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Could a digital currency strengthen the euro?

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Abstract

The introduction of a digital euro could transform not only the way European citizens will make payments in the future, but also how the ECB operates. It could also have a major impact on the structure and functioning of the European financial system. While the final decision has not been made yet and the pros and cons of the different technical options are still being debated, greater attention should be paid to the complementarity between the introduction of the digital euro and the implementation of other institutional reforms. The risks of bank disintermediation or greater financial instability could be minimized or even transformed into an opportunity if the introduction of the digital euro were to be accompanied by the implementation of the Capital Market Union and the completion of the banking union. Also, a common digital currency could have limited benefits without a common digital “safe” financial asset. Only if it is part of a wider reform process, the introduction of a digital euro could strengthen the international role of the euro.

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1. The ECB initiative

A Central Bank Digital Currency (CBDC) is a liability of the central bank, denominated in the official unit of account, which serves both as a digital means of payment and a store of value. According to a recent Bank for International Settlements (BIS) survey, 86% of the central banks are studying the benefits and drawbacks of CBDCs and some are already in the testing phase. In 2020 the first CBDC, the Sand dollar, started operating in the Bahamas (Boar et al. 2021).

Currently, the European Central Bank (ECB) is also working on it. In October 2020 it published a report on the digital euro and launched a consultation whose results have recently been presented (ECB 2021). The final decision will be made over the course of the summer. This policy brief will look at the motivations behind the European initiative and the opportunities that the new instrument may offer. It will also enquire whether there is room for an instrument which is not meant to substitute cash and other electronic instruments issued by banks and other Payment System Providers (PSP). Finally, it will discuss the risks that the digital euro's introduction will imply for a financial system like the European one, which is mainly bank-based and which is subject to fragmentation along national lines in times of crisis.

2. The motivations for introducing a digital euro

The entry of big tech in the digital currency market

One of the main motivations is to avoid that a few private currencies could eventually dominate the domestic payment system. The issue is not so much the growing popularity of cryptocurrencies like Bitcoin or Ethereum, whose market values have recently surged but which are too volatile to become a widely used payment medium for retail transactions. What has been worrying central banks most is the new “stable coins” being considered by Facebook and other big tech companies which could be very attractive because their value would not significantly differ from that of the official currency, being backed by highly liquid safe assets or even cash.

There are various categories of stable coins, depending on which of the three functions of money they would cover (ECB 2020a). In its simplest form a stable coin is mainly a new payment method which can be redeemed in the official currency at any time and is fully backed by risk free assets. It mainly specializes in transaction services – such as international remittances and payments - of better quality and price than those offered by existing Financial Market Institutions (FMI). The substitution of central bank money and bank deposits with this new asset may reduce seigniorage and the demand for liquidity and it could also affect bank profitability, although the overall impact would be limited. The dominant coin of this kind, Tether, is mainly used in the crypto-assets market and there is no evidence that it may extend its presence outside of this market.

Much more significant would be the impact of a stable coin representing not only a new payment media but also an alternative store of value or even an alternative unit of account, as originally envisaged by Facebook for the Libra stable coin, which was intended to be backed by a basket of low risk assets in

several currencies. If such an instrument were to gain a role in the money market as significant as that of Facebook in the social media market, the stability of bank deposits and the cost of bank funding would be deeply affected. Since the transactions in this currency would not be settled in central bank money, the demand for central bank liquidity would also fall. The ECB would lose seigniorage and the capacity to control money market rates. Questions would also arise as regards the function of central banks as lenders of last resort, since it is possible for stable coins to be subject to deposit runs if the public fears that their assets would not be redeemable.

Regulators are active in most jurisdictions to limit the liquidity and financial risks of stable coin arrangements and Facebook has already revised the design and name of its currency - now called Diem, which would no longer be a multicurrency - to meet their concerns. However, the regulators may have limited capacity to prevent a few large players from gaining a dominant role in a sector in which “network externalities” play a crucial role. Tech companies have an extraordinary marketing capacity built upon the wealth of data acquired on the individual habits and preferences of their customers. This could lead to a major transformation of the global financial system in which payment systems become part of platforms where new currencies offer not only the traditional monetary functions as stores of value, exchange media and units of account, but also access to additional services, including credit and insurance (Brunnermeister et al. 2019a).

Competition among central banks

This is what happened in China where the Alipay platform, part of the Ant Group owned by Jack Ma, has become the most widely used payment service and is rapidly expanding into loans, wealth management, even insurance. The Chinese authorities have clearly revealed their concern about the excessive power of the Ant Group when they suspended the 35-billion-dollar IPO that Ant was ready to launch in the Hong Kong-Shanghai market last November. But even the very powerful Chinese government cannot do much to break down payment patterns that are now deeply rooted in the habits of the Chinese people. According to many commentators, this is one of the main motivations behind the People’s Bank of China’s (PBoC) CBDC project, which is being implemented in collaboration with the big Chinese tech companies and is already being tested in a number of cities.

The possibility for China to gain first-mover advantage in the global arena should not underestimated. While it is hard to believe that the digital Yuan will gain popularity in Europe or the US, it cannot be ruled out that it could make inroads in other Asian countries or in Africa, where large sectors of the population are unbanked and where China is developing a vast network of commercial relations. New digital currency areas could emerge, supported by digital networks able to achieve broad domestic and international acceptance (Brunnermeister et al. 2019).

China may also become a global leader in the development of the technology underlying digital currencies. The PBoC has already filed more than 80 patents to develop for its system, which has been designed to process up to 300,000 transactions per second (Knoerich, J 2021). Once successfully used in China, one cannot exclude that the PBoC could actively market it abroad.

Another central bank that is on the forefront of CBDC initiatives is the Swedish Riksbank, which operates in an almost cashless country where the public's demand for central bank money is continuously declining. The Riksbank has already started testing the token-based e-krona which uses blockchain technology (Sveriges Riksbank 2021).

The opportunity to reduce transaction costs

Of course the defensive motive is not the only driver of the central banks' initiatives in the area of CBDCs. New technologies offer an opportunity to reduce the use of cash, which is an instrument that, as is well known, bears high social costs. They can also reduce the costs of the large networks that connect banks and that currently utilize big centralized data centers often directly operated by central banks.

In Europe, one of the main issues is the fragmentation of the payment system. The banks' most promising initiatives, such as those in the area of instant payments, mainly operate at national level. The risk is that global players will dominate the Europe-wide market, as has happened with major credit card brands. In 2017 the European Payments Council (EPC) developed a scheme to enable instant money transfers without exchanging IBANs. However, participation has been limited and the European Commission is considering making it compulsory. Depending on how it is designed, the digital euro could play a catalytic role in this respect.

3. The role of the digital euro in the current European payment landscape

While there are clear public policy motivations that could justify the introduction of a digital euro, a number of questions still remain unanswered as to which consumer needs the new medium would meet and whether there is a business case for an initiative that most likely would be very costly and would bear high reputational, financial and operational risks.

Two types of digital currency

The CBDC could be a bearer instrument - often called "token money" - or an account-based system, or both. The main difference is in the way the finality of payments is achieved (Landau et al. 2019). With a bearer instrument the transfer of money is completed ("final") when the object - be it cash or some other token - is transferred between the two parties of the transaction. With an account-based system the payment is final when the accounts of the two parties are respectively credited and debited in central bank money. In a digital world what is relevant is not the physical transfer of the asset (e.g. cash), but the transfer of the information underlying the transaction and its mechanism of validation. For instance, digital payment services based on smart phone applications can transfer money using Bluetooth or QR codes which do not require an online connection. A central bank currency could be constructed to allow offline use of this kind.

In a not too distant future new technologies could also allow central banks to open accounts for the public at large. However, from an economic and institutional point of view, this is an unviable solution.

It would violate the principle of separation of central banking from commercial banking and it would lead to an unpractical and unhealthy direct relationship between the central bank and the commercial banks' customers. As most central banks, also the ECB is therefore thinking of a two-tier system whereby the digital central bank money will be distributed to final users through banks which will retain the interface and all the business and accounting relationships with the final customers (Auer R. et al. 2020). The public would have access to both deposits in commercial bank money and deposits in central bank money through their banks.

Digital euro vs. cash

Since the new currency would continue to coexist with cash, a question to ask is whether it could become a viable alternative to cash. Banknotes have several features that make them one of the preferred payment instruments. They guarantee anonymity; they cannot be refused for payment because of their status as legal tender; they can be used also by those who do not have bank accounts; they ensure “instant payment” because the transfer of the value between the buyer and the seller is immediate, and they are free of credit risk because they are a liability of the central bank. They have, however, very high storage costs and bear the risks of counterfeiting and theft.

A digital currency would certainly be similar or superior to cash with respect to the last three of these features but it could be inferior as regards the other ones. To be successful as an alternative to cash, the first aspect that will need to be clarified is that of anonymity and privacy. In the consultation conducted by the ECB, privacy occupies the first position in the ranking of the desirable features of the digital euro (41% of replies) (ECB 2021). The ECB has stressed that the digital euro will respect the right to privacy. As ECB Executive Board Member Fabio Panetta stated, “A digital euro would increase privacy in digital payments thanks to the involvement of the central bank, which – unlike private suppliers of payment services – has no commercial interests related to consumer data.”² However, the ECB intends to restrict the use of the currency for some categories of users, such as non-eurozone residents, as well as certain kinds of operations. To do this it will need to be able to identify the users. However, it is interesting to note that among the respondents of the consultation, only less than one per cent are in favor of anonymity. In designing the new currency a technical solution could be identified and institutional arrangements could be put in place to properly balance the right to privacy and the need to avoid the use of the new medium for illegal activities.

The second important feature to be clarified is the digital euro's status as legal tender, which, if granted, could greatly favor its use. From a legal point of view it may be difficult to impose the obligation to accept an instrument which requires technical support that is not available to all the population. But some features could be introduced for its use in “official transactions,” such as paying taxes or receiving subsidies, which could favor its use as a “de facto” legal tender.

² Statement by Fabio Panetta, at the ECON Committee of the European Parliament, October 2020. ecb.europa.eu/press/key/date/2020/html/ecb.sp201012_1d14637163.en.html.

The third important feature is whether it would be available in token form also for those without bank accounts, a feature that would greatly enhance financial inclusion and that would make the new currency an attractive alternative to cash. Some developing countries have introduced instruments of this kind at a relatively low cost, something that could also be considered in the euro area.

Central bank digital euro vs. private digital instruments

Another important question is whether the central bank digital euro could be a valid alternative to the electronic instruments already offered by banks and other payment system providers. The ECB's intention is that "the prospect of central bank initiatives to issue a digital euro should neither discourage nor crowd out private solutions for efficient digital retail payments in the euro area". The main advantage of a central bank digital currency is that it would be free of credit risk, contrary to the liabilities of private financial institutions which can be used for payments with other cashless instruments such as credit transfers, card payments and e-money. However, holders of small value deposits are to a large extent already protected by deposit insurance. They would switch to a CBDC only if it offered other advantages, such as security or the ease of use.

The categories of depositors who could obtain most advantages from a digital euro are the large value depositors, such as firms or merchants, or non-residents, who are much less protected by deposit insurance and could even be exposed to the risk of bail in times of crisis.³ However, the shifts of large deposit holders from private money to the digital euro could destabilize the banking sector. The ECB is therefore considering the introduction of quantitative limits for different categories of customers and differentiated interest rates. For example, Bindseil and Panetta suggest a limit of €3,000 per capita, which would cover the average monthly net income of eurozone households.⁴ The interest rate applied to this amount would be zero, while for larger amounts, which would be reserved for categories of users other than households, interest would be lower, or even negative, to discourage holding digital currency for investment purposes.

An alternative approach would be for the Eurosystem to provide the basic digital infrastructures on top of which additional value added services could be offered by commercial banks. For instance, an area where there is a clear market failure is that of cross border and cross currency transactions. The digital euro could offer the basic infrastructure to fill this market gap, as has been done in the area of wholesale payments with the creation of Target 2. An important initiative was the launch in November 2018 of the Target Instant Payment System (TIPS), a platform operated by the Bank of Italy on behalf of the Eurosystem. TIPS is an extension to retail payments of the Target 2 system, which, however, unlike Target 2, could also process various currencies other than the euro.⁵

³ Under the Bank Resolution and Recovery Directive currently in place in the EU, some categories of investors, including holders of some categories of bonds and some large value depositors, could participate in the bail-in of a bank in crisis by taking losses on parts of their capital.

⁴ "For corporates (financial non-banks and non-financials) the tier one allowance could be set to zero, or it might be calculated to be proportional to a measure of their size and, thus, presumed payment needs. Foreigners could be allowed to hold CBDC, but should not have any tier one allowance."

⁵ Also in the US, The Federal Reserve Banks have developed the FedNow service which will provide instant payment services to businesses and individuals "around the clock, every day of the year". A pilot program will be launched in the coming months.

4. The complementarity with other euro area reforms⁶

Bank disintermediation

If the public were to substitute bank deposits with CBDC, banks would have to offer higher interest rates to retain funding capacity, which could in turn force them to either increase the cost of loans or reduce the volume of lending.

However, this outcome may not be very significant quantitatively and, to a certain extent, might even be desirable. Only some categories of deposits, mostly sight deposits, could partly migrate to the central bank. Furthermore, banks could increase their reliance on wholesale funding. They could also offer more innovative payment services and enrich their financial product offerings.

To a certain extent, moving away from the classic intermediation model, based on the maturity transformation of liquid deposits into long-term credits, and encouraging greater reliance on capital markets could even be a desirable development for the European financial system. However, this would require further progress in the direction of a Capital Markets Union. According to some estimates, the ratio of total bank assets to GDP is three times bigger in the EU than in the United States.⁷ Securitization would be a particularly useful tool for banks, allowing them to transfer illiquid loans to investors. Currently, securitization represents only 3% of GDP in the EU-27, as opposed to 12.5% in the United States and 12% in the UK.⁸

Excessive expansion of central banks' balance sheets

If a CBDC mainly replaced banknotes, the size and composition of the central bank's balance sheet would not change substantially. However, it could greatly increase if non-residents shifted a part of their portfolios into the national CBDC or if the public moved their funds from commercial bank deposits to the CBDC. Changes in lending and investment policies of central banks may have important institutional implications. Certainly central banks could not take over the function of lenders to the private sector, something that would lead to the misallocation of resources and crowd out a key function of commercial banks.

The most immediate possibility would be for the ECB to use the additional funds to increase loans to banks.⁹ This solution would preserve the separation of roles between central banks and commercial banks, but could be problematic from several points of view. First, the collateral that banks would offer, especially in its loan component, could not be of the high quality that the ECB usually requires. Second,

⁶ This section of the note summarizes the main points made in Passacantando (2020).

⁷ According to Langfield S., M. Pagano (2015), the total assets of banks in the EU amounted to 334% of the GDP in 2013, as opposed to 196% for Japanese banks and 86% for US banks. Converting the US figure to international accounting, the size of the US banking system would reach 115% of US GDP, which is still only about a third of the size of Europe's banking system.

⁸ European Commission (2020).

⁹ For Brunnermeier et al (2019b) this would make private and public money equivalent to the issuance of CBDC and "would simply render the central bank's implicit lender-of-last-resort guarantee explicit".

it would represent an important change in the central banks' lending policies, which are exclusively motivated by monetary and financial stability objectives. Current long-term maturities – up to three years for long-term repo operations or LTROs – are justified by monetary policy considerations, i.e. the need to avoid a prolonged deviation from the inflation target. Finally, complex conflicts of interests would arise if the ECB were to become a “structural” long-term investor in the banks it supervises.

The other asset the Eurosystem could acquire is government securities. Currently, the ECB buys a huge volume of public bonds almost exclusively as a result of quantitative easing operations rather than to finance states, something it is not allowed to do. It could also increase its investments in corporate bonds, but given the lack of depth of European capital markets, this could excessively reduce the quantity of corporate bonds held in private banks. A deep securitization market and a common “safe” financial asset for the euro area would be crucial in this respect.

Probably the best option for the central bank would be to properly combine all the previously mentioned options, following some transparent rules of diversification and principles of market neutrality. The development of deeper and more highly integrated capital markets would be crucial for Europe.

Financial instability and volatility of capital flows

A central bank digital currency alternative to bank deposits could amplify financial instability if it facilitates the transfer of funds from bank deposits to central bank accounts during crises. This possibility already exists *de facto* for large value deposits, which can at any time be converted to Treasury bills or other low-risk assets. It would be extended also to the public at large, who could convert their bank deposits to risk-free CBDC without waiting in queues in front of bank branches.

A switch from bank deposits to cash is not a remote possibility. Flights from bank deposits peaked after the collapse of Lehman Brothers and remained high during the 2010–13 sovereign debt crisis (Rinaldi 2019).

As already mentioned, the ECB believes it could reduce this risk by introducing quantitative limits on the use of the CBDC and a variable remuneration system. However, a quantitative limitation would put the CBDC at a disadvantage with respect to other digital currencies for which no limitation applies. Furthermore, a change in the remuneration of CBDC would be a very sensitive instrument to use during banking crises because of the signal it would send to the markets about the concerns of the central bank.

At the same time it is very unlikely that a run on banks would be generalized across the eurozone. Most likely it would affect either individual institutions or the banking systems of some member countries. In the former case, strengthened traditional instruments of lending of last resort could be sufficient. In the latter, it would certainly be very difficult to reduce the remuneration of the digital currency for the entire eurozone in response to financial instability episodes which would materialize in a few member countries.

The exposure of the eurozone to the risk of fragmentation during banking crises is a well-known problem. The recommended policy actions to address it include completing the banking union, in particular

introducing cross-border deposit insurance, a sustainable crisis resolution mechanism for banks, a stronger public backstop in case of a systemic crisis, and the creation of a common safe asset to break the loop between banking and sovereign crises. Because of the possible impact on financial instability, the creation of a digital euro requires the implementation of reforms on all these fronts.

5. Conclusion

The main role played by central banks in the area of payment systems has traditionally been that of issuers of cash and providers or supervisors of the system of settlement for interbank transactions (the Target 2 system in the euro area). Only banks were allowed to have direct access in digital form to central bank money by keeping an account in the central banks. New technologies make access to central bank money in digital form possible for the public at large and they could give central banks a more direct role also in the settlement of retail payments.

The creation of a digital euro is a very complex project from the economic, technical, legal and organizational point of views (Cipollone 2021). To meet consumer needs the new payment medium will have to be widely accessible, possibly also for those who do not have a bank account, easy to use, secure and resilient against cyberattacks or malfunctioning of the network. It will also have to safeguard privacy, while allowing for verification that is not used for illegal activities. Finally, it should complement the existing electronic instruments issued by the private sector rather than displace them.

The introduction of a CBDC would also have important implications for the structure and stability of the European financial system. One of the main challenges will be limiting bank disintermediation. Although this risk has probably been overstated, it is of critical importance for Europe because European enterprises highly rely on bank intermediation, especially the SMEs that form the bulk of the industrial sector in many member countries. Risks of instability should also not be underestimated because when they materialize in the euro area they result in fragmentation of banking markets along national borders. Whether the CBDC would exacerbate these risks requires further analysis, but at the same time it would not be easy to design measures to mitigate them (such as variable interest rates on the CBDC), measures whose impact would greatly differ from country to country. Only the completion of the banking union and the strengthening of the mechanisms to prevent and manage banking crises could mitigate those risks.

The digital currency could be designed to facilitate the banking system's gradual adaptation to the new environment. However, both the banking sector and the corporate sector will eventually have to increase their reliance on capital markets for funding needs. The ECB will also have to rely more on capital market instruments to diversify the investments of the additional funds which it will have at its disposal.

If the launch of a properly designed digital euro becomes part of a broader reform effort which includes the Capital Markets Union and the banking union, it could greatly enhance the international role of the euro.

References

- Auer R., R. Böhme (2020) “The technology of retail central bank digital currency”, BIS Quarterly Review, March
- Bindseil U., F. Panetta (2020) “Central bank digital currency remuneration in a world with low or negative nominal interest rates” Cepr Vox Eu 05 October
- Boar C. and A. Wehrli (2021) “Ready, steady, go? – Results of the third BIS survey on central bank digital currency” BIS Papers No 114
- Brunnermeier M.K., H. James, J. Landau (2019 a) “The Digitalization of Money” NBER Working Paper 26300
- Brunnermeier M.K. and D. Niepelt (2019 b) On the equivalence of private and public money Journal of Monetary Economics 106
- Cipollone P. (2021) “Issuing a CBDC: a complex task” presentation at the IAI webinar on “The (near) Future of Central Bank Digital Currencies, Rome 20 April
- ECB Crypto-Assets Task Force (2020 a), “Stablecoins: Implications for monetary policy, financial stability, market infrastructure and payments, and banking supervision in the euro area”, *Occasional Paper Series*, No 247, ECB, September.
- ECB (2020 b) “Report on a digital euro”, October
- ECB (2021) “Eurosystem report on the public consultation on a digital euro” April
- Knoerick J. (2020) “China’s new digital currency: Implications for Renminbi internationalization and the US dollar” in “The (Near) Future of Central Bank Digital Currencies. Risks and Opportunities for the Global Economy and Society”, vol. 7, Global Politics and Security, Peter Lang, ed. N. Bilotta e F. Botti.
- Landau J. with A. Genais (2019) “Digital currencies An exploration into technology and money” Report to Bruno Le Maire, Minister of the Economy, June
- Langfield S., M. Pagano (2015) “Bank bias in Europe: effects on systemic risk and growth” Working Paper Series, n. 1797, May
- Micossi S. (2020) “An international role for the euro?” School of European Political Economy Policy Brief 37/2020

Panetta, F. (2018) "21st century cash: Central banking, technological innovation and digital currencies" SUERF Policy Note, Issue No 40, August

Passacantando F. (2020) The Digital Euro: Challenges and Opportunities, in "The (Near) Future of Central Bank Digital Currencies. Risks and Opportunities for the Global Economy and Society", vol. 7, Global Politics and Security, Peter Lang, ed. N.Bilotta e F.Botti.

Rinaldi R. (2019) "Cash" School of European Political Economy Working Paper May 24

Sveriges Riksbank (2021) "E-krona pilot Phase 1", April

Visco I. (2020) "The role of TIPS for the future payments landscape " Speech given at the virtual conference on "Future of Payments in Europe" Deutsche Bundesbank 27 November