Issue: Bitcoin

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Pub. Date: March 12, 2018
Access Date: June 19, 2018
DOI: 10.1177/237455680409.n1
Source URL: http://businessresearcher.sagepub.com/sbr-1946-106034-2882454/20180312/bitcoin

Are cryptocurrencies just another asset bubble?

Executive Summary

Transformative technology? Asset bubble about to pop? Garden-variety fraud? Bitcoin and other cryptocurrencies have no shortage of fans and detractors, and there is no lack of opinions about how real the phenomenon is – but they have caught the world's attention, at least for the moment. Bitcoin was invented by libertarians who wanted to circumvent governments and financial institutions by creating a currency that was anonymous and untraceable. But the speculative frenzy that surrounded it, of a kind once reserved for hot tech IPOs, took off in earnest in 2017: Bitcoin's price shot up to more than $19,700 in December, then fell in January almost as steeply as it had risen. Bitcoin uses a technology called blockchain, a public digital ledger run by computers that promises to be both transparent and unhackable. Even bitcoin critics call blockchain an innovative technology that could have wide applications in many areas of the economy.

Some key takeaways:

- Bitcoin's rise has spawned more than 1,300 rival cryptocurrencies, some of which seek a competitive edge against it by offering greater anonymity or faster processing speeds.
- While free from government and its regulation, cryptocurrencies offer no investor protection on investments that have been subject to great market volatility.
- Cryptocurrencies are not widely held and attract a criminal element because of their offer of anonymity, making the market potentially vulnerable to manipulation.

Full Report

Bitcoin is the oldest and best-known cryptocurrency. (Luke MacGregor/Bloomberg via Getty Images)

Bitcoin fans knew the cryptocurrency had finally arrived in September 2017, when JPMorgan Chase CEO Jamie Dimon said he would fire any employee caught trading in it. He went on to call it a fraud fit only for drug dealers, murderers – or North Korea. [1]

Obviously, bitcoin was on his radar, and that of many executives and government officials, after its stunning gains in value over the prior 12 months. But Dimon's unbridled animosity revealed the financial elite's anxiety about the sudden rise of unregulated cryptocurrencies and the implications for the wider economy if they grow more popular and prove to be – as many suspect – a speculative bubble.

What is a cryptocurrency? In essence, it is digital money that uses encryption techniques and coding rather than a central bank to regulate its supply and verify transactions. The virtual currency exists outside the traditional financial framework, without the safeguards consumers and investors have come to expect. As the first and best known of more than 1,300 cryptocurrencies available today, bitcoin has been the primary target of attacks by a raft of financial heavyweights like Dimon over the past year. [2] As bitcoin's price shot up – topping out at $19,783.21 on Dec. 17, almost doubling in less than a month – the level and ferocity of criticism rose with it. [3]

New York University economist Nouriel Roubini, also known as Dr. Doom for his prescient forecast of the 2008 global financial collapse, has been among its most vocal critics. In early February, just weeks after bitcoin's price had peaked and then dropped as fast as it went up, Roubini called it "the mother of all [asset] bubbles" reserved for "charlatans and swindlers." [4] He predicted its price would fall "all the way down to zero" in the near future because fundamentally it has no real value.

The chairman of the Royal Bank of Scotland, Sir Howard Davies, invoked Dante's vision of hell to warn investors against buying bitcoin: "Abandon hope all ye who enter here," he suggested regulators tell potential investors. [5] Nobel Prize-winning economist Joseph Stiglitz called for cryptocurrencies to be outlawed. [6] In January, at the 2018 World Economic Forum conference in Davos, Switzerland, the consensus among central bankers, corporate executives and economists was that while bitcoin might be a plausible if volatile investment, it most certainly should not be considered a currency. [7] And billionaire investment guru Warren Buffett said simply, "I can say almost with certainty that they [cryptocurrencies] will come to a bad ending." [8]

Why does the idea of bitcoin and other cryptocurrencies rattle the global economic elite so much?

To answer that question, it is necessary to understand how bitcoin works and why it and other cryptocurrencies even exist. At their foundation, they represent a rejection of government-guaranteed money and bank-controlled payments. Cryptocurrencies were created over the past two decades by a group of libertarian computer scientists, fighting foremost, they would say, for individual privacy through the extensive use of encryption techniques. [9] The vision behind bitcoin was to create a globally accepted means of payment outside the purview of any state or financial institution – free from their restrictions, but also without their protections. That bitcoin transactions are largely untraceable, anonymous and unregulated is not merely a random byproduct of this maverick technology-driven currency but its *raison d'être*.

It also is no coincidence that bitcoin emerged out of the despair of a financial crisis that caused the banking system to implode. While bitcoin was on the drawing board long before the 2007–09 recession, its creator, known as Satoshi Nakamoto – a pseudonym for the person or persons responsible for developing bitcoin and its technology – decided to unveil the new currency in 2009 at the nadir of a global economic plunge brought on by corporate avarice.

"Nakamoto was very clearly motivated in this effort by the fallout from the 2008 financial crisis," Maria Bustillos, a journalist who covers cultural trends, wrote in a 2013 New Yorker article. And with people's trust in financial institutions at its lowest, the bitcoin mastermind released the first 50 bitcoins with a line of text in the data that made the cryptocurrency's juxtaposition to the state of the global economy clear: "The Times 03/Jan/2009 Chancellor [of the Exchequer] on brink of second bailout for banks." [10]

"More and more, we are losing faith in humans and depending instead on machines," wrote Tim Wu, a Columbia University law professor and the author of "The Attention Merchants: The Epic Struggle to Get Inside Our Heads." [11] "We trust in computers to fly airplanes, help surgeons cut into our bodies, and simplify daily tasks, like finding our way home. In this respect, finance is actually behind: Where we no longer feel we can trust people, we let computer code take over."

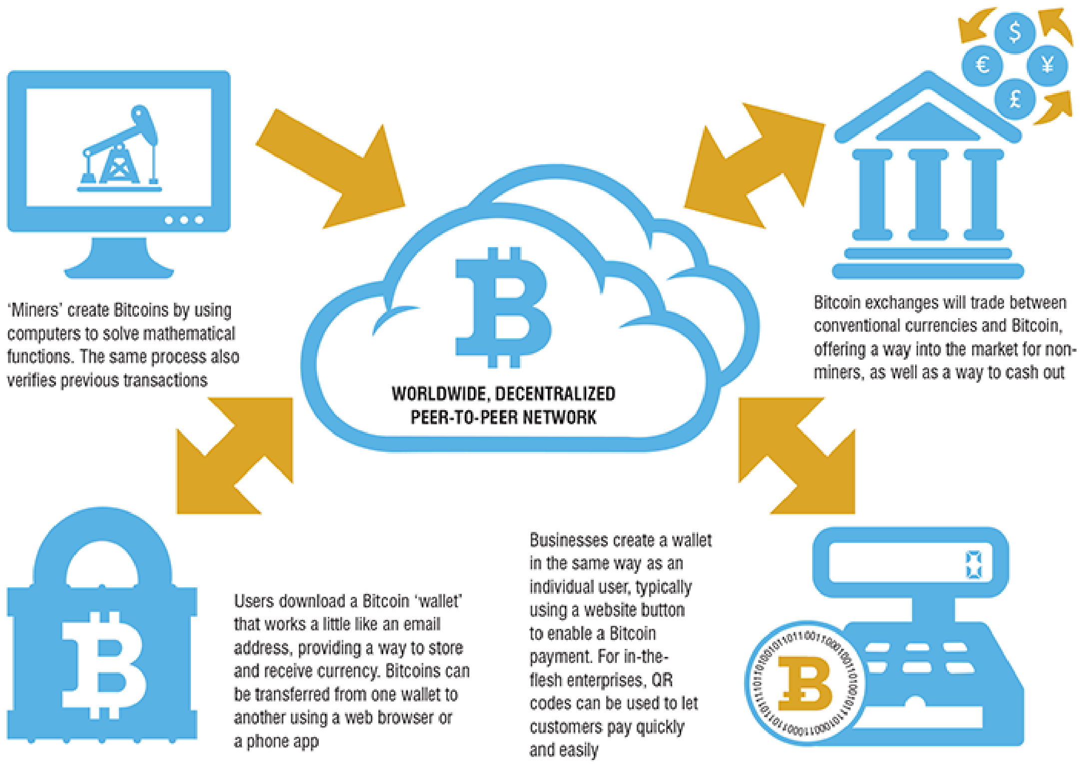
In the case of bitcoin, that computer code is a sophisticated, artificial intelligence-based technology known as blockchain – a public digital ledger run on a programming algorithm that monitors and verifies all bitcoin transactions. Unlike the dollar and other so-called fiat currencies – money that a government has declared to be legal tender and guarantees but is not backed by a tangible commodity such as gold – blockchain allows cryptocurrencies to exist without that government endorsement of their worth or a designated authority to make sure the system runs smoothly. Instead of central bankers, a network of powerful computers runs bitcoin operations, following the protocol of the blockchain's governing algorithm. [12] Cryptocurrencies place their trust in code, not in God, and certainly not in the state.

Blockchain's "key innovation is how it reduces the need for central third-party institutions to serve as central authorities of trust – banks, courts, large corporations, stock markets and even governments," wrote Marc-David L. Seidel, a professor of entrepreneurship at the University of British Columbia, in a World Economic Forum report. "It can distribute power away from centralized institutions to those that traditionally have less power.… Institutions do not let go of their influence easily." [13]

And that potential reallocation helps explain the virulence of attacks by the elite. No doubt, many feel at least a bit threatened by currencies that do not fall under the authority of the state and desire to make the state and banking system irrelevant over time.

"It's worth thinking through some of the implications if something like Bitcoin … were to wholly or even partially supplant central bank fiat currency," wrote Tony Yates, an economics professor at the U.K.'s University of Birmingham and a former Bank of England economist. "Not least because central banks themselves are thinking about it out loud, and wondering what they might do to avoid being usurped in this way." [14]

How Do Bitcoins Work?



Source: Marc-David L. Seidel, "Bitcoin is making banks nervous. Here's why," World Economic Forum, Oct. 6, 2017, https://tinyurl.com/yahl9v6p

Bitcoin units are generated and regulated using encryption techniques and then can be obtained and exchanged digitally by businesses and individuals like conventional currencies.

While bitcoin clearly annoys the financial establishment, its blockchain technology seems to delight it with its potential application beyond bitcoin. Many view blockchain as the skeleton for a new internet – a way of communicating that allows digital information to be distributed but not copied, making the system less vulnerable to hackers. [15] Even while he argued that bitcoin purchases were more akin to gambling than investing, the governor of the Bank of Canada, Stephen Poloz, praised the blockchain technology upon which bitcoin is built as "a true piece of genius" that "will be applied to many, many areas in the economy." [16] The Bank of Canada currently has a project, codenamed Jasper, investigating potential uses for blockchain. [17]

"I'm impressed with the technology, but it seems to me that it's technology for something else," Nobel Prize-winning economist Robert Shiller told a panel at Davos. "I tend to think of bitcoin as an interesting experiment … not a permanent feature of our lives." [18]

As a system, blockchain operates like a spreadsheet that is duplicated thousands of times across its decentralized network of volunteer-run computers. [19] The network is constantly updated and reconciled, as the computers verify transactions and compile them into "blocks." Since no central bank is running the show, the computers are responsible for releasing new bitcoins. This process is known as mining, an allusion to the creator's intent to make bitcoin an asset similar to gold. [20]

One of the most important jobs "miners" do is to ensure that a holder does not attempt to spend the same bitcoin twice. They do this by adding the data from transactions as they are completed to bitcoin blocks that have available capacity, according to the algorithm. To find blocks with this capacity, miners must solve complex computational equations. The requirement to do calculations is intended to prevent miners from adding blocks willy-nilly and deviating from the algorithm.

"Only once about every ten minutes will a miner somewhere succeed and thus add a new block to the blockchain," according to Bitcoin Magazine, the oldest publication covering cryptocurrency and blockchain news. [21] With the discovery of every new block, miners are rewarded with the release of new bitcoins.

Miners also charge transaction fees for their work maintaining the blockchain, and those fees have been described as substantial. Based on uncorroborated reports, the fees can be as much as 15 percent to 40 percent of the total transaction. [22] According to BitInfoCharts, a repository of statistics on cryptocurrencies, the average transaction fee in December 2017 was $28. [23] There is also a suggestion that a coin holder could get faster processing by paying a higher fee, just as an online shopper can choose pricey overnight delivery.

Based on Nakamoto's algorithm, a finite number of bitcoins are in circulation at any time, and a finite number can ever be released, again mimicking the finite supply of gold. In December 2017, there were 16.78 million bitcoins in circulation. [24] According to digital forensics firm Chainalysis, somewhere between 2.78 million and 3.79 million of them have been "lost" because holders have misplaced the identifying keys for the coins or have forgotten they once bought them. The maximum number that can ever be mined is 21 million, which will be reached when the final block is added to the blockchain, based on limits set by the algorithm. [25]

The blockchain database, hosted simultaneously by millions of computers, is open to the public and transparent, with no single entity controlling it. Its invulnerability to hacking – because of its complete transparency and because the information is held simultaneously by more than one million computers – is a key attribute that has made the technology of interest to many industries, from the obvious beneficiaries in tech and banking to health care, supply chain management, music streaming and real estate. [26]

The bitcoin market is essentially controlled by 1,000 investors, known as whales.

IBM, for instance, began building cloud-based custom blockchains for corporate customers in 2017. [27] That same year, Barclays performed the first blockchain-enabled trade finance deal, reducing a process that once took between seven and 10 days to less than four hours by exploiting the speed of computer-to-computer communication. [28] In health care, blockchain may prove invaluable in allowing hospitals and other providers to share electronic medical records securely. Among other major corporations developing blockchain: Microsoft, Walmart, Airbus, Overstock.com, American Express, Accenture, Intel, Visa and Nasdaq. [29]

If blockchain is the leading positive byproduct of bitcoin, cryptocurrencies also come with some troubling realities, including their close association with criminal activities.

The current speculative frenzy aside, bitcoin has been best known since its inception as the payment method of choice for drug dealers, arms traders, terrorists, hackers and blackmailers. It is used most often on marketplaces on the Dark Web, a shadowy corner of the internet where people go when they have things to hide and want to operate anonymously. Although nothing about bitcoin and other cryptocurrencies is inherently illegal, their ability to mask the identity of the holder too often has made them tools of criminals and terrorists.

In May 2017, a "ransomware" attack known as WannaCry incapacitated tens of thousands of computers around the globe, including the network running Britain's National Health Service. The hackers demanded the equivalent of $300 to $600 to release each computer and the data being held hostage and required that the ransom be paid in bitcoin. [30] The U.S. National Security Agency (NSA) and several cybersecurity firms have since identified the perpetrators as a state-sponsored team from North Korea.

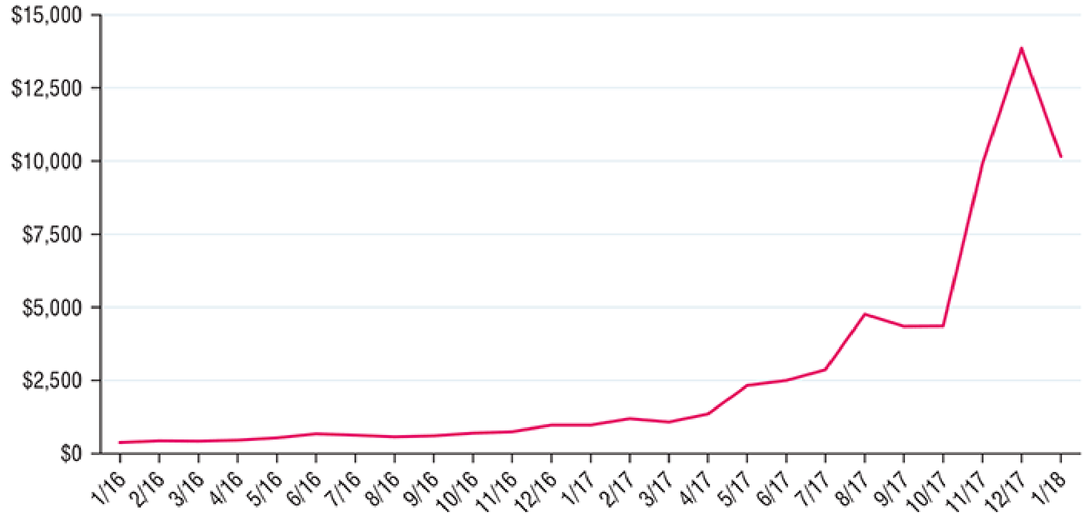
To be paid, the hackers provided addresses to "bitcoin wallets" where the victims could send the ransom. Bitcoin wallets are software programs that hold the identifying private keys to bitcoins, and, according to the MIT Technology Review, the addresses look something like this: 15VjRaDX9zpbA8LVnbrCAFzrVzN7ixHNsC. [31]

Months later, the hackers emptied three wallets of bitcoin worth at the time close to $150,000 and then "laundered" the ill-gotten gains. [32] If the hackers had kept their bitcoins into 2018, the value would have been more than three times what it was in late July and early August 2017 when the wallets were emptied, even taking into account the recent plunge in bitcoin price. If the hackers had sold the bitcoins in December, at the cryptocurrency's peak, the ransom would have been worth seven times more than when it was withdrawn.

State-sponsored North Korean hackers, affiliated with the team responsible for the WannaCry attack and cyberattacks on Sony Pictures in 2014, have also been linked to a spree of bitcoin robberies from South Korean cryptocurrency exchanges, according to several cybersecurity firms. As the prices for cybercurrencies have skyrocketed, cyber experts say North Korea, hampered by international trade sanctions imposed because of its nuclear weapons program, has been stealing cryptocurrencies outright from the exchanges as well as mining them. [33]

Bitcoin's Value Spiked in 2017

Bitcoin price index, 2016–18



Source: "Bitcoin price index from January 2016 to January 2018 (in U.S. dollars)," Statista/CoinDesk, February 2018, https://tinyurl.com/ybhdmymy

Bitcoin's price fell in the first month of 2018 after skyrocketing in the latter part of 2017.

The high prices of cryptocurrencies are also attracting terrorists. In December, around the peak of the bitcoin price rise, a woman from Long Island, New York, was indicted on charges of defrauding financial institutions of $85,000. Authorities said she laundered the cash by buying bitcoin and other cryptocurrencies and transferred the money to the Islamic terrorist group ISIS. The woman was arrested as she tried to leave the United States for Syria. [34]

The ability to mask ownership and launder funds is one reason cryptocurrencies do not sit well with the authorities. In January, Treasury Secretary Steven Mnuchin said the United States was working closely with other G-20 nations to ensure that cryptocurrencies do not become the modern version of Swiss numbered bank accounts, referring to past Swiss bank secrecy that deterred investigations into criminal activities and tax evasion. (In recent years, Switzerland has begun cooperating with such investigations.) [35] "We want to make sure that bad people cannot use these currencies to do bad things," Mnuchin said. [36]

In fact, bitcoin may not be private enough anymore for those seeking anonymity since law enforcement and cybersecurity firms have developed software tools to track bitcoin transactions and monitor users. Over the past year, Dark Web denizens have been switching to other more hyper-anonymized cryptocurrencies, such as monero, z-cash and dash. [37] Thanks to the new demand, monero grew more in value than any other major cryptocurrency in 2016 and was up another 2,596 percent in 2017, which was almost double bitcoin's rise. [38] Although cryptocurrency developers deny there was ever any conscious connection to the Dark Web, consider this: The original name for the dash cryptocurrency was darkcoin. [39]

Bitcoin also suffers from limitations on its technology that are giving its rivals – even in the traditional financial system – the upper hand. For instance, one disadvantage is the length of time it takes to process bitcoin transactions compared to newer maverick currencies. According to Blockchain.com, a company that helps organizations understand how to use blockchain, it took 78 minutes to process the average bitcoin transaction in December, when the system was overwhelmed with speculative excess. [40]

But even under normal volume, it faces problems. Of the six largest cryptocurrencies by market cap, bitcoin's transaction speeds were by far the slowest, according to research by data firm HowMuch.net. While bitcoin theoretically can process only seven transactions per second, Ripple's XRP processes 1,500; litecoin, 56; and Ethereum's ether, 20. [41] By comparison, VisaNet, the electronic network behind the Visa credit card, processed an average of 150 million transactions per day, or around 1,667 transactions per second, on average in 2016. [42]

Slow transaction speeds are the consequence of bitcoin's scalability problem, one shared by all blockchains. Where traditional database systems such as VisaNet can add more computer power with more servers to meet increased demand, blockchain is a prisoner of its algorithm, which has set the size and frequency for blocks being added. For bitcoin, that size is one megabyte per block, and that defines how many transactions the system can process. [43]

Proposed solutions to the scalability problem all involve changing the size of the blocks. Among those that have been considered: Bitcoin Unlimited, which would remove the block size limit altogether, and Segregated Witness, which proposes doubling it to two megabytes. [44] But both solutions have had trouble mustering a majority of support from bitcoin holders and miners.

Block size changes are called hard forks and soft forks, which are either accomplished through consensus among miners and holders or when a group of miners decides to break off from the blockchain. With a hard fork, the blockchain splits and a second currency is created.

In August 2017, one such newcomer, called bitcoin cash, was created after a hard fork. [45] The new cryptocurrency's blockchain has blocks of eight megabytes each – eight times the original bitcoin blocks – allowing bitcoin cash to process at almost 62 transactions per second. [46]

"Institutions do not let go of their influence easily."

A soft fork keeps the blockchain together; only the programming algorithm changes to accommodate growth. But can even those changes keep up with a market growing so rapidly? On the day CME, the largest global futures exchange, announced it was planning to launch a bitcoin futures contract, 100,000 users signed up for an account on the bitcoin exchange Coinbase. [47]

Scalability deals with more than just transaction speeds. The longer transactions take, the higher the transaction fee. Logically, an elevated fee and slower processing should result in a less competitive cryptocurrency, and its rivals are growing faster than bitcoin, albeit from smaller bases.

But bitcoin has the advantage of name recognition and wider usage. "Ultimately, the lowest fee for a transaction wins, and as cryptocurrencies attempt to unclog congestion in their blockchains, the ones with the most innovative [technology] and lower fees have an advantage," said Charles Hayter, chief executive of the cryptocurrency comparison site Crypto Compare. But he added that "the more established the crypto, the more likely someone will accept it due to the lower volatility and conversion risk." [48]

Indeed, bitcoin remains the most established of the cryptocurrencies with the broadest infrastructure of exchanges and companies that will accept it. Among the most popular exchanges for trading bitcoin and other altcoins are San Francisco-based Coinbase, the biggest trading venue with more than 13 million customers in December 2017, and Bitstamp, a Slovenia- and Luxembourg-based operation that boasts one of the top trading volumes and is ranked the third-largest exchange. [49]

From a Coinbase account, a client can store, spend and buy bitcoin. The exchange's easy-to-maneuver setup is made for beginners. The exchange does not hold dollars or other currencies in accounts, requiring customers to link Coinbase accounts with traditional banking accounts. Besides bitcoin, Coinbase sells ether and litecoin, two other popular cryptocurrencies. [50] After the hard fork in August created bitcoin cash, the exchange said it would support it. [51] Operating in 18 countries, Coinbase also acts as a bitcoin processor for such companies as Expedia, Dell and Overstock.com, among the handful accepting it for purchases. [52]

By contrast, Bitstamp facilitates conversion from bitcoin to dollars or other fiat currencies back to bitcoin. Bitstamp trades in the top five cryptocurrencies based on market cap: bitcoin, litecoin, ether, bitcoin cash and XRP. Its greater user complexity makes it more geared for professional and institutional traders than Coinbase. [53]

As in all closely held markets, the possibility of manipulation exists with bitcoin and all cryptocurrencies. The bitcoin market is essentially controlled by 1,000 investors, known as whales, who hold as much as 40 percent of the worldwide supply, according to Bloomberg Businessweek. [54]

Bitcoin has made and unmade billionaires: for instance, the Winklevoss twins, Cameron and Tyler. Known best as the two Harvard graduates and Olympic rowers who lost a battle with Mark Zuckerberg for control of Facebook, the brothers took their $65 million settlement from Zuckerberg and bought bitcoin in 2013. [55] By December 2017, as the price of the currency soared, their holding climbed to $1.3 billion. But by January, as the currency plunged to below $8,000, the value of their holdings fell by almost $1 billion. [56]

Tyler Winklevoss (l) and brother Cameron. (Astrid Stawiarz/Getty Images)

The twins say they are committed to developing bitcoin as an investment asset and have petitioned the Securities and Exchange Commission (SEC), so far unsuccessfully, to create an exchange-traded fund in bitcoin. The SEC may reconsider the petition. [57]

Michael Novogratz, a former Goldman Sachs trader and ex-hedge fund manager, is another bitcoin whale. On Dec. 15, 2017, two days before bitcoin hit its peak, Novogratz shelved plans to create a cryptocurrency hedge fund, citing market conditions. He predicted that the cryptocurrency would sink to $8,000, which it did a month later. [58] Of course, that eventual decline was at least partially a self-fulfilling prophecy, as Novogratz said he expected to liquidate part of his position.

Bitcoin clearly is a speculative investment asset, but is it a currency? Most economists have concluded it is not because of its exchange rate volatility, which makes it unlikely anyone would choose to purchase anything with it for fear of missing out on a spike.

But some businesses are accepting it. In 2016, CNET, the media purveyor of news related to consumer technology breakthroughs and digital innovation, wrote about "28 things you didn't know you could buy with Bitcoin." These included Subway sandwiches in Allentown, Pa.; plastic surgery at a clinic in New York City; funerals in St. Paul, Minn.; certain hotel rooms in Las Vegas; and a cab ride in Argentina or Hungary. [59]

On the website 99bitcoins.com, 90 companies are listed that accept bitcoin; they range from Microsoft, Overstock.com, and Bloomberg to The Pink Cow, a diner in Toyko, Helen's Pizza in Jersey City, N.J., and Grass Hill Alpacas, a farm in Haydensville, Mass. [60] Some require a shopper to use a physical or electronic gift card to make a purchase with bitcoin. But volume is light; Overstock.com said earlier this year that cryptocurrencies accounted for just 0.25 percent of its revenue. [61]

And why would consumers use bitcoin, given its price swings? A shopper who used bitcoin to buy a $500 coat on Feb. 11, 2018, when bitcoin was around $8,100, would have used 0.06 bitcoins for the transaction. If the shopper had waited until Feb. 17, the $500 coat would have cost only 0.045 bitcoins because the currency's price had risen. So the consumer who bought with bitcoin on Feb. 11 would feel that the coat had become one-third more expensive six days later. The phenomenon is similar to what consumers experience in countries suffering from hyperinflation or deflation.

Take, for instance, the most famous early bitcoin purchase: In 2010, when the currency was worth a fraction of a penny, software programmer Laszlo Hanyecz bought two Papa John pizzas for 10,000 bitcoins. If Hanyecz had held onto those 10,000 bitcoins, they would have been worth about $100 million at the end of February. Those were two expensive pizzas. [62]

Then there is the question of taxes. The Internal Revenue Service considers bitcoin to be property rather than currency. Therefore, when a bitcoin owner cashes in the cryptocurrency to buy something, he or she must pay capital gains tax, assuming the bitcoin has appreciated in value. [63] Of course, if it has lost value, there may be a tax benefit to using it for a purchase and taking a loss. Let's just say, shopping with bitcoin requires consumers to bring along a calculator and perhaps an accountant.

Still, despite a mixed picture of success, the financial establishment does not like to miss out on a potentially money-making invention. Wall Street and institutional investors are starting to get into the speculative bitcoin game where the cryptocurrency has shown itself to be resilient enough to ride the market's highs and lows.

At the end of 2017, as bitcoin soared in value, Goldman Sachs said it would set up a cryptocurrency trading desk, likening bitcoin to the digital version of gold, the same comparison Nakamoto and bitcoin supporters made nine years earlier. [64] In a report issued in January, the investment bank's economists concluded that emerging markets may find a role for bitcoin as currency, although in the developed world it was unlikely to replace the dollar or euro any time soon. [65] Even JPMorgan's Dimon retracted his comment that bitcoin was a fraud. He added that while he is still not an enthusiast, his bank has been investigating the possibilities of blockchain. [66]

JPMorgan Chase CEO Jamie Dimon. (Kimberly White/Getty Images for Fortune)

Almost inevitably, as market gyrations rocked cryptocurrencies, governments also have begun to step in to protect investors and bring some stability to the market, lest the frenzy spill over into the conventional economy.

One of the swiftest to act was China. As early as January 2017, its central bank, the People's Bank of China, moved to tighten oversight of China's three cryptocurrency exchanges, known as "The Big Three." [67] In September that tightening led to a shutdown of initial coin offerings (ICOs) of new cryptocurrencies and eventually a ban on bitcoin exchange trading. [68] In January 2018, China closed bitcoin mining operations in the country. [69] In February, China moved to close down all cryptocurrency trading by banning trading on foreign crypto exchanges. [70]

China is not alone. South Korea, another hotbed of cryptocurrency trading, also has sought to rein in activities. At one point the government contemplated a ban on all trading, but eventually settled for barring trading through anonymous bank accounts. [71] Tax regulators also have said they would investigate the Bithumb exchange, where bitcoin and other cryptocurrencies are traded. Regardless, as the economic divide between young and old widens based on spiraling property values that benefit older Koreans, young South Koreans have embraced cryptocurrencies as an investment path to wealth and are protesting the crackdown. [72]

In the United States, regulators have sought to intervene when they suspect fraud, as the SEC did in three initial coin offerings last year, but regulators have generally not maintained a consistent position or made a broad statement about the role it feels cryptocurrencies should play in the economy. [73]

On the one hand, the SEC turned down the first request for an exchange-traded fund; on the other, the Commodities Futures Trading Commission, which regulates futures markets, allowed the CME (Chicago Mercantile Exchange) and CBOE (Chicago Board Options Exchange) to launch bitcoin futures contracts. [74] As the trading volume in cryptocurrencies has increased, even their critics are encouraging U.S. regulators to get more involved to “reduce shenanigans in the market,” as Georgetown University finance professor James Angel puts it.

“I am now of the opinion that the best way to clamp down on the illegal uses is to strictly regulate the entry and exit points” through exchanges and traded instruments, Angel says. Given that much bitcoin trading happens on poorly regulated exchanges, he says, “it is more likely that a properly regulated financial sector will apply anti-money laundering and know-your-customer rules, making it easier to track the bad guys. It should also bring in increasing liquidity that will help reduce volatility.”

Georgetown’s James Angel

Bitcoin does have its enthusiasts among nation-states. Switzerland, with its legacy of bank secrecy, seems ready to embrace cryptocurrencies. In January, Economics Minister Johann Schneider-Ammann made the case for Switzerland to become a “crypto-nation” at a crypto finance conference in the alpine resort town of St. Moritz, where bitcoin can be used to buy lift tickets on the ski slopes. [75] Already, Switzerland is becoming the country of choice for initial coin offerings: Of the 10 biggest ICOs, four have used Switzerland as a base, according to accounting firm PricewaterhouseCoopers. [76]

Venezuela is another nation that thinks it has a future with cryptocurrencies. On Feb. 20, it launched its own cryptocurrency, known as the petro, which many say the nation plans to use to skirt U.S. trade sanctions. [77] Unlike other cryptocurrencies, the petro is backed by physical assets, the nation’s substantial oil reserves. Venezuela is using the new cryptocurrency to help raise money to bail out its faltering economy, which has contracted by one-third in the past five years. Inflation is projected to hit 13,000 percent this year, according to the International Monetary Fund. Vice President Tareck El Aissami said it was resorting to the cryptocurrency to try to overcome the “economic sabotage” inflicted by the United States. [78]

Among the other countries considered bitcoin-friendly: Denmark, Estonia, the Netherlands, Sweden, Australia, Canada, Finland and the United Kingdom. [79] Most recently, Russia – which had been hostile to cryptocurrencies – said it too may consider its own digital currency to help avoid international sanctions. Sergei Glazyev, an aide to Russian President Vladimir Putin, confirmed recently that his nation was contemplating a crypto-ruble that would allow Russia to “settle payments with our business partners all over the world regardless of sanctions.” [80]

In the end, is bitcoin a bubble, as Roubini claims, one worse than the Netherlands’ tulip mania of 1634 to 1637 when the price of a bulb at times exceeded the annual income of a skilled worker? Or is it a transformative innovation, a technological advance that will redefine commerce? While many economists lean in the direction of calling it a bubble, only a few are as definitive as Roubini.

But there is agreement that bitcoin has changed the world, if only because of its blockchain technology. Despite its speculative extremes, bitcoin relies on a “durable technology that is likely to continue to evolve and strengthen,” Viktor Shvets, head of global and Asia-Pacific equity strategy for Australian investment banking firm Macquarie, told investors last year. [81]

Bitcoin may turn out to be the Netscape of cryptocurrency: an adventurous pioneer that changed the landscape but then lost momentum to faster-reacting and innovative competitors. In other words, there is no guarantee it will be around to witness all of the commercial and industrial disruption its technology is apt to spawn.

“Blockchain is the killer app, but most of the billions being invested in blockchain have nothing to do with bitcoin or cryptocurrencies,” says Georgetown’s Angel. “Bitcoin has enough defects that I expect it will fade into obscurity eventually. I see it being bypassed by many of the newer blockchain applications like ethereum and ripple that have much better long-term prospects.”

About the Author

Pat Wechsler is a veteran journalist who has held senior editing and writing positions at Businessweek, Bloomberg, Newsday and New York magazine. She served as a senior vice president at FleishmanHillard, where she created and ran an award-winning online thought-leadership magazine focused on the intersection of communications, marketing and media. Her previous reports for SAGE Business Researcher were on Customer Service, Cybersecurity, The Boycott and Data Security.

Chronology

1980–2008 **Pioneers lay groundwork for cryptocurrencies.**

Mid 1980s	Cryptographer David Chaum invents the blind signature for untraceable payments, which lays the groundwork for digitalized currency transactions. He later creates eCash, a precursor to cryptocurrencies.
1993	Eric Hughes, an American mathematician and computer programmer, publishes “A Cypherpunk’s Manifesto” and helps create the cypherpunk movement of privacy advocates who develop and support privacy-enhancing technologies such as cryptocurrencies as a means to social and political change.
1998	Computer scientist Wei Dai proposes the creation of a cryptocurrency, known as b-money, and outlines the basic properties underlying all cryptocurrencies today.
2008	A person or persons using the pseudonym Satoshi Nakamoto proposes bitcoin, a peer-to-peer version of electronic cash that would send online payments without going through a financial institution.
2009–2015	**Bitcoin and its imitators take off.**
2009	Bitcoin software is released to the public, and the peer-to-peer, distributed-ledger technology by which bitcoins are created and transactions are recorded and verified, known as blockchain, goes live.
2010	One of the first legal bitcoin-based transactions is completed: 10,000 bitcoins for two pizzas. At the bitcoin price of around $10,000 prevailing in late February 2018, the buyer would have paid $100 million for the pies.
2011	Litecoin, a bitcoin clone that clears transactions four times faster, hits the cryptocurrency market, followed over the next few years by more than 1,300 other rivals.
2012	Coinbase, a digital-currency exchange that brokers transactions of cryptocurrencies – bitcoin, ethereum, bitcoin cash and litecoin – opens in San Francisco. It currently has more than 13 million customers.
2013	The price of a bitcoin crosses the $1,000 threshold.
2014	Mt. Gox, the biggest bitcoin exchange at the time, collapses after the theft of 850,000 bitcoins, most likely by hackers who increasingly have been targeting bitcoin and cryptocurrency sites after prices rise.
2015	Ethereum initiates its live blockchain. It becomes the second most valuable cryptocurrency as it gains popularity against bitcoin.
2017–Present	**Bitcoin market becomes highly volatile.**
2017	The U.S. Securities and Exchange Commission rejects a proposal by bitcoin investors Cameron and Tyler Winklevoss for a bitcoin exchange-traded fund (ETF).… Hackers, allegedly from North Korea, demand ransom in bitcoin from hundreds of thousands of computer users in 150 countries to release their systems and keep their data confidential.… The Swiss municipality of Chiasso says it will let residents pay their taxes in bitcoin.… The price of bitcoin hits $10,000 in late November.… On Dec. 17, the price of bitcoin peaks at $19,783.21.… The Commodity Futures Trading Commission, which regulates futures markets, approves bitcoin futures contracts on the CBOE (Chicago Board Options Exchange) and CME (Chicago Mercantile Exchange).
2018	Bitcoin loses 40 percent of its value in January as the entire cryptocurrency market plummets.… The International Monetary Fund calls for global coordination on regulating bitcoin and other cryptocurrencies.… South Korea, home to one of the world’s most popular bitcoin markets, bans the use of anonymous banking accounts when trading cryptocurrencies.

Resources for Further Study

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Organizations

American Cryptocurrency Association
www.usacryptoassociation.com/
www.linkedin.com/company/american-cryptocurrency-association/
Association dedicated to bitcoin advocacy and dissemination of bitcoin news.

The Bitcoin Foundation Inc.
1 Ferry Building, Suite 255, San Francisco, CA 94111
https://bitcoinfoundation.org/
llew@bitcoinfoundation.org
Organization dedicated to educating the public and media about the benefits of bitcoin and its technology.

Chamber of Digital Commerce
https://digitalchamber.org/
info@digitalchamber.org
https://www.linkedin.com/company/chamber-of-digital-commerce/
Trade association and political action committee working on behalf of digital commerce and technology innovations, such as blockchain.

DC Blockchain Innovation Center
1133 15th St., N.W., 12th Floor, Washington, DC 20001
1-202-765-3105
https://digitalchamber.org/initiatives/dc-blockchain-center/
hello@dcblockchaincenter.com
Blockchain innovation center created by the Chamber of Digital Commerce.

Global Blockchain Business Council
1440 G St., N.W., 9th floor, Washington, DC 20005
https://www.gbbcouncil.org/
info@gbbcouncil.org
A group that seeks to advance understanding of blockchain technology and promote its adoption.

Wall Street Blockchain Alliance
https://www.wsba.co/
info@wsba.co
Trade association working to guide and promote comprehensive adoption of distributed ledger technology across financial markets.

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