

CRYPTOCURRENCIES

27 FREQUENTLY ASKED QUESTIONS AND ANSWERS FOR CURIOUS INVESTORS

Long shrouded in mystery, cryptocurrencies are today on the cusp of becoming adopted by mainstream investors. Soon they will take their place alongside traditional assets like equities, fixed income, and commodities as a common part of portfolios. Here's what curious investors need to know.

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Cryptocurrencies 101

All cryptocurrencies—also known as digital assets—share two key qualities:

First, they are built on blockchains, an emerging digital technology with the potential to disrupt virtually every industry and even the internet itself.

Second, they reflect a conviction that digitalization—a trend that has rapidly accelerated alongside the pandemic—is here to stay. In fact, bitcoin, the most well-known cryptocurrency, has attracted interest from major investors, who see it as a kind of “digital gold.”

1. What's a blockchain?

A blockchain is a technological protocol—a ruleset—that combines cryptography and economic incentives to enforce collective agreement on information in computer networks. Each computer in the network maintains a copy of the information, only updating it when new information is collectively agreed upon. Because broad collective consensus creates security of information, blockchains are particularly useful for transferring value between parties.

2. Why are people saying blockchains could be transformative?

The modern world is built around entities who facilitate trust between parties and who maintain collective information, like records of credits and debits, signatures on contracts, and the enforcement of contracts. These gatekeepers can be found across all industries, including finance, law, media, communications, insurance, and government. Blockchains represent a different architecture: Because collective information is maintained by default, central entities that maintain information become redundant. Cryptocurrencies have shown this can be true for money; other industries are in earlier stages of disruption.

At their heart, blockchains are powerful because they are the continuation of the “story of the internet” and the march towards digitization: The internet is unparalleled in its ability to connect computers globally in real time. It had, until the advent of the Bitcoin blockchain in 2009, lacked the ability to exchange value natively between computers. Now, the design space has been blown wide open.

3. I've been hearing about blockchain technology for years. Why hasn't it taken off yet?

Bitcoin, the first blockchain, has taken off. It's a finished product that in 10 years went from computer code to the first public, open-source, non-sovereign money with a market capitalization over \$400 billion as of mid-December. Further innovations like Ethereum that implements general programmability into money—the ability to include if/then conditions in all transactions—have grown to tens of billions of dollars living in programmable smart contracts.

Blockchains are like plumbing; if they run smoothly, a user shouldn't hear about them. Much of the early blockchain adoption has occurred quietly. Many companies have adopted blockchain-enabled software to improve efficiency of payments, contract execution, regulatory compliance, supply chain management, and more. Corporate interest is growing: According to Deloitte, in 2019, 53% of enterprises said that blockchain technology had become a critical priority for them—a 10% increase over the previous year. Banks like JPMorgan and Santander have already experimented with putting workflow onto blockchains.

Blockchains still have limitations, particularly in meeting the scale and privacy demands of would-be users such as banks, payment processors, and websites. Researchers are implementing scalability improvements to scale to 100,000+ transactions per second. Privacy is the next frontier.

Meanwhile, digitalization is profoundly altering the way we work, learn, interact, spend, and invest. But as the world becomes more connected and digital, tensions are rising around trust, data, privacy, digital

identity, and security. Blockchain solutions for these increasingly prominent issues are being developed.

4. What is cryptocurrency?

A cryptocurrency is a form of non-sovereign money built using cryptography rather than trust between institutions. Cryptocurrencies are generated by “miners” who receive income for providing computational power to the network, which helps to maintain an associated blockchain. Miners of bitcoin and other cryptocurrencies expend computing power to validate and secure transactions recorded on their respective blockchains. As more users join or interact with a given blockchain, demand for that blockchain’s cryptocurrency grows.

5. What is bitcoin?

Bitcoin was the first widespread application of blockchain technology. Bitcoin was conceived as “peer-to-peer” electronic cash for the internet, meaning that people can exchange it without need for a bank, a government, or another intermediary. Transactions on the bitcoin ledger are permanent, auditable, encrypted, and distributed. Importantly, the Bitcoin blockchain has never been hacked.

Since its inception, the supply of bitcoin has been limited by design, and only 21 million bitcoin will ever be issued. An increase in bitcoin’s value will not affect its supply. Bitcoin has emerged as one of the only verifiably scarce, immutable, and capped-supply assets in the world, and it is attracting investment as a “store of value” asset, which is why some call it “digital gold.” Like gold, bitcoin is a potential safeguard against macroeconomic trends and sovereign currency fluctuations. But unlike gold, bitcoin lives on the internet: It can be transferred more quickly, it’s easier to store, and it’s more easily divisible. Bitcoin also has more growth potential than gold; its market cap stands around \$400 billion as of mid-December, while gold represents a \$12 trillion market.

6. What are Web 3.0 assets?

These assets are primarily meant to support the emerging decentralized internet known as Web 3.0. After bitcoin,

the second-most popular cryptocurrency is ether (ETH), the digital currency of the Ethereum blockchain. Ethereum was the first platform for the building of decentralized applications using “smart contracts”—self-executing code that automatically implements the terms of agreements between parties. These contracts have the potential to streamline processes across the business world.

Developers have built hundreds of decentralized applications on the Ethereum platform in areas including finance, commerce, and social networks. ETH miners provide the computing power for the execution of smart contracts, and demand for these applications indirectly drives demand for ETH. Smart-contract blockchains such as Ethereum may become foundational for the decentralized internet.

7. What are digital payment assets?

The race for digital payments broadly splits into two categories: central bank digital currencies (CBDCs) and “stablecoins” on public blockchains.

Bitcoin forced central banks to recognize that cryptographic payment rails are more efficient than legacy payment rails. The announcement of Facebook’s Libra (now Diem) further underscored that point. Now, more than 80% of central banks globally are studying or developing their own CBDC according to the Bank for International Settlements. CBDCs are blockchain-inspired, but do not need to live on blockchains. According to a European Union task force, CBDCs stand to “provide state-of-the-art payment services”, “increase choice, competition, and accessibility”, and “reduce overall costs and ecological footprint of the monetary and payment systems.”

On the other hand, stablecoins—dollar-pegged cryptocurrencies like USDC, Tether, Dai, Celo, and Diem—live on public open-source blockchains like Ethereum and have grown to more than \$20 billion in market size, up 213% from \$6.7 billion on January 1, 2020. Stablecoins are cryptocurrencies with reduced price volatility, making them more suitable for exchange. Celo, a promising startup out of San Francisco, built a blockchain specifically tailored to mobile-first transactions and aims to serve 1.1 billion users who have smartphones but lack access to banking services.

Why Now Is the Time for Cryptocurrency

Digitalization was already transforming our lives even before the pandemic forced us to do almost everything online. As people and companies demand more and more from the internet, they will require it to be fairer and more efficient. Blockchain technology has the potential to create a new iteration of the internet, known as Web 3.0, and cryptocurrencies are essential to powering the blockchain. Therefore, investment in cryptocurrency is a long-term bet on the future of digitalization.

While it has accelerated digitalization, the pandemic has also contributed to financial and economic destabilization around the world. Investment in cryptocurrencies—and bitcoin in particular—could be a hedge against the economic side effects of the pandemic and the resulting government stimulus responses.

8. Why should I consider an alternative asset like bitcoin? The stock market has been resilient, even through the early months of the pandemic.

Alternative assets may be a good idea right now because of—not despite—the U.S. stock market's recent positive performance. After all, this bull run will not go on forever; the real economy is hurting due to the pandemic, and corporate debt has ballooned. In a recent survey, 84% of Fortune 500 chief financial officers said they believed the stock market was overvalued.

Stock market values may be artificially inflated by government action. The U.S. Federal Reserve (along with other central banks worldwide) has slashed interest rates to stimulate the economy, increasing the appeal of stocks relative to bonds. It has also borrowed and printed money at a historic rate: The U.S. government has spent a record \$3 trillion on pandemic stimulus and support initiatives, and global pandemic efforts have already exceeded \$20 trillion, according to Bank of America. The U.S. deficit has soared to a new high, and many economists believe the spending will eventually spur a long wave of inflation that could be exacerbated by global trade tensions and their effects on the price of imported goods.

Many investors are seeking a hedge asset that will rise in value if inflation harms their other assets. Common inflation hedges include real estate, U.S. Treasury Inflation-Protected Securities, commodities including precious metals and—increasingly—bitcoin.

9. What makes bitcoin attractive as a hedge?

As a hedge, bitcoin is perhaps best compared with gold; quantities are limited and no government

controls the supply. Both assets can potentially protect investors against harmful government actions.

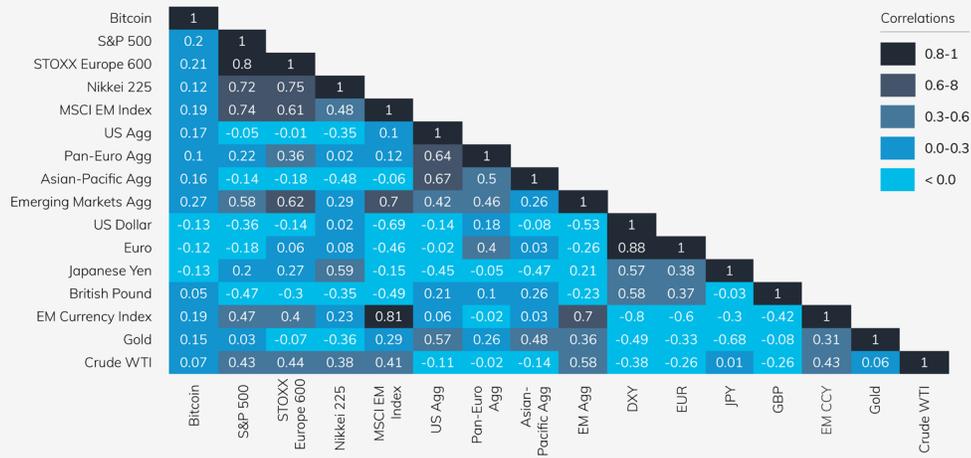
But bitcoin also benefits from being disinflationary. Bitcoin's underlying code limits the maximum amount of bitcoin that will ever exist to 21 million. Today, roughly 18 and a half million bitcoin has already been issued. Currently, since the most recent halving in May, around 900 bitcoin are issued per day. About every four years, the supply of bitcoin issued as mining rewards gets cut in half, until eventually no more supply will be issued—a process estimated to take about another 120 years. In contrast, studies show that gold mining tends to accelerate as the price of gold increases.

One measure of a hedge is its lack of correlation to the more common assets in investors' portfolios. A good diversifier is an asset that doesn't move in tandem with other assets. Here, bitcoin shines: Over its 12-year history, bitcoin has demonstrated a very low or even slightly negative correlation to most major asset classes, including the S&P 500, European stocks, U.S. bonds, and major currencies. (In mid-2020, bitcoin's correlation to traditional assets was slightly elevated due to the rush for liquidity that took place in March and the subsequent recovery experienced across all asset classes. Still, over its history, bitcoin is broadly uncorrelated.)

10. If bitcoin is "digital gold," why not just buy gold? More people are trading in that market.

Unlike gold, bitcoin is a fully digital asset that can be effortlessly stored, transferred, and divided. And also unlike gold, bitcoin is a growth asset, with tremendous room to expand. Bitcoin's market capitalization is around \$400 billion as of mid-December; by contrast, the total value of the gold market is \$12 trillion. Bitcoin's value has soared

ASSET CORRELATIONS: BITCOIN MAKES A SMART HEDGE



Source: Bloomberg and Galaxy Digital Research. Correlations calculated from December 2013 – August 2020.

over the past 10 years, and even if only a small fraction of today’s gold investors add bitcoin to their portfolios, its trajectory will still have a long way to go.

As an investment, bitcoin is particularly popular among millennials who are just starting to build significant investable assets. One survey found that bitcoin is among the top five holdings for millennials, on par with stock holdings of some of the best-known tech giants.

11. How can bitcoin be a “hard asset” when there’s nothing physical backing it? Can’t it just disappear?

Physical assets can be seen and touched, but they can still disappear—they can be stolen, lost, confiscated, degraded, or destroyed. Fixed-code cryptocurrency is digital, but it is still a real asset. Bitcoin transactions are permanently and publicly recorded on an immutable ledger, and the transactions are cryptographically secured and validated.

Bitcoin and other cryptocurrencies are sometimes traded on exchanges or kept in digital wallets, which have occasionally been subject to hacks and fraud. But the Bitcoin blockchain itself has never been hacked, and today investors can have the cryptographic keys to their bitcoin stored securely offline by a professional custodian. In July 2020, the U.S. Treasury Department said it would permit banks to supply “cryptocurrency custody services” to customers. This paves the way for major banks to allow customers to store, borrow, or lend cryptocurrency.

12. Why should I invest in such a highly volatile asset?

The total value of bitcoin and the number of businesses using it are still relatively small, so events or trades can have a big

effect on the price. Even with 12 years under its belt, bitcoin is still a relatively new asset. Savvy investors in new asset classes accept higher risk in exchange for higher potential reward, and they size their investments appropriately.

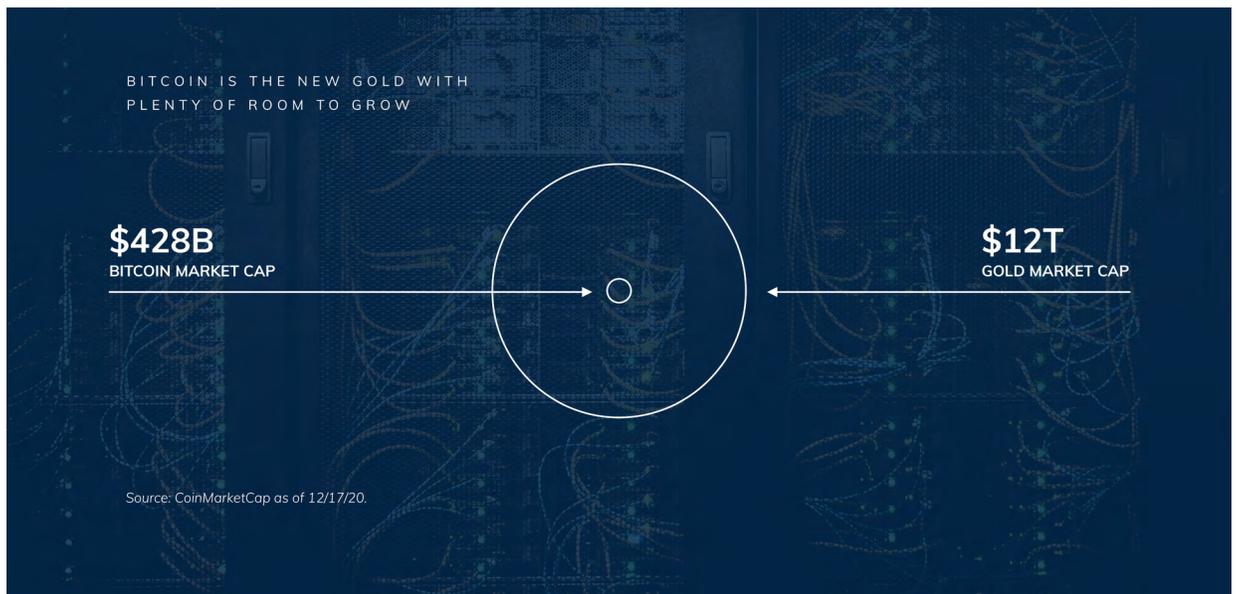
Bitcoin’s volatility is likely to decline as bitcoin’s market matures and more experienced and established investors establish positions. For example, two of the largest U.S. conventional commodities exchanges, the Chicago Board Options Exchange and the CME Group exchange, now offer bitcoin futures, and CME has also launched federally regulated bitcoin options. Although the average investor never trades in these instruments, they’re popular among professional traders, whose educated judgments may help moderate bitcoin’s volatility going forward. In 2020, bitcoin routinely registered new lows in 30-day annualized volatility, and its volatility has even slipped below that of the S&P 500 at times.

If you step back from the peaks and valleys, bitcoin has been a superior performer over the longer term. In fact, bitcoin has outperformed all major asset classes over the last one-, five- and 10-year periods, according to Galaxy Digital Research.

13. What does the “smart money” think about bitcoin and cryptocurrency?

Major university endowments were some of the first institutions to make significant investments in cryptocurrency. In 2018, Harvard and Yale were reported to have invested in cryptocurrency funds, and in 2019, the University of Michigan followed suit. In a survey of 150 endowments in 2018, 94% said they had invested in crypto-related initiatives.

In a pre-pandemic survey of 800 U.S. and European institutional investors, 36% said they were already



invested in digital assets, and six out of 10 agreed that they have a place in their portfolio.

More recently, in a May 2020 letter to investors, renowned hedge fund manager Paul Tudor Jones predicted that bitcoin would be the best-performing hedge against what he called “the Great Monetary Inflation,” and disclosed a 1%–2% allocation to bitcoin in his portfolio to protect against the potential decline of the U.S. dollar. Famed hedge fund manager Bill Miller of Miller Value Partners has also bought bitcoin, and Renaissance Technologies’ highly successful Medallion Fund has reported an interest in bitcoin futures.

Some companies are following suit: In 2020 MicroStrategy, a publicly traded business intelligence firm, bought \$425 million in bitcoin, declaring it preferable to cash as a reserve asset. MicroStrategy added \$50 million to their position in December, and is raising \$400 million to buy even more. Digital payment company Square has bought \$50 million, declaring that the time was right to diversify its US dollar-denominated balance sheet.

Wealth managers for individual investors are also waking up to the potential benefits of bitcoin. Galaxy Fund Management reports that in a December 2020 survey of RIAs, 62% said they are likely to allocate client portfolios to bitcoin within the next 12 months.

14. Why invest in decentralized internet (Web 3.0) cryptocurrencies?

Bitcoin is only the tip of the iceberg, however. Web 3.0 cryptocurrencies support the development of a decentralized internet—a more efficient, reliable,

and secure internet that returns control to its users (see previous FAQ). How does that work?

Here’s one example: People who help maintain the Ethereum blockchain earn its cryptocurrency, ether.

The Ethereum blockchain is used by developers to build decentralized apps. The more developers that use Ethereum, and the more people who use its apps, the greater the demand for ether as an instrument to pay for computational power on Ethereum.

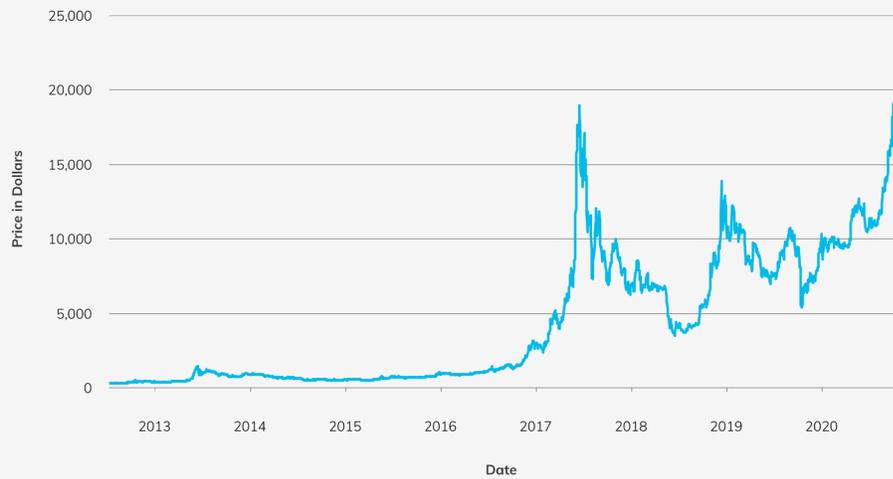
Ether has become the second-largest cryptocurrency (after bitcoin) on the strength of the Ethereum platform; developers like Ethereum for its broad set of development tools and large community of experienced programmers. Another sign of Ethereum’s staying power is the formation of the Ethereum Enterprise Alliance, which includes many of the biggest names in banking, technology and energy, and is dedicated to developing use cases for Ethereum.

15. Why invest in digital payment assets?

The global financial industry is ripe for disruption. Payment systems are inefficient, error-prone, and insecure. Underserved people who lack government identification or access to a banking institution are often excluded entirely from the financial system. More than 1.7 billion adults globally lack bank accounts—a signal example of what the late innovation scholar Clayton Christensen called “nonconsumption”—and a tremendous market opportunity.

Digital payment assets are increasingly built upon blockchains, which promise to make finance more efficient and accessible to everyone. Stablecoins designed on

BITCOIN'S ROLLER COASTER RIDE



Source: Bloomberg. From January 1, 2012 through December 17, 2020.

public blockchains and blockchain-inspired central bank digital currencies will open financial services to a new class of users. Technology researchers at Celo, for example, are optimizing for mobile-first payments.

Generally speaking, digital payment asset investment is a bet on the disruption of the finance industry and the power of decentralized finance. That bet may sound speculative, but consider how the pandemic has accelerated the adoption of

digital wallets and payments. The public's growing comfort with handling their finances entirely digitally should help to promote the acceptance of digital payment assets.

It may be impossible for ordinary investors to predict which digital payment assets will be successful in the long run—but they don't have to. Instead they can diversify within the class and rely on an index fund that automatically chooses the winners based on market capitalization.

Cryptocurrency Grows Up

Cryptocurrencies were born in the minds of programmers trying to solve real problems: how to transfer value efficiently over the internet, and how to protect value from the inefficiencies of banks and governments.

Today, crypto isn't just a means of exchange—it's also an investable asset. There have been some growing pains along the way, but farsighted investors increasingly see crypto as a hedge against financial destabilization, a bet on the future of digital transformation, or both.

16. Why were cryptocurrencies developed?

Prior to the advent of cryptocurrency, conventional financial technologies like online payment apps worked with traditional currencies and established financial and payment systems. These apps involve a whole host of intermediaries, including governments that can manipulate the value of currency and banks that charge fees and have been known to compromise customer data.

Cryptocurrencies, by contrast, are built on cryptography—code for storing and transmitting data so that it can be read only by those for whom it is intended. They make it possible to transact globally and instantly, without banks or governments acting as intermediaries.

In the wake of the financial crisis that began in 2008, trust in the financial system plunged. In November 2009, a programmer or programmers using the pseudonym “Satoshi Nakamoto” announced the development of bitcoin, an electronic cash system “based on crypto proof instead of trust”:

“The root problem with conventional currency is all the trust that's required to make it work,” Nakamoto wrote. “The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust. Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve. We have to trust them with our privacy, trust them not to let identity thieves drain our accounts. Their massive overhead costs make micropayments impossible.... With e-currency based on

cryptographic proof, without the need to trust a third-party middleman, money can be secure and transactions effortless.”

Since then, more than a thousand other cryptocurrencies have been developed. Most are intended to power blockchain applications or to facilitate more efficient or secure financial transactions.

17. How is bitcoin “mined”?

In a traditional financial transaction, a middleman is charged with executing and validating the trade. The middleman is entrusted with personal data and takes a profit for the work. On the Bitcoin blockchain, that work is done by a network of “miners” who are rewarded with bitcoin units. Miners run powerful computers tasked with solving a complex mathematical computation that cryptographically assures the security of a transaction and adds it to the blockchain's ledger.

The computers' heavy use of electricity to mine bitcoin has led some to criticize bitcoin's contribution to climate change. However, Cambridge University's Alternative Finance Center found in a recent benchmarking study that renewable energy—particularly hydropower—accounts for 39% of its energy mix. Roughly two-thirds of bitcoin mining takes place in China, with about 10% occurring in China's Sichuan Province, where hydroelectric dams produce a surfeit of energy. Bitcoin has enormous potential as a sink for waste energy, where overproduction during low-demand hours leads to surplus. Along those lines, bitcoin mining is increasingly used as an alternative to natural gas flaring.

The world's second-largest cryptocurrency, ether, plans to switch to a different type of mining that promises to reduce power usage by 99%.

18. Isn't bitcoin often used by criminal enterprises?

This view is outdated. Just 1.1% of all cryptocurrency transaction volume in 2019 resulted from illicit activities like scams, according to a study from Chainalysis, a blockchain analysis firm. By comparison, illicit activity represents 8%–15% of the global economic product—virtually all of it using traditional currencies. Far more people use cryptocurrency as payment, investment, or a store of value than for criminal activity.

19. Haven't cryptocurrency owners lost money through hacks?

Hacks or fraud have occurred on unsecured, unregulated exchanges over the years. In the most well-known example, Tokyo-based exchange Mt. Gox closed in 2014 after one of the largest such hacks. But the industry has matured rapidly since the 2017 bitcoin bubble.

Some exchanges stored the private “keys” to cryptocurrencies online, where they could be stolen by hackers. But today, major investment firms like Fidelity offer “custodial services” to provide offline storage of digital assets.

New cryptocurrency investment vehicles don't require investors to wrestle with digital wallets or vet the security of exchanges. Instead, they can invest in professionally managed funds in which custodial services, auditing, and tax reporting are performed by well-established names.

20. Aren't cryptocurrencies just a fad, or only of interest to die-hard techies?

On the contrary, many “digital natives” view crypto as just another investment option. While older investors buy gold to hedge market uncertainty, millennials are buying bitcoin. One survey from last year found a bitcoin vehicle to be a top-five holding among millennials. Another found that 42% of millennials said that they were at least somewhat likely to buy bitcoin in the next five years.

Young people aren't just buying bitcoin, they're studying its underlying technology. More than half of the world's top 50 universities offer at least one course in blockchain or digital assets. Many students and academics clearly have a sense of crypto's potential.

21. Why are larger investors taking an interest in cryptocurrency?

Cryptocurrency has attracted investment from the endowments of Harvard and Yale and from leading investors such as Paul Tudor Jones, Bill Miller, and Stanley Druckenmiller, who see bitcoin as a hedge against potential inflation. MicroStrategy declared it preferable to cash as a reserve asset. Square favors bitcoin “given the rapid evolution of cryptocurrency and unprecedented uncertainty from a macroeconomic and currency regime perspective.” And the 169-year old insurance firm MassMutual just announced a bitcoin purchase worth \$100 million, a move which J.P. Morgan strategists said may presage a \$600 billion influx of institutional capital into the asset.

Crypto for Today's Investor

Not too long ago, profitable investments in commodities, currencies, non-residential real estate, and even stocks and bonds were largely the province of insiders. Non-professionals who delved into these products faced barriers, inefficiencies, and downright fraud. But for each of these investment categories, financiers ultimately developed trustworthy exchanges and regulators imposed protections to ensure that all investors could participate safely.

Cryptocurrencies are on the verge of joining these widely accepted asset categories. They started as volatile, early-stage investments, with all the risk and potential reward that implies. But investment vehicles are emerging that reduce extraneous risk and complexity.

22. If I'm convinced bitcoin deserves a place in my portfolio, how much should I invest?

Modern Portfolio Theory (MPT), a trusted analysis often used by investors, posits that by holding assets that are uncorrelated (i.e., their values don't rise or fall at the same time), one can increase returns without a proportional increase in risk.

Bitcoin has a 12-year history of generally positive returns and low or negative correlations to established assets. Despite its volatility, adding a small portfolio allocation to bitcoin generally increases overall expected return when adjusted for risk. It also potentially diversifies some of the inherent systemic risk in the financial system that exists in most investors' portfolios.

A Galaxy Digital Research analysis using MPT finds that the hypothetical risk-return (or Sharpe) ratio is optimized with a 7% allocation to bitcoin. However, the strongest marginal improvement occurs in the 0.5% to 2.5% range. This demonstrates that even a small allocation to bitcoin can have a major impact on a portfolio's total returns.

In May 2020, respected hedge fund manager Paul Tudor Jones disclosed a 1%–2% allocation to bitcoin in his portfolio to protect against inflation. Hedge fund manager Bill Miller—who at one point had about half of his Miller Value Partners 1 fund's assets in bitcoin—recently said that for investors concerned about inflation, having 1%–2% of their assets in bitcoin “makes great sense.”

23. How should the allocation be managed?

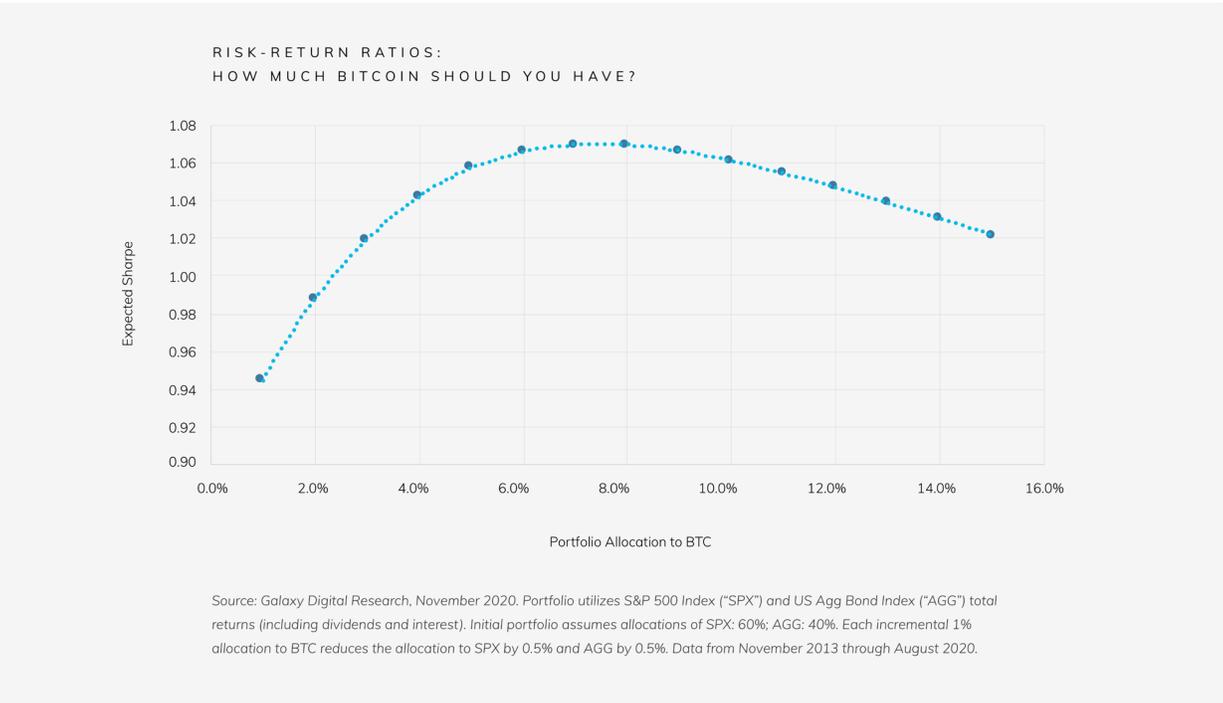
Advisors have taken different views on how to shift allocations when adding bitcoin or cryptocurrency. Many investors have already allocated a portion of their portfolios to inflation-fighting assets like equities, commodities, precious metals, or real estate; bitcoin could supplement or replace this portion of the portfolio. But cryptocurrency is also a volatile and speculative asset, so some investors may be more comfortable selling assets at the more volatile end of their equity allocations, such as small-cap or emerging-market stocks, to buy crypto assets.

Due to its tendency toward volatility, your cryptocurrency allocation may need to be rebalanced relatively frequently. The Galaxy Crypto Index Fund, currently composed of five cryptocurrencies, is rebalanced monthly.

24. With so many cryptocurrencies popping up, how do I know which will be winners?

For investors seeking cryptocurrencies that may protect against inflation, bitcoin is already a clear winner. With its unsurpassed security and guaranteed limited supply, it has won the mantle of “digital gold.”

The open-source nature of cryptocurrencies means that 1,000+ have been created over the past decade. Some of these, like Ethereum and Polkadot, represent promising technological advances. Picking winners could be compared to the odds of identifying today's Big Tech firms



from the many tech startups of the 1990s. Fortunately, investors do not need to try to pick winners; instead they can invest in a diversified fund of cryptocurrencies.

The Bloomberg Galaxy Crypto Index, for example, serves as a benchmark for institutional quality fund products. The index is market capitalization-weighted and diversified across all the major use cases described in these FAQs: digital store-of-value, digital payments, and Web 3.0 assets. Market capitalization, in turn, is based on demand for the underlying currency. Therefore, funds based on this index automatically favor winners and remove losers as market capitalizations change.

25. What are some of the options for buying cryptocurrency?

Currently the most popular venue for buying cryptocurrencies are exchanges. The most popular of these peer-to-peer markets have tens of millions of accounts, rivaling the largest stock brokerages.

Exchanges facilitate instantaneous, 24/7 trading of hundreds of cryptocurrencies. But many exchanges are themselves startup companies whose long-term survival is not guaranteed. Some exchanges have closed due to hacks or fraud; quoted prices may vary between exchanges; and transaction fees vary widely.

Security remains a significant issue with some exchanges. Cryptocurrency "wallets" are accessed through private keys. If these long strings of alphanumeric characters are lost or stolen, the currency cannot be retrieved. Some exchanges allow traders to store their private keys online, where they are subject to theft. Traders who keep their private keys offline must store them with extreme care.

Managing tax reporting is another potential drawback for exchange users. The onus is typically on the user to understand and manage tax documentation, which can be challenging as the cryptocurrency tax landscape continually evolves.

26. What's the alternative to exchanges?

Alternatives have emerged for individuals who are interested in investing in—rather than merely trading—cryptocurrency. They don't require owners to manage wallets, and the private keys are secured offline by a professional custodian.

Cryptocurrency hedge funds offer affluent investors the benefit of experienced professional management. But that advice comes at a price: Minimum investments often run into the six figures, and managers typically take 20% of profits in addition to a 2% management fee. Investments may be "locked up" for a year or more. And hedge fund managers often employ exotic investment strategies involving leverage, short-selling, or algorithmic trading. Many investors prefer greater transparency.

One vehicle gaining traction are cryptocurrency trusts. Some trusts allow investors to specialize in a single type of cryptocurrency. But the price of a trust share may not directly reflect the price of the underlying asset—the most popular one currently trades at a significant premium to NAV. Investors could pay a large price premium for a share that could fall in value for reasons unrelated to the asset's value. An alternative to these trusts are Galaxy funds.

27. Who can invest in Galaxy funds and how?

Galaxy funds provide exposure to cryptocurrency at low and predictable management fees, and with no transaction or performance fees. Pricing, tax reporting, and auditing are handled by the most familiar names in finance:

Galaxy Bitcoin Funds: bitcoin pricing is by Bloomberg, custody is by Fidelity Digital Assets and Bakkt (a subsidiary of Intercontinental Exchange), auditing is by Deloitte, and tax is handled by Ernst & Young.

Galaxy Crypto Index Fund: the benchmark index the fund is designed to track is maintained by Bloomberg, custody is by Kingdom Trust, auditing is by KPMG, and tax is handled by Deloitte.

The Galaxy Bitcoin Funds and Galaxy Crypto Index Fund are open to accredited investors (who must reach predefined wealth thresholds) with a \$25,000 minimum investment. To learn more, visit galaxyfundmanagement.com or email GFM@galaxydigital.io

The technology behind cryptocurrency—and the dynamics behind crypto trading—can be daunting. But few people today would assert that you must be able to analyze a balance sheet or work on a trading floor to invest responsibly in stocks. Similarly, the day is soon coming when investors won't be expected to understand the details of how blocks are mined, or how crypto exchanges work, to invest in crypto. Now, investors with an informed understanding of crypto's potential and risks have a simple, secure, and transparent way of adding it to their portfolio.