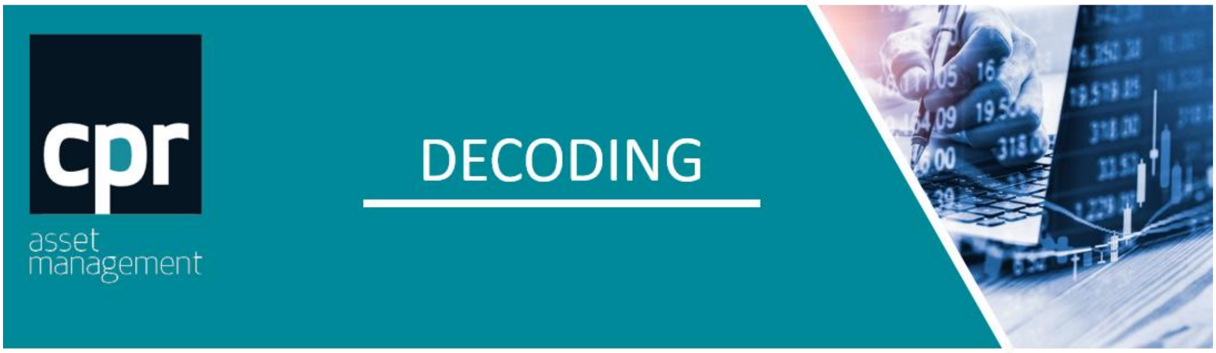

Money too is digitalizing

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Forms of money tend to change over time: electronic means of payment are increasingly used, to the detriment of cash payments. Some countries are moving towards ‘cashless societies’. In addition, it is more and more likely that “digital” currencies, issued by central banks, will emerge in the years to come.

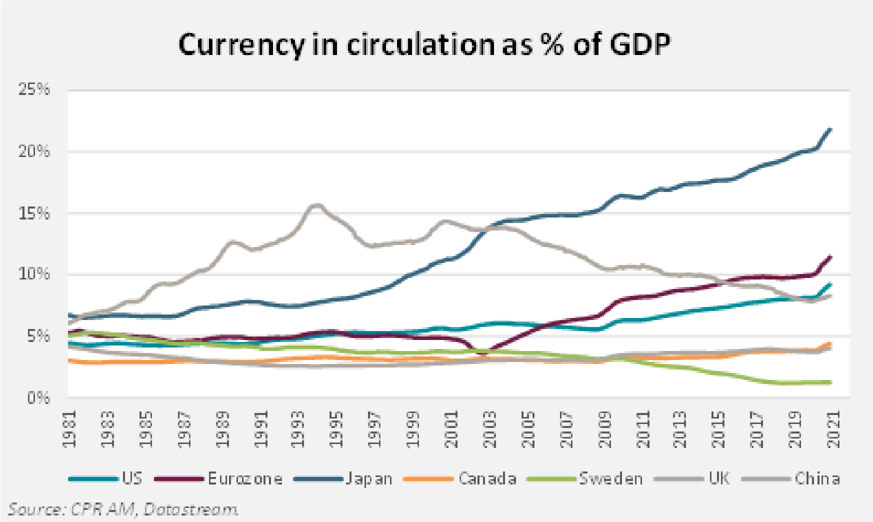
The decline in the presence or use of cash in developed countries

In several countries, the use of fiat money (banknotes and coins) has gradually become scarce, in favor of electronic means of payment. This trend can be assessed by measuring the amounts of cash in circulation or the frequency of use of fiat money.

If we focus on the quantities of cash in circulation, it is in Sweden that the development is the most spectacular: banknotes and coins in circulation only represented 1% of GDP in 2020, against 3% in 2010. In 2018, the deputy governor of the Swedish central bank (Riksbank) Cecilia Kingsley indicated that Sweden would stop using this type of means of payment within 3 to 5 years. The quantity of banknotes and coins in circulation calculated as % of GDP has also fallen gradually over the past 20 years in China. It has remained stable at low levels (4% of GDP) in the UK and Canada. On the other hand, the quantities of banknotes in circulation as % of GDP have rather increased in the United States, in the eurozone and in Japan. In the case of the eurozone, and even more so for the United States, the figures are higher than elsewhere, especially since the euro and the dollar are used in other zones[1]. Recently, the ECB estimated that 30-50% of euro-denominated banknotes circulate outside the euro area[2].

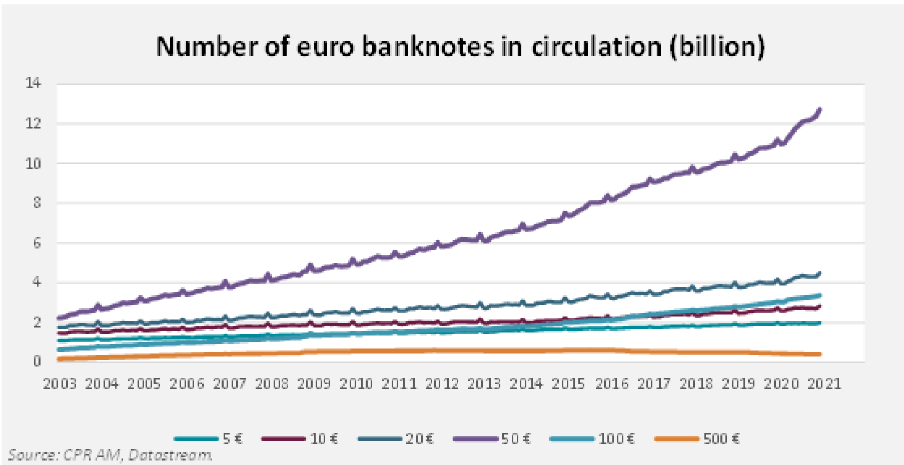
[1] Hassl T., S. Schulhofer et A. Paulson, 2018, “Understanding the Demand for Currency at Home and Abroad”, *Chicago Fed Letter N°396*.

[2] BCE, 2021, « Foreign demand for euro banknotes”, Occasional Paper series.



However, the fact that the quantity of fiat currency in circulation is high does not say much about the frequency of its use. Electronic means of payment (cards, credit transfers, direct debits) have developed significantly in recent decades. Thus, in the euro zone, the share of the volume of in-person transactions carried out in fiat currency fell from 79% in 2016 to 73% in 2019, and its share in value fell even more from 54% to 48% over the same period[3]. This decline is more marked in some countries, such as the Netherlands. Cash payments are likely to continue to decline as households and businesses increasingly rely on electronic payment methods and this could be accelerated by the development of mobile payment applications (Apple Pay, Google Pay, etc).

The effect of the covid crisis on means of payment is ambiguous. On the one hand, it has been recommended for health reasons to preferentially make contactless payments (for example, the ceiling for contactless payments has been raised to 50 euros in almost all European countries). On the other hand, the demand for banknotes has accelerated markedly in Europe and the United States, but the main driver of demand for fiat money appears to have been the precautionary motive[4]. Moreover, the fact that central bank key rates are now close to zero now makes the opportunity cost of holding banknotes much less important and it is interesting to underline that it is mainly the circulation of banknotes of 50 and 100 euros which has increased in recent years.



[3] ECB, 2020, *Study on the payment attitudes of consumers in the euro area* (SPACE).

[4] Delmas M., L. Devigne, E. Politronacci, G. Torre, 2020, “Demand for banknotes: linkages with the crisis”, *Bloc-notes éco de la Banque de France N°172*.

A cashless society?

At the turn of the 2020s, one of the most debated questions in financial economics is whether developed countries will abandon fiat money and become cashless societies. As the former IMF chief economist Kenneth Rogoff points out in his book *The Curse of Cash*[5], there are many economic, financial, philosophical and even moral questions behind this question.

One of the benefits of moving away from fiat money is that it makes criminal activity more difficult. Rogoff, a proponent of this idea, explains that "*there is little question that cash plays a starring role in a broad range of criminal activities, including drug trafficking, racketeering, extortion, corruption, human trafficking and, of course, money laundering*". In November 2016, the Indian authorities announced the end of circulation of 500 and 1000 rupee banknotes, in order to discourage the informal economy and to strike a blow at illegal activities, and in particular the financing of terrorism. The same type of operations had already been carried out in this country in 1946 and 1978. **Furthermore, the abolition of banknotes, at least of large denominations, could allow central banks to set up much more negative key rates than today and thus regain leeway to stimulate the economy.** Indeed, one of the elements currently preventing central banks from going further into negative territory is that beyond a certain threshold (this is what is often called the "physical lower bound"), It would become more interesting for commercial banks to convert their central bank money for banknotes, which they would store in safes, for example. In the absence of big denominations, this arbitrage would clearly be much more complicated.

However, the disappearance of banknotes and coins is associated with a number of disadvantages. The use of digital means of payment for all transactions may raise questions about the preservation of privacy[6] and part of the population may wish to continue to use cash to ensure the anonymity of certain transactions. In addition, it is possible that the populations of isolated areas cannot do without cash because they do not have sufficient means of communication to use digital means of payment. The same goes for people who do not have a bank account. Finally, maintaining small amounts of paper currency would, for example, make it possible to deal with a breakdown in digital payment infrastructures.

The disappearance of banknotes would imply a reduction in the balance sheet of central banks[7] because banknotes have historically represented the major part of the liabilities of their balance sheet: the seigniorage income of central banks (income from securities that the central bank buys with the banknotes that it prints) would crash in the event of the disappearance of fiat money. On the other hand, this would probably not pose a problem for the conduct of monetary policy because cash plays virtually no role in it.

Central Bank Digital Currencies (CBDC) in response to "cryptocurrencies"

The use of money is therefore more and more digital and we have, moreover, seen since the beginning of the 2010s the birth of "cryptocurrencies", often referred to by abuse of language as "virtual" currencies[8]. These, initially conceived as instruments of exchange in the digital world, using cryptographic techniques. They have gradually gained a foothold in the real economy, through services

[5] Rogoff K., 2016, *The Curse of Cash*, Princeton University Press.

[6] Courmont A., 2020, "Cash Less Society : comment préserver la vie privée dans une société sans argent liquide ? ", Laboratoire d'Innovation Numérique de la CNIL.

[7] Engert, W., B. S. C. Fung and S. Hendry. 2018. "Is a Cashless Society Problematic?" Bank of Canada Staff Discussion Paper No. 2018-12.

[8] Banque de France, 2018, "L'émergence du bitcoin et autres crypto-actifs : enjeux, risques et perspectives".

allowing their purchase or sale against legal currencies, their conservation, their use as an instrument of exchange or even more recently an investment and financing instrument with the appearance of Initial Coin Offering. As the Nobel Prize winner for economics Robert Shiller explains[9], a narrative presenting cryptocurrencies as the future of money has gradually taken hold, but for Benoît Coeuré[10], former member of the ECB's Executive Board, "*Such cryptocurrencies are poor imitations of money. Almost nobody prices goods in bitcoin, few use them for payments, and, as a store of value, they are no better than gambling in a casino.*" (See box on the difference between money and means of payment).

It is in particular because of the concerns of politicians about the multiple abuses associated with cryptocurrencies and their use for illicit activities that the major central banks are currently working on the development of their own digital currencies[11] (*Central Bank Digital Currencies,* CBDC), a "digital euro" for the ECB, a "digital dollar" for the Federal Reserve and a "digital yuan" for the PBoC. This promises to be one of the major projects that central banks will tackle in the years to come.

For the euro zone, Christine Lagarde has just confirmed that she believed that there would be a digital euro by 2025, this subject being an integral part of the ECB's strategic review. While there is not necessarily an urgent need for a "digital euro", Christine Lagarde explains that "*the ECB wants to ensure the euro remains fit for the digital era*". Among the scenarios mentioned which would require the issuance of a digital currency, the ECB mentions:

- the intensification of the demand for digital means of payment which would require the creation of a free and risk-free European digital means of payment,
- the decline in the use of fiat money,
- the need for a digital currency that can be used during extreme events (natural disasters, pandemics) in the event that existing electronic means of payment no longer work,
- the development of global means of payment raising concerns in terms of regulation and financial stability,
- the fact that the ECB would like to prevent the European population from turning to digital currencies issued by foreign central banks (on this subject, Jerome Powell insisted on the fact that the Fed is working on the subject but that it is not in a rush).

This "digital euro" could correspond to the provision of central bank money to citizens and businesses, hitherto reserved only for commercial banks: "*a digital euro would be introduced alongside cash, it would not replace it*". It would therefore not be a parallel currency and this digital euro would be convertible at par with paper money: for example, 10 digital euros held in an account by an individual at the central bank could be converted into a 10 euro banknote.

A certain number of preparatory works still remain to be carried out. As the ECB report on the digital euro underlines, the latter could pose a number of problems for banks in the event that savers massively transform their bank deposits into central bank money (for example in the event of economic and / or financial crisis): this could increase the cost of financing for banks, and by extension the interest rates on bank loans. On the subject, the Chinese central bank (PBoC) appears at the forefront among the major central banks with the launch of several experiments. In one of them, in

[9] Shiller R., 2019, *Narrative Economics*, Princeton University Press.
[10] Coeuré B., 2018, "Bitcoin not the answer to a cashless society", ECB Opinion piece.
[11] On this topic see BIS report: "Central bank digital currencies: foundational principles and core features".

2020, 2 billion of “digital yuan” (equivalent to 300 million dollars) were spent, on 4 million transactions. PBoC Governor Yi Gang explained that he envisions a coexistence of paper and digital currency, but a framework remains to be created for it. The PBoC is planning a much more massive deployment of the “digital yuan” during the Beijing Olympics in 2022.

Money and its use have constantly evolved over time. Like the economy, it is becoming more digital and this trend is expected to continue with the popularization of payment applications and the advent of digital currencies issued by the major central banks. The developments of the digital yuan will be watched with particular attention, the PBoC having taken a lead over the Fed and the ECB.

The difference between money and means of payment

Money should be distinguished from the instruments used to exchange it. Confusion between "money" and "means of payment" is frequently made, because fiat money has the particularity of being both money (store of value, unit of account and support for commercial transactions) and a means of payment (medium of exchange). More generally, means of payment are defined as instruments which allow funds to be transferred, whatever the medium or the technical process used. There are two types of means of payment: fiat money, therefore, and cashless means of payment. These allow "a transfer of monetary units between the payer's account and the beneficiary's account, these accounts being opened on the books of payment service providers". When the accounts of the payer and of the beneficiary are opened on the books of two different establishments, the means of payment gives rise to an interbank settlement.

Among the cashless means of payment are: payment cards, credit transfers, direct debits, checks, electronic money payment, commercial paper. In the European Union, card payments represent 49% of cashless means of payment, direct debits 20%, transfers 25% and checks 3%.

The Banque de France specifies that crypto-assets, such as bitcoin or ether, are not recognized either as money or as a means of payment. It underlines that crypto-assets do not or almost do not fulfill three functions devolved to money:

- Unit of account: their uncertain and volatile value means that very few prices of goods and services are expressed in these crypto-assets,
- Medium of exchange: their use as a medium of exchange is much less efficient than legal tender because it induces disproportionate transaction costs for simple retail operations,
- Store of value: the absence of a real underlying does not allow it to be credible stores of value.

Legally, they are also not considered as a means of payment because in the European Union, they do not come with a legal guarantee of reimbursement at all times and at face value in the event of a payment problem.

Published on 26 January 2021

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