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Task Force 03

REFORMING THE INTERNATIONAL FINANCIAL ARCHITECTURE

Digital Currencies in the Developing World: Coordinating and Sandboxing CBDCs

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Abstract

This policy brief delves into Central Bank Digital Currencies (CBDCs) in developing nations, examining economic, regulatory, and political dimensions. With countries like China and Brazil launching digital currencies, CBDCs hold the potential to boost financial inclusion and lower transaction costs but also pose policy challenges. Our analysis considers macroeconomic impacts, including risks to monetary sovereignty and the potential path for the adoption of foreign CBDCs. Regulatory scrutiny focuses on traceability and fundamental rights. Recommendations suggest adopting multilateral governance for strong coordination between CBDC issuers and adopters, as well as a sandbox approach to foster innovation and help prevent widespread risk to the financial system. Lastly, this paper suggests possible scenarios for the widespread adoption of CBDCs, looking to mitigate the associated risks with this technology.

Diagnosis of the Issue

There has been rising global interest in developing Central Bank Digital Currencies (CBDCs). A Bank of International Settlements (BIS) survey found that 93% of Central Banks have experimented with some form of CBDC efforts (Kosse et al., 2023). The drivers of this desire to engage in CBDCs are existing challenges within countries' domestic economies, such as the high cost of payments and what the International Monetary Fund called "Future-proofing," i.e., ensuring that Central Banks remain the authority that defines the unit of account and the "ultimate settlement asset." (IMF 2023).

CBDCs are the digital format of a country's unit of account. They represent a new step towards digitalization and control over assets and promise to help anchor the public's trust in money, facilitate cross-border payments by making them faster, less costly, and more transparent, and make financial systems more inclusive and efficient. (IMF 2023).

It is important to note that there is not a one-size-fits-all model to CBDCs as benefits and risks vary depending on the country's domestic economy, the level of digitalization/modernization of its financial system, the design choices for the CBDC, the legal and regulatory framework that will underpin the CBDC and so forth.

The G20, comprising the world's major economies, has the potential to be the main character in bolstering central banks' efforts to overrule the issues that come with the CBDCs environment.

Issues with CBDCs

Issue 1 - Risks to monetary sovereignty

The IMF considers CBDCs to be valuable tools for de-dollarization, as they promote greater use of local currencies through their ease of use and safety. This could mitigate the impulse to adopt digital foreign currencies, making domestic currencies more appealing to the public and helping to "safeguard monetary sovereignty" (IMF 2023). However, there is a significant risk that developing countries might adopt digital versions of strong foreign currencies, like the U.S. dollar, which could undermine national monetary autonomy due to these currencies' inherent liquidity and convertibility within the current monetary hierarchy (Brunnermeier et al. 2019).

Some developing countries, such as Ecuador, El Salvador, Panama, and Zimbabwe, use the USD as their official currency to reduce currency devaluation, promote stability, and safeguard against speculative attacks. Other countries, like Argentina, while not officially adopting the USD, rely heavily on it due to currency devaluation. The potential widespread development and use of CBDCs, due to their ease of use, could make dollarization processes more appealing and easier for the developing world, undermining national monetary control and reinforcing the current US-dollar-based monetary hierarchy.

In this sense, digital currencies are likely to have a proportionally greater impact on the unbanked in Least Developed Countries (LDCs) and other nations with larger unbanked populations, leading to significant macroeconomic consequences if implemented on a large scale (Foster et al. 2021). Fragile financial systems make these countries particularly vulnerable to the widespread adoption of non-native CBDCs or commercially issued stablecoins by unbanked individuals, potentially resulting in the gradual dollarization of small economies and exacerbating the devaluation of their domestic currencies.

Issue 2 - Impact on financial stability

Another issue is the risk of bank runs during financial turmoil when worried depositors convert their funds into safe central bank currency. Possible disintermediation of banks could also occur if CBDCs compete directly with traditional bank deposits. Nonetheless, designing CBDCs with no interest rates could reduce its attractiveness as a store of value.

If cash use were diminished upon CBDC issuance, it could strengthen central bank money. Because cash serves as a risk-free store of value and an efficient payment method, acting as a clear bridge between bank accounts to determine exchange parity, its absence for the public could weaken these functions, potentially leading to less confidence in bank accounts and quicker adoption of alternative units of account. CBDCs could secure ongoing availability and demand for central bank money.

In an open economy, considering a macroeconomic model based on an inflation target regime with interest rates as the main policy tool, the issuance of a CBDC creates competition for bank deposit funding. This is not necessarily negative, but it would shift the monopoly of transaction clearing away from commercial banks, reducing banking profits and strengthening central bank money.

Issue 3 - A Risk to fundamental rights

Without clear laws or effective regulations, CBDCs pose risks to society and individual and fundamental rights (Sarai et al. 2021). Those risks include privacy violations, and personal data protection violations. CBDCs have enhanced traceability, meaning issuing central banks can trace and interfere with transactions. If, from one perspective, this feature can help mitigate fraud and other criminal activities, it can also lead to violations of Privacy and Personal Data Protection Laws.

Digital currencies operating within decentralized networks raise significant challenges to maintaining user privacy. Without proper tests and rules, there is a heightened risk of unauthorized access to personal information and the potential for its misuse. The lack of transparency within the digital currency ecosystem amplifies these concerns, as users may not have clear visibility into how their data is being utilized or protected.

Without adequate safeguards, digital currencies may become susceptible to various cyber threats, including hacking and personal data breaches. These vulnerabilities might undermine user confidence in the currency and pose significant financial and reputational risks to all parties involved.

Additionally, the widespread use of CBDCs might also mean the extinction of physical currency usage, as has already been observed in developing and developed economies using digital payment solutions. In countries where individual rights and freedoms are guaranteed, citizens might not have a second thought about safeguarding their rights. However, in more restricted political systems, the usage of CBDCs might also mean curtailing freedom and enhanced tracking of citizens, journalists, political activists, and so forth.

One major issue with CBDCs is the lack of basic infrastructure. In many developing countries, people struggle with poor internet connections and unreliable power supplies, which are crucial for digital currencies. This problem is even bigger in remote and less-served areas. Without good internet and stable electricity, using CBDCs becomes difficult and inconsistent. (IMF, 2023; Foster et al. 2021).

Another big worry is keeping these digital currencies safe. CBDCs are online, which means they can be targeted by cyberattacks. There's also a need for clear rules and laws around digital currencies. Many countries don’t have the right policies to handle the complex nature of CBDCs, leading to confusion and a lack of trust. Political issues and unstable governments make it even harder to set up these rules. (IMF 2023; Foster et al. 2021).

Finally, people need to understand and be comfortable with digital money. In many developing countries, many people lack the knowledge or skills for this, making them hesitant to use CBDCs. This is called user inertia or inertial risk. (IMF 2023; Gupta et al. 2023). Without better infrastructure, cybersecurity, rules, and digital literacy, CBDCs' promise might not be fully realized, and the gap between the digitally connected and disconnected could grow wider.

The lack of a coordinated approach to implementing CBDCs among developing nations risks creating a fragmented system. Without a centralized regulatory and operational standard, each country becomes an isolated financial entity, limiting the potential for dialogue and unified action. This fragmentation could lead to inconsistent policies and standards, hampering the benefits of CBDCs in achieving financial inclusion and sustainable development.

Recommendations

Sandboxing CBDCs

Our first proposal to address the issues of potential impacts on the financial stability of economies adopting CBDCs and the risks to fundamental rights is adopting a sandboxing approach to CBDCs. A sandbox is a relatively new approach to regulatory frameworks, as it takes advantage of the public's exposure to test products and the best tools to regulate them. In that sense, a CBDC sandbox aims to exploit the potential interface of CBDC-related goods and services with the public in highly controlled test environments (Ofa et al. 2023).

A regulatory sandbox offers a balanced and innovative approach to regulating CBDCs. It provides a creative environment that goes beyond traditional legal frameworks, allowing for innovation and avoiding outdated regulatory measures with devastating impacts. Experiments within that field can highlight the potential for other technologies and uses of known technologies, particularly emphasizing, for example, the utilization of smart contracts and programmable money (Ofa et al. 2023).

The Norwegian example indicates that adopting an open-source approach can enhance flexibility. Moreover, it emphasizes that early collaboration between government entities, banking institutions, and the fintech sector is key to generating innovative solutions that add value to CBDCs (Ofa et al. 2023).

Saudi Arabia's experience among G20 member countries is also particularly noteworthy. Following the CBDC regulatory sandbox coordinated by the Saudi Arabian Monetary Authority (SAMA), fintechs participating in the sandbox received licenses to operate in the market. Upon successfully testing their solutions to digital currency scenarios within SAMA's sandbox, these licenses were granted. They were based on government-backed purchase orders linking small and mid-market businesses seeking finance (peer-to-peer financing).

Even though SAMA has conducted planning and testing activities, and they were effective, it emphasizes that no final decisions have been made regarding the official introduction of a CBDC in the country. SAMA seeks to thoroughly examine the advantages and potential risks associated with implementing a CBDC before any further steps are taken.

Saudi Arabia is an observing member of Project mBridge, a collaboration initiative led by the BIS Innovation Hub. The project aims to develop a multi-CBDC platform for wholesale cross-border payments, with a focus on international trade. The platform, supported by custom-built distributed ledger technology and comprehensive legal documentation, organizes a sandbox for testing. So far, 11 observing members have participated, offering valuable feedback (BIS 2023). Participation in this project is possibly one of the reasons why Saudi Arabia is waiting for the CBDCs to be implemented.

G20 member countries can support the central bank's initiatives regarding the sandbox approach by several key avenues. Members with experience in CBDC sandboxes can (i) organize workshops and training programs for central bank officials, focusing on the development and operation of the sandboxes per se; (ii) establish an expert pool to offer sustained and technical support and guidance throughout the whole existence time of the CBDC sandboxes, when and If implemented by the central banks; (iii) allocate financial resources to sandbox projects, particularly in developing economies, to ensure they have the necessary funding for thorough and effective testing processes. This collaborative approach promotes innovation and helps stabilize the international financial architecture, paving the way for the widespread adoption of CBDCs.

International governance

Our second proposal addresses the risks to the monetary sovereignty of countries adopting third-party CBDCs and the lack of international coordination related to CBDCs. We propose that a singular multilateral entity, such as the UN's Economic and Financial Committee, the Financial Stability Board, or a specific standard setter, such as IOSCO—International Organization of Securities Commission—should be tasked with CBDC oversight.

This body would ensure standardization and global integration, aligning CBDC deployment with broader financial inclusivity and economic sustainability goals. It would also offer stability against domestic political changes that might disrupt the continuity and effectiveness of CBDC initiatives. Implementing these recommendations can significantly contribute to the successful adoption and effective functioning of CBDCs in developing nations, leading to broader economic growth and financial inclusion.

We recommend collaboration between member countries and technology experts to develop and implement advanced encryption methods and stricter global security standards for financial transactions, which may involve creating guidelines to ensure consistency and effectiveness across borders.

We also recommend a partnership between such institutions with central banks and the private sector to conduct thorough and frequent assessments of policy recommendations. Such a partnership would aim to establish a system of regular audits to verify compliance with the pre-established security standards and enhance transaction transparency and traceability. This would provide oversight and accountability, ensuring compliance with regulatory requirements and mitigating risks associated with personal data protection and privacy matters.

Broader international coordination would also foster a culture of clear, inclusive legal and regulatory structures for CBDCs. It involves ensuring transparent governance and stable political environments to foster trust in digital currencies. Countries could recommend upgrading telecommunications networks and investing in cybersecurity, as well as improvements to internet access and digital security measures.

On par with our first recommendation, international cooperation also allows for sandboxing and knowledge sharing among participating countries. This could facilitate the implementation of inclusive financial practices, such as educational initiatives to generate inclusivity and guaranteed accessibility and affordability of services in the digital ecosystem.

Governments must create secure digital IDs and policies for financial inclusion, making CBDCs accessible to everyone, including underserved communities. Collaborating with educational institutions and NGOs for digital and financial education is important. Governments should also promote private sector investment in affordable technology, enhancing internet and digital device availability for CBDC use. These actions are key to effectively implementing CBDCs in developing countries, leading to economic growth and wider financial inclusion.

Cross-border CBDC agréments

Central bank cooperation is crucial for mitigating the risks of currency substitution and ensuring stable cross-border use of CBDCs. By collaborating, central banks from different regions can avoid disrupting each other's economies through the widespread use of a CBDC beyond the issuing country's borders, thereby preventing foreign exchange mismatches for users (Auer et al. 2021).

To address issues such as slow speeds, high costs, restricted access, and lack of transparency in international payments, cross-border CBDC agreements have been established to foster collaboration between central banks. Currently, there are two ongoing and four completed cross-border CBDC agreements, providing a framework for central banks to develop shared infrastructure for CBDCs. Project mBridge exemplifies this effort, offering a wholesale multi-CBDC platform based on Distributed Ledger Technology (DLT). This platform coordinates the CBDCs of the People's Bank of China (PBOC), the Hong Kong Monetary Authority, the Bank of Thailand (BOT), the Central Bank of the United Arab Emirates (UAE), and the Bank for International Settlements Innovation Hub (BIS).

While research in cross-border CBDC agreements is still in its early stages, this project can serve as a model for G20 member countries to enhance cooperation and reduce regulatory and political fragmentation in CBDC implementation within an increasingly globalized economy. Consequently, the G20 has prioritized improving cross-border payments, endorsing a multi-year, multi-dimensional program in 2020 to enhance these payments. The motivations behind this initiative include creating faster, cheaper, more transparent, and more inclusive cross-border payment services to promote global benefits, such as supporting economic growth, international trade, global development, and financial inclusion (BIS 2020; Financial Stability Board 2022).

By leveraging the mBridge platform and the research behind it, G20 countries can streamline cross-border transactions, making them faster, safer, and more cost-effective, while supporting the use of local currencies and enhancing financial stability across jurisdictions. However, it is important to note that the BIS emphasizes that the concept of CBDCs for cross-border use is still exploratory. This idea will require significant further economic and practical examination before the investigation into their cross-border use can progress significantly.

Scenario of outcomes

We made two recommendations to improve the widespread adoption of CBDCs and to help mitigate the associated risks to monetary sovereignty, potential impacts on financial stability, risks to fundamental rights and the importance of multilateral institutions. The adoption of a sandbox approach coupled with multilateral governance is of utmost importance to allow for the good governance of CBDCs and avoid unnecessary problems in the near future.

An institutionalized multilateral framework by a chosen institution can effectively integrate and harmonize CBDC policies, aligning them with global financial inclusion and sustainability goals. Conversely, inconsistent CBDC policies could exacerbate financial and economic disparities, undermining their potential as tools for social and economic development.

We also expect that the adoption of CBDC sandboxes could lead to increased innovation and experimentation within the financial sector. Banks and fintechs would be encouraged to develop new services and goods, leveraging CBDC technology within the controlled environment of the sandbox. This could result in the creation of innovative payment solutions, financial applications, and services that enhance user experience and drive economic growth.

However, a contradiction arises in balancing innovation with regulatory oversight. While the sandbox allows tests and trials, there is a risk that some goods or services may pose challenges or fail to meet consumer protection standards. The policymakers must balance fostering innovation and ensuring adequate safeguards to protect consumers and maintain financial stability.

Additionally, sandboxing may risk the creation of a complex regulatory system. Central Banks testing different practices may be enticed to follow their own findings and preferences, making it challenging for banks and fintechs to navigate the regulatory landscape when developing CBDC-related goods and services.

As the trade-off between promoting innovation and maintaining regulatory oversight becomes more pronounced, policymakers must carefully consider harmonizing regulations while encouraging and allowing experiments within the member country's sandboxes. Hence, the need for international coordination and knowledge sharing.

One potential benefit of implementing CBDC sandboxes is the opportunity to promote financial inclusion and accessibility. By testing CBDC-related goods and services in a well-controlled environment coordinated by the Central Bank, policymakers can assess their impact on underserved populations and explore ways to improve access to digital financial services. However, while the sandbox may encourage the development of innovative solutions, there is a risk that a part of the population, such as those in rural, remote, or hard-to-reach areas, may be left behind if they lack access to the necessary technology or infrastructure to enjoy CBDC-based financial services and goods. Policymakers must consider strategies in organizing the CBDC sandboxes to address these disparities and ensure that CBDCs and its products/services are tested, considering all segments of society in the most diverse scenarios and realities.

With effective deployment, CBDCs can significantly improve financial inclusivity, economic stability, and growth. Some positive outcomes are enhanced digital literacy, increased access to financial services, and streamlined transactions. This scenario also includes a boost in confidence in digital financial systems and overall economic growth.

On the other hand, inadequate implementation could result in the persistence of traditional currencies, a widening digital divide, and continued distrust in digital financial systems. This scenario emphasizes the potential risks of neglecting infrastructure, cybersecurity, and education in the adoption process.

Substantial investments in training and education are vital to ensure users are well-equipped to adapt to CBDC technologies. Adequate user knowledge is essential for CBDCs to be an enabler in achieving personal goals rather than a barrier. Moreover, user-friendly and easily accessible system interoperability is crucial. Without these elements, there is a risk of user inertia, where individuals might prefer sticking to traditional currencies, undermining the transformative potential of CBDCs in promoting financial inclusion and economic advancement.

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