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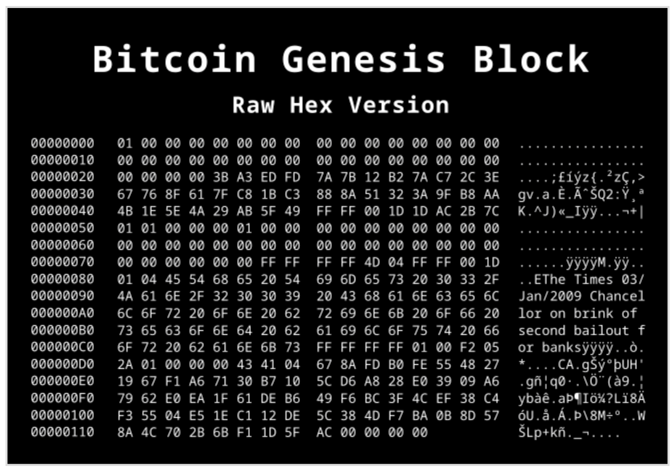
Cryptocurrency

A **cryptocurrency**, **crypto-currency**, or colloquially, **crypto**, is a digital currency designed to work through a computer network that is not reliant on any central authority, such as a government or bank, to uphold or maintain it.[2]

A logo for Bitcoin, the first decentralized cryptocurrency

Individual coin ownership records are stored in a digital ledger or blockchain, which is a computerized database that uses a consensus mechanism to secure transaction records, control the creation of additional coins, and verify the transfer of coin ownership.[3][4][5] The two most common consensus mechanisms are proof of work and proof of stake.[6] Despite the name, which has come to describe many of the fungible blockchain tokens that have been created, cryptocurrencies are not considered to be currencies in the traditional sense, and varying legal treatments have been applied to them in various jurisdicitons, including classification as commodities, securities, and currencies. Cryptocurrencies are generally viewed as a distinct asset class in practice.[7][8][9]



The genesis block of Bitcoin's blockchain, with a note containing *The Times* newspaper headline. This note has been interpreted as a comment on the instability caused by fractional-reserve banking.[1]:18

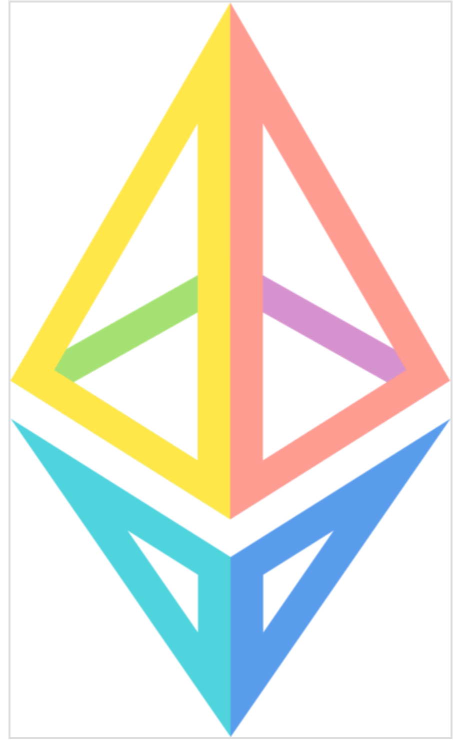
The first cryptocurrency was bitcoin, which was first released as open-source software in 2009. As of June 2023, there were more than 25,000 other cryptocurrencies in the marketplace, of which more than 40 had a market capitalization exceeding $1 billion.[10]

History

In 1983, American cryptographer David Chaum conceived of a type of cryptographic electronic money called ecash.[11][12] Later, in 1995, he implemented it through Digicash,[13] an early form of cryptographic electronic payments. Digicash required user software in order to withdraw notes from a bank and designate specific encrypted keys before they could be sent to a recipient. This allowed the digital currency to be untraceable by a third party.

In 1996, the National Security Agency published a paper entitled *How to Make a Mint: The Cryptography of Anonymous Electronic Cash*, describing a cryptocurrency system. The paper was first published in an MIT mailing list (October 1996) and later (April 1997) in *The American Law*

Stablecoins are cryptocurrencies designed to maintain a stable level of purchasing power.[49] Notably, these designs are not foolproof, as a number of stablecoins have crashed or lost their peg. For example, on 11 May 2022, Terra's stablecoin UST fell from $1 to 26 cents.[50][51] The subsequent failure of Terraform Labs resulted in the loss of nearly $40B invested in the Terra and Luna coins.[52] In September 2022, South Korean prosecutors requested the issuance of an Interpol Red Notice against the company's founder, Do Kwon.[53] In Hong Kong, the expected regulatory framework for stablecoins in 2023/24 is being shaped and includes a few considerations.[54]



The logo of Ethereum, the second largest cryptocurrency

Memecoins

Memecoins are a category of cryptocurrencies that originated from Internet memes or jokes. The most notable example is Dogecoin, a memecoin featuring the Shiba Inu dog from the Doge meme.[55] Memecoins are known for extreme volatility; for example, the record-high value for a Dogecoin was 73 cents, but that had plunged to 13 cents by mid-2024.[55] Scams are prolific among memecoins.[55]

Physical crypto

Physical cryptocurrency coins have been made as promotional items and some have become collectibles.[56] Some of these have a private key embedded in them to access crypto worth a few dollars. There have also been attempts to issue bitcoin "bank notes".[57]

The term "physical bitcoin" is used in the finance industry when investment funds that hold crypto purchased from crypto exchanges put their crypto holdings in a specialised bank called a "custodian".[58]

These physical representations of cryptocurrency do not hold any value by themselves; these are only utilized for collectable purposes.

Architecture

Cryptocurrency is produced by an entire cryptocurrency system collectively, at a rate that is defined when the system is created and that is publicly stated. In centralized banking and economic systems such as the US Federal Reserve System, corporate boards or governments control the supply of currency. In the case of cryptocurrency, companies or governments cannot produce new units and have not so far provided backing for other firms, banks, or corporate entities that hold asset value measured in it. The underlying technical system upon which cryptocurrencies are based was created by Satoshi Nakamoto.[59]

on 9 March 2022, Biden issued an executive order.[160] Followed this, on 16 September 2022, the Comprehensive Framework for Responsible Development of Digital Assets document was released[161] to support development of cryptocurrencies and restrict their illegal use. The executive order included all digital assets, but cryptocurrencies posed both the greatest security risks and potential economic benefits. Though this might not address all of the challenges in crypto industry, it was a significant milestone in the US cryptocurrency regulation history.[162]

In February 2023, the SEC ruled that cryptocurrency exchange Kraken's estimated $42 billion in staked assets globally operated as an illegal securities seller. The company agreed to a $30 million settlement with the SEC and to cease selling its staking service in the US. The case would impact other major crypto exchanges operating staking programs.[163]

On 23 March 2023, the SEC issued an alert to investors stating that firms offering crypto asset securities might not be complying with US laws. The SEC argued that unregistered offerings of crypto asset securities might not include important information.[164]

Legality

The legal status of cryptocurrencies varies substantially from country to country and is still undefined or changing in many of them. At least one study has shown that broad generalizations about the use of bitcoin in illicit finance are significantly overstated and that blockchain analysis is an effective crime fighting and intelligence gathering tool.[165] While some countries have explicitly allowed their use and trade,[166] others have banned or restricted it. According to the Library of Congress in 2021, an "absolute ban" on trading or using cryptocurrencies applies in 9 countries: Algeria, Bangladesh, Bolivia, China, Egypt, Iraq, Morocco, Nepal, and the United Arab Emirates. An "implicit ban" applies in another 39 countries or regions, which include: Bahrain, Benin, Burkina Faso, Burundi, Cameroon, Chad, Cote d'Ivoire, the Dominican Republic, Ecuador, Gabon, Georgia, Guyana, Indonesia, Iran, Jordan, Kazakhstan, Kuwait, Lebanon, Lesotho, Macau, Maldives, Mali, Moldova, Namibia, Niger, Nigeria, Oman, Pakistan, Palau, Republic of Congo, Saudi Arabia, Senegal, Tajikistan, Tanzania, Togo, Turkey, Turkmenistan, Qatar and Vietnam.[167] In the United States and Canada, state and provincial securities regulators, coordinated through the North American Securities Administrators Association, are investigating "Bitcoin scams" and ICOs in 40 jurisdictions.[168]

Various government agencies, departments, and courts have classified bitcoin differently. China Central Bank banned the handling of bitcoins by financial institutions in China in early 2014.

In Russia, though owning cryptocurrency is legal, its residents are only allowed to purchase goods from other residents using the Russian ruble while nonresidents are allowed to use foreign currency.[169] Regulations and bans that apply to bitcoin probably extend to similar cryptocurrency systems.[170]

In August 2018, the Bank of Thailand announced its plans to create its own cryptocurrency, the Central Bank Digital Currency (CBDC).[171]

Various studies have found that crypto-trading is rife with wash trading. Wash trading is a process, illegal in some jurisdictions, involving buyers and sellers being the same person or group, and may be used to manipulate the price of a cryptocurrency or inflate volume artificially. Exchanges with higher volumes can demand higher premiums from token issuers.[219] A study from 2019 concluded that up to 80% of trades on unregulated cryptocurrency exchanges could be wash trades.[219] A 2019 report by Bitwise Asset Management claimed that 95% of all bitcoin trading volume reported on major website CoinMarketCap had been artificially generated, and of 81 exchanges studied, only 10 provided legitimate volume figures.[220]

As a tool to evade sanctions

In 2022, cryptocurrencies attracted attention when Western nations imposed severe economic sanctions on Russia in the aftermath of its invasion of Ukraine in February. However, American sources warned in March that some crypto-transactions could potentially be used to evade economic sanctions against Russia and Belarus.[221]

In April 2022, the computer programmer Virgil Griffith received a five-year prison sentence in the US for attending a Pyongyang cryptocurrency conference, where he gave a presentation on blockchains which might be used for sanctions evasion.[222]

Impacts and analysis

The Bank for International Settlements summarized several criticisms of cryptocurrencies in Chapter V of their 2018 annual report. The criticisms include the lack of stability in their price, the high energy consumption, high and variable transactions costs, the poor security and fraud at cryptocurrency exchanges, vulnerability to debasement (from forking), and the influence of miners.[223][224][225]

External videos

Cryptocurrencies: looking beyond the hype (https://www.youtube.com/watch?v=vo6s1mUjxQQ), Hyun Song Shin, Bank for International Settlements, 2:48[223]

Speculation, fraud, and adoption

Cryptocurrencies have been compared to Ponzi schemes, pyramid schemes[226] and economic bubbles,[227] such as housing market bubbles.[228] Howard Marks of Oaktree Capital Management stated in 2017 that digital currencies were "nothing but an unfounded fad (or perhaps even a pyramid scheme), based on a willingness to ascribe value to something that has little or none beyond what people will pay for it", and compared them to the tulip mania (1637), South Sea Bubble (1720), and dot-com bubble (1999), which all experienced profound price booms and busts.[229]

Regulators in several countries have warned against cryptocurrency and some have taken measures to dissuade users.[230] However, research in 2021 by the UK's financial regulator suggests such warnings either went unheard, or were ignored. Fewer than one in 10 potential cryptocurrency buyers were aware of consumer warnings on the FCA website, and 12% of crypto users were not aware that their holdings were not protected by statutory compensation.[231][232] Of 1,000 respondents between the ages of eighteen and forty, almost 70% wrongly assumed cryptocurrencies were regulated, 75% of

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