

Central Bank Digital Currencies (CBDCs) – Are you ready?

November 2021



Foreword

Central Bank Digital Currencies

More than 60 central banks have already initiated central bank digital currency (CBDC) projects. CBDCs fundamentally digitize money, which means that all aspects of government-backed currencies – from issuance, circulation, storage and payment, to investment and cross-border flows – could change. CBDCs may become a game-changer, providing access to alternative payment solutions for citizens and corporates, and offering faster and cheaper solutions for financial market transaction settlements and interbank monetary transactions.

From an international perspective, our study shows that CBDC platforms have the potential to revolutionise cross-border payments by significantly reducing both transaction speed and cost. From a domestic standpoint, CBDCs are expected to introduce benefits such as enhancing financial inclusion, promoting payment solution diversity by offering a regulated payment alternative and enhancing transparency and traceability as compared to a cash-based system. In addition, programmable features of CBDCs facilitate transaction privacy, automated risk management and compliance, as well as innovative business use cases.

Current technical CBDC designs differ across jurisdictions. A recent Bank for International Settlement (BIS) study shows that seventy percent of central banks surveyed are engaged

in some type of CBDC exploration. The International Monetary Fund (IMF) published a paper in November 2017 encouraging central banks to experiment with CBDCs. Some central banks have been researching this technology since 2013.

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. 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 Distributed Ledger Technology (DLT) could transform the wholesale payments system.

Singapore’s ‘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. In February 2018, the Republic of the Marshall Islands issued the Sovereign Currency Act of 2018 which introduced a new blockchain based currency called the Sovereign (SOV).



Facebook's Diem 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.

China's DC/EP Program has also made significant strides in the past few years. In April 2020, Mainland China became the world's first major economy to pilot a digital currency. The pilot programs, conducted in some of its major cities have shown that the digital yuan works when paying for goods. The project has already reached an advanced level in trials, with more than 20 million wallets opened, and over 70 million transactions conducted amounting to 34.5 billion yuan (US\$ 5.3b) as of 30 June 2021. It is also expected that a wide scale domestic pilot of DC/EP will take place during the Beijing 2022 Winter Olympics.

The Bank for International Settlements Innovation Hub, the Hong Kong Monetary Authority (HKMA), the Bank of Thailand, the Central Bank of the UAE, and the Digital Currency Institute of the People's Bank of China jointly announced in September 2021 the publication of the results of their mBridge project. This included the development of a proof-of-concept (PoC) prototype, to facilitate real-time cross-border foreign exchange payment-versus-payment transactions in wholesale CBDCs in a multi-jurisdictional context and on a 24/7 basis. The mBridge project will also explore business use cases in a cross-border context using both domestic and foreign currencies.

In October 2021, the HKMA released a retail CBDC technical whitepaper to study the prospects of issuing e-HKD, covering both technical and policy considerations. The whitepaper unveils a technical architecture that allows transaction traceability while preserving privacy. The whitepaper aims to seek comments from academia and industry on a number of problem statements identified for further exploration on CBDC.

What should banks be doing now?

There are many CBDC projects and initiatives being undertaken now globally by various Central Banks. Consequently, banks and other financial institutions should be conducting their own research and planning on what to do when CBDCs are launched. Some CBDCs may be domestic and others may be targeted at cross-border usage only. Other CBDCs could have both uses. The various functionalities and use cases could present banks with a variety of new business opportunities. We set out below some of the areas for banks to consider when planning their adoption of CBDCs.



Infrastructure

- The vast majority of CBDC projects involve blockchain technology. Banks will need to plan for how to integrate this new infrastructure within their existing systems and processes and to address any consequential risks.



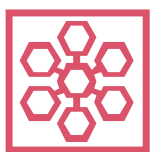
Cross border payments

- Some CBDCs are expected to have international usage for cross-border payments. Currently many banks use correspondent banks for international payments and can process client transactions within normal working hours. CBDCs will be a catalyst for 24/7/365 settlement and updating of client records. This will require changes to existing batch processes on financial record updates, including client ledgers.



KYC/AML

- From an international perspective, enhanced digital identification of users / clients and KYC interoperability between jurisdictions could help expedite cross-border payments and reduce risks. From a domestic standpoint, mass adoption of CBDCs should help enhance transparency and traceability. Banks will need to redesign the current KYC / AML processes and implement automated compliance capability to improve customer experience, ensure robust information exchange and preserve appropriate transaction privacy.



Supply chain finance

- CBDCs can be incorporated into trade finance and e-commerce contracts that are executed using blockchain technology. This can then result in automatic settlement when relevant conditions in the transactions are met. However, to maximize the use of such functionality, other infrastructure at banks will need to be built (e.g. smart contracts on a blockchain). Digitalized information on transaction behavior, payment and settlement can facilitate the adoption of advanced risk management models (e.g. alternative credit data).



Cyber security

- Cyber security continues to be a prime risk for banks in general. When adopting CBDCs, banks will need to design and build their relevant security controls over new technology infrastructure, system connectivity and the wallets/accounts to be used.



Taxation

- The enhanced ability to trace funds movements is helpful for tax authorities and for banks when wishing to demonstrate purpose / use of funds. Tax process automation can help improve customer experience and reduce costs of handling tax calculations, payments and filing.



Automated securities settlement

- In due course we can expect to see traditional securities trading and exchange platforms migrating to digital exchanges. When these are used with CBDCs, automated and immediate settlement will be possible. Banks will need to identify and plan for required changes to existing processes.



Treasury operations

- The impacts on treasury operations, such as liquidity and foreign exchange management, and handling of both traditional and CBDC-based fund transfer systems and system connectivity in parallel, will need to be addressed.



Risk Management and Compliance

- The introduction of digital assets can present various regulatory challenges (e.g. need for new and different licenses for various services) and new market and credit risks which have not been handled before. The Risk and Compliance functions within banks will need to identify and address these new areas, which may also require new skill sets





How PwC can help



Strategy

- CBDC landscape review and research study
- Strategy and branding advisory
- Proof of Concept, feasibility study and implementation roadmap advisory
- Service providers scan and selection support



Legal, Regulation and Corporate Services

- Regulatory compliance advisory
- Data privacy and AML/KYC assessment
- Licensing support
- Legal due diligence



Infrastructure and Cybersecurity

- Technology infrastructure advisory and implementation
- Emerging technology governance, blockchain security, smart contract adoption, wallet and key management advisory and review
- Cyber attack simulation and application penetration testing
- Data analytics and reporting support



Advisory

- CBDC driven financial products advisory
- Technical CBDC design and governance model advisory
- Treasury and settlement operations process redesign
- Operational due diligence audit and review



Let's talk

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