Stellar Development Foundation

2025 Policy Briefs:

DECENTRALIZED FINANCE (DeFi)

Exploring the new financial frontier

Understanding DeFi

From a panoramic perspective, decentralized finance (DeFi) can be viewed as an open marketplace that facilitates crypto investors, lenders, and borrowers to meet and engage in financial transactions without relying on intermediaries or trust assumptions.

Rather than going to a bank and opening a savings account or asking for a loan, anyone can open a DeFi app, connect their crypto wallet, and find an option that best suits their needs. If you have $50 in a stablecoin (like USDC) and $50 in ether (ETH) to spare for a few weeks and want to earn some return, you can add both to a USDC/ETH liquidity pool–a digital box with pairs of digital assets that reward the liquidity providers with fees based on the volume of trades happening in the pool.

Or let's say you have some ETH and don't want to sell it because you think it will go up in value in the long term. Instead, you could use it as collateral to get an immediate loan–say, in a stablecoin like USDC–from a lending pool, a specific type of DeFi protocol for lending and borrowing. In this case, your collateral (ETH) is locked in a digital "vault" until the loan is repaid.

On the supply side, other individuals act as lenders and deposit their USDC to fund your loan and earn interest in return. All of the capabilities for borrowers and lenders as well as the interest payouts and collateral locking are governed by smart contracts, self-executing computer code that runs on if-then logic and the main technical component that enables DeFi.

Up close, from an individual perspective, DeFi apps look like vending machines running on your computer or mobile device.[1] You open the app, check the options available and the displayed prices, choose the option you want, use digital assets as payment tokens, and immediately receive not soda or candy but financial products.

Anyone with the right tokens–in this case, digital assets–can participate in an operation with the DeFi app-vending machine. It's all open and automated, built on a blockchain, and powered by smart contracts.

[1] https://www.coindesk.com/opinion/2021/12/20/inside-the-defi-vending-machine

Why DeFi Matters

A fascinating innovation indeed, but why does DeFi matter? First, it provides increased financial access to a larger group of people and businesses, beyond what the traditional financial system offers.

The only requirement for anyone to engage with a DeFi application is to hold digital assets. DeFi offers alternatives even for needs typically neglected by traditional financial institutions.

Opening a savings account at a bank to deposit $100 for a couple of weeks and then withdraw the money isn't a viable option. Asking a bank to borrow the same amount for less than a month isn't feasible either. DeFi offers solutions for both, facilitating micro-lending and micro-borrowing, as DeFi loans can usually be taken for any amount and be repaid at any time, all automated.

DeFi also opens up new investment opportunities for those already dealing with crypto, like crypto derivatives, which can be used for leveraged investments and also for hedging against crypto volatility.

Sure, these more sophisticated and complex crypto products aren't for all users, as credit default swaps and collateralized debt obligations aren't for all consumers in traditional finance. But DeFi offers a range of investment options, which can then be explored according to each user's needs and risk appetite.

Second, DeFi matters because smart contracts, much like vending machines, are unbiased providers of products–in this case, financial products like loans. Once the conditions set in the smart contract are met, the operation automatically happens without external interference.

A person's gender and skin color or a business's size, for example, don't affect how smart contracts function. DeFi can thus provide a shield against discriminatory practices, such as the debanking of entire industries or predatory consumer lending based on subjective grounds.

The Technical Hurdles

Despite its potential, DeFi has some way to go before becoming mainstream. The first challenge is bringing more users to crypto since DeFi use will increase with the expansion of crypto adoption.

DeFi can be seen as the second step in the process of crypto adoption. Users typically start exploring crypto for basic operations, like acquiring bitcoin as a store of value or making payments and transferring value with stablecoins.

Then, after they learn the basics and understand the industry better, they may look for other opportunities and will find more diversified investment options in DeFi. Setting up a non-custodial or unhosted crypto wallet, whose private key remains with the user, is how the transition usually starts.

These wallets can play a fundamental role in bridging the gap not only between traditional finance and crypto but also between crypto and DeFi. A well-designed wallet can promote a seamless transition between fiat currencies and crypto and provide an easy pathway in and out of DeFi.

For that to happen, unhosted crypto wallets must excel in creating a friendly user interface (UI), connecting to multiple on- and off-ramps, and incorporating DeFi applications. The smooth combination of these features will allow users to securely store and manage their digital assets as well as earn fees or passive returns in DeFi, all from their wallet.

With increased use, the second challenge to DeFi will have to do with the security of its underlying technology. Greater volumes will attract more attacks to exploit the vulnerabilities of poorly designed protocols, apps, and smart contracts, especially those governing liquidity pools.

Unstable and insecure technology can become a huge reputational risk for DeFi if the number of users losing digital assets increases exponentially. To reduce that risk, developers will need to spend more time testing and refining their products before making them available.

Developers must also attach meaningful disclosures to their products regardless of any regulatory requirement. The goal is to allow users to easily find enough information about how a decentralized network or application works and what the related risks are before deciding to use them.

Regulating DeFi

Regulating decentralization is challenging. For networks and applications with no single party capable of unilaterally making changes in their rules or data, regulation based on the traditional rule-enforcement combination might be ineffective.

The lack of an individual controlling authority with the power to independently comply with commands might render any regulatory attempt futile. But that characteristic doesn't mean that DeFi can never be regulated. It only means that regulation must adjust its focus.

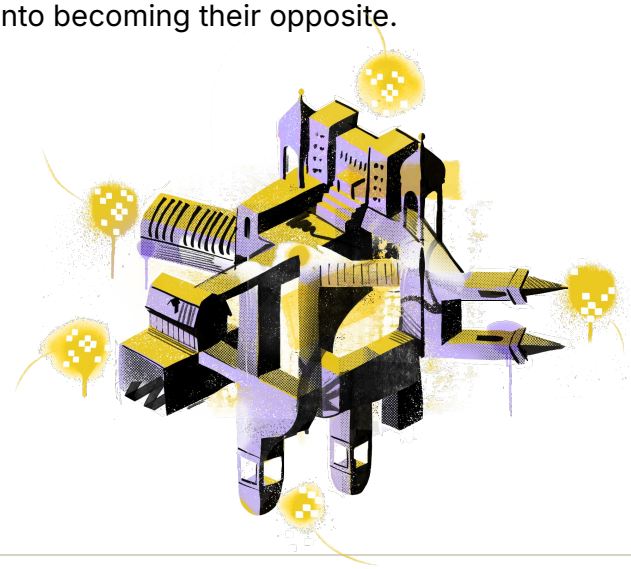
Instead of trying to enforce rules against a decentralized structure, regulation should focus on the first centralized entity that is touched by the digital asset transaction flow–like an asset issuer, a centralized exchange, or a cash-to-crypto ramp, which can be thought of as "centralized touchpoints."

The centralized touchpoints, notably those already regulated, would then be responsible for complying with applicable rules, from anti-money laundering to consumer protection. From this touchpoint, regulators could follow the trail left behind by the digital asset transaction flow to investigate further any sign of noncompliance or wrongdoing.

The reality is that digital asset transactions eventually go through a centralized touchpoint. To be fully useful, digital assets have to be able to travel between DeFi, centralized crypto markets, and traditional financial markets.

Being exchangeable is the feature that makes digital assets–or any asset for that matter–valuable because of the liquidity it unlocks. Few, if any, digital asset transactions will flow only in the DeFi environment without ever moving outside.

That's why regulating centralized touchpoints solves the DeFi regulatory puzzle without forcing decentralized structures into becoming their opposite.



The Role of the Stellar Network

The launch of smart contracts on the Stellar network in February 2024 (Soroban[2]) has opened the door for applications running on Stellar to incorporate DeFi capabilities into their offerings.

While staking and trading may currently be the most common use cases in DeFi, DeFi built on Stellar also offers options to improve payments and increase financial access. Payment financing (PayFi) is a case in point.

PayFi refers to solutions that facilitate an optimal allocation of liquidity in the global payments market.[3] Consider, for example, DeFi applications that let small businesses better manage their financial flows, notably by giving them financing options to access immediate liquidity while they wait to receive payments owed to them (receivables).

The idea is to enable the tokenization of a business's receivables so that they can then be sold or used as collateral for the business to get immediate onchain liquidity–in the form of stablecoins, for example. PayFi is particularly useful for businesses working with international trade, a $33 trillion economic activity[4] that relies on cross-border transactions and payments that can take days, if not weeks, to settle.

Trade finance platforms built with Stellar smart contracts are starting to appear in the Stellar ecosystem.[5] These platforms enable the tokenization of supplier invoices and their prompt funding via liquidity pools. They also contribute to decreasing cross-border payment times, with the use of stablecoins, and improving transparency for all parties involved in an international transaction. Meanwhile, investors in liquidity pools benefit from the interest collected on payment flows.

[2] https://stellar.org/blog/developers/soroban-the-smart-contract-platform-designed-for-developers
[3] https://messari.io/report/payfi-ecosystem-analysis
[4] https://unctad.org/publication/global-trade-update-december-2024
[5] https://stellar.org/learn/payfi

THE STELLAR DEVELOPMENT FOUNDATION

The Stellar Development Foundation (SDF) is a US-based nonprofit organization focused on working with and supporting changemakers to create equitable access to the global financial system through blockchain technology. Founded in 2014, SDF supports the continued development and growth of the Stellar network and also serves the ecosystem of NGOs, corporations, universities, small businesses, governments, and solo entrepreneurs building on the Stellar network through tooling, funding, and strategic collaborations. The Stellar network is a decentralized, fast, scalable, and uniquely sustainable blockchain built for financial products and services.

Find out more at the SDF Policy Hub
https://stellar.org/policy-hub