



CENTER FOR ADVANCED STUDIES

ON THE REGULATION OF THE
NATIONAL FINANCIAL SYSTEM

NEASF

REPORT ON 12TH MEETING OF THE CENTER FOR
ADVANCED STUDIES ON REGULATION OF THE
NATIONAL FINANCIAL SYSTEM (NEASF)

OPENING REMARKS

On November 5, 2021, the 12th meeting of the Center for Advanced Studies on Regulation of the National Financial System (NEASF) was held by the Center for Research in Law and Economics (CPDE), part of Fundação Getulio Vargas' Rio de Janeiro Law School. The meeting was exceptionally held online.

NEASF's main objective is to contribute to better regulation of the national financial system through research and analysis that make it possible to diagnose problems and identify opportunities to improve Brazil's financial sector. NEASF is a multi-stakeholder organization involving representatives of academia, the markets and government. Through debates and roundtable discussions, its members discuss topics related to regulation of the national financial system, contributing to broader understanding of the sector, trends, risks, any regulatory gaps and their implications.

The chosen subject of NEASF's 12th meeting was "Prospects for the Issuing of Digital Currencies by Central Banks."

SESSION 1

INITIAL DISCUSSION ABOUT THE ISSUANCE OF CENTRAL BANK DIGITAL CURRENCIES (CBDCS)

The first session looked at recent discussions about the issuance of digital currencies by central banks (known as central bank digital currencies or CBDCs), to either replace or complement other forms of currency. Recent events that have made CBDCs a priority for several countries around the world were addressed.¹ It was highlighted that the progressive decline in the use of cash in certain economies together with the proliferation of other digital currencies (such as cryptocurrencies and stablecoins) and the need to create more resilient monetary and fiscal systems have spurred governments and international organizations to actively study the advantages and risks of issuing CBDCs.

It was said that the spread of cryptocurrencies and stablecoins was instrumental in motivating central banks to better understand the possibility of issuing their own digital currencies. The announcement of the Libra project (now called Diem) suggested the possibility of stablecoins of global reach competing with legal tender currencies. This could have unintended consequences for the regulatory authorities and possibly pose a threat to central banks' control of the issuance of money.

Diem is Facebook's project to implement a blockchain-based payment system. Until December 2020, it was called Libra. The Diem Association applied for a license as a payment service provider from the Swiss Financial Market Supervisory Authority (FINMA), but on May 12, 2021, it announced it was closing its operations in Switzerland and moving to the United States. At the time this report was written, the Diem Association's proposal was to issue a dollar-based stablecoin in partnership with an American financial institution. The original intention was for this stablecoin to be offered globally, but the current plan is to only implement it in the United States for now.²

It was said that despite the main motivations of central banks being centered on risks related to the emergence of private sector cryptocurrencies and stablecoins, the inherent advantages of CBDCs have also piqued the interest of central banks around the world. The meeting's participants mentioned CBDCs' potential to improve payment systems, to efficiently make cross-border payments, to promote financial inclusion, to accelerate digitization, and to control monetary policy and financial stability

¹ According to the latest mapping exercise published in 2021 by the Bank for International Settlements (BIS), around 86% of central banks said they were working on some type of CBDC project. In May 2021, the Brazilian Central Bank presented preliminary guidelines on the potential development of a project to issue the "Digital Real" in Brazil. Source: BANK OF INTERNATIONAL SETTLEMENTS. "Ready, steady, go? – Results of the third BIS survey on central bank digital currency." Monetary and Economic Department. Working Paper 114. January 2021. Available at: < <https://www.bis.org/publ/bppdf/bispap114.pdf>>. Accessed on: November 15, 2021. Source: <<https://www.bcb.gov.br/detalhenoticia/548/noticia>>. Accessed on: November 14, 2021

² SMITH, Tom; GERADIN, Damien. "Maintaining a level playing field when Big Tech disrupts the financial services sector." European Competition Journal, p. 1-39, 2021.

by preventing the growth of alternative private sector digital currency. They also noted the need to reduce fraud and illegal activities and to promote innovation and competition in the digital economy.

It was commented that, regardless of the reasons that led to the development of CBDC projects around the world, this is an inevitable reality and central banks are likely to develop their own CBDC projects. However, the implementation of digital currencies issued by central banks warrants careful analysis by public policy makers, given that they could result in a wide range of legal, macroeconomic and monetary policy consequences.

Central banks are currently studying possible ways of structuring CBDC projects operationally. It should be noted that CBDCs could have general/retail or wholesale uses. Wholesale CBDCs could be structured to carry out payment clearing activities between financial institutions, similar to the bank reserve and settlement accounts that central banks already have. Their advantage will lie in the technology used to make the operating system viable. The possibility of integrating tokenized assets and having the currency deposited in reverse accounts held with central banks has been analyzed. Additionally, CBDCs could be based on distributed ledger technology (DLT) or more conventional technology infrastructure.

The meeting's participants decided to focus more on aspects related to retail CBDC structures, because, as discussed, this model has a higher chance of being implemented in society. Retail CBDCs may be used by the general public (individuals and organizations). While wholesale CBDCs could become a new instrument for clearing between financial institutions, retail CBDCs would use the country's central bank for centralized settlement. It would be a form of digital money accessible to all. There is also the possibility of creating an intermediate

system involving financial institutions to implement a retail CBDC.

It was stressed that CBDCs are particularly appealing to countries that have weak payment systems. This does not apply to Brazil, especially given the recent implementation of PIX, an instant payments system.

It should be noted that the main differences between CBDCs and instant payment systems, such as PIX, lie in infrastructure and operation aspects. Retail CBDCs can use account or token technology, while payment systems tend to operate through accounts based on more conventional technological infrastructure.

Considering that commercial banks depend on customers' deposits to carry out their intermediation activities and create book-entry currency, it was argued that CBDCs could cause significant changes in the way the financial system works, because, depending on the structure and technology adopted for their operation, CBDCs could be deposited in a direct account between the general public and the monetary authority, without being part of the intermediation flow of financial institutions.

This change could lead to financial disintermediation, which would represent a disruption of the current operating model of banking institutions. This is because, theoretically, the general public might prefer to deposit their money in the central bank account rather than in the deposit accounts offered by financial institutions, given that the central bank is not at risk of bankruptcy. Thus, without receiving deposits from customers, commercial banks could have difficulties in offering credit.

The meeting's participants also discussed the possibility of a bank run in a context of uncertainty in which the public fears a financial crisis, since CBDCs would present

themselves as a more reliable alternative due to their public nature. In addition, other concerns related to information security and privacy issues in implementing CBDC project were mentioned.

Given these concerns, it was pointed out that central banks have to deal with the challenge of developing a CBDC project capable of mitigating such risks. Some of the options that have been studied by central banks were discussed, such as the possibility of imposing restrictions to lessen the attractiveness of holding CBDCs in relation to deposits, a possible ban on CBDCs paying interest and limits on the sums that could be allocated in this way.

It was said that there is no consensus among experts on the adoption and implementation of CBDCs. Broadly speaking, there are three different views on this subject: (i) some experts argue that there is no need to adopt a CBDC, even as cryptocurrencies evolve and grow; (ii) some support the creation of CBDC, given their potential to make payment systems more efficient, especially in cross-border transactions; and (iii) some do not have a firm position on the real need to implement CBDC projects, but consider that this is a trend and central banks will eventually implement them.

Some examples of CBDC implementation projects around the world were also mentioned, including the Bahamas' Sand Dollar and China's Digital Yuan. These two countries opted for integration with financial and payment institutions in a retail CBCD retail. Six potential public policy mistakes that should be avoided when implementing a CBCD project were also pointed out:³ (1)

a fragmented decision-making process; (2) distance from decisions regarding regulatory objectives; (3) overlap with other existing public policy tools to achieve the desired goals; (4) the creation of an excessively complicated tool for the intended purpose (a "Swiss Army Knife" approach to regulation); (5) underestimating the influence of political forces and pressure groups; and (6) communication distortion.

First, it was said that CBDCs should be considered in an integrated way with other public policy instruments that could be used to achieve certain public objectives. CBDCs are part of a complex payments ecosystem that overlaps with cryptocurrencies, and their implementation projects must be consistent with modernization of payment systems, as well as stablecoins and cryptocurrencies.

It was then mentioned that a second mistake that should be avoided when developing a CBDC project is a lack of clear purposes for implementing such an instrument. In other words, political choices must be made and priorities indicated in their objectives.

As discussed, central banks need to clearly define the public policy objectives for the development of a CBDC project, in order to better guide their decision making regarding their operational structures to implement their digital currencies and understand how CBCDs could interact with other public policy instruments.

Thus, once the public policy objectives to be achieved by implementing a CBDC project have been defined (e.g., financial inclusion, improved payment systems, etc.), it is important not to ignore other

³ ELLIOT, DJ; LIMA, L. "Central Bank Digital Currencies: six policy mistakes to avoid." June 2021. Available at: <<https://www.oliverwyman.com/our-expertise/insights/2021/jun/central-bank-digital-currency-and-the-policy-mistakes-to-avoid.html>>. Accessed on: January 18, 2022.

policy instruments when determining the institutional design of CBDCs.

It was also said that in view of CBDCs' potential use as possible solutions to different problems in the financial sector, there is a risk of taking a "Swiss Army knife" approach to developing CBDC projects. In other words, a project could have multiple functionalities but not perform any one task in an optimal way to the point of fully replacing a specific tool. As a result, it is necessary to clearly define the reasons for implementing a CBDC, so that it is possible to develop a system that is best suited to the country's specific characteristics, needs and regulatory problems.

It was also said that central banks should work together with other political and regulatory authorities to implement a CBDC project, addressing the main problems in the most appropriate way. Otherwise, regulatory fragmentation could pose challenges to the supervision and control of the activities of financial institutions and central banks themselves. Therefore, political influence should not be overlooked when implementing a CBDC project.

Finally, the meeting's participants reflected on the role of communication in the process of adopting a CBDC, given that it is a topic that could impact different segments of a country's society, such as the general public, the media, financial institutions, technology companies, commercial establishments and business people. Therefore, when implementing a CBDC project, one must consider structuring an effective communication channel to convey, in a clear and objective way, the priorities and purposes of the public policy decision to create a central bank digital currency.

It should be noted that the Brazilian Central Bank has been studying CBDCs since it set up a working group on the subject in August 2020, which presented its preliminary guidelines for the potential development of a "Digital Real" project in Brazil in May 2020. 2021.⁴ It is therefore very clear that the Brazilian Central Bank has sought to lay the foundations for the possible development of a CBDC that could accompany the dynamism of technological evolution in the Brazilian economy, aimed at increasing the efficiency of the retail payment system.

⁴ Source: <https://www.bcb.gov.br/detalhenoticia/548/noticia>>. Accessed on: November 14, 2021.

SESSION 2

PROSPECTS FOR ARCHITECTURE AND OPERATIONAL STRUCTURES FOR CENTRAL BANK DIGITAL CURRENCIES

The second session looked at “Prospects for Architecture and Operational Structures for Central Bank Digital Currencies.” Practical aspects of implementing CBDC projects, related to institutional architecture, operational structures and possible macroeconomic repercussions, were discussed.

First, it was noted that a sound monetary system is based on trust in the currency, and this in turn is based on trust in the central bank itself. A digital currency issued by the central bank would therefore offer, in digital format, the advantage of being a currency backed by trust, unlike cryptocurrencies and stablecoins, and it would be able to provide liquidity in a secure manner. Some comments were made on the institutional structure/design of CBDCs, most notably what is called a two-tier system or hybrid system, in which the central bank issues retail CBDCs, but involving financial institutions and other authorized institutions to maintain relationships and provide intermediation with the general public.

Some fundamental aspects of the digital economy were pointed out to contextualize the emerging discussion about CBDCs and their possible justifications. It was mentioned that one byproduct of the digital economy is the huge volume of personal data collected and processed by Big Tech. The presence of externalities characteristic of two-sided platforms could pose three challenges for central banks: (i) competition challenges, given that network effects will make the financial system more prone to dominance

by companies that have access to exclusive data, such as technology companies; (ii) privacy and governance challenges; and (iii) difficulties in maintaining the stability and integrity of financial systems. Thus, it was said that digital innovation requires analysis of the three aspects of competition, data privacy and stability of the financial system.

It was argued that this tripartite analysis of the digital economy extends to analysis of a CBDC implementation project. Considering that the implementation of a CBDC would depend on the institutional characteristics of each country, such as its market structure and other components, not only macroeconomic and monetary aspects must be considered, but also the role that data and information governance will play to structure a suitable CBDC project. In this sense, it was explained that the presence of network externalities caused by Big Tech and the potential risks to the financial system arising from access to privileged information were some of the reasons that led central banks to undertake further studies on CBDCs.

As discussed, although it is considered that the activities of technology companies may be beneficial for the financial system and the public in general, providing greater accessibility, lower costs and better services, one must bear in mind the risks generated if these companies enter the financial sector, and in particular the payments area, since the dominance of data and the concentration of market power could lead these actors to engage in anticompetitive practices.

Some other justifications that motivated studies about CBDCs undertaken by central banks around the world were discussed. First, rapid change in the behavior of retail payments was pointed out, including the declining use of cash in transactions. Meanwhile, the use of new digital payment systems has grown, driven by restrictions imposed by the pandemic.

In addition, high financial intermediation and payment system costs around the world were discussed. Problems inherent to cross-border payments, the inefficiency of payment systems and lack of clarity in the pricing structure of payment arrangements were pointed out.

CBDCs' potential to promote financial inclusion and universal access to the financial system was also discussed. However, it was pointed out that central banks should take into account the risks of implementing a digital currency, in view of the digital divide problem that exists, especially in developing economies. It was noted that even in the advanced economies, many households lack bank accounts, credit or debit cards, and cell phones. Furthermore, homeless people and other vulnerable groups such as the elderly are more likely to prefer to use cash, and as the use of cash declines, these groups may be progressively excluded from the payments sector in the digital economy.

Considering that central banks are generally trusted by the public, it was emphasized that issues related to data privacy should be carefully analyzed when developing a CBDC project. According to a study published by the Bank for International Settlements (BIS), the U.S. population considers Big Tech firms to be the least

reliable parties to safeguard their data⁵. The public showed greater trust in fintechs and the government. Traditional financial institutions were rated the most reliable organizations. This could indicate that CBDCs would be a more credible option for the public than cryptocurrencies and stablecoins.

Thus, CBDCs should be analyzed with such challenges in mind, and they represent an opportunity to tackle them, although they are not the only public policy option to deal with such issues. It was mentioned as an example that the instant payment systems being implemented around the world – and in particular in Brazil – share several functions similar to those possibly performed by CBDCs, thereby resulting in lower costs, greater inclusion and better protection of data privacy.

It was also said that central banks are stepping up their efforts to research and develop CBDCs. There are now three functional retail systems using CBDCs, in the Bahamas, the Eastern Caribbean and Nigeria (eNaria). Some pilot projects are also under way.

One crucial aspect about the institutional structuring of CBDCs is related to the identification of users. It was asked whether users will be able to use CBDCs anonymously or whether there ought to be a tracking and identification mechanism, and how such an identification system would be structured in order to guarantee the privacy of users.

It was said that one important decision in CBDC projects is the choice between a token model, which allows completely anonymous transactions, and an account model based on some type of user identification. There

⁵ FROST, Jon; GAMBACORTA, Leonardo; HUANG, Yi; SHIN, Hyun Song; ZBINDEN, Pablo. "BigTech and the Changing Structure of Financial Intermediation" (April 9, 2019). BIS Working Paper No. 779. Available at: <https://ssrn.com/abstract=3369011>.

have been some problems with token-based currencies, such as their possible use for money laundering and other illegal activities. From this point of view, an identification document would be necessary to preserve the integrity of the financial system.

However, it was mentioned that digital identity systems can be programmed in different ways. There may be purely private sector digital systems, or there is the possibility of government-issued identification systems. For example, the government could directly issue a public digital identity, which would then be accepted by all service providers in both the public and private sectors. Between these two models, there are several other possible digital identity governance models, such as public-private cooperation to ensure interoperability.

Subsequently, it was said that in any chosen model there would be important data privacy issues. To protect sensitive personal data from unjustified access, data access would be limited to specific elements necessary for the execution of a task. Application programming interfaces were presented as good illustrations of this strategy.

Based on this structure, financial institutions or other authorized institutions would not see all the data. Each one would only have access to the information needed for transactions, while users would have full control of their data. This would prevent any economic agent from having a complete view of users' information. In this way, the CBDC's technological architecture could guarantee end-user privacy (regulation by platform).

The same principle could be applied to different types of organizations, such as government departments or the central bank itself. Such an institutional design would protect individuals against excessive data hoarding and abuse of personal data by commercial and financial establishments while also preventing unauthorized access by the central bank and other public authorities.

The authorities could request access to data in special circumstances, as provided for in existing data protection legislation.

Another concern discussed at the meeting was the operational arrangement for CBDCs. A single-tier system operated by the central bank – a direct model – would imply a major operational role for the central bank in terms of communicating with users, opening accounts, maintaining anti-money laundering policies and providing day-to-day consumer services. Such an architecture would imply a major operational change in central bank costs and it is not the most viable option.

Another option consists of a model in which the central bank does not carry out retail transactions, but only wholesale CBDC transfers from payment service providers (PSPs). In this intermediate architecture, the CBDC is still issued by the central bank, but the central bank does not keep all the detailed records of retail transactions, as these are kept by the private sector. Consequently, the central bank acts as a payment ledger between private sector service providers rather than between individual users. The benefit of such an intermediate architecture would be the simplification of the operational setup for the central bank and a greater role for the private sector. By reducing the concentration of data, there would also be greater privacy. The negative effect, however, is that additional protections and prudential standards would be required for PSPs, implying the need for greater oversight to ensure that at all times the information held by the central bank accurately reflects customers' retail properties.

A third shared architecture model was also discussed: a hybrid model, which would bring together characteristics of the direct and intermediate models. In the hybrid model, PSPs would perform all consumer-related payment services, but the central bank would regularly receive individual users' transaction information and account balances. In this way,

the operational involvement of the central bank would be much lower than in the direct model, but higher than in the intermediate model, finding a potential balance.

It was said that most central banks have not yet specified the architecture of their projects. Among those that have done so, most have chosen the hybrid or intermediate model, followed by the direct model. As far as infrastructure is concerned, most central banks are researching digital ledger technology (DLT) and conventional infrastructure, while none are researching public (permissionless) versions like bitcoin. As for access levels, the accounts model is more common than the token model, but many are considering a combination, using a token for small transactions and an account for larger ones. Finally, it was said that transnational use has been considered more frequently than just domestic use.

It was then said that CBDC projects should be concerned with the interoperability of cross-border payments between CBDC systems. Concerns were raised about the cross-border use of CBDCs. It is believed that CBDCs could harm domestic currencies, leading to currency substitution, a phenomenon dubbed digital dollarization. However, under certain conditions, such as with a properly

designed CBDC, especially as in the account model, using digital identities, this risk would be mitigated. It was said that for the international use of CBDCs, the issuing central bank would need to accept users as part of the CBDC network and the host central bank would need to previously discuss this issue through regulation. CBDCs through accounts would not circulate freely and it would be possible to impose a limit. Other major risks mentioned are facilitation of tax evasion, loss of supervision and exchange rate volatility.

Returning to transnational payments, multi-CBDC or “mCBDC” arrangements were discussed and described as promising, given that they represent an opportunity to simplify the international monetary architecture. Several ways are now available today to make CBDCs interoperable. The first option presented would imply mere regulatory standardization and technical compatibility, such as harmonizing message formats. The greatest potential for improving cross-border payments was considered to be the creation of a single multi-CBDC that features a jointly operated payment system encompassing multiple CBDCs. This would require the highest level of cooperation between central banks, but digital ID could be handled nationally only, with international mutual recognition.



 **FGV DIREITO RIO**