論文

The Rise of Crypto Assets and the Importance of Regulation: The Current State of 'Centralized' Finance Brought About by 'Decentralized' Technology (2)

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Abstract

Crypto assets initially appeared as "virtual currencies", but it became clear that they had limitations in terms of their function as a currency, particularly in terms of their practical use. Although the speculative aspect is often emphasized, in reality, there are cases where they are adopted as legal tender in emerging countries, suggesting that they are not necessarily limited to being a speculative product.

The IMF is calling for stricter regulations due to the rapid growth of the crypto asset market and concerns about systemic risk. In addition, the bankruptcy of FTX has confirmed that the price of cryptocurrencies fluctuates according to the expectations of market participants, and the introduction of financial products undermines price stability. Stablecoins have been developed as a means of supplementing the limitations of cryptocurrencies, and their use is expanding, but financial authorities are calling for stricter regulations. The chain reaction of the crypto asset market crash was caused by excessive expectations, and was the result of rapid growth and delayed regulation.

Crypto assets, which were created with the aim of being a decentralized system, are now strengthening their centralized elements, and as the risks are becoming more apparent, it has been concluded that strengthening monitoring systems and regulations is essential.

Keywords: crypto-assets, blockchain, decentralization, regulation, stablecoin

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With crypto assets, there have always been concerns about hacking and bugs due to their ability to record value online, and problems have arisen. The collapse of BTC itself has not yet occurred. However, the hacking of exchanges that handle crypto assets has had a significant impact on the crypto asset market. The collapse of Mt. Gox in 2014 and the fraudulent outflow of funds from Coincheck in 2018 both had a significant impact on the cryptocurrency market. In addition, the collapse of stablecoins in 2022 and the chain of bankruptcies that led to the collapse of FTX were events that were said to mark the end of the crypto market.

Although not covered in this article, during the Cyprus crisis in 2013, funds flowed into the BTC as a means of preserving value due to the closure of domestic banks and the loss of confidence in the legal currency[1]. There were also periods when the price of the BTC rose due to inflows from countries suffering from a weak national currency, but as we have seen, the price fluctuations were significant. The periods of decline are thought to be due to heavy regulation by the Chinese authorities and incidents such as hacking.

ICOs were strongly affected by the regulations. Since 2018, there have been almost no ICOs due to the introduction of regulations. As regulations on crypto assets were gradually put in place in each country, the demand for BTC was strengthened by the flight of funds from 2019 onwards. As shown in Chart 13, El Salvador and the Central African Republic introduced BTC as legal tender[2].In addition, the expansion of major exchanges and the issuance of tokens due to the boom in DeFi also increased, and the inflow of funds into the entire crypto asset market also increased. Under these conditions, UST, a stablecoin, attracted attention[3].

Chart 13 Making BTC a legal tender

2021/6/9	El Salvador makes the official decision to make the BTC a legal tender.
2021/8/17	Coinbase, a major American exchange, has started services in Japan.
2021/9/7	El Salvador became the first country in the world to make BTC a legal tender. .
2022/4/28	The Central African Republic announced it will make BTC legal tender.

Source: various media reports.

Since its launch in September 2020, the UST has been funded by high yields under the Anchor Protocol, and at its peak, the supply of UST was worth $17.5 billion before it suddenly collapsed in May 2022. Even for stablecoins that are considered the most stable, such as those backed by legal tender, concerns about their backing have grown. As mentioned above, while UST and LUNA acted as incentives for arbitrage trading, they were not backed by funds. In addition, as concerns and doubts grew, the price maintenance mechanism could easily have collapsed[4]. The collapse of the UST was an expression of the risks of stablecoins, and it became an opportunity to discuss the need for regulation in concrete terms[5].

The U.S. Treasury was concerned about the state of the crypto asset market because (1) while crypto asset trading is booming and the number of crypto asset products has increased significantly, this has not led to financial technology innovation in areas such as payment systems; (2) the content of cryptocurrency transactions is dominated by cryptocurrency lending transactions; and (3) the lack of comprehensive regulation means there are no measures in place to protect users, investors, and businesses[6]. In fact, as shown in Chart 14, there have been a number of crypto asset-related bankruptcies, including the FTX collapse.

Chart14 Chain of bankruptcies surrounding crypto assets and the collapse of FTX

2022/4/1	FTX Japan officially begins operations after acquiring Liquid
2022/5/7	Stablecoin Terra USD (UST) peg collapses
2022/5/9	UST/LUNA shock
2022/6/2	FTX begins services in Japan
2022/6/13	Celsius freezes customer assets
2022/7/1	Three Arrows Capital files for bankruptcy, Voyager Digital freezes customer assets
2022/7/5	Voyager Digital files for Chapter 11 bankruptcy protection
2022/7/13	Celsius files for Chapter 11 bankruptcy protection
2022/11/2	CoinDesk publishes an article on Binance's balance sheet
2022/11/6	Binance CEO Changpeng Zhao announces that he will sell his FTT holdings
2022/11/8	Binance announces that it has signed a non-binding letter of intent to acquire FTX
2022/11/8	FTT falls below $22 (the line of defense set by Alameda Research)
2022/11/9	CoinDesk reports that Binance is heavily leaning towards withdrawing the acquisition
2022/11/9	Binance officially withdraws the acquisition of FTX
2022/11/9	Justin Sun states that he is exploring a rescue plan for FTX
2022/11/10	Sam Bankman-Fried announces that he will dissolve Alameda Research
2022/11/10	Bahamian regulators freeze FTX assets
2022/11/11	FTX files for Chapter 11 bankruptcy in the US
2022/11/28	The major lending company BlockFi files for Chapter 11 bankruptcy
2022/12/13	SEC charges FTX's former CEO Sam Bankman-Fried with fraud against customers
2023/2/14	NY state regulator orders Binance to stop issuing stablecoins
2023/3/8	Silvergate Capital closes its crypto assets division (Silvergate bank)
2023/3/27	NY federal court issues preliminary injunction against Binance.US's planned acquisition of Voyager Digital

Source: various media reports.

Around the same time as the rapid expansion and collapse of UST, FTX Trading, led by Bankman-Fried, was hailed as the savior of the crypto asset industry and attracted a lot of attention[7]. FTX was a company that developed cryptocurrency exchanges and platforms, but it was created within the investment firm Alameda Research and proceeded to acquire crypto asset companies through massive fundraising. By actively providing rescue loans to companies struggling due to the regulatory environment in the U.S. and the peak of the crypto asset market, it expanded its share in the crypto assets industry (see Chart 15).

Chart 15 FTX's fundraising and valuation

2021/7/20	Raised $900 million, market value 18 billion dollars.
2021/10/21	Raised $420 million, valued at $25 billion
2021/10/25	Announced the completion of the acquisition of LedgerX
2021/11/11	FTX.US announces average daily trading volume of $360 million (500% increase)
2022/1/15	Launched FTX Ventures, a $2 billion fund.
2022/1/26	FTX.US raises $400 million, valued at $8 billion
2022/1/31	Raised $400 million, valuation of $32 billion
2022/8/23	Sales of $1.02 billion and net income of $388 million in 2021

Source: various media reports.

In addition to the size of the funding, the participation of well-known investors was also a factor in FTX's growth. The July round included more than 60 participants, including major venture firms in the crypto asset industry such as SoftBank Group, Sequoia Capital, Ribbit Capital and Coinbase Ventures. In September, BlackRock, the largest asset management firm, also joined. In just a short period of time, they made huge acquisitions and loans, and this was reported in the media, which helped to raise public awareness[8].

In 2021, sales were more than ten times higher than the previous year, and the growth rate of net profit was even higher. The largest cryptocurrency exchange, Coinbase, had a sales revenue of $7.4 billion in 2021, a significant increase from $1.1 billion in 2020, but due to a sharp decline in trading volume, it recorded a net loss of $1.1 billion. It has been pointed out that FTX's source of revenue was not cryptocurrency trading, and its revenue structure was different from that of Coinbase[9]. FTX grew rapidly in an extremely short period of time, only three years after its founding in 2019, but in November 2022, it went bankrupt.

Crypto asset news site CoinDesk published an article about Alameda Research's balance sheet on November 2, 2022. It was reported that the company had $14.6 billion in assets and $8 billion in liabilities, but it was revealed that $6 billion of the assets were FTT, a token issued by FTX, and the liquidity risk of FTX became apparent. In addition, only $134 million of the assets were cash, while over $3.3 billion were crypto assets and $2 billion were equities. As shown in Figure 10, in 2022, there was a series of bankruptcies related to crypto assets, and the valuation of the crypto assets held was significantly impaired. If FTX had not protected the FTT it had lent to Alameda Research, FTX's losses would have spread. Thus, it lent client assets to Alameda Research that were not originally investment funds.

Following the CoinDesk announcement, Changpeng Zhao, CEO of Binance, the largest cryptocurrency exchange, announced that he would sell his FTT holdings, and a few minutes later Caroline Ellis, CEO of Alameda Research, announced that she would buy them for $22, but two days later the price had plummeted to the $2 range.

In the same way that FTX acquired a competitor in dire straits, Binance planned to acquire FTX, but abandoned the acquisition after only a few hours of due diligence. FTX, which had grown rapidly by successfully raising large amounts of capital and making a series of acquisitions, filed for bankruptcy just days after the facade was exposed. The bankruptcy filing involved some

130 related companies, including FTX.US, Alameda Research, and FTX Japan, and the total number of creditors was over 100,000, with debts estimated at between $10 billion and $50 billion. Sam Bankman-Fried, the former CEO of Alameda Research and FTX, who was hailed as the founder, has been charged with fraud[10].

The bankruptcy trustee for FTX is John J. Ray, who oversaw the liquidation of Enron Corporation when the IT bubble burst in 2001. Enron had inflated its accounting profits through the use of special purpose entities, so it is possible to view FTX's collapse in a similar light. However, we should consider that there are more fundamental problems with FTX's collapse. It started with the extremely special relationship between Alameda Research and FTX, and if there had been oversight of the opaque money transfers, it could have been prevented. It has also been revealed that there was no governance function. The key point is that there was no segregation of client assets and proprietary assets, but the delay in the legal development of the crypto market is also not unrelated[11].

It is said that the background of CoinDesk's balance sheet disclosure, which triggered the collapse of FTX, was opposition to Sam Bankman-Fried's lobbying activities on crypto regulation, as he had also made large political donations in the United States[12]. As we have seen, FTX has taken advantage of the sluggish crypto market to make acquisitions, but it is not headquartered in the US, so it is in a position to avoid regulation. If it can gain a vested interest by dominating the crypto market before regulations are in place, it will be advantageous for FTX.

(2) Increasing Complexity of Crypto Assets and International Regulatory Developments

Chart 18, presented by the Financial Stability Oversight Council (FSOC) based on the bankruptcy filing of Three Arrows Capital on July 1, 2022, is useful for understanding the interconnectedness of the players in the crypto asset industry. At a glance, it is clear that we are in a situation where different types of businesses with different functions are intricately interconnected, and regulation has not kept pace. As discussed below, these trends in the crypto market have raised concerns about the potential impact not only on the crypto market but also on traditional financial markets, and international regulatory discussions have become more active.

Chart 16 shows how the Financial Stability Board (FSB) classifies the crypto asset ecosystem. As we have already mentioned, the turmoil in the crypto market in 2022 led to an increase in regulatory momentum. In the following section, we look at the specific details.

The chart shown by the FSB in Chart 16 is not intended to be a classification. It is intended to show that the functions in the crypto asset market are becoming more complex, with at least four categories and 11 subcategories. As complexity increases, so does the number of types of entities, as well as the number of connections between entities performing different functions. There is considerable concern about the composition of Chart 12. At the October 2022 meeting of G20 finance ministers and central bank governors, specific regulatory and supervisory frameworks were proposed in response to these concerns[13].

Chart 16 Essential functions and activities in the crypto-asset ecosystem by FSB

Functions	Activities
Creation, issuance, distribution, redemption and underlying infrastructure	1. Creating, issuing, and redeeming crypto-assets, distribution, underwriting, placement, market-making, marketing and sales
	2. Operating infrastructure and validating transactions
Wallets and custody	3. Provision of custodial (hosted) wallet and custody services
	4. Provision of non-custodial (unhosted) wallets
Transfer and transactions	5. Payment for/of goods, services, gifts and remittances.
	6. Exchange between crypto-assets or against fiat currencies, clearing and settlement
Investment, leverage and risk management	7. Use as collateral to borrow/purchase other crypto-assets
	8. Trading/borrowing/lending of crypto-assets
	9. Insurance
	10. Direct/outright exposures to crypto-assets
	11. Synthetic/derivative exposures to crypto-assets

Source: FSB［2022c］p.4.

The FSB cites the extremely high price volatility and the fact that expectations alone act as a strong price-determining factor as risks specific to the crypto market. Expectations of price increases attract speculative funds, including leveraged trading. The FSB also considers the spillover effects on conventional financial markets beyond the crypto market[14].

Apart from the turmoil in the crypto market in the United States, the International Monetary Fund (IMF) also considers the issue on an international level in its *Global Financial Stability Report* (IMF [2021]). The IMF states that as the crypto asset ecosystem grows rapidly, it is important to consider both the opportunities and challenges, and points out the points to be aware of, especially in emerging markets and developing countries. Given that El Salvador and the Central African Republic have made BTC legal tender, such consideration is essential.

The IMF report also states that crypto assets function as speculative investment targets, value storage, alternative currencies, and payment methods, and that new services provided by DeFi in particular are contributing to market expansion. On the other hand, it states that the international regulatory framework is inadequate and that monitoring of risks is necessary.

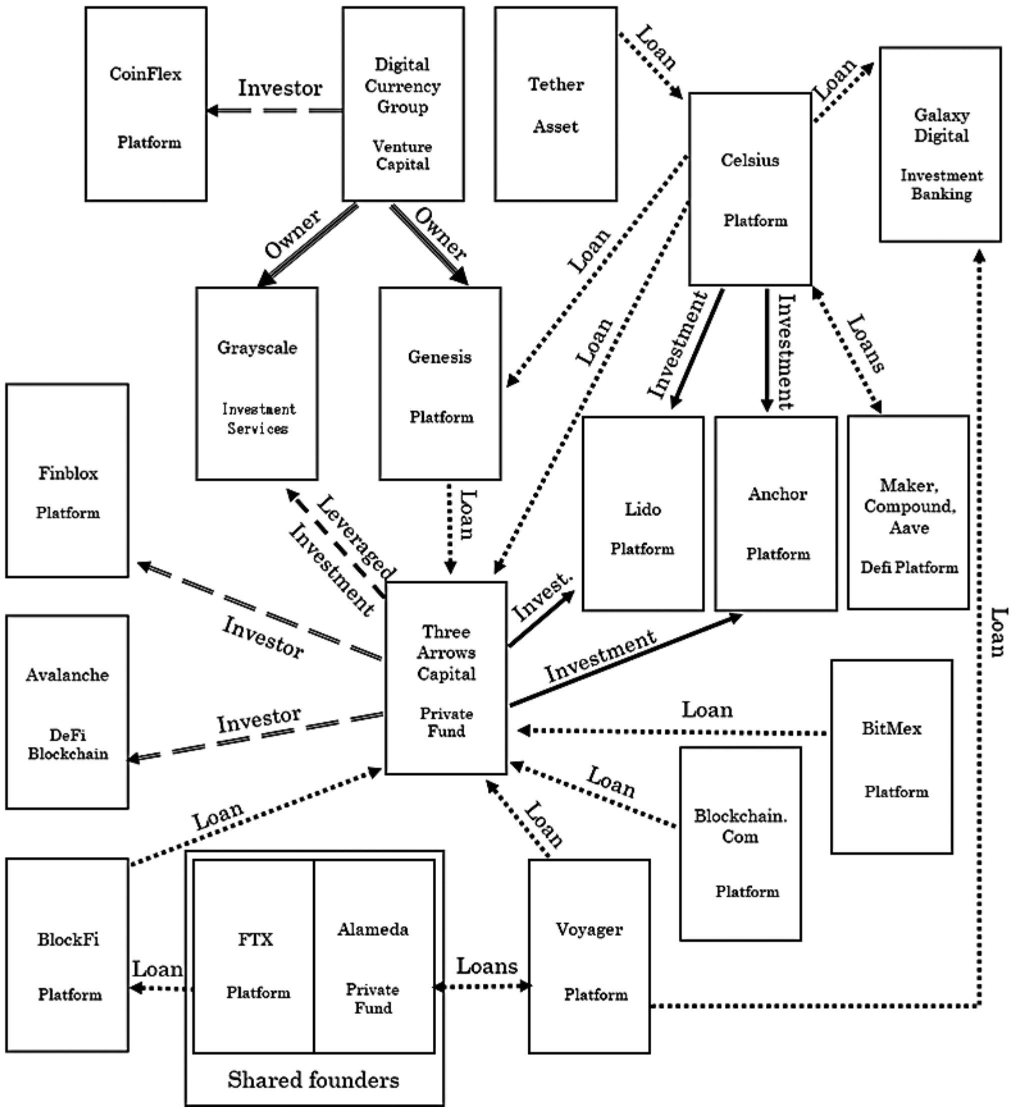
An important development in the latest regulatory trend is the US government's evaluation of crypto assets. In the March 2023 *Economic Report of the President*, it clearly denies the benefits of crypto assets and their technology. In particular, there is a noticeable critical reference to stablecoins, as shown in Chart 1. The US is a nation that issues the reserve currency dollar and has the privilege of a reserve currency. The rise of stablecoins is seen as a threat to the dominance of the dollar[15]. The US government's response to crypto coins and stablecoins differs at present, with no regulations being imposed on BTC itself, the representative cryptocurrency, and the listing of futures ETFs being approved, as shown in Chart 14[16].

Chart 17 ETF listing and BTC price record high

2021/10/16	First Approval for a BTC Futures ETF
2021/10/19	BTC futures ETF launched
2021/11/9	BTC hits record high
2021/11/11	BTC hits record high in yen value

Source: various media reports.

Chart 18 The interconnectedness of the players in the crypto asset industry



Source: Adapted from FSOC [2022], p. 39.

A series of scandals and failures have led to efforts to strengthen regulation in various countries, but as the IMF has pointed out, even when regulations are implemented, their content and goals vary, and it is not possible to comprehensively monitor and regulate digital assets that cross national borders through networks (Bains et al. [2022a], [2022b]). In addition, the different approaches to regulation in each country can be attributed to differences in the emphasis placed on user protection or crime prevention. In Japan, the aforementioned hacking incident was given significant importance, and regulations were put in place with the primary goal of protecting users. On the other hand, the United States places more emphasis on crime prevention, such as money laundering, and it can be said that one of the characteristics of the country is the large number of arrests and prosecutions of crypto asset-related businesses.

Not only has BTC failed to achieve its vision of creating a decentralized payment system, but it has also created a centralized system of stable coins and original token issuers. While this may not be a problem as long as the centralized system of such issuers is functioning normally, in the case of interconnectivity as shown in Chart 18, a chain of risk will occur and systemic risk will become apparent. This is similar to the crisis (financial panic) that occurred in the United States during the "free banking era" that Tanaka [2020] points out (Tanaka [2020], p. 176). Even if it is separate from the central authority that issues legal tender or the central authority of the payment system, a crisis will occur if it is not properly managed.

The IMF has pointed out the potential of digital money, stating that "if well designed and governed, has the potential to enhance pursuit of public policy objectives such as financial inclusion and better cross-border connectivity" (Zhou et al. [2024]).They point out this potential, especially in island economies, but at the same time we should not overlook the fact that they clearly distinguish between existing crypto assets and digital currencies, such as their strong criticism of the legalization of BTC.

（3）Monetary Policy and Crypto Assets

Changes in policy interest rates by central banks in each country have a significant impact on borderless fund transfers. Under extremely low interest rates, there are restrictions on investment options, and an increasing number of investors are forced to direct their funds to riskier investment destinations. Alternatively, there may be cases where risk assessment itself does not function, and investments are made as a result of being judged as safe. The underlying technology of crypto asset, blockchain, is highly evaluated by international organizations including the IMF, and research is being conducted to improve the convenience of international settlements and reduce costs. In order to mitigate the risks, it is necessary to develop various regulations.

Specifically, (1) do not grant crypto assets official currency or legal tender status, (2) guard against excessive capital flow volatility and maintain effectiveness of capital flow management measures, (3) analyze and disclose fiscal risks and adopt unambiguous tax treatment of crypto assets, (4) establish legal certainty of crypto assets and address legal risks, (5) develop and enforce prudential, conduct, and oversight requirements to all crypto market actors, (6)establish a joint monitoring framework across different domestic agencies and authorities, (7) establish international collaborative arrangements to enhance supervision and enforcement of crypto asset regulations, (8) monitor the impact of crypto assets on the stability of the international monetary system, and (9) strengthen global cooperation to develop digital infrastructures and alternative solutions for cross-border payments and finance (IMF [2023]).

The legalization of BTC as a legal tender by El Salvador and the Central African Republic has been criticized because it means that the loss of user benefits caused by the repeated crashes in the price of BTC will occur on a national level. Some have described it as a “new dollarization,” but even looking back at the international monetary system to date, it is extremely difficult to completely replace currencies.

In addition, it is important to note that the trend in the crypto asset market, not just BTC, is that crypto assets, which some market participants have described as "digital gold," are not functioning as "safe assets." If we are to emphasize their value-preserving function, they need to be recognized and accepted as safe assets in the same way as gold. However, the price formation of crypto assets is largely due to unstable factors based on expectations, and they are ultimately "assets" that involve risk.

5. Conclusion

In this paper, we have confirmed the current situation of cryptocurrencies such as BTC, and have attempted to theoretically examine their monetary functions in particular. Cryptocurrencies emerged as 'virtual currencies', but they do not fully function as currencies, and previous research has revealed that they have practical limitations in terms of their functions. Cryptocurrencies are often emphasized for their speculative aspects, but on the other hand, they are also sometimes adopted as legal tender in emerging countries, and it has been pointed out that they may not necessarily remain as speculative products. This suggests that in some cases, crypto assets may function as money.

Furthermore, there are thought to be three factors behind the IMF's recent calls for tighter regulation of crypto assets Firstly, there is concern that the rapid expansion of the crypto asset market will have an impact on traditional financial markets. Secondly, there is a possibility that the interconnected nature of the crypto asset market could lead to systemic risk. Thirdly, central banks could issue CBDCs and benefit from crypto asset technology without losing monetary sovereignty.

The crypto asset market, which is ahead of the curve in terms of practical application, is having a global impact, regardless of whether it is right or wrong. Price increases due to the demand-supply balance and the rise in asset prices due to an extremely accommodative monetary environment are also affecting the crypto asset market. As changes in monetary policy spread to the crypto asset market, the regulations that the IMF should work on to mitigate risks without hindering technological innovation have some commonalities with the existing framework, and continued analysis is necessary.

We also discussed the market trends and regulatory developments in the wake of the FTX collapse. The price of crypto assets is determined mainly by the expectations of market participants, making the prices highly volatile. Price fluctuations are governed by expectations, and when expectations become overly high, a collapse in prices can occur when these expectations are transformed into disappointment. This price collapse becomes a target for short-term profit-seeking for narrow-sense speculators, and it has become clear that the acceleration of this collapse is accelerated by credit transactions and futures transactions as financial products become more common. In this way, the introduction of financial products can undermine price stability and even intensify volatility.

In addition, stablecoins have been created to compensate for the limitations of crypto assets, and their use as a means of payment is increasing. However, the growing use of stablecoins has increased concerns for the monetary authorities of various countries, and there is now a call for stricter regulations on the crypto assets market. Crypto assets, which were once considered to be a form of ‘currency’, are now being distinguished from ‘currencies’ in their definition. In particular, especially as stablecoins grow, their competitive relationship with traditional currencies has become more pronounced. This has forced monetary authorities to take action to strengthen regulations.

The chain of failures in the crypto asset market, typified by the collapse of FTX, is merely the manifestation of risks in the history of financial markets. The collapse of FTX is not a special case, but part of a fraudulent act that took advantage of investors' excessive expectations. Like past failures, it can be said to be an event caused by human instinctive characteristics. The background to such repeated failures is the rapid growth of the crypto asset market and the accompanying delay in regulation.

Furthermore, the rapid growth of the crypto asset market can also be seen as a result of the large-scale supply of liquidity in the financial market. In 2021, it is thought that funds flowed in as a result of monetary easing measures taken by central banks, but since 2022, central banks have been raising interest rates and monetary tightening is progressing. These changes in the economic environment have led to hidden losses for financial institutions, resulting in the collapse of banks for the first time since the 'Lehman Shock', and there is a growing momentum for stricter regulations on the financial industry. The tightening of banking regulations could also lead to tighter regulations for the crypto asset market, which has been poorly developed, and as with the failures of the financial industry to date, risks in the crypto asset market are beginning to emerge.

It is ironic that the crypto assets that were created to realize a decentralized payment system are reverting to a centralized system due to the increase in derivative products and businesses. The primary advantage of a centralized system in finance is the existence of a lender of last resort. As is to be expected, the lender of last resort function is not perfect. However, the FTX bankruptcy seen in this paper is a phenomenon that arose from extremely primitive credit uncertainty, and the same is true for the chain bankruptcy of the crypto asset market.

Blockchain technology, the underlying technology that supports crypto assets, is decentralized. The realization of the decentralized payment system concept was supposed to eliminate the risk of a central administrator. However, in reality, it has failed, and it could even be said that the risk has become more apparent due to the centralization of the crypto assets market. Stablecoins, which were developed later, have a centralized structure, with their unsecured system allowing companies to issue their own tokens and construct high-yield protocols to attract deposited assets. As a result, the ideal of decentralization in the crypto asset market is eroding, leading to increased risks. At present, the risk of centralized control is resurfacing, and stronger oversight and regulation are necessary to eliminate this risk.

In this paper, we have examined the FTX bankruptcy that occurred in the new area of the crypto asset market, and have reconfirmed that the emergence of new technologies tends to increase expectations and neglect risks. Just as the IT revolution of the past did not bring about a 'New Economy', the crypto asset market is not completely separate from the traditional financial industry framework, and it is necessary to recognize once again that risks will also manifest in new areas brought about by new technology. The question of how the crypto asset market will develop in the future, and how to build and maintain financial market stability, will continue to be important, and it will be necessary to pay attention to future regulations and market trends.

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[1] On the day of the crisis, 16 March 2013, BTC reached a record high.

[2] Due to the instability of the legal tender Salvadoran colón, the colón was abandoned in 2001 and the US dollar was adopted as the official currency. From September 2021, Bitcoin was added to the list of legal tender alongside the US dollar, creating a dual currency system. A Bitcoin fund worth $150 million was established to promote the conversion of Bitcoin to US dollars.

[3] See the section above on Stablecoin Mechanism.

[4] Although UST is often cited as the prime example of stablecoin collapse, there are precedents in IRON and the TITAN token. IRON was designed to stabilize its price through arbitrage trading between the USD Coin (USDC), a stablecoin backed by legal tender, and TITAN, but when a large amount of IRON was sold, TITAN was also sold, and the selling led to more selling, and in July 2021, the value of TITAN fell to almost zero in a single day. Some have pointed out that the collapse of IRON was due to large-scale speculative selling, rather than a loss of confidence (Adams et al. [2022]).

[5] At a hearing of the Senate Committee on Banking, Housing, and Urban Affairs on May 10, U.S. Treasury Secretary Janet Yellen expressed concern that risks are increasing due to the rapid proliferation of stablecoins, and argued that a comprehensive regulatory framework should be in place by the end of 2022 (https://www.banking.senate.gov/download/yellen-testimony-5-10-22).

[6] U.S. Department of the Treasury［2022］.

[7] The Nikkei shared an article from the Financial Times titled "Don't mistake the power of deception for talent," which explains the FTX founder's deception (dated November 22, 2022).

[8] In 2022, it signed a sponsorship agreement with the Major League Baseball (MLB) and engaged in advertising activities.

[9] CNBC reported this based on internal documents (dated August 20, 2022).

[10] Reuters has organized the timeline from the establishment of FTX to the arrest of its founder (dated December 22, 2022).

SEC Chairman Gary Gensler stated, "We allege that Sam Bankman-Fried built a house of cards on a foundation of deception while telling investors that it was one of the safest buildings in crypto," and that he diverted the funds to Alameda Research while raising more than $1.8 billion from investors (https://www.sec.gov/news/press-release/2022-219).

[11] There are also allegations that he made large donations to regulators to curry favor, and there are also members of Congress who criticize the SEC Chairman's regulatory and oversight stance. There are suggestions that this is the background to his arrest shortly before his testimony to Congress (The New York Times, December 12, 2022).

[12] Binance CEO Changpeng Zhao said that he would not support those who "lobby against other industry players behind the scenes."
(https://www.coindesk.com/layer2/2022/11/08/the-story-of-sam-bankman-frieds-backroom-deal-with-binances-cz/).

[13] FSB [2022a] is keeping a close eye on the risks of GSCs, referring to the derivatives market, which has expanded rapidly since 2021. Following the collapse of the UST, the FSB [2022b] states that cryptocurrency-related businesses must be regulated according to the principles of "the same activities, the same risks, and the same regulations" as traditional financial businesses. FSB [2022c] elaborates on the following nine issues, which are (1) ensuring the regulatory authority and resources of the authorities, (2) developing a general regulatory framework, (3) international cooperation, information sharing, (4) governance, (5) risk management, (6) data collection, recording and reporting, (7) disclosure, (8) dealing with impact on the financial system, and (9) dealing with businesses with multiple functions.

[14] At the time of the FSB [2022c], it was noted that there was no correlation between the downturn in the cryptocurrency market and the financial market as a whole, and that despite the series of bankruptcies, the impact was limited to the cryptocurrency market. On the other hand, CPMI & IOSCO [2022] point out that (1) the possibility of using settlement assets with new additional financial risks, (2) the interdependency between stablecoin functions, (3) the degree of decentralization of operations and governance, and (4) the possibility of large-scale deployment of emerging technologies such as distributed ledger technology may be risks that differ from the past.

[15] White House [2022] is conducting a technical evaluation of the introduction of CBDC in accordance with the presidential order.

[16] The US government's response is not welcomed by the cryptocurrency industry, as it is notable for its negative views, such as explicitly stating that it will not evaluate technologies such as NFTs.

References

Adams, A., and M. Ibert. [2022] "Runs on Algorithmic Stablecoins: Evidence from Iron, Titan, and Steel." (https://www.federalreserve.gov/econres/notes/feds-notes/runs-on-algorithmic-stablecoins-evidence-from-iron-titan-and-steel-20220602.html)

Adrian, Tobias, Tommaso Mancini-Griffoli [2019] "Digital Currencies: The Rise of Stablecoins," *FinTech Notes,* No. 2019/001.

Aramonte, Sirio, Wenqian Huang and Andreas Schrimpf [2021] "DeFi risks and the decentralisation illusion," *BIS Quarterly Review*, 06 December 2021.

Bains, Parma, Arif Ismail, Fabiana Melo and Nobuyasu Sugimoto [2022a] "Regulating the Crypto Ecosystem: The Case of Unbacked Crypto Assets", *Fintech Notes*, No. 2022/007.

Bains, Parma, Arif Ismail, Fabiana Melo and Nobuyasu Sugimoto [2022b] " Regulating the Crypto Ecosystem: The Case of Stablecoins and Arrangements", *Fintech Notes*, No. 2022/008.

The Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) [2022] "Application of the Principles for Financial Market Infrastructures to stablecoin arrangements," *CPMI Papers*, No. 206, 13 July 2022.

Berentsen, A., and F. Schär. [2018] "A Short Introduction to the World of Cryptocurrencies." *Review of the Federal Reserve Bank of St. Louis,* 100(1), pp. 1-16.

Council of Economic Advisers (CEA) [2023] , *Economic Report of the President,* March 2023.

Financial Stability Board (FSB) [2022a] *Assessment of Risks to Financial Stability from Crypto-assets*, 16 February 2022.

Financial Stability Board (FSB) [2022b] *International Regulation of Crypto-asset Activities: A proposed framework – questions for consultation*, 11 October 2022.

Financial Stability Board (FSB)［2022c］*Regulation, Supervision and Oversight of Crypto-Asset Activities and Markets: Consultative report*, 11 October 2022.

Financial Stability Oversight Council（FSOC）［2022］*Report on Digital Asset Financial Stability Risks and Regulation 2022*.

G7 Working Group on Stablecoins［2019］"Investigating the impact of global stablecoins" *CPMI Papers,* No. 187, October 2019.

International Monetary Fund (IMF)［2021］ *Global Financial Stability Report, October 2021.*

International Monetary Fund（IMF）［2023］"Elements of Effective Policies for Crypto Assets", *Policy Paper*, No. 2023/004.

Kereiakes, Evan, Do Kwon, Marco Di Maggio and Nicholas Platias［2019］"Terra Money: Stability and Adoption."

Lo, Stephanie and J. Christina Wang［2014］"Bitcoin as Money?" *Current Policy Perspectives*, Federal Reserve Bank of Boston, No. 14-4.

Minsky, Hyman P.［1992］"The Financial Instability Hypothesis," *Working Paper* No. 74. Levy Economics Institute.

Nakajima, Masashi［中島真志］［2017］*After Bitcoin*［アフター・ビットコイン］Tokyo,Japan, Shinchosha［新潮社］.

Nakajima, Masashi［中島真志］［2020］*After Bitcoin 2*［アフター・ビットコイン 2］Tokyo,Japan, Shinchosha［新潮社］.

Nakamoto, Satoshi［2008］"Bitcoin: A Peer-to-Peer Electronic Cash System."

Osipovich, Alexander and Caitlin Ostroff［2022］ "Crash of TerraUSD Shakes Crypto. 'There Was a Run on the Bank.'.", *The Wall Street Journal*, 12 May 2022.

Tanaka, Mariko［田中茉莉子］［2020］Angou sisan wo meguru kahei keizai riron no doukou［暗号資産をめぐる貨幣経済理論の動向. Trends in monetary and economic theory on crypto assets.］Fukuda, Shinichi,（Ed.）［福田慎一編］［2020］*Gijutsu sinpo to nihon keizai Shin jidai no sijou ru-ru to keizai syakai no yukue*『技術進歩と日本経済―新時代の市場ルールと経済社会のゆくえ. *Technological Progress and the Japanese Economy: Market Rules and* *the Future of Economic Society in the New Era*』Tokyo, Japan, University of Tokyo Press［東京大学出版会］Chapter 5.

U.S. Department of the Treasury［2022］*Crypto-Assets Implications for Consumers, Investors, and Businesses*.

White House［2022］ "Technical Evaluation for a U.S. Central Bank Digital Currency System."（https://www.whitehouse.gov/wp-content/uploads/2022/09/09-2022-Technical-Evaluation-US-CBDC-System.pdf.）

Zhou, Yong Sarah, Tao Sun, Anca Paduraru, Arvinder Bharath, Stephanie Forte, Kathleen Kao, Yinqiu Lu, Maria Fernanda Chacon Rey, Piyaporn Sodsriwiboon, Chia Yi Tan and Bo Zhao［2024］"Rise of Digital Money: Implications for Pacific Island," *Departmental Paper,* No, 2024/003.