

CENTRAL BANK DIGITAL CURRENCY: A BIRDS EYE VIEW

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Abstract:

Digital Currency is a latest invention in banking system with that every citizens came in to the economy. For for trading every citizen are using digital payment system but investing purpose countries central banks has introduced a digital Currency. Every country has its own central bank and all banks works unde its own central banks norms. Likewise the following banks of different Countries and its central bank names the following are the some of them: Indian Central Bank Reserve Bank of India, European Central Bank Bank of Japan Sovereigns Riks bank, Swiss National Bank Bank of England, Board of Governors Federal Reserve System Bank for International Settlements Bank of Canada. Every bank has its own currencies like Reserve Bank of India Rupees,

Introduction: Central banks have a mandate for monetary and financial stability in their jurisdictions and, explicitly or implicitly, to promote broad access to safe and efficient payments. A core instrument by which central banks carry out their public policy objectives is providing the safest form of money to banks, businesses and the public – central bank money. This money acts as a means of payment, unit of account and store of value for a jurisdiction. A common unit of account is a public good that allows goods and services to be exchanged and financial transactions to be settled efficiently and safely. Today, central banks provide money to the public through cash and to banks and other financial companies through reserve and settlement accounts. In this way, some of the smallest and largest payments in an economy are carried out using central bank money. To coordinate and consolidate some of this work, the central banks of Canada, Japan, Sweden, Switzerland, the United Kingdom and the United States have come

together, along with the European Central Bank and the Bank for International Settlements. This report summarizes where they collectively stand.

Motivations, challenges and risks

- A variety of motivations drive central bank research into CBDC.
- Currently, the focus is on providing a CBDC for payments, enabling broad access to central bank money and providing resilience.
- Practical challenges and risks exist, which multiply when additional requirements are considered, eg improving cross-border payments or enabling monetary policy tools.

Payment motivations and challenges

- a. Continued access to central bank money In jurisdictions where access to cash is in decline, there is a danger that households and businesses will no longer have access to risk-free central bank money. Some central banks consider it an obligation to provide public access and that this access could be crucial for confidence in a currency. A CBDC could act like a “digital banknote” and could fulfil this obligation
- b. Resilience Cash serves as a backup payment method to electronic systems if those networks cease to function. However, if access to cash is marginalised, it will be less useful as a backup method if the need arises. A CBDC system could act as an additional payment method, improving operational resilience. ³ Compared to cash, a CBDC system might provide a better means to distribute and use funds in geographically remote locations or during natural disasters. However, significant offline capabilities would need to be developed, both for the CBDC system and any dependencies (eg some availability of electricity for mobile devices). Counterfeiting and cyber risk present a challenge. Cash has sophisticated anti-counterfeiting features and large-scale issues rarely occur. Theoretically, a successful cyber attack on a digital CBDC system could quickly threaten a significant number of users and their confidence in the wider system (as it could for a large bank or payment service provider). Defending against cyber attacks will be made more difficult as the number of endpoints in a general purpose CBDC system will be significantly larger than those of current wholesale central bank systems.

- c. Increased payments diversity Payment systems, like other infrastructure, benefit from strong network effects, potentially leading to concentration and monopolies or fragmentation. Payment service providers have the incentive to organise their platforms as closed-loop systems. When a small number of systems dominate, high barriers to entry and high costs (especially for merchants) can occur. Where more systems exist, fragmentation may still occur as systems often have proprietary messaging standards, increasing the cost and complexity of 3 However, this increase in resilience assumes that other payment methods and instruments remain available. 6 Central bank digital currencies: foundational principles and core features interoperability (CPMI (2018)). Fragmentation of payment systems means that users and merchants may face costs and difficulties paying users of other systems. This is inconvenient and socially inefficient. CBDC could provide a common means to transfer between fragmented closed-loop systems (although an accessible fast payment system can also achieve the same end).
- d. Encouraging financial inclusion For the central banks contributing to this report, most of the adult population in their jurisdictions can conveniently access electronic payments. However, increasing digitalisation could leave some sections of society behind as potential barriers around trust, digital literacy, access to IT and data privacy concerns create a digital divide. For central banks in many emerging market economies, a key driver for researching CBDC is the opportunity to improve financial inclusion (Boar et al (2020)). Yet for a CBDC to increase financial inclusion, it must address the causes of exclusion, which vary by jurisdiction and are often complex.⁵ Given the complexity of this issue and possible underlying obstacles to digital inclusion (eg illiteracy), any CBDC initiative would likely need to be embedded in a wider set of reforms (CPMI-World Bank (2020)).
- e. Improving cross-border payments Cross-border payments are inherently more complex than purely domestic ones. They involve more, and in some cases numerous, players, time zones, jurisdictions and regulations. As a result, they are often slow, opaque and expensive (CPMI (2018)). An interoperable CBDC (ie one that is broadly compatible with others) could play a role in improving cross-border payments .
- f. Supporting public privacy A key feature of cash is that no centralised records of holdings or transactions exist. Some have argued that the main benefit a CBDC could bring would be some level of anonymity for electronic payments (Bech and Garratt (2017)). Full anonymity

is not plausible. While anti-money laundering and combating the financing of terrorism (AML/CFT) requirements are not a core central bank objective and will not be the primary motivation to issue a CBDC, central banks are expected to design CBDCs that conform to these requirements (along with any other regulatory expectations or disclosure laws). For a CBDC and its system, payments data will exist, and a key national policy question will be deciding who can access which parts of it and under what circumstances.⁶ Striking this balance between public privacy (especially as data protection legislation continues to evolve) and reducing illegal activity will require strong coordination with relevant domestic government agencies.

- g. Facilitating fiscal transfers for some jurisdictions, the Covid-19 pandemic illustrates the benefits of having efficient facilities for the government to quickly transfer funds to the public and businesses in a crisis. A CBDC system with identified users (eg a system linked to a national digital identity scheme) could be used for these payments.

Three foundational principles Central banks have a common mandate for monetary and financial stability in their jurisdictions and have been providing trusted money to the public for hundreds of years as part of their public policy objectives. Their policy choices reflect their jurisdiction's specific requirements and circumstances at a point in time. Policy choices can therefore differ and change. Yet there are three common foundational principles for a central bank's consideration of CBDC issuance that flow from their common objectives.

“Do no harm”: New forms of money supplied by the central bank should continue supporting the fulfillment of public policy objectives and should not interfere with or impede a central bank's ability to carry out its mandate for monetary and financial stability. For example, a CBDC should maintain and reinforce the “singleness” or uniformity of a currency, allowing the public to use different forms of money interchangeably.

Coexistence: Central banks have a mandate for stability and proceed cautiously in new territory. Different types of central bank money – new (CBDC) and existing (cash, reserve or settlement accounts) – should complement one another and coexist with robust private money (eg commercial bank accounts) to support public policy objectives. Central banks should continue providing and supporting cash for as long as there is sufficient public demand for it.

Innovation and efficiency: Without continued innovation and competition to drive efficiency in a jurisdiction's payment system, users may adopt other, less safe instruments or currencies. Ultimately this could lead to economic and consumer harm, potentially damaging monetary and financial stability. The payments ecosystem is comprised of public authorities (in particular the central bank) and private agents (eg commercial banks and payment service providers). There is a role for the public and private sectors in the supply of payment services to create a safe, efficient and accessible system. Private economic agents should generally be free to decide which means of payment they use to conduct their transactions.

1. Introduction Central banks have a mandate for monetary and financial stability in their jurisdictions and, explicitly or implicitly, to promote broad access to safe and efficient payments. Today, central banks provide money to the public through cash and to banks and other financial companies through reserve and settlement accounts. In this way, some of the smallest and largest payments in an economy are carried out using central bank money. Yet the ongoing digitalisation of the economy is changing the way people pay. The use of cash, currently the only form of central bank money available to the public, is falling in many jurisdictions. The Covid-19 pandemic may be accelerating this trend. Yet the significant changes of that period have required central banks to innovate and evolve in how they met their objectives.
2. To coordinate and consolidate some of this work, the central banks of Canada, Japan, Sweden, Switzerland, the United Kingdom and the United States have come together, along with the European Central Bank and the Bank for International Settlements. Arguments for and against issuing a CBDC and the design choices being considered are driven by domestic circumstances. There will be no "one size fits all" CBDC. Yet domestic CBDCs would still have international implications. Cooperation and coordination are essential to prevent negative international spillovers and simultaneously ensure that much needed improvements to cross-border payments are not overlooked. Central bank digital currencies: foundational principles and core features
3. The report This report starts by examining central banks' motivations and evaluates some of the opportunities driving CBDC research. In this context, some foundational principles for central banks' role in payment systems are then articulated together with the core features required of any CBDC for it to fulfil public policy objectives. To realise these core features,

a suitable design for a CBDC and its underlying system must be developed. This report highlights some of the key design choices and where the policy trade-offs and technology challenges currently lie for central banks. The report concludes with thoughts on future work and some recommendations for where and how international collaboration can aid future domestic policy discussions.

9 Although it may also increase the risk to other jurisdictions if there is insufficient control and coordination.

10 Central bank digital currencies: foundational principles and core features 3 Issuing a CBDC

- Diverse motivations are driving research into CBDCs. Yet central banks have common public policy objectives.
- Common objectives allow common principles to be agreed. These include that CBDCs: (i) do not interfere with or impede a central bank in carrying out its mandate; (ii) coexist with cash and robust private money; and (iii) enable innovation and efficiency in services for end users.
- In practice, these common principles require a CBDC and its underlying system to incorporate core features. These include: ease of use, low cost, convertibility, instant settlement, continuous availability and a high degree of security, resilience, flexibility and safety.

Central bank digital currencies:

Foundational Principles and Core Features 4 CBDC design and technology

- Designing a CBDC and its underlying system is inherently a choice on where and how the central bank should be involved in the national payments ecosystem.
- Understanding the feasibility of these choices requires an understanding of the technologies available.
- Balancing the safety and efficiency of the ecosystem, while factoring in sufficient competition, cooperation, innovation and flexibility among participants, results in complex and multifaceted trade-offs (CPSS (2003)).

Conclusion: foundational principles and core features Annex B: Group members Steering group members Co-chairs Bank for International Settlements Benoît Coeuré Bank of England Sir Jon Cunliffe Members Bank of Canada Timothy Lane European Central Bank Fabio Panetta Bank of Japan Shinichi Uchida Sveriges Riksbank Cecilia Skingsley Swiss National Bank Fritz Zurbrugg Board of Governors of the Federal Reserve System Lael Brainard Bank for International Settlements Hyun Song Shin Expert group members Members Bank of Canada James Chapman Scott Hendry Francisco Rivadeneyra Dinesh Shah European Central Bank Andrej Bachmann Ulrich Bindseil Fiona van Echelpoel Arnaud Mehl Andrea Pinna Ignacio Terol Bank of Japan Masaki Bessho Kazushige Kamiyama (from July 2020) Takeshi Kimura (until July 2020) Michinobu Kishi (until July 2020) Akio Okuno (from July 2020) Yutaka Soejima Takeshi Yamada Sveriges Riksbank Carl Andreas Claussen Gabriela Guibourg Swiss National Bank Martin Schlegel Petra Gerlach Sebastien Kraenzlin Thomas Moser Central bank digital currencies: foundational principles and core features 21 Bank of England James Bell Sarah John Tom Mutton Cormac Sullivan Board of Governors of the Federal Reserve System David Mills Melissa Leistra Federal Reserve Bank of Boston Jim Cunha Bank for International Settlements Raphael Auer Henry Holden Cyril Monnet The expert groups were led by Timothy Lane (Bank of Canada) and Cecilia Skingsley (Sveriges Riksbank). Thanks also go to Michael Yoganayagam (Bank of England), Björn Segendorff (Sveriges Riksbank) and Mario Barrantes (Bank for International Settlements).

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