

The Rise of Central Bank Digital Currency: Implications for Commercial Banks



Abstract

The concept of Central Bank Digital Currency (CBDC) dates back to the emergence of cryptocurrencies in 2009. With the advancement of technology and the consequent interest in digital money, several central banks are experimenting with CBDC in partnership with commercial banks. Pilot CBDC projects initiated across the world are reaping benefits. However, CBDC implementation has several implications for financial systems — adequate liquidity in commercial banks should be maintained, and the privacy of citizens ensured. Moreover, increased competition from technology companies will drive commercial banks to explore value-added services for consumers and businesses – with CBDC as the key enabler.

This white paper highlights the current landscape of CBDC and emerging implementation models – retail (citizens are involved), wholesale (citizens not involved), and cross-currency CBDC. Ongoing CBDC pilots indicate that commercial banks play a significant role. The paper underscores the need for commercial banks to get involved in early-stage discussions to build policy safeguards and invest in innovative solutions. We have also identified emergent business opportunities for commercial banks to help explore the way forward.

CBDC Adoption: Benefits and Concerns

Central Bank Digital Currency (CBDC) is the digital form of a country's fiat currency and is a claim on the country's central bank. As a concept, CBDC has attracted attention globally, since 2009, after the emergence of Bitcoin, the first cryptocurrency. The disruptions caused by the COVID-19 pandemic have further enhanced interest in the CBDC. In formulating CBDC policies, central banks need to balance the benefits gained with the concerns (see Table 1).

Benefits	Concerns
<ul style="list-style-type: none">• Reduced currency management cost• Targeted government aid• Growth in digital payments, micro-payments• Efficient cross-border payments• Enhanced traceability of economic activity	<ul style="list-style-type: none">• Citizens' concerns on privacy• Consumer protection• Accessibility and convenience of CBDC• Stability of the financial system• Strength of digital infrastructure

Table 1: Adoption of CBDC: Benefits and Concerns

Central banks are exploring multiple options for adopting CBDC. A major multilateral example is the initiative by the Bank for International Settlements (BIS) with central banks of seven major economies – Canada, the European Union, Japan, Sweden, Switzerland, the UK, and the USA. In October 2020, BIS and the seven central banks published a report assessing the feasibility of publicly available CBDCs. The report highlights three key principles for the introduction of CBDC¹:

- Coexistence with physical cash
- Should not affect monetary and financial stability
- Should promote innovation and efficiency

Based on these principles, the report identified the core features of the CBDC:

- Ensure resilience and security to avoid operational failure and cyber-attacks
- Offer convenience and availability at very low or no cost to end users
- Ensure appropriate standards and a clear legal framework
- Promote competition and innovation

With the right policies in place, CBDC can present major opportunities for banks to innovate. Commercial banks can transform the consumer payment journey with value-added services and deepen business relationships. However, commercial banks need to be aware of the risks- liquidity concerns and increased competition from technology firms.

CBDC Implementation Models

There are four implementation models based on the availability of CBDC to market stakeholders. The most common is wholesale CBDC, with only the central bank and commercial banks needed for inter-bank settlements. As this resembles the current currency distribution model, it is the easiest to implement.

Citizens are impacted more by the retail CBDC. It requires a two-tier model where the digital currency flows from the central bank to commercial banks and then to citizens and businesses. The currency can be accessed in the form of a digital wallet or card and will promote financial inclusion and traceability.

Cross-currency CBDC is currently limited to a few pilot projects, focusing only on wholesale inter-bank transactions. The objective is to make inter-bank cross-border transactions faster and seamless for improved trade. Cross-currency retail CBDC is yet to see a pilot as it requires multi-level policy agreements between countries. Figure 1 elaborates the enablement and alternatives of both wholesale and retail CBDC within or across countries while suggesting implementation models.

[1] BIS, *Central banks and BIS publish first central bank digital currency (CBDC) report laying out key requirements*. October 2020, Accessed May 2021, <https://www.bis.org/press/p201009.htm>

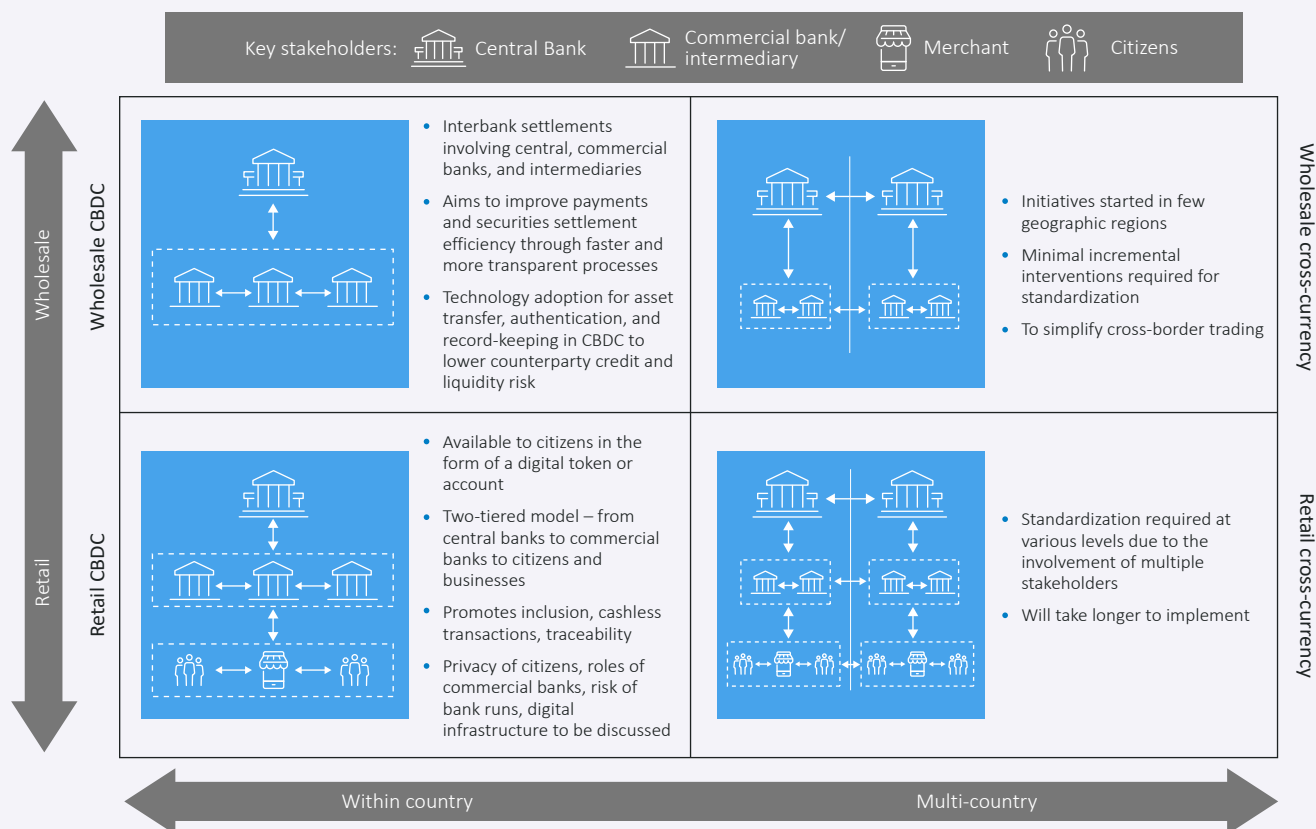


Figure 1: CBDC Implementation Models: Characteristics and Market Stakeholders

In this evolving scenario, commercial banks may face increased competition in retail CBDC as other market stakeholders can come up with better currency distribution platforms. Low interest rates increase the risk of currency outflow from bank accounts. This can be a major challenge to financial and credit market stability. Hence, commercial banks need to collaborate with central banks to formulate adequate CBDC policies, ensuring safeguards.

Central Bank Initiatives: A Global Perspective

Many countries are currently testing CBDC. **Three CBDC models** (wholesale, retail, and cross-currency wholesale) are mostly being implemented. Key instances include:

Wholesale CBDC – In a few countries, experiments by central and commercial banks have shown results. In Thailand², the pilot phase has been completed with eight banks collaborating to develop a proof of concept (PoC) for corporate transactions, with plans to expand. In France³, the central bank plans to launch experiments with eight entities to test CBDC for inter-bank settlements. The Italian Banking Association⁴ (ABI) envisages use cases in peer-to-peer (P2P) and machine-to-machine (M2M) transactions.

Retail CBDC: In retail, the interest is high, but it's more complex to implement. China⁵ has conducted pilot testing in four cities, while Sweden⁶ is moving forward with CBDC trials.

[2] Bank of Thailand, The Bank of Thailand Announces the Prototype Development Project of Central Bank Digital Currency (CBDC), June 2020, Accessed December 2020, <https://www.bot.or.th/English/PressandSpeeches/Press/2020/Pages/n3063.aspx>

[3] Banque de France, Banque de France Press Release - 20 July 2020, Accessed in December 2020, <https://www.banque-france.fr/en/communique-de-presse/banque-de-france-press-release-20-july-2020>

[4] ABI, Banks, Abi: 10 considerations for a central bank digital currency, June 2020, Accessed December 2020, https://www.abi.it/DOC_Info/Press-releases/18-06-Press%20Release_Italian%20banks%20position%20on%20CBDC.pdf

Cross-currency wholesale CBDC: A few pilot projects in the initial stages include those in the UAE and Saudi Arabia⁷, where the common digital currency ‘Aber’ is in the PoC stage. The Central Bank of Thailand and the Hong Kong Monetary Authority² collaborated to test corporate cross-border payments.

Other experiments and projects: There have also been small-scale trials, or infrastructure projects, conducted as pre-work for CBDC implementation. This includes the Coinless Society trial⁸ in South Korea and redesigning the UK Real-Time Gross Settlement system.⁹

Wholesale CBDC projects have made the most progress. Conversely, retail and cross-currency CBDC projects are still developing and will require significant iterations before implementation. The European Central Bank has expressed a preference for technology-neutral solutions¹⁰, although initial pilots have mostly used blockchain.

The Way Forward for Commercial Banks

CBDC is transformative in many ways. Entities will have an account with the central bank to hold the currency, which can be accessed using a digital wallet or cards for all types of financial transactions. We believe that CBDC adoption can change the role of commercial banks in the financial journey of customers. To offset increasing competition, commercial banks will need to strengthen their payments services, loyalty offers, and cross-border transaction services to prevent major customer churn.

Emerging technologies will play a key role in developing this digital currency ecosystem. There is a prevalent risk of higher liquidity and reduced deposit and payment volume contraction. It’s a good time for commercial banks to participate in policy formulation around CBDC, safeguard financial stability and play a pivotal role in the CBDC era. Accordingly, commercial banks will need to design new offerings, realign technology adoption with CBDC platforms, and redesign the customer experience. However, this will require deep expertise in areas such as blockchain, privacy, and next-generation banking. Banks must consider partnering with service providers with the relevant expertise and domain knowledge to accelerate this transformation journey.

[5] BIS, *Rise of the central bank digital currencies: drivers, approaches and technologies*, August 2020, Accessed December 2020
<https://www.bis.org/publ/work880.pdf>

[6] Cointelegraph, *Sweden moving forward in e-krona CBDC trials*, May 2021, Accessed June 2021,
<https://cointelegraph.com/news/sweden-moving-forward-in-e-krona-cbdc-trials>

[7] Saudi Central Bank, *A STATEMENT ON LAUNCHING “ABER” PROJECT, THE COMMON DIGITAL CURRENCY BETWEEN SAUDI ARABIAN MONETARY AUTHORITY (SAMA) AND UNITED ARAB EMIRATES CENTRAL BANK (UAECB)*, January 2019, Accessed December 2020,
<https://www.sama.gov.sa/en-us/news/pages/news29012019.aspx?ref=steemhunt>

[8] Bank of Korea, *Action Plan for 'Coinless Society'*, December 2016, Accessed December 2020,
<https://www.bok.or.kr/eng/bbs/E0000634/view.do?nttId=224630&menuNo=400069&pageIndex=77>

[9] BIS, *Cross-border Payments – Innovating in a Changing World*, October 2020, Accessed December 2020,
<https://www.bis.org/review/r201015a.pdf>

[10] European Central Bank, *An ECB digital currency – a flight of fancy?* May 2020, Accessed September 2020,
<https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200511~01209cb324.en.html>

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