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Chair Warren, Ranking Member Kennedy, and members of the Committee, thank you for the opportunity to testify this afternoon. I am a lecturer in law and academic fellow at Columbia Law School where I research money and banking. My work focuses on the design of monetary systems and the institutional structures that Congress has created to supply the U.S. economy with dollars.

In June of 2018, along with Morgan Ricks and John Crawford, I proposed that Congress authorize the Federal Reserve to offer a retail "central bank digital currency" or CBDC through a program we called "FedAccounts."[1] FedAccounts would be available to any U.S. resident or business in digital wallets operated by the Fed, the Post Office, or one of the country's several thousand community banks. These wallets would charge no fees and have no minimum balances. They would come with debit cards, direct deposit, and bill pay. Their balances would be nondefaultable no matter how large—just like physical cash. They could be exchanged in real time, 24x7x365. They would have customer service, privacy safeguards, and fraud protection—if you lost your password, there would be someone you could call. And they would earn interest at the same rate that the Fed pays to banks.

In the past three years, the case for authorizing FedAccounts has only grown. To understand how and why, it helps to review some of the shortcomings with our existing money and payments system.

I. MONEY AND BANKING IN THE U.S.

Our economy is built around the U.S. dollar, which the First Congress established as the country's "unit of account" in 1791.[2] The government creates two

[1] Morgan Ricks, John Crawford & Lev Menand, *Central Banking For All: A Public Option for Bank Accounts*, THE GREAT DEMOCRACY INITIATIVE, June 2018. *See also* John Crawford, Lev Menand & Morgan Ricks, *FedAccounts: Digital Dollars*, 89 GEO. WASH. L. REV. 113 (2021).

[2] 31 U.S.C. § 5101 ("United States money is expressed in dollars.").

types of dollars that are available to the general public: physical dollars and deposit dollars. It creates the first type directly. The U.S. Mint issues dollar denominated coins, and the Federal Reserve issues dollar denominated paper notes. There are $2 trillion of coins and notes outstanding, although most of this cash circulates abroad.[3]

The second type of money, deposits or account money, is the more important type. Deposits are not physically certificated like paper notes. They are ledger entries. Imagine a simple spreadsheet with two columns. Column A is a list of people and legal entities. Column B is a list of numbers. Each entry is a deposit. There are over $17 trillion of deposits like this outstanding today. That is more than ten times the amount of cash in use domestically.[4] Since cash can be lost, stolen, or destroyed, people use deposits to save. And since cash is hard to move around, especially in large amounts, people and institutions also use deposits to conduct transactions. They pay their rent with deposits. They receive their salary in deposits. They settle their credit card bills using deposits. Most businesses depend on deposits to operate.[5]

But unlike cash, the government does not issue deposits directly to the general public. It outsources this function to publicly chartered, privately owned banks. And although people treat bank account balances as equivalent to government-issued cash, banks don't actually hold cash to back them. In fact, they create deposits out of thin air. The way it works is fairly simple: Someone asks to borrow money. The bank agrees and lends deposits by plussing up the borrower's deposit account balance at the bank. In other words, the bank edits Column B in the spreadsheet. All it takes is the stroke of a keyboard.

This system is stable—with people treating their deposit balances as equivalent to cash—only because the government stands behind deposit balances. The Office of the Comptroller of the Currency, the Federal Reserve, and the Federal Deposit Insurance Corporation ("FDIC") are the franchisors: they charter the banks and back them. The banks are the franchisees: They interact with the depositors and create the deposits.[6]

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[3] Bd. of Governors of the Fed. Rsrv. Sys., *Monetary Base: Currency in Circulation*, FRED: FED. RSRV. BANK OF ST. LOUIS; J.P. Koning, *How Much U.S. Currency is Held Overseas?*, BULLIONSTAR (Jul. 3, 2019) (estimating that 60% of U.S. banknotes are offshore).

[4] Bd. of Governors of the Fed. Rsrv. Sys., *Deposits, All Commercial Banks*, FRED: FED. RSRV. BANK OF ST. LOUIS.

[5] PAUL SAMUELSON & WILLIAM D. NORDHAUS, ECONOMICS 228 (13th ed. 1989) ("today is the age of bank money" . . . "[i]f we calculate the total dollar amount of transactions, nine-tenths take place by bank money, the rest by paper money").

[6] To ensure that banks operate in the public interest, Congress has enacted a series of laws to (1) prevent banks from dominating other industries by separating them from private commerce, (2) diffuse their power by spreading them out across the country and preventing any one bank from becoming too large, and (3) hold them in check through rigorous, informal oversight by special government supervisors. For a discussion of these safeguards and

Although we treat deposits like they are all on one big spreadsheet, they're not. Each bank has its own ledger (technically speaking, it issues its own money). When depositors want to make transfers to customers of other banks, the government enables the transfer using programs called FedWire and FedACH. If depositors want cash instead of deposits, banks can go to the Fed and get cash at a program called the discount window. If a bank makes too many bad loans and fails, the FDIC steps in to ensure that the bank's deposits can still be exchanged for cash. In each case, the government ensures bank deposits are good money.

II. SHORTCOMINGS IN THE U.S. MONEY AND BANKING SYSTEM

This system is not working particularly well. Banks are not meeting the needs of our increasingly digital economy. And nonbanks are trying to fill the gaps left by banks with dangerous deposit substitutes.

Consider a few of the biggest problems with the system:

- It leaves a lot of people out. Over six percent of U.S. households do not have access to deposit money at all. Most of them either don't trust banks or don't have enough money to open and maintain an account. That's millions of people stuck on the sidelines, at a significant disadvantage when it comes to getting a job, finding a place to live, or participating in the online economy.[7]

- It is costly. Banks, which are organized for profit, charge high fees for using deposit money. Most accounts have minimum balance requirements and monthly account maintenance fees. They often charge substantial amounts for checks and wires. Estimates of annual bank overdraft fees, another way banks extract rents from their privileged position, run into the tens of billions. Banks also earn large amounts through interchange fees that are imposed on card-based payments—a huge cost for small businesses and consumers.[8]

- It is slow. Checks drawn on deposit accounts take up to two days to clear. Even wire transfers do not settle until the end of the day and credit card payments may not settle for up to two days. A bank account transfer made before Memorial Day Weekend on Friday May 28, for example, likely did not clear until Tuesday, June 1. Five days to edit a couple of cells in a spreadsheet is far

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how they have eroded in recent decades, see Lev Menand, *Why Supervise Banks? The Foundations of the American Monetary Settlement*, 74 VAND. L. REV. 951 (2021).

[7] *See* MEHRSA BARADARAN, HOW THE OTHER HALF BANKS: EXCLUSION, EXPLOITATION, AND THE THREAT TO DEMOCRACY (2015); Mehrsa Baradaran, *How the Poor Got Cut Out of Banking*, 62 EMORY L. J. 483 (2013); MICHAEL BARR, NO SLACK: THE FINANCIAL LIVES OF LOW-INCOME AMERICANS (2012).

[8] *See* Aaron Klein, *A Few Small Banks Have Become Overdraft Giants*, BROOKINGS INST. (Mar. 1, 2021).

too long in a world where billions of people can communicate near-instantly using mobile devices.[9]

- It is complex. With thousands of banks operating different ledgers, it takes a lot of work by the Fed and the banks to ensure that transactions between the different ledgers clear.

These are all first order problems with the government's existing monetary offerings. There is also an urgent *second-order* problem: a range of unstable private sector alternatives. These alternatives are basically monetary ledgers maintained by nonbank financial institutions. In the short run, these ledgers might operate faster and more efficiently; in the long run, they undermine financial stability, threaten to trigger severe recessions, weaken the U.S. internationally, and fuel ransomware attacks, money laundering, and tax evasion.

One group of workarounds—eurodollars, repos, commercial paper, and money market mutual funds—has been around for several decades. These deposit substitutes brought down the U.S. economy in 2008. They are issued by firms that operate like banks but lack a charter from the government to issue deposits ("shadow banks"). Most Americans are unfamiliar with these deposit substitutes because they are used primarily by businesses, institutional investors, high-net worth individuals, and financial companies. Nevertheless, these instruments compete with deposits to satisfy money demand: they offer better security (deposit insurance maxes out at $250,000) or better returns (banks don't pay a lot of interest to their depositors). But they are highly unstable: their issuers do not have access to the Fed's discount window and in the face of economic uncertainty the people who hold them often decide all at once to switch back to deposits, unleashing chaos in financial markets.[10]

Although eurodollars, repos, commercial paper, and money funds remain a serious problem—they triggered another financial crisis in 2020, which the Fed quelled by launching an unprecedented round of backstopping[11]—now another, equally dangerous breed of deposit substitute is spreading. These are deposit substitutes marketed at a retail level to ordinary households and businesses.

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[9] *See* Aaron Klein, *The Fastest Way to Address Income Inequality? Implement a Real Time Payment System*, BROOKINGS INST. (Jan. 2, 2019). This problem was particularly severe during the COVID-19 pandemic: It took between three weeks and three months for the government to distribute stimulus payments. *See* Aaron Klein, *70 Million People Can't Afford to Wait for their Stimulus Funds to Come in a Paper Check*, BROOKINGS INST. (Mar. 31, 2020).

[10] *See* MORGAN RICKS, THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION (2016).

[11] *See* Lev Menand, *The Federal Reserve and the 2020 Economic and Financial Crisis*, 26 STAN. J. OF L., BUS. & FIN. (2021).

The new retail deposit substitutes come in many shapes and sizes. One type aims to displace the dollar entirely. The most prominent of these are cryptocurrencies called Bitcoin and Ethereum. They do not have a central issuer (like bank deposits) but operate using distributed ledger technology: each currency user has a copy of the entire spreadsheet. These deposit substitutes offer users the ability to make anonymous transfers across national boundaries in a matter of minutes instead of hours or days. Although they are unlikely to ever displace dollar money instruments fully, as their use grows, so do the harms they threaten.

For example, if more transactions are denominated in cryptocurrencies, it will be more difficult for the Fed to stimulate economic activity through monetary policy. The use of multiple currencies in the same economy will also increase transaction costs and incentivize arbitrage. (There is a reason why the Japanese Yen, despite being a stable currency, is not used in Los Angeles.) In addition, widespread use of cryptocurrencies may hamper price discovery. People in the U.S. value goods and services and tangible and intangible property in dollars and use vast stores of information about how much things are worth in dollars to order their economic lives. New units of account are unmoored by comparison.

Perhaps even worse, cryptocurrencies divert limited social resources (including energy[12] and the technical skills of thousands of computer scientists and entrepreneurs) away from more productive endeavors. And they offer malicious actors a way to bypass U.S. money laundering and tax laws. Hackers use them to extort U.S. companies.[13] Foreign adversaries use them to attack American hospitals and government agencies and to finance nuclear missile programs.[14]

Another new type of retail deposit substitute is more familiar. It is denominated in dollars. The best-known example is Venmo, which is a money issued by the financial technology firm PayPal. Venmo is growing rapidly, and now has over $30 billion of balances. The cryptocurrency version of this substitute is called a stablecoin and uses distributed-ledger technology. The most prominent stablecoins are Tether and USD Coin, with over $80 billion in balances between them.

Stablecoins and Venmo balances are economically equivalent to deposits—they are dollar denominated ledger entries—but they are not issued by chartered banks

[12] Cambridge Bitcoin Electricity Consumption Index, University of Cambridge (last accessed Jun. 6, 2021) (estimating that Bitcoin's decentralized ledger technology consumes 115 Terawatts of electricity per year, more than countries like the Netherlands and the Philippines, accounting for over 0.5% of worldwide electricity consumption).

[13] David Uberti & James Rundle, *U.S. Looks Into Cryptocurrency's Role in Ransomware Hacks*, WALL ST. J. (Jun. 3, 2021).

[14] *See* Lev Menand, *Regulate Virtual Currencies as Currency*, JUST MONEY (Feb. 14, 2020).

and are not backed by the FDIC. In other words, their issuers are shadow banks, among the biggest in the United States. They don't have access to the Fed's discount window. And they are highly susceptible to runs and panics. If Congress does not act soon to address the risks posed by Venmo, stablecoins, and cryptocurrencies, they may ultimately trigger a financial calamity and recession worse than 2008.[15]

III. HOW CBDC COULD HELP

A CBDC like FedAccount cannot solve all of the first and second order problems with our money and banking system. But it can help in a variety of ways. For example:

- It can bring millions of people into the mainstream financial system. The primary reason six percent of households lack bank accounts is that it is unprofitable for banks to operate deposit accounts for people with low balances.[16] FedAccounts would make digital dollars available regardless of the balance and the Fed would ensure that anyone who is eligible could open an account regardless of cost.

- It can speed up payments. FedAccount payments would clear immediately for in-network users.

- It can reduce the fees banks and other financial institutions charge their customers. FedAccounts would charge no fees.

- It can bolster financial stability. FedAccounts would offer many businesses and other institutions what they are looking for when they pile into deposit substitutes: riskless money with a positive yield. A bigger supply of such money will crowd out some of the bad money that has been proliferating in recent years. By offering people a safe and effective form of digital cash, they will be less likely to turn to stablecoins and other unstable financial technology products.

- It can reduce regulatory complexity. Many rules promulgated since the 2008 financial crisis are directly or indirectly targeted at deposit substitutes. By crowding out these instruments, FedAccounts would reduce

[15] *See* Jamie McAndrews & Lev Menand, *Shadow Digital Money* (Apr. 8, 2020); Dan Awrey, Lev Menand & Jamie McAndrews, Comment Letter to the Office of the Comptroller of the Currency Warning of the Dangers Posed by the Shadow Payment System and Shadow Digital Money (Jul. 31, 2020).

[16] *See* Aaron Klein, *America's Poor Subsidize Wealthier Consumers in a Vicious Income Inequality Cycle*, BROOKINGS INST. (Feb. 6, 2018) ("It can cost banks between $250 and $400 to establish a new checking account and another several hundred dollars a year to maintain it.").

the need for these regulations. FedAccounts could also potentially reduce the size of the largest U.S. financial institutions. To the extent that these firms, due to their size and wide range of activities, are hard to supervise or enjoy subsidies because of a perception they are "too big to fail," FedAccounts could bring them more in line with other large regional banks and reduce their systemic importance.

- It can improve monetary policy transmission. Since 2008, the Fed has paid interest to banks as part of its standard monetary policy framework. These payments are called interest on reserves or IOR. In theory, IOR "passes through" to everyone, allowing the Fed to influence macroeconomic conditions. But pass through has been lackluster in practice. Banks do not increase the rates they pay depositors in parallel.[17] FedAccounts would mitigate this problem by paying people IOR on their FedAccount balances.

- It can generate revenue for the government. The returns on the Fed's asset portfolio typically exceed its interest payments and other expenses by a wide margin. These earnings, known as "seigniorage," represent the fiscal revenue from money creation. If a robust CBDC expanded the Fed's balance sheet, remittances to the U.S. Treasury could increase substantially, even after accounting for the costs of operating the new program. By recapturing seigniorage, FedAccounts would remove existing distortions in financial markets and reduce rent extraction.

- It can protect national security. The growth of cryptocurrencies, which are increasingly demanded as payment in ransomware attacks on American companies, is driven at least in part by a perception that the U.S. dollar is difficult to use. Accordingly, a faster, safer U.S. dollar money instrument will likely blunt demand for these alternatives.

Some people argue that a CBDC, especially one with robust customer protections and privacy safeguards that also offers interest, would threaten the banking system. This need not and should not be the case. To the contrary, a well-designed FedAccounts program can strengthen the banking system and protect it from growing threats posed by unstable and unregulated deposit substitutes. For example, the Fed might contract with banks to provide retail services as its agents. The Fed could also hire banks to do compliance. Moreover, Congress can direct the Fed to pass back to banks any lost deposit funding with special discount window loans. In this way banks can continue to serve as the government's franchisees for

[17] Morgan Ricks, *Money as Infrastructure*, 2018 COLUM. BUS. L. REV. 757 (2018).

lending, while simplifying the overall monetary architecture and improving the usefulness of account money.

IV. CONCLUSION

Money is basic infrastructure. It is the backbone of the economy and a core public good.[18] Unfortunately, our monetary system is antiquated and decaying. If the government allows it to become even more private, dominated by cryptocurrencies, deposit substitutes, and foreign fiat money, we are bound to face worse financial crises and economic contractions. A CBDC like FedAccounts can be part of the solution. By improving the government's existing money offerings, it can help strengthen our financial system and our economy.

[18] *See* CHRISTINE DESAN, MAKING MONEY: COINS, CURRENCY, AND THE COMING OF CAPITALISM (2014). This point is even conceded by some libertarians. *See, e.g.*, MILTON FRIEDMAN, A PROGRAM FOR MONETARY STABILITY 8 (1960) (arguing that money provision is "an essential governmental function on a par with the provision of a stable legal framework").