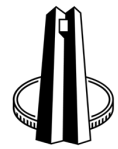


Frequently asked questions on central bank digital currencies



SOUTH AFRICAN RESERVE BANK



Frequently asked questions on central bank digital currencies

1. What is a central bank digital currency (CBDC)?

A CBDC can be defined as a form of money that is denominated in fiat currency¹ (central bank money), in an electronic form, and which is a liability on the central bank's balance sheet similar to cash and central bank deposits. In the context of SARB's current CBDC feasibility study, it could be considered as "smart cash" with unique attributes enabled by its digital form.

The Bank for International Settlements² (BIS) defines a CBDC as a purely digital banknote that could be used by individuals to pay businesses, shops or each other (called a "retail CBDC"), or between financial institutions to settle trades in financial markets (called a "wholesale CBDC").

2. SARB is undertaking a CBDC feasibility study. What is the objective of this study?

The objective of the study is to investigate if it would be feasible, appropriate and desirable for the SARB to issue a CBDC to be used for retail purposes, complementary to cash in South Africa.

3. Does the fact that the SARB has embarked on a feasibility study imply that the SARB will issue a CBDC?

No. The outcome of the feasibility study will reveal the desirability and appropriateness of issuing a CBDC in South Africa. It will highlight the different CBDC design options and the potential policy and/or regulatory implications associated with these options. The insights gained will inform the decision around whether to pursue the issuance of a South African CBDC. Even if the outcome of the feasibility study suggests that the issuance of a CBDC in South Africa may be feasible and/or desirable, it does not necessarily imply that it will be pursued.

¹ *Fiat* currency is a government-issued *currency*.

² <https://www.bis.org/about/bisih/topics/cbdc.htm>

4. What is the difference between a CBDC and cash?

Cash has a physical presence, whereas a CBDC is available exclusively in digital format. The digital nature of a CBDC unlocks potential benefits related to usability for consumers and merchants, safety and security, and traceability of transactions without infringing on privacy rights. CBDC payments and remittances can be made remotely, which is harder to do with cash.

5. What is the difference between a CBDC and crypto assets such as Bitcoin?

Crypto assets are privately issued (i.e. by a non-central bank) and have a decentralised and disintermediated value proposition (i.e. crypto assets offer a direct, peer-to-peer transactional capability that does not require a financial intermediary, such as a bank). Crypto assets are not a liability on any institution's balance sheet and unlike a CBDC, they are not backed by any government or centralised authority. Because they are not on anyone's balance sheet as an obligation to the holder (i.e. the holder has no claim on the issuer as there is no central issuer), the user is potentially exposed to risk. Crypto assets such as Bitcoin are susceptible to large price fluctuations, generally making them less predictable and therefore less suitable as a stable medium of exchange.

The introduction of a more stable type of crypto asset, known as "stablecoins", addresses the inherent volatility of crypto assets by linking the value of the crypto asset to a fiat currency (such as the US dollar), a basket of fiat currencies (such as US dollar, euro and others), or a traditional asset or commodity (such as gold or oil).

In short, if a CBDC is guaranteed by the issuing central bank, it would be as safe as cash and would have minimal or no counterparty risk.

6. If most money exists in digital form, what is the difference between CBDC and money in your bank account?

When money is held in a commercial bank account in a digital form, it represents an amount owed to you by that bank; in other words, it is a claim that you have against the bank. It can typically be withdrawn in its physical form, but only if the bank is solvent. A CBDC, on the other hand, is backed by the central bank and is a liability on the central bank balance sheet, similar to cash. A CBDC with legal tender status would not be a commercial bank's liability, so you would not have to rely on a particular bank's solvency to be able to maintain your balance.

7. What is the difference between wholesale and retail CBDC, and what is the focus of the SARB's CBDC feasibility study?

The focus of the SARB's CBDC feasibility study is on a retail CBDC, that is, a CBDC that is accessible to the general public for everyday consumer and merchant commercial activities. By contrast, a wholesale CBDC is typically available only to financial institutions for high value transactions.

8. What are the key design principles of a CBDC?

The core principles applicable to the design features of a CBDC in South Africa are as follows:

- It must be a generally accepted medium of exchange/means of transacting, accepted and trusted by consumers and businesses as legal tender, and complementary to cash.
- It must be available to and usable by everyone in the South African economy and the financial system.
- Its value must be pegged at a one-to-one parity with the South African rand.
- It will be a liability on SARB's balance sheet and will remain so throughout the distribution chain (similar to cash).
- It should have the attributes of a generally accepted medium of exchange: it must be divisible, durable, fungible (exchangeable) and portable, and the supply should be limited.
- Its value must be transferable immediately and irrevocably.

In addition to these core principles, the following attributes of a CBDC should be addressed in its design:

- its ability to be exchanged for cash from a commercial bank;
- its use alongside other means of payment in the financial ecosystem (e.g. debit cards or electronic fund transfers);
- its strong safety and security measures to protect against counterfeiting and fraud;
- its ability to allow for improved regulatory reporting and anti-money laundering/combating the financing of terrorism measures, while still protecting the privacy of the user; and
- its usability in the absence of connectivity to a network as a contingency measure, albeit with some limits on the value and/or number of transactions.

9. What are the types of CBDC deployment models?

The CBDC feasibility study will examine two types of deployment models, typically considered globally. These can be summarised as:

- The account-based model: a third party is involved in holding an account on behalf of an entity (business or consumer) and maintaining debits and credits against the account. The entity has a claim on the third party to the net value in the account. This is similar to a commercial bank account.
- The token- or value-based model: the value is inherent in the object that an entity possesses. No third party is needed, as transferring the object of value from one entity to another is sufficient to transfer the value. This is similar to physical cash.

The CBDC feasibility study is expected to examine the advantages and disadvantages of both models.

10. What is distributed ledger technology (DLT)?

A ledger is basically a record system. DLT is a secure digital system for recording the transacting of assets (such as CBDC) in which the transactions and their details are recorded in multiple places simultaneously. This approach offers benefits in terms of resilience (less exposure to a central database failure), as well as safety and integrity through validation of transactions by multiple stakeholders.

11. What is blockchain technology?

Blockchain technology is used to facilitate a shared, distributed and immutable ledger. The term “immutable” refers to the attribute of a blockchain that ensures that the integrity of the history of every transaction that has ever occurred can be guaranteed. The name comes from the way transactions are grouped into blocks, verified, processed and stored in a sequence (chain) that is electronically verifiable, which makes it indisputable.

Bitcoin is an example of a crypto asset developed using blockchain technology.

12. What is the difference between blockchain and DLT?

DLT can be seen as a family of technologies, ranging from distributed databases to tokenisation, while blockchain is one type of this technology.

13. Will a CBDC have to be implemented using a DLT such as the blockchain?

There is no fixed rule regarding the technology used to implement a CBDC. It is more important that the requirements and design attributes are understood before selecting a technology that solves these needs. However, most existing CBDC projects are based on a form of DLT, or a “blockchain-like” technology.

14. Can cash and a CBDC co-exist?

Yes. Should a CBDC be issued, the most likely scenario is that it would exist alongside cash, so that people can decide whether they want to use cash, the CBDC, commercial bank money, or some combination of these. Therefore, much the same as physical cash co-exists with money in your bank account, and can be transferred from one form of money to another, a CBDC would provide another option with its own unique qualities.

15. What is a digital wallet?

A digital wallet can be described as a container (i.e. an electronic device) in which the holder may securely store digital value. Potential consumer devices include chip-embedded cards, smartphones, and a number of emerging dedicated devices incorporating additional security features such as biometric readers or PIN codes.

Digital wallets typically include technologies to interface with point-of-sale devices, such as QR code scanners, near-field communications and other wireless communication technologies, thereby providing a secure means of transacting and transferring value between consumers and businesses.

16. Is South Africa the only country exploring a CBDC?

No; according to a recently published BIS survey,³ the year 2020 saw an official launch of a retail CBDC in the Bahamas; it is likely that more will be rolled out soon. Most central banks are exploring the case for CBDCs. Overall, the survey indicates a continuous move from purely conceptual research to experimentation and pilot projects. Yet despite these developments, a widespread roll-out of CBDCs still seems some way off.

³ C Boar and A Wehrli, 'Ready, steady, go? – Results of the third BIS survey on central bank digital currency.' BIS Papers No 114. BIS Monetary and Economic Department, January 2021. <https://www.bis.org/publ/bppdf/bispap114.htm>

17. What are the possible advantages of issuing a CBDC?

The CBDC feasibility study will examine the extent to which a CBDC would support a number of outcomes potentially affecting the SARB, the national payment system, as well as consumers and businesses. The study topics include:

- improving the ability of the unbanked and underbanked to participate in the financial system and thereby also the economy;
- modernising and optimising the issuance of legal tender;
- maintaining and enhancing SARB's ability to ensure price and financial stability;
- stimulating innovation and competition towards cost-effective and appropriate payment services and products to consumers and businesses; and
- improving transparency and visibility from a regulatory and crime prevention perspective, while ensuring the privacy of consumers and businesses.

18. What are the possible risks of issuing a CBDC?

The CBDC feasibility study will consider potential risks and unintended consequences and how these would need to be mitigated. Some of these are:

- lack of adoption, buy-in and trust from consumers and businesses;
- operational risks associated with the creation, issuance, distribution, transactional usage and management of a CBDC;
- reputational risk of an unsuccessful CBDC implementation for SARB, the payment system and South Africa;
- potential unintended displacement of financial system stakeholders from their roles as intermediaries in the ecosystem, which could impact financial system stability (for example, moving commercial bank money from deposit accounts to a retail CBDC could affect the ability of commercial banks to extend credit to consumers and businesses); and
- the risk of attacks from hackers and criminals.

19. Will a CBDC compete with existing methods of payment such as credit cards?

A retail CBDC is not intended to displace or compete with other payment instruments. Rather, it is a potential additional payment instrument with specific attributes and characteristics that make it attractive for certain uses.