

Bank of England Publishes Discussion Paper: Central Bank Digital Currency

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The Bank of England (the BoE) recently issued a Discussion Paper on opportunities, challenges, and design of central bank digital currency (CBDC). The Paper seeks comments and information from the public.

Banknotes issued by the BoE constitute the most accessible form of money in the United Kingdom, but are being used less frequently. At the same time, fintech firms are offering new forms of money and new ways to use those new money forms for payments and other currency transactions. The BoE asks in its Discussion Paper whether it should, therefore, innovate to provide the public with electronic money to complement physical banknotes.

The Paper focuses on domestic retail payments, *i.e.* payments that involve households and businesses outside of the financial sector. This would cover payments for goods and payments at shops and online, recurring bills, gifts, rent, wages to employees, and payments to suppliers for goods and services.

Nature of CBDC

CBDC would be denominated in pounds sterling and would not replace cash. Indeed, CBDC, to be practical and attractive, would need to be directly convertible into cash and deposits.

Although referred to as a “digital currency,” it should be noted that any eventual CBDC would be fundamentally different to virtual currencies as they currently exist - (*i.e.*, broadly, digital representations of value that are not issued or guaranteed by a central bank or a public authority, that are not necessarily attached to a legally established currency and do not possess a legal status of currency or money, but are accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically). Decentralized virtual currencies (*i.e.*, cryptocurrencies) are distributed, open-source, maths-based peer-to-peer virtual currencies that have no central administrating authority, and no central monitoring or oversight.

The BoE in their paper suggest that there are three essential roles of money: (1) as a store of value; (2) as a means of exchange; and (3) as a unit of account (with which to measure value). The Bank of England considers that cryptocurrencies are too volatile to be a reliable store of value; they are not widely accepted; and are not used as a unit of account. While “stablecoins,” may be more reliable in that they are backed by certain assets, their stability depends on the nature of those assets and how they are held. That creates risks to the user for managing the

user's liquidity and ability to meet the user's payment obligations. The risk of fluctuations in the value of stablecoins could cause collapse of confidence, with risks of contagion to the system. Also, stablecoins may not be interoperable with one another and with other payment systems, thereby creating inefficiency. The BoE considers that a CBDC does not present similar problems as cryptocurrencies and stablecoins and would perform all of the essential functions of money.

Hypothetical Model

The BoE notes that CBDC would not necessarily be built using distributed ledger technology (DLT), but could be built using more conventional centralized technology. DLT, however, may enhance resilience and availability, but that comes with challenges and trade-offs in the areas of performance, privacy, and security. Any form of CBDC would require a ledger to keep a record of transactions. Otherwise, users could “double-spend” sending the same CBDC to different recipients. That ledger, since it would be a critical piece of national infrastructure, would need to be able to withstand hardware, software, and network failures. The ledger would have to be secure and maintain integrity of its data and not lose data or permit theft of data; that security would have to be able to be upgraded as new threats evolve. The ledger would have to be available 24/7 without any downtime, and its capacity would have to increase if demand increased. It would also have to be fast to handle retail payments.

The Paper hypothesizes a model in which the BoE would provide a fast, highly secure, and resilient technology platform (the Core Ledger). Private sector “Payment Interface Providers” (PIPs) would connect to the Core Ledger to provide customer-facing payment services. Without the involvement of PIPs, CBDC would not be open to competition or support innovation. The platform would include a database on which CBDC would be recorded, with applications and point-of-sale devices to be used to initiate payments, offering users another way to pay. The platform would comply with anti-money laundering and data protection regulations.

The PIPs would be permitted to provide “overlay services” in addition to the BoE's core infrastructure. Those “overlay services” could meet future payment needs, such as “programmable money, smart contracts [*i.e.*, contracts that automatically execute their terms and initiate related transactions without human intervention], and micropayments.” PIPs would be regulated and supervised to protect consumers and to prevent service failures.

Trade-offs Among Goals

In building a payment system, trade-offs will be required and the right balance between design principles sought, the BoE recognizes that common trade-offs include transaction throughput versus speed of settlement and simplicity versus functionality. The BoE proposes a simple platform in order to minimize failures and maximize security, but that may limit the ability of PIPs to build innovative overlay services.

Benefits of CBDC

The benefits of CBDC would include enabling households and businesses to make fast, efficient, and reliable payments as well as enabling households and businesses to benefit from an innovative, competitive, and inclusive payment system. CBDC also may provide safer payment services than new forms of privately issued money-like instruments, such as stablecoins. It would be free of credit risk, just like physical cash, and it could be more convenient as a means of payment, particularly for electronic and remote payments. Indeed, there could be some shift from cash to CBDC. CBDC might not be as attractive as deposits in that deposits offer customers other services such as credit facilities. On the other hand, CBDC would have less credit risk than uninsured deposits.

Risks of CBDC

In considering the risks associated with CBDC, significant deposit balances might be moved by customers from commercial banks into CBDC affecting not only the balance sheets of those banks, but also that of the BoE, the

amount of credit provided by those banks, and the ability of the BoE to implement monetary policy and support financial stability. These risks, and their potential magnitude, would depend on functionality, remuneration, and other design features.

Regulatory Considerations

The BoE's Financial Policy Committee recently announced that the current framework for regulating the payments system may need adjustment to accommodate innovation, outlining three principles to be achieved: (1) regulation should reflect risk to financial stability rather than legal form; (2) regulation should ensure resilience across payment chains that are critical to the economy; and (3) regulation should ensure that enough information is available to monitor payment activities so that emerging risks to financial stability can be identified and addressed. PIPs would need to meet these criteria. Regulation of PIPs for this must mesh with existing regulation and oversight, and relevant regulators would need to cooperate. PIPs would need to meet standards of operational and financial resilience.

PIPs would have to be interoperable with one another; they would have to meet security standards, guidelines for interfacing with users, and messaging and identifier standards. Rules would need to address who bears responsibility when CBDC payments go wrong, such as in the case of fraud, failed transactions, cyber-risks, and privacy violations.

To comply with anti-money laundering (AML) laws and combating financing of terrorism regulations, the identities of CBDC users would need to be known to some authority or institution that can validate the legitimacy of the transaction. PIPs would fulfill that function and be responsible for applying AML restrictions and reporting suspicious transactions. Theoretically, new business models could arise with third-party firms dedicated to doing that. There may be tension between AML concerns and privacy. Preventing money laundering and terrorist financing rules out truly anonymous payments. However, to prevent vendors from using CBDC users' transactions to build a picture of each user's shopping habits, a payer should be able to pay without revealing his or her identity to the payee, but not have anonymity to law enforcement. The BoE notes that it does not have a specific mandate to provide anonymous payment methods.

Privacy would be protected by the 2018 General Data Protection Regulation that would apply to the BoE, PIPs, and any third party processing data. Users would have control over their data and with whom that data is shared.

Next Steps

The BoE has not made a decision as to whether to move forward on CBDC, and it will be influenced by comments it receives on this Paper. The Paper gives the public until June 12, 2020, to provide relevant observations. The BoE is also hosting a webinar on the topic on April 7, 2020, which is open to all interested parties and which can be registered for [here](#).

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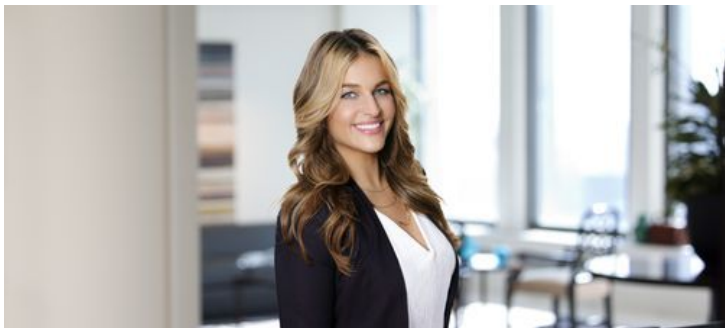
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