Institute and Faculty of Actuaries

12 June 2020

Bank of England: Discussion Paper on Central Bank Digital Currencies

The Institute and Faculty of Actuaries (IFoA) is a royal chartered, not-for-profit, professional body. We represent and regulate over 32,000 actuaries worldwide, and oversee their education at all stages of qualification and development throughout their careers.

Key points

1. The IFoA values the Bank of England's consideration of a Central Bank Digital Currency (CBDC) as part of its objective to address the consequences of a decline in cash, and appreciates that the exercise is of an exploratory nature at this time. As such, the IFoA views this phase as critical to ensure that all requirements are taken into consideration, and that some international lessons are drawn when they may be relevant to the Bank's illustrative model.

2. We recommend that the existing issues and risks pertaining to the digital transition, and those towards a less-cash society, should be considered in scope for future public policies on CBDCs and deployment solutions if ever relevant.

3. We also suggest that the implementation of a CBDC should integrate with a broader plan to manage the transition towards a less-cash society.

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1. The Institute and Faculty of Actuaries (IFoA) welcomes the Bank of England's ("Bank") discussion paper on Central Bank Digital Currencies.

2. Under its Royal Charter, the IFoA has a duty to advance actuarial science in the public interest. We support a wide range of research and knowledge exchange activities with members, external stakeholders and international research communities.

3. The IFoA's volunteer working party on "Cashless Society - Benefits, Risks and Issues" ("the working party") has taken a global interest in the topic of Central Bank Digital Currencies ("CBDC") for its relevance to existing issues with the transition towards a less-cash economy.

4. This response focuses on public policy principles which are salient to the discussion, structured on each of the three named building blocks for a CBDC: functional design, provision and economic design.

Functional design

5. The prospect of a CBDC is evidently a highly complex matter over which the Bank's Digital Currency Team has delivered a solid base for discussion and exploration. The IFoA is however concerned that the extent of the Bank's objectives and intent on carrying forward some existing principles will lead to a highly complex solution that will introduce further risks, costs, and challenges to financial stability, compared to limited benefits with a prospect of limited demand.

CBDC as mobile money

6. The Bank may wish to assess the option of operating without intermediaries (Payment Interface Providers - "PIP") in the effort to distribute a CBDC and manage retail accounts. Peer-to-peer technology such as QR codes through a mobile application is an option to power a national platform for transaction-free payments with CBDC, as some Asian countries have deployed, primarily to boost financial inclusion and digital transactions. The application could accept a balance to a set threshold and could enable offline transactions to limited amounts. Amongst benefits, this could simplify the operating model, meet the objective of a resilient means of payment in the ecosystem without relying on historically complex merchant infrastructure, as well as keeping the implementation and running costs low for the Bank and businesses. This could also avoid some of the risks relative to re-engineering financial intermediation.

Digital ID

7. Enabling CBDC as mobile money could entail embracing technology to enable a digital-banking only CBDC, deploying digital identification through biometrics. Such an inclusive process may engage vulnerable groups who are undocumented or lack proof of identification and address. This would add a dependency in a CBDC implementation programme and require major regulatory updates for acceptance of biometric data in lieu of documentary evidence for Know Your Customer processes.

Financial inclusion

8. The IFoA believes that any solutions must carefully take into account vulnerable customers and financial inclusion. There is a risk that by using intermediaries (or indeed any commercial solutions) the gap between 'haves' and 'have nots' will widen.

9. The discussion paper assumes that financial inclusion is sufficiently high in the United Kingdom, oblivious to the issues of vulnerable groups whose significance was highlighted by the Access to Cash Review and the ensuing creation of the Joint Authorities Cash Strategy group. The Working Party urges the Bank to review its assumptions and ensure that a CBDC solution addresses the requirements of cash users, as a CBDC may further cannibalise cash use and exacerbate their issues, one of which is the cost of access: as a public good, cash has been free to use, and work is ongoing to protect free cash withdrawals. The proposed model could lead to the automatic application of transaction fees that are known to exclude the poorer groups in society: indeed, elimination of transaction fees as a means to improve financial inclusion has been a major driver for the deployment of national payment platforms such as national QR codes in Asia. Introducing fees and obliging consumers to use private payment platforms to use electronic fiat money seems likely to increase exclusion. This may lead to additional questions of ethics with regards to the appropriateness of private companies charging for consumers to use a public good, especially if core user groups are vulnerable in diverse ways.

10. Should the Bank decide to move forward with the proposed intermediation model, it is not clear how it will ensure that the PIPs will serve unprofitable markets. Vulnerable customers are prone to financial exploitation, hence the concern that a consumer may be locked in an abusive contract, if their CBDC account is held with a PIP instead of the Central Bank. However, transaction data held by a PIP instead of the Central Bank could help retain a level of privacy from public bodies.

11. Furthermore, as part of a CBDC implementation, it would seem right, i.e. in the public interest, that the Bank should own and drive a financial inclusion programme so vulnerable groups can leap into the digital economy with access to mobile phones and the Internet to enable use of a CBDC mobile application, as suggested above. This may enable the Treasury to deliver welfare or helicopter money.

Cross-border transactions

12. Implementing a CBDC would open an opportunity for the Bank to avoid the risks of new forms of money creation, as explained in the discussion document. New entrants in this sphere continue to position their Unique Selling Proposition around global payments, compared to the enduring cost and latency of current transnational transactions. While implementing a CBDC poses a complex set of decisions and trade-offs domestically, scoping out cross-border payments from an early stage risks encouraging cryptocurrency firms to develop their market in that space, possibly impacting financial stability.

Provision - Payment Interface Providers - "PIP"

13. The proposal to use intermediaries (PIPs) to distribute CBDC accounts fits with the Bank's policy for private and public enterprises to innovate alongside one another. However, there could be a concern that the introduction of a new payment network with new technology within a complex operating model may create new points of failure, instead of improving the systems' resilience.

14. If developing an alternative payments infrastructure is a core objective, then further questions arise as to the privacy embedded into the network. The Bank's proposal to use a PIP is consistent with the goal that transactions should remain private. The rise of cryptocurrencies has been synonymous with underworld transactions. The level of public engagement with a CBDC will likely be directly correlated to the decision on the level of privacy offered. On one hand, privacy of transactions is expected by individuals and the CBDC accounts could be seen as a public good that offer the same anonymity as cash under the PIP system. Alternatively it may mean that the Central Bank will miss

an opportunity to have a greater influence on monetary policy with citizens. A CBDC could be used as a new payment network that would give Government greater visibility to our payments and so have positive implications on the payment of taxes and welfare.

15. Quantifying the demand for a CBDC remains an open question for the Bank, dependent on finding out more about the public motivations for using or not using a CBDC. The increase in digital transactions and the ease with which a CBDC could potentially be used may mean that the Bank places a greater emphasis on privacy in payments as the number of cash-based transactions declines. Another important factor will be the interest rate paid on CBDC deposits. Holding deposits with a commercial bank earns savers interest and so it may be anticipated by savers that they would earn interest on their savings with a CBDC account, particularly when the account is held with a PIP rather than directly with a Central Bank. A number of scenarios require evaluation:

    1. <u>If the interest rate paid by the PIP is less than that paid by a commercial bank</u> - it may be that the CBDC appears less attractive and so does not attract as much interest from citizens, which commercial banks would view as a benefit and would not threaten the fractional reserve banking system. However, this could detract from the Bank's objective to create a widespread alternative payments system as it would not scale up.

    2. <u>If the interest rate paid by the PIP is greater than or equal to that paid by a commercial bank</u>

        i) If PIPs don't offer additional services, such as lending facilities, then the interest rate earned should exceed or at least equal that earned at a commercial bank. This may attract additional users but would have implications on the fractional reserve system.

        ii) Depending on the structure of the PIPs, the reserves held against the CBDC deposits may be invested in a similar range of assets as that of commercial banks or in lower risk assets. It is not clear if the Bank would lend to PIPs at the same rate as commercial banks. The Bank should explore these policy areas that will have onward implications on the attractiveness of holding deposits in a CBDC to citizens and the willingness of PIPs to provide a service.

        iii) If the rate paid by the PIP is the same or greater than that paid by a commercial bank, the PIP may be able to operate at lower costs than a traditional commercial bank as the accounts held are digitally operated and the assets are held on the CBDC balance sheet. However this raises the question as to how will the PIPs earn revenue. If the PIPs are able to provide lending through a CBDC then the PIPs compete directly with commercial banks. This would have serious implications for fractional reserve banking. CBDC accounts attracting savings would move savings held in commercial bank accounts and would therefore limit the ability for commercial banks to lend.

    3. <u>If the PIPs are assumed to be commercial banks</u> - this would mean that a commercial bank would have traditional accounts as well as CBDC accounts. Given that the CBDC money held is on the Bank of England balance sheet, it is difficult to understand why an individual would choose to have a deposit account with a commercial bank when they expose themselves to the credit risk of the bank. The operational complexity of commercial banks operating two payment systems is beyond the scope of our response but poses interesting thoughts – such as whether this would mean greater participation in a CBDC; whether the due diligence for creating a CBDC account would be relaxed; whether the issues of a run on a bank would be reduced; and whether there would be any change in the approach to monetary policy.

16. If PIPs are intended to act as pure payment players, then existing merchant networks may engage with the innovation in order to prevent loss of market share. However, without the ability to provide additional services such as lending, there are few ancillary revenue platforms. In the new data economy, this raises the question of whether these PIPs would be allowed to exploit a free service with low transaction costs to use the data to inform targeted advertising at customers. It is not clear how excesses akin to those from social media would be prevented, or why individuals should trust a CBDC with a PIP.

17. The Bank may have little interest in handling the administration and operational burden of potentially millions of CBDC accounts under their direct control, hence the attractiveness of a two-tier model. Having an intermediary gives the Bank greater freedom to monitor and regulate from a distance, but the likely form of the PIPs is a very important consideration. Fiat money should be a free service and given the regulatory costs and technology required to build the CBDC there will be a cost to the PIP in making CBDCs available. This raises the question of how this cost would then be fed through to the CBDC users and what makes the service sufficiently attractive for users to want to participate. This requires further investigation by the BoE.

18. Although not in the context of a CBDC, India's recent history may provide some insights in a two tier model based on an ecosystem of PIP as narrow banks. A similar structure of having intermediate payment providers was completed in India but has been affected by the inability to attract and retain PIPs. Of the 11 payment services banks licensed "in principle" in 2015, 7 licences were confirmed, and only 4 were still operational in 2019. It appears India's payments bank models became unviable as a result of stringent regulations that affected both assets (lending ban) and liabilities (deposit ceiling), as well as high-capital ratios. Other reports mention elements such as bureaucracy, regulations against cross-selling and third-party partnerships.

Economic design

19. The design of a CBDC may open interesting monetary policy options. These include the ease at which helicopter money could be distributed to citizens, the payment of a basic income through a CBDC or offering a variable interest rate that could directly influence individuals' desire to save or spend according to the requirements of the wider economy.

20. The discussion paper lacks guidance on the opportunity for a CBDC to provide monetary policy alternatives. It is our view that great consideration should be put into the design of the CBDC to assess and support these potential options. The recent COVID pandemic has required extraordinary stimulus. The Central Bank quantitative easing has provided funding to the banks rather than to the individuals most at need. Although monetary policy design may not be a primary driver for implementing retail CBDC, the option to do so should be scoped in as part of the design. A two-tier model using PIPs may challenge the ability to deliver such monetary policy.

21. Questions arise as to the involvement of a PIP and their potential influence and independence in monetary policy, such as whether the PIP could determine the interest rate offered on a CBDC, if the PIP would be willing to engage in helicopter money payments, and whether the PIPs would act coherently to enforce policies.

22. We are not clear how the regulation of CBDC would work in the current regulatory regime. A NBER working paper states that competition between retail deposits and a CBDC will implicitly narrow the banking system. A narrow banking system would need regulation of the traditional banking system, to decrease the risks associated with fractional reserve banking performed by commercial banks. A

narrow banking system may emerge from the issuance of a CBDC as retail deposits currently held at commercial banks move to the deposit accounts held with the PIP. Deposit liabilities would be backed by the liquid assets of the PIP via the Central Bank. This in turn makes the CBDC banking platform a narrow bank, which may mean that commercial banks would see an outflow of deposits being their main source of funding. Whether such a narrow banking system actually develops depends on the outcome of competition between retail deposits and a CBDC. This competition determines whether the public is willing to shift their retail deposits from their bank accounts held at commercial banks, to their CBDC accounts (Broadbent, 2016).

Conclusion

23. The discussion paper could be enhanced to consider the above points, as well as evaluating the impact on other economic mechanisms such as seigniorage and international use of a CBDC. It could also elicit risks of not issuing a CBDC in the event that competing or neighbouring countries issue theirs.

24. If you would like to discuss any of the points raised please contact Matthew Levine, Policy Manager (matthew.levine@actuaries.org.uk).

Yours Sincerely,

John Taylor
President, Institute and Faculty of Actuaries