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CBDCS OF THE GLOBAL SOUTH: ASSESSING THE APPROACH TO FINANCIAL INCLUSION

Abstract:

A rapid increase in interest for Central Bank Digital Currencies (CBDCs) has come about recently as governments and central banks globally explore their potential benefits. This paper examines the motivations behind CBDC adoption, particularly in countries forming the Global South, with an emphasis on the critical goal of financial inclusion. We analyze central bank policy documents from Nigeria, India, Brazil, and Thailand, in order to highlight the strategic design elements employed to enhance financial inclusion. These include the use of third-party agents, electronic Know Your Customer (eKYC) processes, and the possibility of offline functionalities. We find that while there are commonalities in approach, such as the utilization of eKYC and third-party agents, challenges remain, particularly concerning offline functionality. The paper highlights the importance of these design features in addressing the issue of financial inclusion, such as geographic, institutional, and demographic hindrances. By addressing these issues, CBDCs could bring unbanked individuals into the formal banking system, leading to wider and more equitable economic development. The study also points to the potential of CBDCs to spur innovation in digital payments and support existing financial inclusion policies. Further, based on our analysis, we believe there is rationale for a concerted effort towards the international interoperability of CBDCs, enhancing their effectiveness and adoption across borders.

Keywords:

Central Bank Digital Currencies, Financial Inclusion, Digital Payment Systems, Cryptocurrencies, Fintech

JEL Classification: E42, E58, O33

Introduction

Central Bank Digital Currencies (CBDCs) have in recent years gained a lot of ground in the discourse around payments and digital interventions to leverage the increasing ubiquity of technology access. Governments around the world through their respective central banks have taken an active interest in the study and potential launch of CBDCs, with some having already progressed from research to pilot launches. Some countries such as Nigeria, Bahamas and Jamaica have in fact, already launched their respective digital currencies.

To clarify, a global group of central banks defines CBDCs as a digital payment instrument, denominated in the national unit of account, that is a direct liability of the central bank (BIS, 2020).

Motivations of CBDCs

A number of motives are cited behind the pursuit of CBDCs by various central banks. The more commonly understood reason is of preempting the network effects-driven potential of private players becoming the dominant component of the payment ecosystem. This has been driven by four developments of concern: the rapid proliferation, growth and adoption of Bitcoin and other cryptocurrencies; the advent of private-sector stablecoins designed to maintain a stable value by being backed by specific assets; the entry of big tech into payments, and the consequent potential of dominance and misuse of data gathered as well as risks of user privacy; and lastly, the accelerated adoption of digital payments due to Covid-19, leading to calls for digital currencies to help with distribution of conditional or stipulated-expense funds to beneficiaries (Auer, et al., 2022).

These apart, central banks around the world have varying other motivations for CBDC research and developments. The developed economies come across as more concerned on safety and robustness of the digital payments along with containing the costs and supporting smooth functioning of retail and wholesale payment systems. Financial stability in the context of emerging alternate cryptocurrencies also is a major concern. (Boar, Holden, & Wadsworth, 2020).

Further, in developing economies, or what we might refer to as the global south, financial inclusion also is an important motivation. Many central banks see CBDCs as a means to provide more payment options or access to digital payments to those that are currently unbanked (ibid).

(Auer & Bohme, The technology of retail centreal bank digital currency, 2020) examine revealed preferences of central banks from their documents and conclude that CBDC projects are more advanced in countries with higher digitization and those with higher innovation as shown by intellectual property. Also, that countries with larger informal economy tend to be in more advanced stages of research on retail CBDCs.

CBDCs and Financial Inclusion

In developing countries, CBDCs could potentially bring many unbanked individuals into the formal banking fold and give an impetus to financial inclusion. These can take effect in two manners: first by inducing unbanked individuals to open bank accounts to get access to CBDC wallets, thus getting them banked while simultaneously mitigating the risk of bank disintermediation by creating counter flows. The second effect would be that of creating a credit risk profile by way of data of banking transactions, thus enabling these individuals to access formal sources of credit (Tan, 2023).

Interactions with central banks at various stages of exploring retail CBDCs bring out some key barriers to financial inclusion: geographic barriers; institutional and regulatory factors such as identity credentials; issues with economic efficiency and market structure making this excluded group

unprofitable; demographic barriers pertaining to age, gender, income, or disability; and low education levels and financial illiteracy. Some central banks see CBDCs as having the potential to spur innovation and economic development leading to financial inclusion while others see it as a strong support to existing financial inclusion policies and efforts (Auer, et al., 2022).

(Auer, et al., 2022) further map CBDC design features to target financial inclusion barriers as illustrated below:

CBDC design features can target financial inclusion barriers — Table 2

Specific design features to address financial inclusion barriers	Financial inclusion barriers					
	Geographic barriers	Institutional factors	Economic and market structure barriers	Characteristics of vulnerability	Limited financial literacy	Limited trust in financial institutions
CBDC architectures: facilitating innovation in a two-tiered system						
Participation of non-bank PSPs			■			
Direct provision of CBDC by the central bank	■		■			
Use of third-party agents	■	■	■	■	■	■
Offering a robust and low-cost public sector technological basis and novel interfaces						
Fee-free P2P payments		■	■	■		
Access for PSPs via APIs			■			
Provision of wallet modules			■			
Different user interfaces				■	■	■
Offline functionality	■	■		■	■	
Disbursement of government and social payments	■					
Rethinking customer enrolment processes and educating about the use of CBDC						
Tiered wallets		■				
Simplified KYC processes		■		■	■	
Electronic KYC (e-KYC)	■	■	■	■	■	
Customer data portability		■	■	■	■	
Fostering interoperability among multiple dimensions						
Domestic interoperability	■		■			
Cross-border interoperability		■	■	■		

[1] This table shows how individual design features map to the six financial inclusion barriers categorised in Section 2.

Source: Authors' elaboration.

Study of Select countries from the Global South and their potential for financial inclusion as evidenced from their CBDC design features

We examine a select group of central bank policy documents or white papers as available to evidence the potential reduction of financial inclusion through the design features planned, evidenced, or considered by these countries.

We present below a sample of the study, examining three key factors of design elements: use of third-party agents, electronic-KYC processes, and offline functionality. These three elements have been chosen keeping in mind they seem to have the potential to address a larger number of financial inclusion barriers as indicated in the exhibit above. These range from all six barriers to at least four. This paper is under development and intends to cover more design parameters for more countries that make up the Global south. The intention is to help arrive at consensus measures and persuade policy makers to evaluate additional features that might be under consideration by a wide group of countries but not considered by a few. A wider consensus would create the path to another key element that is international inter-operability of CBDCs, thus providing a stronger argument to support their cause vis-à-vis an otherwise distinct advantage of cryptocurrencies/crypto-assets such as Bitcoin.

The countries chosen for the initial sample are Nigeria, that has already launched its CBDC, the e-Naira, India that has launched the pilot in the form of the Digital Rupee, Brazil is implementing its proof of concept of the Digital Real, has named it the DREX and is planning to launch it next year in 2024. and Thailand has pursued the pilot for the Digital Baht from June to August 2023 (Reserve Bank of India, 2022; Banco Central do Brasil, 2023; Central Bank of Nigeria, 2023; Central Bank of Nigeria, b, 2023; Bank of Thailand, 2023)

Use of Third-party agents:

Nigeria has adopted a two-tier system, where the Central Bank of Nigeria acts as issuer of digital currency to the banks that in turn distribute the eNaira to the consumers. Other supporting intermediaries can work with banks to further distribute the currency. India has also pursued the pilot eRupee project in collaboration with banks that act as distributors of the currency to select customers by invitation as a part of the pilot. Brazil is also intending to distribute its Drex through registered financial intermediaries that will convert balances of demand deposits and electronic money into Drex. The pilot programme of the Digital Baht pursued distribution in collaboration with three banks, thus also incorporating third-party agents in its currency management system.

e KYC Processes

The eNaira of Nigeria allows for eKYC of the wallet to store the currency using the National Identification Number (NIN). The Indian version, the Digital Rupee also facilitates eKYC using the Aadhar number, the Unique Identity Number allotted to all citizens that also captures biometrics. For the Drex, the Banco Central do Brasil is intending a digital KYC process involving biometrics and behaviour patterns. The Thailand Digital Baht app provided eKYC services along with digital payment facilities.

Offline Functionality

The eNaira does not currently have offline functionality built into the system. However, the CBN is examining the possibility of doing so in the future. The BCB is also considering offline functionality for the Drex but is not making it a mandatory initial feature. The RBI has emphasized the need to offer offline functionality for the Digital Rupee. However, it has not yet implemented it for the pilot programme. The Bank of Thailand did not implement offline access in the pilot programme but does

also intend to provide the same in the actual rollout of the Digital Baht. (Reserve Bank of India, 2022; Banco Central do Brasil, 2023; Central Bank of Nigeria, 2023; Central Bank of Nigeria, b, 2023; Bank of Thailand, 2023)

Conclusion

From the summary observations derived from the policy document and central bank websites of the respective countries, it is apparent that all the countries have undertaken third-party enabled distribution through banks or registered financial intermediaries. This would help keep a key set of stakeholders positively involved in the process while mitigating the risks of disintermediation by enabling the opening of bank accounts or access to banks for the unbanked. Moreover, all the four countries sampled have utilized eKYC processes for launching or piloting their CBDC initiatives. On the count of offline functionality which may prove to be a major facilitator, or stumbling block in the way of this effort, all four countries have expressed intentions to incorporate this feature but have not done it so far. Even Nigeria which is the only country in this grouping to have launched the eNaira as a CBDC, has been unable to do so. This indicates the degree of difficulty this aspect might pose. However, given that all countries, despite recognizing this challenge, are keen to implement this feature, holds promise for the introduction of the appropriate technology and regulatory measures to be able to do so in the future.

References

Auer, R., & Bohme, R. (2020). The technology of retail centreal bank digital currency. *BIS Quarterly Review*, March, pp 85-100.

Auer, R., Banka, H., Boakye-Adjei, N. Y., Faragallah, A., Frost, J., Natarajan, H., & Prenio, H. (2022). Central bank digital currencies: a new tool in the financial inclusion toolkit? *FSI Insights*, No 41.

Auer, R., Frost, J., Gambacorta, L., Monnet, C., Rice, T., & Shin, H. S. (2022). Central bank digital currencies: motives, economic implications, and the research frontier. *Annual review of economics*, 697-721.

Banco Central do Brasil. (2023, September 15). *Drex – Digital Brazilian Real*. Retrieved from Banco Central do Brasil: https://www.bcb.gov.br/en/financialstability/drex_en

Bank of Thailand. (2023, September 04). *Central Bank Digital Currency*. Retrieved from Bank of Thailand: https://www.bot.or.th/en/financial-innovation/digital-finance/central-bank-digital-currency.html

BIS. (2020). *Central Bank Digital Currencies: Foundational principles and core features.* online: BIS.

Boar, C., Holden, H., & Wadsworth, A. (2020). Impending arrival: a sequel to the survey on central bank digital currency. *BIS Working Papers*, no 107.

Central Bank of Nigeria. (2023, September 12). *eNaira*. Retrieved from Central Bank of Nigeria, a: https://www.cbn.gov.ng/currency/enaira.asp

Central Bank of Nigeria, b. (2023, September 15). *eNaira*. Retrieved from eNaira: https://www.enaira.gov.ng/

Reserve Bank of India. (2022). *Concept Note on Central Bank Digital Currency.* Reserve Bank of India.

Tan, B. (2023). Central Bank Digital Currency and Financial Inclusion. *IMF Working Paper*, WP 23/69.