DEFI'S ROLE IN THE MODERN PORTFOLIO

OCTOBER 2021

GALAXY

FUND MANAGEMENT

THE DEFI OPPORTUNITY

The news around decentralized finance (DeFi) is impossible to ignore. While it is difficult to imagine the future of finance without the traditional financial intermediaries we rely upon today, the emerging area of DeFi has the potential to upend the entire financial ecosystem as we know it. DeFi refers to the set of apps that offer financial services without a central financial intermediary. This alternative to traditional financial services replicates financial functions such as borrowing, lending, and exchanging assets without relying on financial intermediaries such as brokerages, exchanges, or banks. The magnitude of potential presented by this blockchain-powered global movement is revolutionary and may disintermediate the current financial industry.

The financial industry currently occupies an average of 8% of total GDP annually and has for over two decades. Even as we witnessed GDP jump from $12.7T in 2005 to $22.7T in 2021, the percentage held remained constant for this industry.[1] The stability of this hold on GDP exemplifies the traditional finance industry's power that DeFi challenges. We are continually assured of the future of this movement by the incredible pace of DeFi's growth and its market cap of $90B.[2] DeFi is the first genuine attempt to disrupt the massive centralized financial sector.

1) Source: Fred.com
2) Source: TokenTerminal.com, as of 8/31/2021

ANNUALIZED REVENUE OF PROTOCOLS VS. SELECT RECENTLY-PUBLIC TECH CO'S (30D VS. QUARTERLY ANNUALIZED)

Figures as of 6/30/2021

WHAT IS DEFI?

DeFi is a system of digital financial apps that replicate and innovate various functions that we rely on intermediaries to perform today including asset management, crypto lending, and derivative exchanges. DeFi is developing across different blockchain networks but operates primarily on the Ethereum blockchain. The Ethereum blockchain 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.

One of the unique features of DeFi is that all of these projects can use and leverage each other, a trait commonly referred to as "composability." This level of permissionless interoperability is significant to the continued growth of the entire space. That said, all of this interoperability is enabled because these projects build on Ethereum. 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. While other blockchains are bringing forward DeFi applications, the DeFi ecosystem originally developed on Ethereum. Thus, DeFi is still mostly confined to Ethereum.

These advancements in blockchain technology empower DeFi developers to recreate the architecture of legacy financial systems with the code-based digital infrastructure of DeFi apps. We see DeFi offering global, inclusive financial service improvements with incomparable enhancements in speed, cost, and accessibility, opening up entirely new possibilities for economies and individuals worldwide.

DEFI REFERS TO THE SET OF PROTOCOLS AND APPLICATIONS THAT OFFER FINANCIAL SERVICES WITHOUT A CENTRAL FINANCIAL INTERMEDIARY

- Global, open alternative to traditional financial services
- Replicates financial functions such as borrowing, lending and exchanging assets
- Does not rely on central financial intermediaries such as brokerages, exchanges, or banks
- Powered by a native digital asset and utilizes smart contracts

THE DUALITY OF DEFI

We should not consider DeFi as some kind of challenger taking on the white knights of traditional finance. Instead, think of DeFi as an ecosystem that can live independently of traditional finance and integrate with traditional finance. The traditional payment system in the U.S. and broader financial systems currently operate based on a paper currency-driven world, and that's why many elements of them feel antiquated. We see a future where more traditional economic activity transitions to using blockchain as its rails. For example, it should no longer take three days to withdraw money from digital payment services like Venmo. Moving to blockchain will enable these exchanges and withdrawals to be nearly instantaneous. We fully expect the amount of financial activity that happens on blockchain to increase thanks to DeFi.

We also expect that you will soon see fintech apps integrating directly into DeFi. It is not far-fetched to imagine someone depositing money into Chime to earn a yield via Compound, and their idle balance on Robinhood starts earning yield from Aave. One current example is Centrifuge, an app that tokenizes real-world assets and allows issuers to borrow against collateral, creating an obligation that is tradeable on-chain. The obligation has legal recourse in the event of default. This type of activity is just one clear example of traditional finance and DeFi integrating.

These are the early innings of on-chain investment vehicles. DeFi opens new possibilities for diversification of indexes with both on- and off-chain assets, intersecting the two systems. Other potential DeFi app functions we expect to materialize leverage traditional finance data to make better decisions on-chain. Imagine using off-chain credit scores and bank data to help an underwriter extend credit to a borrower on-chain. We see endless possibilities and enhancements to traditional finance afforded by DeFi and blockchain technology.

THE RISE OF DEFI

We see, in real-time, just how useful Ethereum technology is as we watch the rise of decentralized finance (DeFi) and non-fungible tokens (NFTs). Ethereum now hosts seventeen DeFi applications valued at more than $1B, including Compound, Uniswap, and Aave. These protocols are quietly producing hundreds of millions in annualized revenue. DeFi has experienced exponential growth in the first half of 2021 that we anticipate will continue.

The growth facilitated by the Ethereum blockchain is seen by the number of innovative apps and platforms we now have facilitating asset management, crypto lending, decentralized exchanges, and derivative exchanges. What makes these specifically designed blockchain apps unique is that most of them are fully programmable, permissionless, and composable.

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. This project introduced the first decentralized stablecoin called DAI. 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. Compound was unique because suppliers/lenders were consistently earning a variable yield so long as there was at least a single borrower. This provided 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).

DECENTRALIZED FINANCE PROTOCOLS

DEXS	ASSET MANAGEMENT	LENDING	DERIVS
0x		Compound	UMA
Uniswap		AAVE	SYNTHETIX
SushiSwap		MAKER	

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.

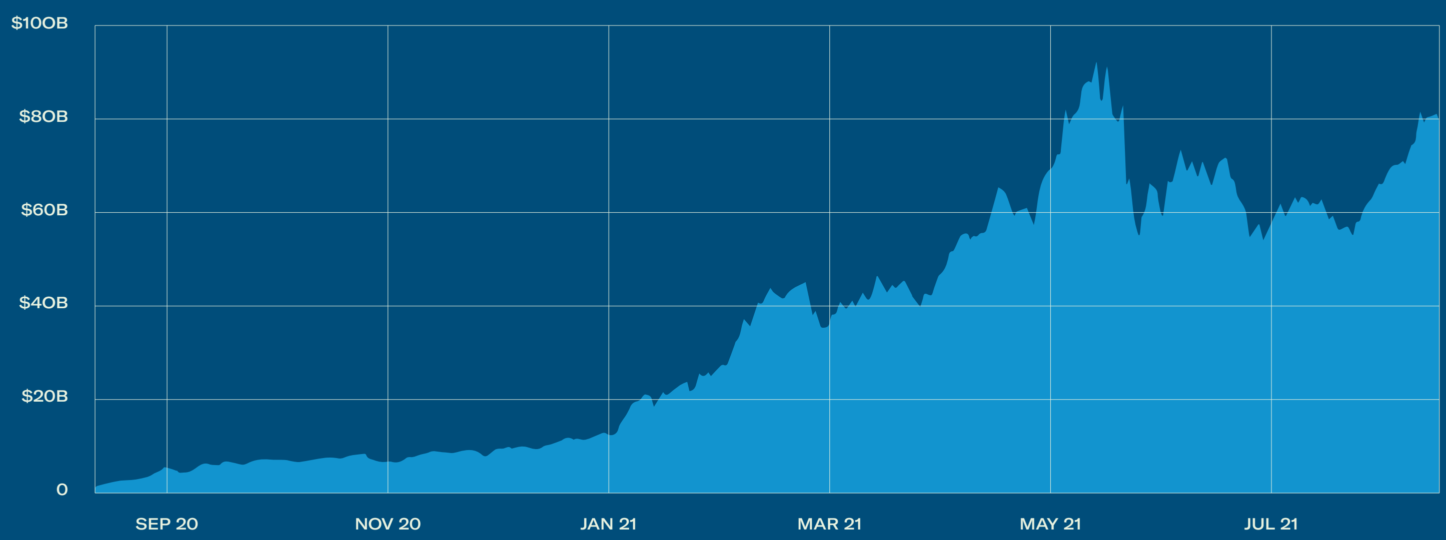
Aave, formerly known as ETHLend, is a money market protocol that preceded Compound. Aave initially struggled to gain traction. However, the larger DeFi ecosystem warmed to subsequent innovations. Aave introduced Flash Loans, an innovation with no exact parallel in traditional finance. In some ways, Flash 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.

The rise of DeFi has been in the making for some time. At the start of 2020, the entire DeFi industry was valued at just $1B. As of 8/31, the total locked value was nearly $90B.[1]

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 increase in TVL on the DeFi network, as shown in the chart below. 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.

1) Source: DeFi Pulse

TOTAL VALUE LOCKED (USD) IN DEFI (AS OF AUGUST 2021)



THE ROLE OF DEFI IN THE MODERN PORTFOLIO

DeFi can be viewed as a collection of high-growth individual stock picks. And while it may be challenging to know which apps will emerge victoriously because these are such early days for the asset class, we view the entirety of DeFi as a growth asset. 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.

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 no longer exists. This is the future of finance.

CONTACT US

STEVE KURZ
Head of Asset Management
Steve.kurz@galaxydigital.io

PAUL CAPPELLI
Portfolio Manager
Paul.cappelli@galaxydigital.io

GENERAL INQUIRES
(212) 390 9205
GFM@galaxydigital.io
galaxyfundmanagement.com

GALAXY FUNDS RISK FACTORS

Please note that the following are not all the risk factors associated with Digital Assets or the Funds (each, a "Fund"). Refer to the Offering Memorandum of the applicable Fund for more risk factors.

Investment Risks Generally. An investment in the Fund, involves a high degree of risk, including the risk that the entire amount invested may be lost. The Fund will invest in Digital Assets (such as Bitcoin, Ethereum, other cryptocurrencies or blockchain based assets, including those that represent the Decentralized Finance (or DeFi) portion or sector of the digital assets market) using strategies and investment techniques with significant risk characteristics, including risks arising from the volatility of the global Digital Assets markets and the risk of loss from counterparty defaults. The Fund's investment program may use investment techniques that involve substantial volatility and can, in certain circumstances, substantially increase the adverse impact to which the Fund may be subject. All investments made by the Fund will risk the loss of capital. No guarantee or representation is made that the Fund's investment program will be successful, that the Fund will achieve its investment objective or that there will be any return of capital invested to investors in the Fund, and investment results may vary.

Different from Directly Owning Bitcoin, Ethereum or Other Digital Assets. The performance of the Fund will not reflect the specific return an investor would realize if the investor actually purchased a Digital Asset. Investors in the Fund will not have any rights that Digital Asset holders have.

No Guarantee of Return or Performance. The obligations or performance of the Fund or the returns on investments in the Fund are not guaranteed in any way. Any losses of the Fund will be borne solely by investors in the Fund. Ownership interests in the Fund are not insured by the Federal Deposit Insurance Corporation, and are not deposits, obligations of, or endorsed or guaranteed in any way, by any banking entity.

Regulation. Digital Assets, including Bitcoin, Ethereum and DeFi tokens, are loosely regulated. Ongoing and future regulatory actions may alter, perhaps to a materially adverse extent, the value of a Fund's investment. If any Digital Asset is determined to be a "security" under U.S. federal or state securities laws or a Digital Asset exchange is determined to be operating illegally, it may have material adverse consequences for Digital Assets due to negative publicity or a decline in the general acceptance of Digital Assets. As such, any determination Digital Asset exchanges are operating illegally or that any Digital Asset is a security under U.S. federal or state securities laws may adversely affect the value of a particular Digital Asset or Digital Assets generally and, as a result, the value of a Fund's investment.

Exchanges. Exchanges may suffer from operational issues, such as delayed execution, that could have an adverse effect on the Fund. Digital Asset exchanges have been closed due to fraud, failure or security breaches. Any of the Fund's funds that reside on an exchange that shuts down or suffers a breach may be lost.

Value. Several factors may affect the price of Digital Assets, including Bitcoin, Ethereum and DeFi tokens, including, but not limited to: supply and demand, investors' expectations with respect to the rate of inflation, interest rates, currency exchange rates or future regulatory measures (if any) that restrict the trading of a Digital Asset or the use of a Digital Asset as a form of payment. There is no assurance that a Digital Asset will maintain its long-term value in terms of purchasing power in the future, or that acceptance of bitcoin payments by mainstream retail merchants and commercial businesses will continue to grow.

Protocol. Many Digital Asset networks, including Bitcoin, Ethereum and DeFi tokens, operate on open-source protocols maintained by groups of core developers. The open-source structure of these network protocols means that certain core developers and other contributors may not be compensated, either directly or indirectly, for their contributions in maintaining and developing the network protocol. Lack of incentives to, or a failure to properly, monitor and upgrade network protocol could damage a Digital Asset network. It is possible that a Digital Asset protocol has undiscovered flaws that could result in the loss of some or all assets held by the Fund. There may also be network-scale attacks against a Digital Asset protocol, which could result in the loss of some or all of assets held by the Fund. Advancements in quantum computing could break a Digital Asset's cryptographic rules. The Fund makes no guarantees about the reliability of the cryptography used to create, issue, or transmit Digital Assets held by the Fund.

Volatility & Supply. Values of Digital Assets have historically been highly volatile, experiencing periods of rapid price increase as well as decline. For instance, there were steep increases in the value of certain Digital Assets, including Bitcoin, over the course of 2017, and multiple market observers asserted that digital assets were experiencing a "bubble." These increases were followed by steep drawdowns. During the period from December 17, 2017 to February 5, 2018, Bitcoin experienced a decline of roughly 60%. During the period from February 13, 2020, until March 16, 2020, the value of Bitcoin fell by over 50%. Bitcoin had a strong start to 2021, hitting an all-time high of nearly $65K in April. But, it closed H1 2021 down 47% from its record. Supply of Digital Assets is determined by computer code, not by a central bank. For example, uncertainty related to the effects of Bitcoin's recent and future "halving" could contribute to volatility in the Bitcoin markets. The value of the Bitcoin or other Digital Assets held by a Fund could decline rapidly in future periods, including to zero.

Decentralized Finance (DeFi) Risks. Decentralized Finance (or DeFi) refers to a variety of blockchain-based applications or protocols that provide for peer-to-peer financial services using smart contracts and other technology rather than such services being offered by central intermediaries. Common DeFi applications include borrowing/lending Digital Assets and providing liquidity or market making in Digital Assets. Because DeFi applications rely on smart contracts, any errors, bugs, or vulnerabilities in smart contracts used in connection with DeFi activities may adversely affect such activities. DeFi lending is subject to counterparty risk and credit risk, but because lending is automated through the DeFi protocol, rather than individual decisions made by a portfolio manager on behalf of a Fund, such risks may be exacerbated, particularly if there are flaws in DeFi protocol's code or operation. DeFi applications may involve regulated financial products or regulated activities, however because of their decentralized nature, there is generally no entity subject to regulatory supervision. Accordingly, DeFi applications may be subject to more risks than engaging in similar activities through regulated financial intermediaries. In addition, in certain decentralized protocols, it may be difficult or impossible to verify the identity of a transaction counterparty necessary to comply with any applicable anti-money laundering, countering the financing of terrorism, or sanctions regulations or controls. All of these risks could cause the value of DeFi tokens held by a Fund to decline, including to zero.

DISCLAIMERS