



**Testimony before the
U.S. House of Representatives Committee on Financial
Services
Task Force on Financial Technology**

Regarding

**“Digitizing the Dollar: Investigating the Technological
Infrastructure, Privacy, and Financial Inclusion
Implications of Central Bank Digital Currencies”**

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I. Introduction

Task Force Chairman Lynch, Ranking Member Emmer, and distinguished members of the Financial Technology Task Force, it is an honor for me to appear before you today to testify regarding digitizing the dollar. My name is Jenny Gesley and I am a Foreign Law Specialist at the Law Library of Congress. I have previously worked at the chair for money, currency, and central bank law at the University of Frankfurt, Germany, and I hold a Ph.D. in law in the area of financial market supervision. In my testimony today, I will provide an overview of different design choices for central bank digital currencies (CBDCs), reasons in favor of and against adopting a CBDC, and some legal, economic, and technical considerations. I will use examples from other countries to illustrate these points.

Technology and digitalization are changing the way we pay. The COVID-19 pandemic has only accelerated the trend away from cash to digital payments. Cryptocurrencies, such as Bitcoin, are experiencing an all-time high. However, we have also seen the volatility of cryptocurrencies when the price of Bitcoin dropped by almost 30% after concerns about tighter regulations and Tesla's announcement that it would not accept Bitcoin as a means of payment anymore.

Central banks are taking note of these developments. On October 20, 2020, the Central Bank of The Bahamas (CBB) launched the first worldwide retail CBDC, the Electronic Bahamian Dollar ("Sand Dollar").¹ Its purpose is to "promote more inclusive access to regulated payments and other financial services for unbanked and underbanked communities and socio-economic groups within the country."² The People's Bank of China (PCOB) recently became the first central bank of a major economy to roll out a digital RMB in several major cities.³ Sweden's Riksbank announced that it will bring in commercial banks and other market participants in the next phase of its e-krona project to test how it might work practically.⁴ The United Kingdom (UK) and the European Union (EU) are also performing exploratory work on a potential retail CBDC, but have not yet made a decision on whether to introduce one.⁵ With regard to wholesale CBDCs, the Bank for International Settlement (BIS) Innovation Hub, the Swiss National Bank, the Bank of France, and a private sector consortium announced on June 10, 2021, that they would investigate the potential benefits and challenges of a wholesale CBDC in settling cross-border payments and digital financial instruments ("Project Jura").⁶

¹ *Digital Bahamian Dollar*, Central Bank of The Bahamas, <https://perma.cc/RPX5-BNQP>.

² *Id.*

³ David Olsson et al., King & Wood Mallesons, *China's Digital RMB – Is Your Business Ready?*, China Law Insight (May 11, 2021), <https://perma.cc/UB27-EPWB>; PCOB, 中华人民共和国中国人民银行法（修订草案征求意见稿）, draft art. 19, <https://perma.cc/7GF9-NSZM>. Draft article 19 states: "Renminbi includes both physical and digital forms."

⁴ *E-krona*, Sveriges Riksbank (last updated Apr. 29, 2021), <https://perma.cc/3MU8-LWMF>.

⁵ Press Release, Bank of England [BoE], Bank of England Statement on Central Bank Digital Currency (Apr. 19, 2021), <https://perma.cc/XV4A-QU3W>; *A Digital Euro*, European Central Bank [ECB], <https://perma.cc/BWN4-EX5P>.

⁶ Press Release, Bank for International Settlement [BIS], Bank for International Settlements Innovation Hub, Swiss National Bank and Bank of France Collaborate for Experiment in Cross-Border wCBDC (June 10, 2021), <https://perma.cc/UH72-XJ6K>.

One of the main functions of central banks is to ensure monetary and financial stability in their respective jurisdictions and to promote broad access to safe and efficient payments. A core instrument by which central banks achieve these objectives is by providing central bank money. Traditionally, central banks have limited access to digital account-based central bank money (a.k.a. reserves or settlement balances) to banks and certain other financial or public institutions. By contrast, physical central bank money, meaning cash, is widely accessible. In some jurisdictions, however, the use of cash is decreasing, with the possibility of its complete disappearance, implying that the public would no longer have wide access to central bank money. That is one of the points where central bank digital currencies (CBDCs) come into play. However, reasons for adopting a CBDC and design choices depend on many different factors and are different in individual jurisdictions. Differences also exist between emerging market economies and advanced economies.

II. Overview of Central Bank Digital Currencies (CBDCs)

A. Definition

There is no official definition of CBDCs. The BIS defines it as a “digital form of central bank money that is different from balances in traditional reserve or settlement accounts.”⁷ Generally, CBDCs have the following three characteristics. They are

- electronic money issued by the central bank,
- denominated in the national unit of account, and
- a liability of the central bank.

B. Worldwide Progress on CBDCs

A 2021 survey conducted among 65 central banks by the BIS found that 86% of survey participants were actively researching the benefits and drawbacks of CBDCs, with 60% conducting experiments or proofs-of-concept and 14% moving forward to development and pilot projects.⁸ The survey also found that seven out of eight central banks in advanced stages of CBDC work were in emerging market and developing economies (EMDEs). As mentioned, the Central Bank of The Bahamas was the first central bank worldwide to launch a retail CBDC. Other Caribbean central banks, such as the Bank of Jamaica (BoJ) and the Eastern Caribbean Central Bank (ECCB) also recently announced the launch of their CBDC pilot projects on March 22, 2021, and March 31, 2021, respectively.⁹

Another question to consider is whether consumers are ready for a CBDC. A 2019 global opinion poll from the Official Monetary and Financial Institutions Forum (OMFIF) on public trust in

⁷ BIS, Committee on Payments and Market Infrastructures, *Central Bank Digital Currencies* (Mar. 2018), <https://perma.cc/5TCR-58RB>.

⁸ BIS, BIS Papers, No 114, *Ready, Steady, Go? – Results of the Third BIS Survey on Central Bank Digital Currency* (Jan. 2021), <https://perma.cc/P8UQ-2HNW>.

⁹ Press Release, Bank of Jamaica [BoJ], BoJ Prepares for Central Bank Digital Currency (Mar. 22, 2021), <https://perma.cc/4V34-LRXW>; *About the Project*, DCash. An ECCB Initiative, <https://perma.cc/VJX4-JBFV>.

monetary institutions, payment characteristics, and digital currency across 13 advanced and emerging countries found that in almost all countries, respondents indicated that they would feel most confident in digital money issued by the domestic monetary authority.¹⁰ Respondents globally expressed a lack of confidence in digital money issued by a tech or credit card company, which was particularly true for respondents from advanced economies. Across all countries, respondents were unanimous in citing safety from fraud and theft as the most important feature. Second were privacy protections. Speed was the least important characteristic. In general, emerging market respondents were much more open to digital money than their advanced-economy counterparts.

C. Design Choices of CBDCs

Among other decisions, central banks adopting a CBDC have to consider the different design choices. In particular, the questions of access, degree of anonymity, operational availability, interest bearing characteristics, limits or caps on individual holdings, and technical solution have to be taken into account. In general, there are two models under discussion: a wholesale CBDC, where access would be limited to a predefined group of users, and a retail CBDC (also called general purpose CBDC), which would be widely accessible and be a digital equivalent of cash for use by end users. The choice between a wholesale and a retail CBDC depends on many different factors and differs from jurisdiction to jurisdiction.

D. Reasons for Adopting a CBDC

Reasons for adopting a CBDC also vary from jurisdiction to jurisdiction. Among the reasons are

- declining cash usage in some jurisdictions, such as Sweden;
- improved financial inclusion for unbanked and underbanked communities, especially in EMDEs, such as the Caribbean jurisdictions;
- a general interest in technological innovations for the financial sector and making the payment system more efficient and instantaneous;
- the fear that central bank money in transactions will be displaced with private digital tokens such as cryptocurrencies in general or stablecoins issued by corporations, such as Facebook's diem; and
- the risk of a "digital dollarization" related to cross-border CBDCs. Dollarization is shorthand for the use of any foreign currency by another country and has an impact on the domestic central bank's ability to conduct monetary policy and ensure financial stability.¹¹

However, central banks that decide to move forward with a CBDC due to one of these reasons, must make several legal, economic, and technical considerations. I will outline some of these considerations below.

¹⁰ Bhavin Patel & Pierre Ortlieb, *Digital Currencies. A Question of Trust. An OMFIF Report on Global Public Confidence in Monetary, Financial and Payment Institutions* (2020), <https://perma.cc/8XCX-XXFW>.

¹¹ Andrew Berg & Eduardo Borensztein, *Full Dollarization. The Pros and Cons*, Economic Issues No. 24 (Dec. 2020), <https://perma.cc/5GJU-7TFL>.

1. *Legal Authority of the Central Bank/Legal Tender Status of CBDCs*

Not every central bank has the legal authority to issue a digital currency. It might therefore be necessary to amend the central bank act or other law that authorizes the domestic central bank to issue the currency of the country. In addition, a clarification that the digital currency will also have legal tender status as the physical currency, if so desired, might have to be enacted. The 2021 BIS survey found that 26% of the surveyed central banks do not have the authority to issue a CBDC and that 48% were unsure.¹² If the central bank law is ambiguous, an amendment is necessary to avoid any questions about the legality of issuing a CBDC. In the Bahamas, the Central Bank of The Bahamas Act, 2020 (CBBA) was amended to provide the CBB with the legal authority to issue the Sand Dollar and to make both notes and digital currency legal tender.¹³ Among others, the Bank of Jamaica, the PCOB, and the Bank of Russia are preparing amendments to their respective legislation to give the central bank the sole right to issue the digital currency as legal tender.¹⁴

2. *Compliance with Anti-money Laundering and Counter Terrorism Financing (AML/CFT) Requirements/Privacy Considerations*

Compliance with AML/CFT requirements is of concern with regard to anonymous CBDCs. A completely anonymous CBDC therefore seems not feasible. However, people prefer cash, because of its anonymity, among other reasons. As the 2019 opinion poll from OMFIF showed, privacy protections were the second most important feature for respondents. CBDCs would therefore have to provide something equivalent to the benefits of cash, while balancing the need to comply with AML/CFT requirements. The Chinese digital RMB will reportedly have conditional anonymity and support for dual offline payments, meaning that both payor and payee can be offline.¹⁵ Conditional anonymity means that the data provided by the users would be tiered depending on the type of digital wallet (basic or premium) and data access would be restricted, such as that only the PBOC will know the identity of the user.¹⁶ However, it should be noted that the proposed Chinese digital RMB would reportedly use a centralized solution, providing less anonymity than other proposed solutions.¹⁷

3. *Flight from Commercial Banks to Central Banks ("Digital Run")/Disintermediation of Commercial Banks*

Adopting a CBDC could have negative effects on the commercial banking sector. During a systemic banking crisis, holding risk-free central bank issued CBDCs could become vastly more

¹² BIS, *supra* note 8, at 10 et seq.

¹³ Central Bank of The Bahamas Act, 2020 (CBBA), Extraordinary Official Gazette, July 27, 2020, art. 5, para. 1(h) & para. 1(p), art. 8, para. 1, art. 12, <https://perma.cc/6TDW-VEGX>.

¹⁴ BoJ, *supra* note 9; Bank of Russia, Digital Ruble Concept 29 (Apr. 2021), <https://perma.cc/5G87-T8CY>; PCOB, *supra* note 3.

¹⁵ Olsson et al., *supra* note 3.

¹⁶ *Id.*

¹⁷ *Id.*

attractive than bank deposits at commercial banks. As a result, there could be a sector-wide run on bank deposits, magnifying the effects of the crisis (“digital run”).¹⁸

Furthermore, there is a risk of disintermediation of the banking sector depending on what CBDCs would substitute. If households substitute banknotes with CBDCs, then the change to central bank and commercial bank balance sheets would be marginal. However, if households substitute commercial bank deposits with CBDCs, then this would imply a funding loss for commercial banks. Commercial banks would have to try to offer better conditions on their deposits in order to protect their deposit base as much as possible – but this would imply higher funding costs for banks which would most likely be passed on to consumers.¹⁹

The Electronic Bahamian Dollar provides insight into possible solutions to counter these problems. The draft Central Bank (Electronic Bahamian Dollars) Regulations, 2021 provide that to constrain the ability of the Sand Dollar wallets to substitute for deposit accounts, the CBB would be empowered to suspend the withdrawal of deposits or limit the maximum amount of withdrawals; however, not exceeding seven days.²⁰ After this time at the latest, other measures to ensure financial stability would need to be enacted.²¹ In addition, no interest would be paid or any other benefit awarded related to digital currency held in mobile wallets in order to make them less attractive than deposit accounts.²² Furthermore, the CBB would be empowered to limit the amount of the digital currency that individuals, businesses and other non-supervised financial institutions can hold.²³

4. Risks to Central Bank Independence

During emergencies, a central bank could agree to act as a government agent and execute CBDC fund transfers on the government’s behalf to individuals and businesses. For example, it has been suggested to use CBDCs as a way to deliver stimulus packages to households and businesses during the Covid-19 pandemic (“helicopter money”).²⁴ However, helicopter money is a form of fiscal policy, suggesting that the lines between monetary and fiscal policy could become blurred. One of the reasons for central bank independence is to shield it from undue influence of politics.

¹⁸ BIS, Committee on Payments and Market Infrastructures, Markets Committee, *Central Bank Digital Currencies* (Mar. 2018), at 16, <https://perma.cc/KGZ4-WPLQ>.

¹⁹ Ulrich Bindseil, *Tiered CBDC and the Financial System*, ECB Working Paper Series No. 2351, at 9 (Jan. 2020), <https://perma.cc/M6T5-NMN8>.

²⁰ Central Bank of The Bahamas, *Consultation Paper: Proposed Legislation for the Regulation of the Provision and Use of Central Bank Issued Electronic Bahamian Dollars*, proposed regulation no. 18, <https://perma.cc/GNT3-XG2J>. The finalized regulations were supposed to be issued by May 1, 2021, however, they have not been published to-date.

²¹ Id.

²² Id. proposed regulation no. 15.

²³ Id. proposed regulation no. 19.

²⁴ See e.g. H.R.6321 - Financial Protections and Assistance for America’s Consumers, States, Businesses, and Vulnerable Populations Act, <https://perma.cc/2D7J-93H9>; S.3571 - Banking for All Act, <https://perma.cc/ZW5U-KVPC>.

5. *Technical Solution*

In general, there are two ways to design a retail CBDC. A retail CBDC could either be offered as a digital currency token or in the form of a deposit account with the central bank.²⁵ A digital currency token would circulate in a decentralized way without central ledger using distributed ledger (DLT) technology, such as blockchain. Sweden's central bank announced that they would most likely employ a DLT solution, whereas the Bank of Jamaica for example stated that their CBDC option will not use blockchain, but rather be fully integrated with the Bank's existing financial market infrastructure.²⁶ Similar to cash, such an option would provide more anonymity, because the central bank would not know who currently holds the token.²⁷ The Chinese digital RMB would reportedly not use blockchain technology but be designed as a centralized digital currency, providing less anonymity.²⁸

A second option would be establishing deposit accounts with the central bank for all households and businesses.²⁹ The actual servicing and technical maintenance of the accounts could be assigned to one or several third party providers. Such a solution would provide advantages for unbanked communities that do not have a regular deposit account.

6. *Financial Inclusion*

Improved financial inclusion for unbanked and underbanked communities is one of the main reasons EMDEs consider adopting a CBDC. However, these considerations can also be applied to other countries where parts of the population have no access to traditional banking services. The Central Bank of The Bahamas cited financial inclusion as one of the critical goals of the Sand Dollar. In order to achieve this goal, the draft regulations would require all wallet providers to provide basic wallet services to all persons at no cost, to establish a financial inclusion strategy, and to provide the central bank periodically with financial inclusion data.³⁰ Furthermore, they would empower the central bank to intervene if services are withdrawn by a wallet provider or no services are provided in certain locations.³¹ In such a case, the central bank would designate a wallet provider to provide services.³² Furthermore, in addition to traditional commercial banks, co-operative credit unions, money transmission businesses, and payment service providers can apply to become wallet providers, thereby expanding options for unbanked or underbanked communities.³³ As of mid-March, nine wallet providers had completed the cybersecurity

²⁵ Bindseil, *supra* note 19, at 4.

²⁶ *The E-krona Pilot – Test of Technical Solution for the E-krona*, Sveriges Riksbank, <https://perma.cc/RV6T-787N>; BoJ, *supra* note 9.

²⁷ Bindseil, *supra* note 19, at 4.

²⁸ Olsson et al., *supra* note 3.

²⁹ Bindseil, *supra* note 19, at 4.

³⁰ Central Bank of The Bahamas, *supra* note 20, proposed regulation nos. 7(a), 11(2), 19(4).

³¹ *Id.* proposed regulation no. 9(8).

³² *Id.*

³³ *Id.* proposed regulation no. 4.

assessments of their technology systems and had been cleared to distribute the Bahamian CBDC.³⁴

However, a CBDC that would replace cash could have negative effects for financial inclusion. Central banks therefore have tried to ease these fears by pointing out that a CBDC would not replace cash, but be introduced as a complement to cash and central bank deposits. Even though the ECB and the Bank of England are only in the exploratory stages of a CBDC, public statements and reports made sure to emphasize this point.³⁵

³⁴ Press Release, CBB, Consumer-Centric Aspects of the Proposed Regulations for the Bahamian Digital Currency (Mar. 26, 2021), <https://perma.cc/CDJ6-U4BX>.

³⁵ ECB, *Report on a Digital Euro* 6 (Oct. 2020), <https://perma.cc/7QBJ-WEGR>; BoE, *supra* note 5.