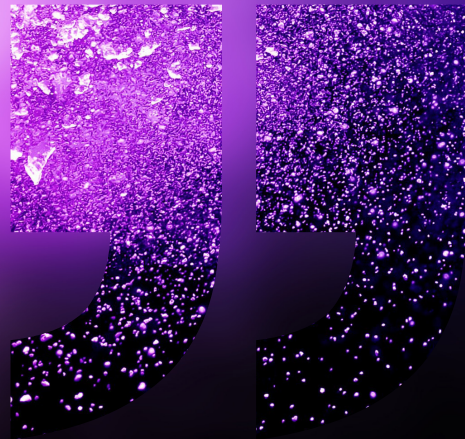


**C L I F F O R D**

**C H A N C E**



**CENTRAL BANK  
DIGITAL  
CURRENCIES AND  
THE THEORY  
OF MONEY**



**— THOUGHT LEADERSHIP**

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## CENTRAL BANK DIGITAL CURRENCIES AND THE THEORY OF MONEY

The development of Central Bank Digital Currencies (CBDCs) – a digital representation of fiat money issued by a central bank – has been accelerated by COVID-19 and the resulting shift to digital payments. In this briefing, we consider the different approaches being taken by central banks globally, including the digital euro, renminbi and dollar, what practical adoption of CBDCs may look like, the legal structures that might be employed and the consequences for businesses.

### The rise of CBDCs

The level of interest in central bank digital currencies (CBDCs) has grown significantly over the past few years at both a national and international level. Many major jurisdictions around the world have active research and pilot projects ongoing, and we are seeing the first launches of live CBDCs – the Bahamas, for example, launched its CBDC, the Sand Dollar, in October 2020. "Different jurisdictions have very different motivations for pursuing their individual CBDC projects. Financial inclusion is a top priority for CBDC development, particularly across emerging markets and developing economies – that was a key motivation for the Bahamas' Sand Dollar," says Laura Douglas, a senior associate in Clifford Chance's Financial Regulation Practice in London. Financial inclusion is generally the motivation for developing a general purpose or retail CBDC where end users include the general public. Conversely, financial inclusion is obviously a less important motivation for wholesale projects where access to a potential CBDC is limited to financial institutions and other players that have direct access to central bank accounts and central bank money.

Wholesale CBDCs are seen as less of a priority globally, compared with the general purpose CBDC but, at the same time, a number of jurisdictions are looking at wholesale CBDCs motivated by factors such as improving efficiency of cross-border payments, development of distributed ledger technology (DLT) enabled capital markets, and enhancement of cyber resilience.

### What are CBDCs?

CBDCs have been defined by the Bank for International Settlements, as "*a digital payment instrument, denominated in the national unit of account, that is a direct liability of the central bank*" in a paper published jointly with several central banks in October 2020. "CBDCs can be based on DLT, but they aren't necessarily. So, different projects may look at an account-based, or token-based, models. The concept that a CBDC is a direct liability of a central bank, is a concept worth considering when we look at the role that the private sector or intermediaries might play in a general purpose CBDC," says Douglas. That can be broken down very broadly into direct models, intermediated or hybrid models. In the direct model the central bank would interact directly with end users, including consumers, although in practice very few if any central banks are pursuing such a model. Most existing projects are exploring intermediated or hybrid models where there are private sector intermediaries that would facilitate end user payments that use CBDCs.

So, for example, focusing on the UK, the Bank of England's discussion paper on CBDCs, published in March 2020, envisages an indirect model where the Bank of England maintains the core technology platform and ledger, but then regulated payment interface providers act as intermediaries to provide the user-friendly interface between the end user and the Bank of England as CBDC issuer.

It is worth noting that the Bank of England has proposed the use of application programming interfaces (APIs) to make that connection between the core ledger and the provision of services to end users similar to what is seen, for example, in the Open Banking space.

Intermediated or hybrid models should also be distinguished from so-called "synthetic" CBDC. This term has been used to describe a scenario where a central bank issues a wholesale only CBDC and then commercial providers in turn issue CBDC-backed electronic money or stablecoins to retail end users. However, the CBDC-backed electronic money or stablecoins do not in fact meet the definition of a CBDC referred to above, as they are not liabilities of the central bank. Instead, they are liabilities of or claims on the commercial bank that issued them – much like commercial bank money today.

Different projects are also looking at different design features and functionalities: whether the CBDC will allow functionality for offline payments, which is obviously important for financial inclusion; whether peer-to-peer payments will be possible; the potential 24/7 availability of the CBDC; questions around privacy and anonymity and determining who gets to see what in terms of actors and users of the CBDC and transaction level data; and how CBDCs function alongside existing payment methods and interact with the existing financial market infrastructure, both at a national level and on a cross-border basis.

## What is the impact of CBDCs?

"If you think about how the banking system actually works today, the reality of the situation is that people pay bills with money created by commercial banks. The commercial banks settle between themselves in central bank money, so the only way that the central bank provides money directly to the end user is when it creates notes and coins – legal tender. Legal tender is always a very small part of the payments world just because it is irritating and difficult to deal with, it has to be stored, it has to be kept secure, it has to be transferred by physically moving it around, and it is generally a nuisance.

What the creation of CBDCs does is to eliminate all of the technical problems that are created by physical cash," says London-based Clifford Chance Partner, Simon Gleeson.

He adds: "So we suddenly go into a world where you can have as much physical cash as you like taking up no space at all, which is remotely transferrable and doesn't require chaps and guns to look after it. Potentially, that could get you to a world where we don't need commercial banks and commercial bank money anymore – everyone can settle directly in CBDCs.

However, this creates a problem. Commercial banks take in deposits, they lend those deposits out as loans, and deposit the difference with the Bank of England. But in a world where all money is held in the former Central Bank, the question is, where does commerce and industry get its credit from? It has to go to the Central Bank. "If you imagine a world where everybody does everything using CBDCs, what you have actually done is nationalise the supply of credit to the economy. This has been tried in various spots around the world; Russia's Gosbank is the best-known example. It didn't work terribly well, but the key point is that the introduction of CBDCs necessarily changes not only the payment system but also the credit system, and so there are some quite big consequences," says Gleeson.

The second issue is how CBDCs are administered. For crypto coins to be transferred from one person to another will require service providers. The question arises as to what is the legal basis on which that service will be provided? There are two entirely different ways of providing that service. One is to say that it looks like a custody service; so, the CBDC remains owned throughout by the customer, the bank undertakes the administration for the customer and charges the customer a fee for so doing. That is awkward for the customer, because customers are having to pay for a service that was previously free of charge. Alternatively, the bank says to the customer: "We will effectively buy your CBDCs from you, so what you will own will not be CBDCs themselves, it will be a

claim on us for those CBDCs." What that achieves is basically to reinstate deposit banking as it exists today. From the bank's point of view it accepts the status quo: it can take those CBDCs, lend them out, make money out of the loan, use that to subsidise the payment service and in that respect everything is as it was. However, from the customer's point of view, the question is 'What is the difference between owning a claim on a commercial bank for payment of sterling and owning a claim on a commercial bank for payment of Bitcoin or whatever'?" says Gleeson.

If the structure is a custody structure then there is a credit problem and customers pay a lot more for the service than they are currently getting, and if there is a deposit structure then what was the point in creating the CBDC in the first place? "It is that issue, the question of how these services will be provided, which will have the biggest impact on whether these things are created at all and how they are actually used in practice," he says.

Another question posed by Gleeson is what exactly are these things? "If I give you a CBDC, does that discharge a payment obligation? If I go into a shop and give the shop CBDCs in exchange for a kettle, have I bought that kettle? It sounds like a stupid question but actually it has significant consequences because the definition of a sale is the exchange of goods for a sum of money, called the price. I only have Sale of Goods Act protection, or Consumer Act protection, if what I did was a sale. So, if the CBDCs are money, I then have consumer protection in respect of the kettle; if they aren't, then I don't. How do you take security over it? Can you not reasonably claim that you can net a money claim against a different money claim? It's equally clear that you can't net a money claim against an obligation to deliver a thing. So, if I owe you £100 and you are obliged to deliver to me £100 in CBDCs, can I net or can I not?"

There is a whole array of questions of that kind, all of which will need to be answered. If, for example, a CBDC is

deemed for all purposes to be money, it creates as many problems as it solves because there are then currency and money laundering requirements. "The trouble with CBDCs is that they are like money, but in a number of respects they are not money and an answer 'this is money for all purposes' is every bit as unsatisfactory as the answer 'this is not money for all purposes'. So, part of the creation of CBDCs will have to be the creation of a new legal architecture that deals with all these consequential questions," Gleeson says.

## What's happening in the UK?

In April 2021, the Bank of England and HM Treasury established a new CBDC Taskforce to ensure a strategic approach is adopted between the UK authorities as they continue to explore the possibility of developing a CBDC, with the creation of new engagement and technology for broader stakeholder engagement.

Alongside this, the Bank of England published a discussion paper on new forms of digital money and feedback to its March 2020 discussion paper, highlighting five core principles that will guide the Bank of England's future exploration of CBDC. These principles point towards:

- Financial inclusion as a prominent consideration in the design of any CBDC.
- A competitive CBDC ecosystem with the private sector taking a leading role in responding to end users' needs.
- The need to assess whether non-CBDC payment innovations could deliver the same benefits.
- The need to protect users' privacy (whilst complying with important legal compliance requirements such as anti-money laundering, countering the financing of terrorism and sanctions).
- Consideration of opportunities a CBDC might bring for monetary and financial stability as well as for payments.

## What's happening in the Eurozone?

What is a digital euro? The report published by the European Central Bank (ECB) on the digital euro<sup>1</sup> states that the digital euro will be, if it comes into force, a liability of the ECB and the euro system offered in digital form for use by citizens and businesses to make payments. The intention is that it would complement cash and wholesale central bank money, but not replace them. "Interestingly, this is not synonymous with DLT or block chain, and the intention of the report is to remain technologically neutral even though, when most people speak about central bank digital currency, it is frequently in the context of block chain," says Jonathan Lewis, a Clifford Chance Partner in the Financial Regulatory Group in Paris.

The Treaty on the Functioning of the European Union, the Statute of the European System of Central Banks and the Regulation of 1998, which introduced the euro, provides the legal basis for the ECB and the euro system issuing notes and coins which are legal tender in the Eurozone. The report recognises that, depending on what features and functionality are adopted for the digital euro – and whether it is limited in purpose or is to have the same legal status as a euro bank note, the legal basis to be used under TFEU, the Statute and applicable regulations may differ. "Given political sensitivities on currency issues, the choice of legal basis is quite important because as we saw in the euro crisis, there are often groups who take legal actions before the European Court of Justice or domestic constitutional courts, to challenge evolutions in the role of the ECB, the euro and monetary policy," says Lewis.

He adds that a parallel issue is, if the digital euro becomes legal tender or its equivalent, what happens in the domestic commercial law of EU states as to how one can validly discharge a debt; in particular, would a person be entitled or permitted to use stable coin or other digital currencies e.g. DIEM to repay a debt, or will the use of those other digital currencies be restricted because the euro

area will have digital legal tender that can be used in the digital space?

The ECB report identified several key principles: the digital euro should be convertible at par; it should be a risk-free asset; it must permit equal access across the Eurozone; and be based on a system and technology that is secure and can be trusted.

One of the reasons cited for the issuance of digital euro partly concerns the challenges to monetary sovereignty of the euro area from private challengers, such as LIBRA/DIEM<sup>2</sup>, or potential currency displacement when or if the digital yuan or digital dollar become a reality and becomes currently used in the digital economy. "In order for the Euro area to preserve its financial and monetary autonomy, it would be necessary to have something that's more user-friendly than the current format of euro in the digital space. Clearly, there has been declining use of cash and a need within the Euro area for a modern, robust payment system which facilitates and encourages innovation and the digital economy," he says.

## What are the challenges for a digital euro?

There are significant policy issues of how to reconcile a digital euro with financial stability, specifically how to reconcile a digital euro with the traditional role of banks acting as intermediaries, which transform retail and corporate deposits into loans and investments in the real economy both to industry and to consumers. With this in mind the ECB's report looked at differences in design, potential use of direct models, potential use of indirect models where the role of intermediaries is preserved, account or tokenised digital euro and issues of security, secrecy and privacy – today cash is totally anonymous, but there is a concern that digital euro should not be completely anonymous because of AML concerns on the financing of terrorism and proceeds of crime.

<sup>1</sup> Report on a digital euro October 2020

<sup>2</sup> The stable coin sponsored by Facebook.

Within the context of combatting financial exclusion and facilitating full participation in economic life the use of physical devices eg digital wallets or encrypted mobile phones to facilitate offline use is also being explored. Partly with a view to taking steps to preserve the traditional transformational role banks and partly to explore the role of the digital euro as a tool of monetary policy some of the discussions relate to whether there should be limitations on holdings of digital euro so they that do not completely displace deposits as a source of stable investment, and on issues of tiered remuneration, so that if you hold digital euro beyond a certain level, either penalties are levied or you do not receive the same remuneration as someone with a smaller holding.

A public consultation<sup>3</sup> resulted in over 8,200 people responding (a fairly large response): 94% were individuals, and only 6% were professionals; most responses came from Germany, Italy and France. The issues identified were privacy concerns, security and trust in the system, usability throughout the Eurozone and the ability to use offline. However, one encouraging element of the feedback, for those who want to preserve traditional banking, is the concerns expressed to integrate the new system with existing systems and to potentially regulate intermediaries. Using intermediaries as a gateway was something that seemed to be envisaged by those responding to the survey, who did not seem to consider the question of direct access to the central bank.

On the wholesale side, there has been some interesting uses of digital euro by the Banque de France. In March 2020, there was an issuance of covered bonds using Société General's FORGE system, as well as, in early 2021, an issuance of a subscription of fund units using block chain and in April 2021 the issuance of an EIB bond using digital euro managed through the Banque de France. This activity needs to be put into the context of the digital finance initiative; the new Markets in Cryptoassets (MiCA) regulation is intended to provide a context for the regulation of cryptoassets that are

otherwise not regulated, and, in particular, Stablecoin. There is also a forthcoming regulation to set up a pilot scheme for DLT multilateral trading platforms and central depositories.

Christine Lagarde stated in the ECB report that "we need to be ready to introduce the digital euro should the need arise." The decision will be taken in the first half of 2021. "It looks as if we are going in the direction of the digital euro being adopted and further work being done. With that in mind, the ECB and the Commission, in a joint statement in January 2021, said they were working on policy, legal and technical issues to assess feasibility and the way forward," says Lewis.

## The US perspective

The US is behind other countries in terms of how it sees CBDC development. It is very much in the planning and exploration stage, explains Megan Gordon, a partner in the Washington Litigation and Dispute Resolution practice. Last year the Federal Reserve Chair, Jerome Powell, was questioned by Congress about CBDCs. At the time Powell said that he appreciated the importance of making quick progress and generally noted that there were unanswered questions. In May 2021, it was announced that the Federal Reserve will issue a research paper on CBDCs this summer. While the Fed has said consistently that it is under no rush to introduce a CBDC, it is clear that there is increasing pressure to do so. "Congress is worried that the US will fall behind its competitors – in particular China – and there is concern that the US Dollar will be replaced as a major international currency by another digital currency that is easier to move internationally," says Gordon. Part of this concern is based on the fact that 5.4% of Americans still do not have checking or saving accounts. During the pandemic this meant that it was very hard to reach a small, but significant, number of Americans who were entitled to stimulus payments.

The Federal Reserve published a paper in February on five broad categories of what are seen as preconditions for CBDCs:

<sup>3</sup> Report on the public consultation on digital euro April 2021.

1. The first objective is in keeping with the guiding principle of the Central Bank, which is to do no harm, but it also wants to complement existing forms of money and support innovation and efficiency. There are currently huge inefficiencies in some money transfers.

2. Broad stakeholder support. "I think this is going to be the hardest push for the US, because it includes governmental bodies. The Fed has said that it will require congressional approval to be able to issue CBDCs and it's a pretty big issue in the US to get that type of consensus," Gordon says. It will also require the buy-in of financial institutions.

3. A strong legal framework. There is a general question in the US as to whether the issuance of CBDCs would be consistent with the Fed's mandate and whether it would require an additional amendment to the Federal Reserve Act in order to issue them. "I think that the general thought of the Fed is that it would, although there is some disagreement on that. In the US, legal tender means something different than it does in other countries. Federal law does not compel private businesses to accept a currency or coin even if it is legal tender, and this could make the rollout of CBDCs both easier and harder. Easier because not every business has to actually support it technically, but harder because many businesses could opt out and payment systems, of course, need to have one universal way to accept tender," she says. There is also an issue with anti-money laundering and sanctions. The US has a huge sanctions regime, which plays a significant role in foreign policy – there are concerns about terrorist financing, money laundering and privacy. There are also concerns about cost and liability – the cost of anti-money laundering systems and sanctions controls are currently borne primarily by the financial institutions, but in a system where the central bank takes that over, who is responsible for those costs and for consumer-facing issues, and who is liable to consumers?

4. Robust technology and block chain. What technology is going to be used and who is going to design it? How do we get to a technological environment that everyone can agree on? Block chains are also an issue given the amount of energy it takes to validate transactions in a block chain. Some environmental groups are already voicing concern about the energy usage involved, and if very large block chain systems are used to operate CBDCs then that problem will increase.

5. Market readiness and the appropriate timing for the introduction of CBDCs.

"Are there end users that are willing to adopt it? Is there a demand for it? And is there an ecosystem to support it?," asks Gordon. "In other words, is it seen as solving a problem? There is a huge concern that the US will lose its prominence, and that the US dollar will lose its prominence if China moves ahead. I think that is really what's driving a lot of the US efforts in this regard," she says. That said, there is clearly a great deal of caution about moving to a digital dollar. "I don't see the US as being at all the first mover on this, but the Fed has said it will be a big year for CBDCs and there will be more announcements in the coming months."

## China and CBDCs

China is pushing ahead with CBDCs. There are some pilot programmes in place and many Chinese people are becoming increasingly aware of the concept. China's central bank, the People's Bank of China (PBOC), began research into digital currencies as early as 2014, and has renamed the Institute for Printing Technology for Legal Tender as the Digital Currency Research Institute. "This demonstrates an expectation by China's central bank that printed legal tender will be replaced by digital currency at some point," says Kimi Liu, a counsel in Clifford Chance's Beijing Banking and Finance Group.

In April 2020, China formally announced that it would test a digital currency called Digital Currency Electronic Payment (DC/EP) in some selected cities. "On the



legislative and technology side, China is making progress. Previously, there was a lot of discussion as to whether China's digital currency is for retail purposes only, because all the testing is currently in retail situations – to buy coffee in Starbucks, for example, and to make other small payments. However, in February 2021, another initiative was announced focusing on wholesale," says Liu.

It is clear that China's central bank will adopt an intermediary model. The PBOC will issue digital currencies to those intermediaries (China's major banks, and third-party payment service providers such as TenPay and Alipay, in exchange for the deposit of lawful currency with the central bank. Those intermediaries can offer digital currency wallets to end users and will undertake daily operations and transactions. "Given China's size, it will be difficult for the Central Bank to build the infrastructure and a system to deal with individuals across the country, so it will rely on an intermediary for implementation," says Liu. The Chinese regulator is quite clear that it will be technology-neutral, so any technology that can satisfy security and reliability requirements will be welcome. However, if DLT is used, it is likely to result in enormous energy consumption which, with such a large population, will be problematic for the Chinese government.

In terms of cross-border activity, China's Digital Currency Research Institute has announced that it will work together with the UAE Central Bank, the Hong Kong Monetary Authority and the Bank of Thailand, with support from the Bank for International Settlements Innovation Hub, to develop a proof of concept prototype to facilitate real time cross-border foreign exchange payments. "I think this is the start of China challenging the digital currency concept on a wholesale and cross-border basis, but it is still at a preliminary stage," Liu says.

## What's happening in Hong Kong and Singapore?

The Hong Kong Monetary Authority (HKMA) has identified the inefficiencies of cross-border payments, and has applied technology to try and resolve those and make such payments more efficient, says Rocky Mui, a partner Clifford Chance's Funds Practice, based in Hong Kong. "They haven't created something completely new. They are not going to change the law, and it's not going to create a new digital currency. It's really just building and upgrading the infrastructure with block chain technology," he says. In conjunction with the Bank of Thailand, it is developing a pilot prototype of cross-border payments settlement. "The idea is to get rid of the corresponding bank because it's inefficient. Simply put, you have the local payment system in Hong Kong and Thailand, and you then build a bridge between them using a block chain. You then can have a live feed in terms of quotes, and execution and settlement can be made in real time. That's the aim. It is a simple idea, so it's a lot easier to get all the stakeholders onboard. There is less concern about who has this control, who is going to have the legal title and privacy concerns," he says. Hong Kong's approach is to move quickly. The next step is to bring in more central banks – the UAE's, and the PBOC in China.

Singapore has been working on Project Uban, a digital currency, for the past five years. It has tested a lot of elements, including cross-border settlement transfers, and has tried to tokenise bonds, loans and insurance. Now the focus is on using the technology and the digital currency concept to make the settlement system more efficient.



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