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## SPOTLIGHT ARTICLE September 2021

# The digitising of central bank currencies among the major economies – the current landscape

BY JUDITH ALISON LEE

The rise of decentralised cryptocurrencies and blockchain technology has encouraged many central banks across the globe to consider digitising their fiat currencies in the form of a central bank digital currency (CBDC). Each central bank would directly control and issue its CBDC, which is a liability of the central bank. The value of a country's CBDC often will be tied to the country's fiat currency, and the central bank will retain reserves of either cash or the CBDC itself, just as it would for other forms of currency. CBDCs have the potential to minimise transaction costs in cross-border transactions, increase financial inclusion, and improve efficiency of monetary policy implementation.

To date, the central banks of 65 countries are in some stage of initiating an active CBDC programme, while 10 countries have inactive CBDC programmes. At present, the Bahamas is the only country to have launched a CBDC programme for widespread retail use. Seven countries

have rolled out a pilot CBDC programme where a CBDC prototype is being tested in a controlled environment, 10 countries have begun developing the technological infrastructure for a CBDC programme, and 28 countries are researching what is necessary to begin developing a CBDC programme.

The central banks of the US, the European Union (EU), the UK, China and Russia have all begun to at least research a potential CBDC programme. Out of these economies, China is the furthest along, having already piloted a retail CBDC programme, and aims to be the first major economy to launch a retail CBDC programme. China's progress and developments among other international CBDC programmes has been a driving force for more CBDC-hesitant nations to begin researching a CBDC programme.

### The US

The Federal Reserve (the Fed) has yet to decide on whether it will issue a CBDC but has recently begun CBDC research.

Chairman Powell announced in May 2021 that the Fed will initiate research projects to understand the benefits and drawbacks of a CBDC, necessary technology to issue a CBDC, and policy implications associated with such an issuance. Moreover, the Fed has made clear any issuance of a CBDC would be a complement to cash rather than a replacement.

Furthermore, the Fed's research programme is primarily concerned with how a CBDC can improve the US payment system. The Fed thus aims to publish a CBDC discussion paper in summer 2021 not only detailing its findings but also on the possibility of issuing a CBDC. Regarding the technical aspects of issuing a CBDC, the Fed is researching in tandem with the Federal Reserve Bank of Boston and the Massachusetts Institute of Technology. This research is looking at infrastructure implementation.

The Fed's recent announcement comes at a time when other powerful nations are ramping up their CBDC development efforts. The US has a vested interest in maintaining

the global power of the dollar, and foreign CBDC programmes have the potential to undermine the dollar's power.

### The EU

The EU is also in the research stage of issuing a CBDC. Thus far, the European Central Bank (ECB) has established a task force to explore design choices and applications for a CBDC and published a report on the possible issuance of a digital euro.

The ECB's research report outlines: (i) reasons for CBDC issuance; (ii) potential effects of such an issuance; (iii) legal considerations; (iv) CBDC design possibilities; (v) technical considerations; and (vi) follow-up work to be done after such an issuance. The report does not advocate for or suggest the use of any specific type of digital euro or offer solutions to various implantation issues, such as set-up and recovery costs of a CBDC. Instead, the ECB's report emphasises that more research must be done to assess the benefits and challenges of CBDC implementation. Notably, however, the report discusses both a completely centralised CBDC and a CBDC that could be an interest-bearing vehicle and involve the role of private-sector intermediaries.

The ECB will not officially announce whether it will initiate a CBDC pilot programme until late summer 2021. In an October 2020 report, however, the ECB emphasised the financial-autonomy risk countries may face if they do not digitise their fiat currencies. The ECB has also published the results of a public consultation on issuing a CBDC. The public's greatest concern was data privacy, followed by security. Respondents also provided various technical suggestions, such as end-user solutions to emulate cash-like features.

### Russia

Russia is further along in its CBDC research than the US and the EU and plans to have a CBDC prototype by the end of 2021. The Central Bank of Russia (CBR) also stated it intends to implement a CBDC pilot programme at the beginning of 2022.

In October 2020, the CBR published a consultation paper outlining its vision of CBDC implementation. The CBDC will

be accessible both on and offline using electronic wallets or apps for end-users. Individuals will also be able to store reserves of the CBDC in their electronic wallets. The CBR's consultation paper emphasised that the CBDC will not serve as a replacement for cash but rather as a complement, like many other central banks considering a CBDC programme. The consultation paper further stressed the importance of discussing time frames and the risks and benefits of issuing a CBDC with various stakeholders before large-scale implementation could occur.

Some commentators note that introducing a Russian CBDC could be used to avoid US sanctions on Russia. Such avoidance and the potential for 'de-dollarisation', concomitant with CBDC issuances abroad, are likely the impetus for the Federal Reserve's CBDC research project.

### UK

Much like the US and the EU, the UK is still in the research phase of a CBDC programme. Thus far, the UK has released two CBDC discussion papers open to public comment. The Bank of England's (BoE's) first discussion paper, published in March 2021, discusses the risks, benefits and design challenges of issuing a CBDC. Published in June 2021, the second discussion paper focuses on the monetary, fiscal and public policy implications of issuing a CBDC.

To further advance study of a UK CBDC, the BoE and Her Majesty's Treasury commissioned a CBDC taskforce to research launching a CBDC programme in April 2021. The taskforce will include UK officials, and its research will focus on designing a CBDC, risk analysis and international CBDC developments. The BoE also established a CBDC unit to lead internal CBDC research and created two engagement forums for public stakeholders. One forum will gather strategic input from non-technological stakeholders, while the other forum will strictly focus on technological stakeholders.

### China

China is situated to be the first major economy to launch a CBDC and is currently piloting its digital yuan programme in several major economic sectors within China. For example, in October 2020 the

city of Shenzhen AirDropped the equivalent of \$10m in digital yuan to pilot programme participants via a People's Bank of China (PBC) authorised app. The digital yuans were spendable for a week-long period at designated retailers. The PBC aims to increase the usage of the digital yuan before Beijing hosts the 2022 Winter Olympics. The PBC has also begun to set up cross-border retail payment platforms with digital yuan functionality.

China's CBDC is designed as a centralised, two-tiered model. Thus, the PBC issues the CBDC against its cash or digital reserves to commercial banks, which in turn distribute the CBDC to end-users for circulation. End-users will have a central-bank approved app where the CBDC is stored in a digital wallet, allowing users to transact directly from their phones. Unlike CBDC initiatives in other countries, the PBC is considering using its CBDC as a cash replacement. Currently, the issuance of China's CBDC will not use blockchain technology. This depends, however, on the scalability limitations concomitant with a widespread rollout. Moreover, China's CBDC programme borrows blockchain technology features, such as the use of digital wallets.

China's CBDC can be used as a monetary policy and regulatory tool as well. Digital yuan holdings could be subject to negative interest rates, unlike cash. Moreover, the increased central bank supervision the digital yuan entails will aid the PBC in combatting terrorist funding and money laundering schemes. The digital yuan could also aid in internationalising the yuan; however, commentators note that other shifts in geopolitical and financial policy are needed to result in 'de-dollarisation'. ■

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