

Analysis of Legal Risks of Transactions of Bitcoin Futures in Chinese Mainland

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Although there is currently no Bitcoin futures trading in Chinese Mainland, there is the possibility of financial innovation in future. The success or failure of the U.S. Bitcoin futures trading was analyzed from an empirical perspective: Regulators replace active review with self-certification, and Bitcoin futures trading violates the law of one price, both of which are prone to financial risks. Bitcoin futures break through previous government barriers that largely separated the virtual currency market from the regulated financial system. Although it has a positive role in integrating the virtual currency market with the broader financial system, it is not recommended for Chinese domestic use in the near future. The futures contract market listed by exchanges should be contracts that are not easily manipulated. In the future, domestic Bitcoin futures trading should emphasize legal regulations and technical support and strengthen the approval process before new products are launched.

Keywords: Bitcoin futures, supervision, risk, the law of one price

Legal Issue

The world is entering a period of economic development led by the information industry. Facing the wave of digital economy, President Jinping Xi has repeatedly emphasized "making the digital economy bigger and stronger" and building "Digital China" and "Smart Society". The 14th Five-Year Plan outline lists blockchain as one of the seven key industries of the digital economy.

In the U.S., the major regulators concerning financial products are the U.S. Securities and Exchange Commission (SEC for short) for securities and security-based derivatives and the U.S. Commodity Futures Trading Commission (CFTC for short) for commodity and financial derivatives. Under the existing legal framework, the U.S. Securities and Exchange Commission regulates the digital tokens and ICOs which they determine as securities, whereas the U.S. Commodity Futures Trading Commission regulates derivatives products where cryptocurrency is used as a reference asset. The proposed crypto-regulation will obliterate this division between the U.S. Securities and Exchange Commission's and the U.S. Commodity Futures Trading Commission's mandate over cryptocurrency and establish a centralized cryptocurrency regulatory body. Earlier than the Futures and Derivatives Law of the People's Republic of China (second draft) from the Standing

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Committee of the National People's Congress of the People's Republic of China was made public, on October 19, 2020, the asset management company ProShares launched the first Bitcoin stock index fund in the U.S. (Exchange Traded Fund, ETF for short) which was listed and traded on the New York Stock Exchange. On its first day, its price rose 4.9%, with a trading volume of nearly US\$1 billion, making it the second-largest fund in history by trading volume on its first day of issuance. In the next two days, the U.S. Securities and Exchange Commission approved the launch of Bitcoin ETFs by two asset management companies, VanEck and Valkyrie. In addition, more than a dozen asset management companies are waiting in line. Then the U.S. Securities and Exchange Commission reviews similar products.

Since 2013, a number of asset management companies have promoted the listing and trading of Bitcoin ETFs but have been rejected by the U.S. Securities and Exchange Commission. In 2017, the U.S. Securities and Exchange Commission explained several major reasons for rejecting Grayscale's Bitcoin EFT listing and trading: including the liquidity of fund products, the valuation of cryptocurrencies, and the risk of market fraud or manipulation.

However, on December 1, 2017, the Chicago Mercantile Exchange and the Chicago Board Options Exchange Futures Exchange self-certified new contracts for cash-settled Bitcoin futures products. The self-certification process allows designated contract markets to submit in writing to the U.S. Commodity Futures Trading Commission that products comply with the U.S. Commodity Exchange Act and the U.S. Commodity Futures Trading Commission regulations of the day after which new derivatives are listed.

Generally speaking, Bitcoin is not equal to Blockchain. In August 2019, the Beijing Internet Court released *the White Paper on the Judicial Application of Internet Technology*, believing that blockchain technology is on top of the consensus system. Blockchain is the underlying technology of Bitcoin. Bitcoin can only exist and operate with the technical support provided by blockchain. Bitcoin is a P2P form of digital currency. Therefore, some scholars compare Bitcoin to "blockchain version 1.0" (Gazi, 2021). Currently, as the largest cryptocurrency, Bitcoin has a market capitalization of around US\$1.5 trillion, much larger than Ether (US\$490 billion), BNB (US\$81.2 billion), IOHK (US\$70.9 billion), stablecoins (Tether/USDT, \$69.6 billion), and other cryptocurrencies. Therefore, it can be said that (government) regulation of cryptocurrencies is, to some extent, the regulation of Bitcoin.

In October 2021, the U.S. Securities and Exchange Commission approved the ProShares Bitcoin Strategy Exchange Traded Fund. The trading volume on the first day hit the second highest in history, with trading volume reaching 29.87 million units. This is another historical moment for blockchain technology in the financial field after the Chicago Mercantile Exchange started Bitcoin futures trading in December 2017.

Although the Bitcoin futures ETF is the product of competition between all parties, and the Bitcoin futures ETF is completely different from the Bitcoin ETF, the Bitcoin futures is strictly limited by the exchange's holdings: 4,000 contracts in the spot goods month, any other month except the spot goods month the number of contracts and all monthly contracts shall not exceed 5,000. But it does represent the attitude of U.S. regulators. Cryptocurrencies represented by Bitcoin meet the urgent needs of the development of decentralized finance (blockchain): more powerful price discovery functions; higher transparency; cryptocurrency holders' a much-needed risk management tool; a group of investors who are eager to enter the market but do not have a Bitcoin wallet.

ANALYSIS OF LEGAL RISKS OF TRANSACTIONS OF BITCOIN FUTURES

On October 24, 2019, Chinese President Jinping Xi emphasized at the 18th collective study session of the Political Bureau of the Communist Party of China Central Committee that China should promote the deep integration of blockchain and the real economy to solve the difficulties of loan financing for small and medium-sized enterprises, bank risk control, and department supervision. The resolution of the Sixth Plenary Session of the 19th Central Committee of the Communist Party of China emphasized "Innovation must become the first driving force and opening up the only way." Although China's futures market has ranked first in the world in trading volume for many years, the total amount of funds in 2021 has exceeded 1.2 trillion yuan, an increase of 44.5% from the end of 2020, and there are 94 types of futures options on the exchange, but specialized laws, such as the Futures and Derivatives Law of the People's Republic of China is a newcomer (officially implemented on August 1, 2022), and there are still shortcomings in four aspects: improvement of product rules, market making system, construction of over-the-counter derivatives market, and expansion of opening up to the outside world.

As far as Chinese domestic research is concerned, there is very few literature on Bitcoin futures trading. Searching China National Knowledge Infrastructure (CNKI), there is only one legal article based on the legal practice of the U.S. that focuses on the analysis of the listing supervision issues of Bitcoin derivatives (Tang, 2019). Although currently only El Salvador on earth uses Bitcoin as legal tender (June 2021), and a few countries or regions use Bitcoin as a commodity, with the development of science and technology and the increased intensity of financial innovation, there will be Bitcoin futures traded domestically in future possibility (Allen & Lastra, 2020).¹ Therefore, the paper will use the U.S. legal practice as a reference to analyze the legal risks of Bitcoin futures trading from an empirical perspective.

Legal Deficiencies and Technical Difficulties in Chinese Domestic Bitcoin Futures Trading

It is a fact that futures trading must rely on written laws and effective supervision agencies. China and the United States have completely different attitudes (legal nature) towards Bitcoin as the basis for Bitcoin transactions. At present, Bitcoin is neither legal tender nor a "thing" stipulated in the Civil Code of the People's Republic of China but belongs to property rights. China's domestic supervision of virtual currencies, including Bitcoin, is not only at a low level and lacks specialized laws or regulations, but also the content of documents/notices focuses on preventing financial risks. Representative documents: (1) The People's Bank of China and other five ministries and commissions jointly issued the *Notice on Preventing Bitcoin Risks* (December 3, 2013); (2) The People's Bank of China and other seven ministries and commissions jointly issued the *Announcement on Preventing Financing Risks of Token Issuance* (September 4, 2017); (3) China Banking and Insurance Regulatory Commission and other five ministries and commissions jointly issued the *Announcement on Preventing Risks in the Name of Virtual Currency and Blockchain Risk Warning of Illegal Fund Raising* (August 24, 2018); (4) China Internet Finance Association and three other associations jointly issued the *Announcement on Preventing the Risks of Speculation in Virtual Currency Transactions* (May 18, 2021); (5) 10

¹ In the age of digital communications system and cryptocurrency-based financial system, the states have to reimagine their roles in protecting financial stability and hence, redesign the financial regulatory structure. For an academic discussion on regulation in the context of an emerging lex cryptographica financiera, see Jason Grant Allen and Rosa Maria Lastra, "Border Problems: Mapping the Third Border", *Modern Law Review*, *83*, 505-538 (2020).

departments including the People's Bank of China jointly issued the *Notice on Further Preventing and Dealing With Speculation Risks in Virtual Currency Transactions* (September 15, 2021).

Analyzing the above-mentioned representative documents, the Chinese government recognizes that virtual currencies, including Bitcoin, have the attribute of virtual commodities: Although online virtual property appears in Article 127 of the Civil Code of the People's Republic of China, it does not define the concept or list the categories of online virtual property. In judicial practice, for example, in 2018, Haidian District People's Court held that China's current laws did not define online virtual properties such as Bitcoin as "thing" under the Property Law of the People's Republic of China (before the Civil Code of the People's Republic of China came into effect). Based on the principle of legal property rights, the plaintiff cannot require the defendant to deliver the cash generated by Bitcoin in accordance with the legal provisions of ownership (such as interest). However, the court also affirmed that Bitcoin is a transaction object/civil interest under the Contract Law of the People's Republic of China (before the Civil Code of the People's Republic of China came into effect) and should be protected by Chinese law. Some scholars also believe that defining Bitcoin as a bearer security has theoretical support at the civil law level, and it can also be included in the extension of property stipulated in Article 92 of the Criminal Law of the People's Republic of China (Zhang, 2019).

Unlike the Chinese government's limited recognition of Bitcoin's property attributes, the U.S. federal government earlier recognized Bitcoin as a special virtual currency and established a relatively complete regulatory system at both federal and state levels. Even on July 25, 2020, a U.S. federal court stated that the virtual currency Bitcoin is a "currency" covered by the Washington D.C.'s Money Transmitter Act.

There are difficulties in complying with the law of one price in Bitcoin futures trading (Berensten & Schar, 2019, pp. 65-74).² Pricing issues in Bitcoin futures trading lend themselves to manipulation and risk: the ability to manipulate cash-settled futures contracts depends on how easily the reference rates used to price the contracts can also be manipulated. For example, a trader seeking to profit from a long position in a Bitcoin futures contract could place a large trade in the Bitcoin spot goods market on the contract settlement date, thereby driving up the price of Bitcoin and making a substantial profit from the futures position. This strategy, known as "closing" a position, has a long history in the futures market.

Generally speaking, establishing a reference rate for most cash-settled futures contracts is relatively simple: the value of an S&P 500 futures contract is determined solely by the level of the S&P 500. However, determining the reference rate for Bitcoin futures is challenging because today's Bitcoin violates the law of one price: the same security or commodity should have the same price no matter where it is traded. There are many Bitcoin trading venues around the world. It is no exaggeration to say that 10 different exchanges may have 10 different Bitcoin trading prices. In practice, due to the lack of a unified trading price for Bitcoin, the Chicago Mercantile Exchange and the Chicago Board Options Exchange need to develop a manipulation-resistant reference interest rate for Bitcoin futures. As mentioned above, in the case of allowing self-certification, the above two exchanges

² Stable coins are digital currencies pegged to fiat currencies or non-volatile assets or to fixed amounts of traditional monetary instruments. Stable coins came into cryptocurrency markets to resolve the problem the problem of cryptocurrencies' market volatility. For reference, see Aleksander Berensten and Fabian Schar, "Stable Coins: The Quest for a Low-Volatility Cryptocurrency", in Antonio Fatas (Ed.), *The Economics of Fintech and Digital Currencies*, CEPR Press, pp. 65-74 (2019).

must explain to the regulatory agency the structure and characteristics of their reference rates and the reasons why the reference rates cannot be manipulated.

It should be careful that Bitcoin futures trading or other virtual currency trading may bring systemic risks. Size is a key indicator of the systemic importance of a market—the larger the market, the greater the economic cost if that market fails. Bitcoin's current market capitalization ranks among the top 15 in the world, surpassing Facebook and Tencent, and is approximately one-tenth of China's GDP in 2020. Together with the total volume of other virtual currencies, the entire virtual currency market is not large enough to pose a systemic risk. However, it is clear that the demand for Bitcoin derivatives is not coming from merchants who trade Bitcoin, but from speculators who want exposure to Bitcoin without having to own actual Bitcoin. Given that the activities in the Bitcoin spot goods market are mainly speculative activities, and that the price of Bitcoin has changed more than 3 million times in 10 years, in addition to the aforementioned price risks, the systemic risks that the Bitcoin futures market may bring in the future are worth noting.

The interconnections between different firms and markets in the financial system can lead to the accumulation of systemic risks and can facilitate the propagation of economic shocks throughout the system. Interconnections between companies can take the form of asset interconnectedness and/or liability interconnectedness. The launch of Bitcoin futures creates new connections between companies and market sectors. Most importantly, it breaks down the barriers that previously separated the unregulated Bitcoin spot goods market from the regulated financial system. Bitcoin futures not only expose the two regulated futures exchanges to risks associated with the new asset class, but they also expose futures commission merchants to these risks. Futures commission merchants solicit orders from retail and institutional investors to buy and sell futures contracts; margin and guarantee customer transactions; and, in some cases, extend credit to customers. Bitcoin futures contracts transformed a previously unregulated asset class dominated by retail investors into a lengthy chain of intermediaries that include some of the world's largest exchanges, clearinghouses and too-big-to-fail financial institutions. Bitcoin futures also bring central counterparty clearing houses into the Bitcoin intermediary chain. A clearing house intervenes between counterparties to contracts traded on one or more financial markets—becoming a buyer to every seller and a seller to every buyer—thereby ensuring the performance of the contract.

The evolution of the mortgage-backed securities market serves as a useful analogy when considering the potential for virtual currency markets to reach systemic proportions. The first mortgage backed security was issued in 1968; it was privately issued but guaranteed by the Government National Mortgage Association. In 1971, the Federal Home Loan Mortgage Corporation issued the first mortgage-backed securities, followed a decade later by the Federal National Mortgage Association. These initial offerings were simple pass-through securities, investors would receive prorated monthly principal and interest payments from the underlying loan. The mortgage-backed securities market gradually grew over the next two decades, and by 1996 total mortgage-backed securities issuance was approximately \$550 billion. But then the market began to grow exponentially, with new issuance exceeding \$1.2 trillion in 1998 and reaching a peak of \$3.5 trillion in new debt issuance in 2003. The growth of mortgage-backed securities proved incompatible. This growth was paralleled by and contributed to continued house price growth. The housing market collapsed in 2006, ultimately leading to the near collapse of the financial system and a severe recession. The fall in house prices revealed previously unknown

connections between firms and sectors within the financial system, among which a significant portion is formed by the purchase, sale, and repackaging of mortgage-backed securities (Omarova, 2012).

Risk Prevention and Countermeasure Suggestions for Chinese Domestic Transactions of Bitcoin Futures

There are several legal methods for risk prevention and countermeasure suggestions for Chinese domestic transactions of bitcoin futures, and the first method is expanded interpretation of relevant legal provisions. From the policy orientation that affirms financial innovation, there is the possibility of Bitcoin futures trading in Chinese Mainland in future (Article 3 of the Futures and Derivatives Law of the People's Republic of China). Compared with the U.S. Commodity Futures Trading Commission, the U.S. Securities and Exchange Commission is stricter on Bitcoin futures trading. One of the reasons is the expanded interpretation of legal provisions. This approach is worthy of reference by the Chinese government in future.

The U.S. Securities Exchange Act of 1934 requires exchanges, as self-regulatory organizations, to submit any proposed rule changes to the U.S. Securities and Exchange Commission. Once the U.S. Securities and Exchange Commission makes a positive determination, it must bear the burden of proving consistency. This is in contrast to the U.S. Commodity Futures Trading Commission self-certification. The U.S. Securities Exchange Act of 1934 also provides that trading rules are designed to prevent fraud and manipulation. While neither the U.S. Securities Exchange Act of 1934 nor the U.S. Securities and Exchange Commission rules distinguish between fraud and manipulation in the spot goods (cash) market and the markets for products listed by exchanges through rule changes, unlike the U.S. Commodity Futures Trading Commission, which only focuses on fraud and manipulation in the futures market, the U.S. Securities and Exchange Commission, which takes a broader view of fraud and manipulation, has repeatedly rejected listings of Bitcoin Futures ETFs ahead of 2021.

Given the fundamental differences between spot goods and futures products, the U.S. Securities and Exchange Commission's view of expansionary interpretation has an empirical basis. Manipulating cash-settled futures contracts requires manipulating the underlying reference price, which is why this paper focuses so much on the Bitcoin reference price from Chicago Mercantile Exchange contract and Chicago Board Options Exchange contracts. While shares of the Bitcoin Exchange-Traded Products are priced based on open market transactions, the Futures Exchange Bitcoin Futures Contract of Chicago Board Options Exchange is based on the auction price of Bitcoin in U.S. dollars on the 4 PM EST Gemini Exchange, since creating (redeeming) a share of the Bitcoin spot goods market, wherever it occurs, may affect the Bitcoin Exchange-Traded Products value. This is why the U.S. Securities and Exchange Commission is concerned because it has a better understanding of the characteristics of the Bitcoin spot goods market.

The U.S. Securities and Exchange Commission did find problematic features of the Gemini Exchange and auction that applied to the Chicago Board Options Exchange's Bitcoin futures contracts but were ignored by the U.S. Commodity Futures Trading Commission in its review: Since the trust's net asset value is determined by the Gemini Exchange auction. As a result, the creation and redemption of new trust shares resulted in the purchase or sale of significantly more Bitcoin (1,000) than would normally be traded in the Gemini Exchange 4 PM auction. Accordingly, if the U.S. Securities and Exchange Commission approves the Bitcoin Zero (BZX for short) rule

changes, the mere act of creating or redeeming trust shares could affect the auction price and thus the pricing of the trust. This should be a red flag for the U.S. Commodity Futures Trading Commission, as they knew the U.S. Securities and Exchange Commission was reviewing the BZX proposal when they reviewed the self-certification. If the creation and redemption of trust shares affects the Gemini Exchange auction, it may also affect the settlement value of the Bitcoin futures contract on the Chicago Board Options Exchange.

The second method is adhered to the law of one price in futures trading. Judging from the U.S. practice, although the U.S. Commodity Futures Trading Commission believes that the Chicago Mercantile Exchange and the Chicago Board Options Exchange meet all requirements for self-certified Bitcoin futures contracts, current Bitcoin futures trading is vulnerable to manipulation (Bitcoin spot goods market can be manipulated), violating the law of one price.

Referring to the practice of the U.S. Commodity Futures Trading Commission in recent years, future Chinese domestic Bitcoin futures trading should strengthen background checks from seven factors: (1) Derivatives clearing organizations set higher initial prices for cash-settled Bitcoin futures Margin and maintenance margin; (2) Designated futures markets set the large trader reporting threshold to five Bitcoins or less; (3) Designated futures markets enter into direct or indirect information sharing agreements with spot goods market platforms to allow access to traders and trader data; (4) designated contract markets to more broadly monitor price settlement and other Bitcoin price data in the spot goods market and identify unusual and disproportionate movements in the spot goods market compared to the futures market; (5) Conduct inquiries on designated contract markets, including trade settlement levels if necessary; (6) The designated contract market agrees to regularly coordinate with the Commodity Futures Trading Commission supervisory staff on trade activities, including providing trade settlement data to the Commodity Futures Trading Commission supervisory team upon request; (7) Designate contract markets to coordinate product releases so that the Commodity Futures Trading Commission's market surveillance arm can carefully monitor minute-by-minute developments.

The third method is to strict approval process for the listing of Bitcoin futures. Procyclical regulatory policies are often excluded from academic analysis surrounding systemic risk factors, and while their exact relationship to systemic risk is difficult to quantify, the historical record shows that pre-crisis financial boom periods are often accompanied by government policies that expanded the credit boom, fostered growth in new financial product innovation, weakened existing regulations, and allowed for regulatory forbearance. In essence, procyclical regulatory policies can create conditions that allow systemic risks to grow.

Viewed in isolation, the changes brought about by Bitcoin (futures) may have little impact on systemic risk. However, when viewed through a broader historical lens, these changes fit a clear pattern of dialing back financial regulation during financial booms: a looser regulatory environment facilitated the development of new financial products with unique risk characteristics. It's no coincidence that Bitcoin futures are entering a record-breaking bull run. In addition to technological developments, Bitcoin futures are made possible by investor appetite for high-yielding assets—as the bull market drives up the prices of other financial assets—and a loose regulatory environment (Brown, 2019).

When reviewing the contract, the U.S. Commodity Futures Trading Commission only focused on the possibility of contract manipulation and ignored the underlying dynamics of the Bitcoin spot goods market. Had they expanded their review to include the spot goods market, they would have discovered a market rife with fraud

and manipulation and might have recognized that it is naive to think that futures contracts based on assets that are easily manipulated are inherently resistant to manipulation.

The U.S. Commodity Futures Trading Commission also ignored the systemic risk implications of allowing Bitcoin futures to be listed. Before the advent of Bitcoin futures, virtual currencies were primarily owned and traded outside the regulated financial sector, posing little risk to the rest of the financial system. The launch of Bitcoin futures entangled systemically important financial institutions, including broker-dealers, central clearing houses, and futures exchanges, into a volatile and little-known asset class.

In future, Bitcoin futures products listed in Chinese Mainland must go through a strict approval process. It can learn from the product approval procedures currently in place in the U.S. pharmaceutical industry to ensure that financial innovation and the creation of complex financial instruments promote productive enterprises and provide real public benefits (Lee, 2019). The approval process is divided into two parts. In the first part, Chinese government conducts a test to determine whether the financial instrument/financial product has social value or social cost, otherwise, the latter will be prohibited. Next, a financial derivative agency similar to the U.S. Food and Drug Administration would be required to review and approve all new financial products before they enter the market. The second part consists of a three-stage test that financial institutions must meet: (1) the economic purpose test, which bears the burden of demonstrating the social and commercial utility involved in each product; (2) the institutional capacity test, which reviews the applicant company's ability to effectively manage risks and monitor market dynamics for the proposed product; (3) extensive system effects test, which requires finding that the proposed new product will not create unacceptable risks, increase systemic vulnerabilities, and will not raise significant public policy issues.

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