



# The Rise of Central Bank Digital Currencies (CBDCs)

What you need to know

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There has been renewed conversation and debate recently about Central Bank Digital Currencies (CBDCs). Whilst central banks have been researching this topic for some time, recent media articles about certain central banks potentially issuing their own CBDC have brought this topic to the forefront of the related policy debate. Here are essential aspects of CBDCs that you need to know!

### What is a CBDC?

Prompted by technology advances and a decline in cash usage around the world, many central banks are exploring whether it would be possible to issue a CBDC complement to cash. A CBDC is a digital payment token which is issued and fully backed by a central bank and is legal tender.

Blockchain or Distributed-Ledger-Technology (DLT) is one technology that can facilitate a CBDC and it is a key feature that CBDCs share with other cryptoassets, such as Bitcoin. However, unlike decentralised cryptocurrencies which operate on a permissionless or public blockchain and where no one person, corporation or central bank has control over the network, it is expected that central banks will initially issue their CBDC on a permissioned or private blockchain network. This means that access and control to the blockchain is limited to a select group of approved participants, permitting the central bank to retain control of the overall money supply.

CBDCs are also 'programmable money', meaning that payment tokens or digital fiat can now have specific design features and attributes built into the token itself. Broadly speaking, the common policy debates contemplate two types of CBDCs, 'wholesale central bank digital currencies', which would facilitate more efficient central bank clearing operations between the central bank and its members banks, and 'retail central bank digital currencies' which would be available for use by the public at large and would effectively be the equivalent of a bank note, albeit in digital form.

For example, the token could pay the token holder interest directly into their wallet and there are endless possibilities for the design of the tokens, as well as the overall network. Each central bank could design a currency according to their own monetary policy and economic objectives.

### What are the potential benefits of a CBDC?

There are many potential benefits for the issuing central bank. Digital currency could provide a real-time picture of economic activity in a country or region as well as provide more accurate and timely economic data for GDP estimates than are available today.

For citizens and businesses, transactions would be more efficient with near instantaneous settlement at potentially a fraction of the cost.

CBDCs can also help in the fight against corruption and money laundering, as authorities would be able to trace transactions far more effectively than is possible today.

### What are potential policy areas of interest?

Depending on how the system supporting a CBDC is designed, a new blockchain enabled CBDC may give rise to some complex questions which need to be considered.

Many central banks are concerned, for example, that introducing a CBDC could potentially disintermediate the commercial banking sector. If citizens, particularly in times of economic stress, pull their savings from commercial banks and place them in risk-free accounts directly with the central bank, this may trigger a bank run and place intense stress on the commercial banking sector. This risk was discussed by the European Central Bank (ECB) in a recent policy paper<sup>1</sup>, noting that "by potentially providing an alternative to some types of bank deposit, CBDC could induce its holders to withdraw a substantial amount of liquidity from the banking system, thereby influencing its ability to finance economic activity in normal times". It is for this reason that many central banks are unlikely to implement retail CBDCs as a first step or, in any event, do so without using existing financial intermediaries.

Data privacy, and compliance with applicable consumer data protection and data privacy laws is another potential area of focus. If transactions are immutable, how will the 'right to be forgotten', which is a core tenet of the General Data Protection Regulation (GDPR) law in the European Union (EU), be addressed by affected central banks? Ironically, the ECB noted recently<sup>1</sup> that traditional cash could continue to be a favoured transaction medium for those wishing to have anonymity or privacy.

Regulation around DLTs and digital assets can also be inconsistent and may vary widely across different jurisdictions. As regulators begin to formulate more mature approaches and react to new developments, there may be rapid changes to the regulatory landscape.

Additionally, there is an inherent risk that the private keys which provide access to digital assets could be stolen by hackers. Security is paramount for the wallets which store the private keys that are necessary to transact (e.g., buy/sell/transfer) digital assets on the blockchain.

### How widespread is the exploration of CBDCs?

Many central banks have been researching this technology since 2013 and a recent Bank for International Settlement (BIS) study<sup>2</sup> shows that seventy percent of central banks surveyed are engaged in some type of CBDC exploration<sup>3</sup>. In fact, the IMF published a paper in November 2017 encouraging central banks to experiment with CBDCs<sup>4</sup>. The First Deputy Governor of the Bank of France also stated at the Official Monetary and Financial Institutions Forum (OMFIF) meeting in October 2019 that central banks should not refrain from experimenting with different forms of CBDC, with a higher potential from his perspective, for wholesale CBDCs<sup>5</sup>.

Examples of pilots abound, such as 'Project Jasper' where the Bank of Canada is conducting a collaborative research initiative between the public and private sectors to understand how DLT could transform the wholesale payments system<sup>6</sup>. In Singapore, 'Project Ubin' is a collaborative project with the banking sector, exploring the use of DLT for clearing and settlement of payments and securities, as well as new methods of conducting cross-border payments using CBDCs<sup>7</sup>. In February 2018, the Republic of the Marshall Islands issued the Sovereign Currency Act of 2018<sup>8</sup> which introduced a new blockchain based currency called the Sovereign ('SOV'). The recent announcement from Facebook launching the Libra Association was a major catalyst in bringing this topic to the top of the agenda of many policy makers around the world.

These examples have also prompted many other central banks to look more closely at CBDCs. For example, the Bank of England's Governor Mark Carney raised the idea of a Global Digital Currency, backed by numerous central banks at the annual Jackson Hole gathering of central bankers.

### What are the characteristics of China's CBDC?

At HK FinTech Week, Mr. Mu Changchun, Director-General of the Institute of Digital Currency of the People's Bank of China (PBoC), announced details regarding the PBoC's plans to release China's version of a CBDC, the Digital Currency Electronic Payment (DCEP) coin.

Mr. Mu noted that the DCEP coin will be targeted specifically at the retail sector only, and not at institutional and wholesale payments. The PBoC plans to enable commercial banks and certain other institutions to distribute the DCEP coins to the general public. The PBoC does not plan on issuing DCEP coins to the public directly, rather allowing the existing financial ecosystem to bring the coins to the public. DCEP coins will be designed to be used as the equivalent of existing fiat currency (i.e. paper notes and coins). However, users will need to open a digital wallet to send, receive, and hold DCEP coins (this can be done without any linkage to a bank account). No interest will be paid for holding DCEP, and there also should be no implications for inflation and no impact on central bank monetary policy.

### How will businesses have to adapt?

Blockchain and cryptocurrencies are emerging technologies that are continuously evolving and being applied to new use cases. This subject matter is complex and technical, requiring sufficient expertise to navigate. Senior management should consider having a strategy in place which outlines the potential impact of CBDCs on their businesses and consider implementing a strategy in order to respond to the changing landscape. Management and digital asset teams will need to collectively build the appropriate competence and capabilities to perform business operations, as well as to understand and effectively manage the related risks.

Organisations will potentially need new policies and procedures to govern how they will interact with and manage digital assets. Digital asset activities will impact not just policies and controls surrounding the new technology, but also resources and whether they are properly suited and have the right expertise to perform their jobs. Distributed ledger technology protocols may have different governance, organisational, or technological approaches, which may necessitate a redesign of traditional control frameworks.

Businesses can consider whether to focus on in-house development or work with a third party for services related to digital assets. Similar to traditional business processes, there might be functions related to digital assets that would be more efficient if outsourced to a third party. The maturity of internal capabilities and the level of complexity in a business model will dictate whether third party service providers could be an effective solution.

## Conclusion

This announcement by the PBOC is a significant milestone in the history of money and China's implementation of a CBDC could have a transformative effect on its economy, and on those beyond. While cash usage is already extremely low in China, the introduction of a CBDC heralds in a new era.

China's adoption of a CBDC will likely provide impetus for other central banks to follow suit and may eventually lead to the global adoption of a new payments infrastructure for cross-border trade as well as for domestic economies.



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