
Bitcoin: Investment or Illusion?

Stay away from bitcoin. It is a mirage. —Warren Buffett¹

It is a fraud. It is worse than tulip bulbs. —Jamie Dimon²

Bitcoin offers a sweeping vista of opportunity. —Marc Andreessen³

I am a believer. —Abigail Johnson⁴

[I am] still thinking about bitcoin...Folks also were skeptical when paper money displaced gold. —Lloyd Blankfein⁵

In September 2017, John Brown, a hedge fund manager in Greenwich, Connecticut, faced a quandary. The tactical hedge fund was mandated to field investment ideas from its limited partners (LPs), and Brown received a call from his largest LP, who asked in less-than-polite terms why Brown's fund had no exposure to digital currencies, specifically bitcoin. The LP had spent his summer in a popular resort town a few hours outside of New York City reading articles and listening to CNBC reports about bitcoin and became increasingly irritated as he listened to his friends and neighbors discussing the paper fortunes they were generating on the back of bitcoin's stunning rise (**Exhibit 1**).

The LP wanted to know why Brown had not considered a bitcoin allocation for the fund, and while Brown explained the long-term importance of other strategic positions he had been working on, the LP wondered aloud rhetorically when the next redemption window was. Brown needed to generate an investment thesis for or against bitcoin, and he had no time to waste.

Brown began to do some initial research. The price of a "bitcoin"—nothing more than a computer program and human imagination—was around USD5,000 (**Exhibit 2**).⁶ During the previous year alone, the price had

¹ Alex Crippen, "Buffett Blasts Bitcoin as 'Mirage': 'Stay Away!'" CNBC, March 14, 2014.

² Hugh Son, Hannah Levitt, and Brian Louis, "Jamie Dimon Slams Bitcoin as a 'Fraud,'" Bloomberg, September 12, 2017.

³ Marc Andreessen "Why Bitcoin Matters," *New York Times*, January 21, 2014.

⁴ Beth Healy, "Abby Loves Bitcoin: Fidelity Chief Touts Digital Currency in First Major Speech," *Boston Globe*, May 23, 2017.

⁵ Lloyd Blankfein (@lloydblankfein), "Still Thinking about #Bitcoin. No Conclusion - Not Endorsing/Rejecting. Know that Folks Also Were Skeptical When Paper Money Displaced Gold," Twitter, October 3, 2017, 11:09 a.m., <https://twitter.com/lloydblankfein/status/915277671831044098> (accessed Oct. 18, 2017).

⁶ Data from CoinDesk accessed on September 13, 2017. USD = U.S. dollars.

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appreciated over 700%. Every mainstream observable metric regarding its usage and users' engagement had skyrocketed (**Exhibits 3–5**).⁷ Brown had to admit, too, that it had become impossible to consume news of any kind recently without hearing about bitcoin. He reflected on his LP's question and wondered whether other hedge funds saw an investment opportunity in digital currencies. He wondered if the interest in bitcoin was just in the United States. He wondered about supply and demand factors. He wondered how a bitcoin came into existence. He wondered about volatility. He wondered if bitcoin was actually a currency, an asset, a commodity like gold, all of those things, or none of those things. He wondered what bitcoin might be correlated to, if anything. He wondered if any of this could help him determine answers to his ultimate questions: To invest or not, and why?

He had a lot of work to do, and the clock was ticking.

A (Very) Brief History of Bitcoin⁸

If bitcoin had a birthday (**Exhibit 6**), it would be in October 2008, when a person, or group of people, using the name Satoshi Nakamoto, released a paper titled “Bitcoin: A Peer-to-Peer Electronic Cash System.” This paper, leveraging decades of cryptography research, proposed “a purely peer-to-peer version of electronic cash [which] would allow online payments to be sent directly from one party to another without going through a financial institution.”⁹ The purpose of bitcoin, as expressed in the paper, was to “allow any two willing parties to transact directly with each other without the need for a trusted third party.” It was unclear whether the *intention* of these original electronic cash networks was to circumvent or disintermediate governmental intervention. However, as early as the early 1980s, computer scientists were inventing untraceable payment systems that separated a person's identity from their transactions, and enthusiasts of the technology touted its ability to separate from fiat currencies.¹⁰ Software code would authenticate and protect transactions instead of the trusted third party, such as the bank or Treasury Department, among others. The bitcoin, the actual thing itself, would simply serve as a “certificate of authenticity” of a transaction between two peers.¹¹

The first bitcoin “transaction” occurred roughly three months later, on January 12, 2009, when Satoshi Nakamoto sent Hal Finney, a computer scientist who contributed to an intellectual precursor to bitcoin, 10 bitcoins as a test of the network.¹² By July 2011, the price of bitcoin climbed to around \$15, and tens of thousands of bitcoins were trading on a daily basis. However, by this time, security flaws in the apps used to store bitcoins on a personal computer or mobile device—called *wallets*—were becoming better known and publicized. Bitcoin wallets were—and continued to be—subject to hacking and theft.¹³ While the usage of the “censorship-free currency” was growing quickly, the largest volume of usage at the time remained online gambling and trading in illicit drugs on the Silk Road website (an anonymous black market).¹⁴

Shortly thereafter, in August 2012, Coinbase, a start-up digital currency exchange with turnkey software¹⁵ enabling nontechnical users to trade digital currencies, debuted at Y Combinator's “Demo Day” (Demo Day was an event at which the latest class of Y Combinator–funded founders presented their companies to a room

⁷ Data from Spreadstreet accessed on September 13, 2017.

⁸ “An Abridged History of Bitcoin,” *New York Times*, November 19, 2013.

⁹ Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” October 2008, <https://bitcoin.org/bitcoin.pdf> (accessed Nov. 21, 2017).

¹⁰ Sundeep Gantori, et al., “Cryptocurrencies: Beneath the Bubble,” UBS, October 13, 2017.

¹¹ Noam Cohen, “Speed Bumps on the Road to Virtual Cash,” *New York Times*, July 3, 2011.

¹² Andrea Peterson, “Hal Finney Received the First Bitcoin Transaction. Here's How He Describes It,” *Washington Post*, January 3, 2014.

¹³ Laura Shin, “Hackers Have Stolen Millions of Dollars in Bitcoin Using Only Phone Numbers,” *Forbes*, December 20, 2016.

¹⁴ Andy Greenberg, “FBI Says It's Seized \$28.5 Million in Bitcoins from Ross Ulbricht, Alleged Owner of Silk Road,” *Forbes*, October 25, 2013.

¹⁵ A computer system customized for a specific application. See https://www.webopedia.com/TERM/T/turnkey_system.html for more information (accessed Nov. 21, 2017).

full of investors and press).¹⁶ As a digital currency exchange, Coinbase provided its customers a user-friendly platform for buying, selling, transferring, and storing digital currencies.¹⁷ All users had to do was point and click; there was no coding or technical knowhow needed. It was a huge success, and Coinbase grew quickly into the most popular platform for trading digital currencies.¹⁸

In April 2013, the first venture capital flowed into bitcoin-related companies. In September 2013, the first bitcoin investment product was created, the Bitcoin Investment Trust. One month later, the FBI seized the Silk Road website, which preferred bitcoin as the method of payment. Silk Road was believed to be responsible for half of all bitcoin transactions at the time. Even with the seizure, by December 2013, bitcoin surpassed Western Union in daily transaction volume for the first time.

In February 2014, without notice, the then-largest bitcoin exchange (Mt. Gox) suspended customer withdrawals, citing technical issues. It was later revealed in its subsequent bankruptcy filing documents that Mt. Gox was hacked, and 744,000 bitcoins had been stolen, worth approximately USD500 million at the time. In 2015, Coinbase launched its first bitcoin exchange in the United States.¹⁹ While the price of bitcoin kept rising in 2016, observers wondered whether the exuberance was more a function of its underlying technology, blockchain, rather than anything having to do with bitcoin itself.²⁰

Brown wondered what might have driven the price from USD700 to USD5,000? Brown heard that the Mt. Gox exchange was originally created as a platform for exchanging trading cards from the fantasy game Magic: The Gathering.²¹ Something did not smell right.

Bitcoin versus Blockchain²²

In its most abstract sense, blockchain was a new platform technology enabling an improved ability to verify and record the exchange of value among an interconnected set of users; it was a secure and transparent way to track the ownership of assets before, during, and after any transaction. Each transaction between parties in the network was a “block,” and the cumulative set of transactions across the entire network was the “chain”: blockchain.²³

Blockchain was a platform technology allowing any network of users to track and trade virtually anything of value. *Bitcoin* was the required medium of exchange to use one specific public blockchain (i.e., a blockchain that was open to anyone) in order to exchange value on that one blockchain.

Brown recalled that although Warren Buffet and Jamie Dimon had spoken ill of bitcoin, Dimon particularly had been a vocal proponent of blockchain. Brown learned that JPMorgan Chase & Co. had invested in and built a private blockchain (i.e., only open to invited parties), called *Quorum*, specifically for financial institutions, and that it was piloting it as an underpinning of its global payments function.²⁴ Although private blockchains

¹⁶ See <https://www.ycombinator.com/demoday> for more information (accessed Nov. 21, 2017).

¹⁷ See Coinbase.com for more information (accessed Dec. 6, 2017).

¹⁸ Data from Coinbase accessed on September 13, 2017.

¹⁹ “The Entire History of Bitcoin in a Single Infographic,” Futurism.com, <https://futurism.com/images/the-entire-history-of-bitcoin-in-a-single-infographic/> (accessed Nov. 28, 2017).

²⁰ Alicia Naumoff, “Why Bitcoin Boomed in 2016, What Will Happen in 2017,” CoinTelegraph, December 31, 2016.

²¹ David Yermack, “Is Bitcoin a Real Currency? An Economic Appraisal,” NBER Working Paper 19747, December 2013.

²² George (Yiorgos) Allayannis and Aaron Fernstrom, “An Introduction to Blockchain,” UVA-F-1810 (Charlottesville, VA: Darden Business Publishing, 2017).

²³ Allayannis and Fernstrom.

²⁴ As of September 13, 2017, JPMorgan Chase offered an enterprise blockchain platform called *Quorum*, specifically for and marketed to financial institutions.