Book review

DeFi and Future of Finance
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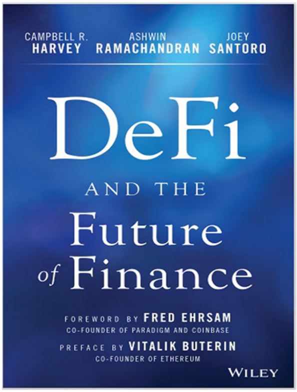

The invention of smart contracts and blockchain technologies has paved a path for the development of an alternative financial ecosystem known as decentralized finance (DeFi). Based on the idea of disintermediation and open protocols, DeFi aims to rewire the prevailing financial services in a more interoperable, pellucid and open manner. Inefficiencies, legacy systems and opacity in traditional finance have proved major hindrances in the way of financial inclusion and frictionless economy. DeFi, through decentralized applications (Dapps), intends to democratize financial services. The term DeFi gained momentum in the year 2020. In that particular year, the total value locked in DeFi protocols grew by a factor of 20 to approximately $16bn. Nevertheless, DeFi also brings unique kinds of financial and non-financial risks. The present book is a good starting point for financial academicians, entrepreneurs, practitioners and policymakers to understand various applications, primitives, risks and opportunities in DeFi.

This book has multiple goals. Firstly, it identifies the weaknesses in the current financial system, including a discussion of some early initiatives that challenged the business models of centralized finance. Next, it explored the origins of DeFi and discussed a critical component of DeFi: blockchain technology. Next, the book detailed the solutions DeFi offers and coupled this with a deep dive into some leading ideas in this emerging space. The final aim of the book is to analyze the major risk factors and conclude by looking to the future and attempt to identify the winners and losers. The book is divided into eight chapters and is written by renowned professors and professionals of the domain.

The first introductory chapter provided a brief overview of DeFi and the problems faced by the centralized financial (CeFi) system. It covers the results of these problems and because of that what all growth opportunities are missed by the financial sector. Another section of this chapter deliberated on the implications the financial sector is facing because of the problems of CeFi.

The second chapter describes the evolution of finance with coverage on the barter system, eventually leading to money and its purposes along with all the traditional characteristics money possess. It also pictorially included the very first banknote, Western Union money transfer telegraph, Diners Club credit card, ATM introduced in north London

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by Barclays Bank, telephone banking (Bank of Scotland), internet banking in 1994 (Stanford Federal Credit Union); radio-frequency identification payments in 1997 (Mobil Speedpass); chip-and-pin credit cards in 2005 (Mastercard); and Apple Pay with a mobile device in 2014 (Apple) and elaborated the high costs associated with these legacies spurred further advancements called Fintech. It further highlights the origin of Bitcoin and cryptocurrencies covering the Iraqi Swiss dinar. A brief discussion on DeFi and Ethereum concludes this chapter.

The third chapter discusses the foundations of the DeFi applications covering in detail blockchain, hashing, proof of work, cryptocurrency, smart contracts, oracles, stablecoins and Dapps. This chapter introduces all these topics along with coverage on MakerDAO case, ERC-20 and Ethereum's gas fee for every transaction is elaboratively covered. The fourth chapter tells the story of DeFi Primitives describing the primitive financial actions that developers can use and combine to create complex Dapps and the advantages each action may have over its centralized counterparts. This parts coverage includes the introduction to Ethereum transactions as the atoms of DeFi, mempool, fungible and non-fungible tokens (NFT). This chapter also covers the three main ERC-20 token categories, namely, equity tokens, utility tokens and governance tokens. The NFT Standard, Multi-token Standard, token burning or minting and bonding curves from various angles (logistics, superlinear) are also elaborated. The book further looks into the topic of incentives within crypto-economic systems, namely, staked, slashing and direct incentives and collateralized and non-collateralized loans (flash loans).

The fifth chapter notes the problems of traditional finance to which DeFi provides solution:

- inefficiency related to volume and friction, keepers, forking, Dapps forkable and vampirism;
- limited access covering yield farming and initial DeFi offerings;
- opacity;
- centralized control (how by forking one can solve the problems faced by DeFi); and
- lack of interoperability and its focus on tokenization.

DeFi has the potential to unlock liquidity in traditionally illiquid assets through tokenization. Voting mechanisms and decentralized autonomous organizations (DAOs) are also covered in this chapter.

The sixth chapter outlines DeFi platforms in the taxonomy of lending/credit facilities, DEXes, derivatives and tokenization. It mainly focuses on the Ethereum network because of its popularity, but DeFi innovations are occurring on many blockchains, Stellar and EOS are also covered. Another address in this chapter is Polkadot, another platform that uses a type of proof-of-stake consensus. The authors illustrated that a governance token can be implemented in many ways: with a static, an inflationary or even a deflationary supply. A static supply is straightforward: purchased tokens would correspond directly to a certain percentage control of the vote. The current implementation of the MKR token for MakerDAO has a generally static supply. Chapter six delves into MakerDAO and its implementation.

The seventh chapter addresses the principal risks that DeFi faces today. DeFi can eliminate counterparty risk by cutting out intermediaries and allowing financial assets to be exchanged in a trustless way. Nevertheless, as all innovative technologies introduce a new set of risks, DeFi is no exception. Various categories of risks DeFi faces are smart contract, governance, oracle, scaling, DEX custodial, environmental and regulatory. Chapter eight concludes the book with how DeFi is advantageous over traditional finance, which exhibits layers of fat and inefficiency that ultimately remove value from the average consumer.

This book suggests the DeFi protocols establish strong liquidity moats and offer the best utility and will thrive as the key backend to mainstream adoption. This is not a renovation of existing structures; it is a complete rebuild from the bottom up. Finance becomes accessible to all, and quality ideas are funded no matter who you are. Ultimately, the authors' end note mentioned a great hope and the greatest opportunity of the coming decade in DeFi, and they are hopeful towards the reinvention of finance.

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