

## Introduction to Cryptocurrency

By Macauley Kilbane, Summer Analyst

Email was new until it wasn't. Venmo was new until it wasn't. Online Zoom meetings were new until they were the only thing that filled our work schedule. Cryptocurrency (crypto) may



be no different. Its technology and ease of access to anyone who wants to make transactions, may lead it to become a global currency. Electronic payment and digital wallet leader PayPal recently announced their plans to allow buys and sells of cryptocurrency directly from PayPal and Venmo.<sup>1</sup> Digital wallets allow users to store funds, track their payment history, and make transactions to other users. Think of it as a mobile tracking system for your funds, except digital wallets do not require a bank account

with an actual firm. Cryptocurrency relies solely on these digital wallets to maintain balances and make transactions. The announcement from PayPal will likely lead transaction volume of cryptocurrency to increase as it introduces many new faces to the digital-asset industry.

To make cryptocurrency more appealing to the average institutional investor, more regulation and structure may need to come into play. Cryptocurrency would need to become both a medium of exchange and a store of value as the dollar is now. That medium of exchange should be valued in a way where supply and demand can be measured accurately, and crypto arguably does not have sufficient reasoning to its current value. Whether it's a more regulated Bitcoin network or likely an alternative cryptocurrency yet to be created that takes over is the question, but a digital reserve currency is possible down the road. Will it be within the next 5 years? Doubtful, but signs are pointing to sooner rather than later.

To understand the cryptocurrency market, it is essential to start at its core. In the simplest framework, it is a virtual currency and a new form of digital money. What separates crypto from payment systems such as credit cards and wire transfers, is the technology behind it. Traditional government-based currency is reserved in banks and controlled by a central authority. The key feature with cryptocurrency is it's decentralized, meaning no single entity or person oversees it. The decentralized nature makes crypto theoretically immune to government control and interference.

Instead of relying on a central figure, it relies on a technology called a blockchain to confirm and secure each transaction. Think of it as it is, a chain of blocks. The block is the digital

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<sup>1</sup> [https://www.coindesk.com/paypal-venmo-to-roll-out-crypto-buying-and-selling?utm\\_source=newsletters&utm\\_medium=firstmover&utm\\_campaign=&clid=00Q1100000N4WwLUAV](https://www.coindesk.com/paypal-venmo-to-roll-out-crypto-buying-and-selling?utm_source=newsletters&utm_medium=firstmover&utm_campaign=&clid=00Q1100000N4WwLUAV)

information being stored in a public database, and the database is the chain.<sup>2</sup> Blocks store pieces of information about a transaction being made – the date, time, dollar amount, the individual who is participating in the transaction, and everything in between. What adds to the decentralized nature is the protection of a person’s identifying information for most, but not all platforms. Instead of using an actual name, the purchase is recorded using a unique digital signature, almost like a username.<sup>3</sup> So a transaction occurs, is verified by a network of computers, stored in a block, given an identifying code, and then can be added to the blockchain. It becomes available for anyone to see once the new block is part of the larger chain. The digital wallet is where you can store, manage, and keep crypto assets secure after the transaction takes place.

It’s important to note a few things on the crypto trading process. There is no FDIC insurance on these transactions; once it’s added to the chain the transaction is complete. Brokerages such as Fidelity or Vanguard currently do not allow individuals to invest in crypto. These brokerages do, however, allow you to add a digital wallet to your account to view your crypto balance, but again, not to trade. Others such as ever-popular Robinhood, TD Ameritrade, and Coinbase allow cryptocurrency trading with varying commission costs, minimum trade guidelines, and choices of tradable cryptos. Many traditional brokers restrict users to only Bitcoin (BTC).

As seen with the increase in crypto trading availability, decentralized finances (DeFi) are becoming more popular in the digital-asset market. The DeFi industry has expanded to various categories – from payment platforms (Codefi Payments), to credit and lending (Compound Finance), and even crypto derivative trading (Daxia).

As with most things, there are advantages and disadvantages to the system. Some individual investors want reduced censorship and a lower need for trust in third parties. The decentralized nature doesn’t mean transactions within the blockchain are not secure. The blocks are stored chronologically as each new transaction occurs, and it’s very difficult to go back and change the contents of the block. In order to change a single block, a “hacker” would need to change every single block after it on the chain, which would take an incredible amount of computer power and control of the blockchain.<sup>4</sup>



However, that does not mean cryptocurrencies are not susceptible to other variations of manipulation. The lack of regulatory oversight has allowed for market manipulation in the past. It was found that much of Bitcoin’s historic rise in 2017 was due to coordinated price manipulation through another cryptocurrency leader, Tether. Tether was used to buy Bitcoin at key moments when its price was declining to help stabilize its movements.<sup>5</sup> Bitcoin hasn’t been the only manipulation headline either, which remains one of the drawbacks to digital assets overall.

<sup>2</sup> <https://www.investopedia.com/terms/b/blockchain.asp>

<sup>3</sup> <https://www.investopedia.com/terms/b/blockchain.asp>

<sup>4</sup> <https://www.investopedia.com/terms/b/blockchain.asp>

<sup>5</sup> <https://www.wsj.com/articles/large-bitcoin-player-manipulated-price-sharply-higher-study-says-11572863400>

The names that dominate the current cryptocurrency market are Ethereum (ETH), Litecoin (LTC), Ripple (XRP), and cryptocurrency market cap leader Bitcoin. Digital currency's record-breaking year in 2017 was led by Bitcoin's spark to its highest price to date of \$19,783 and it has remained the market leader ever since. According to CoinMarketCap, digital-assets total market cap is just under \$270 billion with 63% being dominated by Bitcoin as of July 10<sup>th</sup>. To put into context, the total market cap of the US stock market is over \$35 trillion,<sup>6</sup> so cryptocurrency still has a long way to go in terms of scale. The relatively small market size compared to government-issued currency and gold means smaller forces create a larger effect on price. These effects haven't deterred the US and other governments from looking into the process and development of cryptocurrency technology.

According to the Bank for International Settlements, central banks are conducting research into digital currencies and experimenting with creating their own known as Central Bank Digital Currencies (CBDCs). Just this week, China announced the testing of their digital Yuan as a payment method on their most popular commuting platform, Didi.<sup>7</sup> The US Office of the Director of National Intelligence has already admitted crypto could undermine the US dollar, and therefore have begun their own research to detail the impacts of the status loss.<sup>8</sup> There are a variety of ways in which crypto could get involved as a reserve currency - as CBDC's, through an already existing crypto such as Bitcoin, or a digital-asset technology we are yet to experience.

To conclude with an interesting timeline, the average lifespan of global reserve currencies within the last five centuries is 95 years. The US dollar has held the position of being the global reserve currency for 76 years since the original arrangement of the Bretton Woods Agreement in 1944. This time frame would suggest there may be a newer form of global currency on the horizon to keep up with technological advances, and signs could point towards cryptocurrency.

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<sup>6</sup> <https://siblisresearch.com/data/us-stock-market-value/>

<sup>7</sup> <https://www.bloomberg.com/news/articles/2020-07-08/china-s-digital-yuan-gets-first-major-test-with-tech-giant-didi>

<sup>8</sup> <https://news.bitcoin.com/crypto-reserve-currency/>