ADAN

Regulating DeFi in Europe: issues for consideration

The future of finance requires a new paradigm

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Table of content

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Foreword

Since its emergence in the summer of 2020, decentralised finance (DeFi) has seen exponential adoption by various users in the crypto-asset sector around the world. The growth of this ecosystem has thus naturally attracted the attention of various legislators and regulators on the potential of impact DeFi on financial stability, market integrity and consumer protection.

In the Markets in Crypto Assets (MiCA) Regulation, the co-legislators took the wise decision to exclude "fully decentralised" applications from MiCA and to ask the Commission to report back to the EU Parliament and the Council 18 months after the date of entry into force of MICA, on the development of DeFI and the necessity and feasibility of regulating this sector. At the global level, IOSCO and FSB has been tasked with developing policy recommendations for markets regulators around the world, specifically on DeFI.

Faced with the growing importance of this subject, Adan and its members have launched a specific initiative on the regulatory treatment of DeFi and the need to adapt the framework applicable to centralised financial activities for this new ecosystem. Adan's DeFi Committee - composed exclusively of decentralised finance protocols - worked in parallel with Adan' Legal Committee to provide the necessary technical input and operational vision.

The discussions in this paper reflect two considerations:

- Firstly, the necessity to remove uncertainties relating to DeFi, arising out of the MiCA framework, for both crypto actors and the authorities in charge of supervision.
- Second, the necessity to address the new risks raised by these applications and to integrate them into new legal categories in line with their inherent characteristics.

Thus, this report explains the necessity to review the traditionally accepted legal methodology for financial markets regulation when considering DeFi, while making specific recommendations. However, this report is not intended to legally categorise DeFi services, nor to propose an ad hoc regulation. The Association and its members remain entirely available to provide its technical and legal expertise on the subject to decision-makers, and a second publication will be drafted to make more concrete proposals adapted to the sector.

EXECUTIVE SUMMARY

Decentralised finance or "DeFi" refers to a set of financial activities that are operated on public blockchain networks, without the need for using traditional intermediaries. DeFi thus offers a complementary — sometimes alternative — way to access traditional financial services, and is characterised by its transparency, disintermediation, inclusiveness, interoperability, and innovation.

The intermediated architecture of traditional finance imposes a regulation focused on the supervision of providers, distributors, and infrastructures. This logic, which has also been followed in MiCA, can work for centralised crypto-asset service providers; However, it is not always appropriate when it comes to DeFi.

This report highlights that, by relying on direct interaction between the user and software programs (i.e. smart contracts), DeFi regulation cannot perfectly align with traditional financial regulation. Rather, DeFi raises four main types of new challenges:

- DeFi creates new - mainly technological - risks that need to be identified and addressed to ensure market stability and a sufficient level of confidence and protection for users. Trust is not in the hands of an intermediary but in the underlying technology.
- DeFi is based on technological opportunities specific to the whole crypto-asset sector, which are not available within traditional financial sectors. As such, DeFi's specificities should be used to optimise regulation to make it more effective.
- Legal categories for investment activities and services based on traditional finance regulation cannot be applied without nuance to DeFi applications, as they would be inappropriate in practice.
- While financial regulation is built on the territorial application of its rules, this logic seems incompatible with DeFi protocols, which do not have a "classic" geographical anchoring (such as headquarters). An application of the traditional rules to DeFi would thus risk both being inapplicable in practice and creating major difficulties in terms of supervision for the authorities.

Given these challenges, it seems essential to review the traditional paradigm for regulating financial sector stakeholders by understanding and taking into account the specific characteristics of each DeFi protocol. Inadequate regulation in Europe would slow down the emergence of innovative projects and harm the competitiveness of the European territory in digital finance.

Today, various policymakers around the world are conducting research to understand how DeFi applications work, their risks and opportunities, and how to regulate them to ensure financial stability and investor protection. Adan supports these initiatives considering that a rational and relevant framework of the sector could facilitate the adoption of the various services proposed by DeFi. However, given the complexity of the subject and the stereotypes attached to the crypto-asset sector, an attempt to adopt a strict regulatory approach, based on pre-existing patterns, may be a trap with long-term consequences.

For these reasons, Adan promotes the establishment of an innovative framework, resulting from close and constructive discussions with the sector to embrace all its opportunities in building a framework of trust for users, project holders and which allows for effective supervision by the competent authorities.

Introduction

Decentralised finance (DeFi) refers to a set of financial (or non-financial) applications that are carried out on public blockchain networks, without the need to use traditional intermediaries.

What is DeFi? Decentralised finance covers an ecosystem of applications comparable to those of traditional finance, while taking advantage of the benefits offered by decentralised systems. These applications are based on smart contracts, which are not contracts in a legal sense, but essentially computer programs deployed on a blockchain that automatically executes transactions when a user interacts with them on a peer-to-protocol manner. A smart contract can be defined simply as a code deployed in a blockchain consisting of a set of predefined and deterministic instructions, executed if and when the underlying conditions are met.

What are the top DeFi applications? The best-known examples of DeFi applications are **decentralised exchanges** (DEX), which allow for the exchange of crypto-assets without the use of an intermediary (and represents 681 protools and $18.6b of the Total Value Locked (TVL) in DeFi[1]), and **liquidity protocols** (often also referred as « lending protocols »), which allow the supply and borrowing of crypto-assets, as long as a higher amount of collateral is deposited (and represents 206 protocols and $13.3b of the TVL in DeFi[2]).

Today, DeFi covers a growing number of applications and use cases. In addition to DEXs, which by volume are starting to compete with some centralised exchange platforms[3] (potentially showcasing a proof of their maturity), DeFi allows for collateralised borrowing and insurance contracts, as well as earning rewards on crypto-assets against the user securing the network (referred to as "staking"), access to stablecoins that facilitate payments and protect against crypto-asset volatility, and tokenisation of real estate assets.

Regarding **staking protocols**, liquid staking tokens (LSTs) have also seen strong growth in the DeFi sector in recent months, offering stakers the opportunity to increase their rewards by unlocking liquidity for their staked assets, such as the ETH token from the Ethereum blockchain or the MATIC token from the Polygon blockchain. This new type of token has increased in popularity in the sector, for example, the Lido protocol and its stETH account for more than 20% of the global TVL in DeFi[4].

[1] Source: DeFiLlama
[2] Ibid
[3] Uniswap v3 has greater liquidity in ETH/USD, ETH/BTC and other popular pairs than major CEXs.
[4] Source: Uniswap
https://defillama.com/protocols/Liquid%20Staking

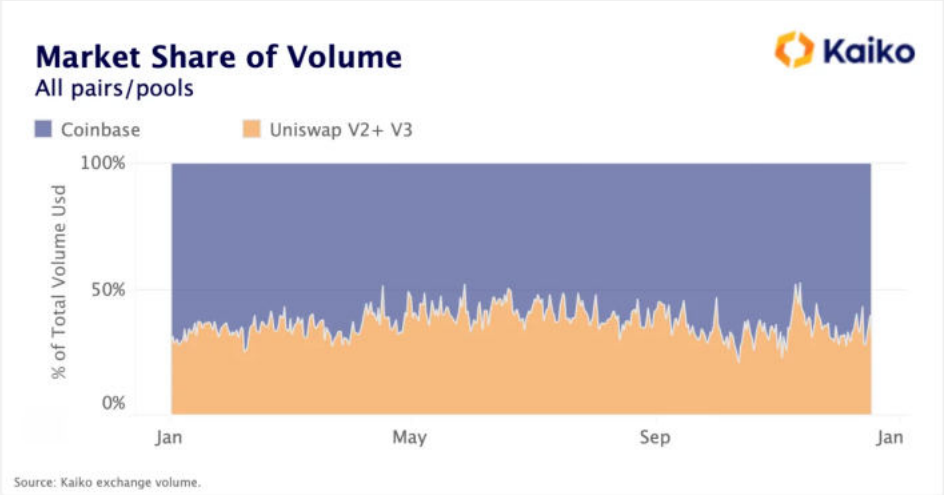

Figure 1: Volume of market shares between Uniswap V2 and V3 and Coinbase[5]

What are the top DeFi blockchains? Each DeFi application is based on a public blockchain to operate. DeFi was born and first developed on the Ethereum blockchain — via the programming language called Solidity. Public (or "permissionless") means that the blockchain allows any person to transact and produce blocks in accordance with its predefined consensus algorithm, as opposed to "private" or "permissioned blockchains", which also enable smart-contract based applications, but which governance is ensured by a limited number of persons that are not part of the decentralised ecosystem of DeFi. Among the pioneers were The DAO, created in 2016, which was similar to a decentralised investment fund where investment decisions are made by its users; MakerDAO[6] (2017-2018), which was behind DAI, the first decentralised stablecoin; or EtherDelta (2017), which was the first DEX.

Since 2021, we have seen **the emergence of alternative blockchains** to Ethereum on which DeFi ecosystems are also developing. The BNBChain, Avalanche, Fantom, Cosmos, or Solana are today the main rivals to Ethereum, thanks in particular to their much lower transaction costs. These blockchains operate very similarly to Ethereum. In fact, some of them are simply "forks[7]" of Ethereum with different transaction validation mechanisms.

[5] Source: « The 10 Defining Market Events of 2022 », Kaiko, December 27th, 2022
[6] https://makerdao.com/
[7] A "fork" refers to the duplication process of the code source of a decentralised finance protocol to create a new independent application.

Is DeFi largely adopted? Thanks to the multiple use cases it offers, DeFi has seen exponential adoption in the last couple of years. In March 2023, the number of unique addresses in DeFi was over 7 million, compared to 2.6 million in mid-2021.

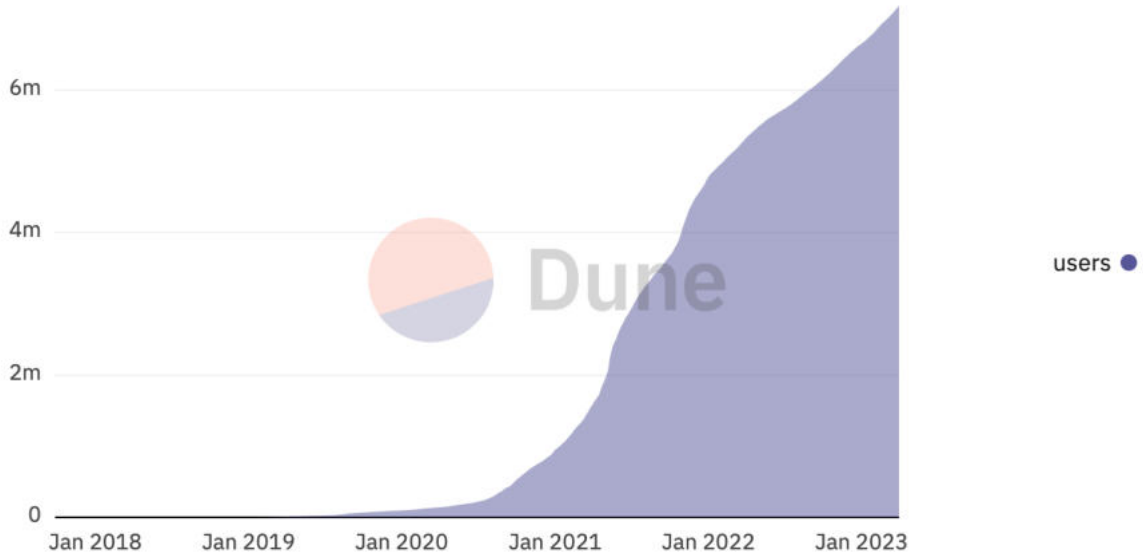

Figure 2: DeFi users over time[8]

Although the adoption of DeFi is growing, it is not yet fully institutionalised and remains an innovative but niche market compared to traditional finance.

The value of assets invested in DeFi protocols - otherwise known as total value locked (TVL) - was estimated to be over $180 billion in December 2021[9]. While the TVL in the DeFi market has since dropped significantly below $50 billion, other positive signals suggest that DeFi continues to grow despite the general market correction (which is not exclusive to the crypto markets): venture capital inflows, number of active addresses, deployment of new protocols and improvement of other protocols, etc.

[8] Source: Dune Analytics
[9] Source: DeFI Llama

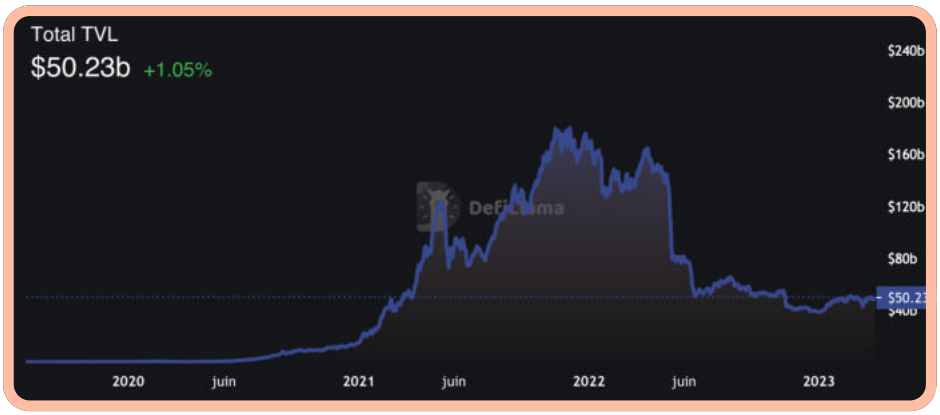

Figure 3: The evolution of total value locked in DeFi[10]

DeFi also stands out for the growth in direct active participation of the community via the countless proposals and decisions on public governance forums across the ecosystems which allow for the decentralised evolution of the protocols. Among the 10,000 existing DAOs, there are more than 1.5 million active voters and proposal makers[11].

[10] Ibid
[11] Source: DeepDAO

1. Why DeFi matters and is part of the future of finance?

1.1 Staying at the forefront of financial innovation

DeFi is a novel and developing ecosystem. While the fundamental constituent parts - essentially smart contracts, the programming language (solidity) and the notion of "token" - existed since 2016, DeFi only really started to take hold during the 2020 summer (often referred as the "DeFi summer") which followed the emergence of the first major "liquidity mining" program introduced by the Compound protocol.

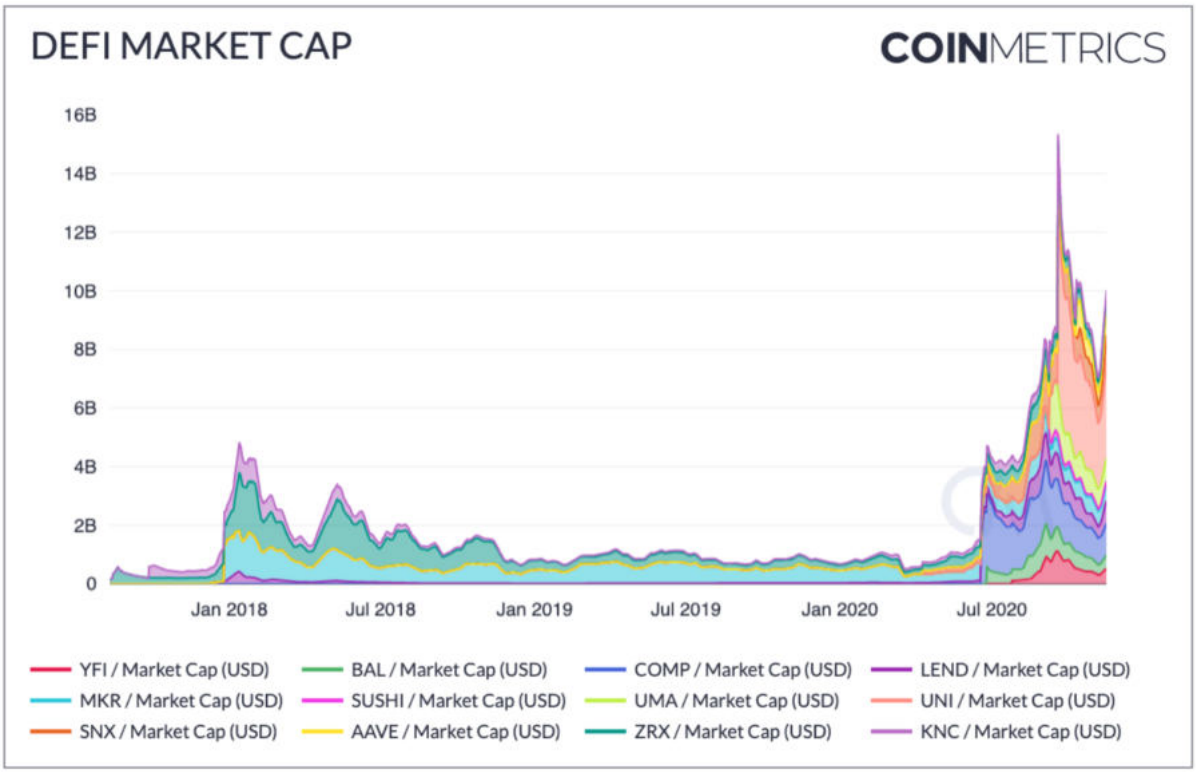

Figure 4: The evolution of the market capitalisation of the main DeFi protocols[12]

One of the reasons behind the rapid growth of this sector is that there are — theoretically — **little or no barriers to entry** due to the relative ease of launching new protocols. A DeFi protocol typically consists in a combination of one or more smart contracts, which are usually open-sourced, allowing other users to “fork” the code to create a “duplicate” of the protocol in question. Any DeFi protocol is accessible directly from the blockchain, however, to less blockchain technology savvy users, web interfaces (or "front-ends") allow for an easier access to interact with these programs.

[12] Source: Coin Metrics

As anyone would be able to create their own website using the internet protocol, anyone can build their own front-end to DeFi in a permissionless manner. In fact, most of the DeFi protocols have multiple front-ends hosted by independent parties. Furthermore, many protocols, such as Liquity, do not provide their branded interface to users and instead, encourage them to run their own front-end[13].

The relative ease in launching a DeFi protocol follows from the notion that a simple "deployment" of smart contracts on a blockchain network, accompanied by the publication of a website, is enough to create a new protocol. Thus, the creation and structuring of a legal entity (such as a development company, association or foundation) is not technically speaking necessary[14] - although the vast majority of software developers that engage in the creation of DeFi projects choose to conduct their software development activities through a legal entity or other legal structures.

Innovation in DeFi has thus been constantly evolving since its emergence and the **number of developers** specialising in this new financial evolution provides interesting employment growth potential for Europe.

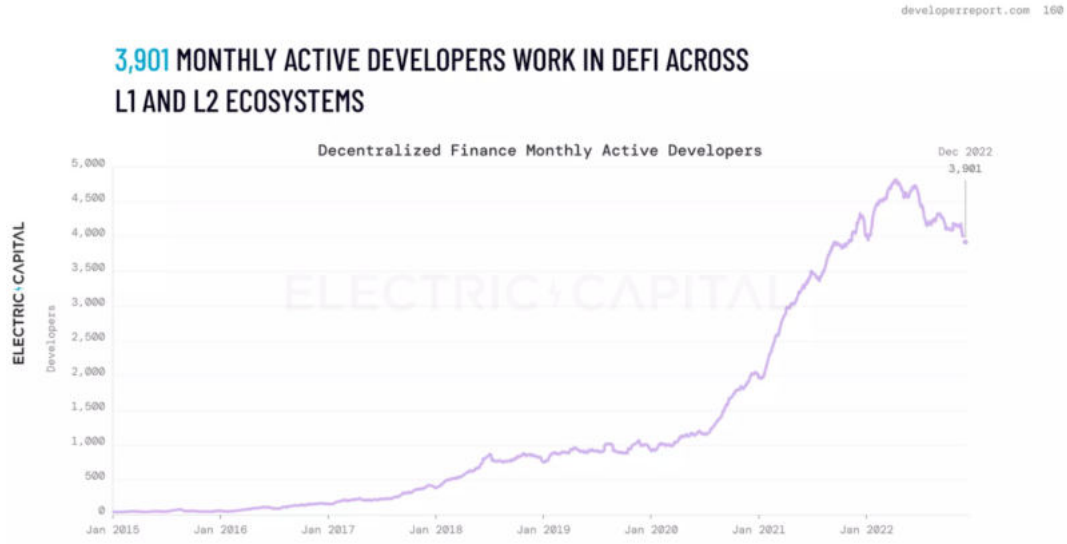

Figure 5: Growth of developers in DeFi[15]

(L1s (layer 1) are base blockchains on which L2 (layer 2) blockchains can be built on for certain purposes, e.g. Ethereum is a L1, Polygon is a L2 that allows more transactions per second than Ethereum)

[13] https://www.liquity.org/frontend-operators
[14] At least for the time being, although some DAOs run the risk of requalification, which will be addressed in this report.
[15] Source: Electric Capital

The ability to constantly innovate to improve risk management, reduce costs for users and further enhance transparency is another reason behind DeFi's rapid growth. While most of the new protocols are "forks" of existing protocols (i.e., copies that simply change a few parameters), many protocols innovate and explore new verticals (i.e., use cases that may eventually constitute a new market). Thus, while verticals that emerged from the 2020 DeFi summer (i.e. DEX, collateralised borrowing, automated yield farming, and synthetic asset generation) still dominate the market, more recent projects (sometimes referred to as "DeFi 2.0") have introduced major innovations. These include for example the development of:

- decentralised stablecoins collateralised with a variety of crypto-assets (or even deposits on other protocols) (e.g. Frax[16], Angle[17], Abracadabra[18], Liquity[19]);
- protocols with the ambition to manage their own cash flow (notably through sophisticated incentives such as bonding) (e.g. OlympusDAO[20], KlimaDAO[21]);
- protocols allowing the creation and exchange of decentralised derivatives (e.g. Opyn[22], dYdX[23], GMX[24]); or
- decentralised indexes to track/create the performance of a group of crypto-assets (e.g Set[25], Enzyme Finance[26], Index Coop[27]);
- overlay protocols that build on an existing protocol by concentrating its governance tokens (e.g. Convex[28], Aura[29], Paladin[30], Votium[31], Redacted[32], Stake DAO[33]);
- protocols which reduce the spread between lending and borrowing rates (e.g. Morpho[34]);
- protocols which allow non-collateralised borrowing of crypto-assets (e.g Atlendis[35], Maple[36], Ribbon lend[37]) and improve the offering of lending protocols;
- protocols which reduce the risk of impermanent loss (e.g Swaap[38]), improving the offering of decentralised exchanges.

16 https://frax.finance/
17 https://www.angle.money/
18 https://abracadabra.money/
19 https://www.liquity.org/
20 https://www.olympusdao.finance/
21 https://www.klimadao.finance/
22 https://opyn.co/
23 https://dydx.exchange/
24 https://gmx.io/
25 https://www.tokensets.com/
26 https://enzyme.finance/
27 https://indexcoop.com/
28 https://www.convexfinance.com/
29 https://aura.finance/
30 https://paladin.vote/
31 https://votium.app/
32 https://redacted.finance/
33 https://stakedao.org/
34 https://www.morpho.xyz/
35 https://www.atlendis.io/
36 https://www.maple.finance/
37 https://lend.ribbon.finance/
38 https://www.swaap.finance/

A common characteristic among these new projects, and **another crucial factor in the growth of DeFi,** is the increased focus on **modularity and interoperability**. The ability to combine and integrate the operation of different protocols is a **unique force of DeFi**. Protocols are not developed in a vacuum: they seek to interact with others to establish integrations; they are not developed "against", but "with" or even "on" existing protocols. The systematic quest for DeFi synergies creates a positive dynamic for the ecosystem as a whole, as each project can benefit from the development of the protocols with which it is integrated.

This modularity and interoperability is possible because DeFi protocols are a set of **smart contracts that operate on a common open source blockchain.** However, following the recent innovations, the interoperability can even go beyond one chain with the use of "**bridges**", which allow the transfer of tokens from one blockchain to another (for example between two so called "layer 1" blockchains). The bridging technology is relatively young and complex and therefore poses novel risks of security to the smart contract development, which have resulted in an increase in the number of hacks. However, this innovation, like the earlier innovations in DeFi, is constantly improving as multiple independent software development teams are working on the improvements aligned with the open-sourced mentality and good software development practices.

There are many examples where the benefits of modularity and interconnection can be showcased. For example, Alchemix[39] offers loans that are automatically repaid by reinvesting the collateral on the Yearn Finance protocol. Gelato[40] automates the management of liquidity-providing positions on Uniswap[41]. Convex[42] collects governance tokens from the Curve[43] protocol and thus provides its users with better returns for their liquidity provision on Curve. The Aura protocol offers the same type of logic for Balancer.

[39] https://alchemix.fi/
[40] https://gelato.network/
[41] https://uniswap.org/
[42] https://www.convexfinance.com/
[43] https://curve.fi/

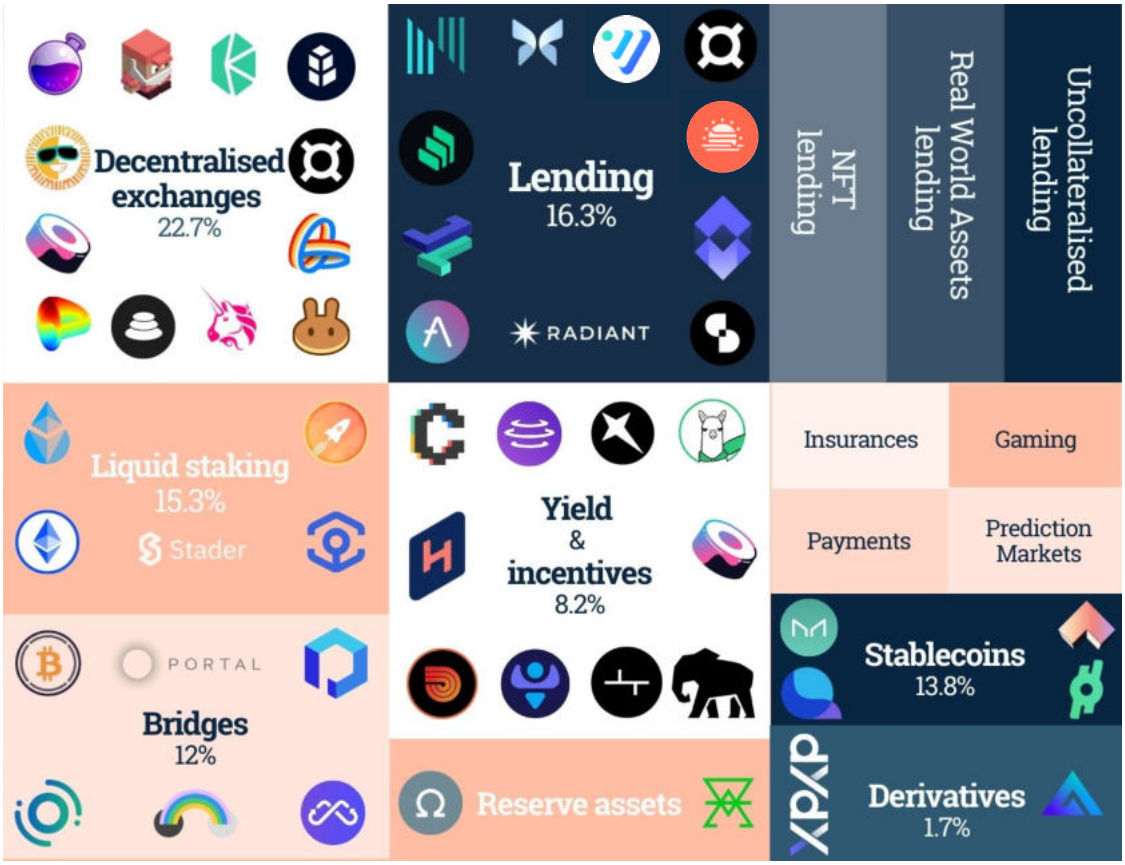

Figure 6: Adan's DeFi mapping

With its rapid development and focus on protocol interconnection, DeFi is at the forefront of financial innovation.

1.2 A complementary offer to intermediated finance

This is one of the major benefits of DeFi compared to traditional finance: **any user can carry out financial transactions with only the technology with which their wallet interacts directly.**

The articulation of smart contracts makes it possible to operate complex systems without the presence of a human intermediary or mediator. The smart contract code predetermines and automates the response to several simple problems. **If a user does not respect the conditions determined by the program, then the proposed transaction is automatically rejected**. Once a smart contract is deployed, its code is as a rule immutable. The software developers may choose to provide for an optional update mechanism for the code, which typically requires a governance vote or another signal of approval from the network stakeholders

By automating the interactions between the protocol and its users, smart contracts allow the development of applications that are both fast (because transactions are sent for execution immediately directly by the user) and trustful (because the consequence of an interaction with a smart contract is always predetermined). This is what distinguishes (but does not oppose) DeFi from the traditional financial sector, where the execution of a transaction can be slowed down due to complex traditional IT systems, mistakes or, human intervention.

The absence of an intermediary also **allows users to keep permanent control of their assets**. For example, to enter to a transaction through a DEX, a user does not have to deposit with an intermediary; he/she can interact directly with the DEX. When the transaction is added to the blockchain, the user's address is simultaneously debited and credited. This logic is found in the vast majority of protocols. Even protocols that involve a deposit of crypto-assets in vaults usually grant the depositor a new token as a "proof of deposit" or receipt. This "proof of deposit", being tokenised, can then be exchanged directly on a DEX (unless the protocol has specified in advance that it is an non transferable token), without going through the initial protocol.

1.3 Truly open, fully transparent finance

All blockchain transactions are visible to the general public by observing the data on-chain. Therefore, compared to the banking and financial industry, DeFi is characterised by its openness and complete transparency. The consequences can be observed on multiple levels.

1.3.1 At the protocol level

DeFi applications are defined by their smart contract code. **This code can be consulted by any user or external party, using free online tools** (e.g. Github[44]) as well as the transactions that are passed through these protocols (e.g. the Etherscan[45] blockchain explorer, for protocols existing on the Ethereum blockchain).

This open audit has many advantages to restore confidence in financial markets. First, users of a protocol can predetermine the consequences of interacting with it prior to calling the smart contract or otherwise engaging in transactions using it. Secondly, the **auditability of the code reduces the risk of fraudulent actors deploying scam protocols**, as flaws introduced in the code could be quickly identified by informed users. Finally, the transparency encourages a **virtuous circle of collaboration between developers** of DeFi applications: they can consult, improve or draw inspiration from the code of competing protocols, but also correct possible vulnerabilities.

[44] https://github.com/
[45] https://etherscan.io/

In particular, protocols often offer bonuses to "white hat hackers" who identify vulnerabilities in the code of their smart contracts.

1.3.2 At the software developer level

The way Ethereum-based blockchains work is that **a smart contract can only be deployed by a pre-existing address**. Thus, the person who deploys a protocol (or, at least, the deployment address) is always known. This allows for increased reactivity if a protocol turns out to be fraudulent: the analysis of the data available on the blockchain can, for example, facilitate the identification of the scammer by **identifying the sources** that fed the address that deployed the fraudulent smart contract. Within the DeFi community, technological solutions - such as Chainalysis[46], Elliptic[47] or Scorechain[48] - are deployed to carry out blockchain analytics that provide additional **tools and intelligence for conducting investigations** based on on-chain data and use publicly available data to disseminate information.

1.3.3 At the user level

The transparency of blockchain data makes it possible to **monitor user behaviour** of the different DeFi protocols over time. In particular, it is possible to analyse transactions made by the addresses containing the highest amount of crypto-assets (so-called "whales"), which are usually controlled by investment funds, professional traders, or leading developers. Tools such as Nansen[49] or Aleno[50], give access to very detailed information on the activity of these addresses, which allows, for example, to reproduce the investment techniques of these "whales". This transparency also **reduces information asymmetry** between the most informed players and the general public. For example, if a leading investment fund suddenly decides to withdraw its funds from a DeFi protocol, which may signal that a vulnerability has been discovered, the general public will be immediately informed thanks to the existence of these analysis tools.
The transparent nature of the data combined with the inclusivity and interoperability of the technologies are one of the key differentiating factors which call for the need of a separate regulatory regime for the space.

Finally, transparency of transactions on blockchains has the advantage of **facilitating the fight against money laundering**. Indeed, financial crime units (as well as compliance teams within regulated companies) can use the traceability of transactions as a tool in their investigations. Furthermore, criminals are seeing the effectiveness of traditional fraud methods reduced by the widespread use of blockchain analysis tools.

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[46] https://www.chainalysis.com/
[47] https://www.elliptic.co/
[48] https://www.scorechain.com/
[49] https://www.nansen.ai/
[50] https://www.aleno.ai/

1.4 Financial inclusion

Contrary to certain preconceived ideas, the DeFi sector can act as a vehicle for inclusivity and is not exclusively motivated by the personal profit ambitions of protocol developers and their investors. Its most illustrious representative - Vitalik Buterin, the creator of Ethereum - regularly speaks out, , urging players to focus on developing decentralised applications for the common good, rather than limited to purely financial uses. The software development ecosystem works largely based on open-sourced technologies and shares the sentiment that technologies underlying DeFi ought to be considered as "*social utility*".

DeFi can act as a vehicle for inclusivity with ability to operate without intermediaries allows anyone with an Internet connection to access the various applications. It thus enables underprivileged and often discriminated populations to access these solutions and to respond in a concrete way to their daily problems. For example, the inhabitants of certain developing countries with high inflation (Argentina, Turkey, Nigeria) or authoritarian regimes (Venezuela, Iran) can use the yield from DeFi applications to supplement their income, hedge against the devaluation of their national currency, or receive funds more easily from family members living abroad.

In the European Union, DeFi has an important role to play in democratising access to financial services. DeFi allows individual investors to access sophisticated financial products, whose equivalents in traditional finance are reserved for professional investors or private bank clients. One thinks in particular of certain derivative products such as options, which can now be traded in a decentralised manner. However, the intrinsic complexity of these products creates a natural barrier to entry for novice investors, limiting their access to the most risk-aware users.

Above all, DeFi allows the general public to make (informed) investments that combine high risk and high reward: where individual investors are excluded from venture capital and private equity, DeFi can offer comparable investment opportunities through "early stage" investment in protocol governance tokens.

As Europe struggles to build funding capacity through traditional venture capital, private equity, or bank lending channels, often causing potential EU Unicorns to seek funding in the US, DeFi offers an opportunity for easier early stage funding of companies and/or projects that are societally useful, and can also reduce the financial burden on governments. See also Section 2.4.2 on the wide variety of non-financial projects that DAOs are able to support through DeFi.

By opening new markets and connecting people, DeFi can foster economic growth, help reduce the burden on the finances of Member States, and create incentives around an economic model where people can take direct responsibility for socially meaningful investing. That is yet another reason behind the growth of DeFI.

1.5. Decentralised Web: New Era of Innovation Beyond Financial use cases

Decentralised finance is squarely part of the emergence of the decentralised web. With decentralised web, the programmability, certification and digital representation of any value has led to the emergence of new uses that will continue to convince beyond purely financial domains. **This dynamic cannot be stopped, it is more a question of being an actor and accompanying its development within a framework that we ourselves have defined.**

For example, the decentralised web can play an important role in the fight against the climate crisis, particularly through Regenerative Finance (ReFi). Through ReFi, funds can be collected more efficiently from decentralised communities and directed to projects that contribute to reducing carbon emissions and combating climate change. For example, CarbonABLE[51] uses NFTs funded by crypto investors to finance projects to regenerate natural carbon sinks. In this way, investors can participate in the fight against climate change while earning potential yields in return.

By using DeFi and ReFi to fund sustainability projects, new solutions to address the climate crisis are emerging and involving a new community, but also create new - more transparent - investment and employment opportunities in the sustainability sector. It shows that **Web3 technology can be used to make a positive impact on the environment and society, and that we can all contribute to creating a more sustainable future**.

Beyond sustainability issues, the decentralised web also offers important social opportunities by providing the creation of systems and applications that are censorship resistant, secure and transparent, **allowing european users to take control of their digital identities and personal data, while reducing their dependency on large corporations**.

As an example, Proof of Humanity[52] (PoH) provides a decentralised identity verification system that creates a public list of verified individuals who are resistant to Sybil attacks. This list can be used in a variety of applications that require reliable and secure identity solutions, such as identification for service access, certification and reputation, as well as other decentralised applications.

[51] https://carbonable.io/
[52] https://proofofhumanity.id/

In the same vein, the decentralised web allows for new and more virtuous social interactions, notably through the creation of decentralised social networks that are more protective of user data, such as the Lens protocol[53].

These non-financial opportunities are abundant and some have not yet been fully exploited by the decentralised web community. It seems necessary to encourage all these initiatives by taking into account the myriad of applications - financial and non-financial - that the decentralised web represents.

Adan's position — Decentralised finance is part of the future of finance

Decentralised finance is a collective experiment where talents from all over the world collaborate to create new methods of exchange and investment ex nihilo. While search for returns remains a driving force for some of the players in the sector (as in the traditional financial sector), DeFi also conveys positive values, such as transparency, inclusion,collaboration, diversification and growth.

When considering the necessity and feasibility to regulate this ecosystem, policy makers should not lose sight of the innovative and experimental nature of this sector. A thorough understanding is needed to develop appropriate regulation, especially as DeFi is constantly evolving.

This constant evolution on the one hand, and the opportunity to make the system more virtuous via compliance tools that are native to the technology on the other, can - according to Adan - calls for the establishment of a DeFi Observatory (see Adan's recommendation 2).

[53] https://www.lens.xyz/

2. An ecosystem that challenges traditional regulatory approaches

By providing a new offer of decentralised financial services native to the crypto-asset sector, DeFi requires a reconsideration of the traditional paradigm accepted to frame financial activities.

2.1 Traditional finance is built around the principle of centralisation[54]

Generally speaking, the regulatory environment of so-called "traditional" finance is based on the regulation of (i) issuers of financial securities and financial products, (ii) distributors of these securities and products, and (iii) market infrastructures necessary for the finalisation of transactions.

The client[55] can access financial, banking or insurance products and/or services:

- either directly from the producer (e.g. his bank, if the bank markets its own financial products); or
- through distributors, i.e. intermediaries.

Furthermore, without directly affecting the final client, many intermediaries are involved in the execution of financial transactions, especially for financial securities where the role of market infrastructures is fundamental: trading platforms, central depositories, clearing houses, settlement systems, etc.

Thus, the client can hardly ever access the financial markets directly, but mostly only through intermediaries whose role is to transmit and execute the transactions that the client wishes to carry out.

This intermediated architecture has given rise to regulation that focuses on the supervision of producers, distributors and infrastructures. This regulation is usually sector-specific (banking, payment, e-money, investment services, asset management, insurance, etc.), and sometimes cross-sectoral (anti-money laundering, regulation of packaged retail investment products or "PRIIPS", etc.). Despite the variety of players and sectors, regulation is generally focused on the same typology of rules, such as prudential standards, organisational requirements and rules of conduct.

[54] i.e Intermediation

[55] Another example of a term that is rarely appropriate when talking about decentralised finance. v.https://www.coindesk.com/layer2/2022/11/02/stop-using-the-word-platform-and-other-defi-language-pet-peeves/

The regulatory framework applicable to crypto-assets in France has been largely inspired by these principles:

- For the primary market, the regulation of initial coin offering (or "ICOs") is based on the "Prospectus" regulation, i.e. the regulation of the issuance of financial securities; and
- For the secondary market, the regulation of crypto-assets service providers (CASPs) is based on the regulation of investment services providers (MiFiR/D). Regulated crypto-assets services partly replicate investment services governed by MiFiR rules, while adding several other services such as custody, buying and selling of crypto-assets (in exchange for other crypto-assets or legal tender), and the operation of crypto-asset exchange platforms.

The same is true of MICA at the EU level, which remains influenced by the logic of intermediation: CASPs are regulated because they are intermediaries between crypto-asset markets and end customers. This may make sense for activities in centralised crypto markets (CeFi), but makes much less sense in DeFi where individuals interact directly with technology in order to access these markets - something MICA does not cater for.

2.2 Decentralised finance is built around a different model

Unlike traditional finance, which is heavily intermediated, the DeFi architecture is based on **direct interaction between the user and automated computer programs**: the user has direct access, without intermediaries, to the infrastructure itself.

Moreover, the designers of DeFi applications do not seek to reproduce the architecture of traditional finance on the blockchain. It is a misunderstanding of DeFi to reduce it to a mere replication of Tradfi but in a decentralised manner. Tradfi is still very largely structured around two pillars that simply cannot be reproduced (at least at present) by DeFi: money creation and financial securities.

DeFi is built around a different pillar: the economic value of key crypto-assets (such as ethers, bitcoins, and the many tokens issued on Ethereum and similar blockchains). In particular, DeFi seeks to build economic applications that optimise the value or exchange of these crypto-assets. Some of these applications are comparable to existing solutions in traditional finance, such as decentralised trading platforms or loan-to-own platforms (which function schematically as pawnbroking systems). Other solutions are fundamentally unique to DeFi and have no equivalent in traditional finance, such as applications - like Yearn Finance[56] or Beefy Finance[57] - that optimise returns (or "Yield Optimiser") or the creation of stablecoins collateralised by deposits of volatile crypto-assets.

[56] https://yearn.finance/
[57] https://beefy.com/

Thus, the regulatory interventions traditionally accepted to frame CeFi may hinder DeFi's inherent ability to achieve the legal policy objectives of many financial regulations, including, but not limited to, transparency, auditability, traceability, risk management, and others.

2.3 To properly regulate DeFi, we need to focus on the new risks it creates

By focusing on the supervision of intermediaries, the regulation of traditional finance makes it possible to limit the risks to final customers. Indeed, on the one hand, the supervision of these intermediaries is essential to guarantee their ability to fully execute the transactions requested by their clients. For example, the techniques used to transfer ownership of listed financial securities require several intermediaries - broker, trading platform, clearing house, central depository, etc. - to execute certain transactions correctly.

On the other hand, the inability of end-customers to access financial infrastructures directly creates an imbalance between them and intermediaries: it is therefore necessary to compensate for this imbalance by imposing on them standards of good conduct and obligations to communicate relevant information to their clients in advance.

This information asymmetry may to some extent extend to the crypto-assets sector, as users and entities marketing products or tokens are not always equally well-informed. Above all, however, the disintermediation that characterises DeFi poses new risks to its users, which become of concern the longer they remain unaddressed. These are **essentially "technological" risks linked to flaws in the drafting of the smart contracts on which the protocols are based**.
These risks can materialise in different ways:

- In the most extreme cases, smart contracts receiving crypto-assets as deposits can be emptied of funds because a flaw in the code allows an attacker to obtain the uncompensated transfer of those funds.
- More commonly, hackers exploit flaws in the "economic" construction of DeFi protocols - so-called "tokenomics", i.e. the economic mechanisms incentivising the use of a protocol based on its governance token. It is sometimes possible for an ill-intentioned user to enrich himself by interacting with the protocol in an "abusive" manner, without this behaviour constituting real piracy (for example, by unbalancing a liquidity pool to carry out an arbitrage around the value of a token). [53] [54]
- Last but not least, there is a major risk to the protocols that allow crypto-assets to be transferred from one blockchain to another. Schematically, these protocols, nicknamed "bridges", store in their address on blockchain "A" the crypto-assets sent by users who want to transfer them to blockchain "B", and generate on blockchain "B" a "mirror" token representing the deposit on blockchain "A". These bridges are crucial to the development of DeFi. In particular, they facilitate the growth of alternative blockchains to Ethereum, which has the advantage of limiting the rise in transaction costs by shifting some of the

- activity to other blockchains. In addition, bridges between the Bitcoin blockchain and the Ethereum blockchain are central to the operation of DeFi: they allow the economic value of bitcoins to be transferred to the Ethereum blockchain by creating an ERC-20 token that represents a bitcoin deposit on the Bitcoin blockchain. The key is the WBTC bridge that issues the bitcoin wrapped token (which represents a deposit of one bitcoin). This bridge is administered by a consortium of DeFi players and as of May 2022 had about $10 billion in deposits.

It is important to note that there are increasingly **technological developments and risk mitigation measures developed by the DeFi community** to address the above-mentioned risks. For example:

1. **Threat intelligence and code auditing** about DeFi projects are common. A smart contract audit is a systematic and thorough examination and analysis of the code of a smart contract that is used to interact within a blockchain protocol. This process is carried out to discover errors, problems, and security vulnerabilities in the code and to suggest improvements and ways to correct them. Generally, smart contract audits are necessary because large amounts of cryptocurrency assets are deposited on these decentralised applications. Such checks are complex, as smart contracts often interact with each other and any integration with third-party systems can also make the system vulnerable. For this reason, checks are often extended to other smart contracts involved in all interactions. Smart contracts often handle large amounts of funds, and a single vulnerability can result in significant losses. Specifically, users and stakeholders of the decentralised application in question could lose all assets that are part of the ecosystem. The recommendations made by auditors are communicated to the project team beforehand, and their actions in response are noted in the final report. It is considered a mark of authenticity and integrity for the project. That's why developer teams are eager to be audited to gain user confidence and strengthen the credibility of the project.

2. There have been **advancements in blockchain analytics.** Solutions such as Elliptic and Chainalysis enable the identification of whether transactions originate from a whitelisted wallet or from a self-hosted wallet.

3. Some lending markets are implementing **MEV[58]-resistant mechanisms** to avoid front-running during liquidations (also so called “back-running”, “sandwich attacks”, “time bandit attacks” or “uncle attacks”); Most of the ill-intended users are at a clear disadvantage against MEV-bots during these events and it is extremely difficult for them to execute liquidations.

[58] Maximal extractable value (MEV) refers to the maximum value that can be extracted from block production in excess of the standard block reward and gas fees by including, excluding, and changing the order of transactions in a block.
Source: Ethereum.org

4. New versions of automated market makers (AMM) such as Uniswap v3 are becoming more capital efficient generating **deeper liquidity for users.** This decreases the possibility of dishonest market participants using liquidity to do market manipulation (the deeper the liquidity is, the lower the impact of a constant transaction will be).

5. **Protocols to limit market manipulation in token launch events** (when a new project launches its project token for the first time) are emerging; For example, the liquidity balancer pools (LBPs) of Balancer[59]. When tokens launch their price is more prone to market manipulation because the liquidity of the LP is usually lower (liquidity tends to grow as the project matures) than for already launched tokens. It is easier to pump the price and then dump it to the rest of market participants ("pump and dump"). LBP's drive up the token price until demand stabilises the price. In this way, manipulators are discouraged from buying to sell at a higher price.

6. The projects that are more reliant on price feeds delivered by oracles (derivatives and lending) usually have **back-up oracles** in case anything goes wrong with the main one; For example, the main oracles such as ChainLink have many different price feeds (centralised and decentralised).

7. Many initiatives are emerging to inform users and **prevent scam and frauds.** For example, BNB Chain DappBay launched Red Alarm[60] where it lists dApps that have been assessed to be untrustworthy and carry extremely high levels of risks.

Recommendation 1 - Assess the new risks created by DeFi and work with industry players to find the most appropriate ways to limit them

A regulatory approach to DeFi that simply attempts to apply the rules of traditional finance would not mitigate technological risks (such as code flaws) or liquidity pool imbalances, which are the most common causes of financial loss to users and potentially destabilise the entire industry. Of course, these technological risks are not the only ones that weigh on DeFi users.

Adan recommends that the European institutions reflect on how regulation - or regulatory equivalents using technology - can intervene to limit all the risks inherent to DeFi, and not only those risks already covered by traditional financial regulation.

[59] https://docs.balancer.fi/getting-started/faqs/pools-and-lbps
[60] https://dappbay.bnbchain.org/red-alarm

These reflections could take several forms:

1. Establishing security standards: Regulators can establish security standards for DeFi platforms and require that they be audited regularly by independent third parties to ensure compliance with established standards.;
2. Encouraging DeFi protocols to implement sophisticated on-chain risk parameters: Several applications have sophisticated risk management systems built into their protocols.
3. Informing investors: Regulators can make investors aware of the risks associated with DeFi and require protocols to inform them of the risks and measures to be taken to protect against financial losses.

2.4 Legal categories from traditional finance cannot be fully adapted to DeFi

The temptation to apply the rules of traditional finance to DeFi also stems from the apparent similarity between the "legal objects" specific to DeFi and the legal categories already known in, for example, French law. Thus, it is tempting to equate smart contracts with contracts, decentralised autonomous organisations (DAOs) with companies or associations, and the developers of DeFi applications with CASPs providing regulated services (such as custody or the operation of trading platforms). However, a more detailed analysis reveals that these equations are questionable. At the very least, the debate is open and not yet settled.

2.4.1 Smart contracts are not necessarily contracts

The name “smart contract” given to applications deployed on a blockchain is more a form of "legal marketing" than a deliberate assimilation to a legal contract.

Definition. A smart contract is a computer program that executes a certain transaction when certain conditions are met; it does not necessarily reflect an agreement between two parties. In particular, the existence of a counterparty in an interaction with a smart contract is not obvious. For example, DEXs, which allow for the decentralised exchange of crypto-assets, do not usually involve a buyer and a seller: they only allow the buyer to "dip" into the application's crypto-asset pool, on the condition that he deposits a certain amount of another crypto-asset.

Smart contracts may give rise to a centralised or decentralised activity of exchanging crypto-assets for other crypto-assets. The activity will be centralised in the case where a company, in return for a fee, brings together buyers and sellers on its site and allows the sale contracts to be concluded using this smart contract. Conversely, the activity will be decentralised when the developer of the smart contract limits itself to making it available to the public by deploying it on a blockchain, without seeking to organise an exchange service through another vector.

In some cases, the border between centralised and decentralised activities will be tenuous. However, this establishing a clear perimeter between centralised and decentralised activities is essential because it has consequences for the attribution of liability. **Who is liable in the event of a loss suffered by the user of a smart contract** and linked to its defective operation? What should be taken into consideration when analysing smart contracts?

The first step is to ask whether all smart contracts incorporate contractual obligations. While smart contracts have for some time been assimilated to legal acts (e.g. the first assimilation of these computer programs dates back to Nick Szabo's writings on the subject in 1994), they only make it possible to ratify a financial relationship between several users of a protocol without necessarily being able to be assimilated to legal acts within the meaning of Article 1100-1 of the French Civil Code. Finally, and exceptionally, only a limited number of theoretical examples have been the subject of a sometimes inappropriate parallel with the Law of Obligations.

If we look only at smart contracts that incorporate contractual obligations, we note firstly that the non-performance of such an obligation may have various sources: the failure of the computer code when the smart contract does not produce the effects expected by the parties, a failure by the debtor to meet, in time, the requirement(s) that condition(s) the performance of the smart contract, an extraneous cause (e.g. a failing oracle), a case of force majeure, etc. While some situations can be resolved with the help of the law as it stands, others pose unique and new problems.

The question of imputability of the non-performance is crucial as it identifies the author and the nature of the creditor's action (tort or contract). The person who holds the key that generated the transaction leading to the introduction of the defaulting smart contract could be designated as the owner of the smart contract. The owner would therefore offer a service whose execution methods are automated. However, it is the owner's role in the provision of the good or service that should determine its responsibility: is it an intermediary, the one offering the service, a prime contractor, or does it play no role in the provision of the service? What happens when the smart contract is decentralised to the point where its code is the result of a collective effort, accepted by the network according to the governance rules of its protocol? Can a protocol accepted by the community contain hidden defects? What are the obligations of result and what are those of means in the provision of this service?

Moreover, any smart contract is not necessarily unalterable and immortal: its developer may plan to retain management and control (for any updates or its management), or on the contrary, give up this possibility and cede total control. Should the liability regime be the same in these two cases? What would be the scope of compensation: only the damage foreseeable by its designer, by the intermediary, by the parties? What about when the smart contract causes damage as a result of use not anticipated by its creator?

As we can see, the lack of clarity on the legal effects of smart contracts prompts caution and reflection. Indeed, smart contracts are the fundamental building block of DeFi and should be at the centre of any regulatory project.

2.4.2 DAOs are not necessarily companies or associations

a) A wide variety of possible uses and forms

Definition. *Collectively owned and managed by their members, DAOs are native organisations in the DeFi sector that redesign traditional models of decision-making within a group of people. In the below, we explain the concept of DAOs, their history, the main use cases attached to them and their risk management and regulatory issues. DAOs allow their users to contribute to various causes with other people who share the same views without necessarily relying on a leader to manage their funds. Thus, a DAO does not inherently have a hierarchical system and does not expose a powerful person to overspending or manipulation of funds. Instead, blockchain-based rules embedded in the code define how the organisation operates and how funds are spent.*

It is very difficult to compare DAOs with companies or legal entities. Indeed, **DAOs exist in a wide variety of forms** and the term can refer to very disparate realities: DeFi protocols generally consider that the collective owners of their governance token constitute a DAO. This presumption arises from the fact that the owners of the token generally have the right to vote on certain decisions taken by the protocol. In most cases, these decisions relate to operational or economic parameters related to the management of the protocol, such as the quantity of tokens issued to remunerate depositors in a certain liquidity pool, or the admission of a token issued by a third party protocol into the application.

In other cases, the DAO is called upon to make decisions that are closer to what is meant by "governance" in company or association law: this is the case, for example, when a vote is held to determine the addresses that will constitute the "multi-sig" address that will control the protocol's funds.

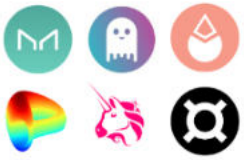
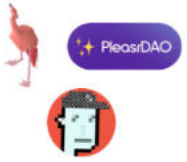
Category	Fonctions	Exemples
DeFi protocols governance	These DAOs allow people to contribute to a DeFi protocol by voting on changes to the protocol	
Media	These DAOs are used for user information in the Web 3 era	
Collections	These DAOs are used to bring together the NFT/metaverse communities to support the funding of artistic projects	
Funds	These DAOs allow the funding of web3 projects	
Social impact	These DAOs are used to support causes - for example, in the context of the Ukrainian war, for environmental causes or for gender equality	

Figure 7: Adan's overview of different DAOs

The **ease of raising funds in a decentralised way on blockchains** has led to a strong growth in projects focused on investing the funds raised. The best known of these is the ConstitutionDAO[61] project, formed in November 2021, which raised over $40 million in ethers in an attempt to acquire an original copy of the US Constitution at an auction. Another example is Nouns DAO[62] which issues an NFT collection, the owners of these NFT are part of the decentralised autonomous organisation. Ethers obtained from each auction are added to a treasury that can be used to fund real-world operations (e.g. Proposition 12 on Nouns DAO allowed part of the group's treasury to be allocated to providing prescription glasses to children in need, referring to the fact that every Noun NFT wears glasses).

[61] https://www.constitutiondao.com/
[62] https://nouns.wtf/

In the same vein, other projects seeking to raise funds to acquire 'tangible' assets have adopted the term DAO:

- LinksDAO[63] raised around $10 million via an NFT sale to fund the acquisition of a golf club whose members would be the holders of NFTs;
- SpiceDAO raised a similar amount in November 2021 to acquire a copy of the 'bible' of the script for a proposed film adaptation of the novel Dune by director Alejandro Jodorowsky;
- CityDAO[64] - an experimental decentralised city - has acquired land in Wyoming, the use of which is determined by the DAO. In this regard, City DAO incorporated in Wyoming (via a Wyoming DAO LLC) to issue citizenship NFTs that gave holders the ability to vote on which land to acquire and how to use it.

The term DAO is also commonly claimed to refer to the shifting mass of stakeholders in a non-profit project that is not organised as an association. This is the case, for example, of some sharing or self-help collectives dedicated to DeFi or NFTs, which are usually organised around Discord servers. This new method of self-organisation sometimes gives rise to the issue of tokens or NFTs intended to be used for governance choices, but which have no economic value.

In addition to the disparity of realities described by the concept of DAO, there is an additional layer of complexity: in parallel to these DAOs, the people behind them often choose to create legal entities, whether companies or associations (or foundations, depending on the jurisdiction chosen). The use of these legal entities is motivated by various considerations: it may be to provide legal protection to developers who wish to sell a governance token to investors (in the context of a "classic" DeFi project), to allow the conclusion of contracts (e.g. employment or service contracts with the project's contributors), or to give guarantees of seriousness to investors, by ensuring that the crypto-assets received are officially owned by a legal entity. The DAO is therefore a shifting legal object that is difficult to grasp.

The legal reflection on DAOs must therefore be deepened and cannot be reduced to assimilating them to unregistered companies. The issue at stake is in particular the responsibility of the various parties involved in a DAO (designers, developers, investors, participants, etc.): the fact of participating in or contributing to a DAO must not lead to the creation of joint and several liability.

[63] https://linksdao.io/
[64] https://www.citydao.io/

b) Incorporation attempts with heterogeneous approaches

While many DAOs attempt to incorporate, the issue of legal recognition of DAOs remains a subject of debate in all jurisdictions.

In French law, it is generally accepted that legal personality derives from reality (not fiction). Thus, any group working towards a common objective can be considered a company (if profit is sought) or an association (if no profit is sought). This is why the concept of unincorporated company exists for commercial companies (article 1873 of the French Civil Code). In France, several DAOs that govern DeFi protocols have turned to the association model to carry out operations in the real world, but no specific legal recognition exists.

In the United States, DeFi project holders also run the risk of being qualified as an unincorporated association. The Securities and Exchange Commission applied this rule in the Ooki DAO case (see below).

For several years, the industry has tried to solve the issues related to the lack of legal qualifications adapted to DAOs through different approaches: the associative form (e.g. Morpho, Paladin, GMX), foundations (formerly Maker), commercial companies or other more flexible forms (dYdX-specific object trusts).

Furthermore, some states have also begun to recognize DAOs — with the intention to position themselves as an attractive territory for these new organisations:

- In July 2018, Vermont became the pioneering state in the United States to pass Limited Liability Company (LLC) legislation tailored towards blockchain-based businesses enshrining « blockchain-based limited liability companies ». While the law does not explicitly mention "DAOs," it generally applies to businesses that rely heavily on blockchain technology as an integral component of their operational infrastructure
- in July 2021, Wyoming introduced a specific law for DAOs called the « Wyoming Decentralized Autonomous Organization Supplement[65] ». This law provides a legal framework for DAOs operating in Wyoming, and it requires DAOs to specify in their articles of association how they will be managed by members, including the extent to which management will be conducted algorithmically.
- The Marshall Islands passed legislation in 2019 to create a legal framework for the registration, operation, and governance of DAOs. The law recognizes DAOs as a new type of legal entity that can conduct business, own assets, and sue and be sued in court. The law also recognizes the use of blockchain technology for record-keeping and decision-making within a DAO[66].

[65] Wyoming Decentralized Autonomous Organization Supplement

[66] See. « MIDAO awarded Facilitation of DAO Registry Process by government of Marshall Islands »

However, it should be noted that DAOs should not automatically be equated with limited liability companies (which is the case in Wyoming, Vermont, etc.) because, as explained above, DAOs can take many forms (in terms of governance systems in particular) and have varied objectives (profit-seeking or non-profit-seeking).

Therefore, if DAOs are legally recognised, this should be done in a way that offers sufficient flexibility. This could be achieved by recognising Limited Liability Autonomous Organizations (LLAOs), which would be legally recognised organisations operated via blockchain technology with limited liability and can take many forms. The designation of a legal representative would be imposed (which would allow the DAO to enter into contracts, act in court, etc.) against the limitation of the liability of the participants.

It is clear that our traditional company law is not perfectly adapted to these new organisations in a decentralised environment, which would require, according to Adan, some adaptations.

c) Defining a legal status for DAOs in Europe: a major strategic challenge

While the geographical anchoring of decentralised finance protocols still raises important questions (see section 2.5), several protocols will be required to be territorialised (at least in part) in the future, particularly by complying with the various regulations that will enable them to reach a broader and more institutional audience and to develop further.

However, to date, Europe is not the privileged territory for some project leaders in the DeFI sector looking to incorporate their DAO. Indeed, the most popular countries for incorporating DAOs today include Switzerland, the US (Wyoming), Panama, the Marshall Islands, the Cayman Islands, Singapore and Liechtenstein.

In some of these jurisdictions, incorporation can be done, for example, through a type of trust that allows trustees to manage the assets of some people for the benefit of others (the governance token holders).

The domiciliation of DAO developers on European territory represents a significant strategic opportunity for Europe. This unsuitability of European law to DAOs governing DeFi protocols exposes the European Union to risks of loss of EU talent and consequently loss of competitiveness and employment potential in the decentralised web economy. Adan supports further reflection on the creation of an ad hoc framework for DAOs. Such a framework should guarantee minimum formalities to ensure stability in the protocol's governance and avoid risks for their developers without limiting the possibilities offered by these new organisational methods.

In this respect, orienting DAOs towards one activity (lucrative or not) rather than another would be risky as many uses exist (see Figure 7). Thus, it is highly likely that this type of structure would lead to non-profit (associations, NGOs, even political parties) or for-profit (companies) forms.

Recommendation 2 - Give legal recognition to DAOs or their legal representation (i.e « *legal wrapper* ») **in the EU**

Adan recommends the adoption of a specific regulatory framework by the European Union to recognise DAOs as autonomous legal entities, thus providing legal certainty for DAO participants and establishing minimum standards for their creation and management (notably to have the quality to contract with third parties). This framework should also consider the governance of DAOs, financial stability and the means made available to secure the DAO's treasury. This approach encourages innovation and development of DAOs in Europe while ensuring their compliance within each Member State.

2.5 The concept of territoriality is incompatible with the nature of DeFi

While financial regulation is built around the territorial (sometimes extra-territorial) application of rules (e.g. authorisation in the state of registration of the company, passporting, regulated cross-border distribution, third country regimes, etc.), this approach is incompatible with the very essence of decentralised finance.

A more global reflection should therefore be conducted in order to define criteria of attachment to a territory that take into account the mode of operation of decentralised applications. In this respect, and despite the absence of legal criteria allowing a clear decision to be made, several avenues could be explored, although they do not represent all the cases in question exhaustively:

- A connection to the jurisdiction in which the protocol's main commercial entity is located (i.e. the company that sold the tokens or that ensures the protocol's deployment). To date, few protocols have taken the opportunity to create an underlying company, but several initiatives are emerging in this direction, particularly in France;
- Attachment to the jurisdiction of residence of the key founder and "promoter" of the protocol;
- A connection to the jurisdiction of the association;
- A "multiple and unlimited" attachment (i.e. in any jurisdiction where the protocol is accessible and used).

The creation of an EU legal status for DAOs or their legal representation would also help in that respect.

3. Seize the opportunity to boost innovation through appropriate regulation

Two main types of approaches are availabe to policy-makers considering how regulation can best mitigate the risks posed by DeFi. The first is to bring the new activity into existing regulatory frameworks, even if this means distorting certain legal definitions to make assimilation possible. The second is to create ad hoc regulation for the new activity.

These two logics were debated in France in 2017 and 2018, during the reflections on the regulation of crypto-assets. During its first consultation in October 2017, the Autorité des marchés financiers (AMF) first examined the possibilities of assimilating crypto-assets into existing regulatory categories. Then noting the inadequacy of these, the preferred solution was the creation of a tailored regulatory regime, via the adoption of the PACTE Act of 22 May 2019. This created the category of crypto-assets and determined the regulatory framework for crypto-asset service providers. The French approach then largely inspired the approach adopted by the European Commission in its proposal for the Markets in Crypto-Assets (MiCA) Regulation on 24 September 2020 as part of the digital finance package.

This same debate is now starting for DeFi: should we try to integrate it into existing regulation of crypto-assets, or even into more general financial regulation, or should we design new ad-hoc regulation?

Adan's position — This ecosystem cannot be effectively regulated without understanding its specificities and opportunities

While the DeFi sector does not pose a systemic risk to date, we should seize the opportunities to properly regulate this fast growing sector. As a first immediate step before developing any *ad hoc* regulation, more flexible initiatives (such as pilot regimes, experiments, standards, non-binding code of conduct, labels, public observatory, etc.) should be considered to create regulatory equivalences allowing project leaders to comply in an innovation-friendly way.

3.1 In France, decentralised finance is already subject to French law, even in the absence of specific ad hoc DeFi regulation

Before choosing the most appropriate regulation, it remains to be decided whether it is appropriate to legislate on DeFi, and what priority should be given to such potential legislation.

In France, for example, all economic activities (including those involving DeFi) are already subject to the general laws on contracts and liability.

There is therefore no doubt that civil liability law and criminal law are fully applicable to DeFi. Not only are the rules applicable, they are being enforced: developers or promoters of DeFi protocols based in France have already been summoned before civil courts based on their responsibility for losses suffered by investors in protocols that have been hacked. Similarly, criminal investigations have also been opened in connection with the deployment of DeFi protocols for deliberately fraudulent purposes.

It would therefore be inaccurate to consider that DeFi is not regulated in France today. The question then arises as to whether continued rigorous application of existing law is sufficient to address all the risks emanating from the DeFi market. And if new rules are needed and given the wide variety of use cases, would a bespoke regulation be effective, or would a granular and thematic approach be preferable?

3.2 At the European level, if DeFi regulation is necessary, should there be bespoke or thematic regulation?

The European Commission is required under MiCA to assess the necessity and feasibility to regulate DeFi. In this respect, Adan supports the idea of considering the necessity of regulating DeFi and, above all, how to implement such a regulation.

Massive and uniform regulation of DeFi seems inappropriate, as it would stifle innovation without any real benefit to users or the public interest. However, it may be understandable to seek to regulate certain actors who use DeFi to reconstruct in a falsely decentralised manner models that would be regulated if developed in the traditional world. For example, an investment fund that raises funds in crypto-assets and then reinvests them for the benefit of depositors, while running the entire transaction through smart contracts, would likely be covered by regulation, whether through existing rules or ad-hoc rules. Similarly, it is possible that the yield farming protocol model could be regulated: these protocols aggregate funds for reinvestment by applying a strategy, while charging management fees which, in some cases, are modeled on the fees traditionally charged by hedge funds.

However, if the investment strategies used by these protocols become truly automated, the application of investment regulation will be less appropriate and less obvious to implement. Secondly, for other projects that appear similar to traditional finance models, it would make sense to have a subjective approach based on the degree of decentralisation. If the protocol is deceptively decentralised and in reality relies on team intervention to operate, applying existing regulation might be legitimate. If the protocol is truly decentralised (or tending towards it), the application of regulation would be both inefficient and unnecessary.

Adan's position — The crypto-asset sector cannot be analysed in a binary way between DeFi on the one hand and CeFi on the other.

When looking at this ecosystem, it is necessary to understand the different factors that can affect the decentralisation of the applications that make it up, as each protocol requires a rigorous and detailed analysis of its functioning and governance modes.

The regulation of crypto-assets and DeFi sector cannot be done in the light of a binary analysis between totally centralised and fully decentralised players.

Recommendation 3 - To create a DeFi Observatory to make DeFi regulation a practical reality while allowing the protocols and their developers to continue to innovate

Given the inherently different structure of DeFi projects, we recommend that the European authorities consider launching an observatory of DeFi's activities managed by the public authorities.

Its mission could be to :

1. **Analyse DeFi protocols in greater detail by conducting thorough impact assessments.** This will enable regulators to better assess the potential risks of the nascent DeFi ecosystem impact through rigorous monitoring with the appropriate expertise and tools. While it is part of the DeFi design to prevent external arbitrary powers to intervene, the transparency of both protocols and historical activity allows in theory for an adapted form of supervision.
2. **Engage with DeFi community and ecosystem** (hearings of relevant actors, data collection and analysis from intermediaries, audit companies or blockchain analytical tools):

- Bilateral and multilateral engagement;
- Knowledge sessions and knowledge transfer;
- Industry and regulator roundtables; and
- Publish standards, codes of conduct and voluntary compliance schemes to which DeFi protocols and entities could adhere.

The deliverables of the DeFi Observatory could be to :

- Publish public investigations and reports;
- Issue opinions and warnings publicly about specific DeFi projects,
- Regularly map new solutions, innovations and significant protocol updates;
- Publish standards, codes of conduct, or voluntary compliance schemes to which DeFi protocols and entities could adhere.

In this respect, Adan is available to the European institutions to set up a dialogue with the DeFi industry players.

3.3 The necessity to dissociate DeFi from "Decentralised In Name Only" (DiNO) protocols

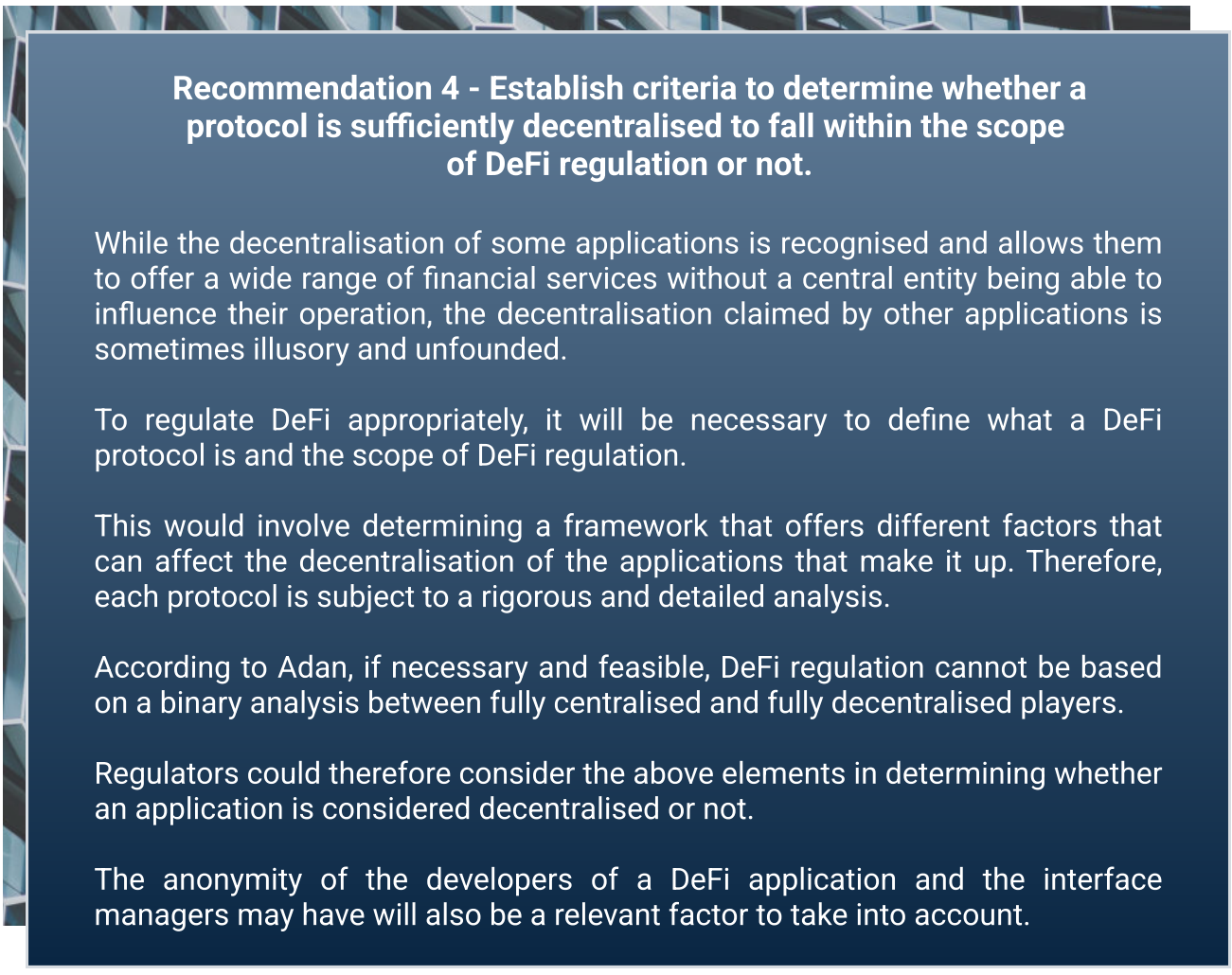
Today, the level of decentralisation of DeFi protocols can vary considerably from one protocol to another. Just as each snowflake is unique, each DeFi protocol has its own level of decentralisation. So much so that there are now « 50 shades of decentralisation[67] ».

Thus, several factors need to be considered to assess the level of decentralisation of a protocol. In a non-exhaustive way, the main criteria that can positively or negatively influence the level of decentralisation of a protocol are the following:

- The blockchain/sidechain network or layer 2 on which the protocol has been deployed: if the protocol has been deployed on a blockchain that is itself centralised, the level of decentralisation of the protocol will necessarily be impacted.
- The governance of the protocol: the allocation of governance tokens can influence the decentralisation of the protocol. Furthermore, protocols have a level of active voters that can vary greatly depending on the improvement proposals.

[67] « 50 shades of decentralisation » Adan's article

- The custody of funds deployed in the protocol's smart contracts: often managed via a multi-sig which is sometimes centralised around the project's core team (too much centralisation can expose the community to rug pulls);
- The ability to unilaterally modify the code of the smart contract or to block certain addresses that interact with the protocol;
- The involvement of the founder(s) in the protocol: too much involvement of a co-founder can lead to the personification of the project itself;
- The exploitation of the protocol's website: some developers attach the protocol to several front ends, giving the protocol a greater level of decentralisation.



Recommendation 4 - Establish criteria to determine whether a protocol is sufficiently decentralised to fall within the scope of DeFi regulation or not.

While the decentralisation of some applications is recognised and allows them to offer a wide range of financial services without a central entity being able to influence their operation, the decentralisation claimed by other applications is sometimes illusory and unfounded.

To regulate DeFi appropriately, it will be necessary to define what a DeFi protocol is and the scope of DeFi regulation.

This would involve determining a framework that offers different factors that can affect the decentralisation of the applications that make it up. Therefore, each protocol is subject to a rigorous and detailed analysis.

According to Adan, if necessary and feasible, DeFi regulation cannot be based on a binary analysis between fully centralised and fully decentralised players.

Regulators could therefore consider the above elements in determining whether an application is considered decentralised or not.

The anonymity of the developers of a DeFi application and the interface managers may have will also be a relevant factor to take into account.

3.4 Regulating the technology or its front door?

To avoid hindering the development of technological innovation in the sector, regulation of DeFi could focus on the user interfaces rather than the protocols themselves.

As was the case with the Internet, governments should accept that DeFi applications depend on decentralised, autonomous, standardised and open source protocols. Regulation of client applications, such as browsers and digital wallets, is an effective way for governments to regulate DeFi. Regulators should also accept that regulations need to be applied differently in different jurisdictions, without imposing global standards on protocols.

Regulating protocols themselves may be technologically unsuitable, as regulations may require subjective determinations that are not feasible at the protocol level. In addition, regulation of protocols may hinder the open and decentralised nature of DeFi. Client applications, on the other hand, are easier to regulate and adapt to the specific regulations of local jurisdictions. They would make it possible to block certain addresses that are the source of money laundering and terrorist financing operations, for example.

Recommendation 5 - Consider a framework at the level of the interface and not at the level of the technology itself.

European institutions should consider regulating the user interfaces - which are the gateway from a DeFi application to the final users - instead of regulating protocols. According to Adan, it is not technologically viable for immutable protocols to comply with regulations that may vary from one jurisdiction to another and may sometimes be inappropriate.

Focusing primarily on the companies that administer the user interface would respect the right balance between protecting innovation and protecting users.

Recommendation 6 - Avoid by any means regulating protocols and their developers who build the future of finance in Europe

While some regulatory initiatives have already attempted to propose measures to consider protocol developers as crypto-assets service providers[68], Adan strongly supports the development of appropriate and proportionate measures to prevent the illicit use of this new asset class. Assimilating developers as intermediaries regarding DeFI regulation, subject to obligations traditionally applied to centralised providers, could considerably limit the innovation potential of software developers in the DeFi sector and could hinder its growth in Europe.

Adan recommend maintaining a flexible regulatory framework for protocols and their developers to allow for constant innovation and to ensure that European citizens can fully benefit from the advantages of these decentralised technologies.

Adan's position — DeFi regulation should take into account the responsibility of each stakeholder in a decentralised application.

According to Adan, the current regulatory discussions should take into account each layer involved in the development of DeFi applications (companies that develop protocols, third parties that operate the user interface, community or DAO that decides on the evolution of a project, which may have an impact on the token held by a user who does not participate in the governance). Thus, the regulation should be set up, either via regulations or soft law, to ensure the investors' and users' security. This framework would aim to ensure that users can withdraw funds at any time (unless they have voluntarily locked their tokens into a pool with a predetermined claim period), that the code is properly audited and exempt of bugs, that governance is properly implemented and - via the interface administrators - that the technology is not used for fraudulent purposes.

Finally, imposing a regulatory constraint only on one stakeholder would be disproportionate and inappropriate. Certain frameworks, in particular concerning DAOs (if a specific legal recognition is attributed to them or to their entity), should be subject more to good practices than to binding obligations to support innovation in Europe.

[68] See. Revision of the FATF Guidance: smart contract developers and digital asset holders subject to AML/CFT.

4. EU, U.S and international regulatory developments

In recent months, the growing development of the DeFi ecosystem has attracted the attention of various regulators around the world.

The EU and the US offer interesting case studies on two quite distinct approaches to regulating crypto markets - and therefore also DeFI in all likelihood.

- The European approach: which intends to be a pioneer in the regulation of the crypto-assets sector in order to create a unified market at the European Union level;
- The American approach: more of a case-by-case approach to the regulatory issues raised by DeFi, inherent to the US regulatory set-up.

4.1 The European approach: Create an adapted regulation, if necessary and feasible

Although Europe has not yet formally positioned itself firmly for or against regulating the DeFi ecosystem, two legislative texts now agreed deserve particular attention regarding the potential future regulatory treatment of DeFi:

- The Markets in Crypto-Assets (MiCA) Regulation, which lays down a first set of binding financial rules on issuers of certain crypto-assets and on market intermediaries offering services on crypto-assets.

- The Transfer of Funds Regulation (TFR Recast) amending Regulation 2015/847, which aims to ensure better traceability of crypto-asset transfers by implementing FATF recommendation 16 called the "travel rule".

4.1.1 Financial regulation: the potential consequences of the MiCA Regulation

MiCA Regulation, the European institutions have repeatedly considered including DeFi in the scope of the Regulation. In the political agreement reached on 29 June 2022, the European co-legislators agreed to exclude activities that are “fully decentralised” from its scope, mandating the European Commission to assess and report back 18 months after entry into force of MICA on the potential need to introduce regulation on the sector.

Generally speaking, Adan already considered during the debates that MiCA is not the appropriate regulatory vehicle to frame the DeFi sector. For the European Union, an inappropriate and disproportionate integration of DeFi into MiCA would have risked undermining the desire to put in place a framework to ensure investor protection without restricting the potential for innovation in the digital sector.

Recommendation 7 — After MiCA and the publication of the report: Create an ad hoc regulation, taking into account the specificities of DeFi but offering the same level of regulatory requirements as for traditional finance.

Adan supports the establishment of an ad hoc regulation for DeFi - detached from the traditionally accepted approach to regulating centralised providers in the traditional financial sector and recognising the uniqueness of DeFi.

This framework will require the development of :

1. A clear definition of the main DeFi applications mentioned above and their specificities compared to traditional financial services: Dexes, liquid Staking protocols, crypto-lending protocols, collateralised debt position, bridges, derivatives, aggregators, governance protocols and decentralised algo-stables and collateral debt position (CDP).
2. Territorial criteria for the application of the law, making it possible to adapt the rules for demonstrating whether or not a provider is targeting a European audience and to clarify the applicable framework for the various protocols, without the latter being able to evade the obligations incumbent on them.
3. A clear delimitation of responsibility between the protocol contributors, the governance body and the users.
4. Identification of the technological and financial risks that DeFi creates: hacking of the platform (via a script for example), exploitation of flaws in a smart contract, rug pull, oracle attack, governance risk, etc.
5. Use of the opportunities offered by blockchain networks and technological solutions to create regulatory equivalents.
6. Identify the above-mentioned regulatory challenges (limit new risks, define what is DeFi or not, consider regulation at the user interface).

Potential indirect consequences via the stablecoins provisions - especially algorithmic ones? During the finalisation of the MiCA regulation (i.e drafting of level two texts and reports), the scope of the set of rules applicable to stablecoins issuers will be central to determine whether only purely centralised stablecoins will be covered or whether certain decentralised stablecoins will also be subject to the obligations set out in the text. Indeed, while some stablecoins are objectively decentralised, regulators will still be able to attach a stablecoin to an element of centralisation - even if only partially (for certain projects the notion of decentralisation is only illusory or partial). By providing that « Thus, it is essential that stablecoins with a true degree of decentralisation are excluded from the scope of MiCA as part of the overall exemption from DeFi.

When a crypto-asset falls within the definition of an asset-referenced token or e-money token, it should comply with Title III or Title IV of this Regulation, irrespective of how the issuer intends to design the crypto-asset, including the mechanism to maintain a stable value. This also concerns so-called algorithmic 'stablecoins' that aim at maintaining a stable value in relation to an official currency of a country or to one or several assets, via protocols, that provide for the increase or decrease of the supply of such crypto-assets in response to changes in demand. » **Adan considers that several stablecoins native to decentralised finance could be covered by the text, this would be inappropriate and would not achieve the intended objectives.**

Recommendation 8 — Establish a clear delimitation of decentralised stablecoins framed by MiCA or not.

While guidelines on the classification of crypto-assets and a report on decentralised finance are both currently in preparation, Adan recalls its vision and issues its recommendations for the treatment of decentralised stablecoins:

1. Have clear Level two texts to help qualify the level of decentralisation of the issuance of stablecoins and the services provided on these assets. It should be noted that the level of decentralisation of stablecoins and more broadly of DeFi projects may change over time.
2. Algorithmic stablecoin projects with some degree of centralised control may fall under the MiCA stablecoin regime.
3. Decentralised stablecoins should receive the same treatment as other DeFi applications, which means being considered by the European Commission in the context of the MiCA review clause.
4. Clear and non-discriminatory criteria for truly decentralised projects should be established.

4.1.2 AML/CFT regulation: the potential consequences of the TFR Recast

TFR, a text inspired by the FATF recommendations. The purpose of the TFR Regulation is to incorporate the "travel rule" initially enshrined in FATF Recommendation 16. However, the recent update of the guidelines by FATF could have important consequences for the ecosystem: the updated FATF guidelines provide for the travel rule to be extended to transactions involving a crypto-asset service provider and an 'unhosted wallet', i.e. a non-custodial wallet - managed locally by the user through software - such as Metamask or Ledger.
In parallel, paragraph 69 of the FATF updated guidance accepts that if no VASP (virtual asset service provider) is identified on a DeFi protocol, there may not be a central owner/ operator that meets the definition of a VASP. According to the FATF, countries should monitor the emergence of risks posed by DeFi services and devices in such situations, including by engaging with their community representatives. In addition, the FATF explains that competent authorities have the power to require that a regulated VASP be involved. If no VASP is identified due to the absence of an underlying entity created by the protocol operators, the authority may direct the protocol to create an entity that will qualify as a VASP and that will have to comply with the FATF AML/CFT Recommendations.

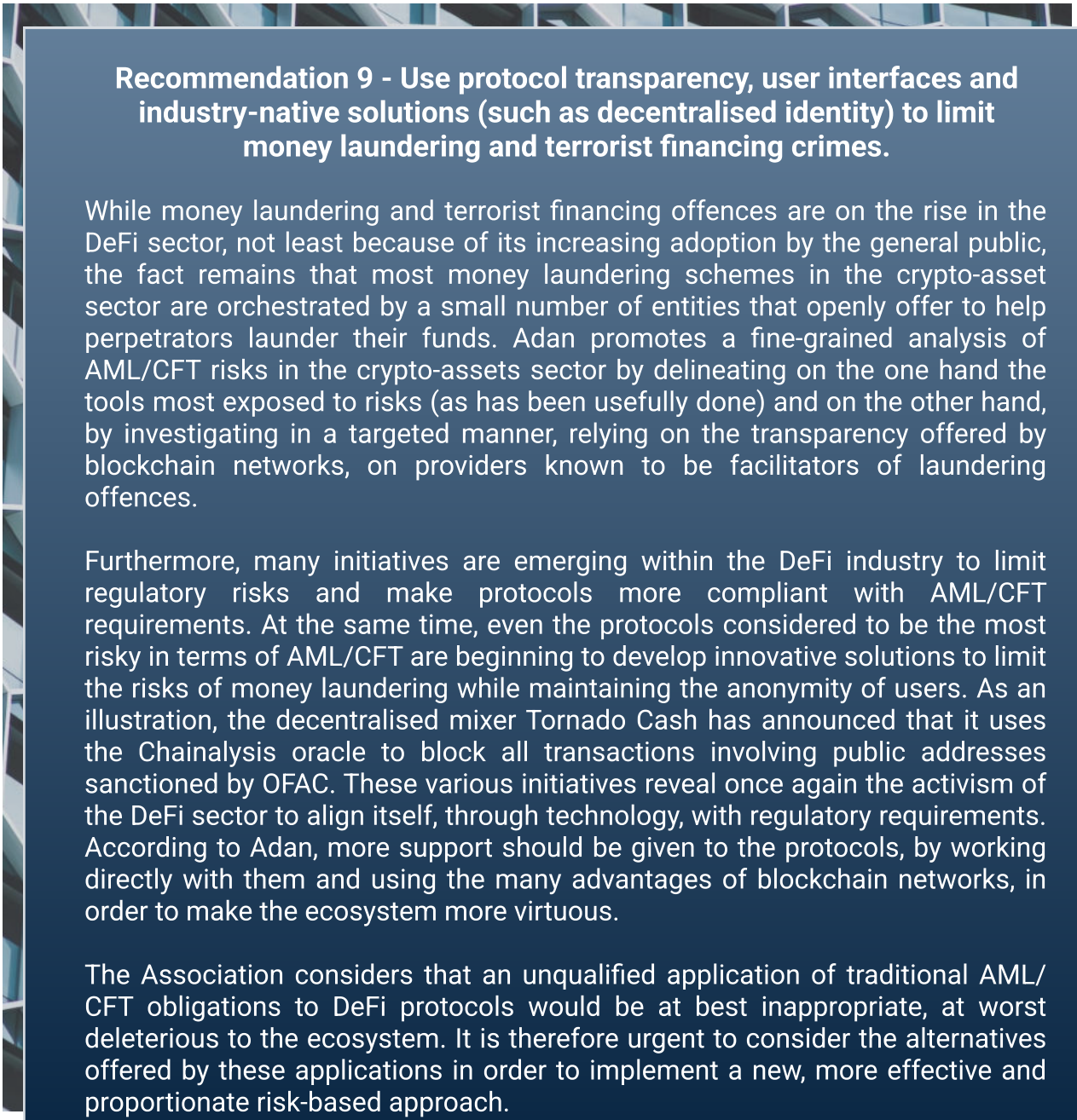
According to Adan, this provision seems to be restrictive for DeFi actors. Indeed, requiring a DeFi protocol to constitute a central entity which will then be qualified as a VASP seems to be in contradiction with the nature of this decentralised ecosystem.

Potential indirect consequences via the self-hosted wallets regulation? In Europe, the extension of the TFR Recast Regulation to self-hosted wallets was part of the political agreement reached on 29 June 2022, and expected to be published in the Official Journal of the European Union in June 2023.

Although this Regulation does not directly regulate DeFi protocols, it does provide for the collection of personal data from self-hosted wallet holders when they wish to send funds from a centralised exchange platform to a Metamask address in order to access DeFi services (this would concern all services: lending, staking, liquidity providing).
From this observation, several issues emerge for the protocols:

- This rule could be seen as a barrier to entry for the user: making all their personal data available to the originator's CASP once the beneficiary of the transaction has received crypto-assets on their unhosted wallet is an additional layer of complexity for a fully inclusive ecosystem ab initio; and

- Guarantee of the confidentiality and security of information of DeFi protocol users. However, the majority of protocols have been built around a philosophy of inclusion and permission-lessness - subjecting them to these obligations would therefore lead them to act against the majority ethos of the sector, while their users would overwhelmingly choose to use other similar protocols that would not be subject to these requirements.



Recommendation 9 - Use protocol transparency, user interfaces and industry-native solutions (such as decentralised identity) to limit money laundering and terrorist financing crimes.

While money laundering and terrorist financing offences are on the rise in the DeFi sector, not least because of its increasing adoption by the general public, the fact remains that most money laundering schemes in the crypto-asset sector are orchestrated by a small number of entities that openly offer to help perpetrators launder their funds. Adan promotes a fine-grained analysis of AML/CFT risks in the crypto-assets sector by delineating on the one hand the tools most exposed to risks (as has been usefully done) and on the other hand, by investigating in a targeted manner, relying on the transparency offered by blockchain networks, on providers known to be facilitators of laundering offences.

Furthermore, many initiatives are emerging within the DeFi industry to limit regulatory risks and make protocols more compliant with AML/CFT requirements. At the same time, even the protocols considered to be the most risky in terms of AML/CFT are beginning to develop innovative solutions to limit the risks of money laundering while maintaining the anonymity of users. As an illustration, the decentralised mixer Tornado Cash has announced that it uses the Chainalysis oracle to block all transactions involving public addresses sanctioned by OFAC. These various initiatives reveal once again the activism of the DeFi sector to align itself, through technology, with regulatory requirements. According to Adan, more support should be given to the protocols, by working directly with them and using the many advantages of blockchain networks, in order to make the ecosystem more virtuous.

The Association considers that an unqualified application of traditional AML/CFT obligations to DeFi protocols would be at best inappropriate, at worst deleterious to the ecosystem. It is therefore urgent to consider the alternatives offered by these applications in order to implement a new, more effective and proportionate risk-based approach.

4.2 The American approach : A case-by-case treatment of DeFi regulatory issues

Like Europe, the US lacks a clear framework for the regulatory treatment of DeFi. While the United States has, through the Biden Decree for crypto-assets, shown its willingness to be the leader in the Web 3 sector by proposing an innovative and competitive framework, DeFi is only subject to casuistic control, carried by the Securities and Exchange Commission (SEC).

Crypto-assets and DeFi at the heart of US digital sovereignty. On 10 March 2022, US President Joe Biden signed an executive order outlining the government's policy on crypto-assets, while paving the way for the creation of a US central bank digital currency. The executive order aims to, among other things, protect US consumers, investors and businesses; protect US and global financial stability and mitigate systemic risk; promote US leadership in technology and economic competitiveness to strengthen US leadership in the global financial system; and promote equitable access to safe and affordable financial services. For decentralised finance, the last two points mentioned demonstrate on the one hand the pragmatism of the American legislator in the face of disruptive innovations and on the other hand, the desire for the United States to establish itself as the most competitive territory in the crypto-asset sector.
A case-by-case assessment due to the lack of any existing framework. In the United States, the competent authorities to interpret the various events related to DeFi are mainly the SEC, the Commodities Futures Trading Corporation (CFTC) and FinCen (especially for money laundering or scamming offences related to decentralised finance).

The US Competent Authorities consider that DeFi regulation could involve a variety of US laws such as the Bank Secrecy Act, the Anti-Money Laundering Act, the Commodity Exchange Act. Recently, SEC Chairman Gary Gensler stated that : « *Right now, we just don't have enough investor protection in crypto. Frankly, at this time, it's more like the Wild West. This asset class is rife with fraud, scams, and abuse in certain applications. There's a great deal of hype and spin about how crypto assets work. In many cases, investors aren't able to get rigorous, balanced, and complete information. If we don't address these issues, I worry a lot of people will be hurt*[69]. » The lack of decentralisation is an argument often put forward by the SEC and its Chairman Gary Gensler. In a recent speech, M. Gensler stated that: « *We've even seen centralization in the crypto market, which was founded on the idea of decentralization. This field actually has significant concentration among intermediaries in the middle of the market*[70].»

[69] « Remarks Before the Aspen Security Forum », Speech by Gary Gensler on 3 August 2021
[70] « Competition and the Two SECs" Remarks Before the SIFMA Annual Meeting », Speech by Gary Gensler on 24 october 2022.

.To date, compared to Europe, which seems to be in favour of a general regulatory framework for DeFi, the US approach to DeFi projects is on a case-by-case basis, depending on the specificities of the financial services offered. Thus, in several cases, the SEC pronounced decisions on issues directly or indirectly involving DeFi regulation :

- ***The "SEC v. Ian Balina" case***[71]. In a recent case involving influencer Ian Balina, the SEC considered that a public offering of tokens should have received its prior authorisation and that tokens are not crypto-assets, but securities. While this is not the first time the US regulator has shown interest in ICOs, the method used to declare itself competent is singular and could have important consequences for the DeFi sector. Indeed, the SEC has, in this case, made a dangerous shortcut by considering that the ETH contributions were validated by a network of nodes on the Ethereum blockchain, which are grouped together more densely in the United States than in any other country, which allows the authorities to be competent since the Ethereum network is mostly established on their territory.

- ***Investigations on Uniswap***. On September 2021, Uniswap Labs - the company behind the decentralised exchange platform Uniswap - was investigated by the SEC[72]. The SEC's investigations focused on "how investors use Uniswap and how it is marketed". However, in a press release[73], Uniswap listed a number of tokens that could potentially be considered financial securities following the SEC's latest pronouncements (this included over 100 different crypto-assets including UMA and Synthetix, decentralised derivatives which, in light of the SEC's latest pronouncements, could be considered financial securities).

This case attests to the risk of qualification of assets listed on DeFi protocols, notably Decentralised Exchanges (DEX) and Automated Market Maker (AMM) such as Uniswap as financial instruments. This topic appears to be important in drafting the guidelines on the classification of crypto-assets in MiCA. Adan calls for a granular identification of crypto-assets that would not create the risk that some crypto-assets fall under inappropriate regulations.

- ***The Tornado Cash case***[74]***: the first censorship of a DeFi protocol***. Mixers ensure the anonymity of transactions made via pseudonymous crypto-assets. They are used to prevent the traceability performed on the public registry of these pseudonymous crypto-assets.

[71] See. Western District of Texas Austin Division decision
[72] Source : Wall Street Journal.
[73] https://uniswap.org/blog/token-access-app/
[74] See. U.S. Treasury Sanctions Notorious Virtual Currency Mixer Tornado Cash.

The mechanisms used by mixing services to ensure user privacy are very eclectic. A significant portion of mixers operate through algorithms and pools where multiple token holders deposit their funds. These funds are then shuffled together before being sent back to each of the recipients. At the end of the shuffling process, each user gets back the same number of crypto-assets that they deposited ab initio at the time of input. Although mixers have been convicted in the US in the past[75], OFAC's sanction on Tornado Cash creates an unprecedented case as it affects a DeFi protocol issued on Ethereum (whereas the other convictions were for centralised mixers).

Adan's Position — DeFi regulation should provide solutions to prevent abuses, not prohibit the technology.

DeFi regulation should not lead to censorship of protocols nor deprive developers from the freedom to innovate. Banning a protocol is in any case not a viable solution since it only shifts the problem, as censored protocols can be forked and replicated on several other blockchains with new contract addresses.

Instead, DeFi actors should be incentivised to have in place effective mechanisms to prevent financial crime while allowing users to preserve their privacy.
Industry members share the desire of regulators to combat fraudulent practices in the sector that create harm for all stakeholders in the sector. In this respect, initiatives such as privacy pools[76] allow honest users to exclude pirates and bad actors from their mixed transactions. This makes it difficult for money launderers to profit from the system.

- ***The Ooki DAO case: qualification as an unincorporated entity***[77]. On 22 September 2022, the CFTC found Tom Bean (Bean) and Kyle Kistner (Kistner), founder of Ooki DAO, guilty of violations of the CEA regulation.

[75] On 19 October 2020, FinCEN sentenced Larry Harmon, the creator of Helix and Coin Ninja, to a $60 million civil fine for money laundering and engaging in unlicensed mixing activity.
Source : "First Bitcoin "Mixer" Penalised by FinCEN for Violating Anti-Money Laundering Laws", FinCEN, 19 octobre 2020
https://www.fincen.gov/news/news-releases/first-Bitcoin-mixer-penalized-fincen-violating-anti-money-laundering-laws

[76] https://www.privacypools.com/

[77] See. « CFTC Imposes $250,000 Penalty Against bZeroX, LLC and Its Founders and Charges Successor Ooki DAO for Offering Illegal, Off-Exchange Digital-Asset Trading, Registration Violations, and Failing to Comply with Bank Secrecy Act.»

Once again, this is an unprecedented case in the United States and a reminder of the necessity for some protocol developers who operate in a significant way on their DAO to consider the potential liability that they may incur.

By transferring control to a DAO, the Ooki (formerly bZeroX) protocol founders announced to community members of the Ooki DAO that trading on the protocol would be protected from the application of US law, including regulations applicable to future commission merchants (FCM).

However, according to the CFTC, Ooki DAO was an unincorporated association of which Bean and Kistner were active members and responsible for Ooki DAO's violations of CEA and CFTC regulations. The CFTC then ordered the respondents to pay a civil penalty of $250,000 and to cease and desist from further violations of the CEA and CFTC regulations.

Adan's Position — Same risks, same rules but adapted regulation?

The FCM regulation and the equivalents at European level are not perfectly adapted to the architecture of DeFi protocols, but this does not mean that the protocols could not meet the requirements of these regulated regimes.

Indeed, many of the obligations accepted in traditional finance (e.g. prevention of market disruption, availability of general information, execution of transactions, financial integrity of transactions, protection of markets and market participants, management of conflicts of interest, record keeping, anti-trust considerations, etc.) could be addressed, and with greater efficiency, given the transparency of the protocols and the accessibility of information for users.

From the above, integrated compliance and supervision in the DeFi sector with sector-native tools seems to be the most sustainable and effective solution to build an adapted DeFi regulation. **Regulators should indeed allow DeFi developers to take into account this type of opportunities in order to comply with their obligations without having to follow traditional compliance methods which seem to be poorly adapted to the specificities of blockchain technologies and to the basic principles of DeFi.**

Other DeFi projects are likely to be investigated in the future by the US authorities, which are increasingly interested in these new financial technologies.

4.3 The involvement of international organisations in the discussion on the DeFi regulation

4.3.1 The implications of DeFi for financial stability

a) The Financial Stability Board's reports

The Financial Stability Board has been working for several years on the regulatory issues related to DeFi. The FSB's report « *Assessment of Risks to Financial Stability from Crypto-assets*[78] » published on 16 February 2022 examines the unique characteristics, trends, risks, and opportunities associated with DeFi, without making any specific policy recommendations.

A year later, the FSB published a dedicated report on « *The Financial Stability Risks of Decentralised Finance*[79] ». The report warns that many risks in traditional finance also apply to DeFi, including operational resilience, liquidity, maturity mismatches, leverage, and interconnectedness. It notes that while DeFi offers innovative processes and technology, there are vulnerabilities in governance frameworks, liquidity and maturity profiles, and automatic liquidation of collateral. The FSB calls for ongoing monitoring and collaboration to fill data gaps and assess regulatory perimeters for DeFi activities/entities. The FSB plans to release a more comprehensive report on DeFi policy recommendations by the end of 2023, based on recommendations from IOSCO's DeFi working group, which are expected before the summer of 2023 .

These initiatives will feed into the review by the European Commission on developing a potential EU regulatory framework for fully decentralised crypto-asset services, as required under MiCA. Adan supports this initiative which is in line with recommendation 7 of this report.

b) The International Monetary Fund report

In an October 2021 report entitled « *The crypto ecosystem and financial stability challenges*[80]» the International Monetary Fund (IMF) explains that the services offered by the DeFi protocols may expose users to particularly high risks.
Applications can be more complex and less transparent, with high technological and governance risks arising from faulty computer code. The lack of central intermediaries complicates the efforts of authorities to monitor and regulate these products. As a result, many DeFi products contain risk disclosures that do not sufficiently warn of their potentially high but volatile returns.

[78] « Assessment of Risks to Financial Stability from Crypto-assets », FSB, February 16th, 2022.
[79] « The Financial Stability Risks of Decentralised Finance », FSB, February 16th, 2023.
[80] « The crypto ecosystem and financial stability challenge », IMF, October 1st, 2021

In addition, the IMF recalls that DeFi has been the victim of major hacks that need to be taken into account. As an example, the IMF mentions the record-breaking hack of over $600 million from Polychain in August 2021, and explains that many scams - such as rug pulls - negatively affect the ecosystem and its users.

4.3.2 An illusory decentralisation according to the Bank for International Settlements

In December 2021, international central banks community, through the Bank for International Settlements (BIS), published a report « *DeFi risks and the decentralisation illusion*[81] » which is particularly sceptical of this ecosystem and opposes the idea that DeFi offers a new decentralised alternative to traditional finance.
In particular, the report explains that centralisation is inevitable ("All DeFi platforms have central governance frameworks[...]") in DeFi and that true financial decentralisation is always an "illusion".

The BIS bases its argument that decentralisation is an "illusion" on what it calls the "basic fact" that centralisation is inevitable and that the governance of DeFi protocols is always centralised or inevitably leads to centralisation.

DeFi is often equated with a homogeneous set of disintermediated actors. However, the decentralisation of a DeFi protocol varies considerably from one application to another, to the extent that no two applications have the same level of decentralisation. In Adan's view, to describe a whole system of protocols as inevitably centralised is to misunderstand an important part of the way the DeFi sector is constructed.

4.3.3 A proposal for a Safe Harbour for DeFi by the OECD

In January 2022, the Organisation for Economic Co-operation and Development (OECD) In published a report entitled « *Why Decentralised Finance (DeFi) Matters and the Policy Implications*[82] ».

This report highlights the fact that DeFi applications have the potential to provide benefits to financial market participants (in terms of speed of execution and transaction costs). However, the OECD recalls that it is difficult to underestimate the risks related to DeFi (e.g. systemic, AML/CFT, technological risks, etc.).

[81] « DeFi risks and the decentralisation illusion » BIS, December 6th, 2021.
[82] « Why Decentralised Finance (DeFi) Matters and the Policy Implications » OECD, January 19th, 2022.

Finally, at the end of this report, the OECD proposes regulatory alternatives to regulate DeFi with the implementation of a "Safe Harbour": granting protocol developers a grace period during which, under certain conditions, they can facilitate participation in and development of a decentralised network by being exempted from registration requirements.

Adan supports this OECD proposal which is in line with recommendation 3 of this report.

5. What DeFi needs to continue to grow in Europe

In order to develop further, DeFi must be able to expand its client base. To this end, DeFi must also be able to address institutional investors. Their involvement, in view of their regulatory status and the associated reputational risk, would be facilitated if were clearly defined:

- The services they would use in the context of DeFi transactions; and
- The intermediaries and counterparties with whom they could deal.

In this respect, it seems essential, for example, to define precisely the staking/farming services, their functioning, and the risks they may entail. Similarly, it would be important to recognise precisely the new forms of counterparties that the FDI may involve, such as DAOs.

These details are an imperative condition for clarifying the accounting and tax issues involved in DeFi activities.

On the basis of these clarifications, an appropriate regulatory framework for this new form of financial activity should also be considered. In view of the recent development of DeFi and the changes it continues to undergo, it is essential that this framework not be too restrictive for activities that are still in the process of maturing.
In order to reconcile the need for regulatory clarification with the necessary legal flexibility, various mechanisms could be envisaged:

1. A charter of good conduct could be drawn up by professional associations, in conjunction with the authorities, to promote certain due diligence measures to be implemented in the context of transactions concluded in DeFi; and/or
2. A targeted and conditional regulatory exemption system could be envisaged, following the example of the DLT pilot regime set up at European level for activities related to securities registered in blockchains; one of the challenges of this system would be to clarify the applicable law for the experiments it supports.

These flexible arrangements are an essential step in the ability to regulate the DeFi, otherwise there is a risk of imposing inappropriate constraints, slowing down the development of the ecosystem in France and in the European Union and harming the competitiveness of these markets.

Adan's general recommendations for the regulatory approach to DeFi in Europe	
Recommendation 1	**Assess the new risks created by DeFi and work with industry players to find the most appropriate ways to limit them.**
Recommendation 2	**Create a DeFi Observatory to make DeFi regulation a practical reality while allowing the protocols and their developers to continue to innovate.**
Recommendation 3	**Give legal recognition to DAOs in the EU.**
Recommendation 4	**Establish criteria to determine whether a protocol is sufficiently decentralised to fall within the scope of DeFi regulation or not.**
Recommendation 5	**Consider a framework at the level of the interface and not at the level of the technology itself.**
Recommendation 6	**Avoid by any means regulating protocols and their developers who build the future of finance in Europe.**
Recommendation 7	**After MiCA and the publication of the report: Consider creating an ad hoc regulation, taking into account the specificities of DeFi.**
Recommendation 8	**Establish a clear delimitation of decentralised stablecoins framed by MiCA or not.**
Recommendation 9	**Use protocol transparency, user interfaces and industry-native solutions to limit money laundering and terrorist financing crimes.**

About Adan

Adan brings together 200 professionals – new players and established companies – who develop innovation and use cases for the decentralised web in all areas of the economy on a daily basis. By removing the obstacles to their growth and competitiveness, Adan works towards the emergence and influence of French and European champions in the service of our digital sovereignty. Adan promotes an appropriate, proportionate and catalyzing framework for innovation, but also a better understanding of new blockchain technologies, crypto-assets and their opportunities.

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