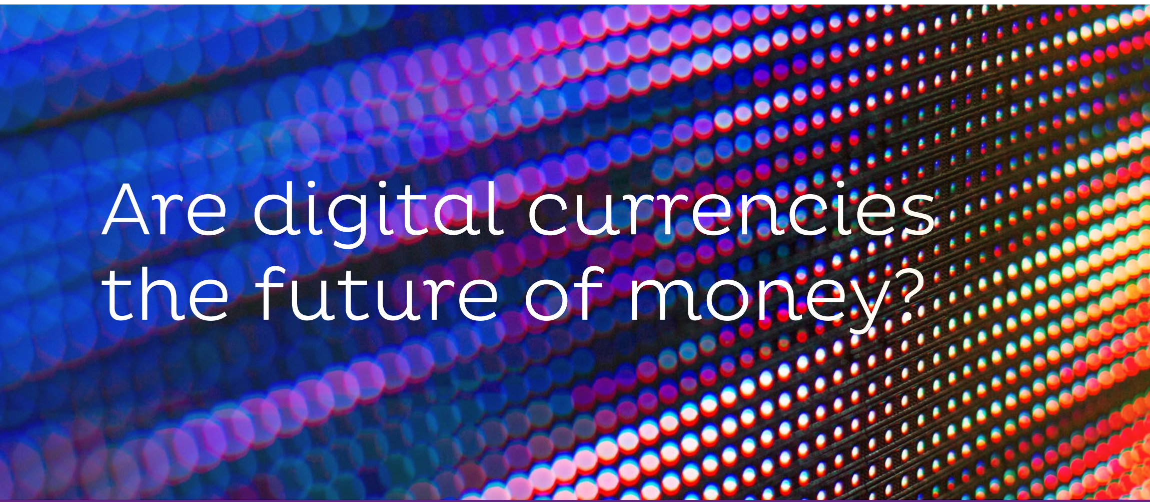

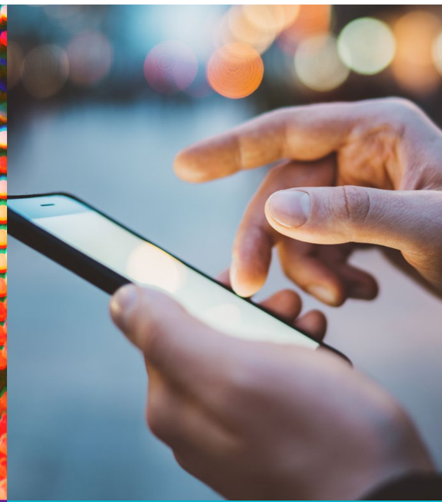

Are digital currencies the future of money?

INSIGHTS ON THE INNOVATIONS THAT MATTER

CATALYSTS

Digital currencies have moved from the fringes to the mainstream.

A decade ago, few outside specialist circles even knew they existed. Now, they are at the heart of the policy plans of the world's biggest institutions – both public and private.

As technology and finance grow increasingly intertwined, how will new forms of money shake up the global economy? And what opportunities will they create along the way?

Stéphane Déo,
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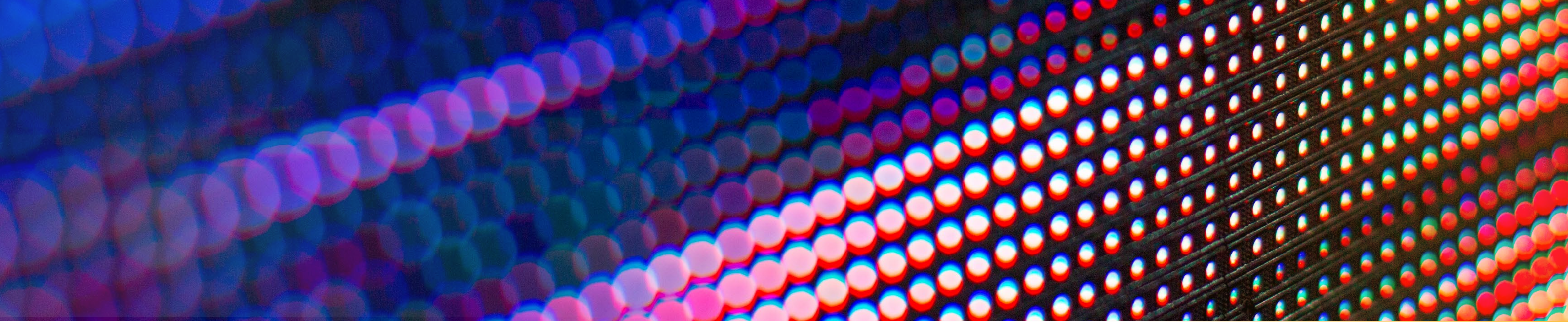
KEY TAKEAWAYS

- **Bitcoin** is well-known as a speculative instrument – but as a currency it's slow, hard to scale, and is environmentally damaging
- The debate around cryptocurrencies has opened a path for new thinking about how technology can deliver **new ways of story and sharing value**
- **Central Bank Digital Currencies** build on some of the ideas of cryptocurrencies but retain a central authority to maintain trust in the system
- CBDCs could potentially radically shake up **monetary systems** around the world
- Private currencies like Facebook's **Libra** project have yet to take off – but they do point the way to a future where government-issued money is not the only currency in day-to-day use



When people think of 'digital currencies', they most likely think first of bitcoin, and then other cryptoassets. What position do they now hold in the investment landscape?

First of all, I want to stress that bitcoin is an environmental disaster. ESG considerations are increasingly central to our industry, so any discussion of cryptoassets must start with the fact that bitcoin alone now has a greater carbon footprint than the Netherlands[1]. Even a single transaction has a carbon footprint roughly equivalent to a flight from Paris to Moscow.

Added to that is the problem of scaling – there are around 300,000 transactions a day with bitcoin[2]. That sounds a lot, but the Visa network handles around 150 million transactions a day[3], and the infrastructure around bitcoin and other crypto assets is both slow and aging rapidly.

There's also the problem of volatility. This makes cryptoassets excellent for speculation, but flawed as stores of value and units of exchange – which are, after all, the key purposes of money. If you want to retain your wealth, or plan a significant transaction, you don't want to do it with an asset that can rapidly double or halve in value.

Finally on the debit side, there is the issue of the uncertain regulatory and tax treatment across different jurisdictions, which we as institutional investors must of course be very wary of.

This all sounds negative, but the facts remain that the total market capitalisation of all cryptoassets in February 2021 was well over a trillion dollars[4]. This would make up which over 10% of the world's existing gold stock[5], so it's not negligible in value. Also, 300,000 transactions a day is tiny on a global scale - but it's also far from zero.

There is a positive case to be made about them as non-correlated assets, as they tend to be subject to different forces to the wider market. They have limited exposure to tail risks, so a token investment could pay off in the long term.

There is also the 'brand' that bitcoin has become. The original white paper was published in 2008[6], and since then it has gone from the fringe of the fringe to something non-specialists have heard of. It has driven the conversation forward, demonstrated the potential – and limitations – of the blockchain technology that underpins it, and made the mass delivery of cryptographically-secured digital assets something not only feasible, but likely.

However, for the average retail trader, you overall would have more fun in a casino.

Cryptoassets are just one of a wide range of digital stores of value in existence. Where do you think the next stage of development lies?

Digital or electronic money is nothing new, of course – the overwhelming majority of bank deposits and other assets have been stored and exchanged electronically for decades.

The rise of e-money in recent years is also important in this story, allowing challenger banks and platforms like Paypal to offer retail clients the kind of easy transfer of virtual funds previously available only on the wholesale market.

This feeds into the narrative of the turn to a cashless society in the developed world, but even in mature banking markets this can be overstated. Some Scandinavian countries are well on their way, but within the eurozone – even allowing for the very different banking sectors within the currency bloc – more than 90% of transactions of less than €5 were conducted by cash in 2017[7]. Even with younger consumers significantly favouring digital payments over cash, it will still take some time for the transition to occur.

However, the iterations of e-money used in these consumer transactions were in effect representations of value on a ledger,

Bitcoin has demonstrated both the potential and limitations of the technology that underpins it, and made the mass delivery of digital assets something not only feasible, but likely.

1 https://cbeci.org/
https://www.cnbc.com/2021/02/05/bitcoin-btc-surge-renews-worries-about-its-massive-carbon-footprint.html

2 https://www.statista.com/statistics/730806/daily-number-of-bitcoin-transactions/

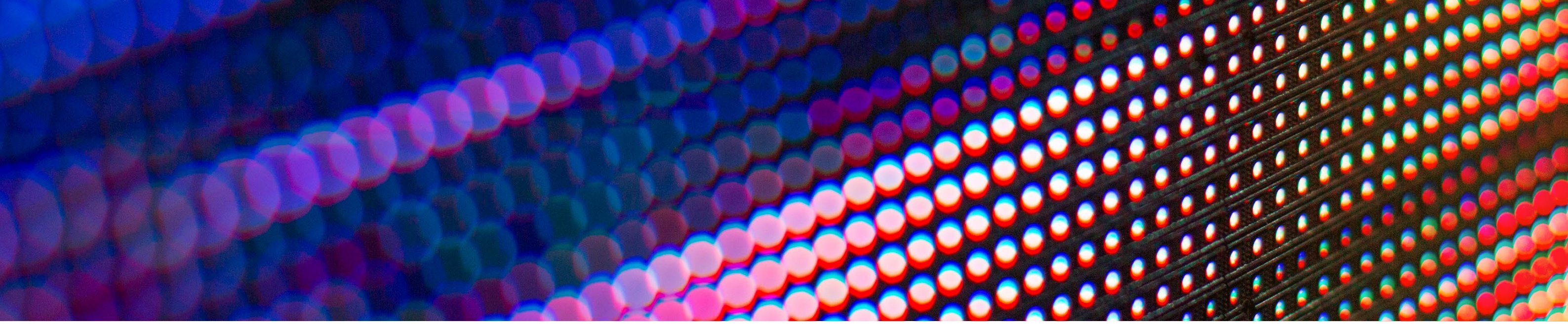
3 https://www.visa.co.uk/dam/VCOM/download/corporate/media/visanet-technology/VisaNet-Network-Processing-Overview.pdf

4 https://coinmarketcap.com/

5 https://www.sunshineprofits.com/gold-silver/dictionary/size-the-gold-market/

6 https://www.bitcoin.com/bitcoin.pdf

7 https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op201.en.pdfhttps://www.bis.org/publ/bppdf/bispap114.pdf



backed by bank reserves and ultimately a central bank. In other words, they are little different to traditional bank deposits.

The new idea of **central bank digital currencies** (CBDCs) – which have been largely spurred by developments around cryptoassets and blockchain – have the potential to catalyse radical innovation in the banking sector, and by extension the wider economy.

What benefits could CBDCs deliver?

For the average consumer, CBDCs won't appear any different to the e-money they've used to shop online for years.

However, they have the potential to significantly shake up the financial infrastructure of any jurisdiction where they are introduced. Transaction costs and settlement times for payments could be slashed, resulting in huge efficiency savings across whole national – and in the European Central Bank's case and transational, in the case of the European Central Bank (ECB).

They can save in costs for the production and distribution of physical cash, encourage competition between payments providers, and break down separations between walled-off payments environments and the wider payments system – for example, the proprietary ecosystems presided over by several Chinese online retail platforms.

At the macro policy level, CBDCs excite central bankers as they offer the chance for the far more direct transmission of monetary policy than is currently possible. They could offer infinitely greater visibility on a whole economy than is now possible, which could make for very detailed and responsive control of the money supply. Central banks could offer emergency liquidity support far faster than is now possible, which could help prevent chain reactions in any future financial crisis. However, the processing of the huge quantities of data they would gather raises questions around privacy.

Finally, there is the 'tone-setting' implicit in their introduction by central banks – there are hard to predict second-order effects, where innovation spurs further innovation in a virtuous cycle.

What would they mean for banking?

There are degrees of radicalism to the various proposals. Theoretically, the implications for retail banking could be enormous.

If you deposit a euro in your bank account, that's a de facto liability for your bank. You have lent your euro to the bank, who can then use it on their balance sheet as they determine the extent they can reuse it as they make loans, deliver mortgages, invest it in equities and so on. Your euro is in practice a funding source for the rest of the bank's activities.

With a CBDC, in theory your wealth is booked directly with the central bank – in our example, the ECB. This would have serious consequences for commercial banks, as the deposits that fund their other activities could dry up or even disappear. Any big shift in the balance sheets of major banks would have major disruptive impacts throughout the real economy.

Obviously, this is an extreme picture, and any disruption on this order will surely attract the intention of regulators and lobbying efforts from the banks, but it should give a picture of how big any changes could potentially be. The transition will have to be handled very delicately.

What stage of development are they at?

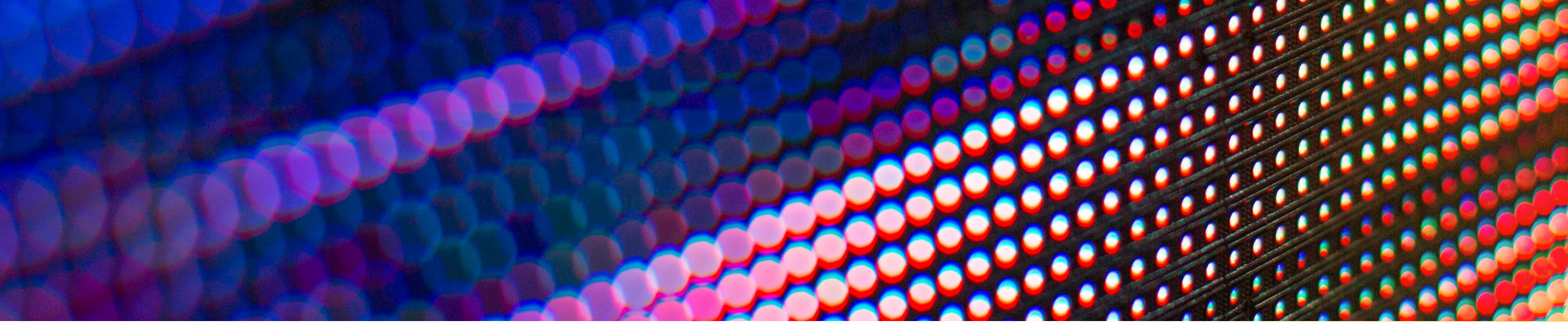
A recent BIS survey of more than 60 central banks showed that more than 80% of them had a digital money plan, or at the very least a task force on the topic[8].

The most significant at present is the digital yuan in China. A recent survey by the BIS on over 80 central banks showed that more than 60% of them had a digital money plan or at least a task force on the topic.

In Europe, there has been a steady drip of research from the ECB and other

Digital currencies have the potential to significantly shake up the world's financial. Transaction costs and settlement times for payments could be slashed, resulting in huge efficiency savings across whole economies.

8 https://www.bis.org/publ/bppdf/bispap114.pdf



institutions, with momentum growing in the last year. The ECB concluded a public consultation in January 2021[9] and are expected to make a formal announcement in the Spring. A lot of the implications of their choices will be in the fine print, so we'll have to wait a while for full visibility on what to expect.

In China, the People's Bank of China is significantly ahead. After five years of developments, local tests are expected this year in Beijing, Shanghai and Guangdong Province. The digital yuan is known as the DCEP – Digital Currency Electronic Payment – and its two-tier system, where it is issued by the central bank but distributed and retained in custody by commercial banks, is perhaps an instructive model for how banking systems elsewhere can manage the transition. This would be more akin to traditional deposits, hence for the consumer their bank would in practice remain their funding source.

If we think about where the complementary opportunities may lie – where do cybersecurity, KYC and AML sit in this picture?

If there is to be reorganisation in the banking system in the long term, it seems logical that the banks themselves will shift into something more along the lines of IT providers. It won't be as a substantial a change as that sounds, although it's clear that cybersecurity will be ever more central as the risk transfers from the banks themselves to the payment chain. However, it will likely be the same people and institutions challenging these new problems.

If we look at KYC, AML, and other anti-fraud practices, we see a huge opportunity as the amount of data embedded in every transaction means there is a huge efficiency saving in determining where resources are allocated. Even a small institution raises many thousands of suspicious transactions every day: the kind of data that a digital currency embeds in every transaction means that triage can be accelerated significantly.

Let's turn to Libra, Facebook's attempt at a digital currency that has recently been rebranded as 'Diem'. Was it ahead of its time – does the future of digital currencies also lie in privately-issued money?

Libra faced many issues with regulators, based in large part on the cultural clash between the engineer mentality of Silicon Valley and the – necessarily – more conservative approach of regulators around the world.

In short, the main problems were that if Facebook wanted to keep Libra/Diem stable in value, it would have had to be backed by what would be de facto one of the biggest sovereign wealth funds in the world, which they would likely to have at some point attempted to derive value from – creating incentives for actions that would influence the currency. Also, Libra would have in effect turned the company into one of the world's largest shadow banks, which greatly concerned authorities.

That said, I'm surprised there have not been more Libra-like projects. There have been suggestions Amazon may try something similar specifically in emerging markets, but most of the projects that have come to fruition have been very small-scale in comparison. For example, some regions and cities in France have issued a local digital currency.

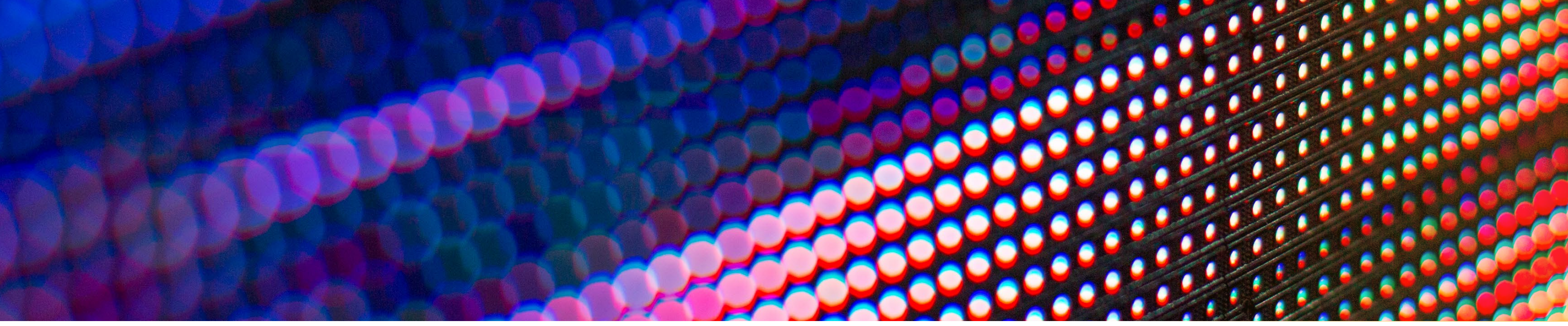
It's likely that something like Libra will come along again, learning from previous mistakes and having more success in making it past the regulators.

One of the key hurdles they will have to overcome is trust. The only reason someone will accept a ten euro note from me is that they have confidence they can pass that note on to someone else. Trust is absolutely critical, and for cash it is based on formal and informal structures that have developed in some cases over centuries.

So, if Apple – for example – launched a digital currency of its own for transactions within its ecosystem, it would still be reliant on its users' trust. Any crisis or crash

Digital currencies are foundational technologies that can spur and facilitate innovation throughout the wider economy. The currencies themselves are not the end of the story – they are the beginning.

9 https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210113~ec9929f446.en.html



would have a huge amount of reputational damage that it would be hard for even a brand as resonant as Apple to recover from. The stakes are incredibly high, which is presumably what has inclined big corporate players to caution.

We touched on it earlier with regard to fraud and security, but one of the key value propositions of digital currencies is the degree to which a centralised institution can gather data. How does that tally with consumer concerns around privacy? Facebook, for example, pledged it would not monetize transaction data gathered from Libra/Diem – but given their record, few took that claim seriously.

This is a complicated question. I think most consumers are now aware that almost all their data is monetised in one way or another, whether it's Amazon's recommendation engine or logging their workouts on Strava.

If we turn to transactions, this data is already gathered by providers like Visa – they just don't monetize it in the same way. But rest assured, the amount of information they have is staggering, and there is a huge opportunity around that. As an investor, if I could find out how many seats Air France sells on a daily basis, I could make a fortune. Visa would have this kind of information on record for countless companies – we just can't access it.

These concerns are really about who has access to the data, and what use they can put it to. I think I would be comfortable with the ECB having total visibility on all my transactions – but there are perhaps more valid concerns around institutions like the People's Bank of China and its close relationship with the Chinese Communist Party. It's fair to say their definition of 'fighting terrorism' is more broad than ours and they demonstrate a case of data being gathered in a way that can impinge on human rights.

This is an extreme example, of course, but it is indicative of the seriousness of the conversation now facing stakeholders around the world.

What kind of innovation could digital currencies unlock in the wider economy?

Digital currencies in the short term can deliver faster, cheaper and more efficient payments both within and between countries – but that's just the first step.

We move here to speculation, but what could their impact on lending be? There are likely to be several layers of disruption, but they are hard to predict because each builds on the previous disruption in a chain that grows in impact over time. We can think of them as foundational technologies that can spur and facilitate innovation throughout the wider economy.

The currencies themselves are not the end of the story – they are the beginning.

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