

## MEMORANDUM

To: Members of the Committee on Financial Services

From: Digital Assets, Financial Technology and Inclusion Subcommittee Staff

Date: September 5, 2024

Subject: September 10, 2024, Subcommittee on Digital Assets, Financial Technology and Inclusion Hearing entitled, “Decoding DeFi: Breaking Down the Future of Decentralized Finance.”

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On Tuesday, September 10, 2024, at 10:00 a.m. the Subcommittee on Digital Assets, Financial Technology and Inclusion of the Committee on Financial Services will hold a hearing in 2128 Rayburn HOB, entitled “Decoding DeFi: Breaking Down the Future of Decentralized Finance.” The following witnesses will testify:

- **Brian Avello**, *Chief Legal Officer*, UDHC
- **Rebecca Rettig**, *Chief Legal and Policy Officer*, Polygon Labs
- **Amanda Tuminelli**, *Chief Legal Officer*, DeFi Education Fund
- **Peter Van Valkenburgh**, *Director of Research*, Coin Center
- **Mark Allen Hays**, *Senior Policy Analyst*, Americans for Financial Reform

### *Introduction*

Decentralized finance (DeFi) is an emerging sector of financial technology and digital assets that utilizes blockchain technology – also known as Distributed Ledger Technology (DLT) – and smart contracts to create permissionless, peer-to-peer financial services systems. DeFi provides an alternative to traditional finance by offering certain services without the need for intermediaries.

DeFi projects vary widely in their decentralization and functionality. While some DeFi projects are truly decentralized, others may rely on centralized intermediaries like financial institutions or technology providers. Unfortunately, there are also projects that falsely claim to be decentralized to attract investors and customers, a practice known as "decentralization theater."<sup>1</sup>

While the origins of DeFi can be traced back to 2008 with the invention of Bitcoin, it was not until the invention of Ethereum that DeFi protocols were technologically feasible and developed. Two years later, most of the earliest DeFi protocols were launched on top of the Ethereum blockchain network. Although the majority of the DeFi ecosystem still exists on the Ethereum blockchain today, it has also expanded to other blockchains including Polkadot, Solana, Avalanche, and Cardano.

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<sup>1</sup> Commodities Futures Trading Commission’s Digital Assets and Blockchain Technology Subcommittee of the Technology Advisory Committee, “Decentralized Finance” (Jan. 8. 2024) <https://www.cftc.gov/PressRoom/SpeechesTestimony/romerostatement010824b>.

## *Overview of DeFi Technology*

Currently, there is no universally agreed upon definition of DeFi.<sup>2</sup> At the same time, there are certain characteristics that are emblematic of this technology. DeFi protocols run on top of permissionless blockchain networks and facilitate peer-to-peer digital asset transactions using smart contracts.

In a permissionless blockchain, or public blockchain, anyone who wants to transact can utilize the network. Additionally, all users can see all transactions on the blockchain. Since the network is decentralized, parties can transact without the use of a third-party intermediary or central authority to validate the transactions. In contrast, a permissioned blockchain, or private blockchain, is essentially a closed network where only certain participants can make certain additions to the ledger.<sup>3</sup> Because of permissionless blockchains, DeFi protocols are able to function like interoperable building blocks. This composability empowers anyone to freely assemble and customize new financial products and services by combining existing DeFi products and services.

When a DeFi transaction is conducted peer-to-peer using permissionless blockchain networks, self-hosted wallets are used by the parties to the transaction. A self-hosted wallet in the digital asset ecosystem means that the private key, which can be viewed as the password to access the user's digital assets, is controlled and held by the owner of the digital assets. Digital asset wallets can also be hosted, which means that individuals' private keys are held by a third party. These types of wallets are not typically considered to be DeFi.

Smart contracts are computer programs stored on a blockchain that define the terms of an agreement between two or more parties. These contracts execute automatically and without discretion when predetermined conditions are met, eliminating the need for intermediaries. Smart contracts are the fundamental building blocks of DeFi. While the use cases for smart contracts are numerous and still growing in the DeFi ecosystem, some existing applications in DeFi include allowing protocols to automatically execute trades, dynamically adjusting the total supply of stablecoins in response to market fluctuations, managing loan processes by determining interest rates and collateral requirements, and ensuring the secure exchange of digital assets between two parties.

## *Overview of the DeFi Market*

DeFi has experienced significant growth since DeFi protocols were first launched. Currently, there are hundreds of DeFi protocols deployed across various blockchain networks. There are several metrics used to assess the size and popularity of DeFi protocols and the DeFi ecosystem

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<sup>2</sup> U.S. Department of the Treasury, "Illicit Finance Risk Assessment of Decentralized Finance," (Apr. 2023) <https://home.treasury.gov/system/files/136/DeFi-Risk-Full-Review.pdf>, pg. 3; Rebecca Rettig, Katja Gilman, and Michael Mosier, "Genuine DeFi as Critical Infrastructure: A Conceptual Framework for Combatting Illicit Finance Activity in Decentralized Finance," *SSRN* (Jan. 29, 2024) [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=), pg. 13; The Board of the International Organization of Securities Commissions, "Policy Recommendations for Decentralized Finance (DeFi) Consultation Report" (Sep. 2023) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD744.pdf>, pg. 1.

<sup>3</sup> *Digital Assets: A Framework for Regulation to Maintain the United States as an Innovation Leader*. U.S. Chamber of Commerce - The Center for Capital Markets Competitiveness, (Jan. 2021), available at [www.uschamber.com/sites/default/files/ccmc\\_digitalassets2021\\_v3.pdf](http://www.uschamber.com/sites/default/files/ccmc_digitalassets2021_v3.pdf).

more broadly. Just as the Bitcoin and Ethereum blockchain networks have native digital assets, DeFi protocols have native tokens with protocol-specific functionalities. The value of a DeFi digital asset is primarily driven by its utility within its corresponding DeFi protocol. Collectively, DeFi digital assets have a market capitalization of \$67 billion.<sup>4</sup> Another important metric in the DeFi ecosystem is Total Value Locked (TVL), which represents the total value of digital assets deposited or locked within a DeFi protocol. TVL is critical for generating economic activity within the protocol, which can include lending, borrowing, asset management, or insurance. Currently, the TVL across DeFi protocols is \$89 billion.<sup>5</sup> At its peak in October 2022, the TVL in DeFi was \$196 billion.<sup>6</sup>

### *Legislative Proposals*

#### **H.R. \_\_\_\_, To require the Securities and Exchange Commission, Commodity Futures Trading Commission, and the Secretary of the Treasury to jointly carry out a study on decentralized finance (Davidson)**

This draft bill would require the Secretary of Treasury, in coordination with the SEC and CFTC, to issue a report on decentralized finance as well as require a separate report by the GAO, to be submitted within 1 year to the relevant committees.

#### **H.R. \_\_\_\_ - To require the Secretary of the Treasury to report on privacy-preserving technologies**

This draft bill would require the Secretary of Treasury to submit a report, within one year, that examines the use of privacy-preserving technologies for digital assets. The report would also provide an overview of how other jurisdictions are mitigating illicit finance related to privacy preserving technologies.

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<sup>4</sup> CoinMarketCap, “Top DeFi Tokens by Market Capitalization” Accessed (Jul. 22, 2024) <https://coinmarketcap.com/view/defi/>.

<sup>5</sup> DeFi Llama, “Overview of DeFi” Accessed (Jul. 22, 2024) <https://defillama.com/>.

<sup>6</sup> Jamie Redman, “DeFi’s Total Value Locked Hits \$80 Billion in a Dramatic Turnaround Since 2022,” *Bitcoin.com* (Feb. 25, 2024) <https://news.bitcoin.com/defis-total-value-locked-hits-80-billion-in-a-dramatic-turnaround-since-2022/>.