

Introduction to Decentralized Finance (DeFi): The Regulatory Perspective

Introduction

Decentralized finance is challenging the centralized traditional financial system by disempowering intermediaries and facilitating peer-to-peer transactions where the users are able to retain control over their money. Where there is a lack of regulation at the time of writing this article, DeFi promises a dynamic, disintermediating revolution in finance, steadily taking over the traditional financial world. In this article I will discuss some of the most important implications of DeFi for existing financial regulations, as well as the challenges regulators are confronted with, focusing especially on the EU's approach.

What is DeFi?

Decentralized Finance refers to platforms that allow users to perform different types of financial transactions. The goal is to improve the availability and efficiency in financial services through disintermediation. DeFi uses blockchain technology, cryptocurrencies (mainly stablecoins) and smart contracts to manage financial transactions such as lending, borrowing, and trading outside the control of traditional financial institutions like banks, brokerage firms, and centralised exchanges. Therefore, users interact with the open software protocols through the so called “unhosted” wallets. Unhosted wallets are digital wallets that are managed by the users themselves rather than by a specific service provider.

How does DeFi work?

Decentralized finance uses blockchain platforms to disintermediate centralized models and enable the provision and settlement of financial services anywhere in the world by using cryptocurrencies, rather than going through traditional financial intermediaries. By eliminating intermediaries, DeFi users are able to maintain full control over their money through personal wallets (DeFi smart contract tokens) and trading services, as well as directly interact with them through DeFi applications (“dApps”).

- **Smart Contracts**

DeFi makes use of smart contracts that provide the fundamental components for the functioning of dApps encoding the necessary terms and activities for the operability of these apps. Smart contracts are computer programs run on a blockchain that control digital assets, and produce automate agreement terms between buyers and sellers or lenders and borrowers. They are used to execute a transaction between two or more parties, thus reducing conflicts and costs.

- **Software protocols**

DeFi software protocols run on blockchain are based on rules written to govern specific tasks or activities. They are interoperable, meaning they can be used by multiple entities at the same time to build a service or an app, enabling buyers, sellers, lenders, and borrowers to interact with each other. DeFi protocols achieve their investment purposes through self-

executing smart contracts that allow users to invest cryptoassets in a pool of funds from which other users can borrow. The most common software protocols used for DeFi projects are built on Ethereum.

- Decentralised applications (dApps)

The so-called dApps abstract the underlying protocols into simple consumer-focused services.

A dApp operates on a blockchain or peer-to-peer network of computers. It enables users to engage in transactions directly with each other as opposed to relying on a central organisation. The user of a dApp will pay the app developer an amount of cryptocurrency to download and make use of the application's source code. The source code is a smart contract, which allows users to complete transactions without revealing personal information.

A traditional web app, such as Twitter, runs on a computer system that is owned and operated by an organization, having full authority over the app and its operations. There may be multiple users on one side, but the backend is controlled by a single organization.

When it comes to the cryptocurrencies, dApps run on a blockchain network in a public, open-source, decentralized environment and are not controlled by any single authority. For example, an app developer can create a dApp like Twitter and put it on a blockchain where any user can publish messages. Once posted, no one has the power, including the app developers and/or creators to delete the messages that were already published.

- Governance tokens

Some types of DeFi protocols distribute the so-called "governance tokens" to reward users for interacting with the system as well as for conducting or supporting different types of transactions. Participants typically earn tokens by interacting with and providing services to a protocol, for example by providing liquidity in a decentralized exchange or collateral on a DeFi lending platform.

These governance tokens generally give users a right of return (reward) from the project and allow users to vote on changes proposed within the protocols. Based on the associated rights, governance tokens have value and can be traded. This structure gives to the holders of governance tokens the ability to contribute to a project's governance and evolution by voting on proposals to change the protocol and, therefore, its incentives and operations.

- DeFi Platforms

DeFi does not just build financial services natively as software, but it recreates the entire ecosystem of finance on novel technical foundations, the so-called DeFi platforms. These platforms are consumer-facing financial interfaces that require blockchain technology as well as crypto holders in order to operate. The blockchain technology acts like digital highways allowing DeFi transactions to move. Several decentralized platforms exist including decentralized exchanges (DEX), lending and borrowing, trading (complex) derivatives, insurance, asset management etc.

- Decentralised exchanges (DEXs)

DEXs are marketplaces that allow the trading of digital assets without any centralized control. They replace the market-making and custody features of exchanges with a powerful algorithm that dynamically adjusts prices and executes trades based on available liquidity. Automated Market Makers (AMMs) have become a popular means of providing liquidity. They match buyers and sellers of digital assets or let them “swap” one cryptocurrency or token for another. Rewards on these platforms result from providing liquidity in token pools. Some examples currently featuring in the crypto space are Uniswap and Justswap.

- DeFi Lending Platforms

DeFi lending platforms are platforms that allow holders of cryptocurrencies to anonymously lend vast sums of funds instantly to people who want to borrow, provided that they can provide enough collateral to deposit in a smart contract and settle the loan within an agreed timeframe. Lenders earn interest on the provided loan amount (credit intermediation). Some DeFi protocols offer crypto loans against fiat collateral (traditional money) and vice versa. Apart from loans, DeFi users can borrow a token to participate in blockchain activities such as governance. Some examples currently featuring in the crypto space are Compound, Makerdao, and Aave.

- DeFi derivatives platforms

DeFi derivatives platforms establish markets for synthetic assets, in which users can establish derivative positions in cryptocurrencies while posting collateral (guarantee) to support those positions (trading in derivatives). They automatically track the value of commodities, stocks, indices, or any combination of financial instruments. Most known example to date is Synthetix.

- Non-Custodial Lending Platforms

Cryptocurrencies have further extended into the world of DeFi through the recent creation of non-custodial lending platforms. These are decentralized markets where users participate as depositors or borrowers. The concept of these lending platforms is designed to mitigate any potential losses or defaults through controlling collateral on the blockchain. Retail lenders are able to quickly liquidate unhealthy loans on these lending platforms through the underlying technology of the platform itself. DeFi pools also have the potential of opening up liquidity in different markets that have previously not been able to transact. Theoretically, DeFi users are able to extend credit and liquidity through cryptocurrencies to users across the world, including markets in developing countries that traditionally do not see inflows of western funds.

- New DeFi Services

Based on the DeFi technology, users can now obtain financial services such as margin trading, yield farming, liquidity mining, and crypto staking on a distributed ledger. Staking platforms

and yield farming protocols have surged in popularity. Yield farming is a tool to help provide liquidity to the network. It can be classified as “the act of hunting for rewards” by interacting with DeFi protocols, by temporarily putting depositing assets as collateral in a liquidity pool, that could be used by other users including investors and start-ups, in exchange for financial rewards.

Liquidity mining is a specific form of yield farming, in which digital asset owners provide liquidity to DEXs in return for rewards. Since DEXs historically suffered from low liquidity, this is an important development for the ecosystem as well as a major source of revenue for some digital asset investors. While liquidity miners and yield farmers add funds to liquidity pools, stakers either hold funds in a wallet or delegate their coins to a validator node. This technique involves locking assets in a wallet in order to gain governance rights and token rewards in proof of stake (PoS) blockchain’s native asset.

- DeFi market

Since 2019, DeFi has been one of the fastest-growing crypto sectors. Interest in crypto and DeFi rose swiftly during the Covid-19 pandemic and investment has accelerated based on that. However, DeFi is still in the early stages of its evolution, where the total value locked into DeFi of various types (collateral pools, DeFi smart contracts/protocols) in leading platforms such as Maker, Compound, Uniswap and Aave has grown from less than 1 billion USD in 2019 to over 90 billion USD in January 2022.

This growth was driven partially by investors looking for enhanced transparency and control of their funds regarding its open network as an attractive alternative to traditional banking. Another reason evidencing this growth was the maturation of stablecoins, for example cryptocurrencies designed to track the value of stablecoins, such as the US dollar (USDT). Incentive structures were developed such as yield farming and governance tokens through which participants can earn returns for providing liquidity to DeFi services.

- DeFi and benefits

Using DeFi applications has a number of interesting advantages beyond the traditional financial services, in terms of easier access to financial products and liquidity, improved market efficiency, enhanced financial privacy, lower fees and quicker as well as faster innovation.

- Peer-to-peer trade

Since dApps fuel the ecosystem without intermediaries thereby using self-executing codes that envisage the outcome and resolution of activities on these platforms, it also provides flexibility, as well as direct person-to-person trade with high levels of transparency and zero joining requirements.

- Availability

There are also theoretical benefits for international financial transactions. The distributed nature of DeFi platforms and protocols make them available across the world. The idea is that with a cheaper alternative, remittance charges and commission fees will drop, and currency conversion will have to get cheaper in order to be more competitive.

- Lower costs

Such decentralised and non-custodial platforms have low costs as market competitors often remain unregulated and have minimal operating and regulatory costs. The absence or lack of central intermediaries makes it hard for regulators to forbid and not fully regulate DeFi services.

- Innovation

It may also lead to new types of services, triggering further innovations. If a community of users is displeased with the service provided by a protocol, that community can vote to change the services supported by it or can separate the existing open-source code base and develop a new protocol to meet the needs of the community better.

DeFi and the associated risks

DeFi is an emerging technology that comes with the associated risks, such as user errors. A crucial question associated with DeFi risk is the question of who will take responsibility for any mistakes occurred during a transaction since we are very well aware that it is nearly impossible to alter things on blockchain.

The smart contract vulnerability comes to the scene since the engine that runs dApps is embedded in the code in order to make the said smart contract. When this code has a flaw, it exposes the entire project leading to loss of funds.

Software systems may also malfunction due to a wide variety of factors. For example, what if an incorrect input causes the system to crash? Or, what if a compiler which is responsible for composing and running codes makes a mistake. Who is liable for these changes and/or mistakes?

While many DeFi tokens have already delivered lucrative returns, they come with considerable risk and price volatility which exceeds the well-established digital assets (Bitcoin and Ethereum). Their lower liquidity means that they are more susceptible to large price swings.

Finally, the anonymity of participants in DeFi transactions, makes it vulnerable for cyberattacks, hacks, and scams. This may lead to loss and/or theft of funds, without any available regulated remedy.

Lack of consumer protection

DeFi has thrived in the lack of rules and regulations. DeFi users however do not receive the protection benefits of transacting with regulated intermediaries. In centralized finance, banks are required by law to hold a certain amount of their capital as reserves, to maintain stability and at any time to provide to its customers their available funds. In DeFi they do not receive risk disclosures. Protocols are not subject to risk management requirements, such as capital and liquidity requirements, that protect against loss of customer funds and systemic risks. Also, there is no helpdesk or relationship manager in DeFi in order to contact if a problematic transaction arises.

Current regulation

DeFi is currently subject to existing regulations. However, the regulatory framework that applies to cryptocurrency projects does not regulate the spectrum of DeFi yet. Their approach is still based on the regulation of centralized intermediaries, where it will not work for decentralised DeFi digital asset classes. DeFi transactions conducted between individual users through unhosted wallets would not be subject to existing regulatory requirements, including KYC and AML reviews. Since DeFi protocols support anonymised transactions, there is no meaningful way for market participants to determine what requirements apply to their DeFi transactions.

Regulators are sceptical and enigmatic at the same time

Regulators across the world are making steps to get involved more closely. However, they are sceptical on how to deal with DeFi and how to fill the regulatory gaps. Considering the fragmented and diverse nature of the DeFi market, the task for regulators seems impressive. From a regulatory perspective, DeFi poses several crucial and multifaceted risks and challenges that will become more serious as the market grows even further. DeFi does not fit within the historic practical and regulatory model used for traditional financial transactions.

World Economic Forum Policy Toolkit: regulatory clarity and balanced approach

Policymakers and regulators are urgently looking for frameworks to address these issues responsibly. The World Economic Forum published a policy toolkit for DeFi, in order to assist governments around the world to appropriately address this phenomenon and help integrate regulation of digital asset marketplaces between different countries. Regulators worldwide contributed to the policy statement including representatives from lawmakers involved in creating the new European Markets in Crypto Assets (MiCA) rules. The toolkit provides the basics for understanding and examining the critical factors concerning DeFi regulations that should drive policy-making decisions. Technological neutral approach is necessary in order to balance the objectives of regulatory regimes, innovation and market development with policies that are fair, efficient, and enforceable.

- Regulatory clarity

Regulation is key to set minimum standards to market participants in the DeFi industry, to protect the capital and clearly define the regulatory treatment of all cryptoassets that are not covered by existing financial services regulation. Regulators will need to further clarify these guidelines for reporting entities as soon as possible in order to reinforce international adoption.

- Balanced approach from regulators

To promote the development of various DeFi markets, it is necessary to put in place a safe and proportionate regulatory framework to support innovation and fair competition. Regulators should thereby maintain an adequate balance between safeguarding positive blockchain-based financial innovation in terms of greater efficiency and broader inclusiveness in finance on one hand and limit the potential of these financial applications being misused for money laundering and terrorism financing on the other hand.

European DeFi regulation: Markets in Cryptoassets

In September 2020, the European Commission adopted the Markets in Cryptoassets Regulation (MiCA) proposal. The aim is to improve harmonisation and legitimisation of how tokens are being regulated generally and the supervision of issuers as well as firms that qualify as CryptoAsset Service Providers (CASPs). MiCA would set clear rules of the cryptoassets throughout the European Economic Area (EEA) establishing a common framework by avoiding any potential inconsistencies.

MiCA aims to provide greater legal certainty, supporting innovation, ensuring appropriate levels of consumer and investor protection, promoting market integrity and financial stability and thus transforming the EU's current fragmented cryptoasset legislation and regulatory framework into a more uniform approach. MiCA will apply to persons engaged in the issuance of cryptoassets and to CASPs within the EU-27. In order to be implemented both the European Parliament and the European Council need to vote on the final version of the MiCA regulation. Following that, there will be a grey period of 12 to 18 months from the day that it will be published in the EU's Official Journal and after that period the MiCA regulation is expected to come into force in 2024.

Overview of Distributed Ledger Technology (DLT) Pilot Regime – Regulation (EU) 2022/858

Background

The European Securities and Markets Authority (ESMA) and the European Central Bank (ECB) in an attempt to not miss the train regarding the fast growing markets of cryptoassets, issued their reports in order for the European Union (EU) to adapt some rules applicable to cryptoassets that qualify as financial instruments respecting the principle of technological neutrality and avoid the obstacles for innovation.

Following the above, the European Commission (EC) proposed a pilot regime for market infrastructures based on distributed ledger technology. The proposal is aiming to implement a model similar to the regulatory sandbox with specific focus on the trading of cryptoassets that are qualified as financial instruments on market infrastructures.

Some of the rules are not suitable for DLT relating to the secondary markets. The unsuitability reflects to experiences in the secondary market that require further attention. The focus on the setbacks of the secondary market in relation to cryptoassets qualified as financial instruments could boost the primary market ensuring liquidity for the instruments issued and traded through distributed registration technologies. One of the recitals of the DLT Pilot Regime (EU) 2022/858 states the following: *“Without a secondary market able to provide liquidity and to enable investors to buy and sell such assets, the primary market for cryptoassets that qualify as financial instruments will never expand in a sustainable way”*.

The negotiations have been concluded and the Regulation (EU) 2022/858 of the European Parliament and Council (the “DLT Pilot Regime”) on a pilot regime for market infrastructures based on distributed registered technology amending Regulation (EU) No. 600/2014 and (EU) No. 909/2014 and Directive 2014/65/EU (“MIFID II”) was published on the 2nd of June 2022.

DLT Pilot Regime

The DLT Pilot Regime will allow market infrastructures that use distributed ledger technology to be temporarily exempt (for a period of six years) from certain requirements of the European Union Financial Law, that will otherwise prevent them to develop trading and transaction settlement solutions to cryptoassets that qualify as financial instruments.

Furthermore, it is an optional regime, allowing financial market structures, such as multilateral trading facilities (MTFs), organised trading facilities (OTFs), central securities depositories (CSDs) and central counterparties (CCPs) from carrying out their trading and post-trading activities in relation to cryptoassets that qualify as financial instruments under EU financial legislation. The DLT Pilot Regime will help and assist ESMA and competent authorities of each member state to gain experience on the specific opportunities and risks of distributed ledger technologies in the trading and post-trading services.

The scope of the DLT Pilot Regime is:

- limited to the conditions applicable on the operation of market infrastructures (such as Investment Firms, Market Operators and CSDs) based on DLT
- the authorisations conditions as well as the supervision and coordination of competent authorities and ESMA

Only the above entities are permitted to operate DLT Market Infrastructures, except the entrants in this space. It was decided that access to the DLT Pilot Regime should not be restricted to established entities of this space, therefore entities not authorised under Regulation (EU) No. 909/2014 (CSDs) or Directive 2014/65/EU (MIFID II) should apply for authorisation under the Regulation or Directive mentioned above and be authorised under the DLT Pilot Regime.

In such cases, national competent authorities should not assess whether the interested entity complies with the requirements of Regulation (EU) No 909/2014 (CSDs) or Directive 2014/65/EU (MIFID II) for which an exemption under the DLT Pilot Regime has been requested. These entities have limited authorisations as they can only operate DLT market infrastructures according to the DLT Pilot Regime. The authorisation should be withdrawn upon the expiration of the specific authorisation granted unless an interested entity submits an application for full authorization either as a CSD under Regulation (EU) No 909/2014 or as an investment company or market operator under Directive 2014/65/EU.

The DLT Pilot Regime regarding DLT market infrastructures introduce and includes the following:

- DLT Multilateral Trading Facilities (DLT MTFs)
- DLT Settlement Systems (DLT SSS)
- DLT Trading and Settlement Systems (DLT TSSs)
- DLT financial instruments which corresponds to financial instruments that are issued, recorded, stored and transferred through DLT

As this is a pilot regime, the following restrictions are laid down as to the type and volume of admitted financial instruments:

- Shares whose issuer has a market capitalisation or provisional market capitalisation of less than 500 million EUR
- Bonds, other forms of securitised debt or money market instruments (except derivatives or complex products) with an issue size below 1 billion EUR
- Units in collective investment undertakings whose market value of assets under management is less than 500 million EUR

The total market value of all the DLT financial instruments permitted to be traded or recorded in a DLT market infrastructure may not exceed 6 billion EUR. However, each competent authority may establish lower thresholds.

ESMA has an obligation to submit a report to the European Commission by 24 March 2026. This will include a cost-benefit analysis to allow the DLT pilot regime to be extended for up to three years, the extension of the regime to other types of financial instruments, its modification, its conversion into a permanent regime or its termination. The DLT Pilot Regime entered into force on 22 June 2022, with most of the rules being applicable as of **23 March 2023**.

Author

Panayiotis A. Koussis

Senior Lawyer | Pelagias, Christodoulou, Vrachas LLC

Team Leader of Legal & Financial Services