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Bitcoin's Uncertain Future in China

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Bitcoin is changing the way the world thinks about money, and its impact is growing, especially in the United States. The driving force behind Bitcoin's explosive growth in 2013 was the entry of the Chinese market, while Bitcoin's subsequent slump in 2014 is largely derived from prohibitive measures issued by China's central bank. If Chinese authorities continue their crackdown on Bitcoin, the global market and, by extension, the U.S. market, may be severely impacted.

Created in 2009, Bitcoin is a "crypto-currency" designed to allow direct payments between parties without involvement of financial institutions or government authorities. (For a more detailed description of the Bitcoin system, see appendix 1.) Users can transfer Bitcoins electronically as payment for goods and services, or convert Bitcoin to fiat currencies in various exchanges. Like gold, Bitcoin's value is not controlled by any central bank, nor is it backed by any government. With no intrinsic value, Bitcoin's worth fluctuates freely based on supply and demand and the public's perception of Bitcoins as a store of wealth.

Initially, economists scoffed at Bitcoin as more of a financial experiment than a legitimate payment system. Some economists denounced it as "evil," because its value is not backed by any government nor can it be used to "make pretty things" as can gold.[1] Former Federal Reserve Chairman Alan Greenspan warned that, with no intrinsic value, Bitcoin's rising price constituted a bubble.[2] Others argued that its lack of regulation predisposes the crypto-currency to be abused as a "weapon" of the "Libertarian political agenda" aimed at damaging the state's ability to collect tax and to monitor financial transactions.[3]

But after the price of one Bitcoin rose more than 50-fold within one year, peaking at nearly $1,200

Key Points

- Bitcoin is a decentralized, money-like virtual commodity that was created in 2009 to facilitate peer-to-peer transactions. There are currently more than 12.5 million Bitcoins in circulation with a limit of 21 million.
- Bitcoin's potential lies in its ability to be used in e-commerce transactions and money transfers.
- Rising interest from China's mobile phone users, technology community and investors pushed Bitcoin to its peak.
- Chinese Bitcoin exchanges accounted for the largest trading volumes in 2013.
- PBoC efforts to curb the use of Bitcoin in China have driven price fluctuations in the global Bitcoin market.
- If PBoC continues to shut down Chinese Bitcoin exchanges, Hong Kong will likely absorb some of the huge Chinese Bitcoin market.
- Continued suppression of the Bitcoin market in China may severely impact global trading volumes, price levels, and perceived legitimacy.

in November 2013, Bitcoin started to move from the fringes of financial innovation into the mainstream.

Wall Street's "biggest endorsement of Bitcoin to date" came in a report issued by Bank of America Merrill Lynch (BAML) foreign exchange (FX) strategists in December 2013.[4] The BAML report predicted that, as both "a medium of exchange as well as a store of value," Bitcoin can become "a major means of payment for e-commerce and may emerge as a serious competitor to traditional money transfer providers" (see table 1).[5]

Table 1: Cost-Benefit Analysis of Bitcoin

	Medium of Exchange	Store of Value
Advantages	Low transaction costs	Value protected by finite supply
	More secure, transparent, and portable than cash	Evasion of capital controls
	Disincentivizes experimentation with alternate digital currencies	Like gold, large benefits given negative correlation with risk sensitive assets
Disadvantages	Further regulation would increase transaction costs	Price volatility
	Bitcoin exchanges vulnerable to hacking	Seigniorage accrues to Bitcoin miners, incentivizing government crackdown
	Payment confirmation delays	Status as non-fiat currency

Source: Bank of America Merrill Lynch

BAML FX and rates strategist David Woo argues that, as a medium of exchange, Bitcoin has the potential to become a competitive player in the e-commerce market, possibly accounting for 10 percent or more of all e-commerce payments for business-to-customer transactions. Moreover, an increasing number of vendors, including Overstock.com and Virgin Galactic, accept the crypto-currency as payment. Since Overstock.com started accepting Bitcoins on January 9, 2014, Bitcoin users have spent more than $1 million on the website. Patrick Byrne, CEO of Overstock.com, expects the company's Bitcoin sales to reach up to $15 million by the end of 2014.[6] Though Bitcoin sales only represent 1 percent of the company's total sales this year, accepting Bitcoin has successfully attracted new customers, who represent nearly 60 percent of the 4,300 Bitcoin buyers.[7] Byrne expects that Amazon.com will also eventually start accepting Bitcoin as payment, as Bitcoin users will "become too big of a market" to ignore.[8]

Bitcoin's value as a medium of exchange is also highlighted by its potential to dominate money transfer services like Western Union, MoneyGram, and Euronet. In fact, Bitcoin's market-driven value, which peaked at nearly $14 billion last year, surpassed the market capitalization of Western Union, at just over $9 billion in November.[9]

As for Bitcoin's role as a store of value, or as an asset that can be stored and traded at a later time, Woo is less optimistic. Like gold, Bitcoin pays no interest, has a limited supply, and is difficult to trace. Unlike gold, however, Bitcoin's price is extremely volatile, hindering its viability as a predictable medium of exchange. One J.P. Morgan Securities strategist showed that Bitcoin's average volatility of 120 percent over the last three years is extreme compared to the typical volatility of emerging markets foreign exchange of about 9 percent

over the same period.[10] Moreover, Bitcoin does not have the reputation as a store of value that gold has maintained throughout history. Because of this disparity, Woo argues that Bitcoin's worth as a store of value mimics silver more than any other commodity.

Bitcoin's potential is not limited to payments services, but can be applied "anywhere a transaction between two parties has traditionally required third party validation," according to analysis by Deloitte Consulting LLP.[11] By utilizing an online public ledger called the "block chain" (see appendix 1) on which all confirmed transactions are recorded, a small fraction of Bitcoin denoting physical property or personal information can serve to transfer "digital signatures, digital contracts, digital keys (to physical locks, or to online lockers), digital ownership of physical assets such as cars and houses, digital stocks and bonds … and digital money."[12]

Governments, regulators, and investors have started to take notice. On March 25, the U.S. Internal Revenue Service (IRS) declared that virtual currencies such as Bitcoin are classified as property rather than as currencies, and taxed accordingly.[13] While such regulation may deter illicit users from pursuing Bitcoin, some financial experts argue that integrating Bitcoin into the mainstream financial system lends it legitimacy and "puts [it] on a track to becoming a true financial asset."[14] U.S. Senator Tom Carper (D-Del.), who commissioned a study on Bitcoin earlier this year to examine its "increasing role in our economy," said that the IRS decision encourages "playing by the rules when utilizing Bitcoin and other digital currencies." [15] The U.S. Commodity Futures Trading Commission is also looking into regulating Bitcoin derivatives markets, further signaling that Bitcoin could become a more mainstream financial product.[16]

American Bitcoin companies such as exchanges, investment vehicles and storage platforms are prominent in the global Bitcoin community. According to the 'State of Bitcoin 2014' report, 53 percent of all venture capital (VC)-backed Bitcoin companies are based in the United States; those 16 U.S. companies (of 30 globally) received $68.1 million in VC dollars, or 70 percent of the total invested in Bitcoin companies worldwide.[17] The largest VC firm in the United States, New Enterprise Associates, announced in April that it will begin investing in Bitcoin.[18] The United States is also a leader in the Bitcoin job market. A survey of LinkedIn revealed that, of the 7,560 individuals who identified themselves as professionals in the Bitcoin sector, around 50 percent are based in the United States, with the UK in distant second at 9 percent.[19]

Bitcoin's "clear potential for growth" may manifest as soon as fall 2014, when a project created by two Massachusetts Institute of Technology (MIT) students will grant each incoming MIT undergraduate $100 in Bitcoin in order to create a Bitcoin "ecosystem."[20] The Bitcoin network earned another "key stamp of approval" on April 30 when financial software and media company Bloomberg LP (Bloomberg) announced that it will list Bitcoin prices from San Francisco-based exchange Kraken and broker-dealer CoinBase on its financial data terminals.[21] Bloomberg's decision, which was made "in response to requests from hundreds of customers wanting access to Bitcoin prices," is expected to bring "substantial institutional investor interest."[22] With Bloomberg's boost to Bitcoin's transparency and MIT's future contribution to innovation in digital assets, Bitcoin is primed to promote further advancement in financial technology.

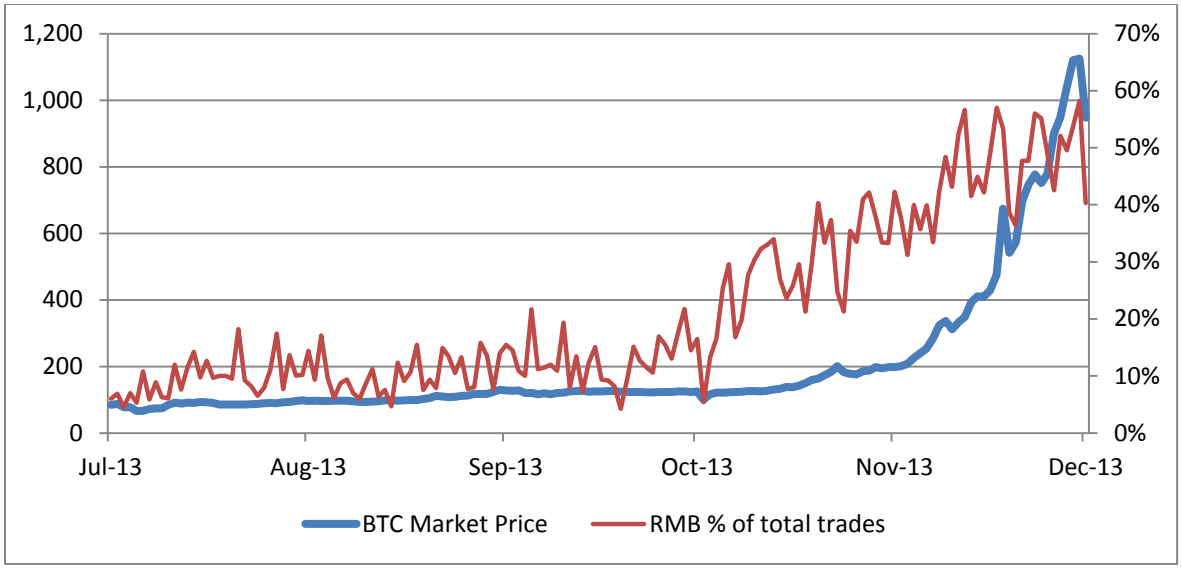
The global Bitcoin market, however, is still vulnerable. High levels of Chinese trade and investment in Bitcoin throughout 2013 underpinned the crypto-currency's extreme price jump. Whereas the United States government has taken measures to investigate and regulate Bitcoin without restricting its use, the approach of Chinese authorities toward Bitcoin's rise can be considered more contentious.[23] A series of prohibitive announcements

issued by China's central bank have severely limited Chinese users' ability to trade or transact in Bitcoin while Chinese Bitcoin exchanges are pressured to close operations, resulting in the continuous decline of Bitcoin's global price. If Chinese regulators successfully prevent Chinese users from accessing Bitcoin, the global Bitcoin market will face continued price declines, significantly decreased trading volumes, and threats to its legitimacy.

China's Domination of the Bitcoin Market

By any measure, Chinese users appeared to be the force behind fluctuations in the global Bitcoin market in 2013, contributing to the market's miraculous peak and recent downturn. First, it is clear that, throughout 2013, there was a high correlation between renminbi's (RMB) "share of volume of all Bitcoin exchanges and price of Bitcoin" (see figure 1).[24]

Figure 1: Correlation between BTC[*] Market Price (USD) and RMB % of Total Trades

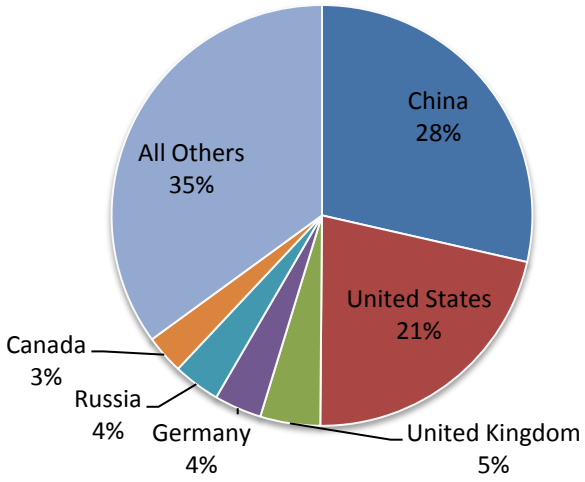


Source: Bitcoinity.com, CoinDesk

This rising trend is explained by a series of events within China whereby Bitcoin rapidly gained mass exposure.[†] The concept of Bitcoin was first introduced on a national level to the Chinese in May 2013 when CCTV aired a half hour-long documentary devoted entirely to the subject. Following this exposure, China surpassed all other countries in the number of downloads of desktop Bitcoin clients, or computer programs, that allow users to trade and store Bitcoins in digital "wallets" (see figure 2).[25] By September, China logged the second-highest number of nodes, or servers, which keep track of the public transaction ledger, accounting for 11.3 percent of the global total.[26]

[*] BTC is the symbol for Bitcoin.
[†] More information on why Chinese users became interested in Bitcoin in "Why China?" below.

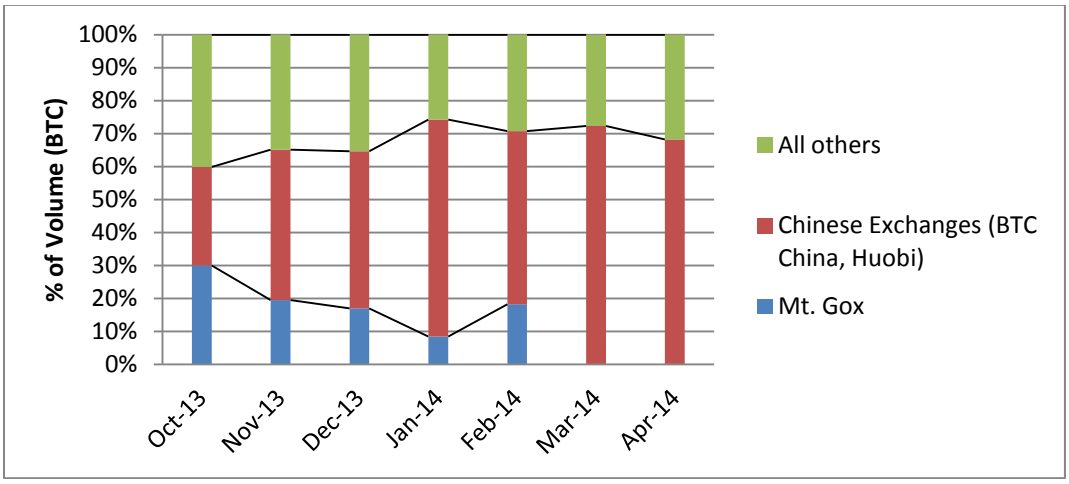
Figure 2: Global Downloads of Bitcoin Desktop Client by Country, May 2013



Source: Sourceforge.net[27]

Several Chinese e-commerce companies, including merchants on China's eBay-like site Taobao.com and tech giant Baidu Inc.'s Jiasule software security service, started accepting Bitcoin as payment in October 2013. The virtual currency then became integrated into China's network of online payment services.[28] The effects on the Bitcoin market were clear: the same month that these services started accepting Bitcoin, trades on China's top Bitcoin exchange, BTC China, surpassed those on the previous top exchange, Japan-based Mt. Gox[‡] (see figure 3), RMB-denominated trades surpassed U.S. dollar-denominated trades, and the market price of Bitcoin surged.[29]

Figure 3: Bitcoin Transaction Volume per Exchange

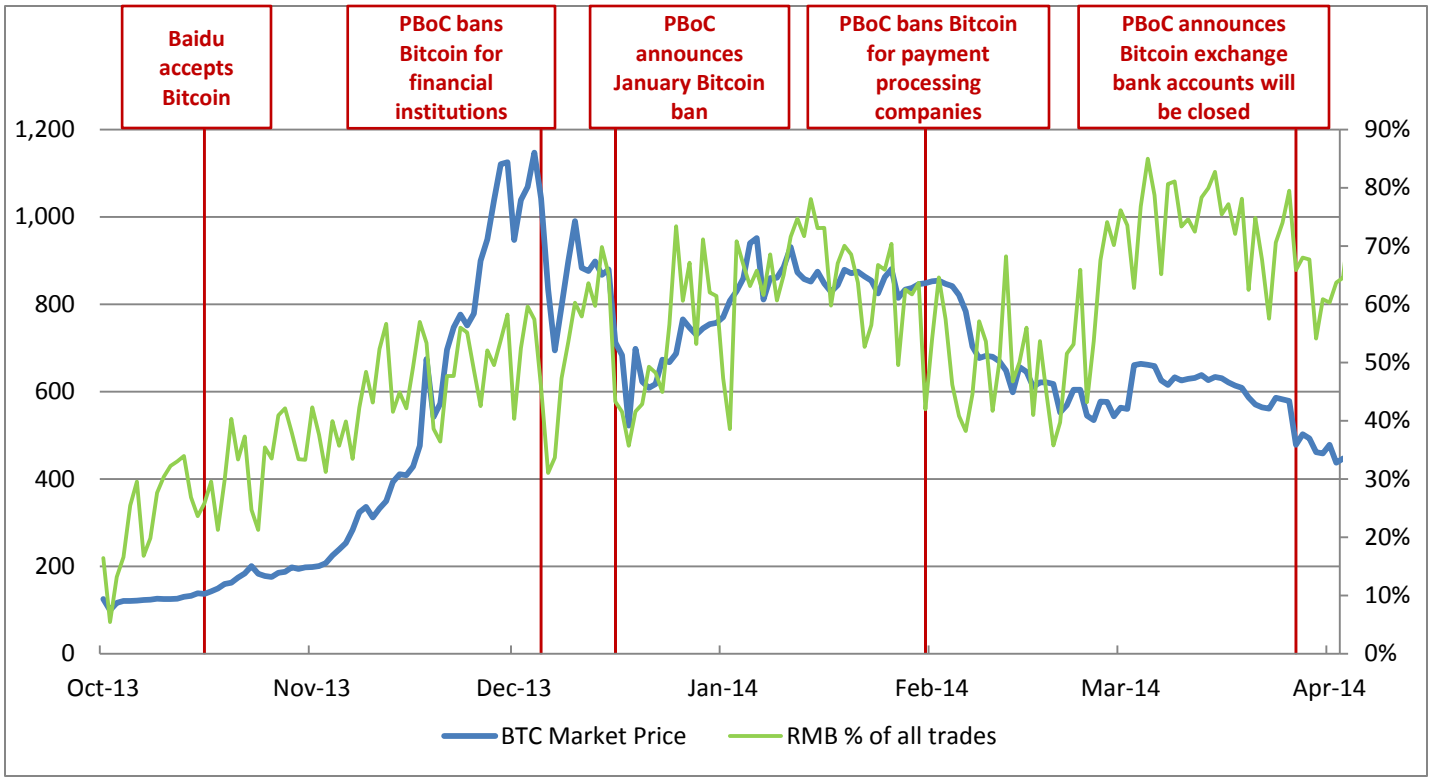


Source: Bitcoinity.org

[‡] Tokyo-based Mt. Gox, formerly the world's biggest Bitcoin exchange, collapsed and went bankrupt in February 2014 after it lost more than 850,000 Bitcoins, totaling more than $450 million. Critics believed that the coins had been stolen by hackers or by Mt. Gox itself. In late March, about $116 million of the missing Bitcoin was retrieved.

Bitcoin's surging rise in China came to an abrupt halt on December 5, 2013, when the People's Bank of China (PBoC) issued a notice prohibiting financial institutions from dealing in Bitcoin in order to "protect the status of the renminbi as the statutory currency, prevent risks of money laundering, and protect financial stability."[30] On December 16, PBoC ordered its largest third-party payment processing companies, including Alibaba's Alipay, to halt transactions in digital currency by January 31. Two days later, BTC China was forced to stop accepting RMB-denominated deposits, thereby prohibiting new purchases of Bitcoins within China.[31] The effects of BTC China's closure devastated the market: the price of Bitcoin in China toppled more than 50 percent from its peak on December 1 (see figure 4).[32]

Figure 4: Effects of China's Bitcoin Policy on Price (USD)



Source: Bitcoinity.org, CoinDesk

BTC China and other Chinese exchanges were able to continue trading by finding a loophole that allowed them to circumvent payment processing companies and accept payments directly in their corporate bank accounts. By March 27, 2014, PBoC appeared to have closed the loophole by "requiring banks and payment companies to close all the accounts opened by the operators of websites that trade in the virtual currency by April 15."[33] Perceived by some as a death knell to the Chinese and, by extension, the global Bitcoin market, this move was expected to force all virtual currency trading websites in China to close, or move their servers abroad and rely on foreign bank accounts and payment companies. Following the announcement, global Bitcoin prices tumbled yet again, falling 7.77 percent by the end of the day (see figure 5).[34]

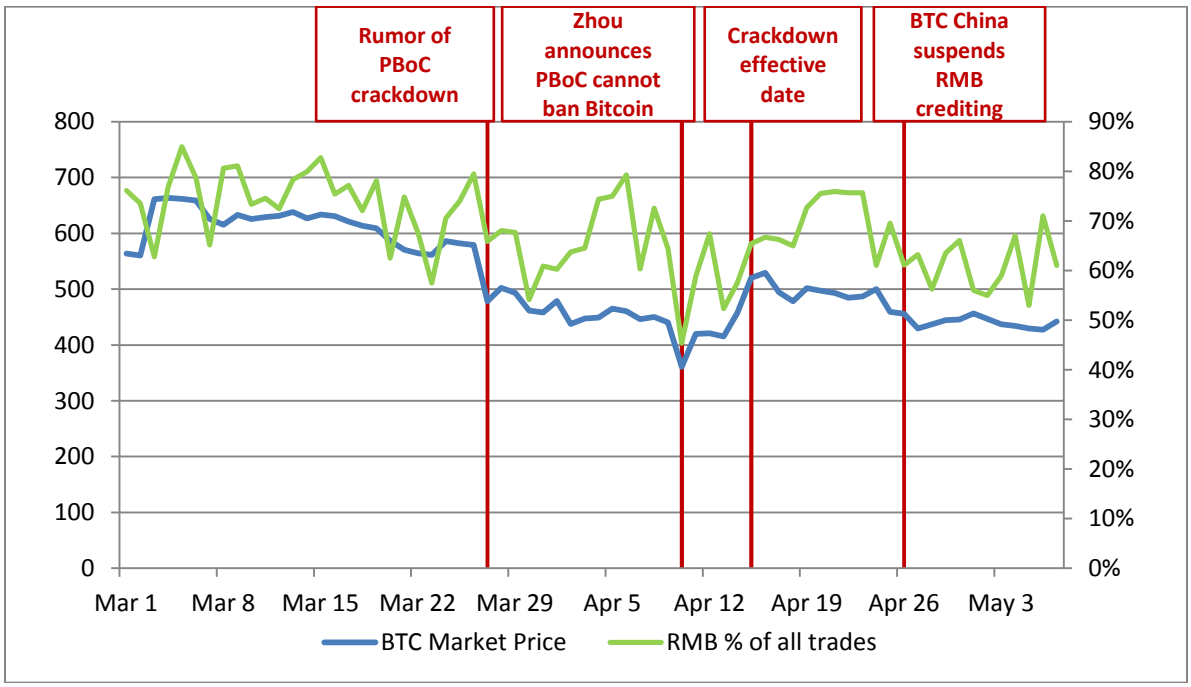
But these PBoC restrictions—first published by Caixin, a Chinese financial publication, but not independently verified—have not proven as definitive as was initially thought. In fact,

none of China's three biggest Bitcoin exchanges said they received official notification from PBoC of the decision, reflecting the tendency of Chinese authorities to issue private verbal warnings to parties involved with Bitcoin without explicitly and publicly banning it.[35] On April 10, however, some Chinese exchanges were informed by their local bank branches, not PBoC, that their business accounts would be frozen. Following the closures of these exchanges, the market price of Bitcoin fell 10 percent overnight.[36]

Despite the regulatory confusion, BTC China CEO Bobby Lee managed to install China's first physical Bitcoin ATM, which handles cash-to-Bitcoin transactions, in Shanghai on April 16.[37] By utilizing a mobile phone app, the ATM skirts PBoC's April 15 restrictions, though Bitcoin-to-cash transactions are still prohibited.[38] Contrary to expectations, the April 15 restrictions have not significantly affected the overall Bitcoin market; the RMB percent of all trades has recovered to pre-announcement levels, though USD market price has decreased about 10 percent (see figure 5).

At the April 11 Boao Forum for Asia, a regional economic conference in China's Hainan Province, PBoC Governor Zhou Xiaochuan announced that "it is out of the question of banning [sic] Bitcoin as it is not started by central banks," and that Bitcoin is more comparable to "a kind of tradable and collectible asset, such as stamps, rather than a payment currency."[39] When news of Zhou's statement broke, Bitcoin's price rose nearly 20 percent (see figure 5).[40] Zhou's statement is significant for the future of Bitcoin in China. Though future PBoC regulations cannot be ruled out, non-threatening, official-level recognition of Bitcoin's presence has reignited optimism in the market.

Figure 5: Effects of China Policy on Bitcoin Price (USD), March to May



Source: Bitcoinity.org, CoinDesk

Rumors and unofficial announcements of PBoC restrictions on Bitcoin continued to circulate through the end of April, perhaps in anticipation of China's upcoming Global Bitcoin Summit starting May 10 in Beijing.[41] On April 25, Caixin reported that central bank officials

"specifically criticized various commercial banks for continuing to do business with BTC China" and other Bitcoin businesses during a closed-door meeting, prompting China Merchants Bank to issue a notice requiring all customers engaged in Bitcoin transactions to close their accounts.[42] The announcement forced BTC China to suspend RMB crediting of customer accounts, causing the international Bitcoin price to drop $40 overnight.[43] Most Chinese exchanges have subsequently closed their bank accounts in the face of "unprecedented pressure" from the central bank.[44] On May 6, China's three biggest exchanges (BTC China, OKCoin, and Huobi.com) collectively decided to pull out of the May 10, 2014 Global Bitcoin Summit "in light of the perceived clampdown of the central bank," according to Bobby Lee.[45]

The true attitude of China's regulators toward Bitcoin is characteristically ambiguous; while PBoC pressures banks and Bitcoin companies behind closed doors, its officials claim openly that China cannot ban Bitcoin.[§] Chinese IT entrepreneur Zhang Weiwu believes that "Bitcoin is tiny in the financial sense, but it is revolutionary in its essence," which may explain the regulatory disconnect between China's biggest banks and its central bank.[46] The closures of several exchanges at the end of April may suggest that Chinese banks are beginning to heed PBoC's warnings. Others within the Bitcoin community believe that "attempts by Chinese authorities to steer Bitcoin legitimacy" cannot succeed because "Bitcoin's legitimacy derives from its market adoption and continued usage among its participants," not political institutions.[47] Until PBoC adopts an official policy toward Bitcoin, rumors of continued regulation may continue to affect the global Bitcoin market.

Why China?

There is much speculation and anecdotal evidence as to why Chinese users are so engaged in the global Bitcoin market. In the United States, where Bitcoin holders can transact with more than 1,500 vendors, some enthusiasts are successfully "living on Bitcoin."[48] In contrast, the virtual commodity has hardly any retail use within China; most of China's 10 or so Bitcoin vendors stopped accepting Bitcoin after PBoC's December crackdown.[49] What, then, explains China's domination of Bitcoin transactions?

Evolution of E-Commerce

The Chinese market is already familiar with the use of virtual currencies. In 2002, Tencent Holdings Ltd. (Tencent) launched the "Q-coin," an online payment system that allowed users to pay for various Tencent services such as electronic greeting cards or software.[50] In 2006, Q-coin's popularity caught the attention of PBoC when internet users started trading the virtual currency among themselves and exchanging units of the currency for real goods and services on other websites.[51] In 2009, Q-coin was effectively shut down when PBoC issued a law that virtual currencies can only be traded for virtual goods and services out of fear that such currencies would "affect the real economy."[52]

Additionally, Chinese consumers have rapidly adopted e-commerce and online payment services such as those offered by tech giants Baidu, Tencent, and Alibaba. The China Internet Network Information Center estimated that 41.4 percent of Chinese Internet users used online payment services in June 2013, constituting a 10.8 percent increase in users since December 2012.[53] According to management consulting firm Bain & Company's annual

[§] PBoC has not released an official statement on Bitcoin since December 3, 2013. "The People's Bank of China and Five Associated Ministries Notice: 'Prevention of Risks Associated with Bitcoin,'" *BTC China*, December 3, 2013. *https://vip.btcchina.com/page/bocnotice2013*.

China E-Commerce Report, Chinese e-commerce spending surpassed that of the United States in 2013, and is expected to maintain 32 percent average annual growth through 2015.[54]

However, how Chinese companies approach Bitcoin may limit the crypto-currency's penetration into the Chinese e-commerce market. When Taobao and Baidu integrated Bitcoin into China's network of online payment services, Bitcoin prices and trading volume increased markedly. Yet since PBoC issued regulations forbidding such companies from accepting Bitcoin, RMB-denominated trading and prices have fallen.

Mining for Bitcoin

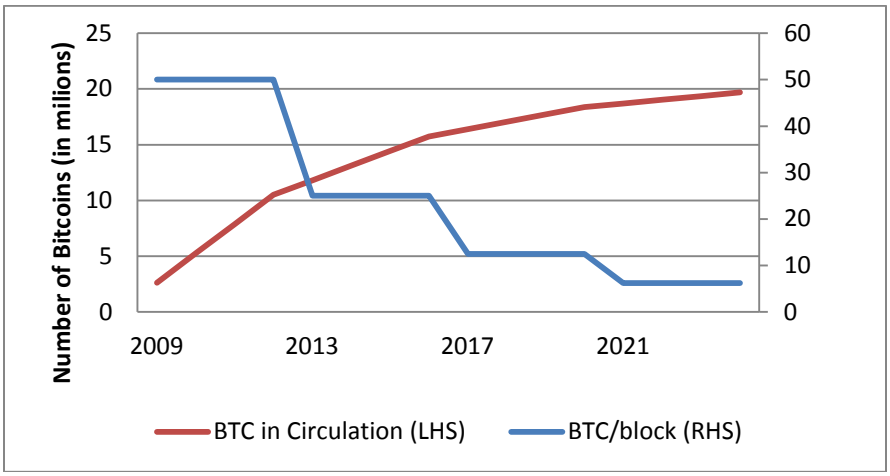
China's enormous online gaming community, which reached 55.5 million gamers in 2009, popularized the use of virtual currencies in online multiplayer games like World of Warcraft, where players can trade virtual credits earned in the game for cash or even real goods and services. [55] In a practice known as "gold farming," gamers congregate in "virtual sweatshops" for days on end to earn enough virtual credits to "level-up." This process is so time consuming and tedious that gold farmers can sell virtual gear like weapons and armor on prominent online marketplaces like eBay and Taobao to players unwilling to do the work.[56] The practice of gold farming is pervasive in China; it is estimated that there are more than 100,000 full-time gold farmers in China, constituting 80 percent of the world's total.[57]

Gold farming can be seen as a precursor to the practice of "mining" for Bitcoin. Mining describes a process where programmed computers perform complex algorithms to "solve blocks," or perform mathematical calculations to confirm transactions and increase security. As a reward, miners collect newly created Bitcoin and transaction fees for the transactions they confirm. [58] At present, 25 Bitcoins are awarded for solving a block, but that number is programmed to halve every four years, mimicking the rate at which commodities like gold are mined (see figure 6).[59] Thus, by the year 2140, the maximum number of Bitcoins will have been mined, capping the monetary base of Bitcoin at 21 million.[**]

Due to the decentralized and anonymous nature of Bitcoin mining, it is hard to determine how much mining activity is taking place in China. Zennon Kappron, director of financial consultancy Kapronasia, believes that China has become a major mining hub, which may contribute to China's comparatively high Bitcoin transaction volume.[60] China experienced a Bitcoin spike in late 2013 as tech enthusiasts rushed to construct large-scale mining operations, costing anywhere from $12,000 to $15,000 each.[61] One prominent figure in Beijing's Bitcoin circles estimated that China's miners, composed mainly of hardware engineers and IT aficionados, number in the tens of thousands.[62] Other Bitcoin speculators opted to rent out space and equipment to eager miners.[63]

[**] Though the total number of Bitcoins in existence will not exceed 21 million, the money supply of Bitcoins in circulation can increase due to fractional-reserve banking, where a bank reserves only a fraction of its total customer deposits to satisfy demand for withdrawals. A bank can then lend out deposits not in reserves to other customers at a profit, thereby increasing the money supply. "Controlled supply." *https://en.bitcoin.it/wiki/Controlled_Currency_Supply*

Figure 6: Projected Bitcoins, Short-term[††]



Source: Bitcoin.it

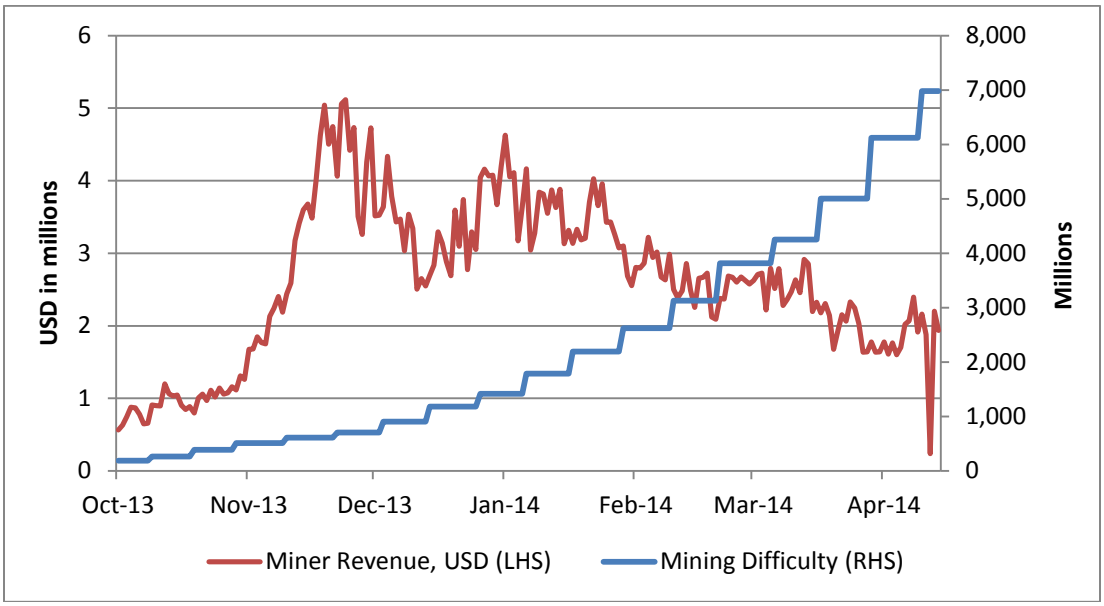
Hong Kong is especially attractive to miners due to its proximity to Chinese chipmakers and its tech-friendly regulatory environment.[64] One observer in Hong Kong speculated that the city has an edge due to "sound property rights, cheap electricity, widely available technology and service technicians." [65] Hong Kong's biggest Bitcoin mine, called ASICminer[‡‡], is located in an industrial building in Kwai Chung, where glass tanks hold 92 circuit boards each that are cooled by a state-of-the-art immersion cooling system.[66] Allied Control, the Hong Kong company that owns the ASICminer and several other mines, keeps the computers running 24 hours every day in order to mine enough Bitcoin to cover the electricity costs needed to run and to cool the computers.[67]

Because the number of Bitcoins mined will be halved every four years, mining Bitcoin will become progressively slower and more competitive (see figure 7). Kar-Wing Lau, vice president of operations of Allied Control, estimated that monthly electricity costs for a mine similar in size to ASICminer would typically exceed $50,000.[68] Assuming that Bitcoin mining costs remain constant and miner revenue continues to decrease as the number of Bitcoins mined decreases, many Chinese and Hong Kong mines may find that their operations are not sustainable or profitable. As such, it is possible that Chinese mining will cease to contribute to the overall Bitcoin transaction volume.

[††] LHS and RHS refer to left-hand side and right-hand side axes.

[‡‡] ASIC stands for Application Specific Integrated Circuits, which are computer chips specially designed to mine Bitcoin by calculating an algorithm called SHA-256. Julie Bort, "These Guys Generated $3 Million In Four Days From The Bitcoin Craze," *Business Insider*, November 14, 2013. *http://www.businessinsider.com/guys-made-3m-from-bitcoin-craze-2013-11.*

Figure 7: Miner Revenue (USD) vs. Bitcoin Mining Difficulty[§§]



Source: Blockchain.info

A New Tool for Investment

Admittedly, Bitcoin investors in China represent a "very, very small part of the population."[69] While tech-savvy miners partially account for China's Bitcoin traffic, two kinds of investors are also contributing to high trade volumes, according to one well-known Chinese Bitcoin community member. On the one hand, there are about 50 individuals who, out of interest in finance and IT, bought large amounts of Bitcoin in 2011 when the price was below $2 per Bitcoin.[70] Some of these individuals became Bitcoin millionaires, including prominent Chinese Bitcoin advocate Li Xiaolai.[***]

On the other hand, transactions are also conducted by "opportunistic investors who have no ideological ties to Bitcoin and whose technical understanding of the currency is fuzzy at best."[71] Strategically, these investors attempt to buy and sell quickly in order to take advantage of Bitcoin's high volatility. Many such speculators jumped on the bandwagon after CCTV aired a segment devoted to Bitcoin in May 2013.[†††] One amateur investor, Xiong Bin, explained that Bitcoin is an attractive investment to younger Chinese who "[don't] have enough money to invest in property and don't understand economics well enough to invest in the stock market."[72]

In Wenzhou, a city in Zhejiang province known for its entrepreneurial spirit and 2012 shadow banking crisis, around 5 to 10 percent of Wenzhou residents born in the 1980s were engaged in buying or selling Bitcoin as of April 2013, according to one Wenzhou resident's estimates.[73] Wenzhou's so-called "ant economy"—where one ant finds food, the rest will follow—may be representative of a larger speculative trend among amateur Chinese

[§§] Difficulty is a measure of how difficult it is to find a new block compared to the easiest it can ever be.
[***] More on Li Xiaoli in "Bitcoin in Hong Kong."
[†††] Jon Southurst, "Why China is Leading the Global Rise of Bitcoin," *Coindesk*, November 18, 2013. http://www.coindesk.com/china-leading-global-rise-bitcoin; Youtube video found here: https://www.youtube.com/watch?v=aw3OSTkdE-s.

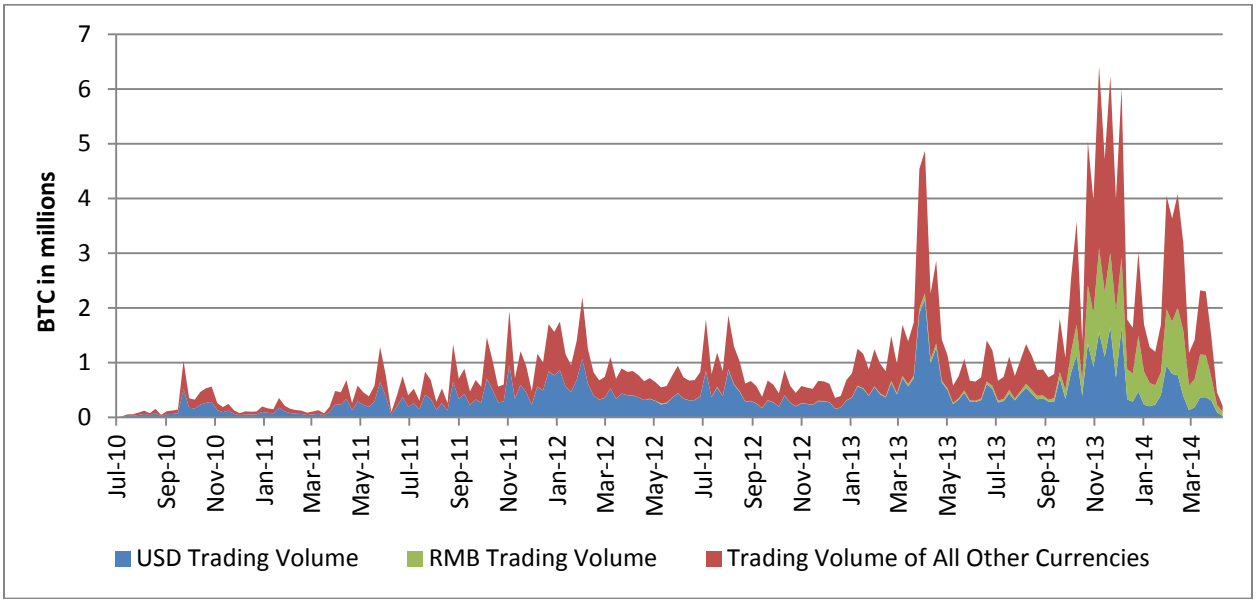
investors today, who "plow their money into financial markets rather than in the physical economy."[74]

"Wealth Transfer Effect"

Professor Tyler Cowen, Holbert C. Harris Chair of economics at George Mason University, noted that Chinese interest in Bitcoin might not be "a vote of confidence in Bitcoin, but rather a vote of distrust in the renminbi."[75] This notion has led to speculation that Chinese interest in Bitcoin could indicate a "wealth transfer effect," where citizens who lack faith in their government's credibility or who have limited investment options choose to move their wealth into a different store of value.[76]

One such instance of a Bitcoin-based wealth transfer effect occurred when Cypriot authorities essentially devalued private sector bank deposits by freezing deposits in excess of 100,000 euros in March 2013 in an effort to prevent a bank run. In effect, the market price of Bitcoin shot up 87 percent (from $47 on March 16 to $88 on March 28) when citizens of Cyprus resorted to using Bitcoin to withdraw inaccessible funds.[77] Similarly, the sharp increase in RMB-denominated Bitcoin trades starting in late 2013 "likely reflect[ed] the currency's value as an outlet for those wanting to avoid capital controls or potential confiscation" in China, according to BAML FX strategist Ian Gordon (see figure 8).[78] Judging by the severe price drop following PBoC's March announcement prohibiting further trade of Bitcoin on the Mainland, however, it is not likely that Bitcoin has created a wealth transfer effect in China as it cannot be considered a reliable store of value.

Figure 8: Bitcoin Trading Volume by Currency, All Exchanges[‡‡‡]



Source: Bitcoinity.org

[‡‡‡] All RMB-denominated Bitcoin trades take place on Chinese exchanges. USD-denominated trades can take place on most major international exchanges.

Bitcoin in Hong Kong

Many Chinese Bitcoin entrepreneurs playing regulatory leapfrog have landed in Hong Kong, where a clearer operating environment has led to the adoption of Bitcoin vending machines and ATMs, offering growing opportunities to potential investors. Whereas PBoC acted to thwart Bitcoin use on the Mainland, Hong Kong is positioned to become a global hub for Bitcoin entrepreneurs and businesses. According to the Hong Kong Monetary Authority, Bitcoin is a virtual commodity, not a currency. As such, while Hong Kong can punish illegal acts such as theft, fraud, and money laundering involving Bitcoin, it does not regulate the "virtual commodity" as it "doesn't meet the criteria of a means of payment or an electronic currency."[79]

Hong Kong's regulatory hands-off approach has fostered a user-friendly environment for Bitcoin. In late February 2014, Asia Nexgen (ANXBTC), Hong Kong's largest Bitcoin exchange, opened the world's first over-the-counter Bitcoin store opened in western Sai Ying Pun district.[80] Both ANXBTC and the Bitcoin Group Hong Kong have set up Bitcoin ATMs, which function like vending machines.[81] A third company, Alitobit, plans to open three additional Bitcoin ATMs in Hong Kong in April 2014 (see figure 9).[82] Not only can Hong Kong's nearly 10,000 investors easily buy, sell, and deposit Bitcoins, but they also have access to more than 20 merchants who accept Bitcoin, according to recent ANXBTC estimates.[83]

Figure 9: Bitcoin ATMs in Hong Kong

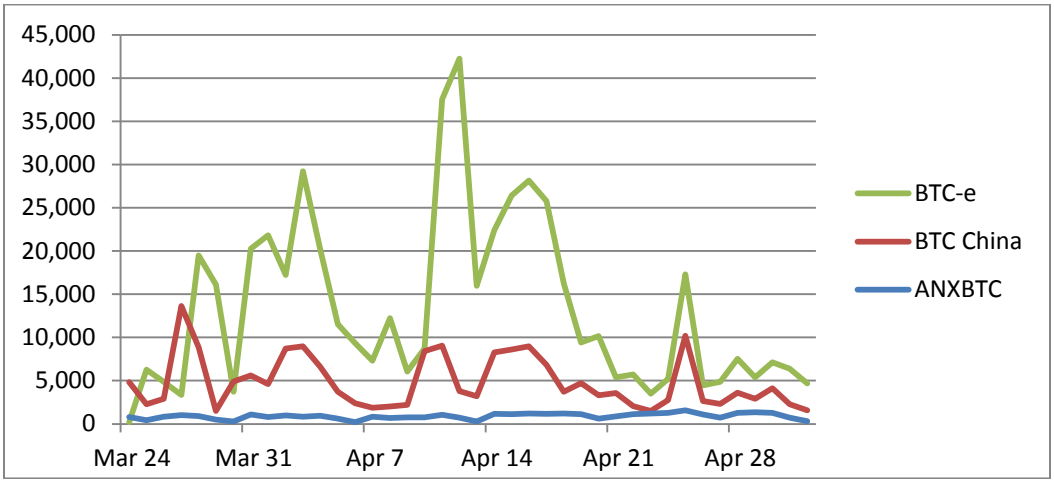


Source: South China Morning Post, HKCEx.net

With Chinese regulators threatening to eradicate the use of virtual currencies, "Hong Kong has the potential to absorb part of China's Bitcoin market," according to University of Hong Kong business professor Michael Chau.[84] In fact, after PBoC ordered its banks and financial institutions to stop dealing in Bitcoin in December, the number of Chinese customers of Hong Kong exchange BitCashOut doubled.[85] At present, however, Hong Kong's trade volume is miniscule compared to that of BTC China and BTC-e, the world's fourth biggest exchange by volume, as demonstrated in figure 10. On average, China's two largest Bitcoin exchanges, Huobi and BTC China, saw 120 times more trade volume than Hong Kong's

largest exchange, ANXBTC, over the last month.[86] Moreover, as the Chinese market remained relatively unfazed following PBoC's April 15 restrictions, it is not yet evident that Chinese users have started shifting to Hong Kong.

Figure 10: Bitcoin Trading Volume (BTC) by Exchange



Source: Bitcoinity.org

Hong Kong's Bitcoin market may see a huge bump in volume if China's Bitcoin millionaires decide to move their funds to Hong Kong's exchanges. Li Xiaolai, regarded as the most well-known figure in the Chinese Bitcoin world, admitted last November that his Bitcoin holdings numbered six figures.[87] At Bitcoin's peak pricing,[§§§] Li would have held at least $116.7 million worth of Bitcoin.

After rumors about the upcoming April crackdown on Chinese Bitcoin trading websites broke, Li told participants at a Beijing Bitcoin meeting that he is looking forward to buying cheaper Bitcoins.[88] If the Chinese government clamps down further as projected, major Bitcoin investors in China will "naturally look at Hong Kong—not Singapore, not Korea—for substitution," according to Hong Kong investment banker and Bitcoin advocate David Shin.[89]

Bitcoin's Uncertain Future in China

Bitcoin investors have kept close watch over developments in China following the outbreak of rumors surrounding PBoC's April 15 deadline for exchanges to close their bank accounts. Since April 15, effects on the market have been minimal. While PBoC governor Zhou Xiaochuan's non-threatening remarks on Bitcoin at the Boao Asia Forum on April 11 convinced some that there is still room for Bitcoin to grow in China, the closures of the bank accounts of two prominent Chinese exchanges were disheartening to many investors.[90]

BTC China CEO Bobby Lee believes that Bitcoin is past the point of governmental eradication, and that loopholes still exist to allow the use of Bitcoin. China's first Bitcoin ATM, installed on April 16, shows the resilience of the Chinese Bitcoin community. Even though future PBoC crackdowns could slow transaction volume, admitted one prominent Chinese Bitcoin user, "Bitcoin would still be legal."[91]

[§§§] According to BitcoinCharts.org, the price of RMB-denominated Bitcoin peaked on November 29, 2013 at $1,167.95.

China's first Global Bitcoin Summit will be held in Beijing on May 10 through May 11. Li Xiaolai projected that the Summit would "serve as a stage where the world comes to witness the progress that China has made" in its Bitcoin endeavors.[92] Five major Chinese exchanges collectively decided to bow out of the summit to take a more "low-key" approach to PBoC pressure, signaling that Bitcoin's progress in China has, for now, been stymied. Nevertheless, the conference will continue as scheduled and will feature presentations from prominent figures in the Chinese and international Bitcoin community.[93]

Hong Kong appears to be primed for Bitcoin's successful takeoff as a medium of exchange, but its trade volume is comparatively low. Bitcoin entrepreneurs, vendors, and payment facilitators are flocking to Hong Kong to take advantage of its wide regulatory latitude and tech-friendly atmosphere. As PBoC's April 15 regulations did not seem to have negatively affected Chinese trading volumes, it is not apparent that Hong Kong will absorb Chinese Bitcoin users. Nonetheless, in the face of future PBoC regulations, Hong Kong may be the most suitable transplant location ahead of Singapore and South Korea.

Appendix 1: Description of the Bitcoin System

What is Bitcoin?	Bitcoin is an experimental, decentralized online **crypto-currency** that allows users to directly send payments to one another. Bitcoins do not physically exist; there are only records of transactions between different Bitcoin **addresses**, or possible destinations for Bitcoin payments. The Bitcoin network is not governed by a central authority – managing transactions and issuing money are carried out collectively by the network. The Bitcoin software was created by **Satoshi Nakamoto**, a pseudonym that refers to an anonymous individual or group of individuals, in 2009.
How does Bitcoin work?	Users download a Bitcoin **wallet** that provides a way to store and receive currency. Bitcoins can be transferred from one wallet to another using a web browser or mobile phone app. Bitcoin wallets keep a secret piece of data called a **private key**, which is used to sign transactions, providing a mathematical proof that they have come from the owner of the wallet. A **transaction** is a transfer of value between Bitcoin wallets that is recorded in the **block chain**, or shared public ledger on which all confirmed transactions are recorded. The integrity and the chronological order of the block chain are enforced with **cryptography**. **Mining** refers to the process of adding transaction records to the block chain. Pending transactions, or **blocks**, are confirmed by **miners** who use computers to solve complex algorithms in exchange for new Bitcoins. To be confirmed, transactions must fit very strict cryptographic rules that will be verified by the network. Users can also trade between conventional currencies and Bitcoin on **exchanges**.
How are Bitcoins issued?	The supply of Bitcoins is regulated by the Bitcoin software and agreement of users of the system and cannot be manipulated by any government, bank, organization or individual. Bitcoins are created each time a miner confirms a new block. The number of Bitcoins awarded per block will decrease over time, mimicking the rate at which commodities like gold are mined.

Source: Bitcoin.it, Bitcoin.org, CoinDesk, aatComment.org

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This report is the product of professional research performed by the staff of the U.S.-China Economic and Security Review Commission, and was prepared at the request of the Commission to support its deliberations. Posting of the report to the Commission's website is intended to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. security, as mandated by Public Law 106-398 and Public Law 108-7. However, it does not necessarily imply an endorsement by the Commission, any individual Commissioner, or the Commission's other professional staff, of the views or conclusions expressed in this staff research report.

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