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Payment and Settlement Systems Department  
Bank of Japan

FIN/SUM 2024: "Future of Wholesale Payments"  
- Session 3: "Future of Wholesale Payments" Key Discussions -

1. Session information

(Date and Time) Wednesday, March 6, 2024, from 2:40 p.m. to 3:40 p.m.

(Moderator) Noriyuki Yanagawa, Professor, Faculty of Economics, The University of Tokyo

(Panelists) Akio Isowa, Group Chief Digital Innovation Officer, Sumitomo Mitsui Financial Group (SMFG)

Shuji Kobayakawa, Professor, School of Political Science and Economics, Meiji University

Hajime Tomura, Professor, Faculty of Political Science and Economics, Waseda University

Naomi Takeda, Director-General, Payment and Settlement Systems Department, Bank of Japan

## 2. Executive summary

In Session 3 ("Future of wholesale payments"), discussions were held on the big picture of the future of wholesale payments from the perspectives of both practice and academia. Issues for discussion included what ought to be done to seek any improvements in the existing wholesale payment infrastructure in light of technological innovations and changes in the external environment, and how the overall landscape of wholesale payments should be envisioned when implementing a new technological infrastructure.

Some of the points raised during the discussion are as follows.

### [Credit creation]

- A system that holds deposit currencies, equipped with credit creation functions, as settlement assets is a highly efficient mechanism, and will continue to function as the basis for wholesale payments.
- Whether the emergence of new payment instruments such as stablecoins would make it more difficult for banks to obtain payment information, leading to a decline in banks' credit capabilities, is a general cause for concern.

### [Deposit currencies]

- The creation of payment instruments and a payment infrastructure utilizing new technologies may also be explored on the deposit currency side.
- In the long run, the idea of cross-border payments being made efficiently is plausible. This could involve, for example, placing wholesale CBDC and tokenized deposits on a common platform while maintaining a two-tiered structure of the monetary system centered on central bank money and bank deposits, as is the case with the unified ledger proposed by the Bank for International Settlements (BIS).

### [Enhancement of wholesale payments from a broader perspective]

- In terms of the enhancement of wholesale payments from a broader perspective, there is potential to reduce settlement risk and improve payment efficiency through the tokenization of securities and real assets.
- Taking this into account, various options can be considered, for example, efficiently realizing DVP by holding and settling security tokens and other assets

on a common platform of cash legs, or connecting each ledger to ensure interoperability on the assumption that funds and securities are settled on different ledgers.

- It is crucial to resolve the burden of surrounding areas of payments, such as AML/CFT and Know Your Customer (KYC).

[Division of roles between public and private sectors]

- Regarding the division of roles between the public and private sectors, regardless of how technology develops, the importance of central bank money will remain unchanged.
- In this context, ensuring interoperability and serving as anchors of value are anticipated roles of wholesale CBDC.
- While the private sector will basically be responsible for introducing and effectively utilizing safe, secure, and convenient payment methods, involvement of the public sector will be expected in areas where issues may arise in networking and reliability.

### 3. Discussions

#### (1) Introduction

(Yanagawa) In this session, we will be discussing the future of wholesale payments taking into account what has been covered in the first two sessions. Where will wholesale payments go from here? What challenges do they currently face, and how will they evolve? In particular, I anticipate a thorough discussion of wholesale payments not only in a narrow sense but also in a broader context, specifically, the impact that the future of wholesale payments will have on the overall payments landscape, the financial system as a whole, and, ultimately, the economy at large.

#### (2) Current issues in wholesale payments

(Yanagawa) First, I would like to ask each of you about any issues or pain points you perceive in wholesale payments today.

(Kobayakawa) As the moderator of the previous session, let me share three key messages of Session 2. First, resolving the issues regarding wholesale payments requires, in addition to facilitating the flow of money, devising ways to facilitate the flow of goods and services behind the flow of money. For example, in trade finance, where paper-based documentation remains one of its challenges, efforts are being made to overcome this by combining blockchains and other technologies such as digitization of paper-based documents.

Second, embracing a flexible mindset is essential to using new technologies. If we are bound by the stereotype that distributed ledger technology (DLT) is something that carries monetary value, we may misjudge the potential of the technology. It was understood that as a platform for sharing information, there is significant room for utilizing DLT even in traditional businesses, such as trade settlements, and in demonstrating compliance with existing regulations, such as Know Your Customer (KYC).

Third, effectively utilizing trust in banks and working to strengthen governance are crucial to developing the DLT ecosystem. Concepts such as tokenized deposits and the unified ledger were also discussed, while the importance of governance was pointed out.

(Isowa) Regarding the current challenges in wholesale payments, I would like to comment on two areas: cross-border payments and correspondent banking. For cross-border payments, in October 2021, the Financial Stability Board (FSB) set quantitative targets to be achieved by the end of 2027, specifically on four issues: cost, speed, access, and transparency. Subsequently, in October 2023, the first set of calculations were published. Although no specific countries or banks were mentioned in this report, we are steadily working to improve customer convenience and service levels by reviewing fees and extending the cut-off time for payment processing. Meanwhile, the FSB has selected priority themes to be addressed and is monitoring their progress. One of these themes is AML/CFT-related regulations, and we are keenly aware that realization of these targets relies heavily on not only the efforts of individual banks but also public-private partnerships.

I also believe that correspondent banking is a valuable invention in the financial world in that its expansion has been enabled through the efforts of the private sector. Recent challenges in correspondent banking, besides de-risking, include further adoption of STP in correspondent networks, and the transition to ISO 20022 in 2025 will be a major contributor in moving forward in that direction. Each financial institution has been devoting resources to the transition. At the same time, networks that do not depend on correspondent networks are also emerging. From the standpoint of banks, we are looking closely at how these networks will develop under the principle of "same risk, same regulation."

(Takeda) I would like to point out two issues regarding wholesale payments, or large-value payments: improving cross-border payments and providing payment instruments on new digital platforms.

To give some background as to why these two issues are worth noting, large-value payments are, as a matter of fact, large in amount. Unlike small-value payments, they require a large amount of money to be prepared in advance, burdened with prefunding. As such, it would be highly convenient if temporary funding to cover payment funding is available when the timing of payout precedes that of incoming payment. Such temporary funding needs grow to be quite substantial when accumulated on a macro scale, and fluctuate significantly depending on the period.

Deposit currencies can meet these needs flexibly. Banks are able to create deposit currencies through lending, which function as a means of payment, and such a process is referred to as credit creation. Thus, they are originally suited for large-

value payments. At the same time, deposit currencies have their inconveniences. Because of their credit creation function, they are subject to strict regulatory supervision and consequently burdened heavily by multinational business expansion. Therefore, when cross-border payments are made using deposit currencies, a longer transaction chain of funds and information is observed among the payer's bank, the intermediary bank, and the receiver's bank. In addition, these banks need to conduct thorough checks for money laundering, respectively. Consequently, the use of deposit currencies becomes costly and time consuming.

In contrast, electronic money offered by non-bank payment service providers and stablecoins are prefunded. Since they do not have a credit creation function, they are subject to less stringent regulation and supervision than banks and can be easily deployed on a multinational basis. In fact, major non-bank payment service providers have established their own multinational payment networks. As for stablecoins, the public blockchain does not even require the creation of their own multinational networks.

While I would not necessarily call this a weakness of deposit currencies, one of their notable characteristics is that they have long assumed an important role and tend to be drawn to traditional systems and conventional ways of working. In light of this, the question being asked today is whether banks can provide the appropriate means of payment when commercial information and digital assets are managed on digital platforms using new technologies, such as DLT and blockchains. While this can be rephrased that there is room for new payment instruments to play an active role in these areas, I also believe that deposit currencies will make a few turnarounds on their part. I will return to this point later.

(Tomura) Some of the challenges I perceive in wholesale payments are the integration and automation of the systems for commercial flow and monetary flow as well as improvement in simultaneous settlement. In integrating various systems, how to connect different systems, achieve this flexibly, and design intermediary institutions will also be part of the challenge.

I also find it crucial to be aware of how to create ledger balances when creating a settlement ledger. My impression is that there is much discussion on smoothing out the allocation of settlement balances, not only for wholesale payments but also for retail payments. In this regard, I sense a slight lack of awareness regarding how to create ledger balances. Currently, banks create settlement balances in the form of

deposit currencies through lending, which is highly efficient. With this in mind, I would say that the lack of vision on how to create a new wholesale payments system that outshines this is also an issue.

### (3) Potential use of new technologies for wholesale payments

(Yanagawa) If we broadly categorized the views we have heard so far into two groups, on the one hand we have the idea that there is room for improvement in cross-border payments, and on the other hand, the idea that efficiency can be improved, including system upgrading and integration in a broad sense, and that new technologies can be utilized in this area. Based on these opinions, we would like to engage in a deep dive discussion and explore the future course of new technologies including the potential use of DLT and blockchains in wholesale payments, the means of incorporating them into the existing payment system, and the potential for technological developments in that process.

(Isowa) I would like to comment on security tokens. Recently, security tokens, or the tokenization of real world assets, have been growing steadily. Nevertheless, the development of the secondary market is essential to further revitalizing the primary market. As an example of efforts in this regard, the Osaka Digital Exchange, which we established together with SBI, launched "START," a security token secondary market, in December 2023. In addition, the Kenedix Group, which is involved in REITs, has made the first real estate security token offering (STO) in Japan that can be traded on the secondary market. Other companies are also beginning to offer residence tokens through private trading systems (PTSs). Although such developments are still in their infancy, I believe that investment opportunities will expand in line with the needs of a wide range of investors in the future. As I have described, while the use of blockchains in security tokens has been expanding, their use in the area of fund settlement has only begun.

(Kobayakawa) With regard to financial assets, including securities, and to real assets, various promising moves to utilize the new technology of tokenization have been observed. On the other hand, the use of new technologies for funds settlement, especially for central bank money, is being considered with more caution. This gives rise to the possibility that the leg of funds will continue to be settled using legacy systems, while DLT will be used for the leg of securities, causing a dichotomy

between the two. In light of this, how to achieve DVP settlement between the two is an issue for consideration.

Looking at the medium-term effects of asset tokenization, there are both pros and cons. A significant positive factor would be the reduction in settlement risk. The DVP settlement, which was previously limited to specific assets, will extend its coverage. Accordingly, the post-trade practice of securities will change significantly, as will the role of CSDs. Furthermore, in the United States, the transition from T+2 to T+1 for a wide range of financial assets, including equities, will take effect this May. Beyond this transition, a move from T+1 to T+0 may also be on the horizon.

Shifting to the challenges, the issue of liquidity may arise for various DVP settlements. For example, while smart locks that utilize new technology could lock securities temporarily until the funds settlement is completed, they may face liquidity issues regarding these securities. Another idea -- to utilize stablecoins or tokenized deposits that can be easily placed on a DLT platform to avoid a dichotomy -- is also accompanied by the concern about the risk of leading to a fragmentation of services.

In the longer term, topics for discussion might cover the need for the tokenization of central bank money, in other words, wholesale CBDC, instead of relying solely on the tokenization of private money. The anticipated role of wholesale CBDC here is at par convertibility with various private money, in other words, the role of an anchor. To realize this, I believe there are different approaches, one being an integrated approach where various assets are placed on a single ledger, such as the unified ledger, and another being an approach where each asset is managed on a different ledger and connected in a way that ensures interoperability. Whatever approach is adopted, new technologies are likely to have a significant effect on the practice of settlement services, especially for securities. It is crucial that the parties involved continue with their deliberations as they work closely together.

(Yanagawa) When one hears the word "tokenization," the image of interbank settlement on the blockchain may first come to mind. However, my understanding is that enhancement of wholesale payments from a broader perspective implies considerable potential for enhancement through tokenization of securities and real estate, and that the ripple effect would be significant. Another point made was that the use of blockchain in actual interbank settlement is still in its early stages.



#### (4) Possibility of development of new payment methods

(Yanagawa) Next, I would like to turn to the possibilities, challenges and risks regarding new payment instruments such as stablecoins, along with their relationship with traditional bank deposits and wholesale CBDC.

(Isowa) First of all, Japan is well prepared for the issuance of stablecoins, with the necessary laws and regulations in place. In this respect, Japan can be said to be progressing the most in the world. Having said that, the usage and potential use cases of stablecoins are still under consideration, and a little more work needs to be done before it can be used worldwide. Put differently, it is difficult to identify specific areas where the use of stablecoins would prove more convenient compared with other payment instruments.

What would happen if stablecoins were to come into wide use? Banks, already losing access to payment information, would have even greater difficulty retrieving such information. If tokenized deposits followed in the footsteps of stablecoins, it would be necessary to ensure interoperability and reduce settlement risks of each payment instrument so that they can be converted at par at any time.

Amidst such a trend, I find it likely that the role of wholesale CBDC as an anchor would become clarified. Another function expected of wholesale CBDC is the traceability of funds. With the practical burden on banks in AML/CFT and KYC procedures increasing, this burden will only grow heavier if the current settlement process remains unchanged. The banking community is very hopeful that CBDC can be designed in a way that ensures the traceability and transparency of funds through the use of new technologies, thereby enabling both free flow and safe use. In such a case, however, governance issues such as the authority for data access or the entity that holds data will arise.

(Takeda) My comments will focus on the advantages and challenges of electronic money and stablecoins as new payment instruments.

The strength of electronic money is that it can be used to make payments over a wide range of recipients by simply recording the funds in the company's books of account. Cross-border payments can be made through the company's own bookkeeping alone, as multinational expansion is fairly easy to achieve. Similarly, anti-money laundering checks can be conducted efficiently, with checks required

only for one's own company.

Challenges do exist, however. If electronic money is to be used for large-value payments in the future, there will be various additional burdens. For example, it may be necessary to allocate a large amount of money in various currencies in advance to ensure swift international money transfers. In addition, since transactions directly related to cash management of corporate clients will be processed, there will be significant responsibility to secure alternative means of payment so that clients will not be inconvenienced in the event of a system failure.

With regard to stablecoins, while their use in the real economy appears quite limited, their strength lies in their nature of being technologically affinitive as a means of payment on a digital platform using DLT and blockchains. In particular, stablecoins have the ability to systemically execute various conditional payments, while utilizing smart contracts, without relying on someone's trust. In addition, the fact that transactions are currently possible with anonymity, which I believe is tolerated because they involve crypto asset transactions, would be attractive to those who have such needs. However, when used for normal economic transactions, it may be difficult for users to enjoy the benefits of anonymity. Another issue revolves around the questions of whether the stability of the coin's value will truly be ensured, and who will be responsible for ensuring the efficiency and safety of the coin's distribution and settlement network.

Of these issues, I would like to discuss the distribution and settlement of stablecoins. Stablecoins differ from electronic money and deposit currencies, in that they unbundle the issuer and the bearer of the distribution and settlement. While the issuer earns a kind of seigniorage, or investment profit, by managing the money in lieu of issuing the coins, how do the bearers of secondary settlement, including the public blockchain, secure their income? Without sufficient income, it will be difficult to maintain the efficiency and security of the secondary payment and settlement network. If the settlement is for transactions that are expected to generate speculative returns, such as crypto assets, sufficient fees could be charged, but would the same apply to the settlement of ordinary economic transactions? In the case of deposit currencies, a sustainable cycle is established in which profits from currency issuance are used to maintain the distribution and settlement network. In order for stablecoins to be used widely for economic transactions, it is necessary to create a mechanism to sustain the efficiency and stability of the network in this sense.

(Tomura) I would like to compare two perspectives. One is that stablecoins would eliminate the need for bank deposits, and the other, that a new banking ecosystem could be created on top of the stablecoin system.

One problem with this view is that the idea of stablecoins is to create a settlement ledger balance backed by an underlying asset. The way bank deposits work today is a very efficient mechanism for providing balances directly to those without money, in other words, those who have insufficient balances on the settlement ledger. The primitive idea behind the structure of stablecoins would therefore be less attractive than the current bank deposits in terms of efficiency. In that sense, it would be unrealistic for new banks to be created on top of the stablecoin system, and traditional banks will most likely remain.

Having said that, banks are not free of challenges either. It can be pointed out that the intrinsic behavior of individual banks in retaining customers as commercial enterprises leads to fragmentation of the payment system when viewed on a system-wide basis. If each bank were to issue its own stablecoins and tokenized deposits, interoperability issues would eventually surface. This is where wholesale CBDC comes in to play its role. However, such scenario may not solve the issues, as inefficiencies will arise before wholesale CBDC is in demand.

In that sense, a possible idea would be to introduce wholesale CBDC early and make it mandatory for commercial banks to connect to a wholesale CBDC platform. This would create an integrated platform. Non-banks could connect to the wholesale CBDC platform, and with their ingenuity and innovative applications, they could implement functions similar to conditional payments and smart contracts.

In addition, since the current structure of an efficient payment system is one in which banks provide new balances to those without money, the function of lending must be maintained. However, if payment information leaves the bank's hands, the quality of lending will deteriorate, making it more difficult to borrow money. While this is a problem that could be solved through an enhanced exchange of information, legal arrangements would be necessary, and I believe that this is an issue that would need to be addressed.

(Yanagawa) There are two ways to define stablecoins: stablecoins as defined by Japanese law, and those that could potentially be referred to as stablecoins in the event of further technological developments, beyond the realm of the current legal system.

Since our discussion here today concerns future technological developments, I hope we can take a step back from existing laws and technologies as we exchange views. In this regard, I believe that there is potential for a considerable expansion of new payment methods utilizing various technologies, such as stablecoins and tokenized deposits.

On the other hand, my impression is that we have heard different views on whether stablecoins would significantly destabilize the existing traditional banking system. One point that emerged from the discussion is what will happen to the entities that can create credit, in particular, whether the role of wholesale payments as a means of settlement will undergo a significant change.

#### (5) Challenges in building a new payment infrastructure

(Yanagawa) Now I would like to take a short break from payment methods and discuss the issues involved in building a new payment infrastructure. For example, a common platform concept, a private sector-led settlement network concept, and a vision for the interlinking of instant payment platforms are all possible scenarios. Putting aside for a minute the question of what can be done immediately, let us have a discussion on the future of wholesale payments and what the future payments landscape should look like.

(Isowa) Regarding the infrastructure for wholesale payments, first and foremost, we cannot turn a blind eye to the need to ensure the safety and resilience of the system.

At the same time, we also need to strive to ensure interoperability among networks by utilizing new technologies, which makes it all the more challenging to balance efforts to ensure resilience and interoperability. Specifically, our bank is already working with several overseas banks on a project related to DLT-based fund settlement infrastructure. As we began to flesh out the project, we have come to realize that there is a wide range of issues to be addressed, including the identification of use cases and liquidity issues on the platform. Alongside this, we feel that platform governance, safety, and resilience are important because they are the source of trust.

(Kobayakawa) In my capacity as Auditor of Zengin-Net, I believe that ensuring resilience must be firmly promoted as a top priority. At the same time, the Zengin System must evolve as a payment infrastructure that supports the digital society of the future. With

the Zengin System of the next generation, it will be essential to enhance security and efficiency while seeking a fine balance between them. Furthermore, since we cannot foresee the future completely, the new system configuration should be flexible enough to respond to new technologies that are currently not visible. In this sense, a way forward for the future of the Zengin System is to modularize mission-critical areas and areas that can be developed in an agile manner.

In terms of challenges in payment infrastructures, building an infrastructure is inevitably costly. Hypothetically, if the financial cost is borne by private-sector participants, there is bound to be talk about what benefits can be gained in return. When creating a new system, it is necessary to be as thoroughly prepared as possible to be able to respond to any concerns among participants. This should include, for example, flexibility in thinking about holding down fees for the new platform in the initial stages of its launch, or offering discounts based on the volume of use.

Moving on to my final point, I refer to the process of creating a wholesale payments infrastructure as "breaking free from the Hogacho (Buddhist subscription list) mindset." In other words, creating a new infrastructure is by no means comparable to making donations to temples and shrines. It is vital for participants to strategize what they want to do with the new infrastructure and how they want to utilize it. At the same time, the form of participation in the new infrastructure network needs to be flexible. For example, participation would be possible in various forms, not limited to joining the network directly but also participating indirectly via direct participants. As such, it is important to explore a wide range of options.

(Takeda) I would like to discuss what kind of solutions we will seek in the future while utilizing deposit currencies in the area of cross-border payments and digital platforms.

Taking the ISO 20022 standard for cross-border payments as an example, harmonization of payment messages based on this standard is underway. This is expected to streamline business operations significantly. Furthermore, since standardized information can be shared, international interbank money transfers can be made faster and be more convenient if it is used to create mechanisms such as STP for anti-money laundering checks or to confirm the existence of a receiving account for a person in a foreign country ahead of the money transfer.

Internationally speaking, other proposals include one for a cross-border interlinking of 24-hour instant payment systems (Fast Payment Systems, FPS). The

complexity of this proposal is that most of the FPS in each country focus on domestic payments. In other words, it is difficult to earn the understanding of stakeholders on how much cost can be allocated to improve cross-border payments, which is not the main focus of each FPS.

In addition, a very long-term potential solution involves putting central bank deposits (wholesale CBDC) and private bank deposits (tokenized deposits) of various countries on a common platform to facilitate cross-border payments and foreign exchange payments, and to do this globally. It is highly likely that DLT will be technically useful in this case. This is because DLT is easier for many countries to accept than a centralized ledger in realizing such a concept. While it is also possible to create a common platform using a conventional centralized ledger, the system would have to be located in a certain country, which many countries would feel uncomfortable with. DLT could serve as a tool to overcome this problem.

Next, the most straightforward way to use deposit currencies as a means of payment on the new digital platform is to record deposit currencies on the DLT platform, in other words, to create tokenized deposits. In this case, since network effects will not be generated if only private sector deposits are placed on the DLT platform, central bank deposits should also be placed on the same DLT platform to create a platform that allows a smooth conversion of tokenized deposits and wholesale CBDC. Furthermore, it might be possible to connect them to DLT networks on the securities side or, in some cases, put them on a single DLT network. Theoretically speaking, such a response is plausible.

If I may add as a final point, although currently not allowed in Japan, a possible future scenario may be for banks to issue stablecoins with their own bank deposits as the underlying asset, and to settle these on the public blockchain. However, there is a question of whether this is acceptable from the perspective of anti-money laundering and KYC obligations, since the circulation, on the public blockchain, of coins that could be regarded as essentially equivalent to bank deposits would mean that deposit-like instruments would be passed on to people other than the bank's own depositors. In addition, while banks are involved in the issuance of stablecoins, once they are issued, banks cannot see how they are used for payment, reducing their ability to make credit decisions. Furthermore, at present, whenever a payment is made using bank deposits and a transfer is made to another bank, thousands, or even tens of thousands of bank deposits are tested daily to ensure a one-to-one conversion with central bank deposits. However, since stablecoins backed by bank deposits will

continue to circulate from one holder to another without such convertibility tests, whether this is appropriate for the purpose of allowing credit creation under the fractional reserve banking system would be a future topic of debate.

(Yanagawa) There are several options for new payment infrastructures, each with its own unique challenges. It is quite understandable, especially in wholesale payments, that ultimately the system would run very smoothly if a common platform were created and payments were settled by some kind of payment instrument comparable to wholesale CBDC. My understanding is that, despite this being the case, when it comes to creating a large system on the part of the private sector, there are challenges in terms of who will take the lead to form a consensus, who will bear the costs, and when and how to migrate from the current system.

(6) Roles of central banks and central bank money, and the division of roles between the public and private sectors

(Yanagawa) As our final topic today, I would like to ask about the division of roles between central banks and central bank money on one hand and the private sector on the other.

(Tomura) Interoperability issues have always been a conundrum for private-sector based payment systems. If for some reason individual banks were to create a system such as stablecoins, regulatory reform to ensure open access to such systems must be in place. Since directly connecting the external system to the core banking system is problematic from a security standpoint, one future approach would be to use the stablecoin system as a relay system, and then have electronic payment service providers and other non-banks connect to it to create various utility systems. If such an approach worked, there would be no need for central bank involvement beyond the current level.

However, coordination under such an initiative would be difficult considering the large number of private players, and it would require the involvement of the central bank. In other words, as the central bank is currently responsible for interbank payments, in such a future case, an ancillary role for the central bank might be to provide a new platform for banking and corporate services as an integrated platform. The role of the central bank would emerge if the issue of interoperability between private players is not resolved.

On the other hand, the limitation to the idea of creating a new private sector-based payment system, such as crypto assets, is in their financial constraints. Private banks can create deposit currency by lending, but they still face financial constraints. Only the central bank can issue currency without financial constraints. Consequently, when a large settlement balance is needed for daily settlement, only the central bank is capable of freely issuing currency on the order of trillions of yen. What is more, in the event of a financial crisis, the central bank can issue currency as a lender of last resort.

Shifting perspectives, the idea of so-called crypto assets involves creating a payment system within a private agreement. On the other hand, the central bank's currency creation function belongs to the realm of public law, so to speak. When considering a private-based settlement system, it is necessary to consider how to incorporate the current public law-based central bank function.

(Takeda) Looking back in history, gold and silver coins were used as a means of payment in the past, but because of the inconvenience of delivery, many transactions were handled as payment on credit, and the practice of settling in gold or silver coins at regular intervals after netting was built. However, payment on credit also had its limits in terms of counterparty trust, which acted as a constraint on economic expansion.

Under such circumstances, at some point, some people started issuing certificates of deposit in proportion to the amount of gold coins in their custody, which began to circulate as a means of payment in place of gold coins. Since the holders of the certificates of deposit did not request to withdraw their gold coins all at once, more certificates of deposit were issued and credit creation began. This marks the origin of the current banknotes and bank credit creation.

At the time, there was no central bank, only private banks. However, since each private bank issued its own banknotes and created credit on its own, there was an over-issuance of banknotes and credit instability due to excessive lending. In terms of payments, banknotes issued by a single bank were circulated only in certain areas and not throughout the country, which proved inconvenient. For these reasons, a central bank was established and central bank notes were issued, allowing the central bank to handle interbank settlements and control the volume of credit creation.

As we can see, payment methods that meet user needs are born from the private



sector. However, if the private sector's solution has issues in terms of networking or reliability, history is proof that public sector involvement is required. This should largely remain the case going forward.

Currently, there are issues regarding cross-border payments with respect to network externality, and with respect to reliability, the question is whether the new digital platform payment instruments are reliable. I believe that the central bank will also be engaged in these areas in some form.

## (7) Summary

(Yanagawa) This session has highlighted how there are many business opportunities in the advancement of wholesale payments as well as various directions in which developments could unfold.

In this context, would the role of the central bank vanish into thin air? Our discussions today have confirmed that the central bank will in fact remain firmly as a sort of anchor for the economic and financial systems. However, we may see a change in the nature of its role, which may involve, for example, issuing wholesale CBDC to support the basis of the wholesale payments system.

Another point that we have clarified is that even with the development of tokenization and the creation of an unprecedented payment and settlement system, the entities capable of credit creation will still be responsible for the majority of settlement. Currently, the two-tier structure between the central bank and bank deposits is the predominant mechanism in wholesale payments, and this structure will remain even if the format changes to a certain degree.

As background to this, it was also confirmed that services and financial systems are being conceived on the premise that blockchains and DLT could be introduced as a matter of course, and could eventually become a key mechanism. It is expected that new business opportunities will be created in the private sector in the area of wholesale payments, and that this will contribute to the enhancement and convenience of various types of payments, including cross-border payments.

Nevertheless, various legal and institutional challenges related to AML/CFT and KYC will inevitably remain, and efforts to consider and deal with these costs will not proceed solely through technological developments. Blockchain technology alone may not be sufficient in overcoming all of the challenges facing KYC, but if an

extremely well-designed common platform can be created, it may be possible to improve efficiency to a significant degree. For this reason, rather than making rigid distinctions, for example, between technology and law, a possible path to take would be to utilize blockchain technology while ensuring that the institutional arrangements currently in place remain secured. We also see the potential for the development of private businesses and systems that could achieve these in the wholesale payments.

Our discussions today have demonstrated how the future of wholesale payments will depend on the efforts of our panelists here and everyone participating in this FIN/SUM, and that the sky is the limit in this regard. I owe these findings to this fruitful panel.