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Greengage's View on DeFi

WHITE PAPER

Contents

Introduction

Why would a banker be interested in DeFi (decentralised finance)? As SEC Chairman Gary Gensler put it in 2018: "With increased competition and innovation in the financial system, DLT [distributed ledger technology] – both permissionless and permissioned - offers a catalyst for change by incumbents or as an opportunity for entrepreneurial start-ups, potentially lowering costs, risks and economic rents in the financial sector which represents 7.5% of the U.S. economy."[1] This is quite a significant statement, not just recognising the scale of financial services as a percentage of the US GDP – which is comparable across the western world – but also that DLT can play a significant role in improving efficiency.

Therefore, the opportunities that DLT, and by consequence DeFi, can bring is not something banks can just sweep under the rug or dismiss as trivial (the way they largely have done with crypto for over a decade). However, before those crypto purists raise their NFT (non-fungible token) pitchforks, let us be clear; Greengage has nothing to do with DeFi today, but we are watching the space closely. Our comments in this respect are deliberately forward-looking as DeFi is admittedly in its early stages and so is our engagement with it.

1 https://www.congress.gov/115/meeting/house/108562/witnesses/HHRG-115-AG00-Wstate-GenslerG-20180718.pdf

CeFi

CeFi stands for centralised finance and commonly refers to crypto exchanges that are not decentralised. However, the concept can extend further to include financial services in general that are controlled by a single entity. While such a system allows for clear decision-making and enables easier regulation, it does have several drawbacks. The concentrated power that makes identifying responsibility and thus regulation simpler also creates a single point of failure. This can result in the service going down either due to attack or a weak link in the chain of command/operations. Additionally, that monopoly on control of the service often excludes users from deciding how that service runs or evolves. As such, it is typical for clients to not have all their needs fulfilled.

Banking is a clear example of CeFi. It is one of the oldest professions and alongside money, has its roots in the oldest civilisations. Aside from the implication that humanity has been corrupt since its beginning, it shows how banking is integral to society and its economy. To perhaps oversimplify, banking and the broader suite of financial services delivers two things to an economy:

1. **Liquidity** – the efficient and safe movement and storage of monies
2. **The pricing of risk** – which we will refer to as "balance sheet" activities

DeFi

On the other hand, DeFi is a financial service where control is distributed across its network of users. The network used to facilitate this often utilises DLT, specifically, blockchain. As such, DeFi's core aims align with those of public blockchains,[2] particularly being permissionless and trustless. This means users don't require authorization to use the service and they don't have to trust a central body to provide that service. Furthermore, there is no single point of failure so the service can continue to operate even if a node or many nodes go down. Nevertheless, this distribution of power complicates decision-making. It also raises questions of responsibility, making regulation harder to implement.[3] Evidently, the advantages of DeFi are the disadvantages of CeFi and vice versa.

Ethereum is the premier protocol for DeFi and hosts the vast majority of DeFi services. The two most popular types are decentralised exchanges (DEXs) like Uniswap and lending platforms such as AAVE. DEXs can use an order book similar to centralised exchanges though more often use liquidity pools to determine asset pricing via automated market makers (AMMs).[4] Lending platforms offer various types of loans though almost all are over collateralised. Most DeFi platforms require the user to connect their crypto wallet to use the service and are thus non-custodial. This is generally safer than trusting an exchange to hold your private keys unless your name is Stefan Thomas.[5] Nonetheless, DeFi does come with its own security issues, mainly around smart contract exploits in addition to theft by the developers, known colloquially as "rug pulls".

2 https://www.blockchain-council.org/blockchain/public-vs-private-blockchain-a-comprehensive-comparison/

3 https://www.upgrad.com/blog/centralized-vs-decentralized-cryptocurrency/

4 https://medium.com/multi-io/automated-market-makers-amm-breakdown-d3338f027230

5 https://www.nytimes.com/2021/01/12/technology/bitcoin-passwords-wallets-fortunes.html

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With financial services as lucrative as they are today, why add DeFi into the mix? No, the answer is not more money, well at least not entirely. Greengage aspires to be the next generation of digital financial services, and we have no vested interests or legacy systems. Our model intends at all times to listen to client needs and respond, rather than pitch a product or a "schtick." Of the two key offerings of financial services (liquidity and the price of risk), our focus is more on the pricing of risk through balance sheet/advisory activities. We think these are defensible as the efficiencies of innovation in finance set in. Specifically, this involves the reduction in transactional costs e.g., the example of WeChat/Alipay in China – albeit non crypto – showing how the payments business model can nearly be free. However, advertising and issues with data privacy/access to finance with good governance come part in parcel with such benefits.

We have four main interests linked to DeFi:

1. Reducing frictional costs, particularly for complicated products such as securities and derivatives
2. The returns – are these sustainable once various factors have been priced in?
3. Can we engage with DeFi to offer better returns to our future customers than the near-zero percent interest rates on deposits from high street banks (low bar, we know)? More importantly, can this be done safely?
4. Some financial services houses have started to engage with DeFi, primarily via venture capital or own their own balance sheet. These include Andreessen Horowitz, Goldman Sachs, and The Brooker Group.[6] How are they doing this when DeFi remains unregulated, and will there be repercussions?

6 https://forkast.news/why-big-investors-diving-defi-others-holding-back/

Considerations

Sounds great, right? So, what are the challenges and direction of travel? Wharton at the University of Pennsylvania put out an excellent paper[7] on the definitions around DeFi a few months ago, but relatively little material is available otherwise in terms of practical guidance using this base layer of terminology. These are very early days, and we are not here to propose answers but rather raise questions (mea culpa for those expecting otherwise) which represent Greengage's considerations in this space. We intend to get involved in relevant working groups exploring these topics:

1. Identity: In respect of KYC/AML and terrorist financing, how can a completely free system without KYC checks survive, and should it survive?
    a) Currently Greengage cannot engage without clarity in this respect (staking/mining is slightly different).
    b) If checks are to be included, will a "walled garden" approach win, or rather a whitelist/blacklist approach? Going back to the Gary Gensler comment, will it be possible someday to achieve the efficiency of a (de)centralised database of vetted clients, so that not every financial institution has to independently bear the costs of compliance? Also, can we share these costs to reduce costs for clients, and friction for customers (delivering upon the promise of e.g., Open Banking for portability of client service across institutions, where they are delivered best)?
    c) Will the returns remain of interest if identity is cleared and transparent? Would lending platforms like AAVE face declining interest rates due to KYC and if they did, would they still be better than high street rates. Currently, institutional rates may be lower due to the lack of governance tokens instead of the effects of KYC.

2. The creation of money: How would that effect money supply and what would be the effects of setting interest rates away from central bank rates? Even with $218 billion locked in DeFi currently,[8] this is still a rounding error compared to the overall money supply. Are CBDCs to be the remit of banks? This seems probable with e.g., Avanti bank which seems to have set up in Wyoming expressly for that purpose. Even if CBDCs are the remit of banks, would DeFi's virtual "wrapped" currencies circumvent banks, and would this be an issue?

7 https://wifpr.wharton.upenn.edu/wp-content/uploads/2021/05/DeFi-Beyond-the-Hype.pdf

8 https://defillama.com/

3. Making good: Who is responsible? With DAOs, and with most centralised tech houses providing DeFi solutions, there is no regulatory capital – so who is responsible for financial services on the code? Would it be a case of "use the code at your peril" in case of hacks, etc? While that isn't as potentially disastrous as when applied to a 0–60 in under 2 seconds Tesla, accountability is still a massive cause for concern. Insurance may mitigate such issues, but the cost and comprehensiveness need to be well defined.

4. Governance: Can open source/democratic approaches rule the day, or will pragmatic regulatory guidance on principles/standards be needed to protect consumers? Erica Stanford's excellent book, Crypto Wars: Faked Deaths, Missing Billions and Industry Disruption highlighted what happens when control is vested in only a few hands, e.g., Quadriga. Does having this code be open source protect against such risks?

5. Winning code: Greengage is agnostic, but will there eventually be only one protocol on which DeFi exists?
   a) We are delighted to have received investment from IOV Labs (a Gibraltar registered company building smart contracts on the Bitcoin blockchain) but will interoperability render the differences in protocols meaningless?
   b) Will staking (e.g., ETH 2.0) prove sustainable and will this be a deciding factor in the battle between proof of work and proof of stake?

6. UI: Will coders prioritise accessibility going forward to shift from the "Napster model" of DeFi to the "Spotify model"?

7. Investment: Can we place our own Greengage funds into DeFi, exposing our balance sheet to risk, and what would be the risk weighting applied to such assets? If we do place them, would we get regulatory consent and what proportion of a balance sheet exposure would be sensible?

Conclusion

Although this paper may have seemed like the DeFi edition of 21 questions, it acts as a beacon that illuminates where the potential pitfalls may be for integrating DeFI into the current financial system. It is also apparent that it is a topic of keen interest for the Greengage team, and for many "crypto friendly" institutional financial services colleagues that we have spoken with. We will be closely following this story and are eager (also with those who are interested) to explore these topics further, including within a university context.

We are an ambitious scale-up of digital natives, aspiring to pioneer a new era in digital finance. Working at the intersection of traditional financial services and new digital innovations, we combine broad expertise to provide a highly client-focused experience for today's ever-changing market.

Combining the high-end care and bespoke personal service found in traditional British financial institutions with leading-edge technology, our evolving platform aims to support entrepreneurs, SMEs, family offices and digital asset firms with a wealth of innovative products and services which facilitate cost-effective transactions within and across traditional currency as well as digital assets. Our purpose is to liberate digital finance in the future.

To find out more about this research please do not hesitate to contact us at info@greengage.co

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