-GcrBNygdJjafXE\_tQ0SLKecU9aOplTojndai2ES0g1a896JoVvh9cy4fz0kPVbe1XOq6Obvbk4HKdbDq2GaoZ4ZypSw\_VrfSP\_PjWhs8zhjwGuE6KYd\_A2Lt7N\_\_HGFCKW59KNDy7TkzZWgVA3yhms2ZK\_o0DND2n6fWiramNyWQ2y6\_gDp-IOA]. 👋 [https://email.mg2.substack.com/c/eJwlkEtuwyAQQE8TdrUwP-MFi256DWswE5vWBgQ4iW9fEkvAiPlo9N4MFZeYT5NiqeT9TPVMaAI-y4a1YiZHwTx5ZyTVvNeDJs4I12upiS\_TPSPu4DdT84EkHXbzM1Qfw3uCSy4kWQ1ai0KDRNe7u9b3Gbi1SjpsQTA6X3vhcB7DjAYfmM8YkGxmrTWVG\_--sZ92cI-\_PqHz0MW8tMQTHj4sXysE137EG0YZo327ilKuOtYpxUfLBYxKsQH42C34eqa6\_d4E3RfWlcOWCvNfN8edZOPw1ZD1WI6E2cbaupY33qfc6KYW9yP4ek4YwG7oLvB6-fuomBYMmJtXN0E1vRKseeOUylFcoM2MGCQdh16Ttt\_FNhVMiLAmH5q6fzOdiWU]USDC [https://email.mg2.substack.com/c/eJwlkU2O5CAMhU9T7IgIPymyYNGbuUZEwJ0wTUEEZtK5\_ZAqCeOF\_fyk7zmLsOVymSNXJPe34HWASXDWCIhQSKtQluCNYlqM-qmJN9KPWmkS6vJdAF42RIOlATnaGoOzGHK6FUIJqchuhAYn7bgqoXt9S8kVAzlzBZ4rb\_nH1zYfIDkw8A\_KlROQaHbEoz7E14P\_6e88z8EmGy8MroZUw7bjkAD7qFVPXQ6JvsW4h7TRKzda99yipz8pn9SuuSHFHWgFl5On0ZYNKtKKdo1wy\_slEgxnnLOx18SYmAY-TJOYVyHtPE38acU8bPB7Hhj\_PiR7bXyobe033M\_g8osU4-G3g9NzbQeUNWPf2m5I73FntPT-aingtUC6rf0HH35SeANdNkhQejp-sWjGSfJOXzCmZvnB1fnKp2Lzc9Sk-\_vcVcmkbPcjpB7Af\_2-o2A].

But this solution was not true to the OG ethos of decentralization because requiring reserve pools in dollars meant we’d be standing on the crutches of our broken existing system rather than ripping-and-replacing. Plus a single entity (read: single point of corruptibility) would have to manage that collateral.

As an alternative, Basis Protocol [https://email.mg2.substack.com/c/eJwlkMtyhCAQRb9mWFq8xQWLbPIbFkqPkihQgHH8-\_SMVTwLmss5s2uwpHLZnGoj72FsVwYb4awbtAaFHBXKGLxV1AhmekO8lZ4ZZUio47MA7C5stpUDSD6mLcyuhRTfFUIJqchqPaOK8VmB72fJ5JMOegJDezfoXjGl71x3-ABxBgt\_UK4UgWx2bS3Xh\_h68G9s53l2k6uhdiHh9rMczzU0yC7jJyF22T9JsJxyThl2TanQHe-0FsMkJAZq3jsxdAu8zty2n4ek-8K7eky1ufm3m9NOivXwQnIz1AOfnVLDW8ub8nOMkCPO-xFDuzDTTRv4m7\_dGj9GxgUiFNTrR9cs05KjPkGpGuTNi4Jkr-jQM0Mw3yesijYmt-YQ0eA\_x8SLAQ] said “Let’s make an algorithmically-pegged stablecoin not tied to any collateral! The protocol will mimic a central bank: automatically mint more stablecoins when the price rallies above $1 and automatically burn supply when price dips below $1.” Unfortunately the Clayton administration killed Basis.

A year later, however, Clayton reversed his austerity, and many new decentralized stablecoins emerged: DAI, AMPL, UST, etc. In the wake of so many algorithmic stablecoins, people thought “Hm, centralized exchanges are not true to our ethos either! Let’s algorithmically run our exchanges too!” Unfortunately the first Dexs (decentralized exchanges) immediately ran into ETH scalability limits.

It was impossible to maintain full order book data on-chain so the traditional market-maker quoting setup just didn’t work. That’s when Uniswap [https://email.mg2.substack.com/c/eJwlkE1uxCAMhU8zLCN-EgILFt30CN1GBNwMbQYQmM7k9iUTybIR8PT8PmcRtlQOk1NFcrYFjwwmwrPugAiFtAplCd5MVAmmZkW8GT1TkyKhLt8F4GHDbrA0ILmte3AWQ4qnQkxinMjdcOGtkvCthPXaMRBcrLO2lFmmV8r45WubDxAdGPiDcqQIZDd3xFxv4uPGP3v55OrQYqhPm4dUtn6VS8Lk0t6PX6y3ELEk39y5AgmGU867AaeSUiEHPkgp9CpGq6XksxV62OD1zLj\_3Eb62PhQ21rRut\_BpQcpxsOrI1C6tgxlTdh\_bWfc93NPu\_T56BvhsUC06w7-AoEXzzeaZYMIpXP2i0XD5Mg7R0HppMcreCc1zhPVM1Ok-\_vUVdHEZO85xJ7jHw8Cjjg] (inspired by this Vitalik reddit post [https://email.mg2.substack.com/c/eJwlkctyhSAMhp\_msHQQxMuCRTd9DQYlR2kVHAhV-\_SNdYYwIeQn4ctkEeaYLr3HjOzeDF476ABHXgEREisZkvFOK97Luu965nTj6l71zGfzTgCb9avGVIDtZVz9ZNHHcCukko1ii-YAtRS8G8RbureDwfYSrOs6OTo1jvypa4vzECbQ8APpigHYqhfEPb\_kx0t80jqOo0rgnMdqihsFEhngAgnKfaTgBgEzuUptvDnJoU9kk0owMUyL9cE4mCgn2dX\_gjNwUjTMkA09Yw57kYR5LbgQvCZrOZdtJaq2lcMoGzu0reisHKoZzmPH9evV8G0WVS5jRjt9342xpB2chK4fctkhjREpa74x\_V8TJXO3WoLHy0Cw4wruAYjPHP6RmhkCJJqPMxZ13TaC-EvO1dA8wIhw0yk-dHXPqL6LpAo6RLvsPtAI\_gCriaNv]and this blog post [https://email.mg2.substack.com/c/eJwlkEuOwyAMhk9TlhGBhMCCxWzmGpET3JQpIRE4fdx-3EbCL2Hrt78ZCJetvP2-VRIfN9J7R5\_xWRMSYRFHxTLG4HtpdWsHK4LvQmt7K2IdrwVxhZg8lQPFfkwpzkBxy58J3euuFzcfOotSK3mdwQ5OowQz964FBzpcJVxPXThCxDyjxweW95ZRJH8j2utF\_1zUL79HJEjx3szAxYIZCyTOlGwHDtJ8csVuhXJHWuGOpTY3WpOIXknFfWxGSm0a1Rij3aQ7cMaoAbRrFnw9d0p\_l06ui2rqMVWCmdW2VRQf8MUwrKvHjmXaiLuWz-Hfb7575LgeOdJ7xAxTwnAioZPsF9J47kwYRiDfmk4xUS1l77oTATPrhl66obWC9cPGU9nnDW57zAz1Hw\_Yj7A]) said, “Well since price is related to supply, let’s just make price literally a function of supply– i.e. automatically derivable– and get rid of the need for market maker quoting. We’ll tell people to inject funds into a two-sided swap pool (e.g. ETH-USDT) and when the market favors asset X over asset Y, they’ll remove more volume from X, driving up the relative price of X according to x\*y=k.” And so the world’s first AMM (“automatic market maker”) was born.

It sounded so simple and great. No order books necessary.

But slippage was a huge issue, especially for huge orders, where ultimate fill-price often deviated >3% from displayed price. So execution-sensitive market makers across the board decided they would stick to “CLOBs” (centralized order book exchanges) for trading the major coins and use AMMs only to trade “altcoins” (like SHIB and OHM) not listed on CLOBs.

There was no viable workaround to the computationally heavy CLOBs problem, it seemed… until late 2019.

Enter L2s and Solana.

3. Solving Scalability: L2s, proof-of-stake, Solana

One way to solve scalability was to fix “ETH classic” (the original proof-of-work protocol) via performance-improving techniques like batching, sharding, and data compression. “Instead of running crazy CPU-frying mining algos on-chain, one transaction at a time, let’s aggregate orders off-chain, process them in batches, then only write summary data back on chain” said developers.

So they made several aggregator chains on top of ETH, collectively called “L2s” or “Layer-2s”. These L2s used two main methods of validation: (a) “Optimistic ETH [https://email.mg2.substack.com/c/eJwl0UuO5CAMANDTFLuKCBASFix609eI-LgTZgggMNOd2w\_VJfGTsbH0cAbhyPXWJTckr2XHu4BO8N0iIEIlvUHdg9cL3fi8rRvxWvh5WzYS2v5VAS4TosbagZRuY3AGQ06vCr5wsZBTC\_BUeb8IS6lgVjqxzlJ-KWMVM7CZd1\_TfYDkQMM\_qHdOQKI-EUt78I8H-xzDZ9cmwPPsdgp5BMYZKvTrWbPxlykjFM0N9cmezZkY0jEiuWC4QsPg9ppj7ONB9kmCZpQxOo8pKeVyYpOUXFkujJKSrYar6YCf74Lxz0PQ62BT67ahcX8nly9StYefwbOp1gtUm3FkHS-K3-shsY\_96ingvUMyNoJ\_I-Hb-pdtPyBBHX\_gd4N6loINY07posQbZSiKdaFqnTcy-vs8qpJO2ZwlpMH8Hy2KmK8]” – where the system would initially trust all written transactions to be valid, then reward its users to constantly scalp around for fraudulent history, and (b) “Zero-knowledge/ZK Rollups [https://email.mg2.substack.com/c/eJwl0MmOhCAQANCvaW5tEBDxwGEu\_RsGpVRmEAzLdDtfP9VtwpZaqOTNpsAa06mPmAt5H2M5D9ABntlDKZBIzZBGZ3VHFW9Vr4jVwraqU8TlcUkAu3Fel1SBHHXybjbFxfDu4B0XHdm05NIaC50wgi9qatXClJxb23JlhVrgmmuqdRBm0PAL6YwBiNdbKUe-8a8be-Cycc4NlG2rU-MiBvANCep-T9HY3RwY8uaEdGf3PBvvwoqRvx9Me1\_xI\_YgTjPKGG1xS0q5bFgjJR8mLswgJesNH5oVXs-j-O-boPvKmlynXMz808xxJ0lbeCGLGnI9IE2xYNX6JvikUWDEe6\_BlXOEYCYP9sIpl\_GHa1whQEJ7O5qiWykY2nJKu0FcGKgn-o4OfasIzrcRu4IO0WyHC8j7D8nilSs]”– where the system would ask its aggregators to generate proofs for each batch-write operation, then have to check the validity of the proofs rather than of the original transactions.

But regardless of method, a modification on proof-of-work was never going to reach the hundreds of thousands or even millions of TPS (transactions per second) necessary for the day full-fledged crypto adoption replaces traditional finance.

The second and only true solution was to rip and replace proof-of-work (PoW) with proof-of-stake (PoS). By mid 2019, Solana [https://email.mg2.substack.com/c/eJwtkcuOwyAMRb-m7Ih4JCRZsJjN\_EbEw02YEojAaad\_P7QdyRhZ-PqiY2cQ1lye-sgVySst-DxAJ3jUCIhQyFmhLMHrgU2ST-NEvO49n4aJhLpcC8BuQtRYTiDHaWNwBkNOL4UcZD-QTbvRA4AfGDA-K3DMO-6vvA3zoxNCfXzN6QMkBxruUJ45AYl6QzzqRX5dxHeLHXw4987lvRU1R5MMjcbWVo00pJTvb-tKcTNId3MD-t-FG9BrKBXpAyytzkSgNmZ3c5sJiXrvBma5h6s3JGjBhGC8HcWYVJ3olJKzlb2ZlRKjkXO3wu\_jwPhz6dm-iq6etqJxt9fXSNEefhu4aa7nAcVmbF3rC9L7uTFa2r2fKeBzgWRsBP\_Bh58tvIEuKyQobTt-Mai56kWjLxkb5v6Dq\_Htx4HNI59I8\_e5qZJO2WxHSI3CHzeKolY] launched as the first “faster than Visa” PoS alternative to ETH. Suddenly execution costs dropped from $20-70 per transaction on ETH to $0.00025 per transaction on Solana, while network throughput expanded from 15 TPS to 65,000 TPS. Ultimately, on a 40GB link Solana TPS could reach 28.4 million. In other words, for the first time ever, DeFi markets now possessed a network infrastructure capable of processing a full fledged global exodus from traditional finance.

This was a major turning point in crypto history. Nay, in financial markets history. Finally DeFi was more than a pipedream. Finally it was institutionally accessible.

4. Solving Liquidity: accelerating institutional adoption

Below is a graph showing institutional adoption through 2020, overlaid over the price of BTC.

At the last peak in Jan 2018 the total market cap of crypto – i.e. all the crypto money in circulation -- stood at $770 million. Today that number is $2.6 trillion! The most significant driver of this growth has been institutional onboarding. To highlight a few OG crypto-native market makers: Alameda Research now trades >$5B in cryptos daily, GSR trades >$4B daily, Genesis Trading’s institutional lending desk processed $36B loans in Q3 2021, etc… Their success caught the attention of “traditional” big market makers: Jump Trading, Tower, HRT, Susquehanna, Jane Street, and the latest addition as of Jan 11, 2022... Cita-last-straw-del [https://email.mg2.substack.com/c/eJxFkcuSpCAQRb-m2GkgoMKCxWzmNwweWRbdCg4kZdffD3Z1REcAubj5uJx0BmFN-aWPVJBcz4KvA3SEs2yACJnUAnkJXo9U8kHOkngt\_CBHSUJZ7hlgN2HTmCuQo9otOIMhxauCj1yM5KEpU0ZJKkDSyVHhPGOztfauZiEEo\_Y911QfIDrQ8IT8ShHIph-IR7nxPzf2t53zPHsX0HjYCriaAwYovUt70y7DLfzI3a\_emRhTbX1LN3TD2Nmwbc1fF-ITCu4QsbvntLeKfzUF09J9d5hsfFivviRoRhmjQ7sTpXzqWT9NXFkujJomNhuu-hW-zgO3j5ug-8r6Um1B4z4vayRrD1-No1SlHpBtwpa1Xsy-5YZsaXGvMeBrgWjsBv5NE99L-ea7rBAht2X5xaAeJsHaMjiloxJveg23mEeq5kGSNt-nVhV1TOZxhNj--x\_3g6fW].

“But why do we want institutions in DeFi?” you may wonder. “Isn’t the whole point to decentralize and give power to the people?”

Yes. Of course. But 1) markets need liquidity and 2) what does it actually mean to give power to the people? It was never the existence of hedge funds and banks in traditional markets that was the problem. It was that traditional markets rigged the game, giving hedge funds and banks hidden privileges and special access totally unknown to retail traders.

Like the fact that non-accredited investors <$1M net worth can’t invest in startups or buy secondaries in private deals. (Whereas, anyone can buy any crypto project’s token in DeFi.)

Like the fact that if retail traders wanted to buy options or oil futures, the minimum trade size is 100 shares’ worth and 1,000 barrels’ worth, respectively. (Whereas, assets trade in infinitely fractionable increments in DeFi.)

Like the fact that retail traders can’t directly market-make on the traditional exchanges: CME, NYSE, NASDAQ, etc. (Whereas, on crypto exchanges like FTX, Binance, Coinbase, etc. retail traders can quote and execute trades programmatically using the exact same APIs as professional firms.)

If DeFi is our second chance to build a new financial system free of structural biases and bureaucracy, then we need to massively accelerate institutional adoption to get there.

Three ways that institutional activity directly lifts crypto markets:

It increases liquidity, which means tighter spreads, lower slippage, and huge executional improvements.

Each new initiate injects huge chunks of capital into the system, many billions in lifetime value (e.g. when Microstrategy bought 125,000 BTC, now worth >$5B).

It creates memes and marketing (e.g. when SBF rekt Coinmamba over $SOL at $3 [https://email.mg2.substack.com/c/eJwlkNGOhCAMRb9GHg0CojzwsMlmfsOgVIddBQN1Z\_z7rWNCoQTae3smh7CkfNo9FWTXNuC5g43wKisgQmZHgTwEb1vey6bveuat8k3f9iyUYc4AmwurxXwA249xDZPDkOJVIVupWva0s2-VnCbfGqXGUSrdQNPNfnZg-plzf-u6wweIE1j4g3ymCGy1T8S9VPKrEg9a-AqXo3pKG93KOA8zvq8MHR6FkkaqzmglhVCtEVqYrqvkY3VxqeQ3RBas4ELwhkJzLnUtaq2lIUvOaC06J029wPu14\_pTKb4toi7HSO2n30uUZevhTQ56U44d8piQfi3X\_J9nGn-gcztiwHOA6MYV\_E0Gb8AfVsMCETKB94ND22glCKzknPDcJAid6lpuuqZnpO8TVUUbk3vuIRLbf4oUkRk]; when Su Zhu pumped/pumps $AVAX [https://email.mg2.substack.com/c/eJwlkM1yhSAMhZ\_msnT4E3HBopu-hhM1Kq0XHAi91z59sc4QEgbCyfkmIFxjOt0RM7FrG-g80AV85R2JMLGSMQ1-di23StjOstnpWdjWMp-HJSE-we-OUkF2lHH3E5CP4epQrdIt25xWy7RoGIXoAYAvALjIVkNnZScWaW9dKLPHMKHDH0xnDMh2txEd-aE-HvKzLnr5a6Jmis96-t1KLjVnAiq5FkKrXlvJ-04oI0TbCcm8k1xKLmoYzpVpZGOM6keloTdGdqD6ZsX366D966H5c5VNLmP9cvq-ZFhyM76rpu1zOTCNkeqr9XL8f10NDzU\_S\_B0Dhhg3HG-WdCN9J\_OsGLAVFHPA5ATRsuKUnHe9vr2XmHprr0mt6zqz7F2BRcibIcPleYfz-WMmA]).

Three ways that institutional activity indirectly lifts crypto markets:

Wild returns from market inefficiencies continue to lure the biggest IQs from TradFi to crypto (e.g. Jane Street = “HR department at FTX”?)

Market makers continue to be the biggest bootstrappers of new DeFi projects (e.g. Alameda is the biggest liquidity provider for Serum, QCP is the biggest liquidity provider for Ribbon Finance)

Funds trading market-neutral strategies (e.g. basis trade) must constantly borrow assets, pushing up lending rates which trickle down to retail in the form of “juicy yields.”

And speaking of juicy yield…

5. DeFi Summer: A Cambrian Explosion in Yields

Since March 2020, Fed Chairman JPow has injected $5.4 trillion dollars of stimulus checks into circulation [https://email.mg2.substack.com/c/eJwlkE1uxCAMhU8zLCMCBMiCRTddtaseICLgZGgTiPjpTG5fTyNhsDD2433OVlhTPs2RSiWvbarnASbCo2xQK2TSCuQpeDNQzXutNPFG-F4PmoQyLRlgt2EzNTcgR5u34GwNKb46-MDFQO7GLtoulCvFGA6RSjk3WuGVGxRVWLp0bfMBogMDv5DPFIFs5l7rUW787cbecaGY70rdUgtlwTTlFW\_xewEKJp\_s64MEwyhjtMeQlHLZsU5KPs5c2FFKpiwfuxWej6Nu3zdB95V1pc2lWvfTubSTbDw80bYeSzsgz6niq\_Vl8b-MDic89xZDPSeIdt7AX-brxfAfx7RChIxs\_WSr6aVgyI5TOoziMot0hBroqHpNUN8n7IomJns\_QkR8f7rliUs], ballooning M2 supply by 34%! That’s one-third of all US dollars in existence! Printed in the last 22 months!  🤯 🤯 🤯 The result?

Yield on stock market: 100%

Yield on Bitcoin: 400%

Yield on DeFi: 69420%

Ok fine JK on that DeFi number. But the point is: during COVID 2020, every DeFi project alive suddenly realized “Hey, I too can pull a JPow! I too can print magic Internet monies, call them ‘reward tokens’ in lieu of ‘stimmie checks,’ then give them out to users based on how much they use my product!!”

Yield as CAC (customer acquisition cost). What could go wrong?

Lending platform Compound Finance [https://email.mg2.substack.com/c/eJw1kE1uwyAQhU8TlhYGjPGCRVWpV-jSwmbi0NqAYGji23fSqBIwI-bn6X2rQ9hSOW1OFdnzmfHMYCPc6w6IUFirUObg7cCN7M1omLfK92YwLNT5WgAOF3aLpQHLbdnD6jCk-JyQg1QDu9lRLFenvDLrOGnj115oZQQMPZfeeaNfuq75AHEFCz9QzhSB7faGmOtFvl3EB501HTm16LtriI466cuntR0QsVL-\_l\_-vAWE7DKULvsrC1ZwIXhPV3MudSc6reW0SOUmrcXo5NRt8Lhn3L8uih-b6GpbKrr1uyNJVqyHB5EwU220c0lIXdvT9V-ZTM8UjxYDnjNEt-zgXzzwhfWP0LxBhEK4\_ezQ9loJwik5Hyb18k\_A1DjwaewNI32faCramNwth0hEfwGOSZFC] was one such pioneer in “liquidity mining,” i.e. rewarding liquidity providers/lenders and liquidity takers/borrowers with a new magic internet coin called $COMP. As the value of $COMP appreciated, the return on lending and borrowing (i.e. “yield”) rose dramatically. And differently for each underlier (e.g. ETH, DAI, WBTC, USDT, USDC) based on supply and demand so that users were incentivized to keep switching between borrowing and lending different tokens to optimize yield.

This was such a successful customer acquisition hack that suddenly every AMM and every lender started doing it: e.g. Balancer [https://email.mg2.substack.com/c/eJwlkEmOwyAQRU8TdrEw2BgvWPSmr2ExVBy6MbgZkvj2XYklipJq0K\_\_rK6wpnyoPZVK3t9Sjx1UhGcJUCtk0grkxTs1Usl7OUni1OB6OUriy3LLAJv2QdXcgOzNBG919Sm-N\_jIh5HcFVB9M\_LGKXW217O0o3HQOyn5ZKSw8tTVzXmIFhQ8IB8pAgnqXuteLvzrwr7xuWRLZ3TQOJW7m8fSmh5XH331KPqAgpXg\_5p3vh7XDRtxJV4xyhjtMQSlXHSsE4LPhg96FoJNms\_dCq\_nXsPPZaDbyrrSTKna\_nY2bSQrBy8EIefSdsgmVZxa36Y\_bfS8YN4aXnEsELUJ4E4c9aT6AbSsECEjbbfoqnoxMKSJRMZ5OO0jr2Ea6Tz1kqC-S7gVVUz6vqOPFP8Bv7yRjA] ($BAL), Curve [https://email.mg2.substack.com/c/eJwlkcuSgyAQRb8m7LR4-MAFi9nMb1gIHcNEwYI2xr-fNqmC213A7YaDswhzyqfZUkF2yYjnBibCURZAhMz2AnkM3rRcK6F7zbxpvNCtZqGM9wyw2rAYzDuwbZ-W4CyGFC-HalXTsoeRLZeO-15OHgalwHIv-15r0KKfJIhvX7v7ANGBgRfkM0Vgi3kgbuWmfm7yl8ZxHLVLIXooT0pWWlptfgIWyiSXgoK4hCsSWy0pPasQMVVuzy8oFbhUzoKwVh7uoVQOIr1wC-CADCwYKiK5oNlxrrpa1l2nhkk1dug62Vs11DO8jw2Xv1vD11nWZZ8KWve5DsvGw5sK6qHsG-QpIZ2aLzyfbaIzUlz3GPAcIdppAf8Fh1\_-H5TjDBEy\_YsfLRrRNZK4K87bofmCIrJN3\_KhF5pRf5\_IFU1M9rGFSOj\_AfBmnTA] ($CRV), Synthetix [https://email.mg2.substack.com/c/eJwtkMtuxCAMRb9m2E1EeCRkwaKb\_kZEwJPQEkDgdCZ\_X9Kp5Idk-8q6xxqENZVT51SRXGXGM4OO8KwBEKGQo0KZvdOSKt6rURGnheuVVMTX-VEAduODxnIAyccSvDXoU7wUXHIhyaaVlFRIsShrx55Z13NuqZjYgzlqFRPvv-ZwHqIFDT9QzhSBBL0h5nrjHzf22WIJae3qGXED9K\_Op2uG9n56CO7-MGX3cb3nlEJbEK8ZZYz2LQdK-dCxbhj4tHBhpmFgo-FTt8LrmTF83QTdV9bVY6lo7Hdn006KdvBqANRUjwxlSdiu1svs37p5nVvfj-jxnCGaJYB7Y8A3zT8w8woRSqPsZoO6HwRrFDmlcvq33TiJUdJp7BVp\_11qqqhjMlv2sYH8BTPxjN4], etc… The market for “yield farming” got so hot so fast that one had to spend all day keeping up with new projects if she wanted to earn the best yield possible. That was when Yearn Finance [https://email.mg2.substack.com/c/eJwl0M1uwyAMAOCnKbdFBEggBw677DUiAk7KlkIEpm3efm4r8WMZsNHnHcKWy2mPXJG9lhnPA2yCR90BEQprFcocgx24kb3RhgWrQm8Gw2Kd1wJwc3G3WBqwoy179A5jTq8XcpBqYFfbr15oALlquQJXk1mM44ta9aT16r3-9HUtREgeLNyhnDkB2-0V8agX-X0RPzRC9rU7wZXUrTE5ukvJjX4Z0\_ZV0RWEQJmj5NA8VgrPu2v7O8pU9B7hwaIVXAje0xw5l2MnunGU0yKVm8ZRaCenboPn48D996L4bRNdbQtV93-dzzdWbIAnuZiptgPKkpFubS-D9zERzLTfWop4zpDcskP46OAH-e01b5CgEH6YHdp-VIJwJefDpD4axKf0wCfdG0b9Q6ZXyabsrkdM5PsPvtGW\_g] created a smart aggregator of all other yielding platforms to take care of the fund routing optimization headache.

Once again it got too easy to make money. DeFi degens started dumping out of staking and dumping into swap pools (why stake your $ETH for 7% APY when you could be making 50% on Yearn??). There was just no way to compete for users’ wallet share. And that’s when Lido Finance [https://email.mg2.substack.com/c/eJwl0UuOhCAQANDTNDsNih9csJjNXMOUUKNMIxAox\_b2g90Jf6qo5KGBcA3pUjFkYvcw0xVReTyzQyJM7MiYZmtUz6Vo5CiZUZ1pZC-ZzfNPQtzBOkXpQBaPxVkNZIO\_M0Qvup5tCqQEvmCP4wLTxJuxW1BzYUBozaGEvOvCYSx6jQr\_MF3BI3NqI4r5Ib4e7XdpOli\_Q3oiaYi1Dns5A4cv8CZZuDeJrHZYVls4KwpVJnhihbRhwmOvTktb5awJzKqWty1vSh84F0Pd1sMgpkV0MA1DO4KY6hVfZyT3--j4vrZ1PpbynH7ehVlSBl9FR075iJiWQCVqvSXe1wViLvN-eEvXjB4Wh-ZjRB\_qt9q8osdUvsDMQKoZurYQC877qfuYFMRu7Pk0NpKV-iaULK98gC1aX5T\_AWKlmRA] realized, “Why ask people to choose between staking and lending when you can tell them to do both! Let them have their cake and eat it too!” Lido then invented “liquid staking,” i.e. rewarding stakers with 1 stETH for every 1 ETH staked, such that users can then chuck their stETH as collateral for more borrowing and more lending.

What could possibly go wrong? As long as new stimmie-checks and institutional capital continue pouring into crypto, as long as inflation narratives keep driving the next marginal buyer into crypto, as long as markets remain greedy, nothing could go wrong. Just like, as long as the US dollar stays a reserve currency, nothing could go wrong. Keep printin’!

WAGMI.

6. IT’S ALL ABOUT THE MEMES

If DeFi yield had a “Cambrian explosion,” memes musta had a “Singularity.” Medical textbooks everywhere now need to add “an inexplicable urge to clog the internet with Pepes, Wojaks, Midwits, laser eyes, and GM” to COVID-19 symptoms. Here are some highlights from 2020 and 2021:

First there was “money printer go brrrr.”

Then there was “if you like Bitcoin then change ur Twitter pfp to laser eyes.”

Then there was “Fiat Virgin; Crypto Chad.”

And of course, there was “men want one thing and it’s disgusting: YIELD!”

Then thanks to Cathy Wood, Elon became #1 richest man in the world and he decided the best way to spend his time was singing praises to Dogecoin.

Then, Gen-Z started begging Santa for rocks this year.

Meanwhile Internet grifters conspired to build an army of HODLers under the guise of a university game theory lecture.

7. What the Future Hodls

So after all that, where is DeFi headed now? What other unsolved problems–what other untapped growth hacks–remain on the yellow brick road to financial Emerald City?

(a) TradFi Distribution Channels:

The next 1 Billion users on DeFi will look nothing like the first 10 million early adopters. Crossing the chasm to onboard the “early majority” will require deeper integrations into traditional finance distribution channels: credit unions, traditional brokerages (e.g. Paxos-IBKR, Robinhood), 401-K and IRA plans (e.g. AltoIRA), modern wealth managers / robo advisors (e.g. Wealthfront and Betterment), expansion into non crypto-specific indices (e.g. ARKK), deeper inclusion into enterprise treasuries (beyond Microstrategy, Square, Tesla), etc.

(b) Prime Brokerage and Cross-Chain Margining for Retail:

DeFi today is notoriously capital-inefficient [https://email.mg2.substack.com/c/eJwlkMuShCAMRb-mWVrIS12wmE3v5hsshGgzY6MFYbr9-4ltFY9ACPfmeIewbPmw-1aQncuIxw42wausgAiZ1QJ5jMFq3su273oWrAptr3sWyzhngKeLq8Vcge11WqN3GLd0VkgtlWYPO3kveylm6GZvujAb4UPPnXRCaj0Leem6GiIkDxb-IB9bArbaB-JebvLrJu408BVPR43fnnS6uynW8g3Z10wB3RR0-AlaZTpyqLnkRhuhdNexaAUXgrc0DefSNKIxRg6TVG4wRnRODs0C79eO689N8ecimlIn-tL\_noIs2wBvUu-HUnfI04b0ajl7\_6Sp9ZH2Z00RjxGSm1YIFxW84H44jQskyAQ9jA5ta5QgqJJzPaiLAmFTneYD-WekHzaqSjZt7rHHRFz\_Ac9QkFc]. If Alice buys 1 BTC long on Uniswap, and sells 1 BTCPERP short on FTX, the two platforms each don’t know about her positions on the other. So FTX will ask her to post much higher collateral than the correlation between BTC and BTCPERP necessitates. This sucks for Alice (and all retail traders who don’t have access to prime brokerage services) because she could otherwise use the excess collateral to earn yield elsewhere.

(c) Options Market:

Trading volumes for BTC and ETH options grew 443% in 2021, yet 95% of that volume remains on Deribit. Why? Until Pyth [https://email.mg2.substack.com/c/eJwlkM1yhCAMgJ9mOToIiHjg0Etfw4mQKq0LDMTu-vbFOsNfJgmZ73NAuKZy2pwqseuY6cxoI77qjkRY2FGxzMHbgRvZm9Ewb5XvzWBYqPNXQXxC2C2VA1k-lj04oJDi1SEHqQa2WYDeGSFGDm5RaoQRsAcjtJ9G6Rwf7rlw-IDRocVfLGeKyHa7EeX6kB8P8dlWTTtE6Fx6tgBdqmclvN75pI0FK7gQvG9bcy51Jzqt5bRIBZPWYgQ5dSu-X5n274fiz1V09Vgqgfu5vmTFenw3YDPVI2NZErWq9YL7Tze2ud3PIwY6Z4yw7OhvbLrt\_YuYV4xYmlU\_A9leK9GsSc6HSd2YzYsaBz6NvWFtvk-tK9qYYMshNnF\_EdWH5w], Dexs could not auto-update margin requirements at a fast enough frequency to prevent systemic nonlinear liquidation events. Plus, protocol-level computational ceilings limited the ability to price-update across the full options chain (dozens of strikes and dozens of tenors per token). Furthermore, the crypto-degen appetite for 100x leverage had already found satiation in trading perps while up-only markets blinded even conservative traders from any region below Yreturn = 0. So the use case of options as hedging instruments and portfolio insurance largely fell on deaf ears. All of this should change in 2022.

(d) Crypto Exchanges Acquiring TradFi Brokers:

In traditional finance, broker-dealers are separate entities from exchanges. Operationally, they are the sales & marketing and customer acquisition arms of the exchanges. But in crypto, the trading stack is vertically integrated. (Imagine if Robinhood, Citadel, and BOX had a massive merger into one single behemoth… that’s basically FTX today.) It makes tons of strategic sense for the large crypto exchanges to go on massive shopping sprees and buy out TradFi broker dealers for (i) their retail customer base and (ii) their deep embeddings with corporate HR systems to deliver employee equity compensation (e.g. Schwab, Fidelity).

In the end, all arrows point to a DeFi <> TradFi convergence as we build upward and onward, standing on the scaffolds of old fiat market structure. “So we beat on, boats against the current, borne back ceaselessly into the past.”

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