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Wholesale Central Bank Money in Digital Times

Denis Beau, First Deputy Governor

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Ladies and gentlemen,

The health crisis has sped up the transition towards more digital ways to consume and pay and it has shown the ability of the ecosystem for retail payments to adapt. Less apparent changes have taken place so far for wholesale payments. This does not mean that wholesale payments cannot be faced with the digital push underway in the retail space and will not be confronted with their associated challenges such as safety, accessibility, competition or sovereignty. New tradable assets have emerged, such as security tokens, stablecoins or utility tokens, based on the use of new technologies such as Distributed Ledger Technologies (DLTs) which may alter the functioning of market infrastructures through which wholesale payments flow.

For central banks, as providers of the dominant settlement asset in wholesale transactions, addressing those issues means questioning and possibly reconsidering the way they actually make available their settlement asset for wholesale payments. In other words, **at the digital age should we provide central bank money to financial intermediaries, and possibly to other players for wholesale payments, in new ways and forms, including in the form of a “wholesale” CBDC, to ensure that central bank money keeps its dominant and stabilizing role in this critical payment market segment for financial stability?**

To share with you a few thoughts on the answer to this question, I will focus my remarks on (I) the opportunities and challenges I see for a wholesale CBDC and (II) the first lessons I draw from experiments we have been running at the Banque de France with market participants in this area.

I - Opportunities and challenges associated with the provision of CBDC in the wholesale space

It is not a matter of controversy that digital innovation in the financial sector and the use of DLT-based innovative technologies are creating a wealth of opportunities to improve the functioning of market infrastructures. In that context **the provision of a digital form of central bank money could provide positive contributions and help materialize those opportunities, in supporting efficient and safe settlement processes in two ways:**

- **First, facilitate integration and STP of clearing and settlement activities:** It is indeed essential that asset tokenization does not halt the trend of the integration of financial markets by leading to disorderly approaches and heterogeneous adaptations of market infrastructures and their clearing and settlement activities. Furthermore, we could face a situation where liquidity becomes insulated thus threatening the settlement finality of transactions and complicating liquidity management. In front of these risks, **a wholesale CBDC could play a unifying role for various systems just as TARGET services did for the current European market infrastructures landscape.** This would obviously be valid within a single currency zone, but also for cross border payments, one of the G20 priorities.
- **Second, minimize settlement risk:** the tokenization of financial instruments raises the question of the tokenization of the settlement asset, the so-called cash leg. Such a question should not lead to downgrade the requirements vis-à-vis the safety of settlement but on the contrary it should invite us to revisit the form in which the most liquid and risk-free asset to settle financial transactions, central bank money, is made available. From that perspective, **a wholesale CBDC is a way to put tokenised central bank money on the ledger, protecting beneficiaries of transfer orders notably against counterparty risk, which had been nearly eliminated from current securities settlement procedures. It could also be an answer to the risks associated with the use of private assets for settlement,** in particular stablecoins backed at par with central bank money, which may expose central banks to a possible loss of control over central bank money issuance and management.

The observation that a wholesale CBDC would be clearly beneficial from an integration and settlement risk perspective may explain why central banks have expressed so far fewer concerns for providing it to the market, compared to a retail CBDC; **but this does not mean that its implementation would be straightforward.** Actually, such a move requires addressing a number of issues. And **I would like to stress two of them of significant importance, from the public policy standpoint** of a central bank.

The first challenge relates to the choice of the technology that would support the deployment of wholesale CBDC and to its scalability features. Blockchain technologies are evolving rapidly: distributed ledgers can be permissioned or public, account-based or token-based which has consequences from an operational, interoperability and control perspective. **DLTs remain yet to be tested for large-scale applications in order to be mature enough to be used in a financial context, which would imply to ensure interoperability, with both conventional systems and other DLT systems.** When designing a wholesale CBDC, central banks should also, and by any means, **guarantee technological neutrality and make sure that the DLT-based solution is underpinned by strong governance and includes adequate processes** conducive to the proper production of information data through the consensus mechanism. Operational resilience, cybersecurity, protection of data confidentiality are also key dimensions.

The second challenge relates to the access conditions to central bank accounts for settlement purposes, which is currently restricted to entities subject to specific and stringent regulatory requirements. A wholesale CBDC could trigger a demand from other financial actors which do not currently have access to central bank money to become eligible to settle in CBDC, in order to enhance their settlement. In a broader wholesale CBDC access scenario, even if these actors would be subject to similar regulatory requirements, the role of large banks in the settlement of transfer orders in central bank money would be challenged. Conversely, central banks may be confronted with the dilution of their control over the monetary policy transmission.

Putting central bank money on the ledger for the purpose of settling payments is therefore not straightforward. But it could make a crucial contribution to the digitalisation of financial markets, which calls for experiments.

II - A few lessons drawn from our experiments

Therefore, since 2020, we at the Banque de France have launched **an experimentation program, with interested market participants, to explore the risks and opportunities triggered by the availability of CBDC for clearing and settlement procedures of tokenized financial assets**. Our ongoing program constitutes a tangible evidence of our support to innovation as well as our willingness to take into account the needs of different stakeholders. Two experiments have already been completed in 2020 and the remaining ones – there will be eight of them- should end by this summer.

This program has three singular features. First, the program follows a “learning by doing” approach, as a needed complement to the conceptual and economic considerations to help us acquire the necessary expertise and confidence to inform future decisions. Second, it takes place in a secure and controlled environment, verifying a proper enforcement of the existing regulation:

in other words, this is not a sandbox. Third, it embarks a wide range of both domestic and international private partners around a variety of use cases over a wider array of asset classes, with different technologies, in a domestic as well as cross-border and cross-currency setup.

Most of our experiments are still under way, but let me already share with you **four main lessons** learned at the current juncture:

1. **Wholesale CBDC could prove instrumental in improving the efficiency of cross-border payments.** It is well-known that there are numerous impediments and frictions that hamper their efficiency, in terms of costs, delays, transparency and accessibility. Experiments show that performing interbank payments on DLT could optimize reconciliation efforts and reporting costs for intermediaries and improve information flows. In particular, **this opens an avenue to “multi-CBDC arrangements”¹, formed by interoperable CBDCs in different jurisdictions, that would mirror the current approach used to interoperate traditional payment systems – namely the correspondent banking model -, but adapted to the technology supporting CBDC.** The three arrangements identified by the BIS offer different levels of accessibility frameworks and degree of interoperability to mitigate cross-border and cross-currency frictions: the first offers compatibility between CBDC systems, the second the interlinking of multi-CBDC systems and the third the integration of multiple CBDCs into a single-currency CBDC system. The Banque de France is currently experimenting these 3 arrangements, leveraging on successful pilot operationalizing interoperability between blockchains. But **interoperability also calls for international cooperation:** to commit to common technical standards, to revamp legal and policy frameworks, to mitigate macro financial implications on the International Monetary System and global capital flows.

2. **While CBDC used for retail and wholesale payments are conceptually distinguished, there is actually a complementarity between the two.** To support optimal circulation of a CBDC for retail payments, in a domestic or a cross-border context, a wholesale CBDC arrangement is proven necessary. First, a wholesale CBDC, by minimising cross-border frictions, improves retail payments by retroaction. Second, at domestic level, the issuance of a so-called “all-purpose” CBDC, which would cover both retail and wholesale uses and smoothen circulation between both, would minimize risks of deposit funding loss for the banking sector through ex-ante measures (in its design) rather than rely solely on ex-post mechanisms (deleveraging, increased central

¹ Source: *Multi-CBDC arrangements and the future of cross-border payments*, Raphael Auer, Philipp Haene, Henry Holden, BIS paper 115, 19 March 2021

bank funding). For instance, such a link could prove necessary to allow retail market participants to purchase or sell (tokenized or not) financial instruments, or to settle any subsequent cash flows.

3. Interoperability between conventional systems and DLT-based arrangements is required. All the new use cases referred to as “decentralized finance” raise the **question of the safe and efficient coexistence of different types of architectures to support innovation while maintaining an integrated market for post-trade infrastructures and services**. To this end, the Banque de France is testing the settlement of financial transactions, using both securities collateralized in a centralised system and CBDC tokens issued on a DLT, relying on a conditional settlement procedure. Issuing a wholesale CBDC could also complement the current offer by making central bank money available to settle payments on a 24/7/365 basis, which would be particularly interesting when RTGS systems are closed. **Decentralized finance and CBDCs will not substitute centralized systems overnight, therefore interoperability by design is key.**

4. The underlying technology of wholesale CBDC offers to central banks new ways to keep control over their settlement asset. In a centralized setup, only the central bank as owner and operator of a system exercises control over its settlement asset. **The first experiments have shown that central banks do not have to be themselves operators of the DLT and that owning a node and a smart contract could suffice for exercising an appropriate control over their settlement asset, even potentially located outside the Central Bank jurisdiction.** The upcoming experiments will contribute to demonstrate how the risk of outsourcing the management of settlement accounts in central bank money, that the use of distributed ledgers to process and validate transactions might imply, can be mitigated. **To this end, the Banque de France will analyse the usability of public blockchain technology, including from a safety perspective and determine whether such use would be pertinent or not.**

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In conclusion, with the ongoing tokenization of financial markets and the emergence of new settlement assets, central banks must make sure they continue to safeguard financial stability and help leveraging technological progress for a more efficient financial system. To fulfil this dual mandate, **there is a case for a wholesale CBDC, which may not take pre-eminence over the case for a retail CBDC, but which is related to it and which therefore calls for a thorough analysis of all its consequences**. Banque de France is definitely engaged in this journey.

Thank you for your attention.

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