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Decrypting Crypto:
Traditional Finance Versus Decentralized Finance

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Key Insight

Although TradFi and DeFi mostly operate in separate technological ecosystems, rising private sector interest in financial innovation and growing concerns by regulators about DeFi risks are spurring efforts to broaden the regulatory perimeter to include decentralized systems.

Summary

Traditional finance (TradFi) refers to the conventional financial systems that have long governed global economic interactions, including banking, stock markets, and investment vehicles. These systems rely on centralized entities such as banks to facilitate access to services and ensure trust in transaction settlement and regulations. In contrast, decentralized finance (DeFi) is an innovation powered by **blockchain** technology that operates without centralized intermediaries. DeFi enables financial activities like lending, borrowing, and trading through **smart contracts** and distributed ledgers. The tension between TradFi and DeFi reflects a broader clash of centralized control versus decentralized, permissionless access, each offering unique benefits and challenges.

Key Facts

Traditional finance operates through centralized systems, relying on intermediaries such as banks, stock exchanges, and investment firms to ensure trust, efficiency, and regulatory compliance. Banks safeguard funds, facilitate loans, and manage payment systems, while stock exchanges provide regulated environments for trading securities. These systems are governed by extensive regulations, including Know Your Customer (KYC) procedures and Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) laws, designed to validate users and keep criminal funds out of the financial system. However, the requirements of compliance do create costs and barriers to serving the widest range of potential customers. Many people are not able to easily access the breadth of financial services available in the traditional financial sector. Decentralized finance (DeFi) represents a contrasting model, operating on blockchain networks with smart contracts that automate digital asset transactions between users without intermediaries. This approach significantly reduces transaction costs and barriers to entry, enabling users to access financial services directly. Platforms like Aave and Compound facilitate lending and borrowing with interest rates determined automatically by supply and demand while decentralized exchanges such as Uniswap use **liquidity pools** and algorithms for peer-to-peer trading without centralized order books.

Unlike traditional finance, where asset ownership data is centralized among a few institutions, decentralized platforms use distributed ledgers maintained by a broader community to create a more transparent and collaborative system of tracking asset ownership. Despite its inclusivity, DeFi carries risks due to its lack of centralized oversight. The ecosystem has seen over $6.45 billion in financial losses through vulnerabilities in smart contracts and governance mechanisms, highlighting the challenges in balancing security, accessibility, and innovation.

Key Institutions

Traditional finance depends on critical institutions such as central banks, commercial and investment banks, and stock exchanges. Central banks, like the U.S. Federal Reserve and the European Central Bank, manage monetary policy, control inflation, and stabilize economies during crises. Commercial banks, including JPMorgan Chase and HSBC, offer services such as savings accounts, loans, and business financing, while investment banks focus on mergers, acquisitions, and raising capital. Stock exchanges, such as the New York Stock Exchange and Nasdaq, provide regulated marketplaces for trading securities, fostering capital formation and economic growth. Regulatory bodies like the U.S. Securities and Exchange Commission (SEC) ensure compliance, transparency, and investor protection.

In contrast, decentralized finance relies much less on centralized authorities. Platforms like Aave, Uniswap, and MakerDAO use blockchain networks such as **Ethereum** to enable lending, trading, and stablecoin issuance through distributed governance structures like decentralized autonomous organizations (DAOs). This innovation has drawn interest from traditional institutions. Central banks such as the U.S. Federal Reserve are researching blockchain technology and there is rising global interest in central bank digital currencies (CBDCs). Well-known Tradfi institutions such as JP Morgan and Visa are exploring how to use some of the technological components of DeFi to increase transaction speed and cater to new customers within their own Tradfi ecosystems.

Background

TradFi's roots date back to ancient trading and lending practices, which evolved significantly after the rise of modern banking in 17th-century Europe. Globally, by the 20th century, highly regulated institutions such as banks, investment firms, and stock exchanges dominated, becoming key to financial stability and economic growth. Central banks took responsibility for oversight and intervention during financial crises.

Bitcoin's emergence in 2009 laid the groundwork for decentralized financial transactions, but the full potential of decentralized finance came into focus with Ethereum's launch in 2015. Ethereum introduced programmable smart contracts for blockchains, enabling innovative platforms like MakerDAO and Uniswap to emerge between 2017 and 2020. These platforms allowed users to directly lend and trade digital assets, not having to access any financial institution. DeFi grew rapidly but has faced significant regulatory scrutiny and concerns about security vulnerabilities. Despite these challenges, TradFi and DeFi are increasingly interconnected, with various TradFi institutions exploring blockchain technology and many DeFi platforms adopting measures to support regulatory aims like illicit finance prevention and cybersecurity resilience.

Policy and Regulation Issues

Regulation is fundamental to traditional finance,

as it safeguards stability and consumer protection. Institutions adhere to strict requirements, including maintaining capital reserves, undergoing audits, and complying with AML/CFT laws. Oversight from bodies like the SEC and global organizations such as the Financial Stability Board mitigates risks but can also slow or even disincentize innovations that could improve business productivity and customer access.

In contrast, decentralized finance operates in a separate, software-based ecosystem, enabling rapid innovation and inclusivity but exposes users to risks like fraud, hacking, and illicit fund flows. DeFi is incredibly dependent on the precision and security of its blockchain code; minor flaws in a highly liquid digital asset platform can lead to catastrophic financial consequences. This presents an ongoing concern as cyber-attacks become increasingly sophisticated. As the technology evolves and grows in use, regulators are likely to seek frameworks and guardrails to address the many novel applications within DeFi networks.

In December 2023, the Financial Stability Board in collaboration with the International Organization of Securities Commissions (IOSCO), presented policy recommendations to address market integrity and investor protection surrounding DeFi. The recommendations cover six areas: understanding DeFi arrangements and structures, achieving common regulatory standards, identifying key risks, developing clear disclosure, enforcing applicable laws, and improving cross-border cooperation.

The future likely involves blending TradFi's compliance measures with DeFi's innovation, creating a balanced financial ecosystem that fosters trust and broad accessibility.

GLOSSARY

Blockchain: A shared and immutable record of transactions that are maintained in a decentralized, digital format. Blockchain is also known as "distributed ledgers."

Ethereum: The second-largest cryptocurrency by market capitalization, Ethereum is a blockchain network that securely executes smart contracts without third-party involvement. Participants transact through smart contracts, with senders "signing" transactions by spending Ether, the network's native currency. Its flexible software and smart contract capabilities have enabled the development of a wide variety of applications across numerous industries.

Liquidity Pool: A crowdsourced collection of cryptocurrencies locked into a smart contract to facilitate transactions. These pools provide the funds needed to execute trades or exchanges within a network, ensuring smooth and efficient operations. Users contribute their own cryptocurrency to the pool and, in return, earn rewards or a share of trading fees as an incentive for supplying liquidity.

Smart Contracts: Digital contracts programmed on a blockchain that are automatically executed when predetermined terms/conditions are met.

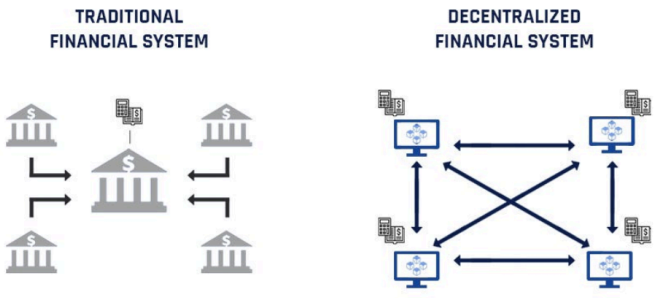

Image courtesy of Stably. (September 19, 2019). Understanding the Differences Between Decentralized Finance and Traditional Finance [Video]. Streaming Service. https://www.youtube.com/watch?v=1Nl6bTrc3gY

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