

CLIENT UPDATE

DEVELOPING A MEXICO CBDC

Banco de Mexico Announces Project to Implement a CBDC

1. Policy Goals

Banco de Mexico, Mexico's Central Bank ("BM") announced on December 29, 2021 its decision to implement a Central Bank Digital Currency ("CBDC"). Development to pilot a digital currency by 2025 is proceeding at a steady pace.

This memorandum summarizes key features of the Mexico CBDC policy debate and the current state-of-progress. We also review the factors that may impact the potential design of a Mexico CBDC and preview upcoming developments.

The CBDC is aimed at increasing financial inclusion, complementing the payments system, creating a stable digital currency and achieving a safe, efficient and fully compliant mechanism for doing so.

The CBDC would seek to offer the general public access to digital money free of credit and liquidity risk, offer a safer deposit substitute to products offered by other actors, including stable coins, level the playing field in payment innovation for private sector firms of all sizes, extend public access to central bank money (currently paper money) and help facilitate payments among the population. BM should increasingly evaluate the use of the CBDC to enhance the efficiency of cross-border payments, which are generally considered costly and inefficient.

The CBDC could facilitate financial inclusion by increasing access to digital payments as a gateway to wider financial services.

In Mexico, where cash and check use are high, operational costs are elevated. A CBDC may offer digital terms of payment cheaper to operate.

There is consensus that Mexico's CBDC should be privacy protected, intermediated, widely transferable and identity-verified. A CBDC may also achieve synergies aimed at reducing the illicit use of money.

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Certain risks are inherent in Mexico's CBDC. BM is fully aware of them and working towards assessing the key CBDC exposures and designing related mitigation measures from the outset. An interest-bearing CBDC could reduce the aggregate amount of deposits in the banking system, increase bank funding costs and reduce credit availability. It could affect how BM effects monetary policy, e.g. demand for a Mexico CBDC could place downward pressure on reserves. There is a need to balance privacy and transparency. There is also a need to be resilient to operational disruptions and cybersecurity risks.

It is understood that BM has decided to create a non interest-bearing CBDC that would not pressure reserves, because consumers would view it as a vehicle for sending-receiving money and not as a replacement for interest-bearing like deposits. It is further understood that BM will create a retail CBDC that can be held and used by individuals, rather than a wholesale CBDC that would be available to a selected set of financial institutions.

BM does not seek to directly compete with existing firms of payments and is likely to design a platform open to private service providers.

2. Operating Model

There are up to this date fundamentally three systems for the operation of CBDC's. In the first model, called unilateral, a central bank issues and distributes the CBDC, and interacts with third parties in respect to them. In the second model, known as intermediated, the central bank delegates functions ancillary to the creation of the CBDC to financial institutions. The third model referred to as synthetic, while not properly a CBDC, offers a potential alternative framework under which a central bank could engage with the rise of digital currencies entrusting private sector payment service providers to issue liabilities matched by funds held at the central bank.

It is understood that considering Mexico's financial conditions, BM has decided that a unilateral model would be appropriate. BM would issue and distribute the CBDC, and would keep a centralized system to maintain an updated record of CBDC's in existence. Financial institutions would receive deposits from the public in exchange for delivery of CBDC's. Each CBDC would represent the right to receive one peso upon surrender. As mentioned before, CBDC's would be non interest-bearing to avoid competing with bank deposits.

BM is considering whether to implement an account-based or a token-based CBDC.

An account-based CBDC would require customers to open an account with a Mexican bank. Related know your customer, due diligence, documentation execution, dispute-resolution and other compliance-related responsibilities would be handled by private sector Mexican banks, which have the required personnel to do so.

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A token-based CBDC is a digital version of physical cash. It is a liability issued by the central bank that exists in a “digital token” form. A token is a representation of a digital asset on a blockchain; both the asset and the blockchain are established by the central bank. Token-based CBDCs share several potentially desirable characteristics with account-based CBDCs. Perhaps the clearest example is the ability to facilitate easy payments and possibly cross-border transactions. So long as both parties have wallets, tokens can be exchanged regardless of the geographic location of either party. Additionally, token-based CBDCs can be used to accomplish financial inclusion goals: Anyone with an internet connection can obtain a wallet, while most traditional bank accounts require minimum balances or fees. Depending on how the CBDC is designed, government agencies also could better crack down on illicit transactions and collect better macroeconomic data.

Further, token-based CBDCs may offer some disadvantages compared with their account-based counterparts. This is particularly true in the realm of transaction speeds. The proof-of-work system (or any other arrangement that works on the blockchain) will necessarily be slower than the instantaneous transmission of currency enabled through accounts systems. This is a significant issue because one of the primary motivations of adopting a CBDC is to create a better medium of exchange that could enable instantaneous settlement. The blockchain may relatively slow down this. A proof-of-work model could also have associated costs to implement.

In our view token-based CBDCs appeal more than account-based CBDCs because the former can better respect users’ privacy. In several areas of Mexico, indigenous people, peasants or low-income persons may feel intimidated by the need to walk into a financial institution office or access a virtual environment to open and maintain an account. Token-based CBDC’s may also require less central bank personnel than account-based proposals, which is desirable.

A token-based system could be designed to allow programmability: smart contracts, automated execution of operations: payment of interest, routing of taxes, electricity fees, etc.

Insufficiencies in payments system could be addressed by an efficient blockchain-based CBDC that resolves time delays and prevents fees. The potential of a CBDC to be a significant participant in the payment system depends on regulator appetite for the CBDC, availability of the CBDC for retail vs wholesale payments, and the risk of a CBDC product.

Validation refers to validation in distributed ledger technology network, but can also refer to traditional processes, such as checking user’s identity, authenticity of money, availability of funds. Functions can be divided between BM and private entities. BM may own and operate a central ledger that ensures money has not been spent, while private intermediaries carry out remaining validations, such as checking authenticity of digital currency. In this case, a ledger is a database of records of digital monetary holdings that can be either centralized or distributed across a network.

At the initial stage of implementation of the CBDC, probably only people with bank verification number could open a wallet. At a next stage, this could be expanded to people

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with SIM cards + mobile phones but no ID numbers. Later, people with simple access to sales points of major retailers (i.e., a beverage company sales unit or a convenience store chain) could also open a wallet, subject to tighter transactions and balance limits.

3. Business Model

The question of whether and how to cover costs is an open question. BM is to provide the CBDC function to the public, possibly but not necessarily charging a fee for using it.

The public may react positively by being charged a reduced fee, in exchange for the benefit of executing payments in an efficient manner country-wide and at some point in the future, probably across borders.

4. Design Features

The CBDC structure to be designed by BM will support policy objectives and mitigate risks.

Such structure is likely to establish certain restrictions aimed at financial stability. General features will probably seek to limit remuneration of CBDC to limit competition with bank deposits and foster financial inclusion. There are likely to be quantitative restrictions on holding and transactions of CBDC.

Anonymity is a feature to be weighted and incorporated. The more anonymity, the larger risk for illicit use. A possible balance may include wallets with lower thresholds to allow for greater anonymity. Tiered CBDC wallets give rise to policy synergies between anonymity, risk reduction and financial inclusion.

Off-line functionality is important in areas with patchy telecom access, which normally correspond to areas of particularly low financial inclusion (see section 2 above).

The possibility to establish cross-border payments with Mexico's main trading partners can offer a valuable feature. At the time, it will be essential to be compliant with rules and regulations of connected countries. It would appear preferable for monetary autonomy purposes, that CBDCs are converted to other currencies as payments cross.

Design features should input the need to deal with adverse macroeconomic implications, such as currency substitution and vulnerability to financial shocks.

The CBDC should be resilient to operational disruptions and cybersecurity risk.

Design features may permit Mexico regulators to focus on the use of analytics in three spaces: augmenting know your customer-related controls at certain levels of holdings and transactions; conducting transaction monitoring of on-chain activity; and conducting sanctions screening of on-chain activity.

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It is advisable for BM to incorporate in the CBDC design from the outset, periodic vulnerability assessments, monitoring of anomalous activity, business continuity and disaster recovery plans, tabletop exercises and incident response plans and updated risk assessments.

5. Technology

Technology to be utilized by BM is to be consistent with the payments system of Mexico and prioritize national security considerations.

BM will probably rely on internal resources and engage contractors for specific areas, as necessary.

The CBDC will probably have a hybrid architecture. Even though its core will be a centralized system maintained by BM, new features of technology will be added as needed, including among other, those required to facilitate the functions of deposits and transfers by commercial banks and other financial institutions, as appropriate.

6. Legal Considerations

As mentioned before, BM will issue a CBDC that will be a representation of a digital asset corresponding to a Mexican peso deposited with Mexican banks. BM will maintain a centralized ledger of the CBDC's issued. The digital asset so issued, will not constitute a coin.

BM is entrusted with the issuance and regulation of coin, and the regulation of monetary policy payments systems and financial intermediation, among other powers (Bank of Mexico Act, *Ley del Banco de México*, D.O November 23, 1993, art. 3)

The CBDC will require the acquiring public to make deposits or payments with Mexican banks, at accounts open with the same. BM's function will not include the opening of deposit accounts to the public.

The question has been raised as to whether the CBDC would require a change of applicable Mexican law, to authorize BM to open accounts to the public, a function limited to Mexican banks under current legislation. Since as mentioned before, BM will not open deposit accounts to the public, a change in Mexican law for such purpose is not necessary (Negotiable Instruments and Credit Transactions Act, *Ley General de Títulos y Operaciones de Crédito*, August 27, 1932, art. 267).

Another question has been raised, as to whether BM requires authorization of the Mexican Congress to issue the CBDC. The CBDC however, will not involve the creation of coin or a redenomination of the same, which would require authorization of Congress. The issuance of the CBDC will only entail creation of a digital asset representing Mexican pesos deposited with commercial banks, consequently such authorization is not required under the Mexican law

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(Federal Constitution, *Constitución Política de los Estados Unidos Mexicanos*, D.O. February 5, 1917, art. 73-XVIII).

It is advisable to propose Congress at the appropriate time, to expressly add to BM's statutory powers, the power to issue digital assets documenting the right to receive Mexican pesos deposited with Mexican commercial banks. This would provide further clarity for the public, financial intermediaries and courts, and would contribute to ensure that the CBDC is playing by the same market integrity rulebook when utilized by participants.

Regulations to be issued by BM should expressly require that deposits made with Mexican commercial banks to enable the issuance of the CBCD, remain at all times within the assets of Mexican banks, without banks being entitled to lend the relevant amounts as part of its permissible lending activities. Depositors should be required to grant irrevocable instructions to Mexican depository banks, so that amounts deposited are utilized exclusively to pay the CBCD at the time of surrender. For further clarity purposes, BM should include within such regulations, a confirmation that such deposits are covered by the IPAB (Institute for the Protection of Bank Savings) guarantee in respect to deposits made with Mexican banks.

7. Project Implementation

It is assumed that BM can start the CBDC with its existing internal resources. Future steps may require to set up a specialized work team and envisage later the creation of a specialized department within BM.

8. Key Insights

Of utter importance for the success of the CBDC will be to consider key aspects that are not purely technical, although will have a bearing on the same.

Such aspects include market research, collaboration with private intermediaries, technology neutrality, anonymity/privacy trade off allowing public access to information, importance of cross-border payments, and the importance of non-technical aspects such as the idiosyncrasies of the Mexican public and in particular of people in areas of lesser financial inclusion (see section 2 above).

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We will keep you informed as the Mexico CBDC project makes further progress.

Please do not hesitate to contact us with any questions.

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