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A digital euro: what's new?

A digital euro supplanting cold hard cash is nothing new. That said, shaken faith in the euro's issuer is opening up novel questions about the role of banks in a cashless society.

I. Paper money

Standing behind the counter, you have just accepted a 10-euro note from a customer in exchange for a cup of coffee and a croissant (you run a fancy coffee shop), and you have stashed it in your cash register. Why have you accepted a piece of paper in exchange for a very tangible breakfast? At first sight, because everyone does it; in fact, you are required by law to accept it as a means of payment: a euro banknote is *legal tender* in the eurozone.

But what does that piece of paper do for you? It gives you the right to buy a piece of the eurozone's GDP, anything that strikes your fancy and costs no more than 10 euros: it is a very convenient medium of exchange. (This is why a 10-euro note is used in the example; 500-euro notes are not so much a medium of exchange as a store of wealth, transported in the trunk of a car to a tax haven.) But if, for some reason, prices go up, the piece of GDP your 10-euro note can buy becomes smaller. Now look at it from another angle: if, for some reason, the amount of notes in circulation increases while GDP stays the same, that GDP will be claimed by a higher number of notes: the piece every note can claim will necessarily be smaller. How is that done in real life? By prices going up. You stash the 10-euro note in your cash register because you believe the piece of GDP you can buy with it will not shrink, that prices will be reasonably stable. And you believe it because you trust whoever is in charge of printing money to keep an appropriate balance between the amount of money and the size of GDP. (The difficult art of defining and keeping that balance is called monetary policy.) Otherwise, on receiving the 10-euro note, you would have to run out to buy something tangible with it before it lost value. It is said that in Germany, during the hyperinflation (1923), people drank two cups of coffee in the morning and none in the evening, because in the course of the day the price of a cup would go up by 30%. In short, there are two conditions, not independent of one another, for a system of paper money to work: general acceptance and trust in the issuer.



II. Bank money

The digital euro project would, in its lighter version, replace banknotes with electronic money: you would bring your euro notes to your bank and have them credited into your account. After that, your customers would pay for your croissants with their debit cards; your bank account would be credited, that of your customer charged. Banknotes would disappear.

This project would have sounded revolutionary to our grandparents; for us, however, it is simply a description of today's monetary system, a description whose accuracy has been sharpened by COVID-19. Currency and coins have virtually disappeared as most transactions are performed through the banking system; the medium of exchange, bank deposits, although denominated in euros, is created by banks. You might believe that the money banks lend comes from your paychecks and your savings, previously deposited in your bank account. You would be wrong: that was true when banks were born, when their main line of business was the custody of the money deposited by merchants in their vaults. Today, banks prosper by buying assets, the loans they extend, and paying for them with bank deposits, the borrower's bank account, which they create and which the borrower uses, of course, as money, to pay for a car, an apartment or a trip.

Figure 1. Bank balance sheet when you get a 100-euro loan from your bank

| Assets | Liabilities |
|---------------------------|---------------------------------------|
| Reserves New loan +100 | New deposit +100 Other liabilities |
| Other assets | Capital |

The bank has purchased an asset, your loan: the contract you signed promises it a stream of interest payments throughout the loan, until the 100 euros lent are returned. On the other side of the bank's balance sheet, the 100 euros that you will use as money, is something that did not exist before you obtained the loan. It is money, and it has been created by the bank. In the eurozone, more than 80% of what is considered money has been created this way.

The digital euro project, in this lighter version, would bring little change to our daily lives. Most of us would be neither winners nor losers as a result, since we already operate under its rules. The losers would be those who benefit more from the use of paper money: beggars, street artists, the homeless, tax evaders, among others. Those belonging to the first three groups are adapting, and many of them have use of a mobile phone through which gifts may be received. On the other hand, it is true that a collateral benefit of a cashless society is to make tax evasion more difficult, and tax evaders big and small (mostly the big ones) have voiced their complaints in the name of privacy and other fundamental rights. To them it might be replied that



he who has nothing to hide has nothing to fear; unfortunately, this argument has been too often used by the authorities in totalitarian regimes. The reader may draw his or her own conclusions.

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General acceptance of banking deposits as money may be taken for granted. We must now look at the second condition for a viable monetary system: trust in the issuer. The conventional answer to the question comes from the days in which banknotes were backed by the gold in the vault of the Central Bank, so that citizens could have their notes exchanged for gold. The issuer was, in fact, the Central Bank itself; the quantity of money was determined by the stock of gold.

Those days are long gone. Today, gold has been replaced by something called "reserves," mere items in the electronic balance sheet of the Central Bank, held in the electronic balance sheets of commercial banks under the heading of "reserves" or "liquid assets." These reserves are created by the Central Bank solely, and commercial banks are allowed to extend credit only up to a multiple of the reserves they hold. In this way it would seem that, by managing the amount of reserves created, the Central Bank determines the upper limit of the total quantity of money in the economy. The chariot is pulled by the banks, but the reins are firmly held by the Central Bank. This is the current model, and we have seen that the light version of a digital euro would make little difference to its operation.

III. From cashless to bankless

Over the last decade, however, it has become apparent that those reins are not made of solid leather, but rather of an elastic substance akin to chewing gum. Increased competition has changed the old traditional business model to one of low margins, so that many commercial banks have seen a high volume of lending as the main source of profit; banks have grown in size, often lowering the quality of their lending; capital has not kept pace with volume, so that higher profits have been achieved with larger, and more frequent, ups and downs as collateral damage. The financial crisis of 2007-2009, coming after a series of minor incidents, has revealed the fragility of the banking sector. At the same time it has become apparent that banks are interconnected, since they lend money to one another, so that the failure of one can trigger a chain reaction involving others. To avoid a catastrophe, monetary authorities have been forced to bail out banks in distress, so that, for a while now, it has looked as though central banks are being held hostage by commercial banks rather than supervising them. Returning to the second condition for a robust monetary system, it is not an exaggeration to say that the combination of a fragile



banking sector and a toothless supervisor has undermined the public's trust in the management of the quantity of money.

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That distrust has been instrumental in giving some currency to a much more radical version of the digital euro: imagine that, after creating the digital euro, all economic agents (people as well as firms and institutions) are allowed to open an account with the European Central Bank, who, in turn, extends credit to one and all just like an ordinary commercial bank. In such a model, it looks as though there would be no distrust of the issuer of the electronic currency: a central bank cannot fail, since it can print as much money as needed.

There are some reasons, however, to believe that this, as a cure, might be worse than the disease. First, its implementation would imply the disappearance of the private banking sector: with the possibility of holding an account with the Central Bank, few would continue to patronize ordinary commercial banks. The banking sector would certainly object to that. Furthermore, banks' knowledge of local market conditions would be lost, and it is debatable that it could be replaced by algorithms; the allocation of credit would suffer from that lack of knowledge. (As an aside, there are two objections that have some merit here: first, it could be argued that distance from customers would make the Central Bank more immune to local pressures; second, that algorithms for credit scoring have supplanted human knowledge to some extent even in local banks, much more so in large banks.)

Continuing with the objections to the proposed "cure," the task of processing the billions of operations taking place every second would require a huge increase in computing power and in software development. Also, the Central Bank would be endowed with an amount of power disproportionate for any healthy democracy. The Federal Reserve System functions in a federal state with clearly defined roles and a well-established accountability, while a European Central Bank, operating in a jurisdiction as diverse and as loosely bound together as the eurozone, would either be powerless or too powerful to preserve democracy in the area.

IV. From money to cryptocurrencies

Although cryptocurrencies are not the subject of this note, a short remark about them may be appropriate, given the fact that cryptocurrencies are sometimes believed to be able to supplant "normal" currencies issued by central banks. (A brief exposition of cryptocurrencies may be found in Peter Bofinger's "Bitcoin lacks a unique selling proposition," posted to *Social Europe* on February 8, 2021.)



A cryptocurrency is a private currency issued by a private entity, often unknown to the public, and whose supply is the result of a complex algorithm. The value of the currency is determined by supply and demand on an electronic market, where players meet anonymously. Clearing among participants is performed, either by means of a standard accounting system run by a central unit or by the participants themselves, as in the case of Bitcoin, under a system of "distributed ledgers." In two aspects, a cryptocurrency is the opposite of the standard money: it is opaque and it is used more as an object of speculation than as a medium of exchange. Anonymity makes it a desirable vehicle for illegal operations.

Going back to the beginning of this note, it is easy to see that monetary policy cannot be run with a cryptocurrency. The goal of monetary policy, under conditions approaching full employment, is to maintain price stability. (That said, in periods of high unemployment, it may be required to support fiscal policy in bringing GDP to its normal level.) To maintain price stability, the state of the economy must be carefully watched so that the quantity of money is appropriate to the level of output. This by itself would rule out the use of a currency whose supply is regulated by an algorithm, no matter how complex. A good monetary policy needs wisdom and courage as well as data and computing power. To take an extreme example: no cryptocurrency could have uttered the magic words, "We will do whatever it takes to save the euro," that were said in July of 2012.

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V. Just an opinion

Under pressures from past crises, technological developments and regulatory measures, the banking sector is undergoing profound changes. Many share the general impression that changes are needed. My conclusion is that, in itself, the appearance of the digital euro, while doing little to solve the sector's problems, is relatively harmless: what works is, after all, not new. On the other hand, going to a fully centralized system, while addressing the fragility problem, does so at an excessive price: what is new may not work.

Building a more robust banking system may be possible without going so far as to get rid of commercial banks. One step would be to subject said banks to market discipline by allowing them to fail if they are not properly run; in this sense, the inclination to concentrate the sector under the pressures of increasing costs and regulatory demands, and thus making them "too big to fail," may be a move in precisely the wrong direction. Again, preventing banks from lending money to



one another may reduce the likelihood of domino effects in case of bankruptcy. Regulatory measures will, of course, be met with determined opposition, but perhaps the threat of a bankless society may help to undermine it. If so, it would perform a very useful function.

(For a shorter, more technical view of the subject, the reader may recall Professor Juan J. Toribio's piece, "Cashless society: economic reality or science fiction" from IESE's *Economic Overview* of February 2019.)



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He has occupied a number of positions of responsibility in the public and private sectors, including serving as Spain's Secretary of State for Economics (1993-1995) and as a board member of the Bank of Spain (1990-1993) as well of several companies and institutions. In addition, he regularly publishes in the media. He was Dean of the China Europe International Business School (CEIBS) from 2001 to 2004.