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CENTRAL BANK DIGITAL CURRENCY: IS IT REALLY NEEDED?

ABSTRACT

Several Central Banks around the world have embarked in projects for issuing a digital currency that would be directly available to retail customers[1]. The European Central Bank started analyzing the issue in October 2021 with a view to take a decision on the implementation of the project by the end of 2023. This article mainly focusses on the European project of issuing a Central Bank Digital Currency (CBDC). The objective is to assess the motivations of such a project and weigh the advantages and disadvantages against the costs and potential risks.

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JEL Classification: E42; E52; E58

RIASSUNTO

Le monete digitali delle banche centrali: ce n'è veramente bisogno?

Alcune banche centrali hanno di recente deciso di lanciare progetti per l'emissione di loro monete digitali (CBDC) direttamente disponibili ai privati cittadini. La BCE ha avviato una fase di analisi nell'ottobre 2021, con l'obiettivo di giungere ad una conclusione prima della fine del 2023. Questo articolo ha lo scopo di illustrare le motivazioni di questo progetto, e di evidenziare i vantaggi e gli svantaggi nonché i costi e i potenziali rischi di una moneta digitale della BCE.

1. THE (ALLEGED) ADVANTAGES OF A DIGITAL EURO

In its 2020 report the ECB mentions several reasons for issuing a digital euro for retail use. None of them seems really convincing nor based on a thorough analysis. Let's consider them in detail.

[1] De Sèze (2023).

According to the ECB, the first reason to issue a CBDC is to support the digitalization of the European economy and the strategic independence of the European Union. These are two distinct objectives. Concerning digitalization, it is not clear how the introduction of a CBDC would make a significant difference, compared to a situation in which digital services are already widely provided by the private sector and are expected to evolve further in the future. What value added can be expected from the public sector entering directly in competition with the private sector for a very specific payment instrument? Shouldn't the role of the public sector be limited to regulating and supervising private payment systems, rather than producing them directly? Is there evidence of market failure or inefficiency which justifies direct intervention?

The ECB does not provide clear answers to these fundamental questions. Available surveys suggest that a significant proportion of European citizens (around 17%) appreciate having the option to pay with cash[2]. This is interpreted by the ECB as evidence of a demand for a digital euro provided by the central bank. This is somewhat misleading. The preference expressed for being able to use banknotes cannot be assimilated to any form of publicly produced digital money, such as a CBDC. There are no surveys nor market study assessing consumers' preferences for public vs private digital money. In fact, the current widespread use of private digital money suggests that there is a widely shared appreciation for such an instrument.

Overall, it seems that the project of a CBDC has been launched without a thorough market analysis of whether there is a real demand for such a service. The project is rather based on the opposite approach, aimed at defining the features of a potential CBDC that would be able to compete with private sector instruments. The underlying assumption is that central banks have the fundamental duty of providing means of payment. The underlying philosophy is that

"payments are public goods and are too important to be left to the markets" (Lagarde, 2022).

Since the use of cash decreases, it is a task of the central bank to provide other direct means of payment.

The argument is debatable. The Treaty attributes to the ECB the task of "promoting the smooth operation of payment systems" (Art. 3 of the ECB Statutes). The issuance of a digital central bank means of payment competing with the private sector would have to be justified by evidence

[2] Panetta (2023).

that the existing retail payment system does not operate smoothly. This was the approach followed for justifying a central role for the ECB and the National central banks in the TARGET large value payment system, whose systemic relevance required a key role for the central bank.

It has been argued that the issuance of a digital euro would require some amendment of the ECB Statutes[3].

One issue to consider is the alleged excessive costs of using private digital services. It would also need to be proven that the most efficient way to reduce costs for customers is to provide a public service, paid by taxpayers, rather than through measures aimed at increasing competition. In fact, the issue of the overall cost to taxpayers of the CBDC project has not been addressed yet.

Furthermore, the cost of using the CBDC have not been determined yet. The impression has been created that the digital euro would be used free of charge, as is the case of cash[4]. However, this will depend on the specific features of the CBDC; in particular on whether retail customers will have direct accounts with the central bank or be able to use CBDC only through commercial bank accounts. In the latter case, the services performed by banks, in particular concerning know-your-customer requirements linked to anti-money-laundering, anti-terrorism, tax-evasion legislation, would inevitably come at a cost, that would ultimately be borne by customers.

The argument that the digital euro would contribute to financial literacy also seems to be stretched, to the extent that such a currency would be available mainly to customers that already have a bank account.

The second reason asserted for the introduction of the digital euro is the need to address the decline in the use of cash, that imply "increasing dependence on private forms of money and private payment solutions". Indeed, the use of cash has substantially declined in most advanced economies. This has been the result of a combination of supply and demand factors. On the one side, public authorities aim at reducing the use of cash with a view to counteracting illegal activities such as tax evasion, money laundering, financing of terrorism. In 2016 the ECB even decided to stop the production of 500€ banknotes, in view of the concern that such a banknote

[3] de Vauplane (2023).
[4] Panetta (2023).

could be used for illegal purposes. On the other side, the private sector has gradually shifted to digital instruments that have been made available by the payment services sector, preferring them to cash. This does not seem to have created a particular anxiety with citizens, who on the contrary seem to increasingly appreciate the possibility to use the available payment instruments.

It is not clear why the increasing reliance on private forms of payment instruments represents a problem and how it can be addressed through a public sector solution. There seems to be no evidence of a market failure nor of a specific demand for a CBDC.

The decline of the use of cash is a source of concern mainly for central banks, as it reduces the scope for seignorage, which is the difference between the remuneration of central bank assets and liabilities. Banknotes bear zero return and are sold by central bank in exchange for central bank money lent to commercial banks at the policy rate. The lesser the share of banknotes in central banks' balance sheets, the lesser the profits.

The issuance of a CBDC would partly compensate for the decline in seignorage if the digital euro was not remunerated. However, no remuneration would reduce the attractiveness of a CBDC compared to private deposits, which tend to bear a positive rate of return in normal times. The long period of very low or even negative rates of interest on deposits may have downplayed the advantage of holding private deposits compared to banknotes. As competition increases between banks and with money market funds, deposits are likely to be remunerated, thus becoming more attractive than cash and thus of a CBDC.

Overall, the argument according to which a digital euro should be introduced to compensate for the declining use of cash does not seem to be convincing, to the extent that the decision to reduce the use of cash lies with consumers.

The third reason for introducing a CBDC mentioned in the ECB report is the need to contrast the use of a foreign CDBC[5]. This is often associated with the objective of "preserving the European autonomy in such strategic sector as retail sector". The reasoning seems be that unless a public digital euro is made available, citizens would use foreign currencies for their transactions. If this was a serious concern, the new digital euro should be issued in unlimited

[5] On this aspect see, among others, Mastromatteo and Rossi (2023; pp. 406-407) in this issue.

amounts and be used for settling a large part of retail payments. This is, however, not in line with the current project, as a quantitative limit – in the order of 3 thousand euro – is expected to be set for the digital wallets available to retail customers. The overall number of transactions settled through public digital euro is thus bound to be contained, as is the case today for banknotes. It is thus doubtful that the most efficient way for the central bank to ensure monetary autonomy for the euro area is to directly produce a means of payment in competition with others. This, incidentally, was never the motivation for issuing banknotes.
The monetary autonomy of Europe would probably be better pursued through other instruments, including effective regulation. We will come back to this issue below.

The fourth reason stated by the ECB for issuing a digital euro is to improve the transmission mechanism of monetary policy[6]. It is not clear why this would be the case. It would depend on the specific features of the CBDC, in particular concerning remuneration and the maximum amount of euro that a customer could hold in its digital wallet. If the digital euro is a close substitute to other means of payments, the shift in the composition could be highly unpredictable. This would make the transmission mechanism less stable. A change in the interest rate could modify the preference between commercial and central bank deposits, affecting the monetary base and the money multiplier. This would be the case especially at very low levels of interest rates, at which the opportunity cost of holding cash is smaller, which might induce customers to fill their digital wallet. As interest rates rise, in an inflationary environment, the incentive to hold a non-remunerated digital currency may decrease, inducing transfers in the opposite direction into deposits. Large shifts from digital wallets to bank accounts could destabilize banks' balance sheets and the central banks' ability to control monetary conditions.

The fifth stated reason for introducing a digital euro is to mitigate the risks in payment systems. However, given that the transactions that can be made through CBDC are of a relatively small size, risks are also likely to be relatively small. Furthermore, in Europe bank deposits are insured up to 100k€, which contains counterparty risk in retail payment systems. It is doubtful that the introduction of a CBDC can significantly reduce such risks. The private sector has shown that it is able to ensure relatively safe means of payments to its customers.

[6] See, for example, Savona (2023) in this issue.

The ECB reports also mentions cyber risk. Such a risk affects all financial institutions, including central banks, which also need to invest massively to protect their systems. Furthermore, if the digital euro is made available through the commercial bank network, the same risks as those of private means of payments will have to be addressed.
The sixth argument is to strengthen the international role of the euro. Again, it is doubtful that the use of a digital euro for small transactions can enhance the role of the euro abroad. It should first be possible for non-residents to hold bank accounts with European commercial banks or allow non-European banks to have direct accounts with the ECB or the National central banks of the Eurosystem, to provide digital euro accounts to their customers. Prudential rules do not make it easy today for non-EU residents to open bank accounts with EU commercial banks. A broader use of the euro abroad may thus require first of all some easing in the existing regulation.

The last reason stated in the ECB report for issuing a CBDC is to support improvements in the overall costs and ecological footprint of the monetary and payment system. The validity of this argument depends on the environmental impact of the new digital euro. It is not clear why a CBDC should be more environment friendly than a private sector digital means of payment.

Overall, looking at the various arguments put forward in favor of a European CBDC, none seem fully convincing. There is no evidence that the new currency would be more efficient and present additional advantages for the consumer. On the other hand, it is not yet clear what will be the cost for the taxpayer of the whole endeavor.

This view is shared by several experts, including in the central banking community. For instance, Randy Quarles, Vice-Chair of the Federal Reserve System between 2017 and 2021, is of the opinion that a digital dollar would present very few advantages while creating a series of challenges for the stability of the financial system[7].
Let's turn to the potential problems created by a digital euro.

2. The risks and challenges of a digital euro

The main problem derives from the decision by public authorities to compete with the private sector. Such a competition may result in different outcomes.

[7] Quarles (2021).

In one scenario the CBDC would turn out not to be as competitive as the private means of payments and would thus not be widely used. This would mirror the current situation of banknotes, which are less and less used as a means of payment. This scenario would imply that public money would have been spent for a useless project, not based on an appropriate assessment of demand by private agents. It would create a reputational problem for the central bank, which would be accused of wasting public money. This scenario is not unlikely, especially in an environment in which the private sector is used to innovate and compete to offer better services, for instance by remunerating deposits, offering credit, etc.

The second problem is the impact on the private financial sector. If the digital euro can be obtained only through regular bank accounts, used to fill the digital wallet, banks would have to purchase the CBDC from the central bank, similarly to what is done for banknotes. Banks would thus have to acquire CBDC in exchange for central bank deposits, that they would have to borrow at the policy rate, against collateral. This would increase the demand for eligible collateral, with the result of raising prices on safe assets. Even with a limited ceiling of 3000 digital euro for each bank account, this would entail a substantive cost for banks, that would have to be partly charged to the customers.

Furthermore, the substitution of bank deposit, used by bank customers for their payments, with digital euro account, reduces the liabilities available to banks to finance the asset side of their balance sheets (mortgages, credit lines, bond portfolios...). Unless the central bank accepts these assets as collateral to finance banks' purchase of digital euro. The risk is that banks end up with less liabilities, in the form of retail deposits, to finance the economy. This could be compensated by additional refinancing operations from the central bank, which comes however at a higher cost for banks. Banks could also resort to greater market financing. However, this is not equally available to all banks, especially smaller ones. Furthermore, supervisors tend to discourage excessive resort to capital market funding, which is considered less stable.

The third challenge concerns the stability of the banking system. The use of a digital euro can accelerate bank transfers from bank deposits to their digital wallet, reducing the amount of available liabilities to finance banks' assets[8]. Banks facing large flows from deposits to digital wallets could be forced to sell their assets prematurely, suffering losses which could trigger

[8] On this aspect see also Beltrametti and Pittaluga (2023) in this issue.

panics, as experienced in the case of Silicon Valley Bank. The fact that bank deposits are insured up to 100 thousand euro may potentially limit the advantage of the CBDC by small depositors. However, experience shows that bank runs are not always based on rational motivations.
The fourth challenge and potentially the most important one, concerns the ability of central banks to control the whole system of digital currency, in particular its key features. For instance, it is assumed that the amount of CBDC available to each customer will be limited. Such a limit should presumably be determined by the ECB. However, this is not the case today with respect to banknotes. Central banks do not set limits to the holding or withdrawals of banknotes. To some extent, the credibility of the fiat money system relies on the potentially unlimited capability of customers to convert bank deposits into central bank money, i.e. banknotes. Limits to the withdrawal of banknotes and to their use in payments are set by national legislators, and actually differ across the member states. The same applies to banking laws, in particular concerning anti-money laundering or anti-tax evasion.

A relevant question would be whether the EU member states, acting individually or in a coordinated way, be allowed – for whatever reason – to modify the maximum amount of digital euro that the respective residents can hold in his account, as would be the case today for banknotes. The same question would apply for other characteristics of the digital wallet, such as remuneration, anonymity, transfer of information, etc. In other words, will the ECB be the only institution deciding on all the characteristics of the digital euro? How would the ECB be able to act independently of the pressure by the member states to change some of its features, especially if some other form of digital payments become more competitive. Suppose a foreign digital currency was issued with a higher wallet ceiling, could the ECB resist the pressure to also raise it?

These are fundamental questions for the independence of the central bank and its ability to maintain control over the issuance of central bank money in a digital financial system. These issues have not been adequately examined yet.

3. The (euro) monetary system of the future

The digital revolution will affect all sectors of the economy, in ways that can hardly be fully predictable today. It thus is legitimate for central banks to try to understand how such

developments will impact the monetary system and the credibility of their own jurisdiction. Such an analysis should normally precede the identification of specific solutions. The opposite process seems to have been followed so far, with a solution being designed in search of problems which have not yet been fully understood. The risk is to devise ineffective and inefficient solutions. Such a process may ultimately lead to a loss of confidence in central banks, which may be seen as trying to expand their powers.

The confidence in the currency should remain the key concern for central banks. The impact of digitalization on trust needs to be carefully assessed. This process should start by asking hard questions.

One example of the kind of questions that should underpin a thorough reflection on the role of a CBDC is whether the reduction in the use of cash puts into question the promise of convertibility that is at the basis of fiat money systems. The ECB's project seems to be based on the assumption that issuing a digital euro would safeguard people's confidence that

"one euro is one euro" (Lagarde, 2022).

The validity of such an assumption is not proven. There is no evidence that the confidence in monetary system is being threatened by the decline in the use of cash or by the rise in the use of private regulated digital means of payments. Any bank customer can request to convert her deposits into banknotes but generally does not chose to do so, not only because it is not practical but rather because it is not an efficient way to ensure conversion. As the recent SVB bank run showed, trust in the currency depends first and foremost on trust in the banking system. The customers that withdrew money from SVB did not convert them into cash or gold but in deposits with safer banks. It is thus incorrect to assume that if banknotes were not available the trust in the convertibility of the euro would evaporate. It also seems rather naïve to assume that a CBDC, as currently proposed, would be sufficient to restore such credibility. In fact, the setting of a limit for conversion in central bank money, which would be explicitly set, could even fuel uncertainty and panic reactions, ultimately turning into pressure for raising the ceiling of the digital wallet.

In fact, the credibility of the fiat system relies on the ability of commercial banks to access central bank money. Bank runs happen when banks do not obtain central bank money because of insufficient collateral, as recent cases show. What ultimately matters for the stability of the

system, and thus its confidence, is the availability of a central bank digital currency to banks, rather than to its customers. Such a currency already exists, as central bank reserves are digitally accessible to banks. It is questionable that central banks' fundamental function is to provide direct access to retail customers. A fiat money system can function without retail use of central bank money, as is currently the case in increasingly cashless economies.

The key challenge for central banks is how to tackle a digital currency privately issued by a non-regulated entity. The whole discussion about CBDC started after Facebook's announcement to issue the Lybra. The question for central banks was whether this novelty would better be tackled through regulation or through the introduction of a competing central bank digital currency. The obvious answer is the first. Without the convertibility into central bank money, the credibility of private instruments would be endangered and represent a threat for the stability of the financial system. On the other hand, the convertibility into central bank money can be granted only to regulated and supervised institutions. This means that Facebook could issue a digital currency only if it is subjected to banking regulation. The challenge is the ability of central banks to impose regulation on such giant companies as Facebook. Not having such a power could create moral hazard. Indeed, if such an institution got itself into trouble, the monetary authorities would be faced with the dilemma of reneging on their commitment not to grant access to central bank refinancing or accepting the disruptive consequences of the failure of the private digital system on the financial system. The experience of the Great Financial Crisis ultimately shows that it is very difficult for the central bank to deny access to liquidity, even at the price of granting a bank license, if this is the price to be paid for avoiding major contagion. The risk of addressing a too big to fail unregulated institution suggests that the best way to avoid such a situation is to prohibit it from the start, which is what the G7 ultimately decided. Introducing a CBDC for the purpose of competing with non-regulated privately issued money is not the most efficient way to reduce the potential systemic risk associated with private payment systems.

4. Conclusions

The arguments developed in this paper suggest that the reasons invoked so far by central banks to issue their own digital currency are still not fully convincing.

However, this doesn't mean that such a project should be immediately abandoned. In fact, the strongest argument for continuing working on the project is the uncertainty surrounding the impact of digitalization on the financial system. It's indeed very difficult to make forecasts in this area and central banks may face the risk of being left behind and not being able to react to innovations in that field. Continuing to work on the digital currency may be a way to remain connected with technological developments and eventually be ready to act if needed. On the other hand, this doesn't mean either that central banks should decide to rapidly get into the production phase.

Central banks should instead start working more closely with the private sector, in particular the banking system that they regulate, to understand all the implications and prepare for alternative scenarios[9]. While this is consistent with the ECB's declared intentions, a more intense multilateral and bi-directional dialogue is required to ensure that both the private and public sector are fully equipped to address the challenges of digitalization.

[9] EBF (2023).

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