

REMARKS BY JAVIER GUZMÁN CALAFELL, DEPUTY GOVERNOR AT THE BANCO DE MÉXICO, ON “SOME CONSIDERATIONS ON CENTRAL BANK DIGITAL CURRENCIES”. THE OMFIF FOUNDATION–FEDERAL RESERVE BANK OF ST. LOUIS SYMPOSIUM “THE NEXT DECADE OF FINANCE: ASSESSING PRIORITIES AND IMPLICATIONS FOR SOCIETY, POLITICS AND ECONOMICS”. Washington University in St. Louis, Missouri, July 9, 2019.¹

Before starting, I would like to express my sincere gratitude towards the organizers for their invitation to be part of this session’s panel.

Historically, technological progress has been a major factor shaping the way in which societies, both within and between, interact across a myriad of dimensions. Of course, economic and financial relationships are among those more swiftly and deeply affected by the ensuing changes. The speed that this process has gathered in recent years, at the dawn of what some have dubbed the “Fourth Industrial Revolution”,² has had remarkable implications for our financial systems, from the way they function and their structural characteristics, to the nature of the partaking agents.

Naturally, this has underlined the importance that central banks, both in their role as participants and authorities in financial markets, remain aware and vigilant of the current state, as well as foreseeable trends, of relevant technologies. The objective should be to timely and orderly adapt to, and also benefit from, developments in this front.

An element that has been receiving increasing attention recently relates to the possibility of officially issuing electronic counterparts to (physical) cash, in

¹ The views and opinions expressed in this document are the sole responsibility of the author and do not necessarily represent the institutional position of the Banco de México or of its Board of Governors as a whole.

² An early reference to this term can be found in Schwab, Klaus (2015): “The Fourth Industrial Revolution: What It Means and How to Respond”, Foreign Affairs, December.

what have generically been termed “Central Bank Digital Currencies” (CBDCs).³ Although still in a very early stage of development, and for the most part within an experimental framework, a few central banks have already taken material steps in this direction, exploring the potential viability of CBDCs with different attributes and characteristics. Among the noteworthy cases are those of the *e-Krona* and the *e-Peso* pilot programs developed by the central banks of Sweden and Uruguay, respectively, as digital alternatives that would coexist with cash as legal tender in their corresponding jurisdictions.⁴

Further to the desire to learn about CBDCs and their implications at this stage, central bank interest in these instruments has been kindled by a combination of factors. One of the most important, particularly among some advanced economies, is the protracted decline in the use of cash and the consequent need to adapt to this situation.⁵ In addition, the possibility that privately-provided electronic means of payment take place in a context of poor competition, has in some cases stimulated central banks’ interest in CBDCs.

Further to the above, a number of other possible advantages of CBDCs have been identified. The potential to enhance the safety of the payments system through a back-up given mounting operational risks in some segments, or its cost effectiveness, by saving on the distribution of cash, are included among them. In other instances, particularly amongst emerging market and

³ In what follows, these remarks will concentrate on the case of *general-purpose* CBDCs, with use aimed primarily at retail operations by the public at large. While restricted-access CBDCs intended for *wholesale* payment and settlement transactions are also being explored, it should be noted that they have yet to be proven as a superior alternative to existing technologies and infrastructures.

⁴ Also worth mentioning is the case of Ecuador, whose CBDC was issued between 2015 and 2018, although with muted success due to low acceptance rates from users in a highly dollarized economy.

⁵ See Khiaonarong, T. and D. Humphrey (2019): “Cash Use Across Countries and the Demand for Central Bank Digital Currency”, IMF Working Paper No. 19/46, March.

developing economies, CBDCs are seen as a means to ameliorate outstanding gaps in financial inclusion of important segments of their populations. Moreover, depending on their specific design, such as the level of transaction traceability (or, conversely, anonymity), CBDCs could also help counter the proliferation of illegal activities.

Notwithstanding the appeal that CBDCs may gather on the basis of these and other favorable attributes, important negative implications must be acknowledged as well. In general, these relate to the potential effects on the role that central banks play in a wide array of activities, some of them closely related to their core functions in the economy. In particular, the issuance of CBDCs could lead these institutions to operate directly in the intermediation of financial resources with the public.

Naturally, such abrupt deviations from the traditional role of central banks carry important risks. At the center of these concerns lie the potential implications for the private financial sector.

First, should CBDCs become entrenched as a close substitute of, or a superior alternative to, commercial deposit accounts (which would very likely be the case if they are designed as account-based and interest-bearing), the amount of resources effectively intermediated by the private financial sector could be curtailed. Adding to the contraction in the supply of loanable funds derived from retail depositors opting to hold CBDCs instead of bank accounts, loan demand could be affected too as a result of banks' attempts to preserve margins by increasing their lending rates. Moreover, as banks face a drop in the relatively stable component of funding represented by retail deposits,

regulatory requirements in place may force them to cut back on credit or hold a higher proportion of liquid assets, either of which would result in less resources available for lending.

Secondly, the stability of the financial system may face important challenges. These would derive partly from the riskier pool of debtors and investment projects that banks could be financing in scenarios of higher equilibrium rates as the one described above. Furthermore, in extreme cases, system-wide bank runs triggered by episodes of stress could be facilitated by the swift and frictionless convertibility of bank deposits into risk-free and liquid assets such as CBDCs.

In other areas, the implications of CBDCs are uncertain:

- In regards monetary policy, the main channels of the transmission mechanism may strengthen if, for instance, CBDCs enhance financial inclusion or push further down the effective lower bound on interest rates.⁶ However, the possibility of dislocations in the financial system as the ones described above, or the potential for changes in the characteristics of the demand for money as a result of the availability of CBDCs, poses risks to the efficacy (and efficiency) with which monetary policy transmits to the rest of the economy.
- As for financial inclusion, even though in principle it should be favored by the introduction of CBDCs, there may be instances in which remaining

⁶ Monetary policy rates are bound below at zero because agents can circumvent rates lower than that by holding non-interest bearing cash. In economies with a low use of cash and an unrestricted utilization of CBDCs, interest-bearing CBDCs can set the bound on monetary policy rates lower. For a more detailed discussion, see Mancini-Griffoli, T. et al. (2018): “Casting Light on Central Bank Digital Currency”, IMF Staff Discussion Note No. 18/08, November.

barriers (such as a lack of access to the required technologies, a strong resistance to adopt them or simply a strong preference for cash) may leave individuals out of the financial and payments system.

- Although carefully-designed and rightly-implemented CBDCs reduce its likelihood, the materialization of operational risks remains a possibility. This could translate into a burden for the reputation (and credibility) of the central bank.
- Striking a right balance between the anonymity and traceability of transactions using CBDCs may prove elusive. At one extreme, full anonymity, while protecting user privacy, may facilitate the execution of illegal activities. At the other end, perfect traceability may hinder interest in CBDCs from users who, for personal and perhaps completely legitimate reasons, prefer to keep part of their transactions unrecorded.
- Should the adoption of CBDCs be successful and not, at least to a significant extent, offset by a commensurate decline in physical coins and banknotes in circulation, the central bank's balance sheet would be expanded. This could imply additional financial risks for the monetary authority as its exposure to the banking system and other security issuers increases while, depending on the size of the expansion, distortions akin to those observed in financial markets linked to the quantitative easing programs of recent may not be ruled out.
- The issuance of CBDCs is not free of legal uncertainties either. Further to the legislative reforms that would be required to equip central banks with the authority to issue this sort of money in the vast majority of

jurisdictions,⁷ it remains unclear how much of a burden account-based CBDCs would imply for these institutions should they become bound by law to comply with existing regulations (such as those related to anti-money laundering and combating the financing of terrorism, or AML/CFT). In addition, given CBDCs legal tender status, difficulties may arise regarding its enforcement, as not necessarily every agent in the economy will have available the means to accept it at all times.

- Lastly, there is a broad consensus in the community regarding the need for further research on, and careful consideration of, the potential implications of CBDCs for interest rates, exchange rates and other asset prices in general, including the relative price between the digital and physical versions of a given currency.⁸

Beyond the above-noted issues, there is an additional element that must be carefully taken into consideration to evaluate whether the adoption of CBDCs, in any of its plausible variants, is recommendable as the next iteration of official fiat money: would there be a relevant contribution of CBDCs to the existing payment infrastructure? In other words, is there a business case for a particular central bank to embark on this endeavor? Clearly, the answer to this question will depend crucially on the defining characteristics of the economy,

⁷ According to results recently reported by the Bank for International Settlements, only about 25% of the central banks surveyed are (or will soon be) legally allowed to issue CBDCs. See Barontini, Christian and Henry Holden (2019): “Proceeding with Caution – A Survey on Central Bank Digital Currency”, BIS Papers No. 101, January.

⁸ See, for instance, ECB Crypto-Assets Task Force (2019): “Crypto-Assets: Implications for Financial Stability, Monetary Policy, and Payments and Market Infrastructures”, European Central Bank Occasional Paper No. 223, May.

especially the level of development and other key features of the corresponding payment systems.

In Mexico's case, electronic inter-bank payments are nowadays mainstream amongst significant segments of the population thanks in large to the success of *SPEI*, Banco de México's flagship system launched in 2004, as it allows users to transfer funds in a safe, cost-effective and nearly-instant manner, on a 24/7 basis. *SPEI* represents today the most important element of the financial market infrastructure in the country, in view of the volume and value of the transactions it executes, both at the retail level and between financial institutions, firms and the government, as well as its importance for other components of the overall system.⁹

One recent overhaul that is worth noting is the forthcoming launch of *CoDi*, a new request-to-pay functionality for electronic payments currently in a pilot stage, developed by the Banco de México to allow for cashless retail transactions via mobile devices. As it runs on *SPEI*'s infrastructure, payments through *CoDi* will be safe, quick and available at all times, with the added benefit of being free of any charge or fee. In addition, it is expected that *CoDi* will foster competition in the financial sector, increase financial inclusion and contribute to the combat of illicit transactions. *CoDi* is scheduled to be fully operational by the last quarter of this year.

⁹ The number of electronic transfers amongst final users via *SPEI* has grown substantially over the last decade, at an average pace of 31.7% per year since 2008. Noteworthy, low-value payments (i.e. for amounts up to MXN 8,000, the rough equivalent to USD 400) continue to dominate the scene, as they accounted for over two thirds of all final-user transfers through this system in 2018, while their growth rate that year was, by a wide margin, the highest among all payment methods other than cash. Further to the increasing presence of online banking services, whose users grew at an average annual clip of 19.3% during the same 10-year period, these figures clearly denote the system's amenability to clear everyday transactions.

Mexico's payments system also features other options provided by private sector institutions. Among these, and as in other economies, credit and debit cards remain the most widely used payment method other than cash in Mexico, with nearly half of all retail electronic transactions cleared with these instruments.¹⁰ In conjunction with the above, some aspects of Mexico's financial regulatory framework have been adapted to the new landscape brought about by ongoing developments in the *FinTech* sector. Of particular relevance for the payments system is the recently-issued regulation of electronic payment funds institutions (e-money issuers), as they are now required to operate in a financially safer and more transparent manner, allowing them to serve in turn better-protected customers.

In spite of the above-noted advances, electronic payment systems in Mexico face important challenges. Chief among them is the strong bias towards the use of cash for transaction purposes in the economy, explained to a significant extent by a high prevalence of illegal activities.¹¹ Such a marked preference for this means of payment is illustrated, for example, by the fact that nearly two thirds of salaried workers receive their remunerations in cash, while virtually all purchases under MXN 500 (roughly equivalent to USD 25) are paid for with coins and banknotes. Adding to the above, cash use in Mexico goes well beyond what might be explained by existing gaps in terms of access to formally provided financial services as, for instance, over 60% of individuals who do not

¹⁰ It should be noted, however, that card usage appears to be on a declining trend, as the annual growth rate of the number of transactions settled with plastic went from an average of 15.1% in 2008-2017 to 8.0% in 2018, with the corresponding figures based on the amounts settled (in nominal terms) being 14.8 and 9.4%, respectively.

¹¹ According to the most recent official statistics, Mexico's informal economy accounted for slightly less than one quarter of the country's GDP in 2017.

use their debit cards cite simply preferring cash as the main reason not to do so.

Under circumstances like these, the case for CBDCs is less obvious. First, the payments features of digital currencies are satisfactorily covered by systems already (and soon-to-be) in place. Second, thinking of a CBDC as a “back-up” does not make much sense either, as the main pieces of the payment systems are handled by the central bank. Third, a major decline in the demand for cash is unlikely to take place in the near future, and it is difficult to expect that the issuance of CBDCs will alter ongoing trends in a significant way. The reputational risks embedded in an entirely anonymous CBDC, especially if it involves unidentified individuals setting up accounts at the central bank, make this a questionable option. But a CBDC design with anything less than full anonymity is likely to dent interest among the general public.

Nonetheless, it is important to stress that arriving at firm conclusions of general applicability regarding the merits of CBDCs is difficult, as expected and realized outcomes will depend, in a major way, on the specific design features of the CBDC at hand,¹² as well as on the characteristics of the countries’ economies and in particular of their payment systems. Even though the subject has raised substantial attention from the part of central banks in recent years, the above-noted lack of clarity is reflected in the fact that none of these institutions has adopted such an instrument on a permanent basis, and the

¹² In general design terms, CBDCs can be either token- or account-based, and intended for either general purpose (i.e. retail transactions) or for wholesale use only, with access possibly restricted to financial institutions. In addition, it is technically feasible for any CBDC variant to pay (or not) interest. For greater detail on the taxonomy of money, and CBDCs in particular, see, for instance: Bank for International Settlements (2018): “Central Bank Digital Currencies”, Committee on Payments and Market Infrastructures and Markets Committee joint report, March.

prospects for an important number of them doing so within a reasonable timeframe are bleak.

This is not to say, however, that the subject of CBDCs and all the issues surrounding it should be disregarded. Quite the contrary. The number and nature of the pending question marks underlines the relevance of continued efforts to satisfactorily understand this matter as well as its potential consequences, even more so in the context of a rapidly evolving environment where changing circumstances and new technological and market developments may warrant further action in this direction. In any event, while we have to be open and attentive to new technologies, it is also true that we need to be cautious in adopting them, especially when, as in the case of CBDCs, we are dealing with an issue with potential major implications and still many unknowns.