

## Kiffmeister's Global Central Bank Digital Currency Monthly Monitor (July 2022)

*Retail central bank digital currency (CBDC) is being explored, or has been explored, in 85 jurisdictions (up one from June).<sup>1</sup> Wholesale CBDC is being explored, or has been explored, by 15 central banks (unchanged). The Bank of Jamaica officially launched its JAM-DEX retail CBDC, the Eastern Caribbean Central Bank DCash became legal tender in all eight of its member countries, and the Bank of Korea announced plans to pilot test its prototype retail CBDC later this year. Also, the Banque de France kicked off the second phase of its wholesale CBDC experimentation.*

The [CBDC Think Tank](#), in partnership with the IMF and George Washington University, is hosting a full-day in-person CBDC Masterclass on October 12 in Washington DC. [\[Register here\]](#)

### Retail CBDC Developments (see also Annex 1)<sup>2</sup>

**The Bank for International Settlements Innovation Hub (BISIH) and Bank Indonesia announced the 21 shortlisted finalists for the G20 TechSprint CBDC challenge.** The shortlisted teams now have until the end of August to complete their prototypes, which will then be judged by an independent expert panel convened by Bank Indonesia. Winners for each of the three categories will be announced in October ahead of the G20 Summit. [\[Read more including a list of all the shortlisted firms\]](#)

**The Bank of Korea wants to commence real-world testing for its prototype CBDC with 10 domestic commercial banks in the second half of the year.** Until now, the CBDC work has been limited to proof-of-concept experiments, starting with basic functions such as minting, issuance, distribution, payments, redemption, digital asset transactions, and cross-border remittances. Now the central bank wants to know whether the prototype is compatible with various banks' IT platforms and wants to investigate possible interoperability-related issues. [\[Read more \(see page 63\)\]](#)

**The Bank of Japan published an English version of its Liaison and Coordination Committee on Central Bank Digital Currency interim report.** While it "currently has no plan to issue CBDC, the central bank considers it important to prepare thoroughly to respond to changes in circumstances in an appropriate manner". The report noted the strong preference for cash and high ratio of bank account holding in Japan, as reasons for cautiousness. However, as privately-issued digital currencies proliferate, a CBDC might be called for to provide broadly secure and neutral payment instruments to avoid fragmentation and monopolization of payment services, and to enable private businesses to utilize these as a source for creating new services. [\[Read more\]](#)

**The Bank of Jamaica officially launched its JAM-DEX CBDC on July 11.** Lynk is currently the only transaction platform for Jamaicans to use their JAM-DEX. As part of the launch, the first 100,000 customers that signed up for JAM-DEX via the Lynk app were given an incentive bonus of J\$2,500 JAM-DEX in their wallets by the Government of Jamaica. [\[Read more\]](#)

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<sup>1</sup> The alert reader may notice that in June I also reported 85 central banks exploring retail CBDC. However, I had double-counted Ghana. This month's new addition is the Dominican Republic.

<sup>2</sup> [Retail CBDC](#) is a broadly available general purpose digital payment instrument, denominated in the jurisdiction's unit of account, that is a direct liability of the jurisdiction's monetary authority, subject to the same rules and regulations as imposed on the jurisdiction's other units of account. [Wholesale CBDC](#) is limited to a set of predefined user groups, typically financial institutions, and based on distributed ledger technology (retail CBDC is platform agnostic – it can run on a centralized or decentralized ledger, or no ledger at all).

**Bank Indonesia continues to research CBDC and plans to issue a white paper at the end of this year concerning a Digital Rupiah.** The central bank's CBDC exploration has six objectives: (i) providing a risk-free means of digital payment using central bank money, (ii) mitigating the risk of non-sovereign digital currency, (iii) expanding payment system coverage and efficiency, including cross-border transactions, (iv) expanding and accelerating financial inclusion, (v) providing new monetary policy instruments, and (vi) facilitating the distribution of fiscal subsidies. [\[Read more\]](#)

**The Bank of Mauritius is still considering CBDC issuance, and the IMF published a paper that assesses the potential impact on liquidity management and monetary policy transmission of various designs of Mauritian Digital Rupee.** It finds that issuing a CBDC, especially when remunerated, may not bring clear advantages for liquidity management, and may lead to complications for the transmission of the policy rate to market rates. A simpler option of non-interest-bearing retail Digital Rupee could be a safer option as it would lead to a lower risk of interference with policy transmission. [\[Read more\]](#)

**According to Central Bank of Nigerian Governor Godwin Emefiele, Nigerian lenders are impeding the use of the e-naira because they are concerned about losing revenue from traditional banking services.** Only about 700,000 customers have created an e-naira wallet since its introduction in October last year, and e-naira transactions have also failed to pick up. Currently, the e-naira wallet is available to only bank customers, but the central bank is close to concluding tests with MTN Group's Nigeria unit to provide a channel to enable Nigerians without bank accounts to open e-naira wallets. [\[Read more\]](#)

**The Bank of Central African States has reportedly been urged by its board to introduce a common digital currency for its six member states** (Cameroon, Chad, the Republic of Congo, Gabon, Equatorial Guinea, and the Central African Republic). The board made the call in an emailed statement on July 21 following a meeting in Cameroon. The proposal comes after the central bank's strong opposition for the Central African Republic's adoption of Bitcoin as legal tender earlier this year. [\[Read more\]](#)

**Côte d'Ivoire authorities are "cautiously exploring the benefits of a CBDC and the IMF said it stands ready to offer capacity development support.** [\[Read more\]](#) However, it's unclear how that would work because Côte d'Ivoire doesn't have its own central bank. It's part of the West African Monetary Union whose currency is the CFA Franc, issued by the [Banque Centrale des États de l'Afrique de l'Ouest](#).

***Other Retail CBDC Explorations and Projects Continue to March on and New Ones Are Announced:***

- The National Bank of Kazakhstan's Payment and Financial Technologies Development Center published a paper describing its Digital Tenge CBDC implementation model. Based on results of the study obtained with the use of this model, a final decision will be made by the end of 2022 whether to implement CBDC in Kazakhstan, following end-to-end testing of the technological platform with market participants and consumers during the 4th Quarter of 2022. [\[Read more\]](#)
- The [Eastern Caribbean Central Bank DCash](#) pilot expanded to Anguilla, making DCash legal tender in all eight ECCB member countries. [\[Read more\]](#) As at end-March, there was \$2.27 million DCash in circulation (0.16% of currency in circulation). More than 20 of the region's financial institutions and 11 agencies, are now participating in the pilot, and there has been a steady increase in the merchant base. The second phase of the pilot will see the introduction of government-to-person payments and e-commerce functionality. [\[Read more\]](#)

- The Banque de la République d’Haïti has requested IMF technical assistance to help address the risks associated with CBDC issuance. Support has been received from foreign CBDC platform vendors and collaboration has been initiated with countries that have launched CBDC. [\[Read more\]](#)
- El Banco Central de la República Dominicana is exploring the benefits of a CBDC, and the IMF stands ready to offer capacity development support. [\[Read more\]](#)
- The European Central Bank is inviting technology experts to take part in online technical talks to explore options for the design of a digital euro. The talks will focus on the large-scale application of privacy-enhancing technologies in settlement of retail payments. For example, how can the payment asset issuer exert control over settlement rules and maintain adequate, tamper-proof evidence of the amounts in circulation, while also minimizing the accessibility of sensitive information? [\[Read more\]](#)
- The Cato Institute analyzed responses to the U.S. Federal Reserve CBDC consultation and found that 66.52% of the 2,052 comments rejected a digital dollar. By excluding blank comments or those soliciting work on the project, the figure rises to 71.21%, with 11.74% in support of a CBDC, and 17.06% neutral. The most common concerns were over financial privacy, financial oppression, and the risk of disintermediating the banking system. [\[Read more\]](#)
- Deputy Governor Jon Cunliffe reportedly said that the Bank of England is unlikely to offer a digital pound that works like banknotes, opting instead for an instrument managed through some sort of account, reflecting concerns that it could be used in crime and money laundering. The Bank plans to release a consultation paper at the end of the year about how a retail CBDC might look. If a decision is made to issue digital pounds, actual issuance is five or more years away. [\[Read more\]](#)
- The Central Bank of Chile has opened an online survey on its CBDC project. The poll is aimed at financial sector and academics; specialists in payments and technological services; and the general public. [\[Read more\]](#) This initiative is expected to deepen the evaluation process started in May with the publication of a [first report on CBDC issuance](#). A second report will be published at the end of this year or beginning of 2023. [\[Read more\]](#)
- The International Monetary Fund (IMF) ran a peer learning event at its Singapore Regional Training Institute on July 6/7 at which Changchun Mu, Director General, Digital Currency Institute at the People’s Bank of China gave a presentation on the e-CNY. [\[Read more\]](#)
- The Reserve Bank of India (RBI) is reportedly working on a phased implementation of both retail and wholesale CBDC. The necessary amendment to the relevant section of the RBI Act 1934 had been made enabling the RBI to conduct pilot and subsequent issuance of CBDC. [\[Read more\]](#)
- The IMF published feedback on the Central Bank of Kenya CBDC discussion paper published in February 2022. The IMF recommended that the paper emphasize that CBDC will “do no harm” to existing private-sector digital payment solutions. [\[Read more\]](#)

### **Wholesale CBDC Developments (see also Annex 2)**

**The BISIH, Committee on Payments and Market Infrastructures, International Monetary Fund and the World Bank assessed different options for CBDC cross-border access and interoperability.** They highlight that CBDCs currently have a key benefit in being able to consider cross-border functionality already during the initial development phase, but this “clean slate” advantage has an expiry date. International cooperation and coordination are needed in the early stages of CBDC design. In addition, any system must be built with the flexibility to adapt both to a changing world and the different CBDC designs likely to be chosen by central banks. [\[Read more\]](#)

**The Banque de France has kicked off the second phase of its wholesale CBDC experimentation**, with an eye towards being ready to introduce central bank money as a settlement asset as early as 2023, with the implementation of the European pilot regime. Over the past year, the central bank has successfully completed the first phase, comprising nine experiments with the private sector and with other public actors, with a focus on cross-border payments and tokenized securities settlement. Now the Banque wants to get closer to a viable prototype, testing it in practice with more private actors and more foreign central banks in the second half of 2022 and in 2023. [\[Read more\]](#)

### **Recent CBDC-Related Publications of Interest**

#### *Central Bank Digital Currency: Stability and Information*

The U.S. Office of Financial Research published a paper on how a CBDC might affect the stability of the banking system. It presents a model that captures concerns that the option to hold CBDC can increase the incentive for depositors to run on weak banks. It highlights two countervailing effects. First, banks do less maturity transformation when depositors have access to CBDC, which leaves them less exposed to runs. Second, monitoring the flow of funds into CBDC allows policymakers to identify and resolve weak banks sooner, which also decreases depositors' incentive to run. The paper's results suggest that a well-designed CBDC may decrease rather than increase financial fragility. [\[Read more\]](#)

#### *Central Bank Digital Currencies and Regulatory Alternatives: The Case for Stablecoins*

The Richmond Fed published an article that discusses the question of whether a regulatory framework for stablecoins — where regulated banks can issue stablecoins backed 100% by deposits at the central bank — could serve as an alternative to issuing CBDC. It concludes that appropriate regulation may offer a path whereby stablecoins become effectively equivalent to CBDCs — when they are issued by regulated institutions and backed by reserves. [\[Read more\]](#)

#### *What factors determine central bank interest in CBDC?*

This paper by Bank of Indonesia staff attempts to explain the differences in CBDC exploration interest across emerging and advanced market countries. Based on a cross-country dataset, it shows that wholesale CBDC work is more advanced in countries with developed financial markets and greater cross-border transactions. Retail CBDC work is more advanced in countries with lower financial inclusion and a large informal economy. It further shows that different factors affect retail CBDC adoption across emerging and advanced countries. [\[Read more\]](#)

#### *Essays on Digital Currencies and Monetary Policy*

[Jonas Gross's](#) PhD dissertation studies issues related to digital currencies and monetary policy. It analyzes the determinants of European Central Bank monetary policy and examines CBDC design aspects, related to financial stability, monetary policy, and privacy. For example, it finds that CBDCs crowd out bank deposits and negatively affect bank funding, but this crowding-out effect can be mitigated if the central bank chooses to provide additional central bank funds or to disincentivize large-scale CBDC accumulation via low or potentially even negative interest rates. [\[Read more\]](#)

#### *Environmental Implications of a Central Bank Digital Currency*

The World Bank published a paper that explores the environmental implications of CBDC and highlights ecological footprint differences between CBDC and other payment methods. As the legitimacy of CBDC

is backed by the trust of central banks, it does not need to prove its legitimacy through energy-intensive consensus or mining mechanisms, so its energy consumption is low. [\[Read more\]](#)

*What can CBDC designers learn from asking potential users?*

The Österreichische Nationalbank published a paper that summarizes the results of a survey of 2006 Austrian residents about their CBDC design preferences and their likelihood of using a digital euro. Respondents were satisfied with the existing payment options, and only about half expressed at least some interest in a digital euro. In terms of CBDC design, high importance was placed on security against fraud and theft, but less than a third considered privacy important. [\[Read more\]](#)

#### **Notes:**

***Kiffmeister** is Head of CBDC/Digital Capital Markets Advisory at [Satoshi Capital Advisors](#), and Managing Director of the [CBDC Think Tank](#), and was a Senior Financial Sector Expert at the International Monetary Fund (IMF) from 2005 to 2021. Prior to that, he was at the Bank of Canada for 25 years, where he spent most of his time managing the funding and investment of the government's foreign exchange reserves, including running its interest rate and currency swap book. At the IMF he was part of the team that produces the semi-annual Global Financial Stability Report covering innovative financial products. [Kiffmeister](#) now offers CBDC-related advisory services through several channels, and contributes to two blogs devoted to fintech-related developments; [Kiffmeister Chronicles](#) and [Global Fintech Intelligence](#).*

*[Satoshi Capital Advisors](#) is a New York-based, global advisory firm that works with central banks, governments, and the private sector to architect, implement, and operate varying initiatives. Satoshi Capital Advisors' central bank work revolves around CBDC architecture and implementation, providing advisory services from research phase through to growth phase. Utilizing a product-market fit and technology agnostic approach to CBDC architecture and implementation enables Satoshi Capital Advisors to build tailored solutions, bespoke to local financial system nuances. **Satoshi Capital Advisors welcomes requests from central bank officials for virtual and in-person CBDC workshops.***

*The CBDC Think Tank is a New York-based technology- and vendor-agnostic digital currency knowledge-sharing hub for staff of central banks, international financial institutions (IFIs) and non-government organizations (NGOs). It runs webinars, workshops, and masterclasses to disseminate knowledge and facilitate communication. It also engages in advisory work, focusing on delivering impact that best aligns with the needs of its clients and the forward progress of human civilization. **The CBDC Think Tank welcomes requests from central bank officials for CBDC advisory services.***

### Annex 1: Jurisdictions Where Retail CBDC Is Being Explored

Where central banks (CBs) have launched or piloted (or soon will)

<a href="#">Bahamas (launched)</a>	<a href="#">Jamaica (launched)</a>
<a href="#">China (pilot launched)(update; 2022)</a>	<a href="#">Nigeria (pilot launched)(update)</a>
<a href="#">Eastern Caribbean (pilot launched)</a>	<a href="#">Uruguay (pilot completed)</a>
<a href="#">Ghana (pilot launched)(update)</a>	
Where CBs have done proofs of concepts (or soon will)	
<a href="#">Bahrain (completed 2022)</a>	<a href="#">New Zealand</a>
<a href="#">Bhutan (planned)</a>	<a href="#">Russia (underway)(update; 2022)</a>
<a href="#">Euro Area (update; 2022)</a>	<a href="#">Sweden</a>
<a href="#">Japan (started)(update; 2022)</a>	<a href="#">Thailand (completed 2021)(update; 2022)</a>
<a href="#">Hungary (completed 2021)</a>	<a href="#">Turkey</a>
<a href="#">Iran (completed 2022)</a>	<a href="#">Ukraine (completed 2019)</a>
<a href="#">Kazakhstan (completed 2021)(update; 2022)</a>	<a href="#">United States</a>
<a href="#">Korea (update; 2022)</a>	
Where CBs are in advanced stages of research and development	
<a href="#">Canada</a>	<a href="#">Norway</a>
<a href="#">Mauritius (update; 2022)</a>	<a href="#">United Kingdom (update; 2022)</a>
Where CBs have explored or are exploring (with year of last update)	
<a href="#">Argentina (2022)</a>	<a href="#">Mexico (2022)</a>
<a href="#">Australia (2021)</a>	<a href="#">Morocco (2019)(update; 2022)</a>
<a href="#">Bangladesh (2022)</a>	<a href="#">Namibia (2022)</a>
<a href="#">Brazil (2022)(update; 2022)</a>	<a href="#">Nepal (2021)(update; 2022)</a>
<a href="#">Chile (2022)(update; 2022)</a>	<a href="#">Oman (2022)(update; 2022)</a>
<a href="#">Curaçao en Sint Maarten (2022)</a>	<a href="#">Pakistan (2021)</a>
<a href="#">Czech Republic (2021)</a>	<a href="#">Palestine (2021)(update; 2022)</a>
<a href="#">Dominican Republic (2022)</a>	<a href="#">Paraguay (2021)</a>
<a href="#">Denmark (2022)</a>	<a href="#">Peru (2022)</a>
<a href="#">Egypt (2022)</a>	<a href="#">Philippines (2022)(update; 2022)</a>
<a href="#">Eswatini (2020)</a>	<a href="#">Poland (2021)</a>
<a href="#">Georgia (2021)(update; 2021)</a>	<a href="#">Qatar (2022)(update)</a>
<a href="#">Haiti (2021)(update; 2022)</a>	<a href="#">Singapore (2021)(update; 2022)</a>
<a href="#">Honduras (2021)(update; 2022)</a>	<a href="#">Saudi Arabia (2022)</a>
<a href="#">Hong Kong SAR (2022)</a>	<a href="#">South Africa (2021)</a>
<a href="#">Iceland (2018)</a>	<a href="#">Sudan (2022)</a>
<a href="#">India (2022)</a>	<a href="#">Switzerland (2019)</a>
<a href="#">Indonesia (2020)(update; 2022)</a>	<a href="#">Taiwan (2022)</a>
<a href="#">Iraq (2022)</a>	<a href="#">Trinidad &amp; Tobago (2021)(update; 2022)</a>
<a href="#">Israel (2021)(update; 2022)</a>	<a href="#">Tunisia (2018)(update; 2022)</a>
<a href="#">Kenya (2022)</a>	<a href="#">Uganda (2022)(update; 2022)</a>
<a href="#">Lebanon (2020)(update; 2022)</a>	<a href="#">Viet Nam (2021)</a>
<a href="#">Kuwait (2019)(update; 2022)</a>	<a href="#">Yemen (2022)</a>
<a href="#">Madagascar (2021)</a>	<a href="#">Zimbabwe (2022)</a>
<a href="#">Malaysia (2022)</a>	
Where CBs have explored or are exploring (according to reputable sources)	
<a href="#">Azerbaijan (2022)</a>	<a href="#">Myanmar (2022)</a>
<a href="#">Guatemala (2021)</a>	<a href="#">Rwanda (2022)</a>
<a href="#">Jordan (2022)</a>	<a href="#">Tanzania (2021)</a>
<a href="#">Laos (2021)</a>	<a href="#">United Arab Emirates (2021)</a>
<a href="#">Macau (2021)</a>	<a href="#">Zambia (2022)</a>

Where CBs have launched and discontinued	
<a href="#">Ecuador (2014-2018)(CBDC?)</a>	<a href="#">Finland (1993-2006)</a>
<b>Sources:</b> Central banks or various news sources per hyperlinks above, the Bank for International Settlements <a href="#">CBDC database</a> and <a href="#">CBDCTracker.org</a> .	

#### Annex 2: Domestic Payments System Focused Wholesale CBDC Experiments

Central Bank	Project	Platform/Vendor Partner(s)
Reserve Bank of Australia (RBA)(2020)	<a href="#">Interbank payments</a>	Ethereum
Bank of Canada	<a href="#">Project Jasper Phase 1 (2017)</a> <a href="#">Project Jasper Phase 2 (2017)</a>	Ethereum R3 Corda
<del>European Central Bank &amp; Bank of Japan (2017)</del>	<del><a href="#">Project Stella Phase 1 (2017)</a></del>	<del>Hyperledger Fabric</del>
Republic of the Philippines	<a href="#">Project CBDPh</a>	n/a
Monetary Authority of Singapore (MAS)	<a href="#">Project Ubin Phase 1 (2017)</a> <a href="#">Project Ubin Phase 2 (2021)</a>	R3 Corda Hyperledger Fabric & Quorum
South Africa Reserve Bank (SARB)(2018)	<a href="#">Project Khokha</a>	<a href="#">Quorum</a>
Bank of Thailand (BOT)(2019)	<a href="#">Project Inthanon Phase 1</a>	R3 Corda

#### Annex 2b: Cross-Border Payments Focused Wholesale CBDC Experiments

Central Bank	Project	Platform/Vendor Partner(s)
Bank of Canada & Monetary Authority of Singapore (2019)	<a href="#">Project Jasper-Ubin</a>	R3 Corda & Quorum
Banque de France (BdF)(2021)	<a href="#">Cross-Border Payments</a>	Multiple Platforms
<del>European Central Bank (ECB) &amp; Bank of Japan (BoJ)(2019)</del>	<del><a href="#">Project Stella Phase 3</a></del>	<del>Hyperledger Fabric</del>
Hong Kong Monetary Authority (HKMA) & Bank of Thailand (BOT)	<a href="#">Project Inthanon-LionRock 1</a> <a href="#">Project Inthanon LionRock 2</a>	R3 Corda Consensys
Saudi Arabian Monetary Authority (SAMA) and the CBUAE	<a href="#">Project Aber</a>	Hyperledger Fabric
Bank for International Settlements Innovation Hub (BISIH) and: Swiss National Bank and Banque de France <del>MAS, CBo of Italy and Malaysia</del> RBA, Bank Negara Malaysia (BNM), MAS, and SARB HKMA, BOT; the People's Bank of China (PBOC), and CBUAE	<a href="#">Project Jura</a> <a href="#">Project Nexus</a> <a href="#">Project Dunbar</a> <a href="#">Multiple CBDC (mCBDC) Bridge</a>	R3 Corda ? R3 Corda and Quorum ConsenSys

#### Annex 2c: Securities Settlement System Focused Wholesale CBDC Experiments

Central Bank	Project	Platform/Vendor Partner(s)
Reserve Bank of Australia (RBA)(2021)	<a href="#">Syndicated loan settlement</a>	Ethereum
Bank of Canada (2018)	<a href="#">Project Jasper Phase 3</a>	R3 Corda
<del>European Central Bank &amp; Bank of Japan (2018)</del>	<del><a href="#">Project Stella Phase 2</a></del>	<del>R3 Corda, Elements, Hyperledger Fabric</del>
Banque de France (BdF)(2021)	<a href="#">Securities settlement</a>	Multiple platforms
Oesterreichische Nationalbank (2021)	<a href="#">Project Delphi</a>	?
South Africa Reserve Bank (SARB)(2021)	<a href="#">Project Khokha 2</a>	<a href="#">Accenture</a>
Bank of Thailand (BOT)(2019)	<a href="#">Project Inthanon Phase 2</a>	R3 Corda
Bank for International Settlements Innovation Hub (BISIH) and: Swiss National Bank (SNB)(2022) SNB and BdF (2021)	<a href="#">Project Helvetia</a> <a href="#">Project Jura</a>	R3 Corda R3 Corda
<b>Note:</b> The projects that are <del>crossed through</del> are ones I'm reviewing, as it's unclear whether wholesale CBDC is involved.		