

"Study Group on the Creation of Next-Generation Financial Infrastructure"

hosted by SBI Financial and Economic Research Institute

## **Guidelines for considering the creation of next-generation financial infrastructure**

### 1. Purpose and perspective of considering next-generation financial infrastructure

#### (A) Purpose of considering next-generation financial infrastructure

As the digitalization of the economy and society progresses, the financial system is at a turning point, with cooperation and integration of financial and non-financial businesses, sophistication of information production functions, response to new social demands due to cross-border, and exploration of new money systems including CBDC, and there is no time to wait to address these issues.

This study group considers financial infrastructure as a "broad concept including legal regulations and systems, IT infrastructure, industrial structure of financial services and infrastructure, and governance of the financial system," and has compiled guidelines for building next-generation financial infrastructure that will contribute to the promotion of financial innovation by bringing about the creation of financial services and the improvement of the financial industry structure that promotes economic growth and the improvement of national welfare. In the future, based on the guidelines presented here, we will consider from a bird's-eye perspective the policy for responding to the various issues we are currently facing and the path to realizing a desirable financial system, while exploring the redesign of the financial system and compiling recommendations on the future image of next-generation financial infrastructure. We hope that these guidelines will contribute to the initiatives of all economic entities that make up the financial system, including domestic and international financial service users and authorities, to resolve various issues.

Through this, we also aim to make Japan's financial market the global financial system and financial center that is chosen by domestic and international users, including by acting as a financial hub in the Asian region. There is a mutual complementarity between a financial system that aims to improve Japan's economic growth and national welfare, and a financial system that creates added value and profits in the global economy.

(Tentative Translation)

(B) Perspectives for considering next-generation financial infrastructure

In order to achieve the above-mentioned objectives, it is necessary to shift from the traditional economic entities-based thinking to a financial function-based thinking, and to keep in mind the promotion of financial innovation through the utilization of information, whose potential has expanded greatly with the advent of a digital society, while taking into account the various perspectives and points of consideration to note as this Guideline in Section 2. At that time, it is important to build a highly functional financial infrastructure by deeply understanding the hierarchical structure (functions are implemented in layers), which is the basic design concept of modern IT systems, and the hierarchical and interdependent structures that exist between financial infrastructure and financial services, and within financial infrastructure. At the same time, it is necessary to take the opportunity of creating new financial infrastructure to consider how the financial system (legal regulations, supervisory framework, etc.) should respond to digitalization.

In order to resolve the issues inherent in the current mechanism, it is necessary to introduce a completely new mechanism that is completely different from the one in the past, while utilizing digital finance. In doing so, it is effective to have two financial infrastructures run in parallel in order to explore and create a new mechanism while maintaining the current mechanism as the foundation that supports the current financial system. In this case, in order to avoid being bound by the current mechanism, when introducing a new mechanism, it may be necessary to have an entity different from the current operating entity.

Although it is inefficient for two financial infrastructures to run side by side, innovation will emerge by surpassing the old one. Even if it ends up being a waste, if we do not accept this, nothing new will be created and society as a whole will continue to depend on the current financial system. We should think that the reform of the entire financial system will be achieved by coexisting the updated version of the current financial infrastructure and the new one, and by competing with each other.

On the other hand, it is necessary to identify which should be changed and which cannot be changed. In doing so, it is necessary to take into account a variety of perspectives, including the possibility of improving financial infrastructure, the uncertainty of its realization, and its investment costs associated with its implementation.

2. Guidelines for considering financial infrastructure that can realize the "future vision of Japan's financial system"

(Tentative Translation)

(A) Perspectives necessary for creating new financial infrastructure

- (1) Promoting and utilizing innovation
- (2) Ensuring market integrity
- (3) Ensuring security (stability and safety)

→ It is necessary to design a financial infrastructure that maximizes innovation in financial services (creation of new financial services) while considering various perspectives, such as ensuring market integrity and security (stability and safety). Examples of market integrity include ensuring user protection, AML/KYC/CFT, appropriate handling of user information (privacy protection), and protection of intellectual property rights.

→ It is necessary to utilize the innovation in (1) to enhance the various points shown in (2)(3)(user protection, etc.). (1) and(2)(3) are not in a trade-off relationship, and it should be kept in mind that (1) is also a means of solving (2)(3).

(Example) Utilizing blockchain technology and privacy protection technology is one example. Tokenization with traceability, separation and protection of ownership information from transaction ledgers and account ledgers, etc.

→ By promoting innovation, it is expected that new financial services will be available in both fundraising and operations, and the awareness of financial market users will change, making the financial market easier to use.

(Example) Sufficient supply of funds to start-ups and middle-risk companies, etc.

(4) Flexible mechanisms

→ Because it is difficult to predict future technological progress and all risks, it is important to move away from the idea of preventing all problems from occurring in advance and to create a mechanism that is flexible and can respond quickly to trouble.

(5) Reviewing appropriate governance and ownership structures

→ When creating a new financial infrastructure, it is important to consider how to govern the entire financial system. To do this, it is necessary to consider appropriate governance and ownership structures for the economic entities that make up the financial system, such as financial institutions, customers, financial infrastructure providers, and regulatory authorities, and to understand the interrelationships between them, especially the incentive structure.

→ When considering the governance structure of financial infrastructure operators, it is necessary to aim for market fairness and investor protection by risk assessment, comprehensive disclosure, and information sharing, while also referring to the reports and recommendations presented by IOSCO.

(6) Responding to borderless operations between domestic financial sectors and among domestic financial infrastructure

- With the progress of digitalization, competition in the domestic financial market is intensifying across financial sectors, and further efficiency is required
- There is a high possibility that the concepts of current banking, securities and insurance, and financial institutions and non-financial institutions will become meaningless in an expanding field, and it is necessary to take this into consideration when building financial systems and financial infrastructure. It is necessary to layer the financial system, which enables a shift from thinking by economic entity to thinking by financial function (approaching the design philosophy of IT systems, which freely combine functional components in layers).
- The traditional financial infrastructure was designed as a vertical silo system in which, for example, exchanges, clearing organizations, and depository institutions were organized separately. However, borderless operations began with the merger and acquisition of exchanges, and the structure of financial infrastructure is also changing due to the emergence of new ledger technologies. From the perspective of reorganizing the financial infrastructure industry structure, it is also necessary to keep a close eye on trends surrounding security tokens, electronic money, CBDC, crypto assets, stable coins, NFT, DeFi, Unified Ledger, cross-border payment infrastructure, etc.

(7) Responding to intensifying international competition

- As international transactions become increasingly borderless, financial markets in each country are moving toward international competition. The international competition to see who will operate financial markets and attract global financial institutions has two aspects: the survival of each country's financial markets and the mutual utilization of them. In particular, in the latter case, access to other countries' financial markets is important.  
At the same time, with the progress of digitalization, the barriers between each country's financial markets will become even lower, and the concept of national competition (inter-market competition) itself may become meaningless. In fact, the eurozone has been rebelling against the existence of a clearing agency for euro-denominated derivatives in London since the global financial crisis, and it is necessary to consider Japan's response policy, keeping in mind that the subsequent Brexit has accelerated the battle for financial center hegemony.
- In addition to attracting inward investment and revitalizing outward investment (using abundant domestic savings), it is important to consolidate Japan's position as an

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international financial center by attracting rapidly growing Asian economies in order to utilize economies of scale and scope in anticipation of becoming borderless due to digitalization, and to function as a financial hub in Asia in particular.

→ On the other hand, unlike the strategies of Hong Kong and Singapore, Japan, which has large domestic demand, needs to consider that revitalizing Japan's real economy will also lead to the development of financial markets.

(8) Reviewing legal regulations and supervision in response to digitalization

→ As financial services become more digitalized, it is necessary to review legal regulations and supervisory systems in order to digitize legal practices.

(Example) Both the supervisory side and the supervised side are required to promote SupTech (Supervisory + Technology) and RegTech (Regulation + Technology).

(9) Responding to economic security

→ In building financial infrastructure, it is necessary to take measures to prevent economic security problems from arising, in light of the progress of borderless operations. The physical locations of the infrastructure supporting markets and ledgers, energy sources for communication, and supervisory authority could pose a serious threat to international politics. On the other hand, it is necessary to adhere to the principle of a free market that emphasizes markets, and it is also necessary to be mindful of movements that threaten this.

(10) Proactive initiatives by the public and private sectors to promote DX: cooperation and competition

→ Promotion of DX by companies, financial institutions, and government is a necessary condition for improving the value of financial services and for increasing added value and profitability through the fusion of financial and non-financial services.

→ In order to build next-generation financial infrastructure, the public and private sectors need to engage proactively in DX. In addition to reallocating social resources such as human resource development, R&D investment, and higher education, it is necessary to create a new corporate culture to promote innovation. One idea is to select areas where the government will cooperate or compete with the private sector, and then take on a multi-layered approach.

(Tentative Translation)

(B) Points to keep in mind when considering the creation of new financial infrastructure

(1) Value created by the collaboration and integration of financial sector activities (money flow) and non-financial sector activities (commerce flow)

→ It is necessary to aim for financial services that can be a means of resolving issues in the real economy. For this reason, it is insufficient to consider only financial sector activities and financial infrastructure.

→ As exemplified by Web 3.0, the evolution of the Internet is expected to further advance the transition of economic activity to digital and cyberspace. In order to promote collaboration and integration between the two sectors in cyberspace, it is necessary to standardize data and develop a data linkage platform to share detailed and real-time information between the two sectors.

→ Financial institutions in particular need to fully fulfill their information production functions and take the initiative in promoting collaboration and integration between the two sectors. In that case, it is also necessary to review business scope regulations that limit banks' entry into commerce, if necessary.

→ In the future, it is necessary to recognize that the source of added value (profits and/or growth) lies in the collaboration and integration of these two sectors, and it is necessary to keep in mind that all industries, including finance, need to be converted into financial and IT industries, and to put them into practice as soon as possible.

→ If necessary, it is also important to review the permission rules for the use of data for purposes other than those intended, from the perspective of promoting information sharing.

(2) Interdependence of financial services and financial infrastructure

→ When considering financial infrastructure, it is necessary to keep in mind the mutual influence between it and the financial services. In particular, it is necessary to make it a financial infrastructure that promotes the creation of financial services. In that case, the challenge is to delve deeper into specific proposals from the perspectives of legal regulations, IT infrastructure, incentives, governance, infrastructure convenience, and information distribution.

(3) Digital finance using blockchain technology, DLT (distributed ledger technology), tokenization, big data, AI, etc.

→ Technologies such as blockchain have characteristics such as non-manipulation, traceability, cost competitiveness, transparency, zero trust, and programmability. In particular, the importance of managing information in a way that is resistant to hacking

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will increase.

By utilizing the automatic execution function built into blockchain technology, a system that automatically executes everything from the provision of goods and services to settlement through token transfers has great potential. Smart contracts are one design model for creating new financial services. Smart contracts are one design model for creating new financial services.

- The ability to imagine and/or create new financial services generated by technologies such as blockchain is important.
- It is necessary to improve processing technology and means to refine the granularity of information, diversify the types, and speed up distribution, thereby enhancing the information production function of financial services.

(C) Key points on how to proceed when creating new financial infrastructure

(1) Responding to the trend of standardization and the Unified Ledger/Shared Ledger

- It is necessary to understand the impact that the movement towards standardization and unified ledger will have on Japan and the global financial system, and to consider a response strategy. Especially, in cases where it is likely to become a global standard, it is important to be part of the inner circle from the beginning, be involved in deciding the direction, and control it.
- In order to make it a financial market chosen by users both at home and abroad, it is necessary to ensure compatibility and interoperability with financial infrastructures of other countries. It is necessary to incorporate mechanisms that work to the advantage of one's own country from an early stage.
- An urgent issue is to address standardization of rules, regulations, programming codes, etc. In order not to fall behind, it is necessary to actively participate in the standardization movement that is underway around the world.
- The most extreme case of standardization is the idea of an integrated ledger, in which the entire ledger infrastructure is integrated. Assuming that the payment infrastructure will also move to such a world, it is necessary to consider in advance such issues as who will be the issuer of the debt money (central banks, private financial institutions, etc.) and whether the choice of the currency unit of the money needs to be linked to the issuer's nationality (just as Libra and stablecoin issuers can choose the currency of any country, should central banks and private banks issue deposit money denominated in multiple currencies?).

(2) Proactive engagement of authorities in standardization

→ In domestic standardization efforts, authorities need to be proactively engaged so that self-regulatory organizations can fully fulfill their standardization functions, and measures should be taken to avoid concerns about the application of Antimonopoly Act.

(Example) Responding to standardization efforts by ISO 20022. Multiple systems are mixed when adopting the travel rule.

(3) Classification of investors based on the level of information gathering and analysis capabilities

→ The classification of investors to be protected must be determined based on whether or not they have the ability to gather and analyze information. If financial transactions in the digital space increase, attention must also be paid to the ability to respond in the digital space.

→ Those who have sufficient information gathering and analysis capabilities (professional investors) can be accommodated with the current relaxed regulations.

In addition, it is necessary to consider expanding and flexibly defining the scope of professional investors.

→ Those who do not have sufficient information gathering and analysis capabilities (individual investors) can be accommodated by utilizing financial institutions, etc. that have sufficient information gathering and analysis capabilities, rather than strengthening regulations, from the perspective of focusing on consumer protection.

In addition, it is necessary to consider relaxing the scope of information disclosure obligations.

→ It is also important to improve the financial literacy of the entire Japanese population.

(4) Classification of retail and wholesale finance

→ As the content of financial services changes, it is necessary to review the classification of retail finance and wholesale finance and consider them separately.

(5) Needs-oriented and seeds-oriented financial services

→ Digital finance-related technologies are advancing day by day. When creating new financial services, it is necessary to consider both the needs side, such as "demand from financial service consumers," and the seeds side, such as "technological advances in financial infrastructure." The perspective of demand for financial services is important, but as seen in the examples of smartphones and the Internet, the demand side cannot imagine something that is unknown or does not currently exist, so a seeds-oriented



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perspective is also necessary in order to create new demand. Society as a whole needs to increase its ability to take an interest in things that it does not understand.

(6) Utilizing of staged regulations based on size, attributes, etc.

→ It is also necessary to devise ways to set up stages in regulations and handling methods (such as tailoring rules) based on attributes such as differences in trading volume, scale, and information-gathering capabilities.

(D) Current issues and concerns

(1) Safety net

→ In addition to providing a means of settlement, deposits also function as part of a credit creating function, making them unique from other means of settlement. Until now, deposits have been very sticky, but it has been pointed out that this is declining with the progress of digitalization, so deposit-taking financial institutions need to be more careful than ever in dealing with liquidity. In addition, it is necessary to review legal regulations regarding the safety net for small deposits in preparation for liquidity shortages, etc.

→ When digitalizing deposits, it is necessary to review the safety net in place to allow for the payment of interest, including the handling of points.

→ While stable coins, which require collateral assets, do not have a credit creation function, token-type deposits, which are bundled with a credit creation function, require separate consideration.

→ The progress of digitalization will affect not only the stability of deposits, but also the stability of financial business models. Rapid contraction as well as rapid expansion of business are characteristic of a digitalized society. It is also necessary to consider how to respond to such situations from the perspective of financial system stability.

(2) Compliance according to risk

→ Japanese financial institutions handle compliance by applying the same standards to all transactions, regardless of whether the amount is small or large, which is inefficient.

→ It is necessary to implement thorough compliance according to risk. In some cases, one option is for financial institutions to specify the scope of compliance and then provide financial services.

(3) Responding to obstacles to information sharing within financial institution groups (firewall regulations, etc.)

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- Even though regulations have been relaxed, firewall regulations and other factors hinder information sharing within financial institution groups, which also affects information production functions.
- In anticipation of the integration of the financial and non-financial sectors, it is necessary to establish an appropriate system for managing customer information and to consider completely abolishing firewall regulations.
- With the progress of digital finance, it will be possible to extract only the information that needs to be selected and promote collaboration.
- If a core bank (narrow bank) specializing in funds settlement and deposits is separated and a ring fence is set up between the core bank and non-core operations, information cannot be shared, which hinders the strengthening of financial institutions' information production functions.

(4) Developing DX (digital transformation) human resources by financial institutions

- Financial institutions need to take the initiative in developing and securing DX human resources to fully utilize their information production functions as drivers of DX.

(5) Modernizing Japan's legal system (Payment Services Act, Financial Instruments and Exchange Act, Banking Act, etc.) and the financial system

- Positioning stable coins as an electronic payment method is commendable.
- Current laws need to be reviewed in order to accommodate asset tokens backed by real assets such as crude oil and NFTs, and efforts should be made to promote the use of tokenized real assets.
- It is necessary to take the opportunity of building a new financial infrastructure to simplify the legal system and review the financial system (legal regulations, supervisory system, etc.) that corresponds to digitalization.

(6) International standardization of criteria for determining whether digital financial assets such as cryptocurrencies are eligible for investment

- There are no international standard criteria for determining whether digital financial assets such as cryptocurrencies are eligible for investment.
- In Japan, the decision is based on whether or not there will be future business dividends. On the other hand, although the United States adopts the Howey Test standard, actual judgments have fluctuated over time.
- One idea would be to set multiple levels of criteria for determining whether digital financial assets are eligible for investment.

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3. Points to keep in mind when making recommendations

(1) Easy-to-understand and flexible recommendations

- When a proposal deals with highly abstract content, attention should be paid to making it easy to understand, such as by using catchy phrases.
- Because the world of defi and other things is changing rapidly, financial systems and legal regulations also need to be flexible.
- One idea is principle-based regulations to allow for flexible responses. However, there needs to be some check on the system to prevent arbitrary application by the authorities.

(2) Perspectives when creating completely new regulations and systems

- Related to 2 (C) (1), there are two ways to consider problem solving based on current regulations (problem solving type) and normative perspective, and the latter approach is useful when considering a completely new system.

(3) Classification of short-term and long-term perspectives

- When compiling recommendations, it is important to consider (a) how far into the future they should look, (b) whether they should be short-term, medium- to long-term, and (c) whether they are necessary regardless of the time frame.

(Concluded)