

Global Investment Strategy
Team

Cryptocurrency Q&A — The basics

Key takeaways

- Cryptocurrencies are part of a new technology platform that we anticipate could launch the next digital era.

What it may mean for investors

- Investors should not casually dismiss what cryptocurrencies (crypto) represent and what the technology can do.

This report reviews the most common, basic questions we have received on cryptocurrencies. The questions tend to center on how they work, why interest is growing, and common investor fears. It is written for the crypto beginner, not the expert. For those interested in more depth and detail, we will be writing plenty of those in the future. We caution investors not to casually dismiss cryptocurrencies or get lost looking for precise definitions. We believe it is about what cryptocurrencies represent and what the technology (currently) can do. We view the technology as a new way of transacting business.

What are cryptocurrencies?

Cryptocurrencies originated as a new kind of currency in 2009. They are not physically minted or printed, like a dime or a \$20 bill. Cryptocurrencies are digital, which means that they only exist electronically. Using them as a currency requires a digital device such as a smart phone, tablet, or computer.

Where did cryptocurrencies come from?

The first cryptocurrency, Bitcoin, was launched in 2009. It was created by Satoshi Nakamoto to become a new kind of day-to-day currency exchange, but purely digital.

When you say “digital currency”, is this the same thing as me paying with my credit card or paying bills online?

No, these are different things. When an individual uses a U.S. credit card, pays a U.S. bill online, or uses other virtual payment methods, they are likely paying with U.S. dollars. The U.S.’s money and banking system is based on U.S. dollars.

Investment and Insurance Products: > NOT FDIC Insured > NO Bank Guarantee > MAY Lose Value

How are cryptocurrencies different than traditional money, such as U.S. dollars?

Cryptocurrencies are quite different than the traditional money we use today, but this is not necessarily because they are digital. U.S. dollars, in fact, are largely digital today, with only 16% physically circulating. The three main differences between traditional money and cryptocurrencies are how they are 1) used, 2) created and controlled, and 3) secured. Chart 1 illustrates in three dual panels.

- **Use (first panel)**

Traditional money — Typically comes in both electronic and physical forms.

Cryptocurrencies — Exist electronically only. Exchanging them requires a digital device such as a smart phone, tablet, or computer.

- **Creation and control (second panel)**

Traditional money — Created, tracked, and controlled by governments. This is called a centralized system, and it is the way most countries operate with money. Governments control all aspects of their money systems, from printing money (whether physical or digital) to creating banking rules and setting interest rates to tracking fraud.

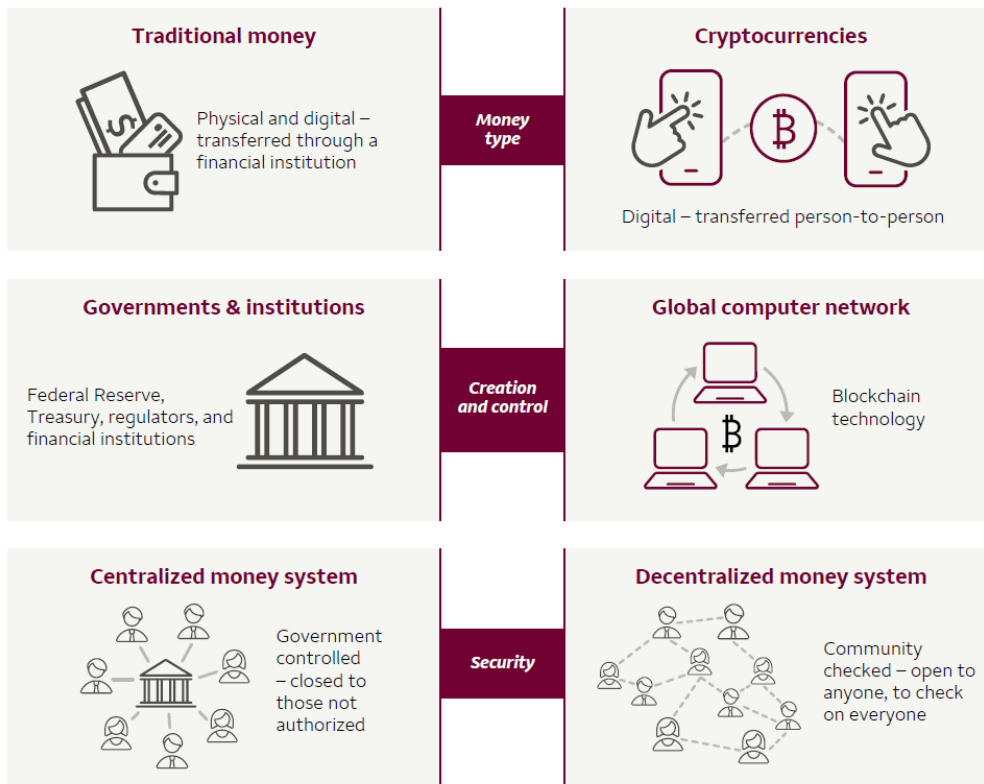
Cryptocurrencies — The vast majority are created outside of government-led money systems. They are built on a unique set of technologies which create, track and control the rules surrounding the currency. Cryptocurrencies reside on a global network of computers, accessible to anyone and everyone interested. This is called a decentralized system.

- **Security (third panel)**

Traditional money — Centralized government money systems are secured by locking out potential bad actors. Only approved government-backed institutions (banks, financial institutions, etc.) have access.

Cryptocurrencies — Decentralized money systems are secured by inviting everyone in to check on one another because they trust no single authority.

What's the difference?



Source: Wells Fargo Investment Institute, June 28, 2021.

How many cryptocurrencies are there?

Today there are more than 9,000. The market capitalization of the industry has grown from literally \$0 in 2009 to \$1.3 trillion today. Bitcoin is currently by far the largest at \$600 billion, accounting for 45% of the industry.

Why has interest grown among investors?

We believe the underlying technology could launch the next digital era. It currently transacts in a wide range of digital value; from money (cash), stocks, art, songs, insurance, land titles, and even votes. The technology may bridge our physical and digital worlds like nothing before it, and countless industries could be disrupted.

What often confuses new investors is having currency in the name “cryptocurrency”. “Digital assets” may be a more appropriate name for an industry that transacts in all manner of digital value.

Can you explain what the technology does?

The basic technology platform is designed to store and transact in digital data, or digital value. The platform is unique in that computer code strictly enforces the rules, which cuts out much human judgement. The technology platform is open and transparent, yet has been secure and private. The four key ingredients are: 1) cryptocurrencies, 2) blockchains, 3) cryptography, and 4) decentralization. We will begin and end with cryptocurrencies. While each cryptocurrency is built a bit differently, it generally works like this:

A piece of digital value is created, called a cryptocurrency. The cryptocurrency is stored on a digital ledger, called a blockchain. All cryptocurrency transactions are tracked, stored, and fused inside the blockchain. This brings us to what has been the first key security feature — removing a transaction from a blockchain can be exceedingly difficult, which has made fraudulently obtaining currency similarly difficult.

Another important security feature has been that blockchains are open for anyone interested to see and scrutinize. It is a security system that invites everyone in to check on one another because it trusts no single authority (this is very different than the centralized way most things are secured today).

A third key security feature of the platform has been that most blockchains are decentralized, which means that they are not held in one central location or controlled by one entity. Copies of the blockchain are spread across a global network of computers, a community of sorts, where anyone interested can keep a copy.

Fourth, individual privacy is protected using “cryptography”. While open community checking is necessary to keep the digital ledger accurate and transparent, no one would use the system if individual privacy was not protected. To fix this, each individual transaction on a blockchain is candy-wrapped in cryptography. Cryptography, which essentially means secret writing, has been used for centuries to protect personal messages and communications. Digital cryptography keeps individual identities hidden and the cryptocurrency accessible only between the intended parties. Accessing the cryptocurrency requires removal of the crypto candy wrapper. To do this, a proof of identity is needed, called a digital signature. This proof of identity is not something that can be influenced by a bad actor. A digital signature is unique to the individual owner, and it is protected by a long passcode (12 random words) known only to the owner.

Lastly, how cryptocurrencies are designed, and ultimately valued, can help secure the platform too. The more valuable the cryptocurrency, the more participants want to join. This typically leads to more computers checking and validating transactions, and a stronger computing network (called hashing power) more resistant to attack.

Can you give us an example of how cryptocurrency may be used?

We anticipate that there are countless physical assets that could be transformed into digital assets. Take house deeds and title insurance, for example. In the future, home buyers may not receive a physical deed but a digital one. It would come in the form of a cryptocurrency, or cryptodeed, which could be held in the owner’s private digital

wallet¹. Buying or selling the home would likely require the owner's personal digital signature to transfer the deed. This cryptodeed could be recorded on the public county blockchain for all to see. The city could regularly update permitted contractor work and property liens, which a new home buyer and mortgage lender could view before making an offer. Title insurance is but one industry that we believe could be transformed by this technology platform that is open and transparent, yet has been sensitive to a customer's private information and secure.

Common fears and risks

What reasons have investors given for not wanting to own cryptocurrencies?

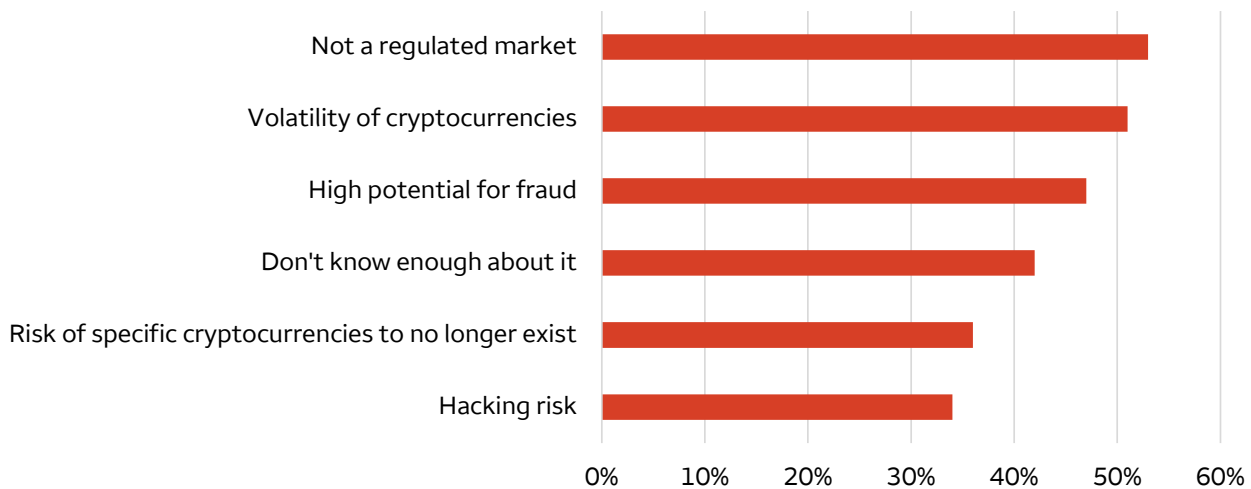
In October 2020, Bloomberg conducted a survey of 500 high-net-worth (HNW) investors on crypto investing. Chart 2 highlights the top six answers that they received. This list is very close to the main fears we have heard.

1. **Not a regulated market.** This has generally been the case with cryptocurrencies. The fear is understandable as future regulation is an unknown. We believe being overly fearful may be unwarranted as global regulation continued to expand in 2020, yet the industry was the best performing major asset class. Additional regulation, for such a young asset class, can mean a clearer regulatory path, which was likely one of the key reasons institutional interest grew in 2020.
2. **Volatility of cryptocurrencies.** We believe cryptocurrencies are new and highly volatile. If they are all that an investor owns, volatility can be a serious problem. Mix in this volatility with a diverse set of assets, however, and volatility may be useful.² Cryptocurrencies were the best-performing major asset class in the past decade.
3. **High potential for fraud.** Fraud does occur in the space. Of the 9,000+ cryptocurrencies in existence, we would not be surprised to find that a high percentage of them eventually fail, whether that be from fraud, scams, or lack of adoption. The industry has been prone to sweeping boom and bust cycles, too. Like other emerging fields though, high failure rates do not necessarily mean that the industry will not survive. In fact, we suspect that the technology and the industry winners may thrive, not just survive.
4. **Don't know enough about it.** Our aim is to change that. That said, we understand investors' concerns. The space is new, highly technical, and not easy to understand.
5. **Risk of specific cryptocurrencies to no longer exist.** This is another legitimate worry. As we stated under reason number three, a high percentage of cryptocurrencies are likely to fail.
6. **Hacking risk.** Millions of dollars in cryptocurrency thefts have been reported through the years. In 2020 alone there were more than 120 reported attacks. Not all hacks are created equal, though. Most hacks do not happen on the blockchains themselves, which is critical to the survival of the industry. Many thefts have usually been due to users not securing their cryptocurrencies properly in their digital wallets or picking the wrong exchanges to store them. As the space matures, we expect that security options and investors' understanding of how to best secure their digital assets will as well.

¹ an electronic device, online service, or software program that allows one party to make electronic transactions with another party bartering digital currency units for goods and services

² "The investment rationale for cryptocurrencies," Wells Fargo Investment Institute, May 2021.

Chart 1. Top reasons not to invest in cryptocurrencies



Source: Bloomberg Research Survey of High Net Worth Investor Attitudes Toward Crypto Investing, October, 2020/Wells Fargo Investment Institute

Are cryptocurrencies used for illegal activities?

Sometimes yes, like in the recent Colonial Pipeline hack. But perspective is needed. All forms of currency have good and bad actors, so the more pertinent question may be, how do cryptocurrencies stack up versus other forms of currency in illicit trades? Recent data shows that a very small percentage of cryptocurrency transactions are illicit or illegal. In fact, illicit activity represented 2.1%, or approximately \$21.4 billion, of all cryptocurrency transaction volume in 2019 and just 0.34%, or \$10.0 billion, in 2020.³ By comparison, nearly \$29.0 billion of credit card fraud occurred in 2019 alone.⁴ And according to Harvard professor Ken Rogoff in his book *Curse of Cash*, most of the \$1.4 trillion in physical U.S. dollars circulating around the globe are used to finance nefarious underground economies.

If cryptocurrency owners are anonymous, won't they eventually be used more and more for illicit activities?

They could, but again we caution patience. The jury is still out on this debate. On the one hand, transactions on a blockchain are often pseudo-anonymous. This means that when an individual transacts on a blockchain, a bunch of numbers are shown (a digital wallet address), not a private name. For very early investors, this can be a strong privacy feature as linking one's digital address to their physical identity can be difficult.

We anticipate the growing popularity of cryptocurrencies, however, has the potential to slowly degrade this privacy feature. The largest digital exchanges in the U.S. are beginning to ask new investors for identification under the Know Your Customer financial regulatory framework. We believe this may make it easier to link a digital address with a physical identity. As more and more new investors buy cryptocurrencies from earlier owners and as transactions are connected in blockchains, one could envision a day when cryptocurrencies become the among some of the most traceable form of currency around the globe. Last month, the Colonial Pipeline hackers learned this the hard way.⁵

³ "The 2021 Crypto Crime Report," Chainalysis, February 2021.

⁴ "Card Fraud Worldwide," Nilson Report, December 2020.

⁵ "State of Crypto: Federal Regulations are Coming into Focus," Coindesk, June 1, 2021.

Risk Considerations

Each asset class has its own risk and return characteristics. The level of risk associated with a particular investment or asset class generally correlates with the level of return the investment or asset class might achieve. **Stock markets**, especially foreign markets, are volatile. Stock values may fluctuate in response to general economic and market conditions, the prospects of individual companies, and industry sectors.

Virtual or cryptocurrency is not a physical currency, nor is it legal tender. Bitcoin and other cryptocurrencies are a very speculative investment and involves a high degree of risk. Investors must have the financial ability, sophistication/experience and willingness to bear the risks of an investment, and a potential total loss of their investment. An investor could lose all or a substantial portion of his/her investment. Cryptocurrency has limited operating history or performance. Fees and expenses associated with a cryptocurrency investment may be substantial. Cryptocurrencies are sometimes exchanged for U.S. dollars or other currencies around the world, but they are not backed or supported by any government or central bank. Their value is completely derived by market forces of supply and demand, and they are more volatile than traditional fiat currencies.

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