

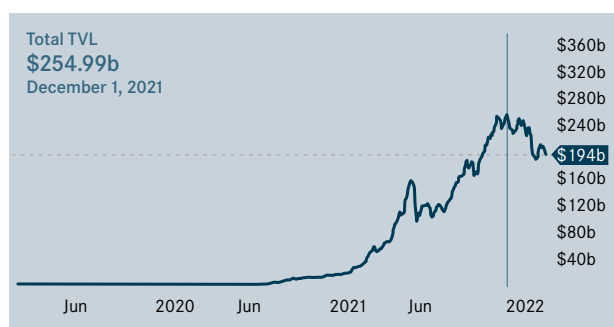


# Decentralised finance (DeFi): the financial system of the future?

**Decentralised finance, or “DeFi” for short, is on everyone’s lips. While some expect the new decentralised financial system to replace the traditional industry logic, others believe it is nothing more than hype and will vanish again. What is certain is that DeFi applications are among the fastest growing sectors of the crypto industry and are now worth billions. Only time will tell whether DeFi actually becomes an alternative financial system. However, it is certainly worth looking into already.**

The basic idea of DeFi is to make financial services cost-efficient, global and freely accessible to everyone at all times. Participants move money, trade assets and execute transactions directly with each other, i.e. on a peer-to-peer basis, without the need for banks, brokers or exchanges as intermediaries. And they are now doing so with great fervour: The total value locked (TVL) stood at more than USD 250 billion at the beginning of December 2021. The TVL indicates the volume of assets tied up in DeFi – and reveals that DeFi services are growing rapidly. DeFi appears to be well on the way to outgrowing the crypto niche and becoming an economic factor that needs to be taken seriously.

## Total Value Locked (TVL) in DeFi



Rapid development: The total value locked (TVL) in DeFi has increased from USD 600 million to USD 250 billion within two years.

Source: [DeFi Llama](#)

## Blockchain as the heart of DeFi

DeFi transactions are processed and verified via a blockchain – a decentralised database that saves all transactions in an encrypted and forgery-proof form. The cryptocurrency Bitcoin was launched as the first blockchain in 2009: An enormous digital ledger that forms the basis of an Internet-based transaction system. While the Bitcoin blockchain exclusively maps value transfers, blockchain technology is capable of much more. All transactions that involve the movement of tangible or intangible goods can be recorded in the data blocks – from the path taken by a good through the supply chain to changes in the ownership rights to a piece of digital art.

## Little works without smart contracts

This is made possible by so-called smart contracts: Computer protocols that allow for contractual agreements and rules to be technically mapped. The crucial thing here is that smart contracts are automated. This means that as soon as a predefined event occurs, the smart contract is executed. Financial intermediaries, who ensure that a transaction is correctly processed as part of traditional financial dealings, are thus no longer required. This is a key requirement for DeFi – and for so-called “dApps”.

## dApps – the engines driving DeFi

Decentralised applications – dApps – are built on smart contracts that reside on the blockchain. They can be programmed at will. Various elements can be put together as needed, much like the elements of a construction kit. Once the dApp has been implemented on the blockchain, it runs on a decentralised basis in a completely independent manner. dApps make blockchain applications socially acceptable, meaning that anyone can use them anywhere just like familiar mobile banking apps, for example, and with minimal transaction costs.

## Does DeFi need Ethereum?

The Ethereum blockchain was the first blockchain to use smart contracts. A wide variety of applications can be integrated within it. Many view Ethereum as a beacon of hope for a decentralised future – and all the more so as with Ethereum 2.0 (expected in 2023) work is under way

on a new version of the ecosystem that is set to get to grips with the three major challenges currently facing the crypto sector: an overloaded network, insufficient storage space and enormous energy consumption.

### The competition never sleeps

However, blockchain users have been waiting for quite a while for the new Ethereum, which is supposed to be more scalable, secure and sustainable. In the meantime, the competition has not been asleep at the wheel: Avalanche and Terra, for example, the number two and three among the DeFi blockchains, are observing rising TVL figures.

### What can you do with DeFi?

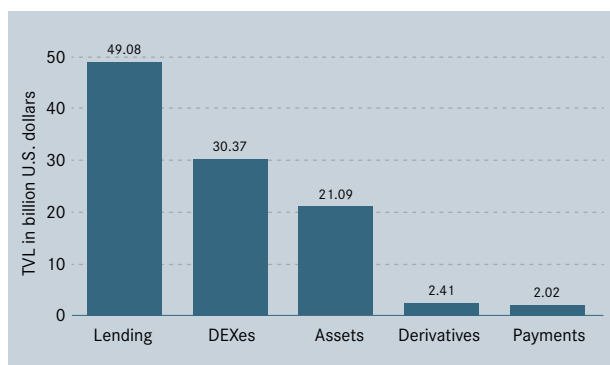
An infrastructure for decentralised financial applications across various ecosystems is needed for DeFi to tap its full potential. There are now already DeFi applications for very different needs:

- **Lending and borrowing:** The lending and borrowing of cryptocurrencies account for the lion's share of DeFi applications. Participants make their coins available to other participants. In return, they deposit collateral in the form of crypto assets and automatically pay loan interest.
- **Decentralised exchanges (DEXes):** The trading of digital assets is the second major focus of DeFi activities. As this trading takes place directly via the wallets of the participants, there is no need for personal data to be stored. Generally speaking, DEXes therefore charge lower trading fees than central exchanges. However, they have not yet reached the speed of central trading systems, as the storing of transactions in the blockchain is complex.
- **Asset trading:** In the traditional financial system, intermediaries take on responsibility for the custody of assets. DeFi allows users to execute purchases, sales and transfers themselves. Asset trading is a fast-growing sector.
- **Payments:** DeFi not only allows for faster and more cost-efficient payment processing. DeFi applications also facilitate more efficient transactions, especially in the area of micropayments.
- **Staking:** Participants make their cryptocurrencies available for the validation of new data blocks – the so-called “proof of stake” (PoS). In return, they receive a certain percentage of the “staked” capital as a reward.

### DeFi builds on transparency and autonomy

But what is the fundamental argument that speaks in favour of DeFi? The traditional financial system cannot do

### DeFi applications



Source: Statista 2022

without intermediaries. All transactions and activities are performed centrally via banks or other financial service providers. The involvement of these intermediaries primarily results in losses in terms of return and speed. DeFi replaces intermediaries with smart contracts and uses a decentralised blockchain that has a tamper-proof design and is open to public inspection. As part of DeFi, participants carry out financial transactions completely anonymously. It is therefore no coincidence that the threshold for “participating” is very low.

### DeFi allows for financial inclusion

According to the World Bank, some 1.7 billion people around the world do not have a bank account, meaning they also have no access to the financial system. DeFi is open to everyone. All that is required to participate is an Internet-enabled device and a wallet. Using a dApp on their smartphone, participants can execute transactions from anywhere in the world. Developed countries also benefit from the financial inclusion made possible by DeFi: In contrast to the traditional financial system, there is no discrimination between the various investors in the decentralised financial system. This means, for example, that those with average salaries also have access to investments that until now had been reserved for the very wealthy. Examples include holdings in unlisted companies and expensive works of art.

### The technical challenges are considerable

While the approach adopted by DeFi is promising, the technical hurdles are high and there is still a significant need for development. The challenges with respect to scalability, storage space and energy consumption are to be solved by Ethereum 2.0. A further milestone is the new

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## These are the differences

| Decentralised finance (DeFi)  | Traditional financial system   |
|---|--|
| Users are autonomous and hold their assets themselves in the wallet                 | Financial institutions hold assets in accounts and custody accounts                |
| Assets take the form of cryptocurrencies, stable coins and tokens                   | Assets take the form of fiat currencies (CHF, USD, EUR, etc.) and securities       |
| Smart contracts execute transactions automatically                                  | Transactions require the involvement of intermediaries                             |
| Transactions are concluded within a matter of seconds/minutes                       | Transactions generally take one to two working days                                |
| Markets are available around the clock  | Markets are subject to restricted opening hours (usually from 9 a.m. to 5.30 p.m.) |
| Markets are accessible to every Internet user                                       | Market access is only possible with a bank account                                 |
| Market is built on transparency: transaction data is accessible to all participants | Clients have to trust the involved institutions                                    |

## “If regulation succeeds in steering DeFi away from the “Wild West” towards an orderly state of affairs, the concept has a real chance.”

Milko G. Hensel, Head Digital Partnerships, Maerki Baumann

“proof of stake” (PoS) consensus mechanism: There need to be sufficient validators within the network that also perform the validation process quickly enough when faced with a large number of transactions. At present, there is not only a lack of sufficiently sized computer centres, but also a shortage of the right chips for the new servers, meaning the process is reaching its physical limits.

### Is the mass of users ready for DeFi?

The technical problems are one issue, while the challenges that DeFi poses to its users are another. The advantage of user autonomy can quickly become a disadvantage if it places an excessive burden on those who are not so tech-savvy. User-friendliness is also an issue with the applications. Here, dApp developers still need to have a rethink, especially as there is no personal support available should users have questions or experience problems.

### Where are the challenges?

Generally speaking, it is part of the nature of blockchain technology that it is very secure against manipulation. Its weak point is the smart contracts that can be faulty and subsequently also lead to incorrect functions within the dApps. One challenge that is set to be solved in the future is the currently still underdeveloped regulatory framework, with regulation even lacking completely in some areas. Consumer protection needs to be improved considerably, especially with respect to lending. Autonomy also means that users are largely left to their own devices when problems arise. There also remains need for clarification in terms of tax law. At present, it is unclear for many applications how they are to be treated by the tax authorities. And there are no interfaces to the national tax systems. In some cases, this means significant additional work for users.

### The decentralised future promises many applications

Blockchain and DeFi have potential – the experts are in agreement on this. While a lot can already be easily imagined, some ideas are still just a vision. The potential areas of use for the technology are certainly exciting:

- **Insurance:** In principle, it is possible to map claims settlements via smart contracts. At the moment, however, it is not yet clear what the external interface should look like. More complex claims such as car accidents cannot simply be verified on a digital basis and transmitted as data for the blockchain.
- **Tokenised land and property shares:** Digitised land registers can easily record a large number of owners for a property. They meet their obligations as property owners on the basis of contracts (maintenance, insurance, repair orders) mapped on the blockchain via a dApp. They also exercise their rights, vote at owners’ meetings and generate rental income in the same way.
- **Emissions trading:** With emissions trading on the blockchain, the issuing and trading of CO2 certificates not only takes place on a decentralised basis, but is also automated. Example: An operator of a coal-fired power plant does business with a provider of CO2 certificates, for example a forest owner, by means of a smart contract. The decentrally stored certificate is verified and can be viewed by everyone. If the forest is cut down, an automatic mechanism kicks in that determines the forfeiture of the certificate and initiates a payment settlement for the power plant operator.
- **Climate protection projects:** Satellites monitor the correct use of subsidies, for example for afforestation measures. Local data providers and observers receive a reward if they transmit data of an appropriate quality to the network.

- **Trade finance:** The blockchain maps commodity chains and money flows from the producer right through to the end consumer on the basis of tokenised products. The latter could thus order a smartwatch directly from the manufacturer rather than via Amazon.

### **DeFi represents an opportunity for the traditional financial sector**

While some experts predict that DeFi will oust classic financial service providers from the market, this certainly won't be happening any time soon, if ever. On the contrary, this change also offers opportunities for established players. After all, traditional banks not only have the regulatory blessing of the supervisory authorities, but also possess considerable financial resources that will allow them to establish the necessary infrastructure and offer their clients and their assets optimum protection. With tokenised assets, banks can also provide their clients in the traditional world with access to interesting new financial products. More decentralised financial activities also create a need for new advisory service providers, including banks who introduce their clients to the DeFi world. Banks can also contribute their expertise in preventing money laundering and identifying clients – taking on a key role in the process. As “gatekeepers” for DeFi, they ensure that only trustworthy individuals or companies participate.

### **Conclusion**

DeFi is an extremely dynamic environment that is developing at a rapid pace. Many believe that DeFi can undermine large sections of the traditional financial system. It remains to be seen, however, how sympathetic the supervisory authorities and regulators will be in their stance towards the new system: How strongly will they regulate the system? How many restrictions will they impose? When will there be legal certainty and how will it be attained? How much DeFi will be possible in the future will depend on the answers to these questions. While there are many reputable companies, there are also many profiteers active in this segment who have no interest in the harm they inflict on others. We are positive that DeFi will not be banned under any regulation introduced. If it succeeds in steering DeFi away from the “Wild West” towards an orderly state of affairs, the concept has a real chance. Only time will tell whether it is the future. Irrespective of this, we firmly believe that banks such as Maerki Baumann will retain their role as stable, reliable and agile providers of financial services – albeit with changed business models.

## Digital assets – everything from a single source

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