



## **Accelerating Exploration for CBDCs by BOJ, FRB, and ECB - How will the digitalization of money advance? -**

**CBDC Webinar (Second in a series) held on January 21st, 2022<sup>1</sup>**

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### **I. Outline of the Discussion**

In the former "CBDC Webinar (First in a series)"<sup>2</sup> held on March 22nd, 2021, we discussed specific strategies and issues of China (DCEP), Cambodia (Bakong), and Sweden (e-Krona), which are leading in CBDC development and operation, as well as the relationship between CBDC and private settlement services.

Since then, the expanding globalization and the influence of initiatives on private sector digital coin being taken globally (including the legal tenderization of bitcoin in El Salvador) have prompted research related to the upgrading of various payment systems, including the introduction of CBDCs, both in the public and private sectors to develop more efficient and low-cost remittance methods and concise regulatory compliance processes.

Especially, since the autumn of 2021, several reports on CBDCs and stable coins have been released by various international organizations. In addition, government officials in Japan, the U.S., and Europe are increasingly referring to CBDCs, and it appears that the framework for considering their issuance is gradually being solidified.

In this webinar, we invited three experts who are familiar with the trends of CBDC development in Japan, the US, and Europe, to discuss the merits and demerits of introducing CBDCs in developed countries, as well as its prospects and measures to be taken in Japan and other countries.

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<sup>1</sup> This webinar is also available on YouTube (for a limited time and In the Japanese Language only).  
Refer to <https://www.youtube.com/watch?v=jElzzKfCNQY>

<sup>2</sup> Recent Developments in Central Bank Digital Currency (CBDC)  
- Strategies and Challenges in China, Cambodia, and Sweden -  
[https://www.iima.or.jp/en/info\\_active/webinars/20210322.html](https://www.iima.or.jp/en/info_active/webinars/20210322.html)

### **Panelists (in alphabetical order)**

Masaki Bessho

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Tetsuya Inoue

Senior Researcher, Financial Market and Digital Business Research Department,  
Nomura Research Institute, Ltd.

Shuji Kobayakawa

Professor, School of Political Science and Economics, Meiji University

### **Moderator**

Toshiki Iwaoka

General Manager and Chief Economist, Economic Research Department, IIMA

The following is a summary of the presentations (in the first half of the session) and panel discussions by the participants (in the latter half).

## **II. Outline of the Presentations<sup>3</sup>**

1. First, Prof. Kobayakawa of Meiji University kicked off the discussion by briefly summarizing the latest status of CBDC initiatives in major countries and their overall experience.
  - (1) CBDCs can be characterized as the ones that are "newly issued as central bank liabilities," "denominated in legal tender," and "supplied via some types of digital media". Using the Venn diagram on the presentation page #5, we can conclude that a retail CBDC is a currency that satisfies the conditions of "issued by a central bank," "in a digital medium," and "can be used by a wide range of people" (while existing currencies cannot satisfy these conditions at the same time) and can be considered as such in the future.
  - (2) In terms of the framework (i.e., what kind of CBDCs will be issued) that has become clear through various efforts to date, major countries are considering "indirect issuance" (i.e., issuance through intermediaries such as financial institutions and funds transfer companies) rather than "direct issuance" (i.e., issuance of CBDCs directly by a central bank to households and firms).
  - (3) In the past year, there was a significant progress in CBDC initiatives in both emerging and developed countries. Since 2020 when the first CBDCs were issued by the National Bank of Cambodia (Bakong ; an application that has the same functions as a CBDC) and the Central Bank of the Bahamas (Sand Dollar), there followed news that the Eastern Caribbean Central Bank (a central bank of a regional monetary union of island nations such as Antigua, Dominica, and Granada that use a common currency called the Eastern Caribbean Dollar) and Nigeria (E-Naira) had also issued or will soon issue CBDCs. On the other hand, major countries are also studying and considering the introduction of CBDCs. For example, a proof-of-concept project was launched in April 2021 in Japan, the

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<sup>3</sup> Slide documents for each panelist's presentation are available on [https://www.iima.or.jp/en/info\\_active/webinars/20220121.html](https://www.iima.or.jp/en/info_active/webinars/20220121.html)

ECB officially launched the “digital euro” project in October 2021, the Fed began consultations on CBDCs in January 2022, and China schedules to launch the Digital Chinese Yuan ("DCEP") at the Beijing Winter Olympics in February 2022.

- (4) Looking at China, the People's Bank of China (PBOC) released<sup>4</sup> a white paper on DCEP in July 2021. So far, the PBOC has conducted pilot tests in major cities such as Shanghai and Shenzhen on a "500,000 to 1,000,000" people scale to confirm whether there are any problems or not. The features of the DCEP include the following.

1)	“Indirect issuance”; a structure in which DCEPs are distributed to people through the intermediary of financial institutions (mainly state-owned banks).
2)	No interest shall be attached to the DCEP.
3)	Focusing on the structure of the wallet (e.g., achieving a degree of anonymity using a main wallet and a sub-wallet).
4)	"Controlled anonymity" (indicating that small payments are allowed to be anonymous, but transactions above a certain amount are subject to strong identity verification (AML/KYC/CFT)).

- (5) The Digital Euro project, which is now officially underway in Europe, has an investigation period of 2 years from October 2021, during which the ECB will hold a Governing Council meeting and make a formal decision on whether to introduce the digital euro. The features of the digital euro include the following

1)	“Flexible indirect issuance”; a form of issuing digital euros through financial intermediaries is being considered.
2)	"Tiered interest rate structure" (i.e., paying an interest rate on up to a certain amount, while setting a penalty interest rate such as a zero or negative interest rate on the amounts above it) is being considered to create an incentive structure to prevent people from holding excessive digital euros.
3)	A cap on the amount of holding/using Digital Euros is being considered.
4)	A high level of awareness of the “Privacy protection needs”.

- (6) In the U.S., the Fed is sharply divided on the introduction of CBDCs between the "proactive group” led by Governor Brainard, and the "conservative group" led by Governor Waller. In the meanwhile, the Fed report<sup>5</sup> released in January 2022 introduced four features that a Digital Dollar (U.S. CBDC) must meet.

1)	The users’ privacy should be protected.
2)	Envisions an intermediated issuance through intermediaries.
3)	Interoperability should be ensured between CBDCs issued through various intermediaries (Widely Transferable).
4)	Must be able to implement strong measures to verify the identity of users (KYC/AML/CFT).

In addition, the report says it is important that the following conditions are met before additional work can be done to develop any CBDC.

<sup>4</sup> Refer to [PBOC "Progress of Research and Development of E-CNY in China"](#)

<sup>5</sup> Refer to [FRB "Money and Payments: The U.S. Dollar in the Age of Digital Transformation"](#)

1)	The benefits of CBDCs to users (including households and enterprises) and to the U.S. economy must exceed their costs.
2)	Should be confirmed the CBDC is superior to the current payment instruments provided by the private sector.
3)	Have broad support from a wide range of entities and institutions involved in the CBDC.

As for the third condition (broad support from a wide range of entities and institutions), they have indicated that a CBDC will not be realized without the understanding of related organizations that are expected to play an important role in the realization of the U.S. CBDC, and the hurdles to its realization are extremely high. For example, in June 2021 the American Bankers Association (ABA), which unites the banking industry in the U.S., submitted a testimony to the Senate questioning the necessity of CBDCs<sup>6</sup>. In addition, The Clearing House Payments Company L.L.C. (TCH), which operates CHIPS (Clearing House Interbank Payment System), an important (large lot) payment system in the U.S., also expressed its cautious stance on a CBDC in 2021.

- (7) In the U.K., though the Bank of England (BoE) and the Ministry of Finance (MoF) announced that they would start "market consultations on CBDCs", a report<sup>7</sup> the House of Lords issued in January 2022 stated that "normally, there is a problem that needs to be solved first, and then a solution is to be found. But the CBDC does not clearly identify what problems and issues it is supposed to solve". The House of Lords held a public hearing with BoE Governor Timothy Bailey and Deputy Governor David Cunliffe in November 2021, but even with this opportunity, the House of Lords was unable to obtain sufficient evidence to persuade its members.

In addition, a report released by the Payment and Settlement Systems Regulatory Authority (PSR) in January 2022<sup>8</sup> clearly stated that the medium-term strategy for the coming 5 years is to "promote the upgrading of interbank payment infrastructure under the leadership of the private sector". Considering these developments, we can say that the realization of a CBDC in the UK faces high hurdles.

- (8) Finally, Prof. Kobayakawa briefly introduced the development on "cross-border payments", noting that the Bank for International Settlements (BIS) and other organizations are currently studying various mechanisms and patterns to improve the convenience of cross-border payments, and that the People's Bank of China (PBOC) is participating in some of the projects too.

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<sup>6</sup> Refer to "[Statement for the Record On Behalf of the American Bankers Association Before the Subcommittee on Economic Policy Of the Committee on Banking, Housing, and Urban Affairs" \(June 9, 2021\)](#)."

In the statement, ABA notes that "as a number of central banks are moving from conceptual research to developing pilot programs to explore the uses and efficiency of CBDCs," "there is a growing recognition that central bank digital currencies may be weighed down by very significant real-world trade-offs". ABA warns that a U.S. CBDC could fundamentally change the role of the central bank in the United States and reshape the banking system." On the risks for CBDC issuance, ABA concludes that "the United States has a well-developed and robust financial system that is the backbone of our economy and markets" and "after a careful review of the benefits and risks of various proposals to implement a CBDC, it does not appear that a CBDC is well-positioned to enhance underlying financial capabilities or extend the reach of financial services in well-developed markets, despite the overly optimistic promises from proponents."

<sup>7</sup> Refer to "[Central bank digital currencies: a solution in search of the problem?" \(Jan 2022\)](#)."

<sup>8</sup> Refer to "[The PSR Strategy" \(Jan 2022\)](#)."

2. Next, Mr. Bessho of BOJ explained the activities of “A Group of Central Banks” on CBDC participated by major central banks and the BOJ initiatives on “general purpose CBDC”.

(1) A joint research group of the BIS and 7 central banks of major countries and regions has focused exclusively on “general purpose CBDCs”, and in a report published in October 2010<sup>9</sup>, the group identified three fundamental principles: “do no harm’ to monetary and financial stability”, “coexist with other types of money,” and “promote innovation and efficiency”.

(2) In September 2021, the group published a second report<sup>10</sup>, consisting of an Executive Paper outlining the progress of group’s efforts since the publication of the first report, and a series of detailed reports (“System design and interoperability”, “User needs and adoption”, and “Financial stability implications”).

In the report on system design and interoperability, it expected that the public and private sectors would be involved in designing the system in a balanced manner. As for “interoperability”, this report focuses mainly on domestic interoperability, and says that the system should ensure easy flow of funds to and from other payment systems. In addition to that, the report points out that the handling of payment data is very important in the CBDC ecosystem.

The second report (User needs and adoption) points out that it is important to look at the needs that exist today, but at the same time to anticipate future needs and incorporate innovations. To do so, the report stresses the importance of designing a flexible core system and the diversity in the ecosystem surrounding CBDCs.

The third report (Financial stability implications) states that if there were to be a significant shift of funds from bank deposits to CBDCs, it could affect the financial intermediary function and so safeguards against this would need to be considered in advance.

(3) The presentation page #4 summarizes the changes in the balance sheets of the parties concerned/stakeholders (central bank, intermediaries, and corporates and households) when CBDCs are issued. Since CBDCs are “liabilities of the Bank of Japan” and always recorded as “assets” in the balance sheets of entities other than the Bank of Japan, the business conditions of intermediary institutions will not affect the value of CBDCs.

(4) The Bank of Japan announced its approach<sup>11</sup> to CBDC in October 2020, and its basic standpoint remains unchanged. The main points are as follows.

1)	Currently, the Bank of Japan has no plan to issue a CBDC.
2)	However, the Bank considers it important to prepare thoroughly to respond to changes in circumstances in an appropriate manner.
3)	As long as there is public demand for cash, the Bank will stay committed to supplying it.

(5) Currently, the Bank is working on both technology and institutional design. Regarding the technology, it started a practical experiment in April 2021, and has been conducting “Proof of Concept Phase1 (test of basic functions of a CBDC, scheduled to end in March 2022)” to be followed by “PoC Phase2 (scheduled to start in April 2022). In addition, if the Bank judges it necessary, it will consider a pilot program that involves private businesses and

<sup>9</sup> Refer to [BIS "Central bank digital currencies: foundational principles and core features" \(Oct 2020\)](#)

<sup>10</sup> Refer to [BIS "Central bank digital currencies - executive summary" \(Sep 2021\)](#)

<sup>11</sup> Refer to [Bank of Japan "The Release of ‘The Bank of Japan's Approach to Central Bank Digital Currency’" \(Oct 2020\)](#)

consumers.

At the same time, the Bank will explore the institutional arrangements around the items listed at the bottom of the presentation page #7, and several related papers have already been published.

- (6) In the PoC Phase1, the Bank compares and verifies 3 design models for the ledger (“account-based data structure / ledger managed by the central bank”, “account-based data structure / ledger managed by the central bank and intermediaries”, and “token-based data structure / ledger managed by the central bank”).  
These 3 design models focus only on the "ledger". As there are various system components other than the ledger in an actual CBDC system, the structure of these components and their responsibilities need to be discussed separately.
- (7) So far, the PoC Phase1 has progressed on track. In this phase, the Bank is trying to see whether the CBDC system can ensure sufficient performance, i.e., sufficient "throughput" (how many transactions can be processed per unit of time) and "latency" (how long it takes to process one transaction), with an eye on the production environment. In addition to the aspect of performance, the Bank is also evaluating system reliability, including its availability, fault-tolerance, security risks, and scalability such as impact on processing performance, together with the issues specific to the token-based model.
- (8) In the PoC Phase2 which is to start in April 2022, the Bank will add peripheral functions to the environment built in the "Phase1". The Bank may try to verify the 3 design models mentioned above on a priority basis instead of verifying all of them comprehensively.  
The Bank is currently discussing the items to be verified in the “Phase2”, while envisioning the following major areas: "additional functions such as booking remittances that make CBDC more convenient.", "linking with the systems of intermediaries", and "safeguards to control the impact on the financial system”.
- (9) Lastly, answering to the question “If the Bank were to issue a CBDC, what kind of ecosystem do you expect to see?”, the key word will be "COEXISTENCE." In other words, it is desirable for the CBDC to realize both "horizontal coexistence" (where various payment instruments such as cash, bank deposits, and private digital money play the roles according to their functions) and "vertical coexistence" (where various entities are involved in the CBDC ecosystem to create value).  
In the case of horizontal coexistence, it is necessary to consider "interoperability (i.e., the smooth exchange of CBDCs with other payment instruments to improve the convenience of the payment system)”, and "safeguards (i.e., "quantity measures" such as limits on a user's maximum holding amount and maximum transaction amount, and "price measures" such as the application of lower interest rates than for deposits and fees on transaction amounts)”.  
On the other hand, vertical coexistence involves the CBDC ecosystem as "public goods (non-competitive domain)" and "competitive domain" where private businesses provide various additional services that meet the needs of users. It is envisioned that various innovations will be demonstrated in the latter domain and new businesses and services will be created, making the entire CBDC ecosystem more efficient and sustainable.

3. Finally, Mr. Inoue of Nomura Research Institute gave a presentation on the ECB's response to the digital euro.

(1) The stance paper<sup>12</sup> released by the ECB in October 2020 conceives "creation of new payment services and businesses by the private sector," i.e., "promotion of innovation" as one of the CBDC "requirements". It also states in its "principles" that the digital euro should be central bank money and that it should not inhibit private sector-based solutions.

(2) The paper also points out that, when considering the "conditions the digital euro should be equipped with", not only the events and issues that are actually occurring at the moment, but also those that may occur in the future should be considered.

In other words, the discussion has been conducted while figuring "what it would be like when a CBDC is introduced in the future" rather than setting up the question of whether a CBDC is necessary at present, which the presenter believed was also an important part for the discussion in Japan.

(3) In addition, it is noteworthy that the ECB is keenly aware of the international status of the digital euro zone, especially in such areas as "Euro-based solutions", "countering the use of foreign currencies, electronic money and CBDCs in Europe," and "enhancing the status of the euro as an international currency.

The background to their attitudes includes the following.

1)	In the euro area, the amount of cash in circulation (as a percentage of GDP) has not declined significantly (even after considering the decline in GDP as a denominator due to the COVID-19 disaster).
2)	Since "credit cards" are the main cashless means and their issuers are US companies, there is a concern that the benefits relating to business and transaction information are being leaked to the US. Therefore, there is an awareness that in the next generation of payment system the ECB wants to compete with the US with solutions originating in Europe.
3)	The euro's share in foreign exchange reserves and in foreign exchange transactions have stagnated, and Europe's competitiveness as an international financial center is relatively weak.

(4) Of course, the ECB also emphasizes the achievement of policy objectives, especially financial stability, in considering the conditions that the digital euro should have.

Specifically, they are aware that the issuance of a digital euro will contribute to maintaining or enhancing financial stability, ensuring safe and efficient micro-payments, and contributing to the proper management of capital flows, even when the digital euro is used by non-residents for cross-border payments.

Regarding the interest rate on the digital euro, the Bank has indicated that it intends to curb an excessive shift of funds from bank deposits to the digital euro by leaving room for a reasonable interest rate only on the portion necessary for payment settlement, while imposing a penalty (either a low interest rate or a negative interest rate) on the remaining portion.

(5) Based on these discussions, the presentation page#7 compares what is presented in the stance paper on the basic design of the digital euro with the discussions at the "Study Group on the Future of Currencies and Banks" organized by Nomura Research Institute to consider the implications for Japan, and it shows that both have come to largely similar conclusions.

<sup>12</sup> Refer to [ECB "Report on a digital euro" \(Oct 2020\)](#)

For example, both see that "anonymity" needs to be controlled to some extent, and that allowing complete anonymity is difficult in reality in view of policy objectives such as AML. Furthermore, as for "user access," both assume that a "tiered structure" through intermediaries is a realistic form.

- (6) In addition, from the public comments the ECB sought from October 2020 to January 2021, it was found that many respondents attached highest importance on privacy. In this regard, they expressed their opinion that, since "acquisition and collection of information by the ECB is inevitable", they would like to see a system is well managed." It was also a noteworthy idea that the system should be managed by differentiating between "anonymity" and "privacy management."  
In addition, the responses in support of "setting a balance limit for the digital euro" and "offering different interest rates for different balances" seem to imply that many potential users consider CBDC as a "safety asset". For this reason, the methods to control massive shift of funds to the digital euro (a digital bank run), especially in times of emergency, will require a careful consideration, including the discussion of interest rates noted above.
- (7) Another interesting point is the "Offline Payments" part in the "Payment" section, in which the ECB assesses they are meaningful but technically difficult. This attitude is consistent with the discussions made at the "Study Group on the Future of Currencies and Banks" and the "Future of Payments Forum" organized by the Bank of Japan, where they argued that there is no need to equip CBDCs with offline payment functions from the beginning, given the progress of various technologies proceeding in the private sector.  
On the other hand, although it relates to the issue of intermediaries, as far as the ECB adheres to the principle of "accretion/remuneration," there will inevitably be some aspects that are difficult to reconcile with an addition of offline functions. This point, however, remains a problem specific to the ECB.
- (8) The report states that "a tiering structure (2 layered structure through intermediaries)" is an effective method of supplying CBDCs. The presenter had an impression that the deliberation of "collaboration with private sector payment systems" led, in terms of its usefulness, to the same conclusion as was reached in the Japanese domestic consultations.
- (9) As for the future direction of the project, the ECB announced that it will proceed with the "investigating phase" in the coming 2 years based on the verification of technology gained thus far. And, once the ECB decides to proceed to the next step based on the results in the phase, it will conduct full-scale experiments over the next 3 year or so.  
During this 2-year design work period, it is envisioned that the focus will be on examining and confirming the policy objectives and uses of the digital euro, the trade-off between data anonymity and utilization, the impact on financial system stability, and the business model and ecosystem aspects.  
Incidentally, there was a report on the status of the design work in the form of an Occasional Paper which was published in December 2021. In this paper, the ECB continues to focus on "tiered interest" and this part seems to be important to the ECB. They also deliberated about "how to utilize the commercial transaction data" and "how to satisfy user needs" and confirmed that "efficient supply through intermediary institutions" is also a key point.

### **III. Overview of the Panel Discussion**

#### **#1 Differences in approaches to CBDC research and study between Japan, the U.S., and Europe**

<Questions from the moderator>

This webinar focuses on discussions in developed countries, and unlike emerging countries, the discussion for CBDC implementation inevitably tends to be more complex and needs careful consideration since the payment systems in those countries/regions are already quite sophisticated and digitalized.

Against this backdrop, I feel that there are many important commonalities in the basic approaches taken by Japan, the U.S., and Europe in considering CBDCs (e.g., avoiding or minimizing the impact on financial intermediary functions, complementing existing payment and settlement systems, and emphasizing private-sector innovation).

On the other hand, it seems that there are differences in approaches due to differences in the way of thinking. So, I would like to ask each of you what you think are the differences in Japan, the US, and Europe that we should pay attention to.

<Mr. Kobayakawa>

- (1) It is my impression from the Fed's paper released in January 2022 that the U.S. is aware of the issue of "how to protect the dollar's position and status as a reserve currency in the midst of the progress of a digital society". As for the digital euro, as Mr. Inoue mentioned earlier in his presentation, Europe is probably concerned with the problem of "improving the status of the euro as an international currency". Therefore, the U.S. and the Eurozone are disseminating much information on their "awareness of the issue of their currency as an international currency or reserve currency," which may be somewhat a different approach from Japan's.
- (2) When we examine the efforts of Japan, the U.S., and Europe in more details, we find that they differ in many ways. For example, while (they agree) it is important to take appropriate KYC/AML/CFT measures, the way to address the question of who should perform such functions differs from country to country and region to region. For example, the Eurozone is considering the idea of having an AML Authority independent of the ECB perform this function, while the FRB's paper clearly states that "intermediaries need to play this role", indicating a difference of interest between the US and Europe. Since it is unlikely that the central bank will take the lead in monitoring KYC, etc., it will be a common task for Japan, the US and Europe to consider how exactly to proceed with such monitoring while benefitting from the consultations with the private sector.

<Mr. Bessho>

- (1) I do not think there is much difference among Japan, the U.S., and Europe in terms of the core question of "whether a CBDC-based payment and settlement system can improve the efficiency and stability of domestic or regional payment and settlement systems as a whole". However, as the structure of payment systems differ from country to country/region to region, and the challenges they face are different, I believe that each country/region has its own characteristics depending on where it focuses its explanations when communicating with markets and the public.
- (2) In the United States, for example, when you listen to the speeches given by Governor Brainard, Chairman Powell, and others, you will notice frequent references to "financial inclusion" against the backdrop of the fact that the percentage of the so-called "unbanked (people who do not have bank accounts)" is higher than in Europe and Japan. In contrast, in Europe, more communications are noticeable on "data protection" and "the presence of

big tech".

Also, in Sweden, where cashless society has so much advanced that cash is effectively no longer functional as a means of payment, the question of how and in what form to provide the society with the role that cash used to play has become a serious issue.

- (3) Japan's focus is related to the concept of "coexistence" as I mentioned in my presentation. In other words, in Japan, where the presence of indirect finance is relatively high and various private-sector payment systems are already highly developed, the importance of "horizontal coexistence" in the form of "system interoperability" is emphasized together with "vertical coexistence" in which various private operators can provide various services and compete with one another in the ecosystem surrounding CBDCs.

<Mr. Inoue>

- (1) I would like to add two points to the arguments the other panelists gave.

The first is how to formulate the argumentation. As is the case in Japan, it is difficult to give a clear answer to the question of "Do we really need a CBDC now?" However, I have an impression that European officials are more careful and extensive in explaining their vision of what money will look like in the next 5 years/10 years as the digital society continues to develop (of course, Japan and the U.S. also have such a vision, I believe).

- (2) Another point is that, while currencies within the Euro zone are unified, member countries maintain payment and settlement systems with various characteristics and legacies of their own. In this context, I feel that the idea of using a CBDC is one of the drivers to improve the efficiency of the entire payment system.
- (3) Incidentally, there still exist national central banks within Europe, but from the ECB's paper and other sources, it is not clear, at least from the outside, which countries are particularly active or passive in the discussion of a CBDC. Judging from the media reports, one might get an impression that each country in the region has a different stance on CBDCs, as France and Germany are clashing on the issue of "green" (environmental) methods. The conflict on CBDCs, if any, however, does not seem to be that clear-cut.

## **#2 Areas of Payment System Advancement with CBDCs in Japan, the U.S., and Europe**

<Question from the moderator >

To a question about which countries and payment areas need CBDCs, it was shown that, "while we cannot give a clear answer at present, we have to proceed with CBDC research in anticipation of the future". However, "the future" depends on the progress of innovation, and it is somewhat frustrating, although it is not surprising, that we cannot clearly visualize at this point that "this function will be available by such and such year".

In this context, which part of the various domestic and international payment systems that currently exist do you think Japan, the United States, and Europe are trying to upgrade?

<Mr. Inoue>

- (1) Although it is not necessarily limited to Europe, the CBDC discussion accelerated to some extent when the Facebook-led Libra came to be discussed in 2019. Libra had various operational and framework problems of its own, but it also revealed many issues related to existing cross-border transactions, including those on "cost", "speed", "opacity", and "administrative burdens".

(2) These facts may not immediately justify the introduction of CBDCs, but central banks are likely to have the challenge in common. However, they are faced with two barriers impeding the solution of this problem.

The first is the question of whether they should rush to introduce CBDC for cross-border settlement in a situation where there are no CBDCs issued or distributed domestically. The second question is whether we should discuss the phase of "wholesale CBDC" rather than "general purpose CBDC", which is the main theme of today's webinar, although we may not need to go into so far at present to draw such a line.

(3) As discussed at the "Study Group on the Future of Currencies and Banks" organized by the Nomura Research Institute, there is a need for more efficient and secure settlement system for small and frequent payments, as is seen not only in Europe but also in such efforts as the launch of the "Kotora System" in Japan. It's not that this area should be immediately replaced by CBDCs, but it is likely that the central banks are aware of the issue as a future coverage.

<Mr. Bessho>

(1) In the midst of "digitalization" and "a declining birthrate, aging population, and declining population forecast especially in rural areas", it is important to consider how and in what form to continue to provide public money.

(2) In this context, it should be noted that the premise of the consideration of a "general purpose CBDC" (i.e., "what are we aiming for") is "How should we design the future of the payment systems with such social changes," and this is not necessarily a discussion with a foregone conclusion that "there must be a CBDC". Rather, a CBDC should be positioned as "one of the important options for realizing that objective.

(3) In addition, we do not think it is appropriate to make a CBDC "a Swiss Army knife that can do anything". If this were to happen, it could have an enormous impact on the financial system and hinder the realization of central banks' objective of "stabilizing the financial system". It is necessary for us to have a situation where various types of money can leverage their strengths while supplementing their weaknesses.

(4) So, when we think about what the strengths and weaknesses of CBDCs are, we find that in comparison with private money (including deposits and wallet types of digital money) and cash, CBDCs have the following characteristics.

Compared with "Private money" (Including Deposits and Digital money)	They are safer since the central bank is the issuer of CBDCs.
	Since the CBDCs are a public service, there are elements of fairness, neutrality, and inclusiveness that can be used equally by everyone.
	The cost of using CBDCs is relatively low (possibly).
	There is a settlement finality.
Compared with "Cash"	CBDCs have more advantage in terms of cost for transportation, use, and storage.
	Being digital, it is possible to add various functions to CBDCs.

Given these characteristics of CBDCs, if their function of "supplementing the role of cash" is to be more focused in the future changes in the social environment, it will be the most expected area that they are used for multi-frequency small payments between consumers and merchants.

- (5) On the other hand, if we would like to make use of the nature of digital technology, we can assume that there will be cases where it is used not only for multi-frequency and small-amount payments but also in other areas. The balance between the two is to be determined by looking at "what the society expects", and in doing so, it is important to continue discussions with relevant players/stakeholders, taking into account of future social changes, in addition to addressing the current issues.

### **#3 Regarding the cooperation between CBDC and Japan's private digital currency development**

<Question from the moderator >

In parallel with CBDCs, research on the issuance of digital currencies by private companies and organizations is underway in Japan and abroad. In the case of Japan, have the discussions on the development of private digital currencies been made in tandem with the Bank of Japan's empirical research on CBDCs?

I have an image that the Bank of Japan would provide basic functions related to "common area" and the private sector would design the "additional function-added area".

<Mr. Bessho>

- (1) We are not at the stage where I can give a clear explanation of what is the "common area" and what is the "competitive area" in the CBDC ecosystem. However, this is a very important agenda item, and (as shown on page#7 of my presentation) the Bank of Japan has listed "cooperation and role-sharing between a central bank and private enterprises" as the first of 4 items to be considered in terms of institutional arrangements.
- (2) In the case of indirectly issued CBDCs, the basic model assumes that the intermediaries have their path to make counter value payment to the Bank of Japan (by opening a current account with the Bank of Japan) when CBDCs are issued to the intermediaries from the Bank of Japan. However, it is not essential for an intermediary to open an account with the Bank of Japan if the intermediary's business is limited to delivery or reception of CBDCs with the users. I believe that a pattern of an intermediary hanging on to some other intermediaries and providing CBDCs to customers without having a direct payment pass with the Bank of Japan might also be discussed in the future.

<Mr. Kobayakawa>

- (1) At the present time, discussions of a CBDC tend to focus on the part of "replacing cash payments". However, as Mr. Bessho and Mr. Inoue have pointed out, as far as we are going to develop and research CBDCs with an eye to the future, it is inevitable that we will be asked the question, "Is a CBDC really necessary?".
- (2) A central bank is an organization that is required to think flexibly and preemptively about problems and issues that are not currently visible or may occur in the future, rather than only dealing with problems that are clearly recognized at present. Therefore, as the digitalization of society progresses, it is essential that a central bank be well prepared to respond to the potential needs of users (which may be programmable money or micropayments) that are not yet occurring but will occur in the future.

#### **#4 Method of cost sharing for a new payment system using a CBDC**

<Question from the moderator >

We received many questions from the audience regarding cost sharing and burden sharing.

While it may be a good thing that a new payment system using a CBDC will coexist with the existing payment system, there is a concern about the upfront cost burden in Japan, as the country is losing its strength in many ways.

Therefore, I would like to ask you about the direction of the discussion in Japan and other countries on how the costs should be born.

<Mr. Kobayakawa>

- (1) The overseas debates have not always been so much clear-cut. As for the cost burden, as I wrote in my column in the Nihon Keizai Shimbun's "Economic Classroom" in November 2021, there are two aspects to CBDC services: the "public aspect" and the "additional service aspect that is added to a plain CBDC". The former "public aspect" refers to the fact that the CBDC service has a very strong public service component, by providing a safe and secure means of payment for a wide range of citizens. However, since the current cash settlement is provided at little or no cost to the users, it is unlikely that intermediaries will pass on the cost of the public aspect of a CBDC to the users
- (2) Therefore, since the cost of public services has been borne by the public sector, including the government and the central bank, while the cost of additional services has been borne by intermediaries who provide services according to the needs of individual users, users' understanding may be easier to be gained about passing on corresponding costs of the intermediaries to users.
- (3) In the future, it will be necessary for central banks to discuss cost sharing with a wide range of stakeholders, based on the premise that CBDCs include both "public services" and "additional services."

<Mr. Bessho>

- (1) I agree with Mr. Kobayakawa on his observation that we need to separate "public services" from "additional services". On that basis, the "Report of the Central Bank Group (BIS +7 Central Banks)"<sup>13</sup> of October 2020 presents as below the possible funding sources for the development and operation cost of CBDCs as a basic means of payment (perhaps we can call them a kind of public goods).

1)	Public funding
2)	Beneficiaries bear the cost In this case, "beneficiaries" can be classified as "general consumers," "merchants (who mainly receive money from consumers)," and "private businesses" that provide services by hanging on to intermediary organizations.
3)	Cross-subsidization (when an intermediary receives some benefit or cost reduction through CBDC intermediation, the intermediary bears its appropriate share of the cost)

In any case, I feel that it is necessary that we consider carefully whether the so-called general consumers should be asked to bear the cost when they use CBDCs as a basic means of payment.

<sup>13</sup> Refer to "4.1.3 Incentive designs" in [BIS "Central bank digital currencies: foundational principles and core features" \(Oct 2020\)](#)

## **#5 Trends in China regarding a CBDC**

<Question from the moderator >

We received many questions also from our audience about the lack of clarity in the relationship between cross-border transactions and China's move in that context.

Today, it was learned that, although retail CBDCs will not be immediately used for cross-border transactions, eventually there may be a possibility where "retail CBDCs will also be used for cross-border settlement".

In addition, since the world of payments is subject to a "network effect," there are arguments that preceding payment systems and mechanisms can become a de facto standard, and that China is targeting this through the experimentation of the Digital Chinese Yuan (DCEP).

In this context, please provide additional information on the status of the development work of international standards for using a CBDC.

<Mr. Kobayakawa>

- (1) We understand that Japan, the U.S., Europe, and other major countries are not putting "competing with China" at the forefront of the reasons they are exploring and studying CBDCs. Rather, they are doing so to respond to the potential needs of the users accurately and adequately in their own countries and regional economic zones which may come up in the future as the digital society progresses.
- (2) In addition, although I am not fully aware of specific moves toward the establishment of international standards, one thing I can say with certainty is that China itself seems to think that, in considering the use of digital renminbi for cross-border payments, it should work on the establishment of standards and technical standards in a close international cooperation. In other words, China does not necessarily envision "an environment where DCEP can be used only in its own backyard (economic zone)" or "its own world that is isolated from other countries". I believe that there is room for China and the major countries like Japan, the United States, and Europe to promote solid cooperation and coordination in the future.
- (3) In addition, when Meiji University held a workshop with the Chinese Academy of Social Sciences in December 2021, an attendee of the Academy made a statement that implied they (China) were taking a very cautious view of the cross-border and international use of DCEP. This is probably because they want to avoid adding fuel to an "excessive confrontation with the United States" with the use of DCEP.
- (4) In light of the cases mentioned above, it will probably take a substantial amount of time before the actual use of DCEP for cross-border transactions is realized as it faces with various circumstances complicated by political, economic, and other factors.

## **IV. Conclusion (Closing remarks)**

<Mr. Iwaoka>

Overall, I could well understand many challenges that developed countries are facing and how difficult it is to move forward in anticipation of the future.

On the other hand, as mentioned in some parts of the talk, I had a strong impression that we have entered an era of "great competition" in a sense, in which it is questioned "how we can provide a digital payment system with high added value that matches the progressing digitalization of society".

In that sense, the landscape of "cross-border settlement" discussed in the last section may change significantly in the coming years, and the Institute for International Monetary Affairs will continue to pay close attention to global development of CBDCs as well as the efforts of private financial institutions overseas, including those in China.

<End>

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