

CBDC and its associated motivations and challenges – Saudi Central Bank

Introduction

Technological progress, and its applications specifically in the financial sector, is resulting in higher adoption of digital services in addition to the considerable shift to cashless and contactless transaction methods. During the pandemic this has prompted central banks and financial institutions to examine even more closely the potential benefits of introducing a new form of central bank money through the issuance of central bank digital currencies (CBDCs). The ongoing shift from traditional economic transactions towards more data-driven and platform-enabled activities emphasises the importance of the digital economy. For the Kingdom of Saudi Arabia, promoting financial innovation is one of the key drivers behind researching and experimenting with CBDC use cases and investigating its related potentials and drawbacks and its alignment with the Saudi Central Bank's policy objectives as well as Saudi Arabia's Vision 2030 strategy. Many authorities around the world have meanwhile also launched CBDC-related efforts, including exploration of CBDC use cases and experimenting with different design approaches.

This paper provides an overview of the CBDC concept, as well as its different types and designs, sourced from international entities' studies and countries' experiences. The paper also discusses the main motivations behind issuing a CBDC and the difficulties and obstacles associated with CBDC issuance while highlighting Saudi Arabia's recent experience in the "Aber" project.

CBDC definition

Central bank digital currency (CBDC) is a digital payment and settlement medium denominated in the national unit of account that is a direct liability of the central bank. CBDC represents a third form of central bank money that coexists with the two other forms: banknotes and bank reserves. It is fully fungible, one-to-one at par with cash and central bank reserves. CBDC can be categorised into three main types: retail CBDC, wholesale CBDC and cross-border CBDC. In a simplified description, a CBDC would be equivalent to a digital banknote that could be used for two purposes: transactions and settlements by individuals and businesses in the case of a retail CBDC, and transactions and settlements between financial institutions only in the case of a wholesale CBDC.

The difficulties, challenges and potential benefits associated with CBDC

Legal and regulatory constraints

The legal and regulatory aspects are one of the key potential challenges associated with CBDC issuance. Current legislation in some jurisdictions may prevent or restrict the issuance of CBDCs. According to several central banks, they have the legal foundation to issue a CBDC, but the law still needs to be adjusted in order to regulate some legal issues related to CBDCs' specific features such as programmability.

Bank disintermediation

If it is not suitably designed, the issuance of a CBDC may have major consequences in terms of financial stability given that it may result in bank disintermediation and lead to serious implications for banks' core business. In view of the prominence of banking sectors in many jurisdictions, and their interlinkages with other segments of the financial ecosystem, such potential implications could spill over to the broader financial ecosystem and the real economy.

Technical challenges

Another major challenge is related to CBDCs' technical infrastructure and application. Many possible difficulties could arise at the technical level, for example relating to internet connectivity, especially in rural areas, interoperability with the existing systems, or cyber attacks.

Financial literacy

Financial literacy of the public is a serious challenge, especially for central banks whose primary objective behind issuing a CBDC is promoting financial inclusion. Even if a country's digitalisation in daily life and in the financial services industry has increased, this does not necessarily imply an increase in financial literacy among its population. It may make it even harder for specific segments of the population to access and use the new technologies and the related digital services which – if not properly managed – could result in financial exclusion of those segments.

CBDC types and designs

CBDCs can take on various forms or models, based on their application. The main models are retail CBDC (also known as general purpose CBDC), wholesale CBDC and cross-border CBDC. These models have potential benefits in acting as a catalyst for innovation and development of financial ecosystems.

Retail payments

A CBDC for retail applications enables real-time peer-to-peer (online and offline) transfers with instantaneous settlement, which could promote financial inclusion and

support a competitive and innovative payments landscape with digitalisation and a future-proof payments channel.

Wholesale payments

A wholesale CBDC can facilitate access for multiple financial institutions to a large-value payment system and support settlement for a digital financial market infrastructure. The potential benefits of this type of CBDC could include, but are not limited to: broader access to risk-free central bank money for large-value payments; supporting delivery-versus-payment and payment-versus-payment transactions; and enabling digitalisation of financial markets.

Cross-border payments

A cross-border CBDC could facilitate direct cross-border monetary relationships with other CBDC networks to be established under the supervision of central banks. The cross-border payments would aim to reduce risks and delays in cross-border transactions, disintermediate correspondent banking models, reduce costs and enhance financial market integration.

Motivations behind issuing CBDC

There are many general driving factors that motivate central banks to issue a CBDC, including the following:

Financial innovation:

A CBDC is about financial innovation, with the introduction of a new medium that serves as an enabler for a digital financial market. CBDC can be compared to the introduction of banknotes during the second half of the 19th century, aiming to bring new convenience to payments and responding to an evolving payments landscape to ensure central bank money will remain future-proof.

Access to central bank money:

In some jurisdictions, a significant decrease in the use of cash can be observed amid an increasing digitalisation of payments, reducing households' and businesses' access to risk-free central bank money. By issuing a CBDC, the central bank is offering a medium, with direct claim on the central bank, that can be used in digital transactions, thereby enlarging the scope of a digital currency's use. Additionally, a CBDC could be seen as a potential mechanism to provide an alternative and safe payment solution compared to the private money issued by non-bank issuers.

Payment diversity:

The diversification in payment methods implied by the adoption of a new medium would enhance choice and competition in the payments sector. Access to CBDC for

digital payments would make the safety of central bank money available to a broader range of payment applications, increasing overall system stability.

Financial inclusion:

The central bank could potentially promote financial inclusion by providing access to a digital means of payment for the unbanked population. Similarly, for the underbanked population, the CBDC could serve as the foundation for new and potentially cheaper financial services provided by the private sector. Fintechs, for instance, could build upon the CBDC infrastructure to provide cheaper services accessible to the portion of the population that does not have access to an extended range of financial services, e.g. due to costs.

Cross-border payments:

Cross-border payments may involve numerous participants/intermediaries, time zones and jurisdictions with varying regulatory requirements, which greatly increases complexity, making such transactions slow and costly to process. The functionalities offered by CBDC are likely to have their biggest impact on international payments. A CBDC infrastructure could be deployed in a foreign jurisdiction, or designed to integrate several jurisdictions or to be interoperable with other currency systems through participation of non-residents, direct connections between networks, or common technological standards applied to the networks.

Transparency and privacy:

A CBDC will bring new transparency to payments for the central bank. As all digital payments are traceable, it may also offer new approaches to ensure that needed prudential standards are met, including on the prevention of money laundering and the financing of terrorism. At the same time, digital payments will most probably have to comply with privacy norms, concerns and standards to acquire legitimacy, adoption and safety.

The Kingdom of Saudi Arabia's experience

Project Aber:

Project Aber was a collaboration between the Saudi Central Bank (SAMA) and the Central Bank of the United Arab Emirates (CBUAE) to explore the potential of a CBDC and distributed ledger technology (DLT). It was considered as one of the first cross-border CBDC projects. The primary goal of this initiative was to undertake a proof of concept for studying, understanding and evaluating the feasibility of issuing a CBDC involving commercial banks (wholesale CBDC) with a view to developing a cross-border payment system that would reduce transfer times and costs between banks. In addition, it aimed at experimenting with the direct use and actual application of technologies such as distributed ledgers. The wholesale CBDC was issued by SAMA and the CBUAE, used only by them, and by the commercial banks participating in the initiative as a settlement unit for domestic as well as cross-border

transactions between Saudi Arabia and the UAE. Over the course of a whole year, usage solutions were designed, implemented and managed. The solutions, results and main lessons learned were all documented in a Final Report that was published in November 2020.¹ Based on the project's outputs, the report aims to significantly enrich the knowledge content in this field, in addition to laying the foundations for future work to be explored in the coming years.

Conclusion

There are numerous key motivations for implementing a CBDC around the world, including fostering payment innovation domestically, allowing for a higher quality in payments in a cross-border context, and responding to the reduction in the use of cash by the general public. Despite the fact that the issuance of a CBDC is associated with numerous benefits, it is also associated with some potential risks such as legal and regulatory issues as well as technical challenges. In conclusion, while the majority of jurisdictions report similar motivations and challenges, CBDC has given central banks a new role in promoting financial innovation.

¹ www.sama.gov.sa/en-US/News/Documents/Project_Aber_report-EN.pdf.