DeFi Research 06

DEFI LENDING AND BORROWING

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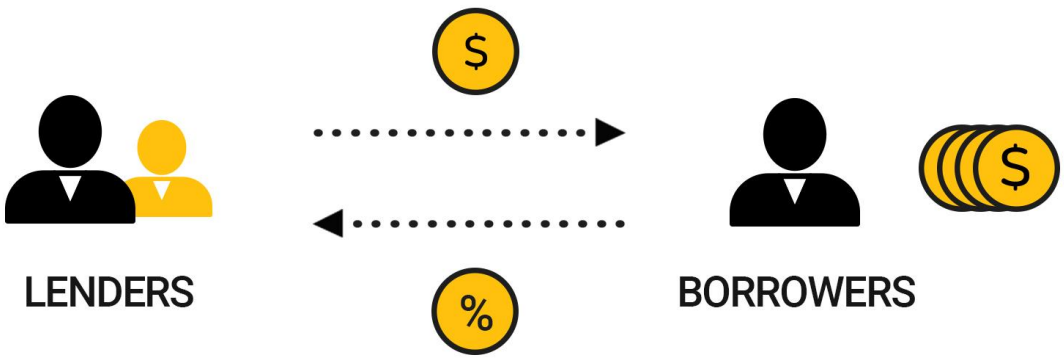
What is Lending and Borrowing ?

Defi Lending and Borrowing Introduction

Now we have an understanding of Dapps ,let us take a closer look on next Defi building Blocks called Defi lending and Borrowing . In this section we go through the most prominent concepts . ↗chapter 1 What is Lending and Borrowing. This serves the basis for ↗chapter 2 What is Defi Lending and Borrowing. ↗chapter 3,explains Challenges in Conventional Lending/Borrowing ↗chapter 4 explains Reasons To Choose DeFi Lending And Borrowing Platform Over Traditional Platform ↗chapter 5 explains Role of DeFi in Lending/Borrowing chapter 6 explains DeFi Lending And Borrowing Platform Properties chapter 7 explains Different Types of Defi lending ↗chapter 8 explains Different Variations of Defi Collateralized loan? ↗chapter 9 explains Benefits of DeFi Lending/Borrowing ? ↗chapter 10 explains Problems of DeFi Lending/Borrowing ↗chapter 11 explains Use cases of DeFi Lending/Borrowing ↗chapter 12 explains How does Defi Lending / Borrowing Works ↗chapter 13 explains Top Platforms for Defi lending/Borrowing ↗chapter 14 explains How to develop defi lending and borrowing platform?↗chapter 15 Conclusion

What is a Lending and Borrowing?

Lending and borrowing is one of the most important element of any financial system. Most people at some point in their life are exposed to borrowing, usually by taking a student loan, a car loan or a mortgage.

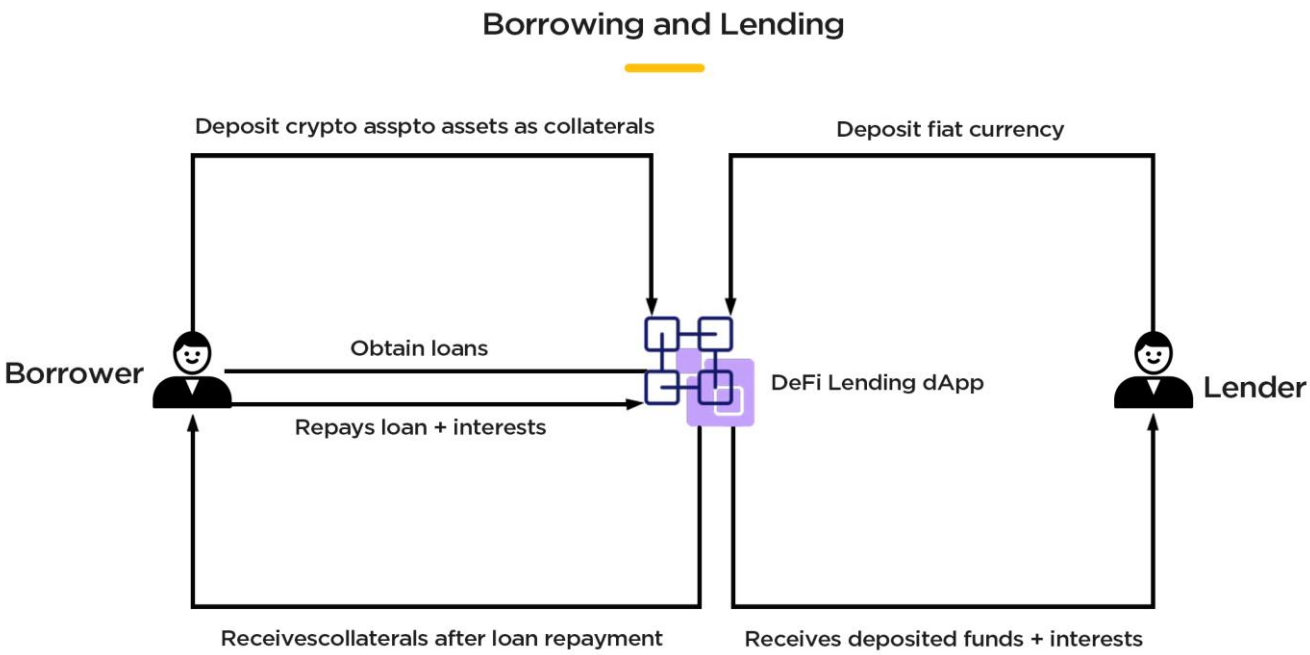


Traditionally, lending and borrowing is facilitated by a financial institution such as a bank or a peer-to-peer lender.

What is Defi Lending and Borrowing ?

Lending are an essential part of the DeFi ecosystem. Decentralized lending platforms are special in the sense that they require neither the borrower nor the lender to identify themselves. Everyone has access to the platform and can potentially borrow money or provide liquidity to earn interest. **Everyone can participate. DeFi achieves this using immutable smart contracts that dictate how funds are handled. DeFi lending Platform allow users to lock their funds in the platform, but smart contracts govern how they work. No third-party can change the underlying code or contracts.**

DeFi lending is based on smart contracts that run on open blockchains, predominantly Ethereum. This is also why DeFi lending is accessible to everyone without a need of providing your personal details or trusting someone else to hold your funds.



Users, who want to become lenders, supply their tokens to a particular money market and start receiving interest on their tokens according to the current supply APY.

The supplied tokens are sent to a smart contract and become available for other users to borrow

Challenges in Conventional Lending/Borrowing

Consider you wish to borrow a sum of amount from a nearby bank. Can you imagine the complications involved in the process? From manual filling out of forms to credit score check, the time it consumes, and the difficulties faced are massive. In some cases, certain banks even misconduct with their customers with a discrimination approach.

The alternate option to banking organizations is private lending and borrowing. Since that cannot be regulated and the parties are mostly untrustable, loanees often encounter conflicts.

Lending and borrowing practices are essential to either maximize our income or meet our urgent demands instantly. But since the existing system is rigged with flaws, is there a way out to borrow and lend funds fast with proper security?

Reasons To Choose DeFi Lending And Borrowing Platform Over Traditional Platform

- ## HIGH-TECH TRANSPARENCY

In a DeFi Lending and Borrowing platform, all the assets are stored in a decentralized blockchain system under the supervision of a smart contract. Due to which, transparency of the transaction is maintained.

- ## FLEXIBILITY AND PROMPTNESS

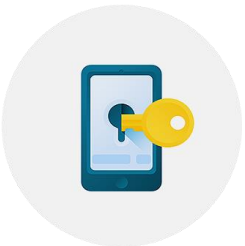
A DeFi lending and borrowing platform work with more incredible speed and flexibility. A user needs to open an account, should have an asset in the crypto wallet, wait for a few seconds to open a smart contract account, and thus initiate the process.

- ## COST-EFFECTIVENESS AND PERMANENCY

A DeFi lending and borrowing platform is ultimately cost-effective with features like immutability, transparency, and speed.

- ## QUICK ACCESS

There is no involvement of any centralized authority, due to which users have immediate access to their assets.



- ## NO CENSORSHIP

A DeFi lending and borrowing platform makes sure that every user on its platform gets an equal right and opportunity to trade in the blockchain.

Role of DeFi in Lending/Borrowing

DeFi plays a phenomenal role in lending and borrowing protocols. Here's how it works for lenders and borrowers.

Lenders:

Users can lend their crypto-assets to any borrower irrespective of their race, nationality, or status. Based on the amount lent, lenders earn respective interest from the borrower. Also, in some lending/borrowing protocols, they also earn additional DeFi tokens for lending the same.

Borrowers:

Borrowers who wish to borrow digital funds are required to deposit their crypto-assets as collateral. This collateral is usually higher than the sum borrowed due to the volatile nature of the crypto market. However, this is solved by stable coins that are pegged to a constant value. Thus borrowers can borrow crypto funds. Their collateral is subjected to liquidation if they fail to repay the borrow the amount.
If the system is decentralized, without any middle-men, how exactly are these activities executed?

Smart contracts:

Yes, smart contracts are pre-coded conditions that execute functions based on the conditions. They collect, deposit, transact and liquidate funds based on the pre-set criteria. Smart contracts cannot be altered once set. Thus, the entire system is automated and made secure.

DeFi Lending And Borrowing Platform Properties

Decentralized loan platforms are special in the sense that they require neither the borrower nor the lender to identify themselves. Everyone has access to the platform and can potentially borrow money or provide liquidity to earn interest.
DeFi lending and borrowing platforms allow users to deposit and lock their funds into smart contracts, from where other users can borrow and pay interest on them. Each loan is collateralized by crypto .
DeFi lending platform properties which makes it unique:

- **Automated**

Smart contracts follow pre-established parameters to issue, monitor and service active loans.

- **Permissionless**

Anyone can lend their assets across the protocol(s) of their choosing at minimal costs.

- **Non-Custodial**

Virtually all DeFi lending protocols do not require users to transfer ownership of their underlying assets. This means they can come and go as they please without any guidance or approval from a third party.

- **Secure**

Major lending protocols have been rigorously audited, meaning that funds supplied to lending contracts are backed by the most robust code in the world.

- **Dynamic**

Most major lending protocols today offer variable interest rates which are automatically adjusted relative to the supply and demand of any given asset.

- **Stress-Free**

Interest earned from lending is collected automatically, meaning there is little to no degree of maintenance required by end-users to earn a passive income on the most popular cryptocurrencies.

Different Types of Defi lending

Decentralized loan platforms are special in the sense that they require neither the borrower nor the lender to identify themselves. Everyone has access to the platform and can potentially borrow money or provide liquidity to earn interest. As such, DeFi loans are completely permissionless and not reliant on trusted relationships

In order to protect the lender and stop the borrower from running away with the funds, there are two distinct approaches:

- ## Flash loans

credit can be provided under the condition that the loan must be repaid atomically, meaning that the borrower receives the funds, uses and repays them – all within the same Blockchain transaction . If the borrower has not returned the funds (plus interest) at the end of the transaction's execution cycle, the transaction will be invalid and any of its results (including the loan itself) reverted. These so-called **flash loans** are a very interesting, but still highly experimental application. Although there are not too many known use-cases besides arbitrage, flash loans could potentially mature to become an important part of DeFi lending.

- ## Collateralized loan

loans can be fully secured with collateral. The collateral is locked in a smart contract and only released once the debt is repaid. Collateralized loan platforms exist in three variations: **Collateralized debt positions, pooled collateralized debt markets and P2P collateralized debt markets.**

• Collateralized Debt Positions

Collateralized debt positions are loans that use newly created tokens while debt markets use existing tokens and require a match between a borrowing and a lending party.

DeFi applications allow users to create collateralized debt positions and thereby issue new tokens which are backed by the collateral. To be able to create these tokens, the person has to lock crypto assets in a smart contract. The number of tokens that can be created depends on the target price of the tokens which are being generated, the value of the cryptoassets that are being used as collateral and the target collateralization ratio.

To illustrate the concept let us use the example of Maker DAO(or Ducato), a decentralized protocol that is used to issue the USD-pegged DAI stablecoin(or KRWD stablecoin). First, the user deposits ETH in a smart contract, i.e., the CDP (or vault). Subsequently, he or she calls a contract function to create and withdraw a certain number of DAI (KRWD) and thereby locks the collateral. This process currently requires a minimum collateralization ratio of 150%, meaning that for any USD 100 worth of ETH that are locked up in the contract, the user can create at most 66.66 DAI(KRWD).

To close a CDP, the owner has to send the outstanding DAI(or KRWD) plus the accumulated interest to the contract. The smart contract will allow the owner to withdraw their collateral, once the debt is repaid. If the borrower fails to repay the debt, or if the collateral's value falls below the 150% threshold, where the full collateralization of the loan is at risk, the smart contract will start to liquidate the collateral at a potentially discounted rate.

• Collateralized Debt Markets

Instead of creating new tokens, it is also possible to borrow existing cryptoassets from someone else.
In other words, For someone to be able to borrow ETH, there must be another person willing to lend ETH. To mitigate counterparty risk and to protect the lender, loans must be fully collateralized, and the collateral locked in a smart contract.

There are two broad categories of Matching between lender and borrower

- P2P
- Pooled

Different Variations of Collateralized loan?

- ## P2P

P2P matching means that the person who is providing the liquidity lends the cryptoassets to specific borrowers. Consequently, the lender will only start to earn interest once there is a match. The advantage of this approach is that the parties could potentially agree on a time period and operate with fixed interest rates

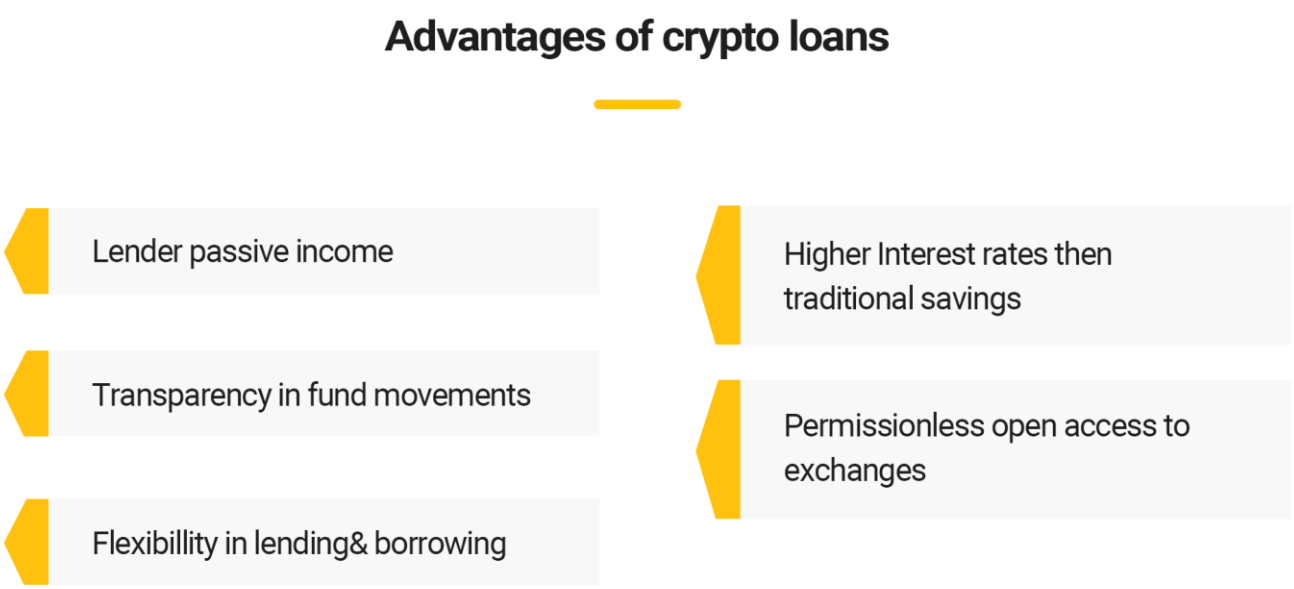
- ## Pooled

Pooled loans use variable interested rates that are subject to supply and demand. The funds of all borrowers are aggregated in a single, smart contract-based lending pool and lenders start to earn interest right when they deposit their funds to the pool. However, the interest rates are a function of the pool's utilization rate. When liquidity is readily available, loans will be cheap. When it is in great demand, loans will become more expensive

Benefits of DeFi Lending/Borrowing

- **P2P**

Users can avail of loans without any hassle like credit check, racial discrimination, or time-consuming process.
Equitable financial opportunities to everyone across the world.
No middle-men. Hence, no disputes.
The lowest transaction fee as the system is decentralized.
Loans can be availed and repaid with profit in less than 15 seconds.
All you need is a smartphone with internet connectivity.
Completely automated system.
Smart contracts make the protocol trustworthy.



Problems of DeFi Lending/Borrowing

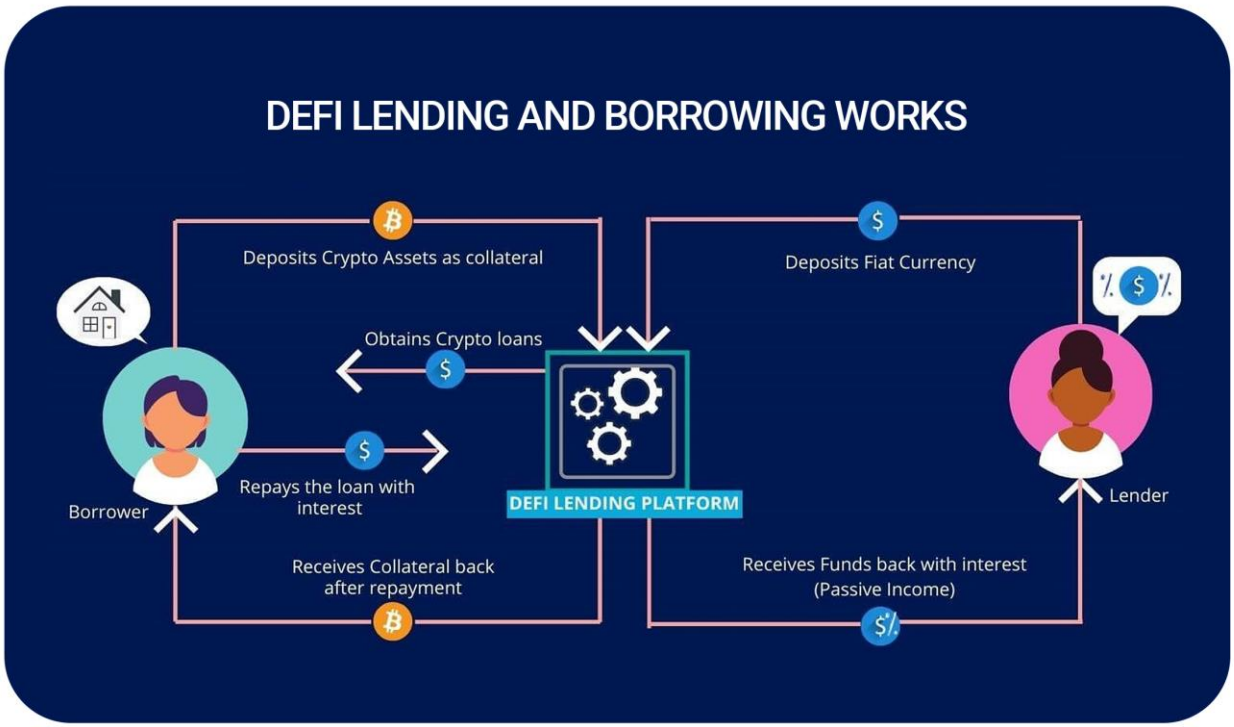
Given the volatility of most crypto assets, you always stand the risk of being liquidated. That means that if for whatever reason, the value of ETH at the marketplace drops significantly and soon what you have locked as collateral is worth less than the loan you took, you will lose the collateral, and the loan is deemed settled.
Now, it does not make sense why you would provide your ETH as collateral while you could easily and instantly convert it to DAI on an
Exchange ,and do whatever you needed to do with the money.

Use cases of DeFi Lending/Borrowing

Use - Cases of

Crypto Loans

How does Defi Lending / Borrowing Works



- ## How does DeFi lending works

DeFi lending – in which a user deposits their funds into a protocol – resembles a traditional cash deposit or investment that accrues interest over time. Lenders not only earn interest on their digital assets, but receive a governance token or DAI as an additional incentive: Compound rewards COMP, Aave generates LEND, Ducato generates KRWD and Maker issues DA

1. Users have to deposit their assets, and they earn interest when someone borrows those digital assets.
2. However, the intermediary is replaced by a smart contract in DeFi lending, and it dictates the loan terms.
3. When a smart contract has been deployed on a blockchain network which is self-executing, and its operations cannot be stopped unless both parties agree to the terms.
4. As DeFi relies on the blockchain, which is transparent and immutable, the lenders earn high returns, where risks can be assessed clearly.
5. The interoperability and standardization of our DeFi lending platform can minimize the cost of the overall system.

How does Defi Lending / Borrowing Works

- ## How does DeFi borrowing works

lending platforms require borrowers to put up crypto assets as collateral. DeFi loans are always over-collateralized. This means that users can only receive a portion of what they put up as their collateral: If you lend 730870.14 USD in ETH, you can acquire up to 548152.60 USD of DAI or other assets (approximately 75% of your collateral). This may seem counterintuitive at first, but it’s necessary to ensure that every user can pay back their loan; if you can’t pay back what you borrowed, you risk the liquidation of your collateralized assets.

1. A borrower can obtain fiat loans from lenders with their crypto assets which acts as collateral if the borrower fails to repay the loan.
2. The exchange of crypto loans occurs when both the lender and borrower accept the rate of interest.
3. As like Traditional loans, here the crypto loans are transferred to the borrower's account, and borrowers pay interest to the lender. When the entire amount is paid back, the lender releases the collateral, which acts as the security.
4. This borrowing process occurs in DeFi lending platforms without the involvement of third parties

Top Platforms for Defi lending/Borrowing

Compound

δY / δX

Dharma

omisego

nüo

connext

Uniswap

0x

DUCATO

Echo

AAVE

kyber network

How to develop defi lending and borrowing platform?

Defi lending and borrowing development solutions follows below mentioned steps to makes the users lending and borrowing the cryptos.

- Analyze and gather the different kinds of cryptocurrencies to lend and borrow.
- Know the interest rate (fixed and variable) of lending and borrowing cryptos.
- Choosing the type of wallet to being the borrowing process. If you don’t have wallet then proceed with “Continue without Wallet
- Choose the token like ETH after that you need to see the offered rates.
- Connecting a wallet with "wallet connect", the most common wallet like MEW wallet or otherwise creating a wallet.
- Add ETH to wallet because need to fund the wallet
- Adding funds on the wallet, the money will be automatically sent to your desired wallet.
- Borrow money option will show after that, the conditions of loan will show, the value and the number of tokens and the borrowing interest rate will display.

Conclusion

Loans in DeFi feed into all kinds of useful activities.

Individual users can earn interest on their holdings without dealing with banks or any actual counterparties.

Traders can borrow and lend actively, making the exchange markets and capital provision markets more efficient.

Companies can combine having long-term speculative positions with short-term usage of borrowed liquidity.

In traditional finance, all of these are separate markets, with sometimes quite long chains of intermediaries and aggregators standing between lenders and borrowers.

Decentralized finance has the potential to sidestep that separation by capital pooling that requires zero human or contractual interaction, as the rules and mechanics of the contracts are baked into the smart contract layer.

Flash loans are a unique addition on top of that, potentially even further democratizing finance by eliminating capital requirements for operations that can be completed within one atomic blockchain transaction.

They also have several rather technical utility usages, such as in repaying part of a CDP by selling off some of the collateral, which is more constrained without flash loan usage.

Beware that DeFi platforms are also not without their risks and you should not invest what you cannot afford to lose. Even though they have had their smart code audited by 3rd party audit firms there is always going to be some inherent risks in code.
Personally, I am more comfortable leaving crypto on decentralized applications where I have more control over my assets.

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