

## **Introduction**

This article is going to discuss the differences between bitcoin and the traditional banking system. There are many differences between the two in the fundamentals of how they operate, how money is distributed and 'created', and how the units of account are stored.



## The Traditional Banking System

The traditional banking system works on regular fiat money. The U.S Dollar is the **reserve currency**, and can be printed at will as/when needed, the supply is not capped. They work by banks keeping units of account between them of how much has been transferred. Before, it was quite a local system and in times gone by, it was bartering with coins made of precious metals.

The banking system is open to manipulation of figures, exchange rates, and tampering by high profile bankers and governments, and due to the ease at which traditional money is printed slowly loses its value. Many banks operate on '**fractional reserve banking**', where they only have a supply of cash at any one time for a certain percentage of customers at once, if all customers attempted to withdraw their money at once, the bank would fail.

The banks have certain legal obligations to customers and have the ability to reverse payments in many cases in the event of fraud among other things.

The **traditional banking systems** networks have been worked on for decades, allowing reasonable reliability for digital transactions although clear times can be long. It is well established around the world.

The advantages and disadvantages of the traditional banking system are below:

## **Advantages**

Already an established system.

Bank Cards are accepted nearly everywhere.

Ability to charge your money back in the event of fraud (although this feature can also be used for fraud).

Use of cash does not require a network connection or electricity.

## **Disadvantages**

Open to manipulation of figures.

Fractional reserve banking makes this a higher risk option.

Inflation slowly can erode value of held cash.

Lack of transparency about how the system runs.

Bank fees can be expensive, especially for businesses.

Banks in different countries often work differently and linking them can be tedious, and many use different currencies.

## **Summary**

The traditional banking system is already established, and payments from all major debit/credit cards and cash are accepted almost everywhere although must be exchanged in different countries. Use of cash does not also require an internet connection or any other technology. Manipulation in the banking system has caused incidents such as the financial crash of 2008, bitcoin actually being created due to the manipulation of the banking system and the need for something in the control of the people. The creator left a clue of this intention embedded in the very first block of transactions on the bitcoin ledger.

## **Bitcoin and other blockchain based currency**

### **What is bitcoin?**

Bitcoin was created as a digital currency, by an entity only known as Satoshi Nakamoto. It has a fixed maximum supply of coins and rules on how it operated. It

was created to solve the problem that banks can be manipulated by governments and bankers alike, and also to give people freedom of privacy in their transactions, although all transactions are public on the ledger, provided sending/receiving addresses are kept private and new ones used for different transactions a certain degree of privacy can be expected.

## How it works

Bitcoin works in a fundamentally different way to the fiat system. The bitcoin network has many nodes. These nodes are distributed around the world, run by bitcoin enthusiasts, major mining pools, etc. These nodes are all attempting to solve mathematical problems, while at the same time holding a memory of all the recent transactions that just occurred after the previous problem was solved and the previous memorized transactions are written into a 'block' and recorded on the **blockchain**, which is a distributed ledger.

This is the clever part about bitcoin, the distributed ledger is a type of database called the **blockchain**. The system is designed where all the full nodes hold a full copy of the entire blockchain, currently 7 years old at the time of writing.

The system is designed where most of the nodes must agree that a transaction was valid, or in reality 51% of nodes must do this. The idea being that if at least 51% of the networks computing power is honest and well distributed, the ledger is tamper-proof even by people with wealth and power. Banks are attempting to incorporate their own private blockchain, but as the computing power will be run by the banks themselves, this does not fully guarantee in any way that it is tamper-proof. A currency like bitcoin the ledger is maintained by any individuals and corporations willing to run nodes and validate transactions.

The blockchain is therefore a tamper-proof record of what transactions happened, the fact they did happen, and solves the problem of a decentralized digital currency. The more computing power on separate nodes which is added to the network, the more secure the network is. Any changes to the bitcoin protocol rules must be agreed by at least 51% of nodes, although in reality this figure is higher due to variations in block solving time, and that the other 49% of the network which is still a large majority can reject the rules of the other 51% and still 'work' on its own.

## Fixed money supply

Bitcoin has the ability to be split into many units, called a 'satoshi' at its smallest amount. Currently, 100% of the bitcoin network's nodes agree that 21 million bitcoins are the fixed amount. Unlike Fiat money which can be printed at will by the central banks and governments, bitcoin supply is capped at 21 million whole units which can be broken down 100 million times if needed. They are introduced at a fixed rate every 10 minutes on average. When a miner solves the mathematical problem, they are awarded 12.5 bitcoins at the current writing. This originally started out at 50, halving in 2012, then in 2016, set to halve at every 4 years on average. In 2020, the expected bitcoins per block mined is expected to be 6.25. Once they are all minted, transaction fees will give the miners an incentive to mine and record transactions on the blockchain.

## Transaction Fees

Unlike the traditional banking system, which can charge quite high transaction fees, bitcoin allows transactions globally with very little cost.

The idea that once all the bitcoins are minted, people donating computing power are still given an incentive to do so, while keeping the supply capped and well distributed. The sender of a transaction does include a 'transaction fee' or 'miners fee' with their transactions, typically 0.0001 of a bitcoin or similar, during high network load times this can go up slightly. You can send transactions without a fee and hope miners still include it in their blocks, which they may do at times of low network demand. The small fees add up when thousands of transactions are taking place.

This fee goes to the miner who generates the next block. The fees are the incentive to mine when all the bitcoins have been minted. The bitcoin consensus rules mean that no one person can manipulate transaction fees for their own motive.

## How bitcoin is used

Bitcoin is used by simply using [bitcoin wallet software](#). This generates your wallets public address and the private key that goes with it. This private key must be secured, most wallets typically use a password and allow backup of the private key.

This is what allows bitcoins to be spent from an address and is the only proof of ownership the network rules recognise. You can have a wallet on your own computer, phone, tablet or even a web based wallet or wallets on USB sticks.

You can buy bitcoins from exchanges and individuals or even be paid in them for services. There are an increasing number of **merchants accepting bitcoin**. Currently it co-exists with the traditional banking system, so traditional money is used to buy them typically, or you can earn bitcoins directly, and even use them to store savings and wealth, although due to high volatility this can be a risk and should be researched thoroughly.

The wallet software allows sending of coins to someone else within seconds, although it can take on average of 10 minutes for the transaction to confirm (that is, be recorded on the ledger and not just held in node memory pools).

You can send money from one corner of the earth to another with an internet connection in an instant. Once the transactions are confirmed which is typically within 10 minutes, they are final and cannot be reversed, if you need your money back you are dependent on the merchant for this purpose. Escrow has become popular for this reason for large transactions.

## **Network capacity**

Bitcoin has a fundamental problem which has come to light as demand for the currency has increased. This is called the 'block size' issue. Each block is currently capped at 1MB in size, limiting the amount of transactions which can be recorded on the ledger. Different developers are struggling to agree on what to increase the block size to, although many solutions have been proposed to solve this problem, such as the **lightning network**. At times of peak demand, it can be typical to increase your transaction fee to jump the queue for the limited block space.

The network capacity solution is being worked on by the bitcoin core developers and the community, although the lightning network solution seems the most likely to be implemented, along with an increase in block size.

The advantages and disadvantages of bitcoin will be discussed below:

## Advantages

Trust less, does not require trust of any one entity or corporation to work. Even the creator himself cannot manipulate it to his own advantage on his own.

Cheap to send transactions with no extra charges between countries, money can be sent with ease from one end of the world to another in seconds.

Bitcoin debit cards exist to serve as a link between bitcoin and the traditional system, allowing its use even with merchants who do not accept bitcoin directly.

Free from the manipulation which plagues the traditional banking system.

One easy to use a currency that is global.

Acceptance gradually increasing.

## Disadvantages

Not accepted by the majority of merchants currently, although some major ones support it.

Blockchain databases are expensive to secure, the power consumption of the entire bitcoin network is enough to power a small country, although this is well distributed.

Has legal issues in some countries, such as Ecuador.

Provides an easy way for dishonest entities to move money with limited ability to trace them.

The inability to reverse transactions in the event of fraud.

The risks of a **51% attack**, especially in the case where large mining pools hold a large quantity of the network's mining power, this has been somewhat negated with the opening of many more mining pools.

## Summary

Bitcoin is a relatively new technology, but is slowly gaining traction due to its ability to be tamper-proof and free from the manipulation which cost average people around the world billions during 2008, while the banks were bailed out. The need to put the power in the hands of the people led to the creation of bitcoin. In any country with an internet connection, the bitcoin network can be used, the one exception being North Korea which does not allow its citizens access to the public internet.

It can send transactions around the world with ease, and the price is slowly

becoming more stable as it becomes more accepted in the mainstream. In many places you can buy your coffee with it, you can purchase games on steam with it and in some cases do shopping with it. Using a [bitcoin debit card](#) can complete the link between it and the traditional system while they both co-exist. If you want to be a part of helping free people from the control of rich individuals and corporations, want an easy way to move money around the world for business or personal reasons, using bitcoin can assist in this.

## **Bitcoin vs Traditional Banking**

Both systems are currently co-existing alongside each other. Both look like they are here to stay for the foreseeable future, although the rise of bitcoin is causing banks to rethink certain areas like transaction fees and how they link between countries, among other things. The banking system is open to manipulation while bitcoin is pretty much tamper proof and allows the control of no one individual or corporation.

The chances are the adoption of bitcoin or other [decentralized currencies](#) will increase due to its ease of use and being tamper proof. The developers and community are working on capacity issues which would when the solutions are implemented and coconscious agreed, solve this hurdle.

In poor countries with limited access to the internet or areas without electricity such as many places in rural India for example, there are still hurdles to cross there. Both bitcoin and the traditional banking system will co-exist for the foreseeable future, although bitcoin is potentially the start of the fall of the manipulated banking system and allows a safe place to store savings and cash away from prying eyes, it is easier to conceal a private key than it is to hide funds in bank accounts. This could protect people in the event of malicious divorce cases, among other things provided no link between the two systems is proven and no laws are broken. In traditional banking your every action can be audited and picked up by governments, for both good and ill.

Traditional banks can charge high fees for transactions between countries, while bitcoin can do it for very little cost, anywhere in the world bar North Korea, at the same rate.

Use of a decentralized currency like bitcoin has responsibility, due to the lack of

chargebacks and the privacy it offers over traditional banking, and loss of private keys or being scammed means no one reimburses you and the coins are lost forever in the event of a private key loss. Only if you are ready for such responsibility should you begin with bitcoin, as the banks to take on many of these responsibilities and reimburse customers usually if they are hacked and funds were stolen, etc.

## Conclusion

Overall, both systems are here to stay for the foreseeable future, although bitcoin has the potential to change commerce, and the financial system as we know it. Both systems have their advantages and disadvantages which have been discussed. Both will co-exist for the foreseeable future for the time being, although the world of finances and commerce has the potential for a revolution in how it operates due to the invention of bitcoin and other currencies derived from it and the blockchain has other uses, such as smart contracts, as used in the [Ethereum](#) platform. Bitcoin is an advance in technology, and potentially one that puts more power in the hands of the people, are they ready for it?

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