CRYPTOCURRENCY 101

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What are cryptocurrencies?

Cryptocurrencies, or cryptos, are digital currencies used as an alternative to fiat currencies (e.g., U.S. dollars). They are neither issued nor guaranteed by any government but instead designed to be decentralized and secured by cryptography.[1] The three largest cryptos by market capitalization are Bitcoin (BTC), Ether (ETH), and Tether (USDT).

Bitcoin emerged in 2008 when it was introduced by the mysterious Satoshi Nakamoto, whose real identity is still unknown.[2] Bitcoin is created by digital mining. In this process, computing hardware is employed to solve complex mathematical puzzles that verify Bitcoin transactions. This computational effort carried out by miners is rewarded with a certain number of Bitcoins. The ownership of Bitcoins and associated transactions is recorded using blockchain technology and shared within the entire network. The method of obtaining cryptocurrency by solving mathematical puzzles is called Proof-of-Work (PoW) and is very energy intensive. The issuance of Bitcoins and their transactions are decentralized, transparent, and secure.

Ethereum was introduced in 2013 as a decentralized blockchain. Ether is the crypto utilized to transact on the Ethereum blockchain. Until recently, Ether was mined using a PoW methodology using graphics processing units (GPUs). In 2022, Ether switched to a proof-of-stake (PoS) approach, where transactions are validated by committing Ether as collateral (stacking) to validate transactions. In the PoS mechanism, Ether is minted as a reward for staking and helping secure the network.

An essential class of cryptocurrencies is stablecoins. Stablecoins are cryptos that are pegged to another currency, usually on a 1-to-1 basis, to enable the use of fiat currency in the digital marketplace. The third largest crypto by market capitalization is Tether (USDT) which is a stablecoin that allows for a $1 for 1 USDT exchange rate. Similar to a real wallet that stores dollars, decentralized digital wallets (online and offline) store cryptocurrencies.

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[1] https://www.investopedia.com/terms/c/cryptocurrency.asp

[2] https://www.forbes.com/advisor/investing/cryptocurrency/who-is-satoshi-nakamoto/

To date, there are more than 13,000 cryptocurrencies.[3] The total market capitalization of the global cryptocurrency market is about $2.63 trillion as of March 26, 2024.[4] The top three cryptocurrencies including Bitcoin ($1.36 trillion), Ether ($0.42 trillion), and Tether ($0.10 trillion) represent about 71.5% of the market value of cryptocurrencies.[5]

How can I be involved in cryptocurrencies?

The fundamental value of cryptocurrencies is open to debate, as they are not backed by any government. Some refer to crypto as "digital gold"[6] and others as "worthless".[7] Nevertheless, crypto market prices are determined by supply and demand, similar to other financial assets. Cryptos are not typically used as a tender for purchasing goods, which are usually priced in fiat currencies, despite some past experiments (e.g., pizza[8] and Tesla[9]). Nevertheless, according to Deloitte, about 2,350 U.S. businesses accept Bitcoin as of 2022.[10] In addition, crypto is used to purchase non-fungible tokens (NFTs) and decentralized smart contracts (e.g., crypto derivatives). Furthermore, interaction with a blockchain (e.g., recording house deeds on a blockchain) involves crypto transaction fees.

Individuals and businesses may also be involved with cryptocurrencies for investment and speculation purposes. There are several ways you can get involved with crypto. You can mine crypto that uses a PoW consensus mechanism. Mining can be accomplished solo but requires tremendous computing power, or you can join a mining pool, where computing power from many users is consolidated, and payouts depend on the percent of computing power provided to the pool. You can stake crypto and earn rewards (in the form of more crypto) for cryptocurrencies that use a PoS consensus mechanism, although you would have to acquire it before staking.

You can buy crypto with cash and trade cryptocurrencies directly on crypto exchanges like Coinbase. This method is the same as buying and selling stocks with your brokerage account, and in fact, many stockbrokers and investment companies, including Fidelity, Robinhood, and PayPal, provide such crypto services. In addition, you can also purchase crypto off-exchange using a digital wallet (e.g., Trust Wallet) and trade crypto using decentralized applications (dApps).

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[3] https://www.coingecko.com/
[4] https://www.forbes.com/digital-assets/crypto-prices/?sh=420a84202478
[5] https://coinmarketcap.com/
[6] https://www.bloomberg.com/news/articles/2023-11-03/cathie-wood-says-bitcoin-btc-is-digital-gold-as-deflation-hedge
[7] https://finance.yahoo.com/news/jpmorgans-jamie-dimon-slams-bitcoin-140037675.html
[8] 10 Years On, Laszlo Hanyecz Has No Regrets About His $45M Bitcoin Pizzas - CoinDesk
[9] Tesla Will Accept Bitcoin as Payment, Elon Musk says. - The New York Times (nytimes.com)
[10] https://www2.deloitte.com/us/en/pages/audit/articles/corporates-using-crypto.html

An alternative way to invest or speculate in cryptocurrencies is using crypto derivatives (e.g., CME Group[11]). Another avenue for crypto exposure is via the recently approved bitcoin exchange-traded funds (ETFs). Finally, investment in cryptocurrency industry-related stocks, such as Coinbase, is also a possible way to get your foot in the door.[12]

What are the risks and uncertainty?

Crypto prices depend heavily on supply and demand, investor and user sentiments, government regulation, and media hype.[13] The cryptocurrency market is much more volatile than the stock market.[14] Furthermore, for cryptocurrencies with small market capitalizations, speculative operations or manipulations may further increase the price fluctuation risk.

Another significant risk stems from government regulation of cryptocurrencies. Regulation poses challenges as cryptocurrencies are designed to be decentralized, secure, encrypted, and pseudo-anonymous. Moreover, cryptocurrency is accused of funding global criminal activities, such as money laundering, terrorism, ransomware, etc.

Despite regulatory challenges, the U.S. government attempts to protect crypto investors (e.g., the cases of FTX[15] and Binance[16]). The fact that governments are attempting crypto regulation is a positive sign of recognizing cryptocurrency as an investment tool or an alternative currency. Per IRS guidelines, income derived from crypto-related activities (i.e., mining and staking) is considered a reportable income, and crypto trading follows the same reporting requirements as stock trading in calculating short- and long-term capital gains and losses. Some countries have chosen to ban crypto mining and transactions (e.g., China) to protect consumers from volatile price swings, potential fraud, and competition with government-issued legal tender.

The key takeaways

Cryptocurrency resulted from innovative digital technologies based on complex mathematical algorithms and raw computing power. There are multiple ways to gain exposure to crypto markets with different risk implications. Crypto investment can be

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[11] https://www.cmegroup.com/markets/cryptocurrencies.html
[12] 6 Best Cryptocurrency Stocks Of March 2024 – Forbes Advisor
[13] https://www.investopedia.com/articles/investing/052014/why-bitcoins-value-so-volatile.asp
[14] Crypto vs. Stock Investing: A Head-to-Head Comparison - Bitcoin Market Journal
[15] https://www.wsj.com/finance/regulation/sam-bankman-fried-trial-ftx-explained-17aaa89f
[16] https://www.reuters.com/technology/binance-must-face-revived-investor-lawsuit-us-over-crypto-losses-2024-03-08/

profitable but also highly risky due to extreme price volatility and the lack of government regulation. All crypto-related gains and losses are reportable to the IRS for tax purposes.

Disclaimer:

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