BIS – IMF – World Bank central bank conference

Paving the way for cross-border CBDC payments

Introduction

The Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI), the BIS Innovation Hub (BISIH), the International Monetary Fund (IMF) and the World Bank (WB) hosted a virtual conference on "Paving the way for cross-border CBDC payments" on 23 and 24 May 2023. The objective of this event was to share information and encourage collaboration between central banks on cross-border payments with CBDC. The virtual conference, held under the Chatham House Rule, was attended by over 350 people from more than 80 jurisdictions around the world representing central banks and selected international organisations.

The programme included remarks from Tobias Adrian (Financial Counsellor and Director of the Monetary and Capital Markets Department of the IMF), Sir Jon Cunliffe (Chair of the CPMI), Jean Pesme (Global Director, Finance, Competitiveness, and Innovation at the World Bank), and Cecilia Skingsley (Head of the BISIH), and a series of panel discussions with leading experts in the area (see Annex).

This note summarises the conference themes and highlights the issues discussed.[1]

Background

Over the past year, work on central bank digital currencies (CBDCs) has gained further momentum.[2] Many central banks are developing a CBDC or running concrete experiments. Cross-border payments is an increasingly explored use case. This highlights the need for interoperability between CBDCs, and international collaboration is required to achieve this goal.

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2 See also Kosse and Mattei (2023): Making headway - Results of the 2022 BIS survey on central bank digital currencies and crypto.

This conference was a commitment under the G20 programme to enhance cross-border payments (Building Block 19).[3] In 2022, the BISIH, CPMI, IMF and WB published a G20 report on options for access to and interoperability of CBDCs that could improve cross-border payments. This report highlights that central banks across the globe would need to collaborate (in this case through a joint conference) in the early stages of CBDC design to fully harness the potential of CBDCs for enhancing cross-border payments.[4]

In the spirit of fostering international collaboration, central bankers from around the world were invited to join the conference to stimulate discussion, share ideas, and encourage collaboration on cross-border payments with CBDC. The conference examined the lessons learnt on using retail and wholesale CBDCs across borders and what remains to be done. It also examined governance and economic considerations for cross-border CBDC arrangements.

Paving the way for cross-border CBDC payments

CBDCs may not contribute to the short-term targets of the G20 cross-border payments programme, but they have the potential to play a vital role in the long run. Wholesale CBDCs (wCBDC) offer an opportunity to reduce the costs of cross-border payments and may facilitate a future ecosystem with tokenised deposits and securities. A retail CBDC (rCBDC) could offer new ways to use money and transact. As domestic work on rCBDCs advances, the cross-border payments side of it should not lag behind.

The clean slate opportunity is present but has an expiration date. To date, central banks' work on rCBDC mainly focuses on domestic use cases. This raises questions about the appropriate timing and design for integrating cross-border functionality in domestic rCBDC design. Also, the appetite for common standards or infrastructure should be assessed.

Cross-border use of CBDCs will face many of the same challenges as current cross-border payment arrangements. The main barriers relate to governance and regulatory issues. Initiatives to improve existing cross-border payment arrangements can provide a valuable foundation for the work on cross-border CBDC. Central banks will need to both future-proof their national payment systems and gain hands-on knowledge through technical experimentation with CBDC. Collaboration and knowledge exchange across a diverse set of countries is crucial going forward.

3 See also G20 Roadmap for Enhancing Cross-border Payments: Consolidated progress report for 2022 (fsb.org).

4 See: Options for access to and interoperability of CBDCs for cross-border payments (bis.org).

One size does not fit all: cross-border wholesale CBDC systems

Central banks' motivations to explore wCBDCs are closely linked with the desire to improve cross-border payments and the potential role of wCBDC in the future monetary system. Some speakers suggested that upgrading real-time gross settlement (RTGS) systems could improve functionality but may not address all current frictions. Lessons from existing wCBDC experiments indicate that wCBDCs could facilitate faster, cheaper and more transparent cross-border transactions. With the emergence of tokenised securities, central banks may find it beneficial to introduce wCBDC to facilitate trading and settlement. In addition, the possibility of tokenised bank deposits may require a wCBDC for efficient interbank transfers.

Experiments to date have tested the technical feasibility of wCBDCs, both in a domestic and cross-border context. These experiments focused on use cases where CBDCs were transferred against either another CBDC (payment-versus-payment) or tokenised securities (delivery-versus-payment). Based on the principles of learning-by-doing and technical neutrality, central banks tested different approaches, including facilitating bilateral links between individual CBDCs and building a single system that supports multiple CBDCs (ie a multi-CBDC system). Each approach has its own benefits and challenges. Some speakers envisage that establishing bilateral links between individual CBDCs may generate efficiencies, though scalability might be a challenge. Multi-CBDC systems have the potential to address the scalability constraints, but they require a more complex governance structure and harmonisation of legal and regulatory frameworks across jurisdictions. When building a multi-CBDC system, there is also a need to determine the network operator and the role and responsibilities of commercial banks, technology operators and liquidity providers. The discussion indicated that regional platforms for wCBDCs may be more likely to emerge than one single global CBDC platform.

Technological aspects of wCBDC that could be further explored include resilience, performance, scalability and integration between traditional and tokenised systems. To ensure a promising avenue to tokenisation and efficient cross-border settlement, interoperability is crucial. It is important for any new CBDC platform to coexist with traditional payment infrastructures. This raises the need to understand the importance of robust technology and APIs to address compatibility challenges, and the role of decentralisation vs centralisation of activities. Certain services could be decentralised. For example, automated market makers for liquidity optimisation are currently being investigated for the cross-border exchange of wCBDC.[5]

More work is needed to test the viability of wCBDC arrangements. Allowing foreign entities to directly hold and transfer a wCBDC could be a game changer when reducing the number of intermediaries and shortening the transaction chain. This however calls for solutions to address challenges related to governance, regulatory requirements and improving AML/CFT measures.

[5] Aside from automated market makers, the BISIH will investigate the addition of DLT-based foreign exchange services that connect a broader network of banks to multi-CBDC platforms.

Some hold the view that one key to addressing these issues lies in defining the use case(s) and narrowing the focus accordingly to certain market segments. Multi-CBDC platforms may conceptually offer a basis for more effective and robust compliance of such measures in a cross-border context, by combining the data network they generate with privacy-protecting machine learning technologies.[6]

Clean slate, but with an expiry date: cross-border retail CBDC systems

Payments efficiency, financial inclusion, and future-proofing the payments system emerged as the main policy objectives underlying rCBDC. Globally, just a few central banks have launched a rCBDC, but many more are researching or experimenting with rCBDC. Areas that central banks are exploring include designing the underlying infrastructure, testing technical features such as offline functionality and programmability, and the allocation of public-private sector roles. The consideration of cross-border use cases is still in the early stages.

Nevertheless, appropriate domestic rCBDC design may pave the way for cross-border use cases in the future. On the one hand, interoperability with existing payments infrastructure is crucial for user convenience domestically and an enabler of access to cross-border payments. Also, while experimentation focuses on technical feasibility, an efficient business model is important for sustained adoption. On the other hand, separate architectures for domestic and cross-border CBDC systems may be considered. Each architecture could then have different requirements, for example for identity management, governance, AML/CFT compliance, and liquidity management. Some countries may need to consider adding capital control-related features to their CBDC design to ensure compliance with capital flow regulations.

Access to and interlinking of rCBDC across borders are perceived to raise technological, legal and governance challenges. Speakers highlighted the need for clear rules for non-residents' access to rCBDCs to prevent bypassing current regulations and designing harmonised systems that ensure compliance with AML/CFT requirements. Technology could help, for example, to improve identity and KYC practices. Speakers also noted that more work is needed to establish appropriate governance structures and management frameworks as a precondition to facilitate international CBDC payments via interlinking. Some hold the view that international standard setting bodies and fora have a role in laying out common standards to facilitate interoperability and harmonization of CBDCs.

Further examination is needed to build cross-border functionalities into a rCBDC. The panel highlighted the need for central banks to continue investigating options as their domestic CBDC work progresses. In this context, a question arises as to how much of the required cross-border functionality should be provided by central banks versus the private sector. Early coordination

[6] See for example Project Aurora of the BISIH Nordic centre.

among stakeholders can help to create an environment that allows for smooth and efficient cross-border payments. This is particularly important for emerging market and developing economies for which remittances are a key pillar.

Putting technology into practice: governance arrangements for cross-border CBDC

Speakers acknowledged that the design of governance frameworks for cross-border CBDC arrangements might benefit from the experience of existing payment systems, such as TARGET2 of the Eurosystem and Buna in the Arab region. These initiatives show that it is important to define who the decision-making body would be for system-level, cross-jurisdictional and jurisdiction-specific issues, and to detail how decisions would be taken, eg based on unanimous, majority or unilateral votes. Different models could be used, such as one where there is a single governance and a single platform, while participants join via their own central bank and advisory functions are replicated at the national level. Other governance aspects that may need to be considered related to the applicable legal and regulatory framework, the operational entity, scheme ownership, operational management protocols, budgeting and resourcing.

One of the key challenges of governing cross-border payment systems are the significant differences in legal and regulatory frameworks, economic policy stances, and privacy concerns. There is no one-size-fits-all governance model: different use cases, eg systems used for remittances versus those for wholesale payments, might benefit from different governance arrangements. The way governance measures are implemented may also differ depending on the CBDC architecture chosen. For example, privacy features could be directly coded into a common multi-CBDC platform. Also, governance models of payment schemes may differ from the governance structure of payment infrastructures. Given these challenges, building consensus is crucial for achieving a solution that is resilient and beneficial to all jurisdictions, but it will likely take considerable time.

Any governance and oversight arrangement for payment system(s) should be guided by core international standards, such as the CPMI-IOSCO principles for financial market infrastructures. Governance is a matter of trust and involves various dimensions, including legal aspects, and regulation. Building trust among the parties involved is crucial. Starting with bilateral agreements and gradually expanding to additional jurisdictions can help build trust at the grassroots level and incentivise parties to work to resolve differences in legal and regulatory frameworks. Existing fora where central banks and governments meet could also serve as a good starting point.

Balancing potential risks and benefits: economic considerations for cross-border CBDC

Current frictions in cross-border payments result in costly remittances. One problem many emerging market economies face is limited market depth. A deeper and more liquid foreign exchange market offers more efficient price discovery and lowers the bid-ask spreads, which may eventually result into lower end-user costs. Therefore, it is important to better understand the role of technology, such as automated market makers, in enhancing market liquidity and facilitating currency exchange.

Allowing non-residents to hold and use a CBDC outside the issuing jurisdiction could have macroeconomic consequences. Although the attractiveness of a currency depends strongly on fundamental economic forces and trust in institutions, new technology requires central banks and other public authorities to understand the macroeconomic consequences and how different currencies may be used in the future.

The panel highlighted that cross-border usage of CBDC also calls for careful considerations of legal issues. To date, jurisdictions have very different approaches to rules and regulations around identity management, privacy regulation and AML/CFT. Therefore, cross-border use of CBDCs warrants further investigation and international cooperation. Although ambitious, a principles-based approach and a global taxonomy could help to address differences in definitions and legal consequences and to ensure a harmonious global CBDC system.

Conclusion

The conference served as a reminder that cooperation and knowledge sharing is an important aspect to enhancing cross-border payments. The ongoing work and collaboration between the BISIH, CPMI, IMF and WB aims to support the G20 goal of faster, cheaper, more accessible and more transparent cross-border payments. CBDCs provide an opportunity to develop domestic and cross-border payment arrangements from scratch and to overcome some of the legacy issues of existing payment systems. As central banks' work on CBDC gradually matures, the nature of the international monetary system and payments will change. Collaborative efforts are necessary to create a global payment system that works for everyone.

Building safe, efficient, and resilient cross-border CBDC arrangements comes with various challenges, many of which also apply to traditional cross-border payment arrangements. Governance and legal frameworks were two recurring challenges mentioned throughout the conference. Private sector involvement and establishing public-private partnerships in the design of cross-border CBDC elements are key inputs to make progress on cross-border payments.

Annex: Overview of keynote speaker and panellists

Keynote speakers

Tobias Adrian (Financial Counsellor and Director, Monetary and Capital Markets Department, IMF)
Sir Jon Cunliffe (Chair of the CPMI)
Jean Pesme (Global Director, Finance, Competitiveness, and Innovation, World Bank)
Cecilia Skingsley (Head of the BISIH).

Panellists

Ziad AlYousef (Deputy Governor, Saudi Central Bank)
Fabio Araujo (Project Lead Digital Brazilian Real Initiative, Central Bank of Brazil)
Morten Bech (Head of BISIH Swiss Centre)
Maria Teresa Chimienti (World Bank)
Piero Cipollone (Deputy Governor, Bank of Italy)
Sarah Hammer (Professor and Managing Director, Wharton School of the University of Pennsylvania).
Claudine Hurman (Director of Infrastructures, Bank of France)
Tommaso Mancini-Griffoli (Deputy Division Chief, IMF)
David Mills (Senior Associate Director, Board of Governors of the Federal Reserve System)
Sasha Mills (Executive Director of Financial Market Infrastructures, Bank of England)
Sopnendu Mohanty (Chief Fintech Officer, Monetary Authority of Singapore)
Bénédicte Nolens (Head of BISIH Hong Kong Centre)
Kwarne Oppong (Director of FinTech and Innovation, Bank of Ghana)
Suvendu Pati (Chief General Manager, Fintech Department, Reserve Bank of India)
Tara Rice (Head of the CPMI Secretariat)
Mathee Supapongse (Deputy Governor, Bank of Thailand)
Hyun-Song Shin (Economic Adviser and Head of Research, BIS)