

# Could Central Bank Digital Currencies change the way we pay for trade?

24 April 2023 | Authors: David Song, Max Mandich, Stephen Adams

The growing debate around Central Bank Digital Currencies (CBDCs) has begun to focus increasingly on the question of cross-border payments. A number of pilots around the world have begun to test the practical questions of whether CBDCs can improve global trade invoicing. These discussions and the review of pilots have generally been confined to CBDC specialists and a certain kind of analyst attracted to their geopolitical implications. But firms with global supply chains should take a practical interest in the debate around CBDCs. Here we use the 2022 mBridge pilot to draw out some of the key themes.

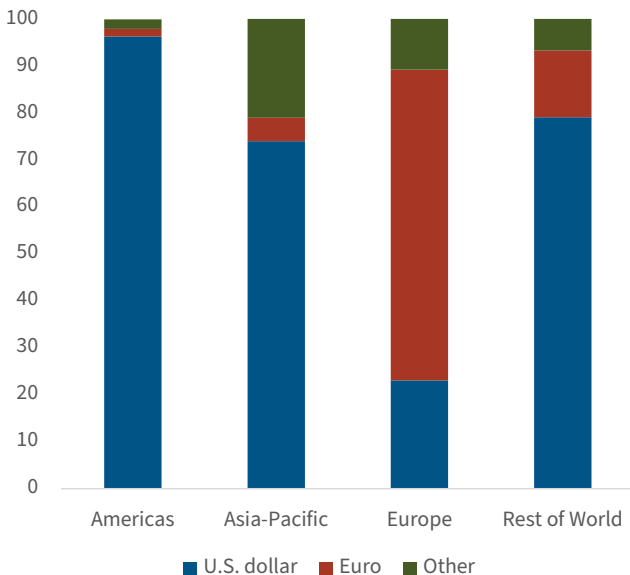
Central Banks cite cross-border payment efficiency as one of the most important policy rationales for developing interoperability frameworks for CBDCs. At present, paying a supplier cross-border either involves a complex and expensive remittance process at the retail level, or a modestly less complex and expensive

chain of correspondent banks at the wholesale one. Large jurisdictions are by and large prioritising the exploration of a retail CBDC. But some are considering the role of wholesale interoperability and actively testing settling on a cross border basis. A material element of this interoperability could in principle be to provide an alternative to the current arrangements for settling import-export transactions.

The basic problem of settling trade transactions is simply the requirement that two entities in different jurisdictions be able to transact in their respective currencies, or via a mutually agreed third currency - usually the dollar, which accounts for about 40% of trade invoicing, most of which does not involve US counterparties. This is facilitated by the various levels of availability of these currencies in the market and the intermediaries that can provide that matching service.

A system of interlinked wholesale CBDCs potentially simplifies this chiefly at the level of the complexity of the intermediation chain. In the mBridge platform piloted by China, Hong Kong, Thailand and the UAE, a single commercial bank in one jurisdiction was able to pay a single bank in another on behalf of corporate clients with CBDC issued against their reserves at their domestic central bank. This has two major benefits: simplification (and reduced frictional costs) and payment in reliable and directly redeemable central bank money. The platform can also be used to exchange the participating CBDCs for each other in defined ways.

**FIG 1: AVERAGE CURRENCY COMPOSITION OF EXPORT INVOICING 1999-2020**

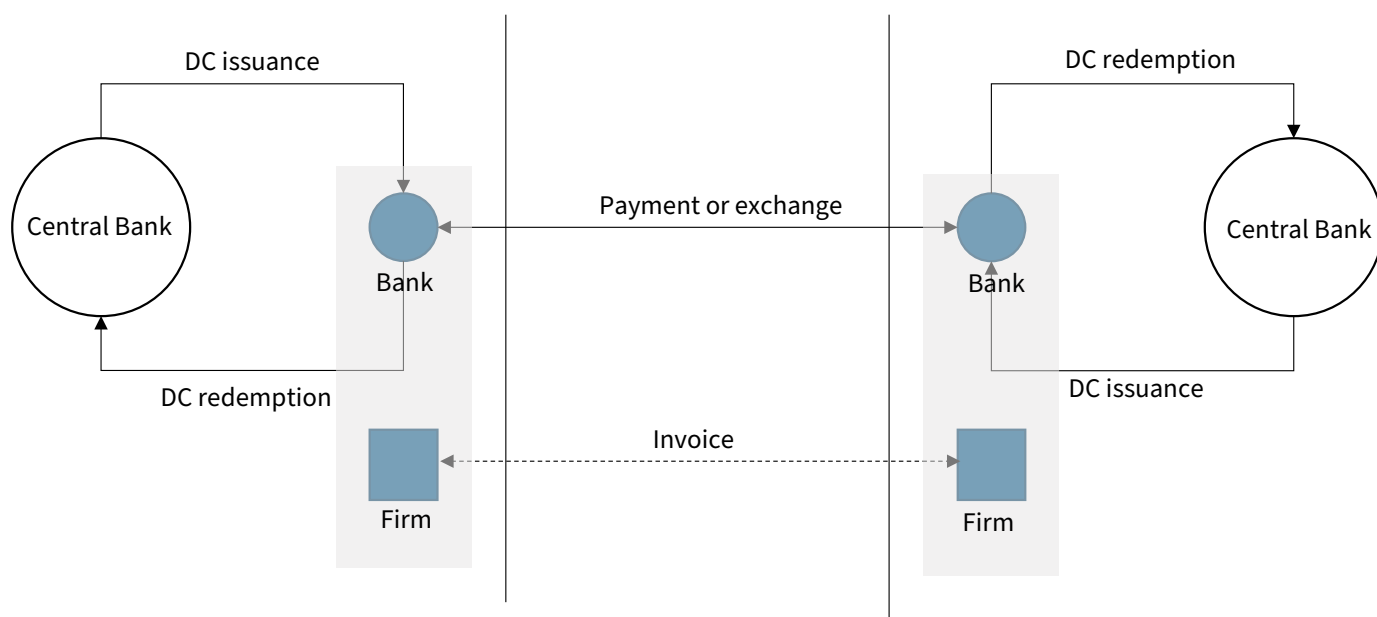


## DESIGNING FOR CROSS-BORDER CBDC USE

What are the questions with the expansion of a platform such as mBridge? Some of the most important are expressed by its (initial) design. One of the basic concerns with cross-border use of CBDCs among Central Bankers is the potential development of pools of their currency offshore in a way that interferes with aspects of monetary

**FIG 2: BASIC MBRIDGE PILOT DESIGN**

The initial mBridge pilot had four central bank nodes: China, Hong Kong, Thailand and the UAE



policy. In practice, there are ways to design wholesale CBDC platforms which deal with this. They could cap holdings of the currency by non-resident banks, or time-limit the useability of unredeemed digital units, which is much easier in a retail context, but more difficult to control in a wholesale environment if a jurisdiction wants to improve on current processes.

The mBridge platform ensures that central banks have control over the issuance and redemption of their CBDC on the platform, linked directly to domestic reserves and with redemption only available to domestic banks. It requires that one leg of a currency transfer is always the jurisdiction of the currency being transferred, which is designed to limit the scope for ‘offshore’ pools to develop. The platform is obviously limited to the participating CBDCs, which also reduces the currency pairing potential.

There are a range of other legal and practical questions that the mBridge pilot and others like it have had to consider. Legal compatibility of the digital currencies is one. Data privacy is another. On mBridge, user identities are protected by strict parsimony in data sharing and a ledger design that limited access to shielded protected user data. But the data storage requirements of the platform still raise protection and privacy questions that any system of this kind will have to manage. Future pilots can be expected to explore distributed options to limit data pooling.

This last question also points to the potential question of platform governance. A platform like mBridge can in principle be operated on a largely decentralised basis, hosted by each participating central bank, with governance functions agreed between them. However, if it is ultimately concluded that there are functions

best delivered centrally, decisions will need to be made on what such a body might look like, how it would be constituted and funded. Traders familiar with the design questions around interoperable single windows for processing goods trade with immediately recognise the parallels.

### **THE GEOPOLITICS OF CROSS-BORDER PAYMENTS PLATFORMS**

But the biggest issue is simply trust and the political will to develop interoperability. It is no accident that the initial pilots have been between jurisdictions with a mix of high trade volumes and a relative degree of strategic alignment. This suggests that the most likely candidates for evolving frameworks are going to be either regional groupings with a tradition of closer cooperation - perhaps expressed in the first instance by deepened regional preferential trading frameworks, or idiosyncratic pairs or groupings where dispersed geography still produces high trade volumes and where politics will allow this level of central bank coordination.

This is where geopolitics will come in. It is not impossible to see something like mBridge evolving from its Chinese cornerstone into a regional platform mapped onto China’s regional trading ecosystem. Whether it could expand beyond that is a question of geopolitics as much as anything else. The same would be true of most other regional variants once they push up against the developing blocks of global strategic competition. These challenges become particularly important important for the United States, where there is firm scepticism about any platforms that undermine the centrality of the US dollar to the global economy, and in doing so weaken the capacity of the US to drive policy through that central role.

Perhaps the perceived network effect of the most effective platforms could take on a logic of its own, over time. But that would require serious political compromises of the kind that seem to be getting less likely rather than more. In this respect, wholesale CBDC platforms could be no different from other commercial-strategic groupings, from Free Trade Agreements (FTAs) to groups of states adopting technical standards for interoperability. New idea, same basic geopolitics.

scope to transact in third currencies such as the dollar, or a series of new platforms that are more efficient, but also exclusive and limited to a range of privileged transactions. At a regional level - for example, inside the EU single market, or in dense regional trading groups - the use case for the latter may still be strong. In any case, this is an area to watch.

For trading businesses, one initial conclusion might be that the potential of CBDCs for cross-border use may ultimately present a choice. This is between a complex, relatively inefficient and expensive current model which is nevertheless highly inclusive and provides a wide range of currency pairings, including the important

**FIG 3: SELECTED CROSS-BORDER PAYMENTS PILOTS**

	<b>PROJECT MERIDIAN</b>	<b>PROJECT MBRIDGE</b>	<b>PROJECT MARIANA</b>	<b>PROJECT DUNBAR</b>
<b>PILOT YEAR</b>	2023	2022	2022	2021
<b>PARTICIPANTS</b>	UK (additional participants expected in 2023)	China Thailand Hong Kong United Arab Emirates	France Singapore Switzerland	Australia Malaysia Singapore South Africa
<b>OVERVIEW</b>	Project Meridian tests using a blockchain to connect to real-time gross settlement (RTGS) transaction systems, using open standard application programming interfaces (APIs). In the pilot program, the Meridian prototype was used to conduct English and Welsh housing transactions.	The pilot involved running real-value transactions across 20 commercial banks in the four participating jurisdictions, to test making multi-currency settlements using a common platform based on distributed ledger technology (DLT).	Project Mariana investigated the use of automated market-makers (AMMs) for settlements. The project tested the cross-border exchange of hypothetical digital Swiss franc, euro, and Singapore dollar wholesale central bank digital currencies.	Project Dunbar focused on the development of a common DLT platform prototype for multi-CBDC settlement. It also explored different governance and operating designs to support G20 efforts on building CBDC infrastructure.
<b>STATUS</b>	The Bank of England plans to further test the Meridian system in other asset markets in 2023, including for securities and cross-border settlements.	The mBridge pilot was conducted over six weeks in 2022. Collaboration among pilot countries remains ongoing.	The project was conducted over six-months in 2022. Conclusions are expected to be published by mid-2023.	Concluded in March 2022 after successfully building and testing two prototypes. Final report published in early 2022.

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