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INTRODUCTION TO CENTRAL BANK DIGITAL CURRENCIES (CBDC)

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What is a CBDC?

A CBDC is a type of electronic money issued by a central bank, intended to serve as legal tender. The key point being that it originates from the central bank; it is effectively a sovereign currency in electronic form and would appear as a liability in a central bank's statement of financial position and an asset to users holding it.

What is the difference between a CBDC and other forms of Digital currency?

There has been a great deal of new digital "currencies" and "tokens" being developed globally, spurned by the recent popularization of cryptocurrencies such as Bitcoin. The main difference however, between a CBDC and another form of digital currency, is that the CBDC is issued by a central bank and is therefore centralized. Cryptocurrencies are fundamentally decentralized, meaning there is no singly governing authority. Additionally, unlike cryptocurrencies whose value can either appreciate or depreciate arbitrarily, a CBDC is pegged to the respective national currency, thus mirroring the fluctuation of the national currency.

Why do we need CBDCs?

To answer this, let us look at the main reasons why other countries are considering, or have already adopted CBDCs in their jurisdictions. In the Bahamas and Easter Caribbean, the respective CBDCs (Sand Dollar and D-Cash) were established to address problems related to the distribution of cash in geographically dispersed rural areas. In China and Singapore, the Yuan and Ubin were launched to improve the cost efficiency of printing money and to increase transaction speeds. In Sweden, the e-Krona was rolled out to accommodate preferences towards the use of digital payments. The United Kingdom and Turkey are also exploring possibilities of CBDC integration.

As illustrated above, most use cases for CBDCs seem to revolve around financial inclusion, cost efficiency – as theoretically, there are no marginal costs for "minting" CBDCs – and increased transaction speeds.

Why CBDCs in Kenya?

The most valuable opportunity to encourage issuance would be for a CBDC to support the Central Bank of Kenya's (CBK) public policy objectives.

A cursory glance at Kenya's domestic payments reveals the dominance of digital currency (mobile money) and has proved to be robust, inclusive, and easily integrable. Therefore, by leveraging the mass adoption of mobile money, the key considerations to introduce a CBDC in Kenya's payment system, according to CBK, are to target cost reduction, interoperability and enhance cross-border payments.
Interoperability is the ability of a payment system to exchange and make use of information with another system. An example is Kenya's M-Pesa system, exchanging information with Telkom money. Currently and unfortunately, the level of interoperability that can ensure seamless payment processes across all platforms has not yet been achieved.

How will CBDCs work?

The Central Bank of Kenya is exploring three operation models for CBDCs:

I. Direct CBDC: Payment information flows from users/ merchants to the Central Bank. The Central Bank will therefore maintain a ledger of retail transactions, meaning that every person with a bank account would need to open a CBDC account with the central bank. The role of intermediaries, such as banks, in the payment ecosystem will be drastically interrupted under this model.
II. Intermediated CBDC: The Central Bank will maintain a wholesale ledger of payment only between payment service providers (PSP) and not those between individual users. Intermediaries can onboard clients and execute retail CBDC payments.
III. Hybrid CBDC: Under this model, the Central Bank retains a copy of the full retail ledger, however, intermediaries will on board clients and handle retail payments.

What can CBDCs achieve?

Some of the theoretical use cases behind CBDCs include the following:

I. Financial stability and payments resilience: CBDCs can enhance financial stability in a jurisdiction by making payment systems more resilient. By providing a new method of making payments, a CBDC could diversify the range of payments options, and mitigate against the downside risks of common disruptions and downtimes experienced in private payment systems.
II. Systemic risks mitigation: CBDCs could make the financial system safer by allowing individuals, private sector companies and non-bank financial institutions to settle directly in central bank money, rather than bank deposits. This would significantly reduce the concentration of liquidity and credit risk.
III. Cross-border payments enhancement: CBDCs could facilitate enhanced cross-border payments through regional and global integration and cooperation. This can be done through designing domestic CBDCs, within a certain economic region e.g., East and/or Southern Africa, around a common set of standards to support interoperability, or through aligning CBDCs with international payment infrastructures such as SWIFT (the Society for Worldwide Interbank Financial Telecommunications).
IV. Consumer protection: The recent interest in cryptocurrencies indicates an apparent increase in the demand for internet-native financial services, also revealing that people want to transact in a borderless financial environment. CBDCs could shield the public from the unregulated risks of new forms of digital money by providing safer and more trustworthy payment services.
V. Promoting innovation: An open CBDC platform could allow a range of firms to innovate around CBDC-related payment services, potentially integrating the same with banking, investment, and insurance services.
VI. Financial inclusion: There is the potential for CBDCs to enable marginalized areas in a country to access a digital payments channel. This, however, would require the rollout of CBDC infrastructure to remote areas that have been left out by the private payment providers. It will also be highly dependent upon the specification of devices that can transact CBDCs – as it may prohibit those with feature phones.

What are some of the foreseeable risks of CBDCs?

I. Disintermediating banks: If considerable deposit balances are moved from banks into CBDC accounts, banks' capacity for credit creation will be constrained. As central banks can't and don't provide credit to

the private sector, the impact of CBDCs on bank credits needs to be carefully appreciated. Furthermore, as banks could lose a significant volume of low-cost transaction deposits, interest margins can come under stress, leading to an increase in the cost of credit. These concerns could be mitigated if CBDC accounts are not interest bearing, so people would be motivated to continue holding their money in interest bearing bank deposits.

II. Financial exclusion: CBDCs can lead to financial exclusion if the required technological infrastructure and technical literacy is not accessible to all sections of the public.
III. Monetary policy impacts: CBDCs, if supplied in the same way as banknotes, would have minimal implications on the implementation of monetary policy. Fundamentally, Central Banks would remain the monopoly supplier of reserves, cash and CBDCs, and continue to set related terms and conditions of these instruments and control monetary policy. However, CBDCs may bring about significant changes in the behavior of the holding public and could, in theory, trigger a review of the monetary policy framework.
IV. Technology risks: The CBDC infrastructure could present an appealing target for cyberattacks and other security threats, including data privacy issues. In countries with lower financial literacy levels, the increase in digital payment related fraud may also spread to CBDCs.
V. AML/CFT and Data Privacy balance: At one extreme, CBDCs could be designed to require that holders provide the Central Bank with information about themselves and their transactions. This approach would minimize money-laundering risks but would raise significant privacy concerns. On the other extreme, a CBDC could be designed allowing parties to transact on a fully anonymized basis, thus addressing privacy concerns but raising money-laundering risks.
VI. Infrastructure Cost: Although CBDCs could reduce the cost of printing money, it does introduce high start-up and maintenance costs, as well as high energy demands amidst growing sustainability concerns.

What's the outlook for CBDCs?

In summary, CBDCs seem to be a tacit admission from Central Banks that indeed technology is primed to infiltrate even the most traditional aspects of banking and finance. However, critics claim that this is merely "conventional" finance's attempt at shoehorning itself into the bustling "fin-tech" realm. Likewise, advocates could opine that CBDCs present the next iteration of currency - as things stand, both camps are more than justified. Paradoxically, and proverbially, the only certainty here is change; the almost continuous convergence of various sectors with technology seems ubiquitous. As with many new technologies, we must be critical on whether the technology presents us with an advancement in a particular area, or if it heralds actual progress.

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