

**United States House of Representatives  
Committee on Financial Services  
Task Force on Financial Technology**

*June 15, 2021*

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

Written Testimony of Carmelle Cadet

**Dear Chairman Lynch, Chairwoman Waters, Ranking Member Davidson, Esteemed Committee Members**

Thank you for the opportunity to testify and respond to your questions on how Digitizing the Dollar, with the use of blockchain technology (a Central Bank Digital Currency (CBDC)), can address financial inclusion and equitable society initiatives while executing an efficient and more secure payments infrastructure in the United States for everyone.

My name is Carmelle Cadet, and I’m the Founder and CEO of EMTECH, a U.S.-based financial technology company helping central banks around the world use modern technology such as blockchain, cloud computing and data analytics tools to deploy inclusive and resilient financial market infrastructures.

It is my pleasure to talk to you today about how with a CBDC the United States can unleash tools and policies for economic uplifting of the unbanked, the minorities, the underserved communities, the unemployed and ultimately the nation’s infrastructure itself.

This conversation is very important to me personally, given my experience as a once unbanked minority person in the U.S. As a Haitian immigrant, supported by a single mother who was paid substantially below the minimum wage, I learned first-hand the importance of financial sector access. Integration into the formal banking sector was transformative and for many like myself, represented a key step in becoming a proud American.

I am now in a position to create jobs, give something back and promote innovative ‘actionable’ CBDC strategies promoting using modern technology to achieve financial and economic inclusion. However, far too many Americans still struggle to get such access to safe, reliable and low-cost provision of financial services.

I understand the value of an inclusive financial infrastructure, and I see it as a duty to bring my voice to the table, given this is the key reason why I launched my company. The emergence of digital currency can be done in the image of the status quo, or we could take the opportunity to design a truly inclusive and resilient infrastructure for every person in this country. I hope this testimony will foster the latter.

And so, I hope to share with you today that CBDC should not be about disruption of the current financial sector nor is it about emulating Bitcoin and other crypto assets. Though a CBDC would significantly decrease attractiveness and uptake of these.

Crucially, CBDC in this context represents a once in a lifetime opportunity for the U.S. to revolutionize its currency infrastructure, along with many of its peers, in building a modern, resilient, efficient and inclusive cash and payment infrastructure.

## Why Issue a Retail Central Bank Digital Currency?

Central Bank Digital Currency like the current money supply, can be issued for wholesale (for bank to bank transactions) or retail (banks to businesses and citizens, includes cash printed) purposes by the Federal Reserve. As stated in its initial mandate, the Federal Reserve has the role to provide payment systems infrastructure and frameworks that ensure the public's interest. The physical paper provided by the central bank today can be gradually complemented with a more easily distributed digital version. A Central Bank issued "Digital Cash" design and execution with a focus on financial inclusion, efficient peer to peer payments and government benefits distribution has the potential to foster economic development while reducing pervasive vulnerabilities associated with money laundering and cybersecurity threats.

Digital cash issued by the central bank can reflect and strengthen American values implicit in the sovereign control of currency, while enhancing the competitiveness of the US currency as well as US financial technology. Further, digital cash would allow the U.S. to maintain the dollar's role as a trusted currency in cross-border payments and remittances, while reducing the cost of these transactions.

Digital cash could be the ideal facilitating tool, in Guam for example, considering it being the 'financial powerhouse of Micronesia'. Transfer of payments via digital cash could foster robust and timely payments and government stimulus in a region reliant on US national defence, tourism and investments of Asia Pacific.

To foster a scalable and consistent digital cash distribution, existing infrastructure such as banks, non-banks and other institutions such as the US Post Offices can be key network participants to facilitate the onboarding and trusted services to achieve universal access. This also represents an opportunity for new comers and new frameworks to be tested such as:

- Fintechs accessing and servicing central bank money efficiently to cash based users
- Pension and benefits management with CBDC for the unbanked
- Feasibility of a "No phone" access to and use of CBDC

### 1. Equality and Financial Inclusion Policy

#### ***Financial inclusion - Access to basic digital finance - Efficient distribution***

I was a bank teller and a mortgage underwriter. I value banks, but the reality is the banking business model still leaves millions of citizens underbanked, many with no access to basic bank accounts and relatedly no access to cost effective digital payments and online economy.

A report prepared for the Bank for International Settlements Committee on Payments and Market Infrastructures & the World Bank Group found that high fees are the most relevant factor affecting access to transaction accounts and their regular use. The other key factors are indirect costs – such as cost of transportation to a branch or other point of service in rural areas, low-income levels and transaction payments products that fail to meet the needs of minority end users.<sup>1</sup>

Hence, though traditional commercial banks have been making some financial inclusion progress there is still a significant gap, only made more felt and visible during the pandemic. Previous

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<sup>1</sup> Committee on Payments and Market Infrastructures & World Bank Group (2016): "Payment aspects of financial inclusion" <https://www.bis.org/cpmi/publ/d144.pdf>

proposals have suggested that banks should be mandated to provide free accounts to lower income populations. We believe such efforts will not be as fruitful as expected based on historical experience and core business incentives of the banks. Instead, we believe that the central bank with its public mandate and financial stability objective is best placed to close this financial inclusion gap and ensure the public's interest by modernizing its cash infrastructure.

#### Wallet vs Account

Instead of the account-based approach, in order to achieve true inclusion, digital cash via a "Fed Wallet" should be deployed using strong frameworks around user privacy, user data and the use of open APIs in order to establish a standard to integrate the asset with the fabric of our nation through physical and digital networks such as the commercial banks, post offices, digital banks and digital payment networks including card networks and ATMs for ease of use. This cash infrastructure would better offer citizens more choices if innovators were given a central bank currency platform on which they can safely build solutions that will extend central bank money efficiently and make it universally accessible with private sector stakeholders.

The "Fed Wallet" concept here differs from the original concept of a "Fed Account" to provide more cash-like benefits such as the direct claim with the central bank, available to all without requiring an intermediary, but at blockchain level. At the digital infrastructure level.

From there, other players can provide the user interface for the citizens and at local institutions to service the new asset. According to the Bank of England, Payment Interface Providers can provide a set of services around onboarding, offboarding and conversion from and to paper cash and other digital assets based on the user's needs.<sup>2</sup>

This approach has the potential of making the overall financial infrastructure more resilient, setting digital money standards, maintaining a strong presence of central bank money in the economy and giving every citizen inclusive option. That is why the concept of "Fed Wallet" should be considered and tested with broad ecosystem engagement via a regulatory sandbox with financial inclusion as a clearly stated objective and outcome. The pandemic only highlighted that the financial inclusion gap needs to be closed fast and a CBDC could be the most safe and democratic way to do so.

A CBDC solution allows for direct access to digital money for everyone and crucially for those who face issues opening and/or using a bank account. With the right technological design, to which I come in a minute, digital cash (CBDC) implementation could leverage a risk-based approach to preventing money laundering, such as requiring less KYC for transactions below a certain amount, which would help keep the provision of CBDCs cost-effective and become as inclusive as physical legal tender is today.

#### Impact of speed

The past year has shown the importance of rapidly distributing stimulus payments directly to Americans during an economic crisis; however, the infrastructure for accomplishing those payments proved to be deficient in speed, simplicity, and effectiveness. That's why we believe that as a complement to paper cash, the United States needs to develop a digital cash infrastructure that will allow it to reach citizens directly and fast for actual efficient distributions for lower income households.

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<sup>2</sup> Bank of England (March 2020): "Central Bank Digital Currency - Opportunities, challenges and design" <https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf>

The speed of payments is an important element to highlight, especially as it impacts low-income households who are forced to pay extra for financial services when they find themselves in an illiquid financial position. They are either faced with costly overdraft fees or must resort to the services of illegal or informal money lenders facing predatory costs and conditions. Furthermore, those who fail to access to affordable credit might face foreclosures on their homes, creating further strain on society and the financial system.

### Impact on Credit

Unbanked can't demonstrate credit-worthiness via their physical cash holding – yet, they could, for example, if they wanted their digital cash (CBDC) wallet data to be shared and weighted as a data point in credit ratings.

The Consumer Financial Protection Bureau has found that approximately 26 million Americans are credit invisible, which means that they do not have a credit record, and another 19.4 million do not have sufficient recent credit data to generate a credit score. Black and Hispanic consumers are notably more likely to be credit invisible or to have an unscored record than White consumers.<sup>3</sup>

Relatedly, benefits distributed via CBDC can be fast, direct, accurate and safe leading to better financial outcomes for American families and to more inclusive credit scoring. It would equally provide the government with better performance data on whether financial assistance successfully reaches those vulnerable and underserved households, while reducing fraud and waste.

Let me highlight that performance data tools for the government having oversight of its funds reaching those targeted households in need does not need to be a big brother state with detailed insights into private citizens' spending habits and personal lives. In fact, we strongly believe in the opportunity of a thoughtful CBDC design that, like physical cash, offers strict privacy, while leveraging embedded governance to combat money laundering with the use of CBDC.

## 2. Infrastructure and Technology

Let me now focus on the technology and infrastructure to achieve financial inclusion. Namely, cryptographic technology and blockchain. These technological tools are now famous in connection with Bitcoin and crypto currencies, where many people associate them with disruption. I would like to stress and highlight that these are outcome neutral tools that can be used for other stated outcomes like user privacy and trusted peer to peer like cash offers today.

### ***What is Blockchain?***

Blockchain is a framework that allows any asset to be tokenized - think of your candy crush or Mario games where you win tokens. In those games, one token is just that, and only usable in that game. In blockchain, a token can represent anything. In addition to enabling the tokenization of the assets, it allows issuers to pre-program how that token can be accessed, how it can be used, and what it represents. As the token is created and used, transactions are recorded on a distributed ledger. Think here of an excel spreadsheet that gets updated within seconds and that no one can change and that maintains the accounting and integrity of the activities in a transparent and trusted way.

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<sup>3</sup> Consumer Financial Protection Bureau (CFPB) (2015): *"Data Point: Credit Invisibles"*  
[https://files.consumerfinance.gov/f/201505\\_cfpb\\_data-point-credit-invisibles.pdf](https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf)

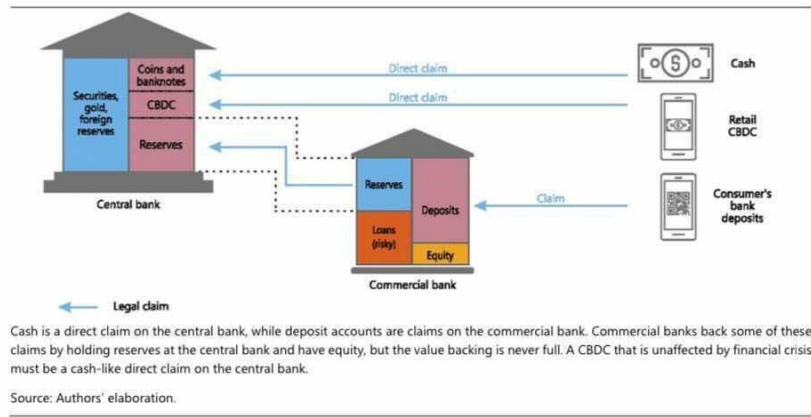
Technology, in the form of blockchain can be used as an implementation tool, to address key features not always present with traditional paper money. Both privacy and transparency along with efficient unimpeded allocation mechanisms are strengthened through Blockchain solutions. Blockchain technology can embed trust, compliance, privacy and transparency in such networks.

Blockchain with smart-contracts services can make the system more resilient by facilitating self-regulation, fostering a trusted network and peer-to-peer resilience. With a CBDC platform and infrastructure regulators do not need to approve every transaction yet guarantee good consumer protection that is scalable and safe.

Cryptographic technology can provide better solutions to data integrity, confidentiality and availability. Blockchain technology can securely embed trust, compliance, privacy and transparency. Such a CBDC platform could allow for implementing confidential transaction processing, while also allowing law enforcement to take action for accounts participating in specific transactions in an auditable way. This also ensures accountability of compliance to privacy laws.

Universal access to CBDC can be designed inclusively, such that access does not depend on smartphone ownership or status with a commercial bank. With emerging financial services technologies, people don't technically need to have a bank account with a traditional bank and not with a Fed either - to make digital payments. CBDC digital cash wallet can be available with various integration models (API or smart contract or node level) available to fintechs as well as banks in a two-tier system and them providing the distribution service making CBDC available to the users.<sup>4</sup> Policies should be aligned on the direct Fed Wallet option that could be managed by an "Payment Interface Providers" and support in physical locations that can support in person transactions.

Cash, electronic payment instruments, and retail CBDC Graph 2



### Impact on Environment and Cost

While Bitcoin has arguably high energy consumption on the scale exceeding of the country of Philippines<sup>5</sup>, any CBDC that would be launched in the next 2 to 5 years would consider climate change, Sustainable Development Goals (SDGs) and Environmental Social Governance (ESG) for

<sup>4</sup> R. Auer and R. Böhme (Bank for International Settlements, June 2021): "Central bank digital currency: the quest for minimally invasive technology" <https://www.bis.org/publ/work948.pdf>

<sup>5</sup> Cambridge Centre for Alternative Finance (CCAF), Judge Business School, University of Cambridge: "Cambridge Bitcoin Electricity Consumption Index (CBECI)" <https://cbeci.org/cbeci/comparisons>

guidance for a government designed and operated CBDC. We are looking at the concept of a “Green CBDC” adhering to environmental goals. Cash distribution using CBDC can be operated cost effectively for the government and *close to free to customers* and with low impact on the environment.

Lower cost to consumers also refers to them not ‘paying with their data’. American citizens and consumer organisations are rightly demanding more government regulation on what big tech and banking institutions do with their consumer data. We agree that stronger regulation and oversight is needed. Privacy rights are embedded in the US constitution, and they can be better protected by giving citizens back ownership of their own data. CBDC would offer a way for households to conduct digital payments via a safe and distributed network, free of monopolies. Blockchain technology can facilitate confidential transactions through smart contracts that obscure consumers’ transaction details and account balances.

It's worth noting that smart contracts technology used in blockchains, can be designed for inclusion and equality as streamlined processes with smarter contracts make it easier and more efficient to connect low-income and small and medium-sized enterprises (SMEs) borrowers and lenders. They can drive financial inclusion by lowering processing costs and frictions and operational, fraud, or legal risk contribute significantly to the cost of financial services. They can also help in situations where trust is a barrier to the uptake of financial services. Smart contracts will not alleviate income inequality barriers to financial inclusion, but CBDC distributed benefits will.

### **3. Conclusion**

As a complement to paper cash, the United States needs to invest in a Digital Cash Infrastructure that allows it to reach people directly for actual cash distribution. A blockchain-based CBDC with a distributed ledger technology offers the best option for the US to build a modern and safe currency system around its central banking structure. A clear mandate of protecting the public interest, financial inclusion and an efficient payment system for all should be clearly stated as the priority objective for the U.S. CBDC.

In order to ensure such outcomes are achieved, we see the regulatory sandbox as a strategic research tool for the Federal Reserve to engage with key stakeholders such as banks, non-banks, fintechs, Congress and even users on the concept of Digital Cash Fed Wallet.

Although many countries are exploring CBDCs for various reasons, the U.S. should lead in this innovation to solve real and acute problems domestically, which include financial inclusion and modern financial infrastructure, making the financial system safer. This will lower the cost of payments for American citizens and the U.S. government, help combat money laundering and improve the American family’s P&L to uplift the entire nation’s economy.

The US should lead in CBDC research and development, not simply follow or play catch up, but harness its strength in executing public and private partnerships that will establish an unmatched foundation that can provide a competitive advantage on the global stage.