

Crypto- and CBD Currencies: What is the Future of Digital Finance?



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ABSTRACT

Report of the intervention of Maria Demertzis, Deputy Director of Bruegel, during the Belgian Financial Forum webinar on “*The road towards a ‘new’ financial system?*” of 12 October 2021, written by Frank Lierman, Chairman of the Editorial Board of the *Revue bancaire et financière*. This report is further based on two opinion articles by Maria Demertzis, published by Bruegel in the course of 2021.

1. Cryptocurrencies: currencies or assets?¹

Cryptocurrencies are here to stay but are unlikely to be considered a credible alternative to money anytime soon.

Cryptocurrencies are here to stay. [Coin Market Cap](#), a popular information site on all things crypto, lists close to 10,000 of them. The name suggests that they are currencies and most of them are, in that they have a value and are accepted as a means of payment. But they **cannot be considered good alternatives to money** for three main reasons.

First, they are not accepted universally. You cannot use cryptocurrencies for daily expenses. It is unlikely you will be able to pay with a cryptocurrency for holidays or flights, or to buy a cinema ticket. You might be able to buy a house with bitcoin, for example, but only in very few places. However, if you operate across borders, cryptocurrencies become more interesting because they are very convenient to use and do not need an intermediary.

Second, cryptocurrencies are not a good store of value. The price of bitcoin has been extremely **volatile**, making it very inappropriate for trade or saving for a rainy day, or for retirement. A second generation of cryptocurrencies, known as stablecoins, has tried to

¹ Demertzis, M. (2021) ‘Crypto...mania’, *Opinion*, 11 May, www.bruegel.org

solve this issue of high volatility by linking the cryptocurrency to a basket of more conventional assets. Although more stable in principle, these coins are not without their own [set of problems](#).

Third, cryptocurrencies are private currencies. There is no state behind them to either manage their price (which is what central banks do by managing inflation) or to guarantee payments will be honoured. Take the case of bitcoin, where the identity of the inventor remains a mystery. We know that their intention was to make only 21 million bitcoins available in total, after which no new bitcoins will ever be minted. We are currently at [18.5](#) million and a decreasing number of coins are minted every day, such that it will take another 120 years before the last bitcoin is minted.

The rationale for this might have been that value comes from scarcity and therefore there must be a limited and finite number of bitcoins, not unlike raw materials such as oil and gold. However, the decision of how many coins to supply to the market is not based on economic criteria but is arbitrary. This makes it inappropriate for storing value or for payments, as the supply cannot be used to manage the demand. Hence a cryptocurrency's price is subject to bubbles and hence be very volatile.

But if you are prepared to accept that cryptocurrencies are more like an asset rather than a means of payment, they offer another type of investment, albeit a very risky one. This raises the question of the extent to which consumers need to be protected from excessive risk-taking.

This is where the issue of regulation of cryptocurrencies arises. There are many questions to consider [here](#) including, first and foremost, the classification of the various types of crypto assets available. For now, these assets are very small in terms of economic value and therefore something going wrong will still not have a systemic effect.

The situation would be very different if Facebook had been able to launch its Libra stablecoin. Facebook has 2.8 billion users today. If Libra had been created, Facebook would automatically have had access to 2.8 billion clients, equivalent to twice the population of China. Libra therefore did have the potential to become immediately very popular. Coupled with the many doubts about the way Facebook handles privacy issues, consumer protection would have become very relevant.

Financial regulators were very quick to appreciate that. The European Council and Commission [said](#) in November 2019 that *"no global stablecoin arrangement should begin operation in the European Union until the legal, regulatory and oversight challenges and risks have been adequately identified and addressed"*. This discouraged investors that were going to finance Facebook's initiative, effectively killing the idea.

But if cryptocurrencies are not good money and involve high risks, what is the craze about? Part of it is to do, no doubt, with the thrill of gambling and the chance of big winnings. If only I had invested in bitcoin... Part of it, however, has to do with some very exciting technology behind cryptocurrencies. This includes the decentralised ledger that has allowed removal of intermediaries guaranteeing digital anonymity and providing unique identification. The possibilities that this technology opens are only starting to emerge – and that includes recent central bank initiatives around the world to launch their own digital currencies.

There remains a very big issue that makes decentralised ledger cryptocurrencies problematic, that is just how energy inefficient this technology can be. The global energy bitcoin mining consumes in a year is **greater** than the annual energy consumption of Argentina. There is still room for improvements in this cryptomania.

2. Central bank digital currency: why and how?²

Electronic cash might be the future, but it is still unclear what payment innovation it offers for the public, certainly in the euro area. And it is unlikely to fully replace the comfort the consumer feels in having money under the mattress.

Central banks often update the money they issue to include new features. The next update will be to introduce a digital version of cash. Central bank digital currencies (CBDCs) are the closest alternative to a wallet of cash, except they come in a digital format and in electronic wallets that are stored by a country's central bank.

CBDCs aim to mimic two crucial physical properties of cash. First, the holder remains anonymous: when you pay with it, you do not have to reveal your identity, as you would with a credit card, for example. Second, the issuer of the currency is still the central bank, not a private entity.

Cash still represents about **one fifth** of all face-to-face payments worldwide, and is even more popular in many European countries. In the euro area, **32%** of people say they prefer to use cash for payments. But differences between countries are quite startling. According to **Statista**, cash usage at point of sale in 2019 was as high as 75% and 63% in countries like Greece and Germany, but low in countries including the United Kingdom (15%), Sweden (13%), France (24%) and the Netherlands (26%). In most other European countries, there appears to be a more or less 50/50 split in preferences for cash versus digital payments: Italy (57%), Poland (49%), Spain (53%).

As Sweden, one of the lowest cash-usage countries in the world, has discovered physical cash is **unlikely** to disappear entirely. But as digitalisation advances, the tendency is for

² Demertzis, M. (2021) 'Central bank currencies going digital', *Opinion*, 27 April, www.bruegel.org

diminishing use, a trend that may have even [accelerated](#) during the pandemic for hygiene reasons.

The emergence of cryptocurrencies, or private electronic money, has led to the development of technology that can guarantee anonymity, privacy and security. These features are crucial to cryptocurrencies and can be readily adopted by CBDCs.

To the extent that there will be a need for cash in the digital era, CBDCs therefore arguably fill a gap. A [good number of central banks](#) have started thinking about how to introduce a CBDC, with at least seven countries in the development phase.

China is already piloting a digital yuan, with the ambition of having it ready for the 2022 Winter Olympics so that foreign athletes can use it. The US Fed (digital dollar), the European Central Bank (e-euro) and the Bank of England (Bitcoin) are also considering digital equivalents of their own coins and banknotes and are in the investigative phase of such projects.

What does the consumer stand to gain from the introduction of CBDCs? In the euro area, there are already several different means of digital payments. From e-banking to cash cards, phone apps and credit cards, the ability to pay electronically is widely available and popular. However, such solutions do not preserve anonymity and as they are all private, there are costs associated with their provision. This is where e-cash may offer an interesting alternative. CBDCs are provided by a public authority and could reduce the cost to the consumer. One of course might ask why a public solution to this problem is necessary. Why not simply encourage competitive private solutions instead?

This is even more so if one considers that e-cash cannot be unlimited. First, because money that is transferred from commercial bank accounts to the central bank for cash purposes cannot be intermediated. This reduces the ability of banks to execute their role of financing growth. But second, because limiting e-cash is necessary to prevent money laundering.

A last reason for the interest in CBDCs may come from central banks themselves. A digital equivalent of the underlying currency could increase the appeal of the currency beyond national borders by making the currency more readily available.

However, in most cases this convenience offered through digitisation is likely to have limited impact in international take-up of currencies. The real reason why a currency is used globally has more to do with the value and stability it represents, not only its availability. A currency like the digital yuan, which is currently the most advanced digital currency in this respect, stands no chance of displacing the dollar as a global leader because the underlying currency, the renminbi, is not even convertible.

Similarly, if the launch of the e-euro is partly motivated by the desire to increase the euro's global attractiveness, going digital may be helpful but will not be sufficient. Other architectural factors will be more important in advancing its international appeal.

Electronic cash might be the future, but it is still unclear what payment innovation it offers for the public, certainly in the euro area. And it is unlikely to fully replace the comfort the consumer feels in having money under the mattress.

3. Digital payments

The digital payment types increase sharply in number and popularity in the euro area. But those payments are still very small compared to other forms of payment: as card payments in 2020 represented more than 50 billion transactions, e-money payments intervened for only 5 billion. Credit transfers and direct debits each around 20 billion transactions.

According to an ECB-commissioned survey on the payment attitudes of consumers in the euro area in 2019 the hit parade of the different payment types is confirmed: 94% for cards, 75% for credit transfer and direct debit each, 58% for internet payment methods, but only 28% for mobile phone payments and 4% for crypto assets.

Point of sale transactions in locations where cash was accepted already represent 91 to 99% according to the locations: 91% in petrol stations, 95% in vending or ticketing machines and 99% in local shops for day-to-day retail items and pharmacy.

Cashless payments will be growing everywhere from 2021 to 2024, but mainly in the Far East and China. That area accounts for more than 50% of those payments already and its share is expected to further grow in 2024. North America is good for some 25%, Europe about 20%. Smartphone payments are already widely spread in China with a market share of more than 80% in 2021. In 2025 it is expected to decrease to 70% due to the upward acceleration in other continents. China is also extremely dominant in QR-code payments with a market share of more than 95% now and probably still 90% in 2025.

The Covid 19- crisis is undoubtedly a turning point for cash. The percentage share of smartphone users who use proximity mobile payments in different countries went up significantly between 2019 and 2021: from 80 to 85% in China, from 30 to 45% in the United States, from 25 to 35% in Japan, from 20 to 25% in Italy, and from 15 to 20% in France. According to a survey commissioned by the advisory group Mercadore in the US the use of new payment technology because of the Covid-19 outbreak is striking.

To conclude it is quite clear that technology is dramatically changing the payments world. Efficiency gains for the unbanked person, mainly in developing countries, are huge. The national currencies will continue to dominate even if the digital currencies continue their growth, because trust is still crucial. Nevertheless, payment systems will become more digital.