

The potential of central bank digital currencies for cross-border payments*



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This Policy Brief presents the key findings of a survey of central banks about their engagement in central bank digital currency (CBDC) and it discusses these findings in the context of cross-border payments. Nine out of 10 central banks are exploring CBDCs and more than half consider it likely or possible they will issue a CBDC in the foreseeable future. Work on CBDCs is increasingly driven by motivations related to cross-border payments efficiency. Many cross-border payments today are slow, expensive, opaque and difficult to access. Central banks believe CBDCs are capable of alleviating some of the underlying pain points, such as the limited operating hours of current payment systems and the length of current transaction chains. For CBDCs to improve cross-border payments, however, central banks must make fundamental decisions on foreign access and how CBDCs connect across jurisdictions.

*We thank Tara Rice for her valuable comments. The views expressed in this article are those of the authors and do not necessarily reflect those of the Bank for International Settlements, the Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI) or its member central banks.

Introduction

Central banks have shown an increasing interest in CBDCs over the past years (Boar and Wehrli (2021)). A CBDC is a central bank-issued digital form of money. When intended for use by the general public for storing value and making payments, it is referred to as a “retail” CBDC. A “wholesale” CBDC targets a different group of end users – financial institutions (Bank for International Settlements (2021)).

In addition to safeguarding and improving financial inclusion, financial stability and domestic payments efficiency, retail and wholesale CBDCs could play an important role in addressing long-standing challenges in the cross-border payments market (CPMI et al (2021)). An ambitious, multi-year G20 programme is under way to make cross-border payments faster, cheaper, more transparent and more accessible. One of the building blocks of this G20 programme is tasked with exploring how to factor an international dimension into CBDC design.¹ As part of this work, the Bank for International Settlements’ Committee on Payments and Market Infrastructures (CPMI), BIS Innovation Hub (BISIH), International Monetary Fund (IMF) and World Bank (WB) published a G20 report in July 2022 that presents different design options that would allow a CBDC to be used across borders (CPMI et al (2022)).

Leveraging the work of Kosse and Mattei (2022), this Policy Brief summarises the results of the latest Bank for International Settlements’ survey among central banks about their engagement in CBDC work, as well as their motivations and expectations for issuing one. This survey was conducted in the autumn of 2021, for the fifth consecutive year.² It was answered by a record 81 central banks, whose jurisdictions represent about 75% of the world’s population and nearly 95% of global economic output. Based on the July 2022 G20 report of the CPMI, BISIH, IMF and WB, this Policy Brief then discusses how the cross-border potential of CBDCs could be fully harnessed.

Central banks’ work on CBDCs continues to advance

Over the past years, central banks’ work on CBDCs moved into more advanced stages. In 2021, the share of central banks actively engaged in some form of CBDC work grew to 90% (Graph 1, first panel). Also, an increasing number of central banks are in the advanced stages of exploring a CBDC. On average, the share of central banks developing a CBDC or running a pilot almost doubled from 14% to 26%. More than 60% are conducting experiments or proofs-of-concept. The work on retail CBDCs is at a more advanced stage than the work on wholesale CBDCs. Almost one fifth of central banks are developing or testing a retail CBDC, which is twice the share of central banks building or piloting a wholesale CBDC (second panel).

More than half of central banks consider it a possibility that they will issue a CBDC in the foreseeable future (third panel). Overall, the share of central banks that indicated to be likely or possible to issue in the short or medium term is larger for retail CBDC (68%) than for wholesale CBDC (54%). Also, as in previous years, this likelihood is generally higher for emerging market and developing economies (EMDEs) than for advanced economies (AEs).

The issuance of a CBDC requires a legal framework that provides central banks with the authority to do so. Compared with last year, the share of central banks with such a legal authority increased from 18% to 26%. In addition, about 10% of jurisdictions are currently changing their laws (fourth panel). Thus, more than a third of central banks will soon have legal authority to launch a CBDC.

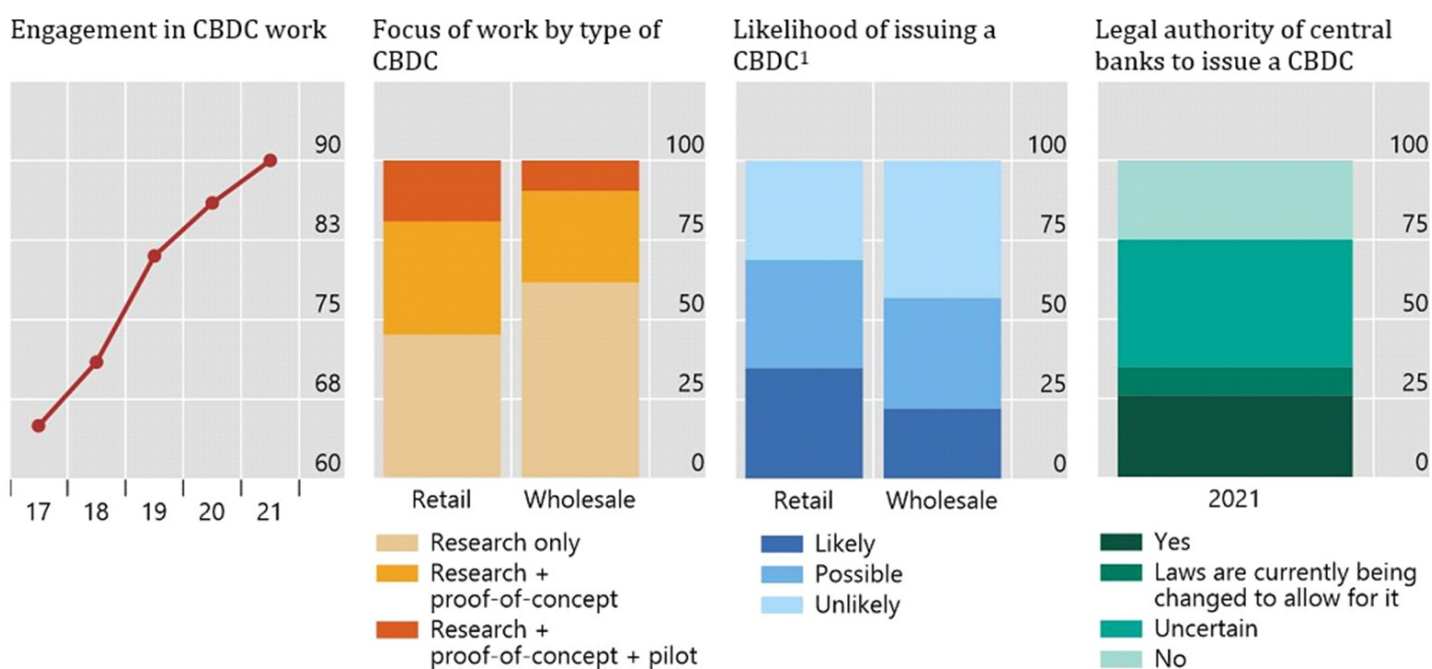
¹ See CPMI (2020a, 2020b) for an overview of all 19 building blocks of the G20 cross-border payments programme.

² The first survey informed a CPMI and Markets Committee report on CBDCs published in March 2018, and the second, third and fourth surveys were published as BIS papers in 2019, 2020 and 2021 respectively (see CPMI-MC (2018), Barontini and Holden (2019), Boar et al (2020), Boar and Wehrli (2021)).

Status of central banks' CBDC work in 2021

Share of respondents

Graph 1

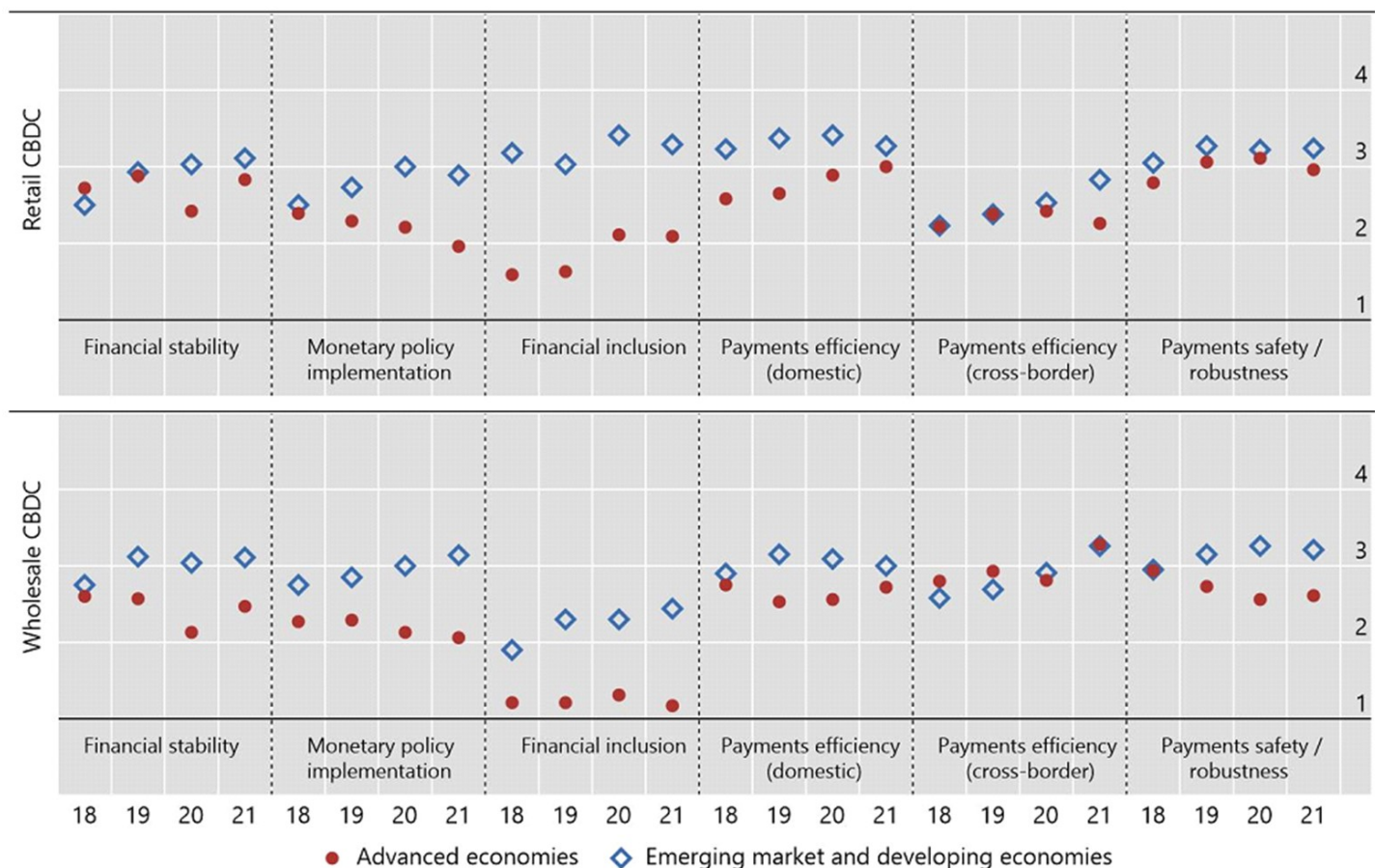


¹ Each bar represents the percentage of respondents that is likely/possible/unlikely to issue a CBDC either in the short term (1–3 years) or in the medium term (1–6 years). “Likely” combines “very likely” and “somewhat likely”. “Unlikely” combines “very unlikely” and “somewhat unlikely”. Source: Kosse and Mattei (2022).

Motivations for issuing a CBDC

Average importance

Graph 2



(1) = not so important; (2) = somewhat important; (3) = important; (4) = very important. Source: Kosse and Mattei (2022).

Cross-border payments efficiency among key drivers of CBDC work

As in previous years, the motivations to consider issuing a CBDC differ between AE and EMDE central banks and between retail and wholesale CBDCs. Overall, the retail CBDC work in AEs is driven mainly by domestic payments efficiency, payments safety and financial stability considerations. The same reasons are also important drivers for the retail CBDC work in EMDEs, however, their CBDC engagement is, above all, driven by financial inclusion-related motivations (Graph 2, top panel).³

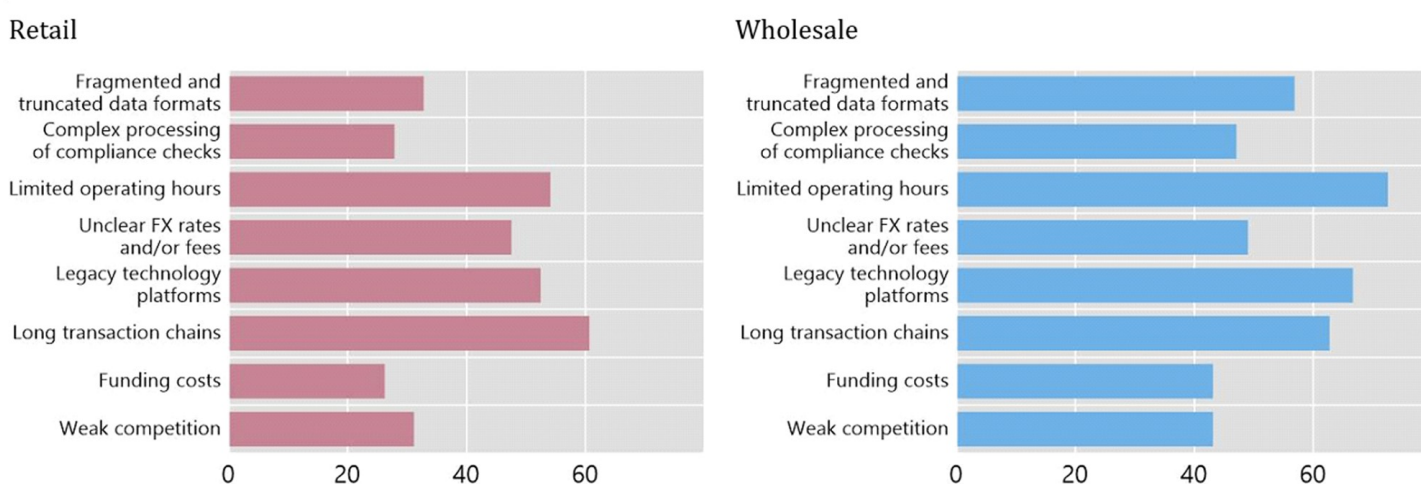
Central banks also consider cross-border payments efficiency as one of the drivers of their CBDC work. Over the past years, enhancing cross-border payments has become a greater motivation for the retail CBDC work in EMDEs, and in 2021 it became the number one motivation for wholesale CBDCs, both in AEs and in EMDEs (Graph 2, bottom panel).⁴ Indeed, many ongoing and completed wholesale CBDC projects specifically focus on cross-border payments. A recent example is Project Dunbar, which explores the use of CBDCs for international settlements and was conducted by the central banks of Australia, Malaysia, Singapore and South Africa together with the BISIH.⁵

The survey results show that central banks believe that CBDCs could address various frictions in the current cross-border payments ecosystem. Examples of such frictions include fragmented data formats, complexity of compliance checks, unclear foreign exchange rates, as well as legacy technologies, funding costs and weak competition (Graph 3). On average, the length of the transaction chains and limited operating hours of the current payment systems, as well as legacy technology platforms were the most often cited frictions. Graph 3 also shows that central banks perceive wholesale CBDCs to be more capable than retail CBDCs of addressing cross-border frictions.

Cross-border frictions that a CBDC could address¹

Share of respondents

Graph 3



¹ The sample includes jurisdictions that consider efficiency in cross-border payments as a somewhat important, important, and very important driver of their CBDC engagement. Source: Kosse and Mattei (2022).

³ See Auer et al (2022) for a discussion of how CBDCs can play a role in financial inclusion.

⁴ These conclusions on the motivations of wholesale CBDCs also hold when looking only at the subsample of respondents that participated in all previous years.

⁵ For more details on Project Dunbar and other cross-border CBDC projects, see www.bis.org/about/bisih/projects.htm?m=1_441_720. See also Auer et al (2021).

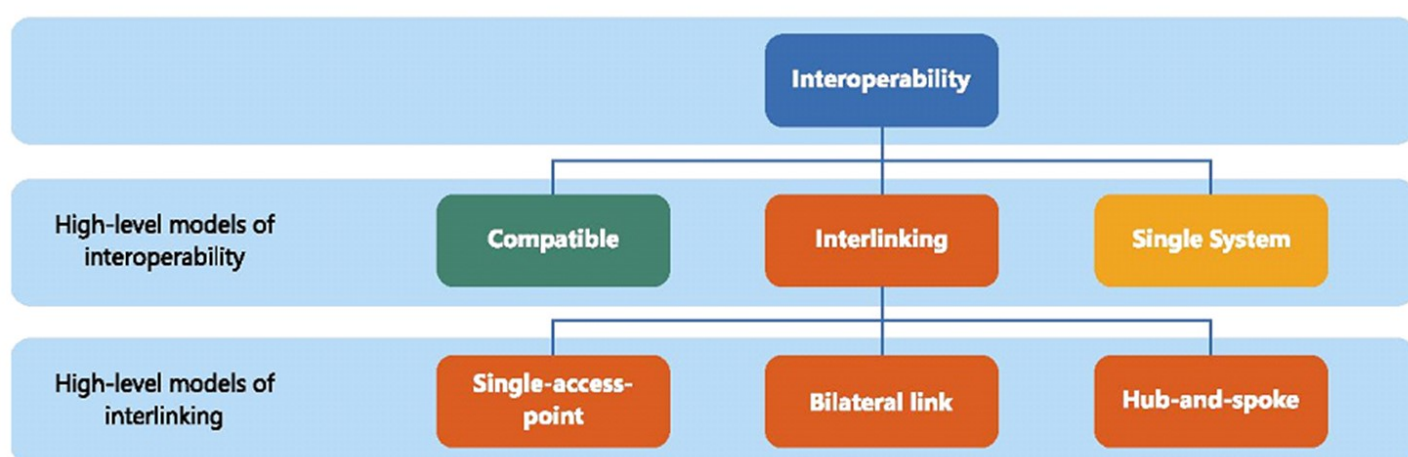
How to ensure CBDCs can be used for cross-border payments?

Interoperability between different CBDC systems is key to ensuring that CBDCs can be used across borders. Such interoperability allows banks and other payment service providers (PSPs) from different systems or jurisdictions to transfer payments between them, so that end users can seamlessly transact with each other regardless of their geographic location or choice of PSP (Boar et al (2021)).

The July 2022 G20 report of the CPMI, BISI, IMF and WB (CPMI et al (2022)) outlines a number of ways to achieve this interoperability (Graph 4). One way is to ensure individual CBDC systems are compatible with each other, for example through common technical standards and data requirements. This would reduce the operational burden on PSPs for participating in multiple systems. Another option is to interlink different CBDC systems, such that participants in each system can transact with each other without participating in the same system. A third option is for central banks to build a single system hosting multiple CBDCs. No matter which model is chosen, interoperability involves multiple dimensions. Technical interoperability is fundamental, but not enough; for CBDCs to be truly interoperable, harmonisation is also needed across legal and regulatory frameworks and business rules.⁶

High-level models of interoperability and interlinking of CBDC systems

Graph 4



Source: CPMI et al (2022).

For CBDCs to improve cross-border payments, central banks must also make critical choices on cross-border access, such as whether their CBDCs can be accessed and held by foreign financial institutions and non-residents such as tourists or businesses abroad. Also, the conditions under which such cross-border access and use would be allowed must be determined, such as whether cross-border transactions would be subject to transaction fees or limits.

Thinking about cross-border interoperability and access at the outset could mitigate the risk that domestic CBDC work unintentionally creates barriers to cross-border CBDC payments. One of the key benefits of CBDCs is that they, to some degree, are a “clean slate”; which means that central banks are able to consider the above cross-border functionalities during the initial development phase. However, this clean slate advantage has an expiry date. Since the CBDC work of many central banks has moved from research towards development and implementation, now is the time to factor the cross-border dimension into the CBDC design.

⁶ See Boar et al (2021) for a discussion on the different dimensions of payment system interoperability.

Each cross-border CBDC access and interoperability option poses trade-offs, such as between investment costs and scalability, between addressing illicit finance and protecting privacy, between offering freedom to use a CBDC outside the issuing jurisdiction and minimising negative spillovers from capital outflow or currency substitution. Moreover, central banks have different motivations for exploring or developing a CBDC. Thus, there is no “one size fits all” model for access and interoperability. For this reason, international cooperation and coordination are crucial to ensure that CBDC systems are built with the flexibility to adapt both to a changing world and the different CBDC designs likely to be chosen. ■

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