CHAPTER 7

Can central bank digital currency transform digital payments?

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An increasing number of central banks are exploring the possibility of creating their own version of digital money, typically referred to as central bank digital currency (CBDC).[1] By now there is a clear consensus on the potential benefits and costs of CBDC, even if there is an ongoing debate on their relative size (e.g. Bank of England 2020). Most of the initial discussions were focused on the potential risks of bank disintermediation, in particular in times of crises (Andolfatto 2021, Brunnermeier and Niepelt 2019, Niepelt 2020). While the debate on the significance of these costs might not be fully resolved, it has produced a set of viable proposals to limit this risk.[2]

In this chapter, I focus on the other side of the arguments – the benefits of CBDC. The list of potential benefits is quite diverse but can be grouped into two big themes:

- the need for a public form of money that ensures financial inclusion and is a key pillar of the monetary system; and
- the importance of offering an alternative that competes with newly created forms of private digital money.

I argue that achieving each of these goals might require very different instruments and that the creation of retail accounts at the central bank can only deliver a small subset of the claimed benefits. For the others, we need an overhaul of the way the payments rails work in a digital world, one that involves different tools that are, to a large extent, orthogonal to the creation of CBDC.

THE EASY PART

Central banks guarantee the value of the unit of account through their management of monetary policy and the provision of an asset – physical currency – that is the cornerstone of that trust (BIS 2021c). Private forms of money – bank deposits – coexist with physical

1 Recent surveys by the Bank for International Settlements suggest that more than 85% of central banks are actively engaging in the analysis and development of CBDC, up from around 65% three years earlier (Auer et al. 2021, Boar and Wehrli 2021).

2 Either by setting a cap on CBDC balances or by allowing for tiered interest rates to dissuade the general public from transferring large bank deposits to CBDC accounts (Bindseil 2020, BIS 2021b).

currency, but individuals always have an option to redeem those assets for cash. In addition, central banks provide finality in payments by settling claims between banks when individuals make use of private money for payments.

As payments become more digital and the role of physical currency decreases, central banks are concerned about their diminishing role and the potential impact on trust in the monetary system. The Riksbank, an early mover in this area, summarises it well: "*There is a risk of basic trust in the Swedish krona and the monetary system being undermined when it is no longer possible for the general public to change their banks deposits into state money*" (Söderberg 2019). Or in the words of the ECB (2020), CBDC is the "*natural transition from currency*".

The creation of retail CBDC accounts will fully address this concern. It will create a digital alternative to physical currency that will maintain the role of central banks in ensuring the value of the unit of account.[3] In addition, achieving this goal does not require that CBDC becomes widely used. Today, in many countries, individuals mostly rely on digital forms of payments, but the existence of cash and its availability still provides an anchor to the unit of account.

THE HARD PART

Central banks want more than just a replacement for cash. They also want an alternative to private forms of payments to ensure a competitive landscape, one that includes everyone, is efficient and adds resilience. To reach these objectives, CBDC would need to be widely used, accepted everywhere. And if resilience is indeed a required goal, it would need to run in parallel with private forms of payments.

To achieve this goal, central banks need a lot more than just creating accounts at the central bank. For digital money to become a successful means of payment, it needs to be used everywhere (peer-to-peer (P2P) transfers, accepted as payment by merchants). Here is where central banks find themselves in a difficult position. In principle, central banks could aim to create an efficient, ubiquitous parallel infrastructure for payments.[4] But, for many good reasons, central banks do not want to do this. Recreating a parallel system of payments for the sake of resilience seems wasteful and central banks might lack the necessary capabilities to do so (ECB 2020). As central banks recognise these limitations, they are exploring hybrid solutions (Auer and Böhme 2020, BIS 2021d). A hybrid solution requires collaboration with private entities that serve as intermediaries, facilitate customer-facing tasks, provide the last mile of the payment system and compete with each other.

3 Of course, central bank money already exists in digital form as reserves of commercial banks at the central bank. But the fact that the public does not have direct access to it means that it cannot be seen as a digital replacement to currency.

4 Some have suggested that making CBDC legal tender would be a key step to ensure its adoption. But the notion of legal tender for digital payments is not a practical one and it is unlikely to be effective (Bossu et al. 2020).

But relying on the private infrastructure of payments will hinder the ability of CBDC to achieve all its goals. For example, central banks recognise that "*resilience benefits would need to be assessed against the costs*" required to provide it. The same can be said about inclusion: private payment providers might still lack the incentives to provide affordable services everywhere, so "*legislation requiring basic access could be proposed*" (BIS 2021d).[5]

More fundamentally, what about the goal of making CBDC a widely used efficient payment technology? Here is where things get more challenging. Digital payments are as much about the underlying assets as about the payment technology that facilitates the transaction (Fatas and Weder di Mauro 2018). A modest goal could be to facilitate P2P transactions within CBDC accounts, replicating what private platforms such as Venmo or WeChat do today. But this is not enough to satisfy many of the CBDC goals.

Making CBDC an everyday payment technology requires full integration and interoperability with all the networks of the current ecosystem of payments. This is highlighted in the recent report by BIS and seven major central banks that emphasises the importance of interoperability for CBDC success (BIS 2021d). But achieving this goal requires a substantial rewriting of the payment rules and a rethinking of what the future infrastructure should look like.

Today, interoperability between banks is guaranteed through the combination of a single settlement system run by the central bank (all 'wallets' are connected through a node) and a set of unique digital identifiers (bank accounts). But as we add additional electronic wallets or payment rails run by FinTech and BigTech firms, the payments ecosystem becomes very complex. Today, transfers or payments across networks are facilitated mostly by banks operating as intermediaries, with the help of credit card companies that often provide the infrastructure. In some jurisdictions, banks and credit card companies hold substantial market power that results in inefficiencies and high costs. FinTech and BigTech are challenging this power by attempting to lure individuals into their own ecosystem. But that comes at the cost of more complexity and limited interoperability. This is the environment in which CBDC will be launched. Reaching the goal of interoperability requires a broad rethinking of the rules, the roles of intermediaries, the potential market power of incumbents or the power that BigTech could build over time.

As an example of the difficult trade-offs, one could argue that CBDC and interoperability might, in some cases, increase the market power of BigTech firms. Today, in regions such as the US and Europe, BigTech has not gained much traction when it comes to digital payments because of the power that banks and credit card companies exercise over the network of payments. What would happen if payments could easily be done using any form of digital money? And what if CBDC became the pillar for private providers to deliver an

5 It is also unclear what is required to achieve inclusion in digital payments. BIS (2021a) cites as a factor the fact that in a country like France, 13% of adults do not own a mobile phone. How will CBDC change that?

efficient settlement or to design successful stablecoins around it?[6] In that environment, interoperability and safety of the underlying assets would mean that individuals would be indifferent between different electronic wallets. The decision to use one or the other would entirely depend on the benefits that the payment technology offers. Some of these benefits are likely to be linked to other digital activities originating in the ecosystem where the payments take place. BigTech firms are likely to have the upper hand when it comes to this race. CBDC could not compete with them.[7]

CONCLUSION

For central banks concerned about the disappearance of currency and the need to have a public form of digital money, retail CBDC is the solution. Accounts at the central bank available for everyone will become the digital equivalent of currency.

But when it comes to the goal of ensuring a competitive, efficient and inclusive payment system, the issues are more complex and they have to do more with the regulatory and technology environment of payment systems. CBDC is in no way a substitute for the needed reforms to the architecture of payments. In fact, we have seen, without CBDC, great progress in some countries when it comes to the payment infrastructure.[8] Fast payments, access of non-banks to the central bank settlement system, the use of digital IDs to improve interoperability or even the promise of seamless cross-border payments by connecting national payment systems are all examples of increased efficiency, inclusivity and competition in payments. On the positive side, the creation of CBDC could become a catalyst for all these changes even if the tools required to reform the payment system are, to a large extent, orthogonal to the creation of CBDC. The biggest risk is that the attention on and energy put into CBDC becomes a distraction for central banks and regulators, moving the focus away from the necessary regulatory and technology changes.

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6 This is not just a hypothetical question. Diem (formerly Libra) in its white paper suggests that the creation of CBDC would facilitate the operation of its stablecoin (Diem Association 2020).

7 Safety of CBDC is unlikely to be a strong argument. Privacy is another one that is mentioned as a potential advantage (ECB 2021), but it is a complex issue as regulation might also impose strict privacy restrictions to private forms of digital payments.

8 India and Singapore just announced that in 2022 their fast payments systems will be linked through a set of unique account identifiers (www.mas.gov.sg/news/media-releases/2021/singapores-paynow-and-indias-upi-to-link-in-2022).

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