DEFI: REDEFINING THE FUTURE OF FINANCE

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GALAXY

FUND MANAGEMENT

WHAT IS DEFI?

It is difficult to imagine the future of finance without the traditional financial intermediaries we rely upon today. But the emerging area of decentralized finance (DeFi) has the potential to upend the entire financial ecosystem as we know it. DeFi offers global, inclusive financial service improvements with incomparable enhancements in speed, cost, and accessibility. DeFi opens up entirely new possibilities for economies and individuals worldwide.

DeFi is a global, open alternative to traditional financial services. Advancements in blockchain technology are empowering DeFi developers to recreate the architecture of legacy financial systems with a code-based digital infrastructure of DeFi apps and protocols. These apps and protocols replicate traditional financial functions such as borrowing, lending, and exchanging assets, and they do so in a permissionless manner without relying on traditional financial intermediaries.

This move away from traditional financial intermediaries is revolutionary. As usage of DeFi apps and protocols surpasses all-time highs again and again, the disruptive nature of DeFi is attracting savvy investors looking to be part of the revolution. Compared to traditional financial markets, the yields of the digital assets being borrowed, lended and exchanged on DeFi apps are very high. Moreover, with new technological advancements come new ways of generating returns. DeFi is creating brand new opportunities in the areas of spot borrowing and lending, call overwriting, yield farming, and liquidity mining.

DeFi is built primarily on the Ethereum blockchain. The Ethereum blockchain was launched in 2015 as a technology that built on bitcoin's innovation, with some key differences. Both the Bitcoin and the Ethereum blockchains allow users to transact with digital value without payment providers or banks. But Ethereum's general programmability goes far beyond the Bitcoin blockchain's simple balance transfers. Ethereum is the world's first programmable blockchain, which is to say all value is programmable. "Smart contracts" implement if/then logic into assets themselves; they are like computer programs running on the blockchain that can execute automatically when certain conditions are met. Ethereum introduces this into every asset, and in doing so, it significantly expands the world's choices for interacting with money.

You'll often hear DeFi apps, built on the Ethereum blockchain, referred to as "killer apps." In order to be a "killer app," the app must be both disruptive and widely adopted. DeFi protocols and applications utilize Ethereum's smart contracts. They're powered by native digital assets that operate as built-in incentive mechanisms. These digital assets have been increasingly attracting attention since DeFi's explosion in mid-2020, with some touting market caps that rival those of fast-growing tech startups.

One of the unique features of DeFi is that all of these projects can use and leverage each other, a trait commonly referred to in the community as "composability." More importantly, other developers can use all of these when they build their own products. This level of permissionless interoperability is significant to the continued growth of the entire space. That said, all of this interoperability is enabled because many of these projects build on Ethereum, which has nearly 60% dominance in DeFi TVL.[1] Composability is currently only possible between projects that operate within the same blockchain ecosystem, such as Ethereum, and becomes increasingly difficult when trying to communicate between two different blockchains. Other blockchains are now making efforts to bring forward DeFi ecosystems, such as Solana. We are beginning to see dApps developing on a variety of these Layer 1s as the ecosystem continues to grow.

1) Source: DeFi Llama, as of 06/2022.

FOUNDATIONAL PLAYERS IN DEFI

Several key DeFi players have set the stage for the current DeFi ecosystem by contributing significant innovations. The DeFi space moves quickly, but gaining an understanding of these innovators is a great place to start.

The first notable DeFi platform is MakerDAO. MakerDAO is a peer-to-contract lending platform enabling over-collateralized loans by locking Ether (ETH) in a smart contract and minting DAI, a stablecoin pegged to the USD. DAI's stability is achieved through a dynamic system of collateralized debt positions, autonomous feedback mechanisms and incentives for external actors. Once generated, DAI can be freely sent to others, used as payments for goods and services, or held as long-term savings. Its other native token is the MKR, used for governance and to purchase excess DAI. The system has since expanded, allowing for the use of other collateral assets. Maker was the first Peer-to-Contract network to gain traction, but Compound took things a step further.

Compound is a money market protocol that allows users to deposit crypto assets into smart contracts that pool assets and earn a yield while being borrowed. Borrowers can pull from the pool by depositing collateral and withdrawing up to 75% in another asset (or less, depending on the collateral). Compound was unique because suppliers/lenders were consistently earning a variable yield so long as there was at least a single borrower. The yield varied based on how much of the total lending capacity was utilized. This was a step-function improvement in DeFi lending as borrowers and lenders no longer needed to be matched on a one-off basis (i.e., a peer-to-peer lending market or an order book). Instead, anyone could borrow from a lending pool if they were comfortable with the rates and had the required collateral. Compound has over $3B total value locked, which is over 21% of the total value locked up across all of DeFi.[1]

Uniswap was another step-function improvement in DeFi. Just as Compound changed DeFi lending, Uniswap pioneered the "Automated Market Maker" model (AMM). This model allows traders to instantly fill market orders against a pool of capital, giving them the flexibility to swap between any Ethereum-based assets at any time and in a permissionless manner. Uniswap (and AMMs in general) is enabled by liquidity providers. Liquidity providers are users who act as market makers by depositing assets into a liquidity pool which can then be used to facilitate trading by others. Liquidity providers then earn a pro-rata share of trading fees collected by the pool. Uniswap's popularity exploded among decentralized exchanges in the last 6 months. It has processed over $1T in total trading volume since its launch in late 2018.[2]

The rise of DeFi has been in the making for some time. At the start of 2020, the entire DeFi industry was worth just $1B. As of early June 2022, it is now worth over $40B.[3] The DeFi industry continues growing with rising token prices and the increasing integration of stablecoins.

1) Source: DeFiPulse.com, as of 06/2022.
2) Source: Info.uniswap.org, as of 06/2022.
3) Source: DeFi Pulse

LIQUIDITY MINING AND TOKEN DISTRIBUTION

What is Liquidity Mining? A number of DeFi protocols, led by Compound, have started rewarding the protocol users with their own tokens. One way to think about these rewards is like mining rewards in Proof of Work systems. Since Compound's token was launched, the protocol has been rewarding users with COMP tokens. Users earn a pro-rata share of tokens based on how much they borrow or lend. This provides an additional yield to users, such that actively participating in a protocol now produces a yield denominated in the protocol's token (although some may provide yield in ETH or other tokens). This additional yield created the initial "yield farming" craze, as the prevailing yields exceeded 30% (annualized). Simply put, users were able to realize double digit annual yields by lending or borrowing crypto assets, including Stablecoins. Stablecoins are digital assets created to act as a unit of account or store of value, typically by being pegged to a fiat currency such as the U.S. dollar.

But what are these tokens? Often they are "Governance Tokens." In most cases, Governance Tokens are tokens that allow the holder to vote on changes to the protocol, or to delegate their vote to someone else (similar to a proxy advisor). However, many of these networks generate cash flows. Simply put, the ability to vote on protocol changes is the ability to vote on how the protocol accrues value or how it directs those cash flows.

DEFI EXPANDS

While there are too many DeFi projects to count, the following all deserve acknowledgement.

Aave, formerly known as ETHLend, is a money market protocol that preceded Compound. Aave initially struggled to gain traction. However, the larger DeFi ecosystem warmed up to subsequent innovations. Aave introduced Flash Loans, an innovation with no exact parallel in traditional finance. In some ways, Flash Loans are similar to overnight borrows. Flash Loans allow a user to borrow assets from an Aave pool without collateral, but the loan must be repaid in the same transaction it is borrowed. This process may seem strange. Why would one want to borrow and repay in the same transaction? Considering a single Ethereum transaction can perform many tasks, Flash Loans become more appealing. For example, a user may take a Flash Loan to borrow $1M, use that $1M to conduct a series of trades, say, close an arbitrage opportunity, and repay the $1M after they have performed the trades. All of this can happen in a single transaction. Flash Loans open the door for unique arbitrage opportunities. Now, anyone can obtain the capital needed to take advantage of these opportunities so long as they can execute their trade in a single transaction.

Synthetix is a platform that allows users to mint synthetic assets. These represent anything from synthetic short positions, leveraged positions, commodities, and ultimately any asset that has a reliable price feed. Synthetix initially started by enabling users to mint representations of other tokens, notably ones that gave synthetic short exposures. Since then, the protocol has added synthetics that give exposure to commodities and the foreign exchange market, and the platform is likely to add additional asset classes. Anyone can mint these assets and become eligible to receive trading fees paid by those who trade the synthetic assets. There is over $200M locked by the Synthetix protocol, and daily trading volume in Synths, the synthetic assets of the protocol, hovers around $50M per day.[1]

Balancer is a new breed of AMM that lets users create a unique portfolio of assets and give others exposure to it. Each portfolio is leverageable as a source of market liquidity similar to Uniswap. Balancer expanded on Uniswap by allowing several assets into a liquidity pool, replacing the Bonding Curve design with a Bonding Surface.

Curve is an AMM that was purpose-built for the trading of stablecoins. It employs a similar methodology to Balancer (the founder started on the Balancer team), which uses Bonding Surfaces. However, since it only allows stablecoins, its design allows for much lower price slippage than most AMMs. Curve has become one of the most popular ways to trade in and out of stablecoins.

1) Source: Coinmarketcap.com, as of 06/2022.

THE FUTURE OF DEFI

One of the most popular measures of DeFi's progress is Total Value Locked (TVL), the amount of assets that are currently staked within DeFi protocols. DeFi has made incredible strides over the last year. Evidence of the power and influence of DeFi is plainly visible considering the TVL has tripled over 2021. In January 2021, the TVL was $29B. While hitting highs of over $100B TVL, as of early June, the TVL is over $40B. DeFi protocols and networks are poised to capture significant value and appreciate, leading to index and basket product prices rising over time. The generation of heightened demand by institutional hedge funds, OTC desks, market makers, and liquidity providers towards DeFi demonstrates this movement's longevity.

The ethos of Decentralized Finance has far-reaching and revolutionary implications. DeFi is actively innovating to rebuild the current financial infrastructure in a way that is not only faster and more cost-efficient but also fully transparent. This is a future where transaction settlement is not only instant but openly verifiable and one in which counterparty risk is significantly mitigated. This is the future of finance.

TOTAL VALUE LOCKED (USD) IN DEFI (AS OF JUNE 14, 2022)

Source: DeFi Pulse

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