Cryptocurrency A Quick Guide to Buying, Using and Investing

Author, Chris Tomlinson

A Data Science Foundation White Paper

September 2018

---

www.datascience.foundation

Unless you've been living under that proverbial rock, you've at least heard of cryptocurrency – those digital, non-corporeal monetary units that have the world abuzz these days. Bitcoin is probably the most obvious such crypto coin, but there are plenty of others that have sprung up in the wake of bitcoin's success, such as Ethereum and Ripple.

However, chances are good that unless you're a financial expert, and possibly even if you are such an expert, you're not all that clear on what cryptocurrency is, how it works, the risks involved, or even why or how to accept it as payment. Within this guide, we'll explore those topics and more to help you understand how to buy, use and invest with cryptocurrency.

What Is a Cryptocurrency?

To many people, the term "cryptocurrency" might seem pretty self-explanatory, but if you take a deeper look at the subject, you'll likely find that it's more complicated than it might seem at first glance. After all, crypto coins have virtually nothing in common with traditional currency, other than acting as a store of value. Even that similarity can be questionable. So, what is a cryptocurrency?

NerdWallet's James Royal, Ph.D., sums it up pretty well. He explains, "Cryptocurrency is a form of payment that can be exchanged online for goods and services. Many companies have issued their own currencies, often called tokens, and these can be traded specifically for the good or service that the company provides. Think of them as you would arcade tokens or casino chips. You'll need to exchange a real currency for the cryptocurrency to access the good or service."

The Motley Fool offers an alternative explanation. Adam Levy points out, "Cryptocurrency is an electronic cash system that doesn't rely on central banks or trusted third parties to verify transactions and create new units. Instead, it uses cryptography to confirm transactions on a publicly distributed ledger called the blockchain, enabling direct peer-to-peer payments."

Finally, the Daily Telegraph reports that, "Cryptocurrency is a form of digital money that is designed to be secure and, in many cases, anonymous. It is a currency associated with the Internet that uses cryptography, the process of converting legible information into an almost uncrackable code, to track purchases and transfers."

From those definitions, we can glean a few important pieces of information that set cryptocurrency apart from everyday currencies such as the US dollar or the British pound.

1. The currency is digital in nature, and not physical.
2. The currency is not backed by any central bank or other financial institution.
3. The currency can only be used/bought/sold/invested in through the Internet.
4. The currency relies on cryptography to ensure trust, rather than using a third party to foster trust.

The Origins of Cryptocurrency

Bitcoin was the first digital currency to gain widespread recognition, but the concept of cryptocurrency did not originate here. It's actually quite a bit older than that. In fact, the first attempts to create a decentralized currency actually date back to the 1980s in the Netherlands with DigiCash, but those attempts never really got off the ground.

The idea evolved further in the 1990s during the Dot Com heyday, before the bubble burst. FirstVirtual is one example, but there were many others at the time, such as CyberCash. However, it proved to be an idea ahead of its time, and lacking in the necessary underlying technology. Ultimately, it foundered and evaporated, with few people remembering it at all.

It would not be until 2009 that cryptocurrency would once again be explored, this time based on research conducted by a programmer using the pseudonym Satoshi Nakamoto (who actually created bitcoin and blockchain technology). Today, blockchains have grown well beyond the world of digital currency, and offer benefits for a very wide range of situations in which trust must be established but the use of a third party is undesirable.

Bitcoin: The Original and Most Popular Cryptocurrency

To truly delve into cryptocurrency, we need to explore bitcoin a bit more. The original crypto coin, it dates back to 2009 as mentioned. However, it did not gain immediate recognition and traction. In fact, until relatively recently, bitcoin and other cryptocurrencies were not widely accepted by more than a handful of relatively unknown websites, and they were worth very little.

In comparison, a single bitcoin today is worth thousands of dollars, and they are accepted by a growing number of businesses, financial companies, and even state governments. Because bitcoin is the original cryptocurrency, all other crypto coins share most of its characteristics, including its decentralized store of value, and ability to ensure trust without involving a third party (due to support from blockchain).

Altcoins: Exploring Ethereum and Other Options

As mentioned, the success of bitcoin ushered in the birth of a host of other options. No other cryptocurrency offers quite the same value or traction as bitcoin, but each brings something different to the table in addition to acting as a store of value the way a traditional government-backed currency does. In this section, we'll touch on a few of the more successful cryptocurrencies, as well as what they offer.

Ethereum: Ether is the second most popular cryptocurrency, and it operates on the Ethereum network (as opposed to the bitcoin network). Ether is built on the concept of facilitating smart contracts that allow two parties to complete a transaction without a third party to facilitate trust. Think buying a home, or signing a binding legal contract without the need of a notary.

Ripple: Ripple is different from other cryptos in that it is not truly decentralized, and is really best suited for use within the financial sector. According to Forbes, "Ripple isn't truly decentralized, but lightning fast. Ripple has the power to improve on legacy banking systems and help streamline international money transfers."

EOS: EOS is the crypto coin used to power the EOS.IO network, which is designed to support decentralized industrial-scale applications around the world. EOS coin ownership allows the holder to claim resources on the network, enjoy fast processing speeds, and more.

Litecoin: Litecoin is often regarded as bitcoin's younger sibling. It operates in pretty much the same way as bitcoin, with the primary difference being its much lower value. This makes it an ideal option for those interested in testing the waters of cryptocurrency investing without breaking the bank or taking on a serious amount of risk.

Of course, these are just the tip of the iceberg when it comes to cryptocurrencies. There are many, many other options. You also have the ability to purchase tokens (coins) from inpidual companies through an ICO (initial coin offering) although these are much more limited in nature and usability than true cryptocurrencies like bitcoin.

What's a Cryptocurrency Wallet?

With cash, you need a place to store it – that's usually your wallet. The same is true for cryptocurrency. However, this wallet is digital. As VentureBeat explains, "In the same way that cryptocurrency is more or less the digital equivalent of cash, a cryptocurrency wallet is, in a sense, the digital place you stash it. But unlike a physical wallet, cryptocurrency isn't stored literally; what you do is secure your private key for accessing the public address of your cryptocurrency and set transactions in motion."

So, you can think of a cryptocurrency wallet in a similar way to a physical wallet, but it's really more like a key, or even a doorway, giving you access to the cryptocurrencies that you own and that are linked to the wallet. Forgetting your key to the wallet means that you will not be able to access your crypto coins, just like losing your physical wallet would mean not being able to access any cash within it.

You'll find three different wallet types in operation today. These are hardware wallets, software wallets, and paper wallets. Of them all, software wallets are the most common, but that does not mean they offer the features you need. A hardware wallet is generally some type of removable media, such as a USB drive, that you store your keys on. A software wallet is a piece of code that might be stored on your smartphone, or accessible via your desktop or laptop. Finally, paper wallets are physical paper documents with your keys printed on them.

Obviously, each type of wallet has its own pros and cons, as well as its own risks. Paper wallets can be lost, stolen or destroyed. The same thing applies to physical wallets. Even wallet apps can be susceptible to hacking, so it pays to ensure you've done your due diligence where wallet security is concerned.

What You Should Know about Buying and Selling

Cryptocurrency can offer you a definite hedge against the vagaries of other markets, although investing in bitcoin, Ether, Litecoin or other crypto coins is not a decision that should be made lightly. Buying and selling cryptocurrencies requires that you know a few things, and that you have access to a cryptocurrency exchange.

You can buy, trade, or invest in bitcoin and other cryptos, but each strategy is slightly different. We'll begin with buying and selling, and then broaden out discussion in other sections.

Buying and Selling: You can buy and sell cryptocurrencies just like you can traditional commodities. However, you'll need to go about it the right way. The first step is to find the right wallet for you, which comes with a number of caveats as we discussed in the last section. You also need to keep an eye on the market so that you can buy at the appropriate time. The cryptocurrency market is incredibly volatile, far more so than even the stock market. As such, you need to have a plan in mind when purchasing, including how long you want to hold onto your asset before you sell.

A cryptocurrency exchange will let you buy and sell your assets, and you will need to have the appropriate purchase method on hand. In most cases, you can use a credit card or debit card to buy a crypto coin (or a fraction of a coin, depending on your budget). However, be aware that cryptocurrency exchanges do not necessarily accept all credit cards. Coinbase, for instance, does not accept American Express, although it does accept both Mastercard and Visa.

When buying, keep in mind a few things. The price of the coin is certainly one of those, and you'll need to keep a very close watch on the market. Another thing you'll need to watch is the amount charged by the exchange in fees. Coinbase is pretty reasonable, but others, such as Coinmama, charge as much as 6% on top of the price of the coin(s) you're buying.

The same considerations apply when you're selling a coin, but in reverse. You'll want to make sure that you can sell at a higher price than you paid for your coin, so keep a close eye on the markets. As before, watch the amount charged in fees.

The World of Trading

If buying and selling cryptocurrency is not for you, then trading may be a better option. This allows you to take advantage of the price fluctuations of bitcoin, Ether, and all the rest, without the need to actually own the coins in the first place. It's a bit like day trading in the stock investing world – you make your money on the margin, not on actually owning the cryptocurrency.

You might find that trading is the better option for you, particularly if you're looking for some tax advantages. The Telegraph reports, "There are a number of tax advantages to trading over investing. You don't have to pay capital gains on the profits of trading cryptocurrencies, whereas you do if you profit from buying and selling cryptocurrency direct". With that being said, trading can lead to greater losses if you're not following the right strategy.

Investing with Cryptocurrency

Investing with cryptocurrencies differs from both buying and selling, and trading. With buying and selling, you will generally buy and sell pretty quickly. With trading, the pace is also pretty fast. With investing, you will most likely want to adopt a buy and hold strategy that allows you to avoid the tremendous volatility inherent to the daily crypto markets and instead benefit from the overall upward trend that has marked bitcoin, Ether, Litecoin and the rest for the past few years. As with other methods, you'll need both a wallet and a cryptocurrency exchange, but you'll also need a defined investment strategy that allows you to maximize the growth potential here while minimizing your risks.

Accepting Cryptocurrency as an Inpidual or a Business Owner

As cryptocurrencies have become more popular and a bit more familiar, they are also becoming more widely accepted by business owners. Many larger retailers now accept some cryptocurrencies as payment, and there are even states exploring the option of allowing residents the ability to pay their income taxes with cryptocurrencies.

As a Business Owner

There are many factors driving business owners to at least consider accepting bitcoin and other crypto coins. One of those is branding – accepting these digital currencies as a form of payment can help enhance your brand reputation and build recognition. The security offered by blockchain technology is also attractive to merchants, and there's the chance to pay less in terms of transaction fees, although these are pretty volatile as well, and can spike along with demand.

With that being said, there are some risks that business owners face when accepting cryptocurrencies. The American Bar Association points out the issues with licensing and registration, the tax implications of accepting cryptocurrencies, and a number of other considerations that do not apply outside the realm of digital currency.

As an Inpidual

Just as business owners are free to accept a number of payment methods, so are inpiduals. Whether you're selling a classic car you just restored, your home, antiques handed down from an estate, or something else, cryptocurrency could be the right option for you.

As an inpidual, you have fewer hoops to jump through than business owners, although there will most certainly be at least some tax implications (work with a licensed tax expert to minimize those risks). You also only need the same tools you already have for buying and selling, or investing in cryptocurrencies – a wallet, and access to the right exchange.

The Risks Inherent with Cryptocurrency

It's easy to get so blinded by the potential gains associated with bitcoin, Ether and the rest that you fail to take adequate stock of the risks inherent with cryptocurrencies. Make no mistake, there are significant risks here that often outweigh those associated with standard currencies and investment methods.

One of the most obvious risks is the volatility of the cryptocurrency market itself. Yes, bitcoin has gained thousands of dollars in value over a relatively short period of time. However, it's also lost thousands of dollars of value overnight. The same thing applies to all other cryptocurrencies.

Related to this, there is the fact that the entire crypto market is related to itself – a panic associated with one digital asset could easily spill over to another, and then so on, creating a chain reaction of loss. Of course, you also face the risks inherent with an asset not backed by a central bank – there is no insurance here. In addition, cryptocurrencies are illiquid and intangible, meaning that they can be more challenging to manage and hold.

All cryptocurrencies have at least some risk of being affected by hackers and malicious actors, as well. While that risk is low, it is does exist. Wallets are not impervious to hackers, and even crypto markets can be manipulated by bad actors.

Less obvious, but just as important to note, are risks revolving around the way that national governments will deal with these currencies moving forward. Governmental regulation will have a significant impact on your ability to profit from bitcoin or another type of cryptocurrency.

Where Is Cryptocurrency Headed in the Future?

Whether you realize it or not, cryptocurrencies are here to stay. They offer a number of benefits for inpiduals, as well as for businesses and trading groups. The underlying blockchain technology will actually play a large role than the inpidual digital currencies, as well. What does the future hold? It really depends on whom you ask.

Toby Nwazor, writing for Entrepreneur, points out that digital currencies will see more support from institutional investors, but also increasing regulation and ongoing volatility.

Data Science Foundation, Atlantic Business Centre, Atlantic Street, Altrincham, WA14 5NQ
Tel: 0161 926 3641 Email: contact@datascience.foundation Web: www.datascience.foundation
Registered in England and Wales 4th June 2015, Registered Number 9624670

Paul Schrodt, writing for Time, predicts that cryptocurrencies will ultimately replace national currencies, although that will take some time to occur. He expects it to happen by 2030. However, he does argue that it will not work the same way that cash does today, and that it will have a cyclical value.

Finally, Rachel Wolfson, writing for Forbes, shares the point of view of Tim Draper, who believes that crypto will ultimately change the world (for the better). Draper predicts that not only will people be able to use digital currencies in everyday situations, but that they will ultimately replace credit cards and fiat currencies (national currencies like the dollar) completely.

In Conclusion

Cryptocurrencies offer some very interesting benefits, as does the technology that makes them usable in the first place. You will likely see a great deal more involving blockchain technology outside the world of currency in the days to come. However, cryptocurrencies are not going anywhere. They are here to stay, and if the experts we've cited are even a little bit correct, then things are going to be changing in some major ways. Whether used as a traditional investment and hedge against devaluation, as a way to trade and build wealth without ownership, or as a simple buy and sell plan, bitcoin and the rest offer traction, independence, and a way to separate your wealth from national currencies.

Source:

https://www.nasdaq.com/article/what-is-a-cryptocurrency-cm910816

https://www.forbes.com/sites/johnhall/2018/05/20/what-is-cryptocurrency-a-simple-guide-to-understanding-cryptocurrency-and-crypto-news/

https://www.nerdwallet.com/blog/investing/cryptocurrency-7-things-to-know/

https://www.telegraph.co.uk/technology/0/cryptocurrency/

https://www.fool.com/investing/2018/03/11/what-is-cryptocurrency.aspx

https://www.nytimes.com/2017/10/01/technology/what-is-bitcoin-price.html

https://www.forbes.com/sites/panosmourdoukoutas/2018/04/11/bitcoin-ethereum-ripple-and-litecoin-good-or-bad-investments/

https://venturebeat.com/2018/07/20/the-cryptocurrency-wallet-evolution/

https://www.telegraph.co.uk/technology/digital-money/buying-vs-trading-cryptocurrency/

https://www.americanbar.org/publications/blt/2014/11/02_middlebrook.html

https://www.fool.com/investing/2018/04/13/this-hidden-cryptocurrency-risk-is-beginning-to-ta.aspx

https://www.entrepreneur.com/article/314760

http://time.com/money/5178814/the-future-of-cryptocurrency/

About the Data Science Foundation

The Data Science Foundation is a professional body representing the interests of the Data Science Industry. Its membership consists of suppliers who offer a range of big data analytical and technical services and companies and individuals with an interest in the commercial advantages that can be gained from big data. The organisation aims to raise the profile of this developing industry, to educate people about the benefits of knowledge based decision making and to encourage firms to start using big data techniques.

Contact Data Science Foundation

Email:contact@datascience.foundation
Telephone: 0161 926 3641
Atlantic Business Centre
Atlantic Street
Altrincham
WA14 5NQ
web: www.datascience.foundation