

Statement for the Record
On Behalf of the
American Bankers Association
Before the
House Financial Services Committee
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Chairwoman Waters, Ranking Member McHenry, The American Bankers Association (ABA)¹ appreciate the opportunity to submit a statement for the record for the hearing titled “Digital Assets and the Future of Finance: Examining the Benefits and Risks of a U.S. Central Bank Digital Currency.” The debate on Central Bank Digital Currency (CBDC) has significant implications for our financial system, economy, and most importantly for the American consumer.

Contrary to popular belief, a U.S. CBDC is not necessary to “digitize the dollar,” as the dollar is largely digital today. However, the issuance of a CBDC would fundamentally rewire our banking and financial system by changing the relationship between citizens and the Federal Reserve. The Federal Reserve notes this in its recent Financial Stability Report, highlighting that “[a] CBDC could fundamentally change the structure of the U.S. financial system, altering the roles and responsibilities of the private sector and the central bank.”²

There is a growing recognition that the deployment and use of CBDCs would be weighed down by very significant real-world trade-offs. The main policy obstacle to developing, deploying, and maintaining a CBDC in the real economy is the lack of compelling use cases where CBDC delivers benefits above those available from other existing options.

Today, we use both public and private money. In developed economies, public money, which includes cash and accounts held directly at the Federal Reserve, makes up about 5% of money.³ The other 95% is private money—funds held as a liability of a private institution like a bank or credit union. Private money is important because it is created through productive financial intermediation by banks in the form of lending and hence represents expansion, and usually a multiplication, in real economic output. Introducing a CBDC would be a deliberate decision to shift this balance to public money. If, instead, our objective is to realize the benefit of technological innovation, we should look to leverage novel developments in private money (like real-time payments systems and well-regulated stablecoins). Private-sector innovation in banking and payments has made a significant contribution to establishing the U.S.

¹ The American Bankers Association is the voice of the nation’s \$24.0 trillion banking industry, which is composed of small, regional and large banks that together employ more than 2 million people, safeguard \$19.9 trillion in deposits and extend \$11.4 trillion in loans.

² Federal Reserve Board, Financial Stability Report at 44 (May 2022), <https://www.federalreserve.gov/publications/files/financial-stability-report-20220509.pdf>.

³ Harvard Business Review, Stablecoins and the Future of Money (Aug. 10, 2021), <https://hbr.org/2021/08/stablecoins-and-the-future-of-money#:~:text=Public%20money%20includes%20central%20banks,in%20developed%20economies%20is%20private>.

dollar as the reserve currency of the world and is best positioned to support the dollar’s preeminent position in the years to come.

There are many proposed designs for a CBDC, and the design choices have a significant impact on the potential risks and benefits associated with each. For purposes of its discussion paper, the Federal Reserve has defined a CBDC as “a digital liability of a central bank that is widely available to the general public.”⁴ It has also suggested that any CBDC should be “privacy-protected, intermediated, widely transferable, and identity-verified.”⁵ This approach has helped focus the discussion on the intermediated CBDC model, where a CBDC would be delivered through private-sector financial institutions, but where individual holdings would sit at the Federal Reserve. Importantly, this definition would preclude “direct”⁶ and “wholesale”⁷ designs of CBDC. Given this focus, the majority of our analysis will evaluate the impact of this intermediated model except where explicitly stated.

As we have evaluated the likely impacts of issuing a CBDC it has become clear that the purported benefits of a CBDC are uncertain and unlikely to be realized, while the costs are real and acute. Based on this analysis, we do not see a compelling case for a CBDC in the United States today.

Proponents of CBDC are driven by a number of laudable goals like financial inclusion and promoting the U.S. dollar’s international role as a reserve currency and a medium of exchange for international trade. ABA supports these important goals; however, we do not believe that a CBDC is well-positioned to accomplish them. In many cases, there are initiatives already underway that address these goals. There are also significant trade-offs that must be made between different design choices. These trade-offs are likely to undermine many of the key goals of a CBDC and make it essentially impossible for a CBDC to fulfill all the various purposes for which it is currently being discussed.

ABA is a strong proponent of financial inclusion and we have put significant effort into bringing unbanked families into the financial system. One such effort is our partnership with the Cities for Financial Empowerment Fund (CFE) to promote the Bank On program. A CBDC would do little to address the actual reasons why families report not having a banking relationship.⁸ Importantly, a CBDC would only address the question of a deposit account. The benefits of a banking relationship go far beyond a deposit account. The goal of financial inclusion is to build a lifelong relationship that can help families access credit that can help them build for a secure financial future. A CBDC is likely to undermine this goal by failing to promote credit availability to the communities that need it the most.

Similarly, a CBDC does not appear well-positioned to support the role of the U.S. dollar internationally. While many countries have experimented with a CBDC, many have focused on a wholesale model, something not contemplated by the Federal Reserve’s discussion paper. In addition, many have pulled these experiments back as the costs of implementation have become apparent. The Federal Reserve notes

⁴ CBDC Report, *supra* n.1, at 1.

⁵ *Id.* at 2.

⁶ A “direct” CBDC means a liability of the central bank held directly by a member of the public, unlike a commercial bank deposit, which is a liability of the commercial bank owed to its customer.

⁷ A “wholesale” CBDC means a CBDC designed for use among financial intermediaries only.

⁸ These reasons include: inability to meet minimum balance requirements, concern about loss of privacy and/or government surveillance, and the amount or unpredictability of bank fees. Federal Deposit Insurance Corporation, “How America Banks: Household Use of Banking and Financial Services” at 3 (Oct. 2020), <https://www.fdic.gov/analysis/household-survey/2019report.pdf>.

that the dollar's status as the global reserve currency is driven by 1) the strength and openness of our economy, 2) the depth of our financial markets, and 3) the trust in our institutions and rule of law.

Recently, Acting Comptroller of the Currency Michael Hsu highlighted how a CBDC might undermine these critical factors when he noted that the lack of a CBDC was not a gap in the market. He went on to note that our current two-tier banking system is “not an accident. It is the result of a carefully architected monetary and banking system. The robustness and reliability of this architecture, combined with the strength of the rule of law in America and the dynamism of our economy, has supported the role of the U.S. dollar as the world's reserve currency.”⁹ His speech suggests that responsible, bank-issued stablecoins or tokenized deposits may be a better alternative if we believe that a tokenized form of money is desirable for ease of payments transmission or other purposes.

The risks associated with issuing a CBDC are often downplayed but are real and likely to undermine any possible benefit that a CBDC would have. Most importantly, every construction of CBDC requires moving funds from banks to the Federal Reserve. Regardless of the model chosen, a CBDC is a direct liability of the central bank. According to the Federal Reserve, “[a] widely available CBDC could serve as a close substitute for commercial bank deposits or other low-risk assets such as government MMFs and Treasury bills. A shift away from these assets could reduce credit availability or raise credit costs for households, businesses, and governments.”¹⁰

In effect, a CBDC would serve as an advantaged competitor to retail bank deposits that would move money away from banks and into accounts at the Federal Reserve where the funds cannot be lent back into the economy. These deposit accounts represent 71% of bank funding today. Losing this critical funding source would undermine the economics of the banking business model, severely restricting credit availability. ABA estimates that even a CBDC where accounts were capped at \$5,000 per “end user” could result in \$720 billion in deposits leaving the banking system.

Policymakers are quickly coming to the same conclusion. In June, 2021, then Vice Chair for Supervision Randal Quarles suggested that CBDCs were an unfortunate fad like “parachute pants” that would be “puzzling or embarrassing” in hindsight.¹¹ Similarly, Federal Reserve Governor Christopher Waller called CBDC “a solution in search of a problem.”¹²

Given the high stakes, it is important we get this right, which is why ABA supports the Federal Reserve's thoughtful and considered approach. The Federal Reserve's discussion paper takes a balanced view of the opportunities and risks associated with issuing a CBDC in the United States. The discussion paper also sets an appropriately high bar for action on a CBDC. We believe that the Federal Reserve should not move forward without a clear analysis that shows the benefits of issuing a CBDC outweigh the risks and that doing so would not create adverse impacts on consumers, markets, or the economy. This analysis must necessarily take into account whether a CBDC is the most effective way to realize these benefits.

⁹ Acting Comptroller of the Currency Michael J. Hsu, Remarks Before the Institute of International Economic Law at Georgetown University Law Center, “Thoughts on the Architecture of Stablecoins” at 4 (April 8, 2022), <https://www.occ.gov/news-issuances/speeches/2022/pub-speech-2022-37.pdf>.

¹⁰ Financial Stability Report, supra n.2, at 44.

¹¹ Federal Reserve Vice Chair for Supervision Randal K. Quarles, Remarks at the 113th Annual Utah Bankers Association Convention, “Parachute Pants and Central Bank Money” at 1 (June 28, 2021), <https://www.federalreserve.gov/newsevents/speech/files/quarles20210628a.pdf>.

¹² Christopher Waller, Member, Board of Governors of the Federal Reserve System, Remarks at The American Enterprise Institute, “CBDC: A Solution in Search of a Problem?” at 11 (Aug. 5, 2021), <https://www.federalreserve.gov/newsevents/speech/files/waller20210805a.pdf>.

We share the Federal Reserve’s view that the introduction of any CBDC should be subject to Congressional approval in the form of an authorizing law.

The recent Executive Order on Digital Assets¹³ places an increased focus on CBDC. While much of the executive order calls on federal agencies to assess the expanding marketplace of digital assets before recommending new rules, we are concerned that it clearly directs federal agencies to begin pursuing a CBDC even before determining whether a U.S. CBDC is actually “in the national interest” as the order also requires. Secretary Yellen recently commented on this work, noting that “issuing a CBDC would likely present a major design and engineering challenge that would require years of development, not months.”¹⁴

We look forward to engaging with the Congress and the Federal Reserve as they consider the important questions raised in this discussion paper. The remainder of our response will expand on the following three themes:

- Any potential benefits of a CBDC are uncertain and unlikely to be realized.
- The costs of offering a CBDC are real and acute. The Federal Reserve’s discussion paper explores these but does not show the full extent to which they might impact our financial system and economy.
- There are better ways to achieve our shared objectives that do not put our financial system or economy at risk.

I. Any potential benefits of a CBDC are uncertain and unlikely to be realized.

A CBDC is not likely to promote financial inclusion

A foundational goal of many CBDC proposals is to promote financial inclusion. Access to banking services provides people with a means to save for their future and economic opportunity that is critical to promoting social equity. This is an important and urgent goal, but none of the CBDC proposals that seek to promote financial inclusion provide a rationale for how it would accomplish this.

The pandemic has laid bare the consequences of being unbanked, from delays in receiving stimulus payments to navigating additional barriers in the Paycheck Protection Program. Sustainable economic opportunity requires a long-term banking relationship, but according to the FDIC’s 2019 “How America Banks” survey, despite some encouraging trends, over 7.1 million U.S. households—5.4%—remain unbanked, and another 24 million households are underbanked.¹⁵ While the FDIC observed “particularly sharp” declines between 2017 and 2019 in the rates of unbanked Black and Hispanic households, 13.8% of Black households and 12.2% of Hispanic households remained entirely unbanked in 2019,

¹³ Executive Order 14067 of March 9, 2022, “Ensuring Responsible Development of Digital Assets,” 87 Fed. Reg. 14,143 (Mar. 14, 2022), <https://www.govinfo.gov/content/pkg/FR-2022-03-14/pdf/2022-05471.pdf>.

¹⁴ Secretary of the Treasury Janet L. Yellen, Remarks at American University’s Kogod School of Business Center for Innovation, “Digital Assets Policy, Innovation, and Regulation,” Sec. IV (Apr. 7, 2022), <https://home.treasury.gov/news/press-releases/jy0706>.

¹⁵ Underbanked means that a household has an account at an insured institution but also obtained financial products or services outside of the banking system.

“substantially above” the unbanked rate for White households (2.5%).¹⁶ Our nation and industry can do better.

America’s banks are committed to promoting financial inclusion and are working to address this challenge. Today, unbanked customers have numerous options to open bank accounts that are designed to address the reasons most unbanked individuals cite as barriers to becoming banked.¹⁷ Through the Bank On program, run by the Cities for Financial Empowerment Fund and other efforts, free and low-cost bank accounts are widely available at banks of all sizes, with new account products being certified every day. Bank On sets account standards that provide a benchmark for safe, affordable accounts at mainstream financial institutions, setting consumers on a path toward financial inclusion. Today, these accounts are available at over 32,500 branches across the United States. And, importantly, they represent the beginning of a banking relationship, which can grow to include lending, saving, investing, and other opportunities.

As the government rushed to distribute millions of Economic Impact Payments during the COVID-19 pandemic, the [FDIC](#), the [IRS](#), [Bank On](#) and [ABA](#) worked to promote awareness of such accounts so American taxpayers could receive their payments quickly and securely.

It is unclear how access to a Federal Reserve liability would address the reasons for which families report not having a banking relationship. Moreover, by taking too narrow a view of the problem, these CBDC proposals risk undermining the real progress underway with Bank On and similar efforts.

CBDC proposals focus solely on the question of access to a deposit account. While it is true that deposit accounts are often the first step toward financial inclusion, the benefits of a long-term banking relationship go well beyond a deposit account. The same is not true of a CBDC account with the Federal Reserve, which could not grow into a lending or investing relationship as the central bank is neither equipped nor authorized to become a retail bank.

Not only do CBDC proposals not address this serious issue, but they would also likely exacerbate it. Philadelphia Federal Reserve Bank research referenced below found that these proposals would create a “deposit monopoly” that would “attract deposits away from the commercial banking sector.” As discussed below, this monopoly would have the effect of reducing the funds on banks’ balance sheets that are available to lend and to support loan and investment portfolios, which would reduce access to credit by the communities that need it the most.

A CBDC is not necessary to maintain the dollar’s international role

The dollar’s status as the world’s most widely used currency for payments and investments results from numerous historical, economic, political, legal, and technical factors, but fundamentally stems from the overall size of the U.S. global economic presence, our open financial markets, their deep financial liquidity, widespread international trust in U.S. public and private institutions, and the U.S. commitment to the rule of law.¹⁸ Other countries’ use of non-dollar CBDCs will not automatically duplicate any of these key factors. To the extent a non-dollar CBDC is claimed to offer improvements in payments functionality and financial inclusion, as demonstrated above, these innovations are already occurring in U.S. dollar markets, independent of any introduction of a U.S. CBDC. Moreover, as discussed in more

¹⁶ How America Banks, *supra* n.8, at 1–2.

¹⁷ *Id.* at 3.

¹⁸ CBDC Report, *supra* n.1, at 15.

detail below, a CBDC could enable government control over private financial activity in novel ways that could potentially threaten property rights, privacy, and freedom of private economic activity.

Other countries are engaged in CBDC-related research and, in some cases, CBDC pilot programs. For some countries like China, the motivation for issuing a CBDC is to increase the government's ability to supervise and control their economy. These objectives will inevitably undermine such a currency's value to international investors. Many countries that share our objectives in evaluating a CBDC have pulled back on their efforts in a recognition that the significant costs outweigh any benefit. Canada and Australia have recently pulled back on their pilots and the UK House of Lords Economic Affairs Committee found no witnesses articulated the case for a retail CBDC.¹⁹

II. The costs of offering a CBDC are real and acute. The Federal Reserve's paper explores these costs but does not show the full extent to which they might impact our financial system and economy.

The introduction of a CBDC would risk undermining the important role banks play in financial intermediation

Every construction of a CBDC currently being considered would require moving funds from banks to the Federal Reserve. Regardless of the structural model chosen, a CBDC is a direct liability of the central bank. This arrangement contrasts with bank deposits, which are a liability of an individual bank insured (up to legal limits) by the Federal Deposit Insurance Corporation (FDIC). In effect, a CBDC would serve as an advantaged competitor to retail bank deposits that would move money off bank balance sheets where it can be used to support loan and investment portfolios and lent back into the economy, transferring the funds into accounts at the Federal Reserve. Research by the Federal Reserve Bank of Philadelphia found that these proposals would create a "deposit monopoly" that would "attract[] deposits away from the commercial banking sector."²⁰

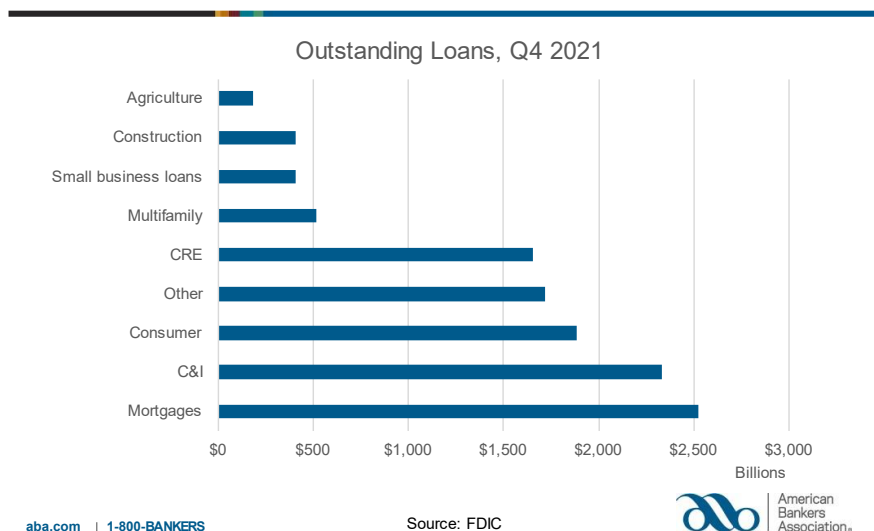
While depositors at FDIC-insured banks have never lost a penny of an insured deposit, it is hard to compete for deposits with a government agency that prints that money. The Philadelphia Federal Reserve Bank found that depositors value this advantage and will, in equilibrium, choose to hold their funds at the Federal Reserve instead of at retail banks, thereby establishing the Federal Reserve as a "deposit monopolist."

¹⁹ See, e.g., **Bank of Canada**: "We . . . don't see compelling need." <https://www.reuters.com/world/americas/bank-canada-not-planning-launch-digital-currency-least-now-2021-10-18/>; **Australia**: "[W]e have not seen a strong public policy case to move in this direction, especially given Australia's efficient, fast and convenient electronic payments system." <https://www.rba.gov.au/speeches/2021/sp-gov-2021-12-09.html>; **UK House of Lords Economic Affairs Committee**: "We have yet to hear a convincing case for why the UK needs a retail CBDC." <https://committees.parliament.uk/publications/8443/documents/85604/default/>.

²⁰ Federal Reserve Bank of Philadelphia, "Central Bank Digital Currency: Central Banking for All?" at 27, Working Paper WP 20-19, (June 2020), <https://www.philadelphiafed.org/-/media/frbp/assets/working-papers/2020/wp20-19.pdf>.

Deposits held at commercial banks are the primary funding source of bank loans. These loans are critical drivers of economic growth and prosperity. In the United States today, banks fund more than \$11 trillion in loans. This includes \$2.5 trillion in residential mortgages, \$1.9 trillion in consumer loans, and \$407 billion in small business loans.²¹ Any reduction in the banking industry’s deposit base would quickly impact consumers and small businesses in the form of reduced credit availability and increased cost, undermining the goal of financial inclusion and undercutting economic growth.

Bank Loans Support Economic Growth



These impacts are likely to be significant. ABA’s analysis suggests that deposits accounting for 71% of bank funding would be at risk of moving to the Federal Reserve. This could increase the average cost of funding for banks by approximately 170 basis points.²² Such an increase in average funding costs would be unsustainable and would undermine the economics of the banking business model with profound implications for the cost and availability of credit in the United States.

Attempts to limit this deposit outflow by capping account size are unlikely to be successful. Our estimates suggest that a CBDC account capped at just \$2,500 would drain \$446 billion in deposits to flow out of the banking system. A cap of \$10,000 would lead to over \$1 trillion in deposits leaving the system. This result would affect all banks but would impact community banks most severely. For context, we believe that 38% of deposit accounts have balances under \$2,500 and 53% of accounts have a balance below \$10,000. The European Central Bank estimates that a CBDC with account limits of €3,000 would lead to commercial bank deposit outflows of €1 trillion. If these relationships leave the banks, it would not only undermine the bank’s business, but leave those customers without a relationship with a financial institution that can provide access to credit. In addition, enforcing compliance with caps and preventing evasion would require tracking individual CBDC holdings throughout the financial system, a serious operational challenge for an intermediated CBDC. Caps, while likely necessary to stem outflows from commercial banks, would also limit the potential benefits of a CBDC account—further diminishing the already theoretical and unlikely benefit of a CBDC. These limits would reduce the business use cases often cited in arguments for CBDC’s ability to promote international payments and, thus, international competitiveness.

²¹ Federal Deposit Insurance Corporation, Quarterly Banking Profile, Fourth Quarter 2021 (Dec. 31, 2021), <https://www.fdic.gov/analysis/quarterly-banking-profile/qbp/2021dec/qbp.pdf>.

²² Assuming cost of funds reflect the 2002–2010 average, and that banks replace these lost deposits with central bank credit.

Moreover, net of any reduction in reserves held at the Federal Reserve by depository institutions, the expansion of the Federal Reserve System’s liabilities would be accompanied by a corresponding increase in its assets.²³ Assuming these assets were financial instruments, the new regime would radically increase the relative share of the Federal Reserve’s direct credit/funding and, thus, its impact on the economy. To the extent that this balance-sheet expansion was influenced by the relative liquidity, asset supply, and other characteristics of different market sectors, introduction of a CBDC could radically change the allocation of credit and investment in the economy.²⁴ In times of economic hardship, the bank balance-sheet driven model is even more important—banks’ balance sheets and strong capital position allow them to make long-term investments and continue lending throughout a downturn, just when it is needed most.

A CBDC would exacerbate a stress event as consumers opt out of private money

We agree with the Federal Reserve that Central Bank money would be perceived as the safest form of money and that, “a widely accessible CBDC would be particularly attractive to risk averse users, especially during times of stress.”²⁵ The degree to which retail deposits and a CBDC could coexist, which would depend on the design details of a potential CBDC, is unknown, particularly over the medium to longer-term. What is more certain is that during a time of economic or systemic stress, a CBDC would become not just an innovative form of payment, but a risk-free store of value. Even with FDIC deposit insurance, it is likely that many consumers, small businesses, and other “end users” would view direct access to the Federal Reserve as the safest place to weather the storm.²⁶

While estimating the effects a CBDC would have on deposits through a period of stress, and the resulting economic impact, is by its nature speculative, we can look to regulatory conventions about the behavior of retail and small business to form a reasonable estimate of stressed deposit outflows. For example, the Liquidity Coverage Ratio²⁷ assumes that three percent of insured retail and small business deposits will be withdrawn during a time of stress. It is reasonable, then, to assume that at least a comparable amount of deposits would be converted to a CBDC during an economic or financial disruption. Based on the analysis discussed above, an additional \$1.3 billion, \$2.1 billion or \$3.2 billion could potentially flow out of banks to the Federal Reserve’s balance sheet during a time of stress, under a regime with an account cap of \$2,500, \$5,000 or \$10,000, respectively.

²³ See CBDC Report, *supra* n.1, at 17.

²⁴ Furthermore, if the Federal Reserve’s asset expansion went beyond financial assets, perhaps in an effort to mitigate changes in credit allocation, it would radically change the nature of the central bank itself, with unforeseeable consequences for monetary policy and the role of government.

²⁵ CBDC Report, *supra* n.1, at 17.

²⁶ We believe that a CBDC has would create dynamics and risks similar to those outlined in the Federal Reserve’s ANPR on offering interest on balances to Pass-Through Investment Entities (PTIEs), which states: “Deposits at PTIEs could significantly reduce financial stability by providing a nearly unlimited supply of very attractive safe-haven assets during periods of financial market stress. PTIE deposits could be seen as more attractive than Treasury bills, because they would provide instantaneous liquidity, could be available in very large quantities, and would earn interest at an administered rate that would not necessarily fall as demand surges. As a result, in times of stress, investors that would otherwise provide short-term funding to nonfinancial firms, financial institutions, and state and local governments could rapidly withdraw that funding from those borrowers and instead deposit those funds at PTIEs. The sudden withdrawal of funding from these borrowers could greatly amplify systemic stress.” 84 Fed. Reg. 8,829, 8,831 (Mar. 12, 2019), <https://www.regulations.gov/document/FRS-2019-0067-0001>.

²⁷ 79 Fed. Reg. 61,440, 61,481 (Oct. 10, 2014), <https://www.govinfo.gov/content/pkg/FR-2014-10-10/pdf/2014-22520.pdf>.

Moreover, a CBDC would likely also cause outflows from deposit equivalent vehicles such as money market funds. While retail MMFs tend to be predominantly invested in Treasury securities, it is reasonable to expect that during times of stress some participants in financial markets will prefer to hold a CBDC. The outflow of funds from the money markets would take additional funds out of financial markets and disrupt money markets and the U.S. Treasury markets.

This likely flight to CBDC would impair the availability of banks to continue to provide credit or meet their customers' emergency liquidity needs, and could potentially create significant systemic strain, as money flows out of the financial sector. Moreover, it is unclear if the funds would return to the financial system once the disruption passed, leading to a further disintermediation of banks and pushing the Federal Reserve further into the space traditionally occupied by the private sector. We do not believe that any design options would sufficiently mitigate the potential outflows of bank deposits and deposit-like vehicles during a time of stress.

A CBDC is likely to balloon the Federal Reserve's balance sheet and impede the transmission of monetary policy

In order to assess the impact of CBDC on the Federal Reserve's balance sheet one could start with the characterization of CBDC in the discussion paper as "analogous to a digital form of paper money."²⁸ This would be equivalent to cash in circulation and, hence, lead one to a conclusion that it will not have any material impact on the size of the Federal Reserve's balance sheet and its policy rate regime. As we have argued elsewhere, we do not believe this to be a steady state; rather, CBDC would cause a substantial share of bank deposits to shift from bank deposits (and thereby shrink bank balance sheets) to CBDC and consequently, a corresponding increase in the Federal Reserve's balance sheet.

Conventional monetary policy relies on the Federal Reserve's policy rate to impact the amount of credit supplied by banks to the households and businesses—the U.S. economy. Once banks lose their deposit base, unless they can replace it with another source at the same cost, the banking system would no longer be a key source of credit to the U.S. economy. Hence, the Federal Reserve's policy rate would no longer be a viable monetary policy tool.

Brunnermeier and Niepelt²⁹ have argued that this replacement risk could be addressed by a swap or transfer of CBDCs with bank deposits. This would neutralize the deposit loss for banks from the switch to CBDCs and, hence, not impact their funding to supply credit. This would also help neutralize any impact on monetary policy. Unfortunately, there is no clarity regarding the contractual agreement between the Federal Reserve and banks for such swaps—Would this be a loan from the Fed? What would be the interest rate charged by the Federal Reserve for such loans?³⁰ What would be the term of these loans (to replicate the duration of different types of deposit accounts)? In addition to fundamentally altering the asset/liability management (ALM) process for the U.S. banking system, there are numerous other important considerations which would likely render it difficult for the Federal Reserve to fully replace the lost deposits for banks. For example, deposit flows to banks are not stationary, and it would just not be possible for the Federal Reserve to replicate the dynamics of these flows. How would the Federal Reserve conduct CBDC-deposit swaps if non-banks are allowed to offer CBDC wallets?

²⁸ CBDC Report, *supra* n.1, at 1.

²⁹ Brunnermeier, Markus K. and Niepelt, Dirk, "On the Equivalence of Private and Public Money", *Journal of Monetary Economics* 106: 27-41 (2019).

³⁰ It would also be important to assess the impact on banks' funding costs and deposit rate today are driven by banks competing in the open marketplace.

The discussion paper argues that “an increase in CBDC that pushed reserves lower would also have little effect on the federal funds rate if the initial supply of reserves were large enough to provide an adequate buffer”; but it is unclear how the Federal Reserve would calibrate the size of any buffer. Even if the sizing of the initial supply of reserves is appropriate, we simply do not have any models to figure sizing of reserves over a business cycle.

It is evident that as the deposit base of banks shrinks due to the issuance of CBDC, it would be essential to develop ways to continue funding credit to U.S. households and businesses. As banks would have been disintermediated from the credit supply business, the Federal Reserve could begin to play a more direct role in supplying credit, which, in turn, would lead to a further increase in the size of the Federal Reserve’s balance sheet. The serious and troubling implications for the role of the Federal Reserve and the wider government are discussed in more detail below.

We would now be in a fundamentally different state of the world, one where traditional banking services have been fully unbundled and re-bundled in unknown ways, and the Federal Reserve having a permanently bigger footprint in direct credit to the U.S. economy. Accordingly, we believe these theoretical solutions would fail to address the funding loss to banks and force the Federal Reserve to completely rethink its approach to conducting monetary policy.

Direct Federal Reserve credit would also impact its balance sheet. To date, we have seen the Federal Reserve increase the size of its balance sheet to conduct unconventional monetary policy. In a world where bank deposits have shifted to CBDC, and the Federal Reserve is playing a direct role in supplying credit to the U.S. economy, it is fair to presume that any quantitative easing during stressed conditions would only cause the Federal Reserve’s balance sheet to grow to an unprecedented size. It is impossible at this stage to predict the effectiveness of current monetary policy tools, and the ability of the Federal Reserve to maneuver its now bloated balance sheet tool in any nuanced manner. We would now be in a world where the policy rate is no longer relevant and the Federal Reserve’s balance sheet is permanently bigger even during normal times and the Federal Reserve would have to invent new tools to achieve its monetary policy goals.

A CBDC must carefully balance the need to prevent financial crimes with protecting privacy

For many years, there has been an ongoing debate between the need for transparency, which is critical for combatting illicit finance, and the need to protect the privacy of those conducting transactions. The two competing concerns require a balancing act that is the responsibility of policymakers.³¹

A significant challenge associated with CBDC is ensuring that the central bank is able to identify users and track the movement of funds. Unlike cash, which can be moved anonymously, digital transactions, including CBDC, offer the ability to track the movement of funds. This is a key component to the transparency required to combat illicit finance, since transparency and sharing that information with appropriate government authorities and law enforcement agencies when suspicious transactions involving CBDC are detected is critical. The responsibility for tracking and monitoring for potentially suspicious transactions is a new responsibility that would fall on the Federal Reserve, something it has never handled previously. The critical element is to ensure that the Federal Reserve could determine whether anything is

³¹ See FATF Guidance: Private Sector Information Sharing (Nov. 2017), <https://www.fatf-gafi.org/media/fatf/documents/recommendations/Private-Sector-Information-Sharing.pdf>.

suspicious or out of the ordinary for that customer and should be brought to the attention of authorities through the filing of a suspicious activity report (SAR).

While it is necessary to share information about transactions to combat illicit finance, it is also important to recognize that the information shared is often a suspicion only and not a proven determination. Therefore, protecting the privacy and data security of subjects also becomes important. While banks have long-standing policies and procedures for protecting privacy and data security under the Gramm-Leach-Bliley Act and other statutes, it is not clear that similar protections apply to the Federal Reserve or how they will be extended.

Apart from transparency, CBDCs present another unique challenge that is distinct from the movement of actual currency. Physical currency is bulky and difficult to move in large amounts.³² However, digital currencies, including CBDCs, can be easily moved in large amounts, making them more appealing to criminals and terrorists as a mechanism to move funds. Here again, the ability to track transactions becomes important to combatting illicit finance.

Fundamentally, the Federal Reserve would be taking on an entirely new role for monitoring customers and their activity, an issue that it has not yet addressed but that would be critical if it takes on the role of issuing and holding CBDCs.

A CBDC would expand the role of government

By issuing a CBDC and bringing millions of retail accounts onto its balance sheet, the Federal Reserve would risk becoming politicized as the central control point for monitoring and potentially denying transactions and making decisions about the allocation of credit. For controversial purchases subject to significant local regulation, such as cannabis and firearms, a CBDC would entangle the Federal Reserve as a national arbiter of social issues.

The deposit substitution effect of a CBDC would lead to increased political influence (and possibly manipulation) of monetary and credit policy. As former Federal Reserve Vice Chairman for Supervision Randal Quarles noted recently, if introduction of a CBDC removes deposits from the commercial banking system:

...that's going to have to be re-intermediated somehow...and either way [whether deposits are re-intermediated directly by the Federal Reserve, or equivalent resources returned to the commercial banking system], those will come with strings. The political system will not allow that re-intermediation from the central bank to the private-sector banking system... [or] to the private-sector economy, ... that will come with strings. It will be directed to where the politicians would like it... differential interest rates depending on who the preferred borrowers are in any particular jurisdiction.

The Federal Reserve's discussion design leaves open (or at least does not expressly exclude) the possibility it could exercise affirmative control over private parties' holdings of CBDC. The objectives could vary widely: as an extreme example, the possibility of restricting use of CBDC, or even mandating its expiration or cancellation, could be viewed as a powerful monetary tool, either for tightening

³² See FATF Report: Money Laundering Through the Physical Transportation of Cash (Oct. 2015), <https://www.fatf-gafi.org/media/fatf/documents/reports/money-laundering-through-transportation-cash.pdf>

(restricting or cancelling existing CBDC), or for stimulus (adding CBDC to the financial system that will expire if not spent within a specified time). The potentially enhanced ability for law enforcement to track private financial activity, noted above, and to impound or seize CBDC would serve very different policy objectives (and may well be appealing in pursuing those objectives), but would create similar uncertainties for holders of CBDC. Particularly when impounds could be executed based only on probable cause, if the mechanics of CBDC lead to more such seizures, the adequacy of procedural safeguards would likely need reexamination. The potential for enhanced surveillance raises similar concerns.

Though presenting both operational and legal/due process challenges, even the potential for such future uses, made possible by CBDC, would obviously present serious policy concerns. Moreover, the existence of such uncertainties, and the long period undoubtedly required to develop broad market confidence (if it could ever be achieved) that such risks were manageable, mean that the added transactional flexibility CBDC proponents claim likely would go unrealized.

The introduction of nonbanks would introduce risks to consumers and financial stability

Serving as an intermediary of CBDC would place significant obligations on the service provider to protect the funds, ensure the privacy of the customer, and process incoming and outgoing transactions without delay. The entities that are most qualified to provide this service are federally insured and supervised financial institutions. The baseline for providing this service must be oversight and supervision that is at least equal to the oversight of chartered financial institutions.

Federally chartered financial institutions are held to a high standard and are subject to stringent compliance and regulatory oversight and examination. Further, those that are federally insured are subject to FDIC oversight to ensure that the financial institution's balance sheet is in adequate condition for it to continue in business. Importantly, these institutions are subject to strict data security and privacy laws that protect their customers' data. Because Congress and regulators, including the Federal Reserve, have long recognized the highly sensitive nature of the customer data that banks hold, the agencies have developed detailed data protection requirements and examination protocols to assure protection. Though some state regulators have been active in creating similar data security regimes, leaving these important questions to the patchwork of state regulations (which would be a consequence of allowing significant nonbank participation) would not only deprive customers of critical protections, but also would curb willingness to use CBDC for significant levels of economic activity.

The introduction of other entities would introduce additional risk. Some may consider money transmitters as one group of potential intermediaries, but that option would significantly increase systemic risk. The current patchwork of regulations that money transmitters are subject to is not adequate. It relies on an uneven layer of requirements, as noted above, being enforced unevenly across the states. Providing CBDC services would be a significant endeavor, requiring that all entities be subject to the same regulation and oversight. The state money transmitter model does not meet this threshold.

Others suggest that some big tech firms could provide CBDC service. This would place customer security and privacy at risk. Most big tech firms mine their customer data and use it to direct more products to them, or they sell that data to third parties who use it to do the same thing. Data about financial transactions can be the most sensitive data a person has. Granting large technology firms and their business partners access to that financial data would put customers at risk.

There is an established regulatory framework for federally chartered financial institutions. They are subject to ongoing oversight and supervision. If unregulated big tech firms became intermediaries, the Federal Reserve would need to create and implement a new regulatory regime to determine entities capable of providing CBDC services and, more importantly, conduct ongoing oversight and examination of these entities. A separate regulatory initiative would be inefficient and ineffective. Moreover, technology companies are likely to have very different incentives in offering access to a CBDC that involves monetizing consumer data to bolster their non-financial services products. If entities want to provide CBDC services, there is already a path ready for them—becoming a federally-chartered financial institution.

There are no effective ways to mitigate the risks posed by CBDC that do not also undermine any potential value

The Federal Reserve’s discussion paper recognizes many of the risks detailed above and seeks avenues to mitigate those risks. However, none of these strategies appear well-positioned to mitigate the risks and many would be counterproductive by undermining the potential use cases.

Caps on Account Size

As noted above, caps on CBDC holdings are unlikely to prevent the drain of a significant amount of funds from the banking system. Caps would constrict any payment efficiencies that a CBDC could offer. If private parties can hold only limited amounts of CBDC, larger-volume payment activities would still require use of the current payments system, and it would continue to evolve and improve independent of CBDC payments activity to serve those larger-volume transaction parties. Moreover, the existence of an attractive, conveniently available alternative to bank deposits, even amounts fully insured by the FDIC, seems likely to lead to further bank liquidity strains during market stress. Importantly, political pressure is likely to increase any cap set as time goes by.

The maintenance of account caps would present a serious operational challenge. It is likely that individuals would set up CBDC accounts at more than one financial intermediary. This could be done on purpose to try to get around the limits, unintentionally by those overlooking the aggregate amount in their different accounts, or due to ignorance of the limit. The Federal Reserve or some other agency would need to be tasked with monitoring accounts at every CBDC intermediary to be able to aggregate individuals’ CBDC balances. Procedures would be needed to prevent balances above the limit in real time, or else force timely conversions out of over-balances once detected.

Moreover, experience with determination of FDIC-insurable balances demonstrates the complexity of knowing whether end-user account balances are below the limit even at financial intermediaries singularly. For example, how would CBDC balances be allocated for multiple owners of a CBDC account at an institution? And suppose some of those same individuals had other accounts at that institution? The FDIC allows accounts to be insured up to the “Standard Minimum Deposit Insurance Amount” in nine categories;³³ would the CBDC limit apply in these same categories? If not, how would the limit apply with respect to other accounts for overlapping end-users or for accounts of employee benefit plans and trust accounts? The FDIC can attest that trust accounts pose particularly thorny issues.

³³ The nine categories of FDIC insurance coverage include single accounts; joint accounts; certain retirement accounts; formal and informal revocable trust accounts; irrevocable trust accounts; corporation, partnership and unincorporated association accounts; employee benefit plans, and government accounts. (See www.fdic.gov/resources/deposit-insurance/brochures/documents/deposit-insurance-at-a-glance-english.pdf.)

To complicate the account data further, the Federal Reserve must realize that aggregate account balances per end-user per financial intermediary would have to be continuously maintained, or at least as of close of business every business day. The FDIC and institutions subject to FDIC rule 12 CFR § 370 (those required to make such insurance determinations daily) can attest to the complexity of such accounting. And yet, every financial intermediary that holds CBDC accounts would have to accomplish this level of recordkeeping, not just institutions with more than 2 million deposit accounts subject to 12 CFR § 370.

Beyond the logistical and civil liberties challenges with tracking and enforcing a cap on a per-person basis, a payments system where endpoints are constrained in their capacity to absorb the flow of funds would quickly become illiquid. A sender of funds would need to know whether the recipient had any “authorized” space in their CBDC quota and would need an entirely new framework for payments that fail because the recipient has “too much” CBDC. Does the sender send the “allowed” amount or does it all get returned? Who would hold liability in this case? Would the disclosure of the amount of remaining authorized capacity for a recipient violate the privacy rights of the recipient or create an easy way for fraudsters to test for the most rewarding accounts to compromise? Where could the sender “park” the excess CBDC while they await a resolution in order to receive more funds themselves?

Not Paying Interest on Deposits

The Federal Reserve discussion paper notes that the “interactions between CBDC and monetary policy implementation would be more pronounced and more complicated if the CBDC were interest-bearing at levels that are comparable to rates of return on other safe assets.”³⁴ Ironically, noting current inefficiencies in the transmission of monetary policy decisions, some monetary policy experts have argued that interest-bearing CBDC would help improve the transmission process.

The theoretical efficiency gain in monetary policy execution would come from an increase in the amount (absolute or relative terms) of money in the economy that is sensitive to the Federal Reserve’s policy rate. Here, disintermediating banks and opening up the reserve system to all, would arguably be an improvement. Proponents of CBDC argue that central banks should issue CBDC with a view to improving monetary policy transmission as a goal in itself.

While the Federal Reserve acknowledges that interest-bearing CBDC would further disintermediate other money market instruments like T-bills and money market mutual funds, it is unclear how to evaluate the trade-offs involved in making all these policy choices. The conflicts between policy goals and the design choices we alluded to earlier have to be addressed before attempting to pilot a U.S. CBDC and are a key reason that further study is essential.

Limit a CBDC to Consumers

As noted, concerning caps on CBDC holdings, other limitations, such as prohibiting nonpersonal or institutional CBDC accounts, would constrict any payment efficiencies that a CBDC could offer. Similar to the consequences of caps on CBDC accounts, larger-volume payment activities would still require use of the current payments system, which would still have to serve those larger-volume transaction parties, independent of CBDC payments activity. And even if CBDC holdings were limited to consumers, the existence of an attractive, conveniently available alternative to bank deposits, even if those are fully insured, seems likely to lead to further bank liquidity strains during market stress.

³⁴ CBDC Report, *supra* n.1, at 19.

III. There are better ways to achieve our shared objectives that do not put our financial system or economy at risk.

While we do not believe there is a compelling case for issuing a CBDC in the United States today, many of the goals outlined are laudable and are worth investing in. There are a number of initiatives underway that help address these. An important decision criterion the Federal Reserve lays out at the start of the discussion paper is that the benefits of a CBDC should outweigh any costs and that it should “yield such benefits more effectively than alternative methods.”

The good news is that any innovation in the United States comes from a place of strength. Unlike many other countries, the United States has a well-developed and robust financial system that is the backbone of our economy and markets. Nearly every worker and person receiving government benefits is paid through Direct Deposit, with access to good, spendable funds on or before their pay or benefit date, indicating that essentially every dollar of income in the U.S. is digital. This is important progress toward addressing the family budget timing mismatches that can lead to overdrafts or declined payments. As they have done for hundreds of years, American banks today provide a broad array of essential financial and economic functions that benefit their communities, most notably, safekeeping deposits and making loans.

Financial Inclusion: Bank On

Today, the vast majority of consumers in the United States have a bank account and enjoy the safety, security and benefits that come with it. But there are still some who remain outside the banking system. For those individuals, access to a simple transaction account can be a first step toward long-term financial security.

As part of ABA’s commitment to reduce the number of unbanked people in the country, we are encouraging all banks to join the Bank On movement by offering low-cost, basic accounts that meet the Bank On initiative’s National Account Standards.

The Bank On national platform, led by the nonprofit, Cities for Financial Empowerment Fund (CFE Fund), helps individuals navigate the marketplace and easily identify accounts that meet their needs.

When an account is Bank On certified, consumers know it has features they are looking for, including low or no fees, no overdraft charges, online bill pay and other basic attributes—giving them more confidence to begin or restart their banking relationship with the right tools to manage their money. Thanks to the efforts of banks and other private-sector stakeholders, more than 230 certified accounts are available to consumers and the rate of individuals without a bank account has fallen to its lowest recorded level of 5.4% according to the FDIC.

Financial institutions offering Bank On certified accounts now comprise 56% of the national deposit market share providing access to over 36,000 branches in all 50 states, and the number continues to grow with more banks in the Bank On pipeline.

Payments system efficiency

For other countries, a CBDC could enhance their payments systems. The United States, however, has one of the most efficient, safe, and modern payments systems in the world. Banks have invested significant resources in expanding faster, safer, and more inclusive options, including P2P, real-time payments systems, and upgraded Automated Clearing House (ACH) products. Solutions to pay gig workers

instantly and put funded bank accounts into the hands of disaster victims have recently come online, addressing key use cases proffered for CBDC.

Efforts to modernize and speed up our payments system have been underway for some time and are already being implemented. The Federal Reserve’s 2017 Faster Payments Task Force examined the entirety of the payments system and its experts, including consumer groups, recommended faster networks—not a new currency. As a result of these efforts, the Federal Reserve is building out an instant payments solution called FedNow.

Industry has been driving these improvements as well. The RTP Network is a brand new instant payments system that represents an advancement equivalent to moving from dial-up to broadband in terms of speed and features. ABA was a strong advocate for using this capability as part of the Economic Impact Payment (EIP) program to speed electronic payments to those with bank accounts or even prepaid cards.

Together, RTP, FedNow, and faster ACH systems are forming a web of super-fast, low-cost or free digital payment options that will make waiting for days to receive a payment a thing of the past. These are all digital channels that contribute to the fact that the dollar is already digital today.

Bank-issued stablecoins

Private-sector innovation is quickly offering new and compelling financial products. Bank-issued stablecoins and tokenized deposits promise to bring fiat currency onto a blockchain-native platform, creating a programmable asset that can be the basis for further innovation. If policymakers want to leverage the potential of these platforms, they should not look to replace these private-sector innovations but create a regulatory structure that creates a clear path for regulated entities to offer these products in a safe and responsible manner. While we believe there are risks presented by some stablecoin arrangements in the market today, there is also a clear and credible path for regulation that can control for the risks and unlock potential for innovation.

For some policymakers, the risks in the market today are the reason to issue a CBDC. In the past when new forms of private money have emerged, we have not looked to replace them with a government program. Instead, policymakers identify emerging risks and craft regulation to control for those risks. Bank accounts and credit cards are just a few examples of innovations in private money that are well-regulated today, provide tremendous benefit to consumers, and support the role of the U.S. dollar internationally. There are few who believe we would be better off if they were replaced by government programs. The President’s Working Group on Financial Markets (PWG) released a report recommending a regulatory framework for stablecoins. In this report they did not recommend that the government replace stablecoins, but instead suggested that the bank regulatory framework is well-equipped to control for the risks presented by stablecoins.³⁵

A key recommendation made by this group is that stablecoin issuers be regulated as “insured depository institutions.” ABA agrees with the recommendations of the PWG and believes this recommendation is particularly important. The stable nature of these assets means that they are a credible alternative to traditional bank deposits. The regulatory structure that banks are subject to is designed to evaluate the quality of a bank’s reserves and ensure that the appropriate consumer protections are offered. While some have proposed a lower standard similar to Money Market Mutual Funds, we do not believe this is

³⁵ President’s Working Group on Financial Markets, the FDIC and the OCC, Report on Stablecoins (Nov. 2021), https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf.

sufficient. Acting Comptroller Hsu agrees, recently pointing out that “[i]f stablecoins were just an investment product, a money market fund approach based on public disclosure could, in theory, serve as a starting point. There are notable limits to disclosure’s effectiveness in preventing runs, however. The need for money market fund emergency lending facilities in the 2008 financial crisis and in the spring of 2020 as part of the pandemic response stand out.”³⁶

In order to make this possible, we also need regulatory clarity that gives banks the ability to offer stablecoin products. While we believe banks have the legal authority to issue stablecoins, there is not a clear path for regulatory approval. While OCC Interpretive Letter 1174 gave banks explicit permission to engage in stablecoin activities, the more recent Interpretive Letter 1179 requires banks to obtain written non-objection prior to exercising this authority. The FDIC has issued a similar Financial Institution Letter that introduces further uncertainty for banks that want to offer these products in a safe and responsible manner.

In a recent podcast, former Vice Chair for Supervision Randal Quarles made the case that the bank regulatory structure is already well-equipped to supervise stablecoin issuance from banks. He notes that “if you are a bank, then there's nothing much more that needs to be done with respect to your ability to issue with the stablecoins. We will view those liabilities like the other liabilities on your balance sheet and determine in our prudential supervision of your institution in determining your compliance with regulations.”³⁷

Stablecoins do not necessarily introduce the deposit disintermediation concerns associated with CBDCs. Recent Federal Reserve research finds that stablecoin deposits held as transactional deposits at commercial banks have a neutral impact on deposit substitution so long as “the treatment of stablecoin deposits [is] the same as non-stablecoin deposits.”³⁸ It is critical that we do not disrupt the important deposit intermediation role banks play in our economy. Some policymakers have suggested that banks may need to issue a stablecoin in a separate legal entity to control for intraday liquidity risks. Unfortunately, this approach would reintroduce the same risks and would effectively position stablecoin issuers as narrow banks. Moreover, this approach is not necessary as there are existing facilities designed to manage intraday liquidity risk associated with any form or real-time payment.

If policymakers believe that the bank regulatory framework is appropriate for stablecoin issuers, we cannot also prevent banks from offering stablecoins. If we can provide regulatory clarity that allows for the issuance of well-regulated stablecoins, they will offer any potential benefits of a programmable form of money without disintermediating bank deposits.

Other models of CBDC do not offer a more compelling case

While the Federal Reserve’s discussion paper focuses on a CBDC that is “widely available to the general public” and suggests an “intermediated” model is the most appropriate, there are a number of other designs being considered globally.

³⁶ Hsu Remarks, *supra* n.9, at 4.

³⁷ Quarles on Inflation, Politics at the Fed and CBDCs (May 3, 2022), <https://podcasts.google.com/feed/aHR0cDovL2ZlZWRzLmxpYnN5bi5jb20vMjYxNjUzL3Jzcw/episode/Yzc4NTA5NGYtNTFjZi00NTkzLW15NjMtMTUyNTc5NGY2MTE0?sa=X&ved=0CAUQkfYCAhckEwjgLLWfjNH3AhUAAAAAHQAAAAQDA&hl=en>.

³⁸ Board of Governors of the Federal Reserve System, “Stablecoins: Growth Potential and Impact on Banking” at 14, International Finance Discussion Papers (Jan. 2022), <https://www.federalreserve.gov/econres/ifdp/files/ifdp1334.pdf>.

Direct Model

Policymakers throughout the world have generally concluded that the direct model is not feasible because of the increased costs and operational burdens placed on central banks.³⁹ A direct CBDC model would effectively set the Federal Reserve up as a retail bank available to every household in the nation. This would present an immense operational burden on the central bank, which would be responsible for onboarding customers and servicing those accounts. Today U.S. banks employ over 2 million people to accomplish the same goal. Among the most critical technical and operational challenges, the direct model risks creating a global target for cyberattacks or a new avenue for money laundering.⁴⁰ Moreover, the direct model would significantly amplify concerns about privacy and government surveillance.

Wholesale Model

In a wholesale model, the Federal Reserve would build a new form of master account that would leverage some of the insight learned from its exploration of CBDC. While this approach might mitigate a number of the risks associated with a retail CBDC, it is not clear what technology would be used and what benefits that might yield. As a country, we should always explore whether new technology can improve our payments system and there is work already underway to do just this. We do not fully explore the impact of this in our response and such an approach would require further consultation.

IV. Conclusion

A U.S. CBDC could fundamentally change the role of the central bank in the United States and reshape the banking system. Given the additional complexity, delay, and transition costs involved in creating a new form of money, there are strong efficiency interests that suggest CBDC should only be pursued as a final option to meet clearly defined public policy goals that cannot be achieved through payments innovations that leverage existing digital dollars. As of today, those use cases have not emerged.

Sincerely,

Rob Morgan

³⁹ This appears to be the position of the ECB. *See, e.g.*, Fabio Panetta, Member of the Executive Board of the ECB, “Evolution or Revolution? The Impact of the Digital Euro on the Financial System,” Bruegel Online Seminar (Feb. 10, 2021), <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210210~a1665d3188.en.html> (“[t]he ECB does not plan to interact directly with potentially hundreds of millions of users of a digital euro. We simply would not have the capacity or the resources to do so. Financial intermediaries—in particular banks—would provide the front-end services, as they do today for cash-related operations. We would provide safe money, while financial intermediaries would continue to offer additional services to users.”).

⁴⁰ *See, e.g.*, Lael Brainard, Member, Board of Governors of the Federal Reserve System, “Cryptocurrencies, Digital Currencies, and Distributed Ledger Technologies: What Are We Learning?” Remarks at the Decoding Digital Currency Conference Sponsored by the Federal Reserve Bank of San Francisco (May 15, 2018), <https://www.federalreserve.gov/newsevents/speech/files/brainard20180515a.pdf>.

Appendix: Impact Analysis

In this section, we assess the potential impact of a U.S. CBDC on the ability of banks to provide credit intermediation. Per the baseline model proposed in the discussion paper, CBDC is defined as “a digital liability of a central bank that is widely available to the general public.” Similarly, there is a commitment to follow an intermediated approach, wherein CBDC wallets would be available to consumers through banks and other authorized intermediaries but not through the Fed. Both of these core assumptions are factored into our analysis below.

Bank deposits today are a liability of the bank, and issuance of CBDC would trigger a shift of liabilities from banks to the Fed. The Federal Reserve discussion paper acknowledges that an interest-bearing CBDC would be a perfect substitute for bank deposits, and, hence, “reduce the aggregate amount of deposits in the banking system, which could in turn increase bank funding expenses, and reduce credit availability or raise credit costs for households and businesses.”

In the context of this expected deposit substitution, one remedy proposed is that of the Federal Reserve somehow ploughing back the funds into the banking system. In theory, the Federal Reserve would know the amount of CBDC held in every bank’s wallet and could credit an equivalent amount of reserves to each bank. To the extent nonbanks and Big Tech firms successfully compete with banks for these CBDC wallets, though, it is unclear whether the Federal Reserve would be able to fully mitigate deposits lost from the banking system.

Assessing the potential impact of a CBDC requires making assumptions about design choices and how a CBDC would be used by the public. We first explore how a CBDC that is a perfect substitute for deposits would affect the industry. We find that a perfect substitute CBDC would create significant deposit flight risk that would undermine the economics of the banking business model.

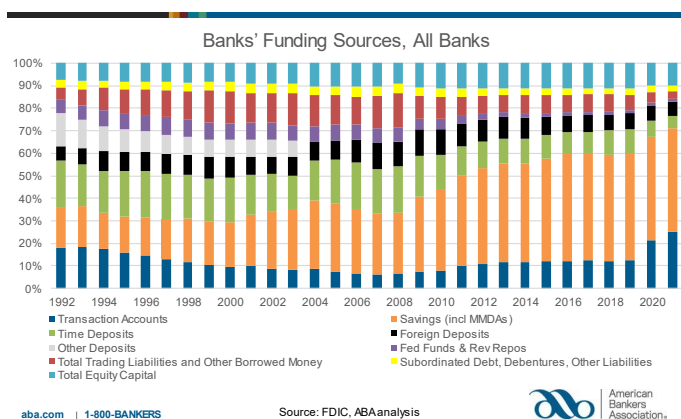
Some CBDC models seek to minimize deposit flight risk by both capping the amount of funds that an individual or other “end user” can hold in CBDC and offering no interest on CBDC balances. Setting aside the challenges this would pose for conducting monetary policy (e.g., setting rates below 0%) and other proposed CBDC use cases (e.g., international payments), we incorporate these assumptions into the second section of our analysis. We find these design choices would not eliminate the deposit replacement problem, particularly for banks with higher shares of small-dollar deposit accounts.

The impact of a perfect substitute CBDC

Deposits are among the most stable sources of bank funding, for which banks fiercely compete. Between 2011 and 2021, deposits comprised 77%, on average, of total aggregate liabilities and equity of the U.S. banking system. Losing these deposits would mean that bank funding costs would increase as banks source alternative and more expensive funding in wholesale markets.

An interest-bearing CBDC could offer either positive or negative remuneration. In fact, the ability to set the monetary policy rate below the 0-bound is one of the primary benefits cited by CBDC advocates. Since CBDC

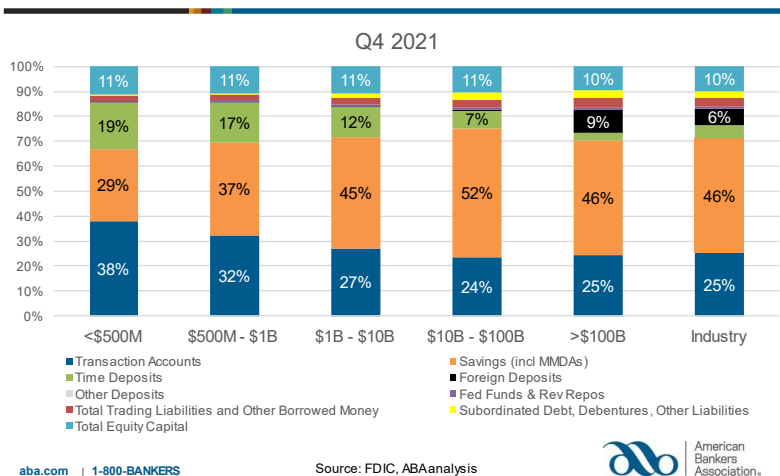
Chart 1: Banking Industry Funding Sources



would be an advantaged competitor to bank deposits, it reasons bank deposits would offer more competitive interest than that offered on a CBDC. With this in mind, we assume that the deposit categories most susceptible to CBDC conversion would be transaction account deposits (which include checking accounts that offer little to no interest) and short-duration, variable-rate savings accounts (not time deposits).

Over the last decade, transaction accounts and savings accounts comprised 59%, on average, of total aggregate industry funding. However, as illustrated in chart 1, the share of industry funding attributable to these deposits has steadily grown over time. As of year-end 2021, banks held \$16.9 trillion of transaction and savings account deposits on their balance sheets—reflecting 71% of total industry funding. Banks of all sizes rely on these deposits to fund operations (Chart 2).

Chart 2: Banks' Funding Sources, by Asset Size



In the extreme case, where all transaction account and savings account deposits are converted into CBDC, the banking industry would lose 71% of its funding and would need to fill that hole with alternative sources. This would not only increase banks' funding costs but completely alter their asset/liability management (ALM) and, thus, the economics of the banking business model. Predicting the impact to cost of funds is complicated by uncertainties about how quickly funds run off bank balance sheets, what alternative funding sources banks turn to, what rates would look like at that time, what second- or third-order effects arise from banks' funding decisions, or whether federal action is taken to create for banks an alternative source of stable, long-term funding.

For the purposes of this analysis, we assume that the average cost of funds from 2002–2010 applies—a period when the federal funds rate steadily rose from 1.00% to 5.25% before being cut to near-zero (Table 1). If banks turned to Federal Reserve funds and repurchase agreements, for example, to fill their funding gap, we would expect an overall increase in funding costs of 71%*(3.32%-0.92%)—or approximately 170 basis points. Such an increase in average funding costs would be unsustainable and undermine the economics of the banking business model.

Funding Source	All Banks
Transaction and Savings accounts	0.92%
Transaction Accounts	0.31%
MMDA's and Other Savings	1.09%
All Time Deposits	2.95%
Fed Funds and Repurchase Agreements	3.32%
Trading Liabilities and Other Borrowed Money	3.21%
Subordinated Notes & Debentures	4.68%

Source: FDIC, ABA analysis

This simple example does not account for differences in duration between comparatively stable transaction deposits and alternate funding sources. Factoring in duration would increase the cost estimate via two drivers—the term premium and volatility. There would also be second-order and third-order effects as banks turn to alternate funding sources. For example, if banks turn to time deposits or other non-transaction accounts to make up the funding gap, competitive pressures would drive funding costs

higher for these categories. More important, alternate short-term funding sources would drive higher volatility into banks’ cost of funds, which, in turn, would fundamentally change their business models, including completely exiting certain product lines, customer segments, and geographies.

Also absent from this analysis is the additional impact one would expect from nonbank fintech and big tech competition. Today, money stored in PayPal or Venmo accounts are held in omnibus accounts at partner banks. In the same way banks compete for consumer deposits, they also compete for these brokered deposits. At the end of 2021, customers held \$34.2 billion in accounts managed by just PayPal/Venmo and the Square Cash App. Estimating the additional potential deposit runoff from the loss of these deposits is complicated by data limitations—but the loss of these brokered deposits would only increase the size of the industry’s expected funding gap.

The impact of a capped, non-interest bearing CBDC

The Federal Reserve’s discussion paper posits capping the size of a CBDC account and making these accounts non-interest bearing as potential mitigants to addressing the deposit replacement concern highlighted above and elsewhere. In this section, we assume that CBDC is non-interest bearing, capped in an effort to reduce the deposit-replacement problem, and only available to natural persons and not to legal or other entities that have deposit accounts.⁴¹ We explore a few different nominal amounts for these caps. For example, a cap set at \$2,500 would meet the needs of many lower-income households based on data from the Federal Reserve’s 2019 Survey of Consumer Finances (Table 2); a cap set at \$5,000 would cover [average monthly household cash flows](#); and a cap set at \$10,000 could be considered a reasonable ceiling, as it is the level at which banks begin to file suspicious activity reports.

Checking Account Percentile	Income Percentile					
	<20	20-40	40-60	60-80	80-90	90-100
10 th	\$ 40	\$ 140	\$ 300	\$ 790	\$ 1,500	\$ 2,900
20 th	\$ 101	\$ 350	\$ 650	\$ 1,400	\$ 2,600	\$ 5,000
30 th	\$ 240	\$ 600	\$ 1,100	\$ 2,000	\$ 3,600	\$ 7,000
40 th	\$ 400	\$ 1,000	\$ 1,700	\$ 3,000	\$ 5,000	\$ 10,000
Median	\$ 660	\$ 1,300	\$ 2,110	\$ 4,000	\$ 6,500	\$ 14,100
60 th	\$ 1,000	\$ 2,000	\$ 3,000	\$ 5,000	\$ 9,000	\$ 20,000
70 th	\$ 1,500	\$ 2,500	\$ 4,000	\$ 7,000	\$ 12,000	\$ 32,500
80 th	\$ 2,300	\$ 4,000	\$ 6,000	\$ 10,400	\$ 18,500	\$ 58,000
90 th	\$ 5,100	\$ 9,000	\$ 10,400	\$ 19,500	\$ 30,000	\$ 118,000
99 th	\$ 50,170	\$ 71,000	\$ 72,000	\$ 86,000	\$ 121,000	\$ 505,000

Source: Fed Survey of Consumer Finances

For the purpose of this analysis, we exclude interest-bearing savings accounts and instead focus on transaction accounts. To assess the potential impact of CBDC caps, we consider the case where every banked U.S. adult holds the maximum allowable amount of CBDC and that these funds are sourced from checking accounts. There were 258.3 million adults in the U.S. in 2020 and, according to the FDIC, 94.6% of U.S. households had a bank account in 2019—leaving approximately 244.4 million banked

⁴¹ If CBDC accounts were made available to legal entities, charitable organizations, individual retirement accounts, trusts, estates, and other “end users,” the potential leakage from bank deposits could be significantly larger.

adults. Not every individual has \$2,500 or more, however, so we combine this assumption with checking account decile data from Table 2 to calculate projected deposit losses.

To illustrate this calculation, let us first focus our attention on households that fall within the 0-20 income percentile. These households reflect 20% of the total adult U.S. population, roughly 48.9 million banked adults. Each checking account decile in this column reflects 10% of the 0-20 income percentile—or 2% of all banked U.S. adults. Therefore, we can expect that 2% of banked adults would only be able to convert \$40 into CBDC, regardless of the cap, as that is the average money available to households that fall within both the 0-20 income percentile and first checking account balance decile.

With a CBDC cap set at \$2,500—and under our assumption that customers hold the maximum amount of CBDC their checking account can fund—the first 80% of households in the 0-20 income percentile will be able to fully convert their checking account balances into CBDC. The remaining 20% of households convert \$2,500—with the residual left as bank deposits. As a result, these households would be expected to convert an average of \$1,124.10 into CBDC.⁴² Therefore, issuance of a non-interest bearing, capped CBDC is estimated to cause households in the 0-20 income percentile to convert \$54.9 billion of deposits into CBDC (\$1,124.10 * 48.9 million banked adults). Table 3 below illustrates that CBDC caps of \$2,500, \$5,000, or \$10,000 would result in expected deposit losses of \$445.7 billion, \$720.9 billion, or \$1.08 trillion, respectively.

Income Percentile	\$2,500 CBDC Cap		\$5,000 CBDC Cap		\$10,000 CBDC Cap	
	Avg CBDC Conversion	Total Deposits Lost	Avg CBDC Conversion	Total Deposits Lost	Avg CBDC Conversion	Total Deposits Lost
0-20	\$ 1,124.10	\$ 54,944,376,931	\$ 1,624.10	\$ 79,383,651,431	\$ 2,134.10	\$ 104,311,711,421
20-40	\$ 1,539.00	\$ 75,224,086,911	\$ 2,189.00	\$ 106,995,143,761	\$ 3,089.00	\$ 150,985,837,861
40-60	\$ 1,836.00	\$ 89,741,015,964	\$ 2,786.00	\$ 136,175,637,514	\$ 3,886.00	\$ 189,942,041,414
60-80	\$ 2,169.00	\$ 106,017,572,781	\$ 3,619.00	\$ 176,891,468,831	\$ 5,319.00	\$ 259,985,002,131
80-90	\$ 2,400.00	\$ 58,654,257,600	\$ 4,270.00	\$ 104,355,699,980	\$ 6,820.00	\$ 166,675,848,680
90-100	\$ 2,500.00	\$ 61,098,185,000	\$ 4,790.00	\$ 117,064,122,460	\$ 8,490.00	\$ 207,489,436,260
		\$ 445,679,495,187		\$ 720,865,723,977		\$1,079,389,877,767

Source: Federal Reserve, ABA analysis

The banking industry held a combined \$23.8 trillion in assets at the end of 2021. Therefore, deposit losses of \$445.7 billion, \$720.9 billion, or \$1.08 trillion from a capped, non-interest bearing CBDC would result in aggregate funding gaps of 1.9%, 3.0%, or 4.5%, respectively. While these percentage may appear small at a macro level, disaggregated analysis reveals that the impact would be significant at a micro level.

In 2021, transaction accounts comprised just over a quarter of aggregate industry funding (Chart 2). However, aggregate figures mask the impact that would be felt across the industry. Transaction accounts comprise a larger share of aggregate funding for smaller banks than their larger counterparts, but even some large banks rely on these deposits to fund credit creation. Transaction accounts comprised greater than 40% of funding for more than two-in-five banks at the end of 2021 (Table 4).

⁴² E.g., With a \$2,500 CBDC cap, the average household in the 0-20 income percentile would convert $(\$40 + \$101 + \$240 + \$400 + \$660 + \$1,000 + \$1,500 + \$2,300 + \$2,500 + \$2,500) / 10 = \$1,124.10$.

Table 4: Transaction Accounts' Share of Banks' Total Funding, by Asset Size						
Share of Funding	<\$500M	\$500M - \$1B	\$1B - \$10B	\$10B - \$100B	>\$100B	Total Banks
<10%	126	116	174	33	7	456
10-20%	181	72	142	40	15	450
20-30%	413	96	92	8	4	613
30-40%	846	172	121	6	1	1,146
40-50%	831	184	160	18	2	1,195
50-60%	354	89	73	11	5	532
60-70%	89	15	15	3	-	122
>70%	22	4	10	2	-	38
Total Banks	2,862	748	787	121	34	4,552

Source: FDIC, ABA analysis. Q4 2021 consolidated by holding company

This data shows that deposit account relationships and funds are not allocated evenly across the banking industry. Just as some banks are more reliant on transaction account funding than others, some banks have higher shares of low-value deposit accounts that would be at greater risk of CBDC conversion under these theoretical caps. Determining how many banks this might impact, however, is complicated by data limitations.

To assess how differently sized banks could be impacted, we exploit two data sources: call report data and responses to an ABA survey. The call report includes two line items that can help us get a better picture of the number of banks potentially at risk of significant deposit replacement under the aforementioned caps: the total number and dollar amount held in non-retirement deposit accounts with balances less than \$250,000. Together, these figures can be combined to calculate the average balance in these deposit accounts.

Over the years, we have observed that low-balance deposit accounts make up a higher share of deposit relationships (measured in terms of number of accounts), while high-balance deposit accounts make up a higher share of total deposit dollars used to fund bank operations. At the end of 2021, banks held a combined \$7.38 trillion across nearly 800 million accounts (31% of bank funding). In aggregate, the average deposit balance in these accounts was only \$9,313. Moreover, the average deposit balance was less than \$15,000 for over a third of the banking industry (35%)—suggesting a significant share of customer relationships would be at risk at these institutions, even if a CBDC were capped and non-interest bearing.

These figures are consistent with the findings of ABA's CBDC survey. Banks were asked to provide the total number and dollar amount in retail and small business accounts whose average balance in Q4 2021 was less than a given threshold. For consistency across responses, banks were asked to report dollars based on call report item RCON 2215 in schedule RC-E of the call report and total number of accounts based on item RCON F050 in schedule RC-O of the call report. While a CBDC cap set at \$2,500 may result in a 1.9% funding gap for the industry, in aggregate, it would place 38% of banks' customer relationships at risk. Table 5 below shows the share of deposit accounts and deposit dollars at risk, by asset size, under our theoretical CBDC caps.

Table 5: ABA CBDC Survey Results						
Asset Size	Share of deposit accounts (#) with balances less than			Share of deposit dollars (\$) with balances less than		
	\$ 2,500	\$ 5,000	\$ 10,000	\$ 2,500	\$ 5,000	\$ 10,000
<1B	35%	44%	51%	4.6%	6.1%	20.6%
\$1B-\$10B	40%	49%	57%	2.4%	4.9%	9.4%
\$10B-\$100B	40%	48%	54%	3.6%	6.1%	10.0%
>\$100B	38%	45%	50%	1.8%	3.5%	6.2%
All respondents	38%	46%	53%	3.3%	5.4%	13.1%

Source: ABA member survey. Number of accounts based on schedule RC-O item RCON F050. Total transaction account deposit dollars based on schedule RC-E item RCON 2215

This has important longer-run implications for the sustainability of the banking business model. Deposit accounts at a bank are often the first step in the customer relationship journey. Disintermediation of the customer entry-point into the banking system obviously would negatively affect banks but could also have negative consequences for customers. Customers would lose out on having a banking relationship and the ancillary benefits that come with a deposit account. Customers that rely on a CBDC wallet rather than making responsible use of credit cards or other short-term financing could miss out on opportunities to build up their credit history for larger purchases later in life. Any impact study of CBDC on financial markets must explore how banks of all sizes, including community banks, would be affected and how those impacts would ripple through their local communities. This is particularly important if the motivation behind a CBDC includes financial inclusion. Community banks play a critical role in providing financial services to rural and other underserved communities.