Cryptocurrency and China

Analyzing China's Historic Cryptocurrency Activity Amidst Government Crackdowns

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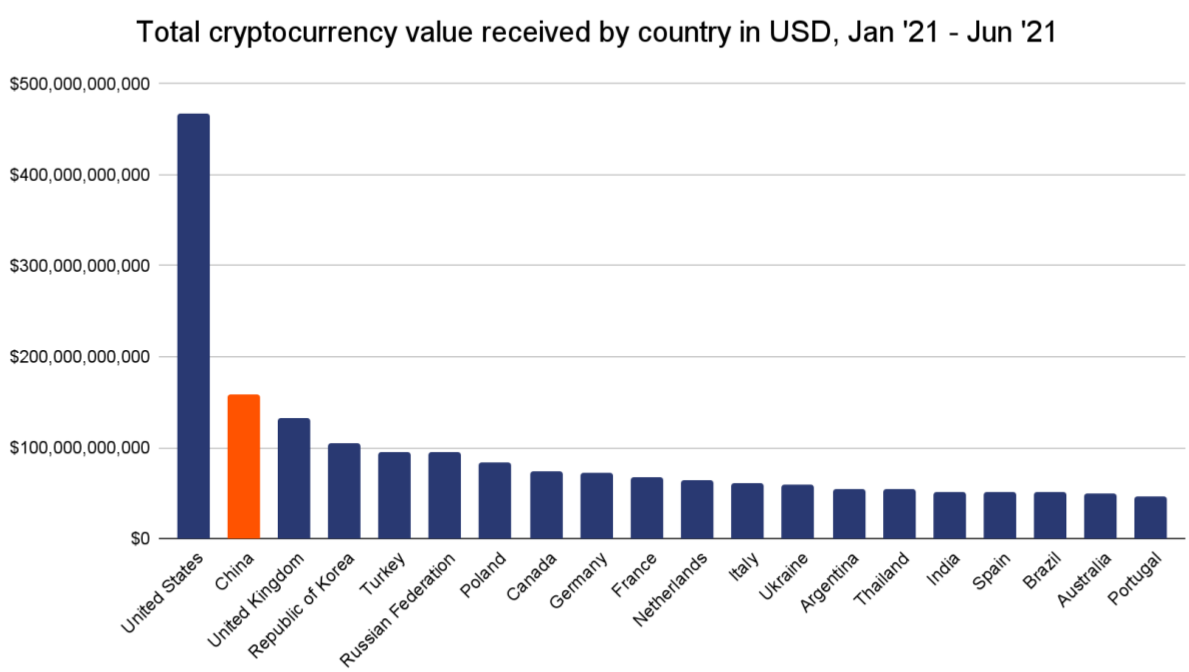
China's cryptocurrency industry and user base is one of the most active in the world. Since January 2021, addresses estimated to be controlled by users in China have received over $150 million worth of cryptocurrency, second only to the United States.



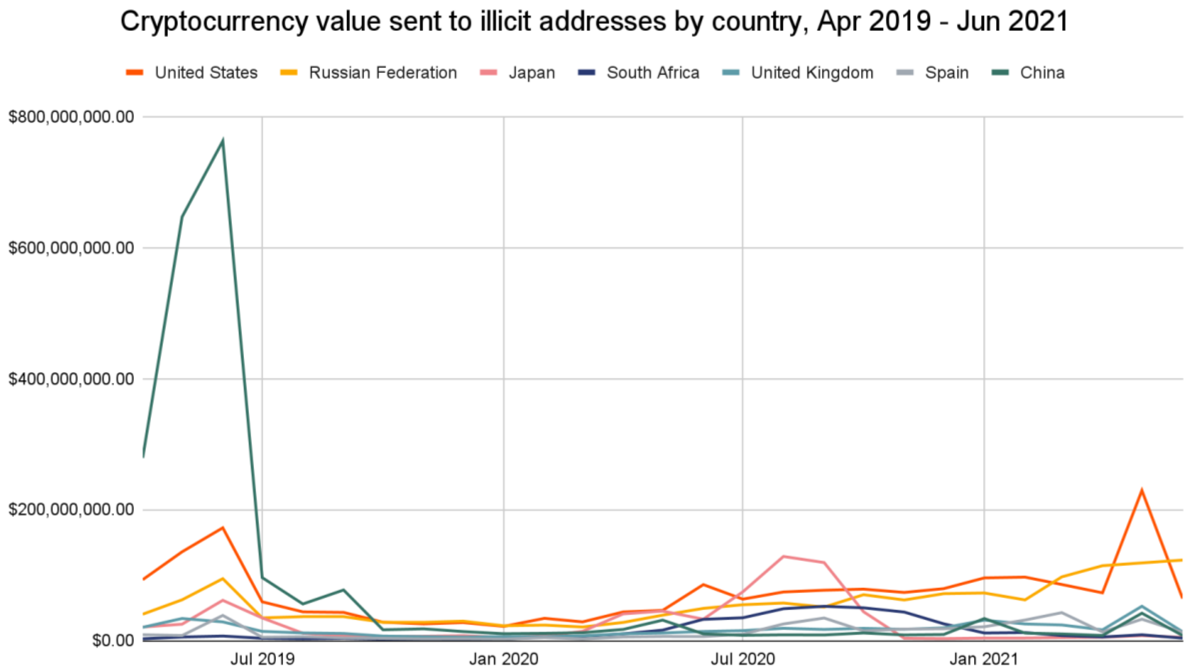
China has also historically dominated cryptocurrency mining. At times, China-based mining operations have controlled as much as [65% of Bitcoin's global hashrate](#) — the measurement of how much computing power goes toward mining Bitcoin — which has led to increased liquidity for cryptocurrency services serving China and Asia as a whole, but also concerns that the Chinese Communist Party (CCP) could leverage this control to harm the Bitcoin network. Historical transaction data also suggests that some Chinese cryptocurrency businesses, especially over-the-counter (OTC) brokers, have played an outsized role in facilitating money laundering for those involved in cryptocurrency-based crime.

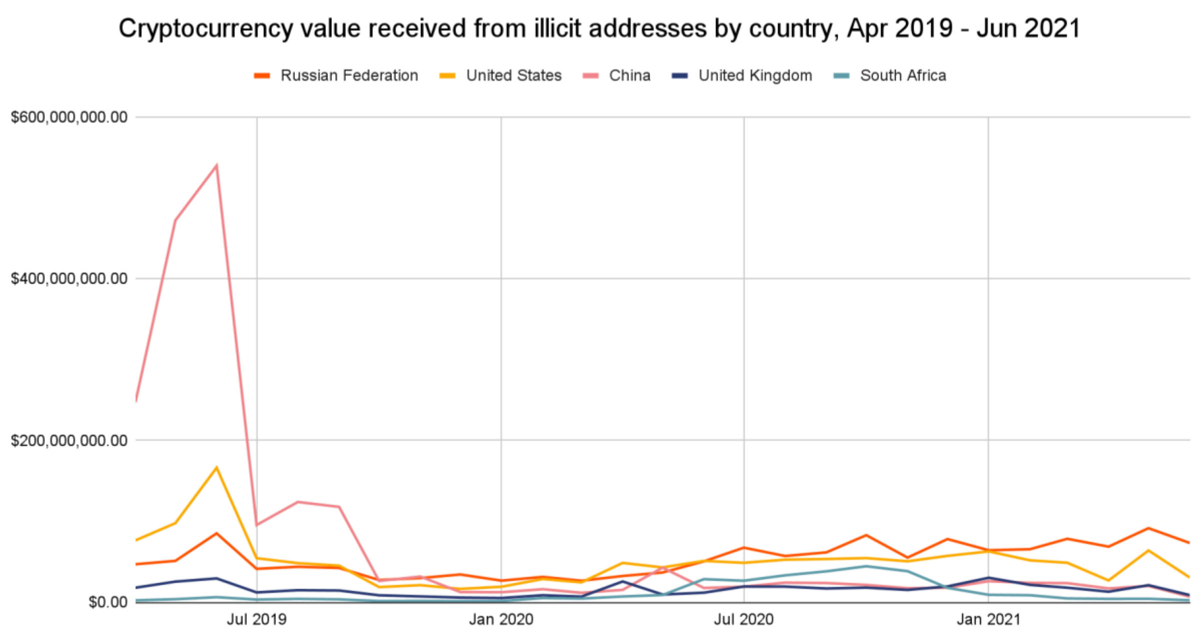
However, China's status as a cryptocurrency superpower could be set to change, as recent events suggest the CCP is making a concerted effort to steer the nation away from traditional, decentralized cryptocurrencies. In May 2021, government officials announced their intention to crack down on cryptocurrency mining and trading, with the global hashrate falling as many Chinese miners paused operations. All this comes as the CCP moves toward launching the digital yuan, a blockchain-based Central Bank Digital Currency (CBDC) that could be used as an equivalent to the standard yuan. The digital yuan could improve the government's ability to manage the Chinese economy, but many have expressed concern that the digital yuan could be a tool for financial surveillance, as well as a means of subverting U.S. imposed sanctions, as well as the U.S. dollar's position as the world's reserve currency.

In this report, we'll use historical blockchain data, open source research, and interviews with experts to shed light on China's historical role in the cryptocurrency ecosystem, examine the CCP's growing hostility toward cryptocurrency, and analyze its strategy and intentions for the digital yuan.

China's role in cryptocurrency-based crime

Just as it's been a crucial part of the overall cryptocurrency ecosystem, China has also historically played a large role in cryptocurrency-related crime. Between April 2019 and June 2021, Chinese addresses have sent over $2.2 billion worth of cryptocurrency to addresses associated with illicit activity such as scams and darknet market operations, and received over $2.0 billion.



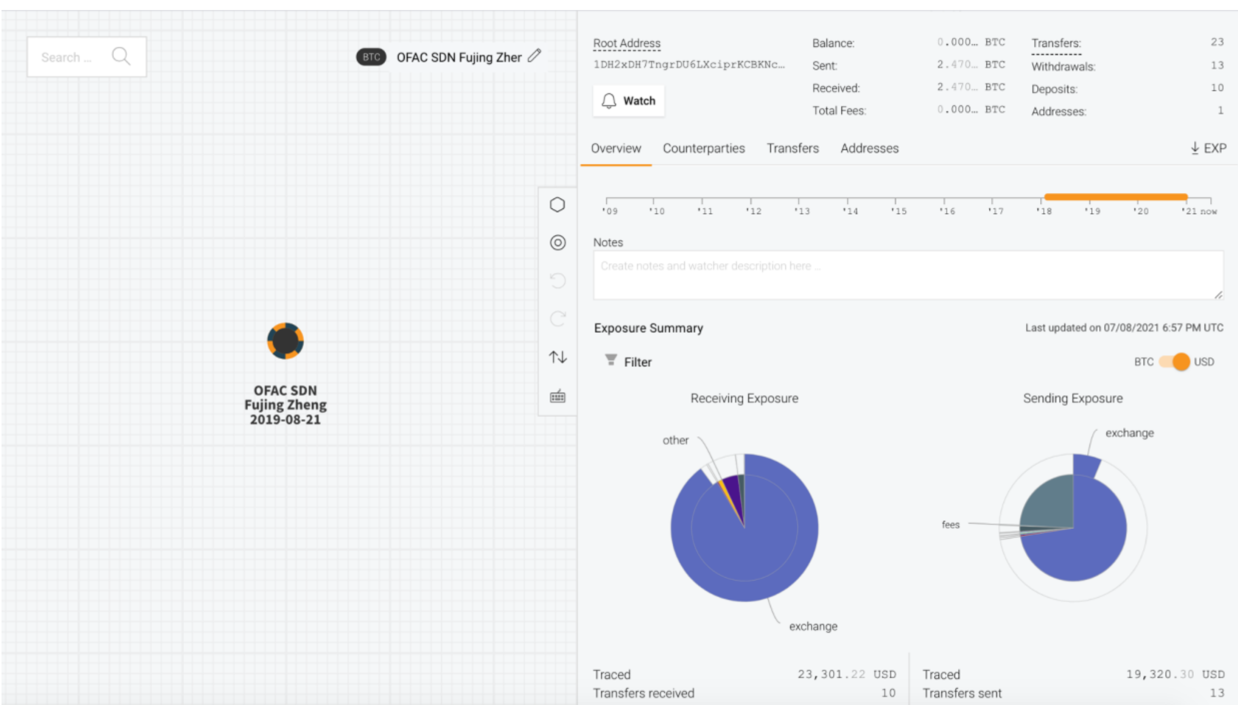


Notably, China's transaction volume with illicit addresses has fallen drastically over the time period studied, both in terms of raw value and in relation to other countries. Much of the drop is due to the absence of large-scale Ponzi schemes like the 2019 PlusToken scam, which primarily targeted users across Asia and whose proceeds were largely laundered through Chinese services. While China remains one of the top-ranked countries for illicit transaction volume, it used to beat all others by a wide margin, suggesting that cryptocurrency-related crime in the country has fallen.

The vast majority of China's illicit fund movements have been associated with cryptocurrency scams — unsurprising given that scamming is by far the most prevalent type of cryptocurrency-related crime in terms of transaction value — with darknet markets and movement of stolen funds also playing a significant role.

Certain types of cryptocurrency-based crime carried out by Chinese organizations have at times drawn the ire of the U.S. government. One example is fentanyl trafficking. China is a hub of the global fentanyl trade, which has played a significant role in the ongoing U.S. opioid epidemic, and many Chinese fentanyl producers carry out transactions using cryptocurrency. In August 2019, the U.S. Treasury's Office of Foreign Asset Control (OFAC) levied sanctions against Fujing Zheng, head of the Zheng Drug Trafficking Organization, for shipping fentanyl into the United States. Zheng relied on Bitcoin to launder the proceeds of this activity, prompting OFAC to include a Bitcoin address controlled by Zheng on his Specially Designated Nationals (SDN) list entry.

Chainalysis Reactor shows that Zheng's Bitcoin address has received over $23,000 in Bitcoin over the course of its lifetime, mostly from mainstream exchanges between January and March 2018.



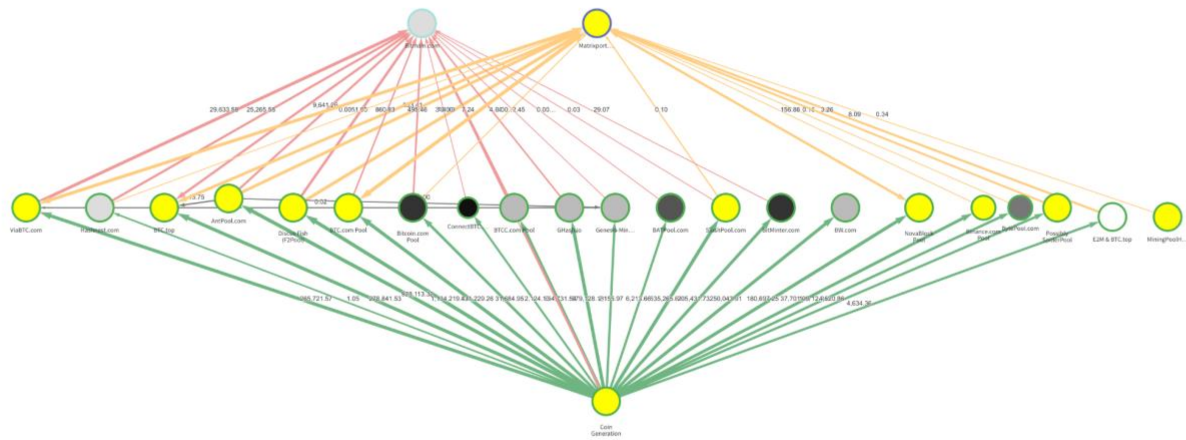
Money laundering is another notable form of cryptocurrency-based crime disproportionately carried out in China, and has become of particular concern to the U.S. in cases where it intersects with sanctions evasion. We saw this happen in March 2020, when two Chinese nationals, Tian Yinyin and Li Jiadong, were sanctioned for their role in helping the North Korea-based cybercriminal syndicate Lazarus Group launder cryptocurrency stolen in exchange hacks. Lazarus Group has stolen more than $1.75 billion worth of cryptocurrency in exchange hacks over the last decade, funds that experts believe the North Korean government uses to advance its nuclear weapons program. Money laundering associated with the group is therefore a matter of grave concern for U.S. national security.

Most cryptocurrency-based money laundering involves mainstream cryptocurrency exchanges, often through OTC desks whose businesses are built on top of those exchanges. However, China appears to be taking action against businesses and individuals facilitating this activity. In May 2021, Zhao Dong, founder of several Chinese OTC businesses, pled guilty in court to money laundering charges after being arrested the previous year. More arrests followed in June 2021, when Chinese authorities arrested over 1,100 individuals suspected of cryptocurrency-based money laundering. The timing of these arrests suggests they may be related to the CCP's broader cryptocurrency crackdown, but it will be interesting to see whether the arrests lead to a drop in flows of illicit funds to China-based cryptocurrency businesses and OTC traders.

Mining: Even as China's Bitcoin mining dominance fades, sanctions risks still abound

China is the historic leader in cryptocurrency mining, with Chinese miners at one point controlling an estimated 65% of Bitcoin's global hashrate. China's mining dominance is due in large part to cheap electricity prices in many regions of China, allowing for large, cost-efficient mining operations.

China also dominates the mining equipment industry. In fact, machines produced by just one Chinese company, Bitmain, have at times accounted for as much as 80% of all Bitcoin mined. Bitmain also owns Antpool, which is one of the world's largest mining pools. On-chain data gives us a view of Bitmain's importance to the mining industry. The Chainalysis Reactor graph below shows Bitmain's transactions with several of the largest mining pools. Green arrows represent newly mined Bitcoin moving to mining pools, while red lines represent mining pools sending funds to Bitmain, likely to purchase mining equipment.

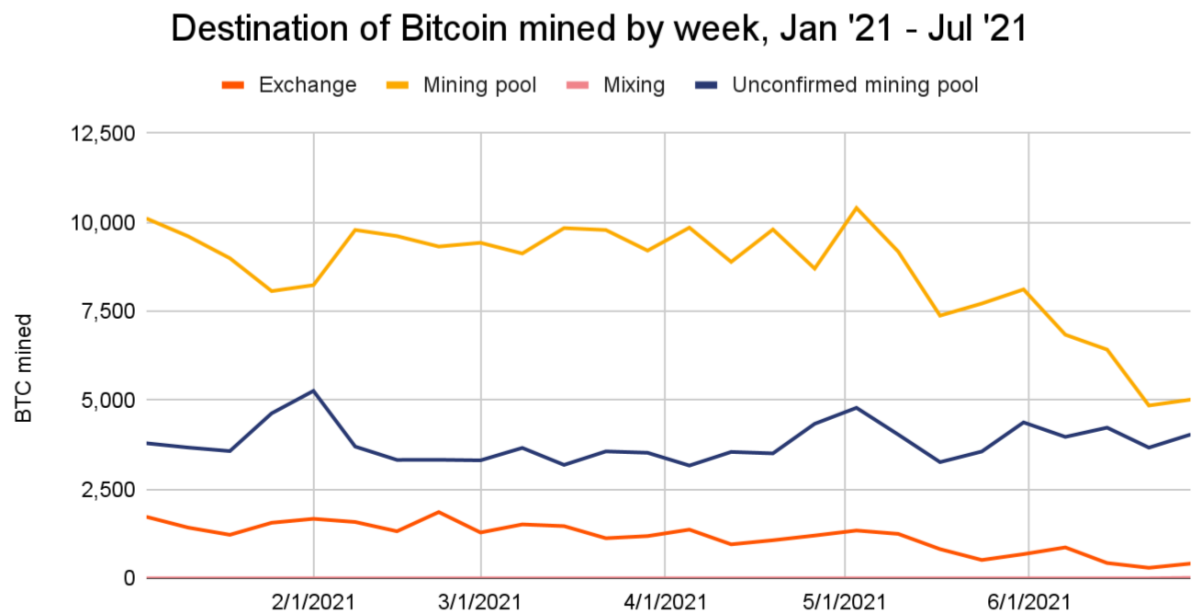


You'll also see a wallet for a firm called MatrixPort next to Bitmain. MatrixPort offers several different cryptocurrency services, and in 2019, Bitmain stopped accepting payments for mining equipment directly and began receiving them through MatrixPort's merchant services solution. Those payments are represented by orange lines, and show that the same mining pools are still purchasing from Bitmain.

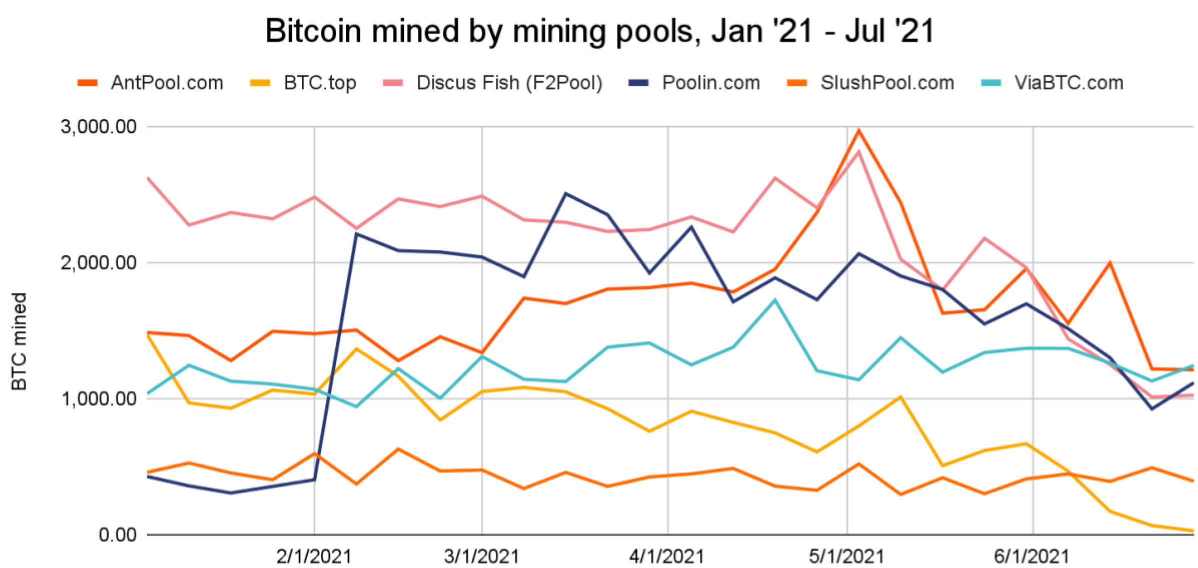
Are government crackdowns ending China's mining dominance?

China's status as the top cryptocurrency mining country changed drastically in May 2021, when the CCP announced its intent to clamp down on cryptocurrency mining and trading, citing concerns around financial stability and environmental impact. While this isn't the first time the CCP has adopted anti-cryptocurrency policies, previous enforcement only pushed exchanges and other cryptocurrency businesses out of the country, while traders and miners could still operate. Since the crackdown began in May 2021, Bitcoin's overall hashrate has fallen by more than 50%, as authorities have begun shutting down mining operations in many Chinese provinces.

On-chain data reflects these changes. Starting in mid-May, soon after the announcement of China's crackdown, mining pools began receiving less newly mined Bitcoin, with weekly volume falling from roughly 10,000 BTC per week to under 5,000.



Digging deeper, it appears that mining pools headquartered in China or connected to Chinese cryptocurrency businesses were hit harder than others.

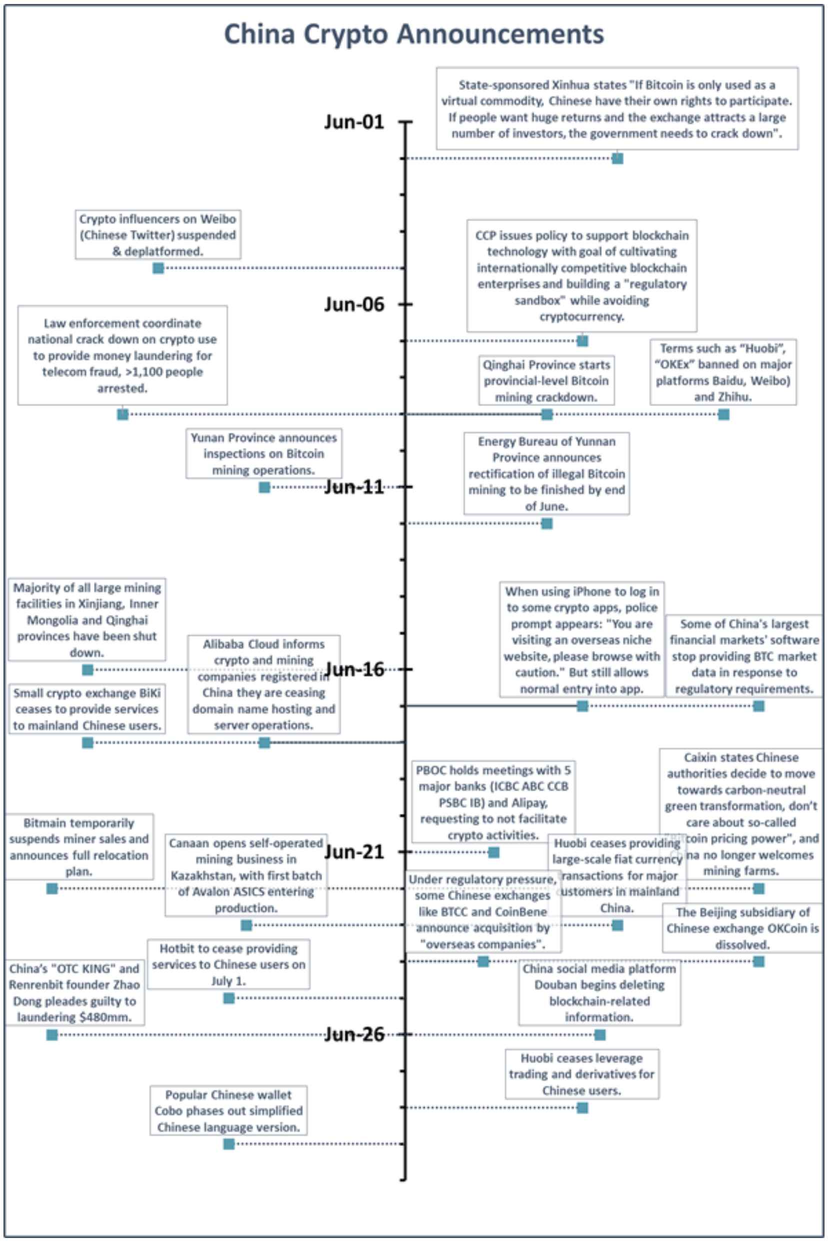


AntPool, Poolin, BTC.top, and F2Pool, all of which are primarily based in China, seem to have seen the steepest declines, while the Czech Republic-based SlushPool hasn't seen its mining figures decline.

All of this begs the question: Why is the CCP cracking down on cryptocurrency? We spoke to a China-based cryptocurrency operator who asked to remain anonymous. They named a few practical reasons for the government to move against cryptocurrency, such as preventing capital flight and stopping illegal money services businesses (MSBs) from operating. However, they positioned the CCP's opposition to cryptocurrency as primarily ideological.

"To understand this, you need to understand the CCP's governance philosophy," our expert says. "They take a top-down approach, and the goal is to maintain stability and unity. So when government officials see people like early Bitcoiners getting ultra rich and advocating for liberty and self-sovereignty, the natural inclination is to see them as dissidents."

Indeed, this ideological conflict has driven the CCP to take actions beyond just cracking down on mining and trading, such as campaigning against cryptocurrency in state-sponsored media, placing official warning messages on cryptocurrency-related apps, and potentially leaning on social media companies to suppress cryptocurrency-related content.

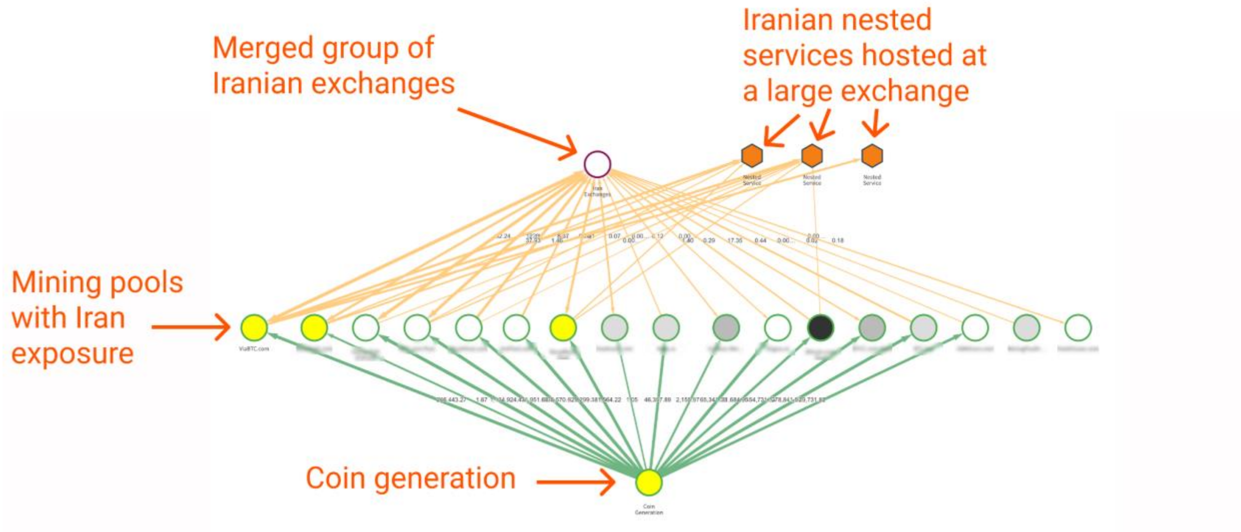


Credit: [Travis Kling](#) on Twitter

Our expert stressed that while rebuilding mining infrastructure would be a long, difficult process, Chinese miners can move to new countries to resume work. They cited Kazakhstan as a likely destination, as well as regions of Africa whose economies have become intertwined with China's through programs like the Belt and Road initiative.

Mining and sanctions risk

Cryptocurrency mining is a great way for heavily sanctioned countries to get money into their economy, because anybody with an internet connection and enough power can mine regardless of their location. [Iran in particular](#) has embraced cryptocurrency mining for this very reason, often partnering with Chinese mining companies to set up operations. We can get a high-level view of this activity using Chainalysis Reactor.



Above the entity labeled “Coin Generation,” we see several Chinese mining pools receiving Bitcoin from mining, which is denoted by the green lines. Many of them send significant funds to cryptocurrency wallets and services known to be located in Iran, as denoted by the orange lines. Iranian cryptocurrency businesses included in that group are:

- iMiner, a Turkey-based company with several mining farms in Iran
- Iranian cryptocurrency exchanges such as Nobitex.ir, Coinex.ir, EXIR.io, and Farhad Exchange
- Iranian OTCs and other nested services with addresses hosted at mainstream exchanges

While most of this activity is likely benign, it also represents potential sanctions circumvention by blacklisted individuals and entities in Iran.

Why is China launching a digital yuan?

In April 2020, China began testing the digital yuan, becoming one of the first governments to issue a Central Bank Digital Currency (CBDC). CBDCs like the digital yuan are government-issued, blockchain-based versions of a country’s national currency. Like most conventional cryptocurrencies, CBDCs would provide greater transparency into how people spend in the aggregate, as the currency’s blockchain would act as a permanent, immutable ledger of all transactions. China is rolling out the digital yuan through state-owned banks and digital payment apps like WeChat Pay and AliPay, which are much more widely used in China than their American or European counterparts. Digital yuan trials are ongoing, with many pointing to Beijing’s 2022 Winter Olympics as the government’s occasion to unveil its new CBDC to the world, as it plans to issue the digital yuan to visiting athletes. As of July 2021, trial users have created more than 20 million digital yuan wallets and executed over $5 billion worth of transactions with the new CBDC.

CBDCs have far-reaching implications for both domestic and foreign policy, especially when rolled out by an authoritarian regime that sees itself as a growing economic rival to the United States. We spoke to Dovey Wan, a founder of cryptocurrency investment firm Primitive Ventures and noted expert on the Asian cryptocurrency market, and asked her what she believes the CCP hopes to achieve with the digital yuan. She outlined two key goals.

The first is relatively benign: more granular control over the economy. Under the fractional reserve banking system all countries use today, central bankers can only interact with the economy indirectly, such as by changing interest rates. If the monetary supply existed entirely in CBDC form, with all transactions recorded on one central ledger, central bankers could exert more control over financial flows. “It would make monetary policy programmable,” says Wan. “For instance, if the government wanted to cool down the stock market, they could write a few lines of code and stop money from flowing into the stock market.” In addition, Wan pointed out that the digital yuan is meant to be easier for older citizens to use than the mobile payment apps that are so common now, and also cited the CBDC’s potential to make transactions cheaper for merchants by eliminating the need for third party transaction settlement.

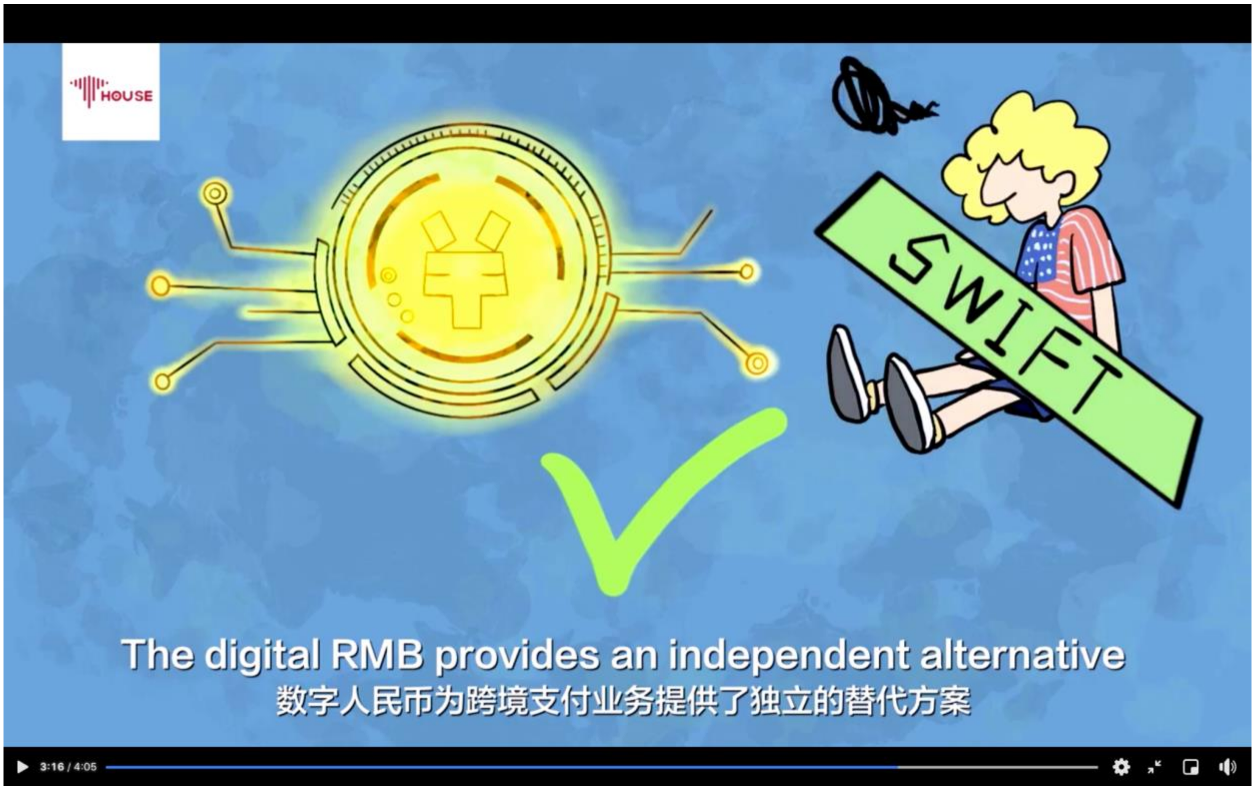
However, it’s easy to see how a centralized, government-owned ledger of citizens’ transactions could become a tool for financial surveillance in the CCP’s hands. While Chinese citizens don’t have financial privacy under their current banking system, the digital yuan would give the government the ability to exclude individuals or businesses from the financial system for any infraction. While it’s unclear if or how much the CCP would elect to use this ability, the possibility of a “financial death sentence” would exist under the digital yuan system.

We also spoke with Yaya Fanusie, an Adjunct Senior Fellow at the Center for a New American Security (CNAS) who has studied the digital yuan and published a report on the project in January 2021. Fanusie largely agreed that the digital yuan could be a tool of authoritarianism, but put more emphasis on its role in the CCP’s broader desire to collect as much data as possible on citizens. “There’s never been a centralized database for a government to access records of all citizens’ transactions,” says Fanusie. “Yes, China can request that data from mobile payment apps, but that takes time, and sometimes they push back.”

He also outlined ways financial data generated by the digital yuan could be combined with other types of data that feed into China’s controversial social credit system. “The CCP recently released a notice that Mongolian families who didn’t send their children to state-mandated schools would be put on a blacklist. The digital yuan would allow the government to combine financial data with lists like that.” Fanusie mentioned that the CCP has already voiced its intention to use the digital yuan to monitor for corruption in the government. While that sounds like a reasonable goal, one can easily imagine how those financial surveillance capabilities could be turned on ordinary citizens.

Is the digital yuan a threat to the U.S. dollar?

Many have speculated that China intends to promote international usage of the digital yuan in order to reduce reliance on the U.S. dollar and the SWIFT transaction system. In fact, a video published by the state-owned China Global Television Network outlines what this might look like, promoting the digital yuan as a way to circumvent sanctions and decrease American influence over world trade.



Source: CGTV

We asked Yaya Fanusie if he sees the digital yuan as a threat to the U.S. dollar. He says that in the short term, this is unlikely, as he believes it will be some time before the CCP promotes usage of the digital yuan outside of China. But in the long term, he believes that the digital yuan, as well as future CBDCs rolled out by other countries, could hurt the dollar's status in the world financial system. "I think they'll try to make arrangements with other countries where they enable CBDC-to-CBDC exchange. Think of it as an atomic swap of CBDCs." Under such an arrangement, somebody in China could send digital yuan to somebody in Malaysia, with a currency exchange automatically taking place in between such that the Malaysian user receives digital Malaysian ringgits without either party having to touch their non-native currency. These transactions wouldn't rely on the SWIFT system. If they became the norm, there would be less need for people outside of the U.S. to hold U.S. dollars. “This isn’t a risk for 2022, but probably more for 2032 and beyond,” says Fanusie.

In the long term, Fanusie also sees the digital yuan as part of a larger war of data proficiency that the U.S. risks falling behind in. “So far, China has been more innovative than the U.S. with fintech. If that happens with blockchain technology too, the U.S. economy risks missing out on the next wave of data-driven innovation,” says Fanusie. It’s hard to imagine today what exactly those innovations will be, but they could be crucial given the massive amounts of data CBDCs would generate, and how governments could use that data to manage their economies more efficiently.

However, Fanusie doesn’t think U.S. policymakers should simply create their own CBDC in order to mitigate this risk. While a CBDC project shouldn’t be ruled out, Fanusie believes the U.S. needs to think beyond a digital dollar and promote more innovation in blockchain, fintech, and monetary policy across the board, as it’s done in the past. “Our federal reserve system is innovative. It’s not like other central banks, because the U.S. has a specific character and historical experience that led it to resist a centralized bank for over 100 years,” says Fanusie. In other words, he believes that innovation needs to unfold organically rather than be lifted from what other countries are doing. One way Fanusie suggests fostering that innovation is for the U.S. to partner with universities to create a sandbox for the development of blockchain projects. “That’s how the U.S. led the development of the internet. There was a directive for universities to create a computer networking system the military could use. That infrastructure was then leveraged for much broader civilian use and unlocked a revolution in business innovation.”

One thing is clear: China appears intent on developing a digital yuan for immediate domestic use, and possibly future international use. Improved monetary policy and financial surveillance of Chinese citizens appear to be the project’s short-term goals, but in the long term, the proliferation of the digital yuan alongside other CBDCs could compromise the U.S. dollar’s status as the world’s reserve currency. Any U.S. response to the project or launch of an analogous digital dollar should consider the question of financial data, and how it can be used to build a stronger economy and maintain the country’s position in economic competition, while still respecting citizens’ privacy.

China promotes government-led blockchain innovation

China’s historically robust cryptocurrency industry and user base would appear to be a national strength, and yet the CCP is now taking action to diminish it with bans on cryptocurrency mining and crackdowns on trading. The dynamic appears puzzling at first, but the evidence suggests that the CCP recognizes the power of cryptocurrency and blockchain technology broadly, and wants to ensure it controls the deployment of that power as much as possible to meet its own goals.

Domestically, those goals appear to be data-driven improvements to monetary policy and heightened surveillance of citizens’ financial activity. Internationally, China’s cryptocurrency goals are a bit harder to understand, but appear to involve subversion of the U.S.'s sanctions regime in the short term — this may explain why so many mining businesses have been allowed to partner with Iranian firms over the last few years — and possibly diminishment of the U.S. dollar's reserve currency status in the long term.

Chainalysis looks forward to helping our government clients meet any challenges posed by China's cryptocurrency policies by providing the data they need to understand how those policies are affecting the wider ecosystem. Please contact us here to learn more about how we help regulators and legislators make better, more informed decisions around cryptocurrency.