A brief overview of cryptocurrency

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What is cryptocurrency?

A cryptocurrency is a **digital** form of payment that, like cash, can be used as a medium of exchange for goods and services. The "crypto" in cryptocurrency stands for cryptography which is the use of encryption and decryption to secure data. Cryptocurrency runs on blockchain technology, and this operates as a digital ledger recording transactional information to assist with security.

A vital element of cryptocurrency is its decentralization. The decentralized capability allows individuals to transact (store, send, receive) digitally **instantaneously** through blockchain technology without any interference from a third party. Transactions today, as we know, go in a way where one party transacts with another, and a third party, typically a bank, must confirm this transaction which can take up to a few days to finalize. This issue is prominent in areas of the world where the banking system is weak but, decentralized finance allows one to have and transfer money digitally and instantaneously.

What is blockchain technology?

As often described, the blockchain is an immutable and shared digital ledger that enables the process of recording transactions. The immutability property of the blockchain means a transaction is unchangeable which entails it's always accurate. As expected, the digital ledger property means there is a digital record of transactions that are stored on a computer network.

Each time a transaction occurs, a "block" is recorded. Each block is connected to other blocks that are before and after it, forming a chain of blocks. A block will confirm the time and sequence of a transaction and will connect (like a chain link) to prevent any block from being changed or inserted between any blocks. As a transaction occurs or a block is added, the verification of a previous block is strengthened, making the entire blockchain collectively stronger and more secure, providing the immutability property.

One can think of blockchain similar to this: blockchain to crypto is what the internet is to email; it makes it work securely.

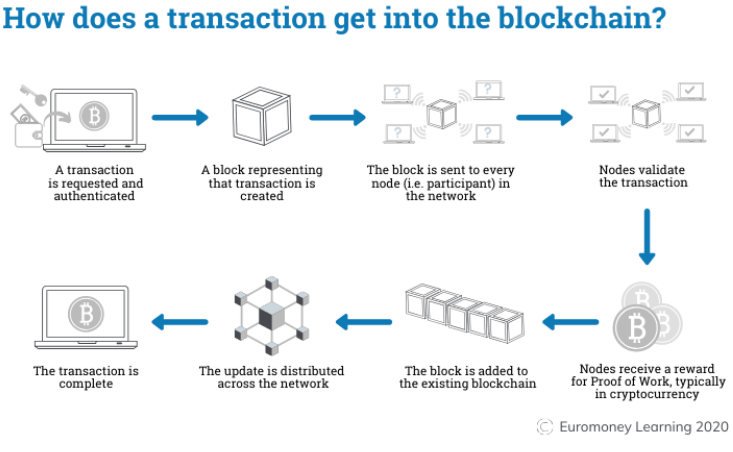


Figure 1: Blockchain process
Source: Euromoney

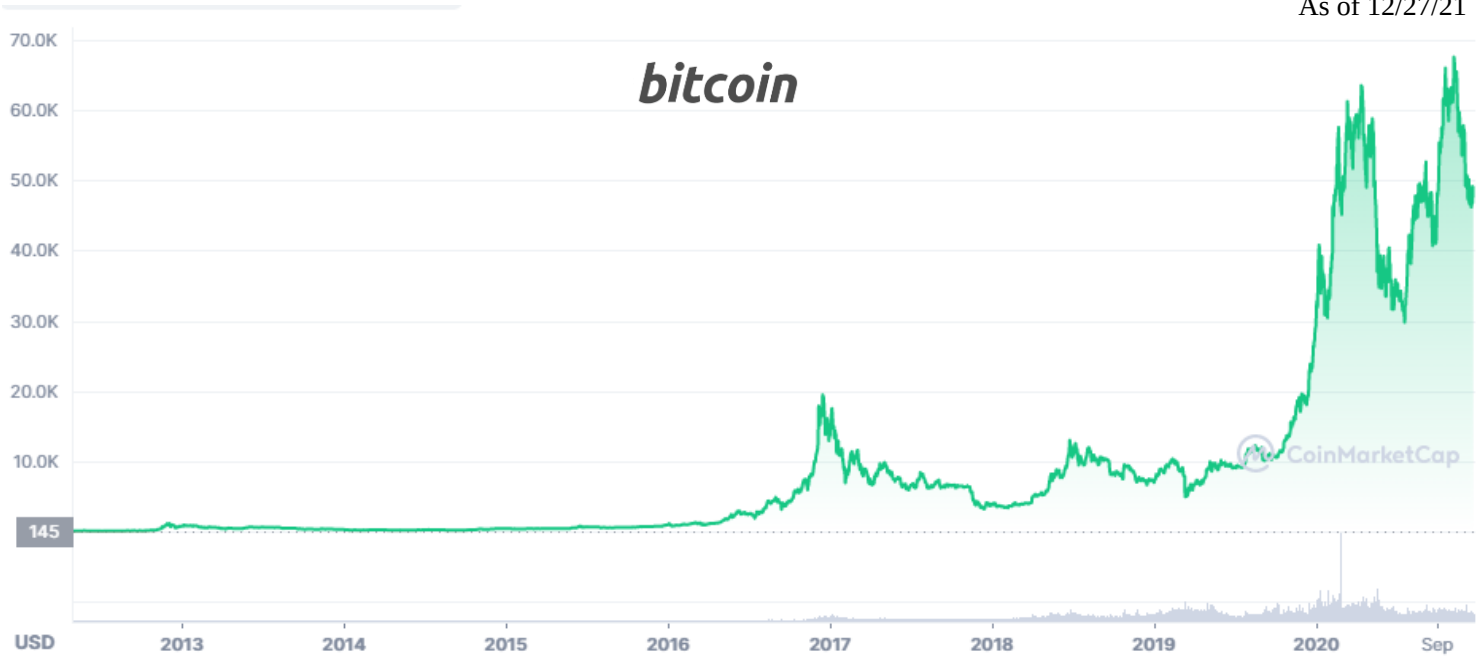
Bitcoin

Bitcoin, at its core and as it was created to be, is a decentralized online peer-to-peer payment network. Decentralization allows users to send and receive Bitcoin instantly without the need for a third party to confirm the transaction thanks to the blockchain. In the Bitcoin whitepaper, regarding the security of transactions, Satoshi Nakamoto, the pseudonymous person or group credited for developing Bitcoin wrote: “Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers” (Nakamoto).

The proposed purpose of Bitcoin is its decentralization property; to operate in a way free of central control. Following this, the future success of Bitcoin is dependent on its ability to be widely adopted by a large network. A clear example of this would be the case that large businesses start accepting Bitcoin as a form of payment for goods and services. Once this happens, it becomes easier for individuals to transact with Bitcoin regularly, further growing the network. The current concern and why it has not become widely adopted is due to the volatility of the currency. The price of Bitcoin fluctuates intraday, making it difficult for businesses to keep on their books. Perhaps as a large number of people widely understand Bitcoin and the regulatory environment settles, the network of Bitcoin can grow larger, and the price may stabilize, allowing room for payment acceptance by businesses.

The coin can function as an inflation hedge due to its perception as “digital gold” with its limited supply of 21 million tokens. In the short term, Bitcoin can serve as a store of value during concerning inflation periods. If wide adoption of Bitcoin occurs, and with limited supply, the laws of supply and demand suggest increased prices, making for a potentially attractive medium to store value. While on the subject of supply, after every 210,000 blocks are mined or roughly every four years, a Bitcoin halving occurs, slowing down the rate of introduction of new Bitcoin into the ecosystem.

$ 49,201
As of 12/27/21



Ethereum

Like Bitcoin, Ethereum is a digital coin that can serve as a peer-to-peer payment method. Beyond payments, Ethereum serves as a decentralized platform that runs smart contracts and enables developers to build decentralized applications on the Ethereum blockchain.

A smart contract is a computerized transaction that self-executes contracts with the terms and agreements between the parties existing through the lines of code. A common use-case example of smart contracts is ordering an Uber ride. Traditionally, within Uber, when one orders a ride, the driver receives payment through Uber, acting as a central authority for facilitating the ride. When introducing smart contracts into this example, a smart contract would automate the process of handling the payments for Uber instead of traditionally using a payment processor to pay drivers. The purpose of Uber using smart contracts and Ethereum is to automate processes, resulting in efficiency and favorable pricing for consumers.

Decentralized applications, also known as dApps, are digital applications on the Ethereum blockchain designed to be independent of a single entity and are not controlled by one person or company. On the Ethereum blockchain, developers are creating dApps to automate smart contracts.

As more businesses implement smart contracts and applications are built on the Ethereum blockchain, the value of Ethereum can rise substantially. Once again, success is reliant on adoption by a large network. There is a case to be made that Ethereum offers significant value as it could be the platform for future transactions to take place since contracts can be directly coded to the network itself. To strengthen its competitive advantage, the network must become cheaper and faster.

Regulatory environment

United States

Cryptocurrency is legal in the United States but, there is no clear regulatory framework and variations in the classification of the asset class. For instance, the SEC views the asset class as a security while the Treasury calls it a currency, and the IRS categorizes Bitcoin as property. A positive note is that cryptocurrencies can be purchased on regulated exchanges like Coinbase.

China

The country has banned both the operations of crypto exchanges and bitcoin mining in the country. The country does not classify cryptocurrencies as legal tender.

India

The country does not classify cryptocurrency as legal tender. It is illegal to issue, hold, mine, and trade cryptocurrency that is not state-backed.

European Union

It is legal to use Bitcoin, and the Union is working to become crypto-friendly by ensuring citizens have access and can safely use cryptocurrencies.

Canada

Cryptocurrency is legal, and in fact, Canada was the first country to approve a Bitcoin ETF, the Purpose Bitcoin ETF.

El Salvador

The only country where Bitcoin is legal tender.

Source: Investopedia

Location	Legal?
United States	Yes
Canada	Yes
European Union	Yes, in most places
China	No
India	No

Classification as a security/asset

For cryptocurrencies to classify as securities, they must pass the Howey Test; a three-part test set as the standard to determine whether a financial instrument is first an investment contract and is then subject to SEC regulation. The three-part test considers an investment contract a security if there is:

1. an investment of money
2. in a common enterprise
3. with a reasonable expectation of profit from managerial or entrepreneurial efforts.

The SEC's stance on cryptocurrencies is that some tokens are considered investment securities.
It is difficult to predict the effects on cryptocurrency if the tokens are classified as securities. It is unlikely that the decentralization element of cryptocurrencies will change. Goldman Sachs has classified Bitcoin as an "investable asset" and, many institutional investors are carrying Bitcoin on their balance sheet. These actions improve the legitimacy of Bitcoin and assist with stabilizing the price of the coin, which can lead to mass adoption. The effects of mass adoption will have increased the demand for Bitcoin increasing its market capitalization and will raise the price per coin.

Ease of use

Buying, selling, and storing Bitcoin is done online through different options. For instance, one can purchase Bitcoin on the Coinbase exchange through the Coinbase app. In the Coinbase app, each account has its digital wallet- one can send and receive Bitcoin with their digital wallet. Furthermore, with the introduction of a debit card with Coinbase, users can make purchases with their digital wallets. There are other popular applications available serving similar functions. Most businesses accept payment of Bitcoin through applications. For example, one can make a purchase at Starbucks with Bitcoin through the Bakkt app.

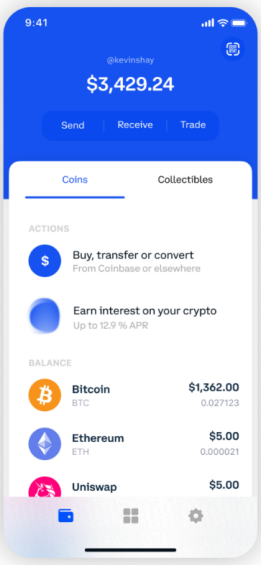


Figure 2: Buying and selling cryptocurrency on the Coinbase application
Source: Coinbase

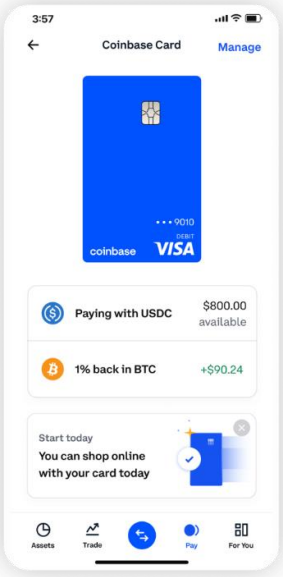


Figure 3: Users can make purchases with their digital wallet.
Source: Coinbase

$ 500,000 Bitcoin

The case for $500,000 per bitcoin deals with the store of value component of Bitcoin. Gold is traditionally seen as an asset to store value and, the asset class has a market cap of roughly $9 trillion. If Bitcoin were to overtake gold as the leading asset for a store of value, therefore achieving a $9 trillion market cap, each bitcoin would be worth close to $500,000. Institutional investors and corporations have already started to diversify into Bitcoin and generally tend to hold for long periods.

Secure storage

For further protection, buyers can store their Bitcoin on a cold wallet, an offline hardware device generating private keys on their own to keep hackers out of reach.

Figure 4: A cold wallet by CoolWallet (left) and LedgerNano. (right).
Source: CoolWallet

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