

DeFi, Disruption & The Law of India

**Adarsh Vijayakumaran & Albert Benjamin*

INTRODUCTION

Decentralized Finance (“**DeFi**”) is a recent yet remarkable phenomenon in the world of crypto.¹ It aims to provide a seamless financial experience by replacing intermediaries with the latest in crypto technology.² This has been made possible, with the help of smart contracts, following the launch of Ethereum blockchain and its token Ether.³ Smart contracts enable the user to execute a contract when certain predefined conditions are satisfied, which is made possible through combinations with blockchain technology.⁴ This combination provides for a multi-layered composable architecture that enables users to develop, operate with and reuse different parts of the same stack.⁵ Hence DeFi lives as a parallel financial system beyond the scope of traditional law. Since 2018, numerous blockchain technology companies have started experimenting with DeFi, and the sector today has crossed \$236 billion USD in locked value,⁶ and is still growing.

Since the coming of DeFi, much literature has already been written on its—potential use cases, risks and possibilities. Nevertheless, the technology has been growing every day—bringing a lot of financial services that were previously not covered within its ambit and further improving its existing system. The present article aims to provide a concise overview of DeFi as a probable financial disruptor in light of its protocol-based applications. The article further aims to discuss what DeFi would mean under the existing laws in India.

*Authors are B.A.LLB (Hons.) students at the National university of Advanced Legal Studies, India.

¹ X. Meegan & T. Koens, *Lessons Learned from Decentralised Finance*, ING, at 1, https://www.ingwb.com/binaries/content/assets/insights/themes/distributed-ledger-technology/defi_white_paper_v2.0.pdf (last visited Jan. 26 2022).

² Sirio Aramonte & Wenqian Huang & Andreas Schrimpf, *DeFi risks and the decentralisation illusion*, BIS, https://www.bis.org/publ/qtrpdf/r_qt2112b.pdf (last visited March 23, 2022)

³ *Id.*; see Sebastian Peyrott, *An Introduction to Ethereum and Smart Contracts: A Programmable Blockchain*, AUTH0, <https://auth0.com/blog/an-introduction-to-ethereum-and-smart-contracts-part-2/> (last visited Jan. 25, 2022)

⁴ *Introduction To Smart Contracts*, ETHEREUM, <https://ethereum.org/en/developers/docs/smart-contracts/> (last visited Jan. 17, 2022).

⁵ Fabian Schär, *Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets*, FED. RES. BANK OF ST. LOUIS: ECONOMIC RESEARCH, at 1 (Feb. 05, 2021), <https://files.stlouisfed.org/research/publications/review/2021/04/15/decentralized-finance-on-blockchain-and-smart-contract-based-financial-markets.pdf>.

⁶ *DeFi Total Value Locked Hits All-Time High of \$236 Billion*, PR NEWSWIRE, <https://www.prnewswire.com/news-releases/defi-total-value-locked-hits-all-time-high-of-236-billion-301412901.html> (last visited Jan. 24, 2022).

DEFI V. CENTRALIZED FINANCE

However, before we delve into the legal framework and related aspects of DeFi it is important to understand how it works. National finance in all sovereign nations is intermediary-driven.⁷ Any and all transactions made by a customer are recorded in the private ledger, owned and controlled by the respective financial institution.⁸ This makes it almost impossible to make an independent financial transaction without providing an unnecessary contribution to the countless middlemen devoted to over-complicating the procedure.⁹ In contrast, when a transaction is made under DeFi, the decentralized blockchain ensures that the transaction is recorded in a public ledger through computer code.¹⁰ This can then be accessed by users of the DeFi application (“**DApps**”), who will be provided with an identical copy of the complete list of transactions in an encrypted format.¹¹ This ensures the user's anonymity and further provides for payment verification and asset records that are almost entirely unsusceptible to fraud or malicious activity.¹²

One of the main features of DeFi is the award of tokens in the system.¹³ Unlike traditional practices, tokens are earned in DeFi through active interaction and provision of service to the respective protocol.¹⁴ In other words, a participant who “provid[ed] liquidity in a decentralized exchange [DEX] or collateral on a lending platform” would receive tokens.¹⁵ This earning system ensures popular participation and mandates greater accountability for said protocol.¹⁶ Furthermore, employment of software to provide related services such as interest rate determination, order matching etc. ensures no middlemen are present in the market.¹⁷ DeFi protocols can also be streamlined and updated from time to time and as users control their assets directly, transition

⁷ Kathy Lien, *The Major Central Banks*, INVESTOPEDIA, <https://www.investopedia.com/articles/forex/06/centralbanks.asp> (last updated May, 1, 2021).

⁸ *Decentralized Finance (DeFi): Disrupting the World of Finance Using Blockchain Technology*, Crystal Capital Partners (May 18, 2021), <https://www.crystalcapital.com/insights/blockchain-technology-decentralized-finance-defi>.

⁹ *See id.* (describing the differences between conventional and blockchain transactions)

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ *Explained: DeFi Governance Tokens*, MEDIUM (Nov. 17, 2020), <https://medium.com/multi-io/explained-defi-governance-tokens-23a76e4df543>.

¹⁴ *DeFi and Regulation: the European Approach*, FINEXTRA (Jun. 28, 2021), <https://www.finextra.com/blogposting/20516/defi-and-regulation-the-european-approach>.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ Ozier Zarouq Khan, *Guide: DeFi Regulations in Key Jurisdictions*, FIRST DIGITAL (Aug. 12, 2021), <https://1stdigital.com/news-and-insights/regulatory-developments/guide-defi-regulations-in-key-jurisdictions-including-india-china-the-us-and-singapore/>. (citing Jai Massari and Christian Catalini, *DeFi Disintermediation, and the Regulatory Path Ahead*, THE REGULATORY REVIEW (May 10, 2021), <https://www.theregview.org/2021/05/10/massari-catalini-defi-disintermediation-regulatory-path-ahead/>)

between protocols is also virtually effortless.¹⁸ Therefore DeFi clearly has the potential to revolutionize the sector especially in comparison with its counterparts that are in effect. The rising number of use cases of the DeFi sector is a proof that, this is more than just a bunch of DeFi projects.¹⁹ It's an integrated effort to develop a holistic ecosystem of finance that shifts from traditional centralized services to a whole new level of a decentralized system (at least on the face of it).²⁰ Some of the important financial activities that DeFi based protocols provide today include Decentralized exchange, (E.g., Uniswap, dYdX), decentralized lending (E.g., Maker), decentralized derivatives (E.g., Sythetix), and on-chain asset management (E.g., Set Protocol).

RISKS OF DEFI

All this said, it's pertinent to state that DeFi is no bed of roses. Much of the risk associated with DeFi is fundamental to its technology and operation.²¹ Even though institutional interest in DeFi has risen many levels in the last few months, only users with great risk appetite interact with DeFi applications because of risks such as concerns on operational security, reliability on external data, difficulty in execution of contracts and infrastructural vulnerabilities.²² All of these can result in the failure of the system and may make it and its users susceptible to illegal activities and fraud.²³ Since the technology has a composable architecture at every level, it may be prone to programming errors.²⁴ Users must rely only on trusted audit services or should conduct their own audits before they start transferring their funds to any DApps.²⁵

Beyond technical risk, of primary concern is the difficulty to devise an efficient and effective legal framework for its implementation. The supposedly decentralized nature of DeFi makes it nearly impossible for any regulator to step in as there is no single responsible entity to blame if something

¹⁸ Jai Massari and Christian Catalini, *DeFi Disintermediation, and the Regulatory Path Ahead*, THE REGULATORY REVIEW (May 10, 2021), <https://www.theregreview.org/2021/05/10/massari-catalini-defi-disintermediation-regulatory-path-ahead/>.

¹⁹ *DEFI is changing the future of the Financial Industry*, ABS RESOURCES (May 17, 2021), <https://www.asbresources.com/blog/defi-is-changing-the-future-of-the-financial-industry>.

²⁰ *Id.*

²¹ See Fabian Schär, *Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets*, FED. RES. BANK OF ST. LOUIS: ECONOMIC RESEARCH, at 1 (Feb. 05, 2021), <https://files.stlouisfed.org/research/publications/review/2021/04/15/decentralized-finance-on-blockchain-and-smart-contract-based-financial-markets.pdf> (describing risks associated with DeFi).

²² See *Id.* (describing risks associated with DeFi).

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

goes wrong.²⁶ The absence of single regulatory and supervisory access points in DeFi networks is one of the major policy questions that remains to be overcome. Given the decentralized nature of the networks based on which DeFi applications operate, and their community-driven governance, it is challenging to identify decision-making entities/actors that can be held accountable for the operation of the network.²⁷

DEFI & THE LAW OF INDIA

The challenges with regulating DeFi through the use of existing Indian law are apparent. Indian law on regulating financial affairs generally assumes intermediaries are present.²⁸ It often uses regulations applied to intermediaries as a way to regulate financial activities.²⁹ Accordingly, lawmakers and regulators will likely find the concept of DeFi alien and confusing to grapple with.³⁰

One consolation for the applicability of existing laws and regulation strategy is that true decentralization is still an illusion in most of the DeFi projects found today.³¹ Not everything that identifies as DeFi is truly decentralized.³² This illusion of decentralization provides scope for regulators to step in to demand that any stakeholders that have decision-making or managerial authority ensure compliance with any existing or future laws. These groups, and the governance protocols on which their interactions are based could be used as a natural entry point for policymakers to develop laws that could help ensure that the innovative potential of DeFi does not compromise financial stability, consumer protection, and AML/CFT. However, in the future, most DeFi projects could be truly decentralized, and it is still uncertain how Indian law will deal with

²⁶ See *Decentralized Finance (DeFi): Disrupting the World of Finance Using Blockchain Technology*, Crystal Capital Partners (May 18, 2021), <https://www.crystalcapital.com/insights/blockchain-technology-decentralized-finance-defi> (describing how the decentralized nature of blockchain eliminates “middle[men] or gatekeeper[s] managing the system”).

²⁷ See *id.* (describing how the decentralized nature of blockchain eliminates “middle[men] or gatekeeper[s] managing the system”).

²⁸ Jayanth Kumar Dash et al., *Section 3.1 Extant Indian Legal Regimes*, in Report of the Working Group on Digital Lending including Lending through Online Platforms and Mobile Apps, RES. BANK OF INDIA (Nov. 18, 2021),

<https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=1189#S31> (describing application of Regulation to specific managing entities such as banks and MBFCs); See also Jai Massari and Christian Catalini, *DeFi Disintermediation, and the Regulatory Path Ahead*, THE REGULATORY REVIEW (May 10, 2021), <https://www.theregreview.org/2021/05/10/massari-catalini-defi-disintermediation-regulatory-path-ahead/> (describing the challenges of DeFi regulation in the US).

²⁹ *Id.*

³⁰ See Jai Massari and Christian Catalini, *DeFi Disintermediation, and the Regulatory Path Ahead*, THE REGULATORY REVIEW (May 10, 2021), <https://www.theregreview.org/2021/05/10/massari-catalini-defi-disintermediation-regulatory-path-ahead/> (describing the challenges of DeFi regulation in the US).

³¹ Wenqian Huang & Andreas Schrimpf, *DeFi risks and the decentralisation illusion*, BIS (Dec. 6, 2021), https://www.bis.org/publ/qrpdf/r_qt2112b.htm#:~:text=The%20%22decentralisation%20illusion%22%20in%20DeFi&text=A%20key%20tenet%20of%20economic,interactions%20with%20staff%20or%20suppliers (last visited Jan 27 2022).

³² *Id.*

this going forward. Some small steps have been made towards regulation. For example, in the *IAMAI* judgment, the Supreme Court of India set aside the RBI's circular that prohibited regulated entities from dealing in, or facilitating banking transactions, relating to virtual currencies.³³ However, most regulation in India still allows DeFi to slip through the cracks. Under the current legal framework, what the Securities Exchange Board of India (“SEBI”) or the RBI will do to control and monitor DeFi ecosystems cannot be determined in a case where digital assets are treated as securities. The uncertainty stems from the Securities Contract (Regulation) Act(1956), which states that a stock exchange is defined as “(a) any body of individuals, whether incorporated or not, constituted before corporatisation and demutualisation under sections 4A and 4B, or (b) a body corporate incorporated under the Companies Act, 1956 (1 of 1956) whether under a scheme of corporatisation and demutualisation or otherwise, for the purpose of assisting, regulating or controlling the business of buying, selling or dealing in securities.”³⁴ This will fail to apply to DEX protocols, used in DeFi ecosystems, because such protocols renounce corporatisation.³⁵ Instead, a new body created in accordance with a DEX protocol will function automatically and thereby not fall under the purview of the Act.³⁶

Part of the reason for DeFi’s ability to evade current regulation is the global reach and operation of its networks, which have no defined jurisdiction and geographical location for their operations.³⁷ This increases jurisdictional uncertainty and challenges domestic regulations. Parties that are key for developing the protocol, such as software developers or smart contract providers, may not even constitute nodes to the network in many scenarios.³⁸ The composable infrastructure of DeFi applications further adds to the complications. Even if malicious activity is detected, it is difficult to assess where the weak point is and who enabled it.³⁹ Interestingly, in a working group report on digital lending released by RBI in November 2021, it was proposed that “[a] blueprint of a forward-

³³ *IAMAI v. RBI*, Writ. Pet. (Civil) No. 373, (S. Ct. of India 2018)

³⁴ Securities Contracts (Regulation) Act, 1956

³⁵ See *Decentralized Finance (DeFi): Disrupting the World of Finance Using Blockchain Technology*, Crystal Capital Partners (May 18, 2021), <https://www.crystalcapital.com/insights/blockchain-technology-decentralized-finance-defi> (describing how the decentralized nature of blockchain eliminates “middle[men] or gatekeeper[s] managing the system”).

³⁶ Rahul Nambiapurath, *What is a Decentralized Cryptocurrency Exchange (DEX)?*, MAKE USE OF, <https://www.makeuseof.com/what-is-a-decentralized-cryptocurrency-exchange-dex/>

³⁷ Luke Fitzpatrick, *DeFi is Reinventing Global Finance Faster Than the Fed can Print Money*, FORBES (May 20, 2020), <https://www.forbes.com/sites/lukefitzpatrick/2020/05/20/defi-is-reinventing-global-finance-faster-than-the-fed-can-print-money/?sh=5defed3753f3>

³⁸ See Fabian Schär, *Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets*, FED. RES. BANK OF ST. LOUIS: ECONOMIC RESEARCH, at 1 (Feb. 05, 2021), <https://files.stlouisfed.org/research/publications/review/2021/04/15/decentralized-finance-on-blockchain-and-smart-contract-based-financial-markets.pdf> (describing risks associated with DeFi).

³⁹ See *id.* (describing risks associated with anonymity and pseudoanonymity),

looking framework for identifying and managing risks arising from DeFi” should be introduced.⁴⁰ However, it is not yet clear what the Indian government’s official take on this financial disruptor will be.

The inability of the current Indian legislations to include DeFi does not mean that it is impossible for Indian laws to completely regulate decentralization. However, in order for the regulators to effectively monitor and ensure consumer protection and domestic financial stability, current laws must adapt to the changing times. This means, instead of the commonly-proposed blanket ban for cryptocurrencies, more effective far-sighted measures should be introduced. This is because a blanket ban will not be effective long-term. Even if all nodes go offline, as the result of a blanket ban, it would only take one node with the full blockchain history to come back online to make all the data accessible again.⁴¹

However, stakeholders in DeFi, should be prepared for changing regulation in India on DeFi technologies, including novel regulation or even the temporary implementation of a blanket ban. Potential avenues for regulation include evaluating DeFi projects on more than just their innovativeness. For example, improved disclosures in DeFi applications could be a first step towards the greater protection of participants. These disclosures can include governance token holding data, disclosure of information regarding existence of admin keys, information pertaining to signers of those keys and the scope of such keys, whether multi-signature arrangements to enhance protection is adopted etc. Considering the global accessibility of DeFi, a global cooperation framework among regulators may also be explored.

In addition, even though DeFi works separately from TradFi, the growing interconnections between centralized bodies such as banks and virtual asset service providers cannot be ignored.⁴² Fiat from regulated intermediaries using UPI, NEFT, IMPS, etc to fill in funds in the virtual asset service wallets may be monitored. Even though alternative transaction mechanisms are available, monitoring primary payment gateways could help regulators gather at least minimal data to flag

⁴⁰ Report of the Working Group on Digital Lending including Lending through Online Platforms and Mobile Apps, RES. BANK OF INDIA (Nov. 18, 2021), <https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=1189>

⁴¹ Jimi S., *Blockchain: What are nodes and masternodes?*, MEDIUM, <https://medium.com/coinmonks/blockchain-what-is-a-node-or-masternode-and-what-does-it-do-4d9a4200938f>.

⁴² See Nikhilesh De, Danny Nelson, *Financial Stability Group Warns of Stablecoin, DeFi Risks in Annual Report*, COINDESK (Dec. 17, 2021), <https://www.coindesk.com/policy/2021/12/17/financial-stability-group-warns-of-stablecoin-defi-risks-in-annual-report/>. (describing potential benefits of stablecoin)

suspicious transactions. The increasing use of stable coins in DeFi protocols and beyond increases the interconnectedness between CeFi and DeFi.⁴³ The ensuing risks of the wider use of stable coins within and outside the crypto-asset space, and their role as linkages between the DeFi and CeFi systems also warrant an appropriate supervisory framework and standards that could create protection levels for investors and financial consumers while reinforcing financial stability, overall.⁴⁴

DeFi stakeholders should note that adverse regulations, including a cryptocurrency ban, would also not be surprising considering the disruptive nature of DeFi.⁴⁵ Given the uncertainty, stakeholders should anticipate possible regulations and create plans to survive and adapt to changes.

CONCLUSION

The DeFi sector is still at its nascent stage, and it will be interesting to see how it goes from here. The legal considerations that the novelty of DeFi has brought in also cannot be ignored. But as far as risks associated with DeFi are concerned, most of its current shortfalls are fundamental to its technology and functionality.⁴⁶ There is no doubt that the coming of improved systems that could make the mantra of decentralization truly immortal, and at the same time enhance the user experience, would actually lead to a paradigm shift in the financial industry and contribute to a more robust, open, and transparent global financial infrastructure. Anyways, for now, it will be interesting to see how the policymakers, stakeholders, and regulators will come together to address the concerns relating to the financial disruptor that is DeFi.

⁴³ See *Id.* (describing potential benefits of stablecoin)

⁴⁴ See *Id.* (highlighting “concerns regulators have involving stablecoins and the broader cryptocurrency market”)

⁴⁵ See e.g., China declares all crypto-currency transactions illegal, <https://www.bbc.com/news/technology-58678907> (last accessed Jan 20 2022).

⁴⁶ See Fabian Schär, *Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets*, FED. RES. BANK OF ST. LOUIS: ECONOMIC RESEARCH, at 1 (Feb. 05, 2021), <https://files.stlouisfed.org/research/publications/review/2021/04/15/decentralized-finance-on-blockchain-and-smart-contract-based-financial-markets.pdf> (describing risks associated with DeFi).