CryptoQuestion
Your cryptocurrency companion

ALL YOU NEED TO KNOW ABOUT...

DECENTRALIZED FINANCE

BASICS - RISKS - REGULATION - OPPORTUNITIES

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YOUR AUTHORS

The book you are reading is a team effort. Written by a team of crypto experts who have both traded and run their own crypto exchange. The team came together and launched CryptoQuestion (@cryptoimpartial) on Twitter and Instagram in 2020 and have since built a loyal following which grows daily. Many of the articles, reports and courses published by CryptoQuestion have featured on Medium, The Capital, Illumination, CryptoCompare, In Making of a Millionaire, Data Driven Investor and Coinmonks and have received many favorable reviews. It is CryptoQuestion's goal to continue to educate investors in the cryptocurrency investment space.

A FEW REVIEWS OF OUR ARTICLES AND COURSES

‘Nice high level, yet comprehensive overview of the space for new entrants.’

‘This is fucking gold Jerry. GOLD.’

‘Really entertaining… plz find the time to check this one. Alternative view to trading.’

‘This is a masterpiece, I loved it. Thanks for sharing.’

‘Its surprising how much you think you know but are then like ohhhh so much more to learn on a subject’

‘I found the first module easy to follow and really pleased that I found this course to do, thank you! Believe it or not, I am also excited about the questions as I am an old school course taker, here.’

INTRODUCTION TO THE WORLD OF DECENTRALIZED FINANCE

Decentralized Finance may be an off putting phrase for the amateur new to the cryptocurrency space. And let's be honest, being an amateur is nothing to be ashamed of. The crypto space moves at a pace like no other in terms of both technology and the speed in which new projects are able to raise vasts amount of money. The sub sect of the crypto world that is arguably moving the fastest is the DeFi space.

It is also the area where mainstream adoption is furthest away. And we say that because many of the DeFi platforms are difficult for the average Joe or Jane to navigate. User interfaces are in most cases appalling and of course our old friend the scammer has been quick to take advantage of the many opportunities to make a fast buck and be off in the wind quicker than you can say, 'Where is my money'.

But saying all that this is the area that we expect to revolutionize how we use our cryptocurrencies in the future. No longer will our bitcoin sit idle when we can put it to work for us on a DeFi lending/borrowing App and earn an income. Smart contracts make all this possible and it is something that without doubt is going to change the way we manage our finances. The DeFi space is important to understand because it is going to be the source of many attractive investment opportunities over the coming years.

It is worth pointing out that CryptoQuestion is an avid follower of small cryptocurrencies which we believe offer potential and many of these are involved in DeFi.

View our latest cryptocurrency lists at www.cryptoquestion.tech

- Micro Cap Watch List
- Portfolio Selection

There is also a free online course you can enroll on which covers DeFi in more detail. You can enroll here.

Finally it is worth saying that if you are still confused, which is understandable, be sure to use our on demand Q&A service and ask us anything crypto related. www.cryptoquestion.tech Always do your own research and remember the DeFi space is high risk. Finally to cover us and you remember none of our resources attempt to provide financial advise. Always seek independent financial advice.

Enjoy!

Team CryptoQuestion

THE WORLD OF DECENTRALIZED FINANCE

Assuming you are a novice in the crypto market you can be forgiven for having never heard of the acronym DeFi, or not understanding its significance. We are devoting a book to the subject because we believe, like many others, that DeFi has the potential to revolutionize the crypto market and lead to its mass adoption by mainstream investors.

DeFi v Centralized Finance

DeFi is an abbreviation for decentralized finance, as opposed to centralized finance which is the system we all use today. Our banks and financial institutions all work on a central basis. Currency is controlled and issued centrally, our investments, savings, deposits and borrowings are likewise managed centrally. Let me provide you with two examples of centralized finance in action.

Cyprus is a great and painful example. When the economic crisis hit Cyprus the local government decided to balance their books by levying depositors, who held bank accounts there, with a 10 percent ‘tax’. Totally arbitrary. Everyone had to take the pain for the government’s gross incompetence, even the Russian mafia.

Another example, closer to home. If we deposit money with a bank (Bank of America is paying 0.01% on a deposit of less than $2,500) we will earn less than 1 percent interest on our deposit. That compares to the bank lending your money out for multiples of this figure (Bank of America secured small business loans start at 3.5%), you receive none of the upsides. That is the way the system works we are told, there are overheads to cover, wages to pay, incompetent decisions to pay for.

Baby steps towards a decentralized system

The invention of Bitcoin was the first step in the decentralized process. Bitcoin decentralized the issue of money and its storage, however, the system still relies on a centralized system. Without a centralized exchange, it would not be possible to buy and sell bitcoin for cash, or as it is called in the crypto world — fiat. If everything was priced in bitcoin then the need to rely on exchanges would no longer be relevant but that scenario is a long way away — as we shall see shortly, there are a number of partial solutions emerging aimed at reducing the reliance on centralization. One such solution we have covered in this article is called a decentralized exchange.

Trust based systems

However, despite bitcoin's reliance on centralized functions, it is one of the most decentralized coins in existence. Many others, such as the stablecoin Tether for example rely on the honesty of the people managing the project. In other words, people buy USDT (Tether's stablecoin cryptocurrency) and the money is deposited into a bank account. The managers of the coin have control over that bank account and how that money is invested etc. This represents a centralized system working in a decentralized environment. Centralized systems are trust-based. We have to have a certain amount of trust that the banker is not going to run away with our money or pay us a lower return on our savings than we are entitled to. DeFi is a non-trust based system, with some obvious limitations. We will come back to this later to see how this is all made possible, but suffice to say at this stage, **the holy grail is a decentralized system where there is no trust involved.**

Decentralization is made possible by smart contracts

DeFi includes digital assets (as we saw with bitcoin), protocols (these are the different blockchains), Dapps (decentralized apps) built on blockchains and smart contracts. Over the next few years, many many more valuable uses are going to be found for the smart contract. Smart contracts play a central role in the whole DeFi sector.

What is a smart contract?

Here is the technical definition:

The notion of a digital protocol is designed to facilitate, verify, or enforce the terms of an agreement without the need of a third party.

Smart contracts aren’t a new concept, the term was first coined back in 1994, however it was not until the arrival of blockchain technology that the protocol’s full possibilities came into force. Blockchain smart contracts are useful as they provide parties the ability to conduct rule-based transactions and agreements without the need for third-party intervention.

Here is how they work

Users transfer a token or currency into a digital program that runs code to automatically validate specific conditions. Once reviewed, the smart contract automatically settles whether to transfer the asset to a new party, return to the existing party, or some other combination. There is no human intervention. There is no risk of a bad actor running off with your cash or deciding not to repay your money on time. There are other risks obviously such as an external hack, but that is another story, which we will consider later.

Blockchain and DeFi

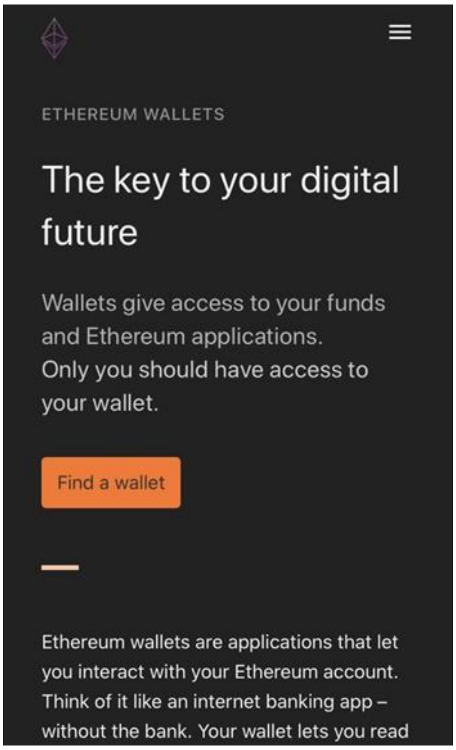
The first blockchain was Bitcoin. Ethereum, which is another blockchain-based on a similar architecture to Bitcoin, but with a different purpose, was launched in 2015. The majority of DeFi applications run on Ethereum. Let’s take a look at Ethereum and consider its significance in the DeFi space.

Ethereum is a decentralized system, meaning it is not controlled by any single governing entity. It has no central point of failure, as it is being run from thousands of computers around the world, and as a result, can never go offline.

Ethereum v Bitcoin

Bitcoin was the first-ever cryptocurrency and money transfer system, built on and supported by a distributed ledger technology called blockchain. Ethereum took the technology behind Bitcoin and substantially expanded its capabilities including and most significantly allowing users to create decentralized applications on that particular blockchain.

Given the flexibility and amount of development, the Ethereum platform is the primary choice for most DeFi applications, but it is not the only blockchain platform — for a deeper dive, take a look at TRON, Cosmos, Binance Chain or Polkadot.



Why is DeFi so important?

DeFi provides users with the opportunity of controlling their own assets thus reducing or even eliminating the need for trust.

There are many applications within the DeFi field. Some, like betting and prediction app Augur, offer huge potential however adoption has been slow. In this article we have focused on the areas which we believe are going to gain mass market adoption at some point and revolutionize the cryptocurrency market.

Open lending protocols

This is a digital money lending platform built on blockchain. Open lending platforms or protocols have become the most popular in the DeFi space. Like a bank, users deposit their money and when someone else borrows the digital assets, they earn interest. The smart contracts dictate the loan terms, connect lenders and borrowers, and are in charge of distributing interest. Due to the transparency of the blockchain and that there are no middlemen, the lender earns higher returns and more clearly understands the risks.

An example

This is how a lending platform works in practice. Let’s use the popular lending platform Compound to demonstrate this and our friend Mr. Smith as our guinea pig.

Who and what is Compound?

Compound has been described as the killer app. It is a well-respected operator in this infant marketplace backed by the likes of Coinbase, Bain Capital, and Andreessen Horowitz. It is one of the largest operators in this field and probably the most innovative.

There are a large number of coins that Mr. Smith can lend (or borrow). Mr Smith can check out the rates available on both Compound and other similar platforms at https://defirate.com.

In order to lend money to Compound Mr. Smith will require both the token he wishes to lend and sufficient Ether to pay for the gas (i,e. the fees related to the transaction). Let us assume for the sake of simplicity, Mr. Smith is using an Ethereum wallet (see above), he must therefore connect his wallet to Compound, to begin with. If Mr. Smith holds ETH, he may lend any amount of it to Compound (well to the Compound pool anyway), and he will earn interest from his cryptocurrency.

Mr. Smith can also use this platform to borrow. For example, if he wanted to borrow ETH he must supply collateral in the form of a particular cryptocurrency which the platform accepts. If Mr. Smith has some DAI he could borrow up to 75% of its value in another cryptocurrency. Each asset on Compound has a different collateral factor. Why would Mr. Smith want to borrow fiat or another cryptocurrency you may be thinking? Perhaps he doesn’t want to sell his cryptocurrency holding as that could crystallize a gain which he would have to pay tax on, so he borrows against his holding so he can buy his wife a new Mercedes.

Another big development is the introduction of governance tokens.

As well as interest, lenders (and borrowers) earn COMP tokens. Every day Compound distributes 2,880 COMP tokens. These can be traded or used to vote in relation to matters related to the protocol. Other protocols have jumped on the bandwagon and are also issuing (new and existing) governance tokens to users as a reward for using their platform.

Why is DeFi going to lead to mass adoption?

Now investors are able to earn interest from their cryptocurrencies. Most commentators have been comparing Bitcoin to gold, going as far as calling it 'digital gold'. Of course gold is a non income producing asset.

Now cryptocurrency has a major advantage over gold. An investor is now able to earn interest from their cryptocurrency holdings. This is a huge plus for owning cryptocurrency with the added bonus of capital protection. At the end of the investment period the capital is returned to the investor intact. There are obviously risks, which we will examine later.

Governance tokens

These currently hold a prominent position in the world of DeFi following the success story of Compound's COMP token. Unlike utility tokens, DeFi governance tokens have an intrinsic value because they earn fees and interest from trading. They also allow the holder to participate in the decision making in relation to the protocol. Government tokens are similar to an ordinary share in the world of the stock market and could be valued in the same way.

The great thing is at the moment lenders and borrowers are being distributed governance tokens which are readily tradable. Effective Interest rates are therefore above the quoted rates as there is the extra benefit of the gifted governance tokens. This factor alone is making this area of DeFi a boom time. However look at this as a bonus, the value and the future are in the lending protocol. This 'giveaway' helps to attract money to the sector — although much of it will be hot money, to begin with, the majority of owners of the COMP token for instance are speculators.

What are the top three protocols right now?

The DeFi lending market exploded when Compound launched in June 2020, quickly rising to the top of the protocols, overtaking the relative veteran Maker who quickly regained their lead.

The current Total Value Locked currently is around $39.3bn (as of February, 2021). The biggest app as of now is Maker, followed by Aave and then Compound.

What does Total Value Locked (TVL) Mean?

Most DeFi applications require capital to be deposited, often in the form of loan collateral or liquidity in a trading pool — locking up value — the best measure of adoption is TVL.

DeFi is Exploding

The low point was 13 March 2020 when TVL sat at $571 million, today it stands at over $39.0bn. In January 2021 that figure stood at $13bn. There is still further to go.

Practicalities

Let's examine how the user can participate in this market by examining four of the biggest cryptocurrency exchanges. Firstly, In order to take advantage of a DeFi lending platform, you must be able to transfer coins purchased on a central exchange to your own wallet (see Ethereum wallets above). However, some exchanges allow you to access these platforms within their own wallets as you will see below.

Binance

Binance, the largest exchange, has recently entered the market and offers between 5.8% and 12% to lenders. The security of the funds is guaranteed by the exchange. In this case, the minimum to stake is 100 DAI. The 12% relates to staking 100,000 DAI (DAI is worth $1.021). This is a reasonably hassle-free service.

Coinbase

Through the Coinbase wallet, you are now able to lend out your crypto and earn interest on DeFi apps, including Compound of which Coinbase is an investor.

PayPal, Square and Robinhood Crypto

Unfortunately, if you buy cryptocurrency through the above platforms, it is stored by them, and you are unable to take advantage of the DeFi apps at this time. Some say this is the biggest downside for using PayPal et al.

Poloniex

One of the largest and most popular exchanges in the world, it provides the largest amount of trading in BTC. There are at least eleven DeFi related governance coins now listed on Poloniex which you can trade.

Yield farming — What is it?

This is a new buzz word in the crypto market related to DeFi. It is shorthand for utilizing strategies which involve temporarily transferring crypto to certain DeFi apps to earn its owner more cryptocurrency. Another related term is ‘liquidity mining’, which is the concept of using cryptocurrency to provide liquidity to a DeFi app thus earning cryptocurrency in the form of governance tokens.

The risks and regulation

Lawyers and analysts say that the apps operating in the DeFi arena are vulnerable to coding bugs and hacks. They also say that most are untested at scale and are unregulated. Critics warn the technology could be the next bubble in the crypto world, similar to the ICO bubble. Britain’s FCA told Reuters it regulated some crypto-related activities, looking at them on a case by case basis. Even decentralized platforms may be subject to regulation, it said last year. However, as recently as August 2020, Aave was granted an Electronic Money Institution licence from the

FCA which boosted confidence in their project significantly, their token rose in value by 40% on the day of the announcement.

In the US, Congress hasn't scrutinized DeFi yet. There is also no guidance from the SEC although there are rumblings about whether governance tokens do, in fact, represent a security. The SEC Commissioner said only last week that DeFi 'Is posing game-changing questions…' The fact that these platforms require no ID or KYC is undoubtedly going to lead to intervention at some point, this isn't a situation that will be acceptable to many regulators!

Another risk worth considering is the inherent risk of being invested in cryptocurrency in the first place. If Mr. Smith rushes to cash in all his investments because he thinks that he can earn 20% APR by converting his fiat into ETH and lending it to Compound, then he is not just betting on the viability of Compound. He is also betting on the cryptocurrency market. If ETH takes a dive by 50% as it did back in March 2020, then Mr. Smith is in trouble. This is definitely a market for investors who understand the risks and manage their risk by only investing a small proportion of their portfolio in the cryptocurrency market.

So with that all said, where do current and future participants in this market stand? As the market expands and its profile rises, there is bound to be regulatory intervention. What form this will take is not known. The real risk to investors is that their capital, which is secured by way of smart contract, is hacked or god forbid has a bug (such as the failure of YAM when a bug was discovered in its software and the tokens value went from a valuation of $60m to zero in 24 hours). If that disaster occurs within say a Coinbase or Binance wallet, you are probably going to be okay. If it happens outside in the wild wild west through an Ethereum wallet where you have no safety net, this could be a problem. But like everything, this is a new and promising area so some people are surely going to get burnt. Overall, the DeFi lending protocols do appear a valuable development with a large number of viable and well funded and well thought out projects a complete contrast to the ICO craze.

Investors should tread carefully before utilizing any platform, buying governance tokens or ICOs.

Other DeFi areas

Much of this chapter covered the lending protocols. There are a few other very promising areas which we will consider too.

Stablecoins

Tether is the leading stable coin by far with a market cap of $32bn. The tether coin is minted by a blockchain, however the custody of the fiat, which provides the collateral behind the coin, is centralized. Thus posing a counterparty risk. Tether and similarly structured coins, such as USDC, are called collateralized stablecoins and do not figure in the DeFi equation although you can obviously participate in it by owning these coins.

The second type of stablecoin, and the one we will focus on here, are crypto collateralized stablecoins. These are decentralized stablecoins and are backed by crypto assets which form the collateral behind these currencies. They rely on trustless issuance and maintain their 1:1 peg against assets (such as the USD) through various methods, including over-collateralization and incentives.

The trustless issuance makes this type of coin wholly transparent and the reserves auditable. Maker's DAI is such a stablecoin. ETH, the underlying asset here is over collateralized against the loaned DAI. For every DAI, there is $1.50 worth of Ether locked in the MakerDAO smart contract as collateral.

The volatility of the underlying collateral is the biggest threat, a scenario which was played out on Black Thursday on March 12, 2020, after the price of ETH collapsed by about 50% within 24 hours. Maker recorded losses of $6.65m.

Decentralized exchanges

Online centralized exchanges include the likes of Binance and Coinbase, however, as with all centralized systems, there are the risks of solvency, price manipulation, and compromising of the exchanges online wallet. Decentralized exchanges, on the other hand, provide the potential of offering a transparent trading experience.

The definition of a decentralized exchange or DEX is an exchange that offers peer to peer transactions of digital assets between two parties on the blockchain with no third parties involved. The advantage of this approach is that there are no sign-up requirements, identity verification, or any withdrawal fees.

In the last few years, a number of decentralized exchanges have emerged. These marketplaces are in the early stage of adoption and still offer a non-friendly user interface and lack of functionality. DEXs are considered safer than centralized exchanges, in terms of their reduced susceptibility to being hacked. They also offer anonymity which could be a problem with regulators as these become more mainstream. In 2019 EtherDelta, one of the top DEX was forced to close as they did not take their KYC responsibilities seriously. As many of their clients were US-based the SEC came down hard on them. In 2019 $2.4bn was traded through DEXs. Last month $12bn was traded through DEX's, a big jump from the $4.4bn traded in July, mainly as a result of the frenzy to trade in governance tokens.

By far the largest DEX is Uniswap. It allows you to swap ERC20 tokens, as well as ETH to an ERC 20 and vice versa. It is not a replacement for centralized exchanges — a user would need to use a central exchange to convert ETH to fiat.

How decentralized is DeFi really?

The billion-dollar question is, how decentralized are all these DeFi projects.

The common components on a DeFi lending app include custody, price feeds, provision of margin call liquidity, initiation of margin calls, protocol development, and interest rate determination.

MakerDAO and Compound are non-custodial and have permission less initiation of margin calls and provision of margin call liquidity, while the other components are centrally administered.

dYdX (a DEX) possesses the above decentralized qualities with the added advantage that its price feeds are decentralized.

It is worth investigating each protocol to see which centralization elements are present and assessing whether this adds risk or derisks the opportunity. As you can see above custody is a big risk in a very shady market!

Takeaways

- ☑ Smart contracts form the basis of DeFi.
- ☑ DeFi is a move away from centralization to a decentralized finance system, but there is some way to go to achieve this.
- ☑ Lending protocols have the potential to make investing in cryptocurrency attractive to the mass market.
- ☑ Investors should base their cryptocurrency purchasing decision on whether they will have access to the best DeFi platforms. Remember certain exchanges don't offer access to these apps.
- ☑ Decentralized exchanges have a long way to go before they become user friendly, however they are an area to watch as like lending protocols, they offer attractive benefits to the mass market, making the whole process of buying and selling more transparent and cutting out the middleman.
- ☑ The DeFi apps operate on a new technology, blockchain. It is still unproven and bugs and hacks are likely to occur but that is the price you pay for being early to the party.
- ☑ There are always regulatory risks attached to new technologies — there will definitely be some protocols that step on regulators toes. There is also the issue of whether the governance tokens represent a security or not.

- ☑ Governance tokens have added an extra gloss to an already attractive market — this has caused a bubble but that shouldn't be a worry as long as investors select the well financed and competent teams behind the best platforms.

- ☑ Finally remember that any investment in DeFi is a bet on the viability of cryptocurrency. If you are a believer then lending to a DeFi platform to maximize your investment return is a no brainer, subject to taking the necessary precautions obviously.

REMEMBER

If you have any crypto related questions you are welcome to use our on-demand Q&A service here.

Or if you want a more indepth dive into the world of DeFi enroll on one of our free online courses here.

Finally, if you are interested in looking for undervalued cryptocurrencies operating in the DeFi space take a look at our following free resources on www.cryptoquestion.tech

- Micro Cap Watch List
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No Financial Advice

This book does not constitute financial advice in any way. Always do your own research and never invest more than you can afford to lose. The article should be treated as supplementary information to add to your existing knowledge.