Bitcoin Cryptocurrency Part 3

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It's hard to fathom something so complicated rising to popularity as fast as bitcoin.

With the price of the cryptocurrency soaring—and mainstream interest surging—Yahoo Finance recently invited readers to send us their top questions regarding bitcoin and other cryptocurrencies. We condensed questions from nearly 3,500 respondents into the list below, and enlisted a team of Yahoo Finance reporters to answer them, including Daniel Roberts, who's been covering bitcoin since 2012, and Jared Blikre, our authority on trading. Ethan Wolff-Mann and Julia LaRoche contributed as well. ***Here's the third of three articles on everything you want to know about bitcoin:***

51. How can I get exposure to cryptocurrencies without actually purchasing the currency? Glad you asked! Because Yahoo Finance has now established a list of publicly traded companies with some exposure to cryptocurrencies. There are 13 tickers on the list so far, including familiar names such as Nvidia and Microsoft. We'll add more as warranted.

More sophisticated investors can trade bitcoin options on the LedgerX platform and bitcoin futures at both the Cboe Futures Exchange and CME Group. At the Cboe, one bitcoin contract represents the price of one bitcoin. At the CME, one bitcoin contract represents the price of five bitcoins. Both settle in cash, so you don't have to put up or take delivery of any actual bitcoin. You need to open an account with LedgerX to trade bitcoin options. To trade bitcoin futures, you need to open a brokerage account with a broker that's a member of the requisite exchange. Many large brokers are taking a wait-and-see approach, and still not yet letting clients trade bitcoin futures. Others are requiring high margin, which is the amount of money a customer must put up to trade the futures.

52. How will the bitcoin collapse affect traditional investments? Who said it's going to collapse? Seriously. But if you want to be a hater, the good news is there doesn't appear to be any correlation between bitcoin and other risky assets such as stocks, according to that Capital Economics report. While the stock market rally has slowed in recent weeks, for instance, bitcoin has continued to surge higher. As mentioned earlier, bitcoin has been compared with gold, but it's certainly not a "safe haven" asset. While gold prices have dipped in the last week, the cryptocurrency has continued to climb higher. As Capital Economics put it, bitcoin is a "world of its own."

53. Why do Jack Bogle and Jamie Dimon tell investors to stay away from bitcoin? Because they think it has no inherent value and that it's only going up in price because buyers think somebody in the future will pay even more for bitcoin than they paid for it in the present. Embedded in their opinions is the expectation that one day there will be a bitcoin crash where investors lose most, if not all, of their investment. But those are only opinions.

54. How do banks view bitcoin? Friend? Foe? Partner? Banks are not fans (yet). JPMorgan is hostile toward bitcoin. Citigroup is suspicious. Goldman Sachs is curious. Nearly all large banks have brokerage arms that are members of the futures exchanges where bitcoin futures are now being traded. These futures contracts finally bring bitcoin to Wall Street. But it's going to take time to build the trust of Wall Street brokers. Until then, volume and liquidity will be low, with most trading happening among retail traders rather than institutional ones.

Right before bitcoin futures went live, big banks and brokers, represented by the Futures Industry Association, sent an open letter to the CFTC, which regulates U.S. futures trading, warning that bitcoin futures were being rushed to market without transparency or proper risk assessment. That has led many large brokers to avoid the bitcoin futures markets for now, refusing to let clients trade yet. Others are reserving trading rights for select clients.

55. Are there any publicly traded companies that make markets in cryptocurrencies? None that are well-known in the United States, although there could be overseas, given that there are hundreds of cryptocurrency exchanges and dozens of public stock markets around the world. (We're not counting futures trading as market-making, since those exchanges don't hold actual bitcoin for traders to buy and sell.)

There are however, a growing number of public companies that have "blockchain" in their name, and claim to gain exposure to this new universe by investing in blockchain technology, mining operations, and specific cryptocurrencies. Beware of these. Many have avoided the rigorous IPO process by performing a reverse merger into an existing public company, which is often engaged in an entirely different business. This adds a level of risk to anyone investing in these companies.

56. How will it impact countries' ability to collect income tax? If bitcoin were to become a substantial gray- or black-market sub-economy where people could hide income, governments would have an incentive to crack down and limit the use of new currencies. Of course, there's already a large underground economy, where cash and other types of assets are exchanged in ways meant to hide transactions. And there are plenty of offshore tax shelters, as well. The IRS's recent lawsuit against the Coinbase exchange indicates the U.S. government is paying attention and is willing to be aggressive making sure taxpayers don't use cryptocurrencies to cheat on their taxes.

Coinbase, one of the world's largest cryptocurrency exchanges, was iPhone's number 1 app in December.

57. Is there a way for all the money invested to just vanish because of a virus or hack? When it comes to the bitcoin network itself, that's a possibility, but an unlikely one. The code that runs the bitcoin network is open source. Over 350 people currently work on it, and anyone can inspect it. With so many well-trained eyes on the code, it's unlikely to succumb to a virus or hack.

Bitcoin's weakness is at the individual exchange level, since exchanges have been hacked and others, such as Mt. Gox, have been exposed as outright frauds. Even the largest exchanges experience outages on days when volume surges. A disruption at a large exchange can influence the price of bitcoin, but one exchange probably can't crash the entire network. It's never happened, but if the world's largest bitcoin exchanges were all hacked or crashed at once, it could prove catastrophic for bitcoin.

58. Can blockchain disappear? If every copy of the blockchain were somehow erased, then the entire blockchain would disappear. But that's unlikely. It is common, however, for parts of the blockchain to disappear as they become invalidated, because of the way the blockchain is designed. For "proof of work" cryptocurrencies such as bitcoin, miners compete to process transactions that allow them to earn new coin, along with transaction fees. The rules require everyone to follow the longest blockchain. Sometimes, concurrent blockchains evolve in parallel, for various technical reasons. When one chain becomes a single block longer than the other, the shorter one is invalidated, along with all the transactions in it. This is undesirable for the losing parties that have invested time and computing power in the shorter blockchain. In general, this creates an incentive for miners to mind the blockchain and keep its size under control.

59. Is bitcoin likely to increase its supply once the 21 million limit happens? It's possible, if at least 51% of the bitcoin miners agree to change the rules. One concern is that miners who maintain the network will drop out after the last bitcoin is mined, because they'd only earn money from transaction fees, which might not be lucrative enough. Buyers and sellers have a say, too, since it's up to them to decide if they're willing to pay the fees. In a way, the bitcoin market will evolve like any other market involving producers, consumers, buyers, sellers and middlemen who continually negotiate over price and terms.

There's no hurry to decide. Miners aren't expected to generate the last bitcoin until around 2140, 123 years from now. By then, computing power will be exponentially higher and humans may mate with robots, for all we know. It's not hard to imagine bigger concerns than whether to lift the bitcoin cap.

60. How easy is it to cash out of cryptocurrencies if I need the money in a hurry? Not as easy as you'd like. Bitcoin is not as liquid as other investments, in part because settlement can take more than a week, under good circumstances. Volatility and surging demand has caused frequent outages on exchanges such as Coinbase and Kraken, and you can't sell if you can't access your account. If such outages occur amid panic selling, some bitcoin holders might be unable to sell for a fairly long time, which could make steep losses worse as the price drops and people who want to sell, can't. That's one thing that could harm confidence in the asset.

61. Will the banking industry adopt bitcoin into their business practices or is it more likely that

they will work together to develop a new type of cryptocurrency? Banks will do what's in their interest. Right now, there's not a big, liquid market to trade cryptocurrencies. The new bitcoin futures may become big enough to trade with institutional money. At that point, it's likely the big banks (which also have brokerage arms) will come to dominate the market for bitcoin, and perhaps other cryptocurrencies.

If the banking industry were to develop its own cryptocurrency, it would make sense for it to be ethereum-like, based on smart contracts. This would allow them to offer and control the process for initial coin offerings (ICOs), which would likely be regulated by the Securities and Exchange Commission at that time. This is speculation and at least several years off.

62. How do we get cryptocurrencies into our 401(k) plan? Careful, cowboy. It could be awhile before financial firms that administer 401(k) plans allow access to cryptocurrencies. For one thing, there are no mainstream mutual funds or ETFs that allow this type of investing. And retail brokerages will probably err on the side of caution when it comes to rolling out crypto products for retirement accounts. The first requirement will be the establishment of a bitcoin ETF, which we estimate to be at least a year away.

63. Can I short bitcoin without opening a futures account or having to pay a very high fee to locate shares of something like GBTC? No. GBTC is the ticker for Bitcoin Investment Trust, an exchange-traded trust that trades on the over-the-counter market (which means it's not listed on a major exchange, like the NYSE or Nasdaq). This is why traders who want to bet against the price of bitcoin find it difficult to borrow shares of GBTC to short. Also, while GBTC is designed to track the movement of bitcoin, it doesn't track the price of bitcoin perfectly. Until a bitcoin ETF is listed on a major exchange, the futures markets offer a much better alternative if you want to short bitcoin (though liquidity is admittedly low at this early stage).

64. Could another crypto take over bitcoin? Yes, depending on how you define "take over." Strains on the bitcoin network, such as persistent outages at some of the exchanges, led some bitcoin miners to take matters into their own hands earlier this year. They banded together to change the bitcoin code in a way that would speed up the network, a change known as a "soft fork." This created a separate cryptocurrency called bitcoin cash, which is now the third-largest cryptocurrency by market value. And other new cryptocurrencies have been coming to market every month, many through the same soft-fork process. These don't necessarily amount to a "takeover" of bitcoin, but they do spawn new competition that's a threat to the dominance of bitcoin.

Bitcoin is the first mover, however, with inherent advantages. It's the only one with its own futures contracts. And it will probably be the first with a U.S. ETF listed on a major exchange, allowing ordinary people to invest easily. But if the bitcoin network doesn't catch up with bitcoin mania, users have literally hundreds to choose from, with ethereum, ripple, litecoin and bitcoin cash as leading contenders.

65. How many people are trading bitcoin and when is the market "open?" Bitcoin never sleeps — it trades 365, 24/7. But there's really no way to determine how many people are trading at any given time on the hundreds of exchanges worldwide. We do know this: Initially, most bitcoin trading was done in the west, but now the lion's share is done in China (and traded versus the Chinese yuan). Large price swings often happen when it's dark in America. As bitcoin popularity surges, however, so do the number of U.S. dollar-denominated accounts being opened.

66. How do you buy other cryptocurrencies with U.S. money, as opposed to buying these with bitcoin? It's up to the exchanges to decide what cryptocurrencies they'll trade and what form of payment they'll accept — whether it's U.S. dollars, Chinese yuan, or bitcoin itself. Most of the altcoins aren't popular enough to incentivize exchanges to accept payment for them in traditional currencies. The market decides how cryptocurrencies can be bought..

67. How is bitcoin "mined"? By purchasing costly equipment that's best suited to the job, such as an ASIC machine (which stands for application-specific integrated circuits). You can also download a mining application to a traditional computer, but that has become an extraordinarily slow way to generate coin.

68. How does anyone know bitcoin is limited to 21 million units? If it is limited to 21 million units, how do you know when 21 million units have been mined, and there's no more to mine? The code behind the bitcoin network is available for anyone to inspect, as is the blockchain ledger, which records the entire history of bitcoin transactions. So everyone in the bitcoin community will know when miners produce the 21 millionth coin. The question then becomes, what next?

69. Why are graphics cards used in mining? It makes it sound like currency is being made up. When bitcoin was invented in 2009, miners quickly discovered that the processors in graphics cards (GPUs) were much more efficient at mining bitcoin than the CPUs that run computers. Nowadays, miners use ASICs, which are custom-built for different cryptocurrencies. Their architecture is still similar to GPUs.

70. How will miners get paid when all the bitcoins have been mined? They will get paid by transaction fees, which are determined by supply and demand — ultimately by the agreement of the person sending the bitcoin and the miners that process the transaction. There is a theoretical upper limit on the transaction fee, and there are legitimate concerns that the bitcoin

network will become insecure if miners aren't properly compensated. This could happen before the last bitcoin is mined, as the bitcoin "birth rate" becomes exponentially smaller over time — meaning the miners might not cover the cost of electricity because it takes increasingly large resources to mine a single coin. But this scenario is likely decades away.

71. Does the size of the blockchain grow forever? As long as bitcoin exists, yes. Each transaction adds to the cumulative bitcoin ledger.

72. I have a very fast computer and I want to mine bitcoin and other currency. How do I do it? You might have a very fast computer, but unless the processor is optimized for mining bitcoin, you probably won't mine bitcoin at an economical rate that covers the cost of electricity. Very powerful processors called ASICs sell for thousands of dollars apiece and are custom-designed for specific cryptocurrencies. But if you're hell-bent on mining bitcoin on your personal computer, there are several mining applications from which to choose.

73. What percentage of total bitcoins are in circulation today? Of the 21 million in bitcoin due to be mined, about 16.74 million, or roughly 80%, are in circulation. Yahoo Finance updates that figure and others on its ticker page for bitcoin.

74. What will the price of bitcoin be in 10 years? When we learn how to predict the future, we'll get back to you. Here's one likelihood, though: The technologies underlying cryptocurrencies will be around in some form for a long time.