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RE: “Money and Payments: The U.S. Dollar in the Age of Digital Transformation”

To Whom It May Concern:

The Clearing House Association L.L.C. (“TCH” or “The Clearing House”) commends the Board of Governors of the Federal Reserve System (“Fed”) for releasing its paper “Money and Payments: The U.S. Dollar in the Age of Digital Transformation” as the “first step” in the consultative process the Fed is pursuing to explore the emerging and consequential topic of whether a U.S. central bank digital currency (“CBDC”) would be beneficial.¹ The Clearing House appreciates efforts by the Fed to solicit stakeholder input and submits these comments in response to the various issues raised by the Fed in its paper.

The Clearing House believes that the Fed has focused on the right issues in its consultative paper, including, among others, whether a CBDC is fit for purpose, implications to the financial system and broader economy if a CBDC were to be issued, heightened money laundering and terrorism financing risks, privacy risks, increased operational resilience and cyber risk, as well as the need to evaluate whether certain controls could ameliorate those risks. The Fed has appropriately raised these and other issues for comment and has indicated that it will proceed cautiously and thoughtfully in its exploration of them. The Clearing House also appreciates the Fed’s willingness to entertain comments in letter format, unrestricted by the parameters of the online question submission form, as a way to address the issues the Fed has raised.

I. Introduction

While The Clearing House appreciates the need to study whether a CBDC is right for the U.S. and the consultative process that the Fed is pursuing, we believe that a thoughtful examination of the issues raised by the Fed leads to the conclusion that the risks associated

¹ Board of Governors of the Federal Reserve System, “Money and Payments: The U.S. Dollar in the Age of Digital Transformation” (Jan. 14, 2022) (available at: <https://www.federalreserve.gov/publications/files/money-and-payments-20220120.pdf>).

with a CBDC outweigh the potential benefits.² Specifically, The Clearing House believes that:

- A CBDC would pose serious risks to the banking system and the economy that cannot be adequately controlled;
- There are other less risky and more efficient alternatives to achieve the purported policy goals for which a CBDC could be advanced;
- The additive value of a CBDC is unclear, particularly given existing efforts by the private- and public-sectors to modernize the payments system;
- Enablement of a CBDC would require significant private-sector investment and risk without the support of a clear business case;
- In order to guarantee the safety and soundness of any CBDC framework involving intermediaries, such intermediaries should be subject to the regulatory and supervisory structure to which insured depository institutions are subject;
- Legal tender status is not necessary for a successful CBDC, but if legal tender status is given to CBDC there will be costs incurred by creditors as they will need to be able to accept CBDC and have a means to use it; and
- Interoperability or transferability of CBDC across multiple payments systems raises important questions that would need to be further explored should the Fed decide to proceed with a CBDC.

In light of the risks associated with CBDC, The Clearing House believes that the policy goals that have been articulated in support of a CBDC would best be addressed through less risky, more efficient, and more economical alternatives that are readily available in the market today. The Clearing House further believes that if the Fed nonetheless decides to proceed with the development of a CBDC, it must do so with a clear use case in mind and with a clear legislative mandate from Congress. The Clearing House appreciates the important work that the Fed is doing to examine the risks and potential opportunities presented by a CBDC, and we hope that the Fed will take the points raised in this letter into consideration.

² The Clearing House notes that the Fed's consultative paper on CBDC speaks solely to the issue of a *retail* CBDC, defining CBDC as "digital liability of the Federal Reserve that [would be] *widely available to the general public.*" ("Money and Payments: The U.S. Dollar in the Age of Digital Transformation," *supra* note 1, p. 3 (emphasis added).) Our comments in this letter are therefore limited to a retail CBDC.

II. Discussion

A. A CBDC would pose serious risks to the banking system and the economy that cannot be adequately controlled

A CBDC carries significant risks of jeopardizing financial stability and the safety and soundness of domestic and global banking and finance. The migration of bank deposits to CBDC, likely exacerbated in times of stress as bank customers sought the relative safety of a central bank guaranteed liability, will impact banks, the current safety net, and the broader ecosystem.³

Cannibalization of Bank Deposits and Impact on Lending and Cost of Credit. The foundational characteristic of a CBDC – that it is a “liability of the Federal Reserve”⁴ – means that CBDC would exist on the Fed’s balance sheet as a liability and on the holder’s balance sheet as an asset. Even in an intermediated model, where CBDC would be distributed through depository financial institutions, CBDC would remain a liability of the Federal Reserve (central bank money) and not a liability of the bank (commercial bank money). A CBDC held by a bank on behalf of its customer in a digital wallet would never touch the bank’s balance sheet and the CBDC could not be comingled with the account holder’s other funds.⁵ In this regard, CBDC digital wallets are less like deposit accounts and more like electronic safe-deposit boxes used to hold a digital version of cash. Banks would hold these accounts in the form of a bailment or in trust (i.e., no transfer of ownership to the bank).⁶ Unless the digital wallet holder converted CBDC into commercial bank money in

³ In many ways, CBDC raises concerns that are similar to those that the Fed confronted with “The Narrow Bank” and other Pass-Through Investment entities (PTIEs) where the Fed recognized the risks involved in taking deposits and investing all or substantially all of those deposits in balances at Reserve Banks (the functional equivalent of a CBDC). (84 Fed. Reg. 8829 (March 12, 2019).) In that instance, the Fed expressed significant concerns about PTIEs cannibalizing bank deposits and other investments, complicating monetary policy, and raising the cost of credit provided by banks to households and businesses and significantly reducing financial stability. (*Id.*)

⁴ “Money and Payments: The U.S. Dollar in the Age of Digital Transformation,” *supra* note 1, at pp. 3, 5 & 15.

⁵ That CBDC would remain a liability of the central bank and not of an intermediary is a foundational characteristic. TCH notes, however, that Securities and Exchange Commission Staff Accounting Bulletin No. 121 (SAB 121) defines “crypto-asset” as “a digital asset that is issued and/or transferred using distributed ledger or blockchain technology using cryptographic techniques” and might therefore require CBDC, if designed in such a way as to meet the definition of “crypto-asset,” to be presented by banks as a liability on their balance sheets and to be recognized as an asset at the same time in accordance with the requirements set forth in the bulletin. (87 Fed. Reg. 21015 (Apr. 11, 2022).) Because specific design elements of a CBDC are not yet determined, TCH believes it is too soon to assess the applicability of SAB 121 to CBDC. Further, characteristics of a CBDC would be markedly different from the types of assets mentioned in SAB 121 in that CBDC would be far more secure and far less volatile than the average crypto asset. (*Id.*) If, however, SAB 121 is ultimately determined to apply, it would effectively preclude banks that operate as public companies from acting as custodians for CBDC because the bank regulatory capital and liquidity requirements relating to on-balance-sheet assets would make serving as a custodian for CBDC prohibitively expensive.

⁶ This contrasts with commercial bank money, where the account holder deposits dollars with the bank and the bank provides the depositor with an account balance. The dollars that are deposited become an asset on the

a bank deposit account, CBDC could not be used by the bank for lending or other purposes.⁷ This would have a detrimental effect on lending and the cost of credit as banks lost deposits to CBDC, an issue that would likely be exacerbated in times of stress as depositors sought the relative safety of CBDC. Community banks, whose primary business model is deposit-based lending, would be the most impacted but banks of all sizes would be forced to find more expensive sources of credit.⁸ A Federal Reserve Bank of Minneapolis review of the effects of declining deposits on banks, for example, concluded that a “decline in cheaper insured deposits will likely raise costs for banks, especially community banks, which must rely on more expensive funding.”⁹ While nonbank issued stablecoins and other nonbank cryptocurrencies also have the potential to cannibalize bank deposits, The Clearing House believes that the appropriate response to the growth of nonbank stablecoins and other nonbank cryptocurrencies is regulation and not the creation of a CBDC as is more fully explored, *see infra* pp. 13-15.¹⁰

Because of the effect a CBDC is likely to have on deposits and lending, the Fed may be pressured to address any shortfalls. If the Fed was forced to take on a role as a supplier of credit to the public, it would represent a fundamentally new role for the Fed. While the ability to control access and to have visibility into holdings and transactions are why China is pursuing CBDC¹¹ these same reasons should concern U.S. policymakers. Further, the allocation of credit in the market is a critical function of the banking sector and putting the

bank’s balance sheet (subject to fractional reserves and the ability to be lent out), with a corresponding liability also on the bank’s balance sheet that is owed to the account holder (in the form of commercial bank money).

⁷ See Gordon Y. Liao and John Carmichael, “Stablecoins: Growth Potential and Impact on Banking,” Board of Governors of the Federal Reserve System International Finance Discussion Paper, p. 16 (Jan. 2022) (available at: <https://www.federalreserve.gov/econres/ifdp/files/ifdp1334.pdf>) (noting that with respect to the potential economic impact of a fully reserved stablecoin, in one scenario, “the commercial banks significantly contract their balance sheets to compensate for the lack of deposit funding”; and in another scenario, “commercial banks compensate for the lost deposit funding by issuing debt securities”; with the result being “reduction in bank-led credit creation” (while the paper addresses the potential impact of a narrow bank stablecoin, we believe the introduction of a CBDC would have a similar effect)). See also Rod Garratt, Michael Lee, Antoine Martin, and Joseph Torregrossa, “The Future of Payments is Not Stablecoins,” Liberty Street Economics blog (Feb. 7, 2022) (available at: <https://libertystreeteconomics.newyorkfed.org/2022/02/the-future-of-payments-is-not-stablecoins/>) (noting the efficiency of the existing commercial bank deposit system).

⁸ See Fernandez-Villaverde, et al., “Central Bank Digital Currency: Central Banking for All?” Federal Reserve Bank of Philadelphia Working Paper 20-19, p. 26 (June 2020) (noting that “[i]f the competition from commercial banks is impaired (for example, through some fiscal subsidization of central bank deposits or ... by changes in the structure of possible bank runs), the central bank has to be careful in its [central-bank-digital-currency-related] choices to avoid creating havoc with maturity transformation”).

⁹ David Fetting and Ron J. Feldman, “Declining deposits ... Is it all bad news?” Federal Reserve Bank of Minneapolis (July 1, 1998) (available at: <https://www.minneapolisfed.org/article/1998/declining-deposits-is-it-all-bad-news>).

¹⁰ As noted herein (*see infra* pp. 13-15), The Clearing House supports the recommendations made by the President’s Working Group on Financial Markets, the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency in their “Report on Stablecoins.”

¹¹ Center for Strategic and International Studies, “How Will a Central Bank Digital Currency Advance China’s Interests” (Aug. 20, 2020) (available at: <https://chinapower.csis.org/china-digital-currency/>) (noting that a digital renminbi would “enhance the government’s capacity to monitor and control economic activity”).

Fed at the center of credit allocation would be a significant change to the credit-allocation model in the U.S., with potentially significant ramifications, such as subjecting the Fed to political pressure.

Globally, the relative safety and security of a CBDC could have significant destabilizing effects on foreign financial systems. For example, individuals and businesses in other parts of the world may prefer the relative safety and security of a U.S. central bank obligation to an obligation of their home central banks. Foreign holders of internationally transmitted U.S. CBDC would be the beneficiaries of 100% deposit protection from the Fed – a benefit they may not receive from the central bank in their own jurisdiction.¹² Ultimately, the Fed’s conclusion in the consultative report that CBDC could exacerbate threats to financial stability is accurate.¹³

A number of risk mitigants have been proposed to limit the impact of a CBDC on the financial sector,¹⁴ with the Fed itself suggesting that reductions in the aggregate amount of deposits could be ameliorated by the CBDC either not paying interest or subjecting holders of CBDC to holding limits.¹⁵ Many mitigants are unlikely to be fully effective, or may result in downstream challenges for the Fed. For example, neither an approach of not paying interest nor the imposition of holding limits is likely to be an effective solution; and an approach of using intermediaries to perform vital anti-money-laundering and countering the financing of terrorism (“AMF/CFT”) and know-your-customer (“KYC”) screenings to mitigate the likelihood that CBDC is available for illicit use will only succeed if there is a viable business model supporting the costs of these screenings.

While The Clearing House believes that the payment of interest on CBDC would only serve to accelerate the cannibalization of commercial bank deposits with follow-on effects on lending in the overall economy, the non-payment of interest does not guarantee that such cannibalization will be adequately controlled. While a non-interest-bearing CBDC could be less attractive than a commercial bank deposit bearing interest, that would only hold true in high interest rate environments and in circumstances where the depositor was unconcerned about the risk of financial stability and capital preservation. In times of stress, depositors would undoubtedly choose the comparative safety of a CBDC over commercial

¹² Tony McLaughlin, “Two paths to tomorrow’s money,” *Journal of Payments Strategy & Systems*, Vol. 15, No. 1 (Nov. 15, 2020), p. 33.

¹³ “Money and Payments: The U.S. Dollar in the Age of Digital Transformation,” *supra* note 1, pp. 17-18.

¹⁴ See, for example, Bank of Canada, et al., “Central bank digital currencies: foundational principles and core features” (2020) (available at: <https://www.bis.org/publ/othp33.pdf>), pp. 8 & 12 (noting the importance of mitigating risks and means of designing CBDC instruments in ways that seek to manage risks); and Bank of Canada, et al., “Central bank digital currencies: financial stability implications” (Sept. 2021) (available at: https://www.bis.org/publ/othp42_fin_stab.pdf), pp. 5 & 14 (proposing holding limits, transaction limits, and other safeguards to moderate CBDC usage and take-up).

¹⁵ “Money and Payments: The U.S. Dollar in the Age of Digital Transformation,” *supra* note 1, p. 17.

bank money even though the former would not be interest-bearing.¹⁶ A central bank liability carries with it guaranteed, immediate liquidity. A claim for deposit insurance does not and is subject to insurance caps.¹⁷

Holding limits are also likely to be ineffective. First, holding limits that are too low will substantially frustrate some or all of the purposes for which CBDC is being advanced (e.g., financial inclusion, cross-border payments, the role of the U.S. dollar internationally, and as a defense against unregulated currencies). For example, it would be highly unlikely that a CBDC subject to holding limits could compete effectively with private-sector cryptocurrencies to which no such holding limits applied. Similarly, if CBDC is being advanced to preserve the role of the U.S. dollar in international trade and finance, holding limits would be inimical to the kinds of large dollar transactions that a CBDC would need to accommodate. Further, statistical data on the size of bank deposits shows that the median value of transactional accounts in 2019 was still quite low (\$5,300),¹⁸ and at least one community banker has noted that seventy percent of the deposit accounts in his institution contain \$2,500 or less.¹⁹ This suggests that to be effective at preventing potential harm to small and community banks, holding limits would need to be extremely low, which would in turn frustrate many of the purposes for which a CBDC is being advanced.²⁰

AML/CFT Risk. In part to address AML/CFT related concerns, the Fed has proposed using an intermediated model that would place AML/CFT screening and compliance obligations on the private sector, but it is unclear that the private sector will want to take on the associated risks without a clear business case for doing so, which has so far not been articulated. Holding CBDC would be a type of custodial service provided by banks, and custodial services typically operate on a very low margin. Fees will be necessary to make a

¹⁶ See “Central Bank Digital Currency: Central Banking for All?” *supra* note 8, p. 27 (noting that the stability of a central bank during a crisis could cause depositors to “internalize” the security feature and could “attract[] all deposits away from the commercial banking sector” as the central bank becomes a “deposit monopolist.”)

¹⁷ At present, the standard deposit insurance coverage limit is \$250,000 per depositor, per FDIC-insured bank. (See Federal Deposit Insurance Corporation, FAQs, “Can I have more than \$250,000 of deposit insurance coverage at one FDIC-insured bank?” (Dec. 8, 2021) (available at: <https://www.fdic.gov/resources/deposit-insurance/faq/#:~:text=The%20standard%20deposit%20insurance%20coverage,held%20at%20the%20same%20bank>).

¹⁸ See Federal Reserve Bulletin, “Changes in U.S. Family Finances from 2016 to 2019: Evidence from the Survey of Consumer Finances,” Vol. 106, No. 5 (Sept. 2020) (available at: <https://www.federalreserve.gov/publications/files/scf20.pdf>) (noting that the conditional median value of transaction accounts in 2019 was \$5,300, but that the mean value was about \$42,000, suggesting that high-value accounts skew the mean).

¹⁹ See Interview of James Reuter, CEO and President of FirstBank in Lakewood, CO, by Rob Blackwell (available at: <https://podcasts.apple.com/us/podcast/why-bankers-need-to-pay-attention-to-cbdcs-or-else/id1506774121?i=1000541221442>) (noting that 70% of FirstBank’s consumer accounts had a balance below \$2,500).

²⁰ While different holding limits could be established for consumer and business CBDC holdings, it would be difficult if not impossible to optimally set such limits and retain CBDC’s usefulness for the various purposes for which it has been proffered.

custodial holding model viable, particularly if intermediaries are going to be responsible for KYC, AML/CFT screening and other compliance obligations. In short, CBDC would not be cost free for consumer use; some fee structure would have to support the CBDC framework, particularly in an intermediated model.²¹ While the Fed could take on these obligations and perhaps subsidize them, The Clearing House recognizes that the Fed may be reluctant to undertake KYC, AML/CFT, and other compliance obligations itself as it has neither the infrastructure nor the manpower to do so and would also be subjecting itself to the significant reputational risk that comes with taking on these activities.

To ensure AML/CFT compliance, either the government or the private sector (in an intermediated model) will need to understand the nature and purposes of transactions and monitor for and provide reports on potential illicit activity.²² It is unclear how the Fed will balance this need with the “strong privacy protections” it suggests will apply.²³ It is also unclear how such information gets transmitted in a CBDC, or gets shared between intermediary and governmental actor, whether it be the Fed, an administrative agency, or law enforcement.

Political Risk. In addition to the potential for risk mitigants to be limited in their effectiveness, the mitigants themselves may give rise to additional risks or present additional challenges. If the Fed is in a position of making interest rate changes to CBDC, or

²¹ There is no reason, for example, to assume that a CBDC would be a cheaper alternative to other cryptocurrencies in the market today. Take rates for private cryptocurrency issuance, along with fees in the marketplace today, may provide a sense for the costs that would be associated with providing intermediation for a CBDC. (See Mizuho Securities USA LLC, “Coinbase Global, Inc.” (Feb. 24, 2022) (noting that the yield/take rate advanced (increased) for Coinbase in Q4 2021, from 1.10% to 1.23%); Interview of Avichal Garg, Electric Capital, on CNBC (Mar. 31, 2022) (available at: <https://www.cnbc.com/video/2022/03/31/electric-capitals-avichal-garg-on-finding-value-in-crypto-exchanges.html>) (noting the importance of fee structures and the persistence of fees (fees have not reduced/compressed since 2016)); and Written Testimony of Alexis Goldstein, Director of Financial Policy, Open Markets Institute, before the Senate Banking Committee, “Stablecoins: How Do They Work, How Are They Use, and What Are Their Risks?,” pp. 1-2 & 9-10 (Dec. 14, 2021) (available at: <https://www.banking.senate.gov/imo/media/doc/Goldstein%20Testimony%2012-14-21.pdf>) (noting that fees for using cryptocurrency are high (e.g., \$1,000 or 0.1% for a fiat withdrawal for Tether) and often exceed fees for traditional systems).)

²² Some have suggested, however, that a CBDC should function as a digital bearer instrument. If CBDC is intended to be a substitute for cash, then it would likely need to be designed as an electronic bearer instrument — the use of which does not require the central administration of accounts or wallets. A bearer-instrument model could be designed using tokens and could preserve the privacy protections that users of cash have today by using technology applications and devices (e.g., phones) that enable the exchange of tokens without creating a record on a ledger, meaning off-line payments could be conducted between private parties. Importantly, electronic bearer instruments, especially those that have the stability of Fed backing raise additional AML/CFT concerns and complexity. Unlike physical bearer instruments, which are bounded by their physical nature — there is only so much money you can fit into a suitcase — digital bearer instruments have no such limitation and present heightened concerns.

²³ “Money and Payments: The U.S. Dollar in the Age of Digital Transformation,” *supra* note 1, pp. 13 & 19 (noting the importance of privacy protections and the importance of balancing the need to have strong privacy protections against other interests).

determining holding limits, then The Clearing House believes the Fed would become subject to increased political pressures over time, and mitigants could become subject to political revision, depending on the priorities of the political parties in office.

Cyber and Operational Risk. A CBDC is also likely to drastically increase cyber and operational risk related to the money supply. At a minimum, CBDC concentrates risk, in contrast to paper currency, where risks are largely spread out across a diverse infrastructure and the failure of any one part is unlikely to have a meaningful impact on the whole.²⁴ CBDC also exists in a digital environment with substantially greater cyber risks than exist for paper currency.²⁵ The digital nature of CBDC, for example, is a fundamental quality that would likely be exploited by nefarious private actors seeking to leverage CBDC for illicit activities.²⁶ Further, a CBDC that was issued, for example, as a programmable instrument, perhaps with an interest rate or other feature intended to facilitate monetary policy, would be subject to hacking and the insertion of malicious code – something that cannot be done with paper currency.

²⁴ Such catastrophic failure recently struck the CBDC platform operated by the Eastern Caribbean Central Bank (“ECCB”), forcing the ECCB to shut down the platform leaving holders of the ECCB’s CBDC in limbo. See “Eastern Caribbean CBDC Platform Crashes” (Feb. 1, 2022) (available at: <https://www.finextra.com/newsarticle/39606/eastern-caribbean-cbdc-platform-crashes>).

²⁵ It is important to recognize that this increased cyber risk would exist both at the hub (i.e., at the Fed as operator of the CBDC system) and at the spokes (i.e., intermediaries that are holding CBDC on behalf of consumers in digital wallets). As we have seen in private cryptocurrency exchanges and wallets, the digital nature of these assets engenders significant custody and cybersecurity risks with the ability of criminal actors to abscond with staggeringly large sums of cryptocurrency with a few keystrokes. (See Paul Vigna and Sarah E. Needleman, “Hackers Steal \$540 Million in Crypto From ‘Axie Infinity’ Game,” The Wall Street Journal (Mar. 29, 2022) (available at: <https://www.wsj.com/articles/hackers-steal-540-million-in-crypto-from-axie-infinity-game-11648585535>) (noting that since 2011 as many as 226 hacking incidents have resulted in the theft of approximately \$12.1 billion in cryptocurrency, that in 2021 alone there were 75 incidents with an aggregate theft amount of \$4.25 billion, and that there are no indications of increased safety in the cryptocurrency marketplace); and Ciphertrace/Mastercard, “Cryptocurrency Crime and Anti-Money Laundering Report” (Feb. 2021) (available at: <https://ciphertrace.com/2020-year-end-cryptocurrency-crime-and-anti-money-laundering-report/>) (noting substantial fraud risk alongside thefts and hacking (observing \$1.1-\$2.9 billion dollar fraud schemes in 2019 and 2020, in addition to hundreds of millions of dollars in thefts and hacking)).)

²⁶ For example, there is every reason to assume that nefarious actors would create solutions similar to Tornado Cash and other programs that would be designed to evade whatever AML and CFT controls might exist on the CBDC network. (See, for example, “Tornado Cash Privacy Solution” (details available at: <https://github.com/tornadocash/tornado-core#:~:text=Tornado%20Cash%20is%20a%20non,withdrawn%20by%20a%20different%20address>) (Tornado Cash is a “non-custodial Ethereum and ERC20 privacy solution” that “improves transaction privacy by breaking the on-chain link between the recipient and destination addresses.” Tornado Cash notes that it “uses a smart contract that accepts ETH deposits that can be withdrawn by a different address”; and markets itself by stating that “[w]henver ETH is withdrawn by the new address, there is no way to link the withdrawal to the deposit, ensuring complete privacy.”))

Although CBDC design may lessen the degree of operational and cyber risks, foundational requirements for a CBDC may prevent the Fed from being able to make design decisions that would *materially* lessen these risks. For example, a CBDC operated on a single ledger would consolidate risks in one or more operational centers, increase the operational risk that a failure would have more catastrophic impact on the whole, and provide for a more convenient and attractive target for hackers, fraudsters, and nation states engaged in cyber warfare.²⁷ While a distributed ledger might offer a more resilient or less risky alternative, accompanying foundational challenges, such as payment throughput,²⁸ may prevent optimal design to foster operational and cyber resilience from taking place. Additionally, factors such as environmental costs might also impact design choice with a direct bearing on operational and cyber resiliency.²⁹ The Clearing House

²⁷ Private digital currencies have already proven to be an attractive target for cyber criminals and would likely be a target of nation states seeking to destabilize key U.S. infrastructure in an attack. (See, for example, Ishita Chigilli Palli, “Hacker Group Stole \$200 Million From Cryptocurrency Exchanges,” Bank Info Security (June 25, 2020) (noting that a specific cyber-criminal gang, the CryptoCore gang, targets cryptocurrency exchanges) (available at: <https://www.bankinfosecurity.com/hacker-group-stole-200-million-from-cryptocurrency-exchanges-a-14506>); Mike Orcutt, “Once hailed as unhackable, blockchains are now getting hacked,” MIT Technology Review (Feb. 19, 2019) (detailing various attacks on exchanges and other entities in the digital currency ecosystem, as well as the risk of exploitation of cryptographic flaws) (available at: <https://www.technologyreview.com/2019/02/19/239592/once-hailed-as-unhackable-blockchains-are-now-getting-hacked/>); “Russian Nationals Indicted for Conspiracy to Defraud Multiple Cryptocurrency Exchanges and Their Customers” (Sept. 16, 2020) (available at: <https://www.justice.gov/usao-ndca/pr/russian-nationals-indicted-conspiracy-defraud-multiple-cryptocurrency-exchanges-and>) (detailing an alleged conspiracy to defraud users of digital currency platforms); and Catalin Cimpanu, “US sues to recover cryptocurrency funds stolen by North Korean hackers,” ZDNet (Aug. 27, 2020) (describing U.S. government efforts to recover digital currency funds that were allegedly stolen by North Korean hackers). (See also U.S. Securities and Exchange Commission, “Investor Alert: Bitcoin and Other Virtual Currency Investments” (May 7, 2014) (available at: https://www.sec.gov/oiea/investor-alerts-bulletins/investoralertsia_bitcoin.html) (noting the risk that crypto currency exchanges may stop operating or permanently shut down due to fraud, technical glitches, hackers or malware); U.S. Securities and Exchange Commission, “Digital Asset and ‘Crypto’ Investment Scams – Investor Alert” (Sept. 1, 2021) (available at: <https://www.sec.gov/oiea/investor-alerts-and-bulletins/digital-asset-and-crypto-investment-scams-investor-alert>) (noting significant fraud risks); and Rosario Mendez, “Donating with crypto? Watch out for scams.” Federal Trade Commission Consumer Alert (Mar. 25, 2022) (available at: <https://consumer.ftc.gov/consumer-alerts/2022/03/donating-crypto-watch-out-scams>) (noting fraudulent schemes to obtain cryptocurrency donations intended to aid Ukraine).

²⁸ Notably, the Fed’s own experimentation with CBDC design has not focused on distributed ledger technology as the operational platform for a central bank digital currency administered by a central party, seemingly due to throughput requirements and other factors, such as trust parameters. (See Federal Reserve Bank of Boston and Massachusetts Institute of Technology Digital Currency Initiative, “Project Hamilton Phase 1[,] A High Performance Payment Processing System Designed for Central Bank Digital Currencies,” pp. 3-5 (Feb. 3, 2022) (available at: <https://www.bostonfed.org/publications/one-time-pubs/project-hamilton-phase-1-executive-summary.aspx>) (noting baseline requirements of “time to finality of less than five seconds, throughput of greater than 100,000 transactions per second, and wide-scale geographic fault tolerance,” and model performance).

²⁹ See University of Cambridge, Cambridge Bitcoin Electricity Consumption Index (available at: <https://cbeci.org/>); and Total World Production & Consumption estimates (available at: <https://cbeci.org/cbeci/comparisons>) (noting that the environmental impact of distributed ledger-based systems can be significant). See also Peter Stella, “Who Will Afford to Use Bitcoin?” (International Monetary Fund paper abstract) (2021) (comparing cost and efficiency of

believes that a certain level of operational and cyber risk is unavoidable due to constraints the Fed will face in designing and operating a CBDC system, that the operational and cyber risks of CBDC will be significant, and that these risks will be fundamentally different than those that exist for paper currency.

B. There are other less risky and more efficient alternatives to achieve the purported policy goals for which a CBDC could be advanced

CBDC is frequently presented in the abstract, and as a panacea. In reality, a U.S. CBDC is unlikely to be an effective tool for all of the purposes for which it has been advanced, or for some purposes at all.³⁰ Additionally, by designing a CBDC for a specific purpose or purposes, its effectiveness will be limited for other purposes or may lead to other issues. Mutual exclusivity of purposes/functions and design tradeoffs must be addressed as the Fed considers whether to pursue development of a CBDC, particularly given the potential harm a CBDC could cause, and the ramifications of design choices on the ability to achieve specific policy objectives.³¹ For example, a CBDC designed to facilitate cross-border payments or preserve the role of the U.S. dollar in international trade and finance would necessarily need to accommodate large-value transactions and not employ holding limits, which could exacerbate the cannibalization of bank deposits with a knock-on effect on lending and the overall economy. Similarly, a CBDC designed to compete with private-sector cryptocurrencies would need to compete on the basis of offering those characteristics that make those cryptocurrencies attractive, including a high level of anonymity. The quality of anonymity, however, raises serious AML/CFT concerns and would be particularly dangerous in a CBDC meant to be used in cross-border or international trade and finance. The clear articulation of the purpose to be served by a CBDC should be an absolute prerequisite to any U.S. CBDC proposal.

Identification of a clear purpose is also essential to evaluating means other than a CBDC that may be readily available to achieve that purpose. The Clearing House believes that all or most of the purposes for which a CBDC has been advanced could be achieved more efficiently and at lower cost through non-CBDC alternatives.

Bitcoin blockchain and six centralized fiat money payments systems — TARGET2, FEDWIRE/CHIPS, NACHA ACH, Hong Kong CHAPS, UK CHAPS, and Payments Canada, and concluding that although technological innovations may improve the relative efficiency of proof of work in cryptocurrencies and digital currencies, there are likely to remain significant differences based on asymmetrical incorporation of knowledge and party identity that will make cryptocurrencies and digital currencies less efficient).

³⁰ See, for example, Jesse Leigh Maniff, "Motives Matter: Examining Potential Tension in Central Bank Digital Currency Designs," Payments System Research Briefing, Federal Reserve Bank of Kansas City (July 2020) (available at: <https://www.kansascityfed.org/research/payments-system-research-briefings/motives-matter-examining-potential-tension/>) (noting that, in practice, it is unlikely that all benefits of a CBDC will be able to co-exist).

³¹ See Daniel Sanches and Todd Keister, "Should Central Banks Issue Digital Currency?" Federal Reserve Bank of Philadelphia Working Paper 21-37 (Nov. 2021), p. 36 (noting that if a CBDC functions well as a means of payment, "a tradeoff arises between promoting financial inclusion and facilitating illicit activities").

Financial inclusion/distribution of government benefits – CBDC has been viewed by some as a vehicle for financial inclusion. Advocates for the use of CBDC as a vehicle for financial inclusion, however, often ignore the reasons households and individuals in the U.S. are unbanked or underbanked in the first place.³² However it is designed, CBDC will struggle to address some of the most frequently cited reasons U.S. households are unbanked.³³

For example, it is unlikely that a CBDC would meaningfully impact financial inclusion because the likely characteristics of a CBDC (e.g., a digital form, availability through intermediaries in accounts or wallets) do not readily address some of the most important reasons why consumers are unbanked today.³⁴ Put another way, the causes of

³² For example, a segment of domestic unbanked consumers rely on cash and do not possess the tools (smartphones and devices capable of connecting to the internet, or internet access) that will likely be necessary to hold and use CBDC. (See The Clearing House, et al., “Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities” (May 2021), pp. 13-16 & 37 (available at: https://www.theclearinghouse.org/-/media/new/tch/documents/advocacy/tch_unbanked_report_may_2021.pdf)). (See also Emily A. Vogels, “Digital divide persists even as Americans with lower incomes make gains in tech adoption,” Pew Research Center (June 22, 2021) (available at: <https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/>) (noting that “[r]oughly a quarter of adults with household incomes below \$30,000 a year (24%) say they don’t own a smartphone” and that “[a]bout four-in-ten adults with lower incomes do not have home broadband services (43%) or a desktop or laptop computer (41%)”); and Vanessa Sumo, “Bringing in the Unbanked,” Federal Reserve Bank of Richmond *Region Focus* (Winter 2007) (noting that many individuals and households lack documentation, including forms of identification, necessary to open bank accounts) (available at: https://www.richmondfed.org/-/media/richmondfedorg/publications/research/econ_focus/2007/winter/pdf/feature3.pdf)).

³³ When the FDIC asks households why they do not have an account with a bank, responses are numerous and varied. Of the reasons households provide, the most frequently reported reason, perennially, and by a wide margin, is not having enough money to have an account or not having enough money to meet minimum balance requirements. (Having sufficient money to have an account and meet minimum balances, however, would not seem to be a true impediment given the wide availability of low-cost and no-cost accounts (See “Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities,” *supra* note 32, pp. 12-21).) After concerns about having sufficient funds to open an account, the next most frequently cited reasons as to why households remain unbanked are: trust (36.3 percent), privacy concerns from banking (36.0 percent), the costliness of bank fees (fees are too high) (34.2 percent), and the predictability of bank fees (31.3 percent). (See Federal Deposit Insurance Corporation, “How America Banks: Household Use of Banking and Financial Services [-] 2019 FDIC Survey,” p. 3 (available at: <https://www.fdic.gov/analysis/household-survey/2019report.pdf>)). (See also The Board of Governors of the Fed System, “Report on the Economic Well-Being of U.S. Households in 2018-2019” (June 5, 2019) (available at: <https://www.federalreserve.gov/publications/2019-economic-well-being-of-us-households-in-2018-banking-and-credit.htm>); The Board of Governors of the Fed System, “Report on the Economic Well-Being of U.S. Households in 2019, Featuring Supplemental Data from Apr. 2020” (May 2020) (available at: <https://www.federalreserve.gov/publications/files/2019-report-economic-well-being-us-households-202005.pdf>); and “Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities,” *supra* note 32, pp. 11-21 (noting many reasons why U.S. households and individuals are unbanked or use nonbank financial products and services).)

³⁴ See “Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities,” *supra* note 32, pp. 13-16 & 37.

households' unbanked status (e.g., lack of trust, privacy concerns, lack of broadband access, lack of documentation to fulfill KYC requirements) are varied, and complex, but not generally related to the absence of low-/no-cost digital payment tools or bank accounts.³⁵ For example, there is no obvious reason why consumers who do not trust banks, or who are concerned with the privacy implications of sharing information with anyone else, would trust the Fed or be willing to accept privacy-related incongruities between cash and general purpose CBDC. As a further example, the lack of access to reliable broadband internet, which appears to be linked to household financial well-being,³⁶ suggests underlying challenges related to connectivity and access that would inhibit use of a CBDC. Even if a CBDC is designed with offline transactional capabilities, a user would still need to download any software necessary to store or use the CBDC, and would need to interact with devices capable of communicating CBDC transfer orders.

As any entities offering CBDC as a product/service under an intermediated model would not fundamentally be any different than those entities that offer financial products/services today (i.e., regulated financial institutions), the likely effects of a CBDC on financial inclusion must also be considered in light of those offerings already available in the marketplace. Looking at the marketplace today, there exists an abundance of no- and low-cost account options offered by U.S. banks,³⁷ as well as collaborative efforts between municipal governments, non-profits, and banks that also provide safe, low-cost transaction accounts.³⁸ Thus, cost and predictability of fees do not seem to be a true barrier to participation in the banking system, and likely would not be factors that would lead to CBDC uptake. But even if one presumes that costs and fees are a barrier to participation in the banking system, there is no reason to assume that there would not also be costs and fees associated with CBDC.³⁹ Intermediaries will need to charge fees to support the custodial services they would provide for the holders of CBDC and for taking on the substantial risks related to KYC, AML and CFT compliance obligations.

Were the Fed to instead proceed with CBDC in a non-intermediated model and directly offer CBDC to the public through FedAccounts, or tokens distributed directly to

³⁵ *Id.* at pp. 12-21.

³⁶ See Emily Vogels, "Digital Divide Persists Even as Americans With Lower Incomes Make Gains in Tech Adoption," Pew Research Center (June 22, 2021) (available at: <https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/>) (noting that about 25 percent of adults with household incomes below \$30,000 do not own a smartphone and more than 40 percent do not have home broadband service); and Letter from forty-seven community organizations, civil rights organizations, broadband providers, and non-profit organizations to Congressional Chairwomen, Chairmen, and Ranking Members (Apr. 6, 2021) (encouraging Congress to address the digital divide and adopt policies that engender greater digital equity and inclusion) (on file with TCH).

³⁷ See "Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities," *supra* note 32, p. 22 & Appendix.

³⁸ More information on the Bank On program is available at: <https://joinbankon.org/about/>. The Cities for Financial Empowerment Fund is a 501(c)3 "focus[ed] on designing, embedding and replicating financial empowerment initiatives within the fabric of local government." (See <https://cfefund.org/about/>).

³⁹ See *supra* note 21.

businesses and individuals, the financial inclusion benefits would be limited by the fact that the Fed would not provide access to the full array of services offered by the private financial sector, including access to credit, online bill payment, financial advice, and other services. A CBDC does nothing to address these ancillary needs. Additionally, the significant impact that direct/non-intermediated CBDC issuance if successful would have on the stability of the financial sector (impacting both traditional banks and alternative financial service providers) could alter the U.S. deposit structure and financial services landscape, impact lending, reduce the credit supply, increase the cost of credit, and otherwise affect financial inclusion in profound, undeterminable ways. While the idea that the central bank might offer accounts directly to businesses and individuals is not a new idea,⁴⁰ offering CBDC directly to consumers and businesses would radically alter the mission and structure of the Fed and constitute an unprecedented role for the government, generally, in the lives of U.S. citizens and the public at large.⁴¹ The Fed should also consider historical lessons about direct competition between the federal government and the deposit-taking activities of private banks, and the possibility that unanticipated consequences might result.⁴²

⁴⁰ As researchers from the Federal Reserve Banks of St. Louis and Richmond, and the Bank of Canada, note, “the idea of universal central bank accounts dates back to the ‘deposited currency’ scheme proposed [] [] [in] 1985.” (See “Kahn, Rivadeneyra, and Wong, “Should the central bank issue e-money?” at pp. 10-11 (first circulated in Oct. 2017) (presented at the Federal Reserve Bank of Atlanta in 2017) (available at: https://www.frbatlanta.org/-/media/documents/news/conferences/2018/1018-financial-stability-implications-of-new-technology/papers/rivadenevra_should_the_central_bank_issue_emoney.pdf). Recent discussions of, and proposals for, consumer accounts at Federal Reserve banks, and distribution of U.S. CBDC through such accounts, appear to build from 2018 work from law professors from Vanderbilt Law School and the University of California Hastings College Of Law who, together with a co-author, argued that all U.S. citizens and residents should be eligible to open bank accounts at the Federal Reserve called “FedAccounts.” (See, for example, Morgan Ricks, John Crawford & Lev Menand, “Central Banking for All: A Public Option for Bank Accounts,” The Great Democracy Initiative (June 2018), p. 2 (available at: <https://rooseveltinstitute.org/publications/central-banking-for-all-a-public-option-for-bank-accounts/>); and Morgan Ricks, John Crawford & Lev Menand, “FedAccounts: Digital Dollars,” Vanderbilt Law Research Paper 18-33, US Hastings Research Paper No. 287, George Washington Law Review (forthcoming) (Apr. 2020) (available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3192162).) (See also “Biden-Sanders Unity Task Force Recommendations” (July 2020), p. 18 (calling for a system of accounts for households at the Federal Reserve); Nicholas Gruen, “Why Central Banks Should Offer Bank Accounts to Everyone,” Economics (Dec. 16, 2016) (available at: <https://economics.com/central-banks-for-everyone-nicholas-gruen/>) (making the case for disruption of retail accounts by wholesale providers (central banks, in this case)); and Nartin Sandbu, “Visa Glitch Shows It Is High Time for Digital Cash,” Financial Times (June 5, 2018) (arguing for central banks to issue digital currency directly to consumers).)

⁴¹ As Chair Powell has noted, the “private sector has the experience and expertise to develop customer-facing infrastructures” (something the Fed does not). (Closing Remarks by Chair Jerome H. Powell, at “Pushing the Frontiers of Payments: Towards Faster, Cheaper, More Transparent and More Inclusive Cross Border Payments” (Mar. 18, 2021) (available at: <https://www.federalreserve.gov/newsevents/speech/powell20210318a.htm>).)

⁴² The Postal Savings Program, for example, demonstrates that a government program designed to facilitate financial inclusion may not wind up attracting users based on convenience and geographic locations, even where the absence of retail bank branches creates an apparent advantage or need, but might instead result in a program that competes directly with the deposit-taking activities of private banks. (See Patricia Hagan Kuwayama, “Postal Banking in the United States and Japan: A Comparative Analysis,” Columbia University Monetary and Economic

There are, however, several viable alternative options to advance financial inclusion in the U.S., including: (i) public-private partnerships that highlight low- and no-cost accounts offered by banks, such as the Bank On program; (ii) bank and alternative financial service provider innovations that meet the needs of unbanked individuals and households; (iii) upgrades to legacy systems that, if made by the government, could facilitate the rapid distribution of benefit payments through same-day ACH or existing real time payments systems, as well as the soon-to-be-available FedNow service; (iv) actions by the government to study and reduce barriers to individuals entering the banking system (including digital identification); and (v) expanded broadband internet access in underserved areas.⁴³ Advancing a CBDC for financial inclusion likely introduces more costs and risks, with less likelihood of success, than these alternative approaches to the issue.

Defend against unregulated private currencies – Concern over possible widespread use of certain unregulated private-sector digital currencies, in particular stablecoins, that are “issued” by unregulated or lightly regulated entities is another driver for CBDC.⁴⁴ Facebook’s initial proposal for Libra caused many central bankers concern that

Studies (May 2000), pp. 76-91 (available at: <https://www.imes.boj.or.jp/research/papers/english/me18-1-3.pdf>) (noting that “geographic availability of depository services provided to areas not served by private banks ... has not proved to be [a] major source of demand for postal savings”).

⁴³ See “Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities,” *supra* note 32. See also PYMNTS.com, “Real Time Payments Help Underbanked Consumers Find Financial Relief” (July 7, 2021) (available at: <https://www.pymnts.com/news/faster-payments/2021/real-time-payments-help-underbanked-consumers-find-financial-relief/>) (noting that faster payments can help unbanked households better manage payments and bills, and avoid late fees).

⁴⁴ See Speech by Governor Lael Brainard, “Private Money and Central Bank Money as Payments Go Digital: an Update on CBDCs” to the Consensus by CoinDesk 2021 Conference (May 24, 2021) (available at: <https://www.federalreserve.gov/newsevents/speech/brainard20210524a.htm>) (noting that the growing role of digital private money is sharpening the Fed’s focus on CBDC and that CBDC introduction “may increase [payment system] resilience relative to a payments system where private money is prominent”); Chiu, Sablik & Wong, “Should Central Banks Worry About Facebook’s Diem and Alibaba’s Alipay?” Fed Bank of Richmond Economic Brief, No. 21-17 (May 2021) (available at: https://www.richmondfed.org/publications/research/economic_brief/2021/eb_21-17) (concluding that private digital currency can result in suboptimal consequences, and reasoning that CBDC, as a policy tool, may temper these consequences); and both Nathaniel Popper, Mike Isaac, and Jeanne Smialek, “Fed Chair Raises ‘Serious Concerns’ About Facebook’s Cryptocurrency Project,” *New York Times* (July 10, 2019) (quoting Fed Chairman Jerome Powell as saying that Facebook’s private digital currency proposal has a host of “serious concerns” around “money laundering, consumer protection and financial stability) and Christine Lagarde, “The future of money – innovating while retaining trust,” as contained in *L’ENA hors les murs* magazine (Nov. 30, 2020) (available at: <https://www.ecb.europa.eu/press/inter/date/2020/html/ecb.in201130~ce64cb35a3.en.html>) (noting that stablecoins could “threaten financial stability and monetary sovereignty” if widely adopted). See also David Milliken and Tom Wilson, “BoE says ‘stablecoin’ payments need same rules as banks,” *Reuters* (June 7, 2021) (quoting Bank of England Governor Andrew Bailey as saying that “[t]he prospect of stablecoins as a means of payment ... have generated a host of issues,” and reporting that the Bank of England has adopted a view that stablecoin-based payments should be regulated in the same way as other forms of payment are today).

they could ultimately cede control of the money supply to large tech giants,⁴⁵ and the growth of stablecoins, like Tether, that claim to be pegged to a unit of currency like the dollar but may not be supported by sufficient liquid reserves raises concerns around financial disclosures and stability.⁴⁶ Additionally, the rise of unregulated cryptocurrencies – like Bitcoin – that have no issuer and are designed to circumvent government regulation has also raised concerns, but thus far those concerns have focused more on the use of those cryptocurrencies for illicit activities than as a substitute for “money.”⁴⁷ CBDC has been raised as a possible means of addressing many of these concerns.

⁴⁵ The initial Libra effort ultimately gave way to Diem, but many of the initial Libra-related concerns that were expressed by central banks were trying to be addressed in the reimagined Diem before its sale. (See Andrew Morse, “Facebook-backed crypto project Diem to launch US stablecoin,” CNET (May 12, 2021) (available at: <https://www.cnet.com/personal-finance/investing/facebook-backed-crypto-project-diem-to-launch-us-stablecoin/>) (noting that Facebook’s digital currency operations would re-brand as “Diem,” relocate to the U.S. from Switzerland, and focus on launching a stablecoin in 2021); and Peter Rudegeair and Liz Hoffman, “Facebook’s Cryptocurrency Venture to Wind Down, Sell Assets: Diem Association is selling its technology to crypto-focused bank Silvergate for \$400 million,” The Wall Street Journal (Jan. 27, 2021) (reporting that Facebook (now Meta Platforms Inc.) has a deal in place to sell assets associated with its planned stablecoin, Diem). However, and in spite of the reported sale of Diem assets, it is still too early to determine whether Diem, as reconstituted, will satisfy the concerns of central bankers, or whether similar future efforts by large tech companies will raise similar concerns.

⁴⁶ See Tether, “Digital money for a digital age” (2021) (available at: <https://tether.to/>) (describing Tether as a token-based digital currency that one obtains by converting cash into Tether token, and that it is “100% backed by [Tether’s] reserves, which include traditional currency and cash equivalents and, from time to time, may include other assets and receivables from loans made by Tether to third parties...”); “Tether says its reserves are backed by cash to the tune of...2.9%” Financial Times (2021) (available at: <https://www.ft.com/content/529eb4e6-796a-4e81-8064-5967bbe3b4d9>) (noting that Tether cash reserves are made up of just under 3% of cash and cash equivalents); Marc Hochstein, “US Fed Official Calls Tether a ‘Challenge’ to Financial Stability,” Coindesk (June 25, 2021) (available at: <https://www.coindesk.com/us-fed-official-calls-tether-a-challenge-to-financial-stability>) (quoting Eric Rosengren (president of the Federal Reserve Bank of Boston) as characterizing Tether’s U.S. dollar stablecoin as a risk to the stability of the financial system, and as concerned about the stability of the assets in the underlying portfolio in times of economic stress, and reporting that CDs, secured loans, and corporate bonds/funds/precious metals all make up large percentages of the portfolio underlying Tether’s U.S. dollar stablecoin); and *In the Matter of Investigation by LETITIA JAMES, Attorney General of the State of New York, of iFINEX INC., BFXNA INC., BFXWW INC., TETHER HOLDINGS LIMITED, TETHER OPERATIONS LIMITED, TETHER LIMITED, TERTHER INTERNATIONAL LIMITED*[,] Respondents, Settlement Agreement (Feb. 17, 2021) (available at: <https://ag.ny.gov/press-release/2021/attorney-general-james-ends-virtual-currency-trading-platform-bitfinex-illegal>) (banning Tether from conducting trading activities in New York and finding that Tether’s U.S. dollar stablecoin was unstable due to a variety of factors, including insufficient reserves backing the coins and parent company loss of access to banking services).

⁴⁷ See *supra* note 44. See also Timothy B. Lee, “Janet Yellen Will Consider Limiting the Use of Cryptocurrency,” WIRED (Jan. 22, 2021) (available at: <https://www.wired.com/story/janet-yellen-consider-limiting-cryptocurrency/>) (noting that Secretary Yellen has suggested the government should “examine ways in which [it] can curtail the [] use [of certain digital currencies] and make sure that [money laundering] doesn’t occur through those channels”); and Harry Robertson, “Janet Yellen says ‘misuse’ of cryptocurrencies like bitcoin is a growing problem, as regulators increase scrutiny after surge in interest,” Business Insider (Feb. 11, 2021) (quoting Janet Yellen as saying that “misuse” of cryptocurrencies is a “growing problem”) (available at:

The Clearing House is also concerned about the risks associated with unregulated or lightly regulated cryptocurrencies, including stablecoins, and supports the recommendations made by the President’s Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency in their “Report on Stablecoins.”⁴⁸ There is no evidence, however, that a CBDC would displace the availability or use of cryptocurrencies and stablecoins or impede their growth trajectory, and a CBDC would face several design challenges in competing with them.

For example, a CBDC designed to compete with unregulated or lightly regulated cryptocurrencies would need to have the same level of anonymity, as well as the ability to hold and transfer value that evades the reach of creditors and bypasses sanction programs. Those attributes are, however, inimical to U.S. anti-money laundering policy goals related to the prevention of terrorist financing, the effectiveness of U.S. sanction programs, and the orderly administration of legal process in the U.S. and elsewhere. The Clearing House believes that the path forward to addressing the risks of cryptocurrencies, including stablecoins, is not the creation of a CBDC designed to compete with these currencies, but the sound regulation of cryptocurrencies, something that would need to occur regardless of the existence of a CBDC. Once cryptocurrency issuers and transfer agents are soundly regulated and supervised to the same extent as depository financial institutions engaged in functionally similar activities, the U.S. should have the expectation that the private sector could meet all or most of the needs that a CBDC might otherwise provide.

Improve the speed of payments – Some proponents of CBDC have argued that it might improve the speed of payments.⁴⁹ Although theoretical CBDC research has prioritized transaction processing speed, it has shown processing speeds to be “comparable to card payment methods and existing interbank instant payment systems,” suggesting that any improvements in speed would be negligible.⁵⁰ Additionally, it is unclear

<https://markets.businessinsider.com/currencies/news/janet-yellen-bitcoin-misuse-cryptocurrencies-growing-problem-tesla-2021-2-1030071724>).

⁴⁸ President’s Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, “Report on STABLECOINS” (Nov. 2021), p. 7 (available at: https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf).

⁴⁹ See, for example, Eswar Prasad, “Central Banking in a Digital Age: Stock-Taking and Preliminary Thoughts,” Hutching Center on Fiscal & Monetary Policy, Brookings Institution (Apr. 2018) (available at: https://www.brookings.edu/wp-content/uploads/2018/03/es_20180416_digitalcurrencies_final.pdf), p. 23 (touting increased transaction speed, improved security, and lower costs from CBDCs and cryptocurrencies in the international monetary system); “Central bank digital currencies: foundational principles and core features,” *supra* note 14, p. 7, Box 2 (arguing that CBDC could, in certain forms, improve the speed and efficiency of cross-border payments); and PYMNTS, “Digital Dollar Exploration Gets Backing From Treasury Secretary Yellen” (Feb. 22, 2021) (available at: <https://www.pymnts.com/digital-payments/2021/digital-dollar-exploration-gets-backing-from-treasury-secretary-yellen/>) (noting Treasury Secretary Yellen expressed support for exploration of a U.S. CBDC and recently concluded that “faster, safer, and cheaper payments” may result from a U.S. CBDC).

⁵⁰ James Lovejoy, et al., “A High Performance Payment Processing System Designed for Central Bank Digital Currencies,” p. 1 (contained in “Project Hamilton Phase 1[.] A High Performance Payment Processing System Designed for Central Bank Digital Currencies,” *supra* note 28).

whether increasing the speed of authorization, clearing, and settlement (or transaction validation, execution, and confirmation), to below the level that is common among real-time payment systems (transaction completion, with a confirmation, within seconds) and available over the RTP network today presents any real advantages to consumers or businesses. Consequently, a CBDC capable of achieving authorization, clearing, and settlement/validation, execution, and confirmation in a single second, or less than a second, is unlikely to be materially more attractive to consumers and businesses than existing faster payments offerings available over the RTP network and the soon-to-be-available FedNow service.

Improve cross-border payments – A U.S. CBDC designed to address cross-border payment frictions would have to be designed as international in scope and therefore could have a significant destabilizing effect on foreign financial systems. Being an obligation of the U.S. central bank, a U.S. CBDC could prove more attractive for foreigners to hold than their native currency, particularly in times of stress.

Further, most proposals to use CBDC to reduce frictions in cross-border payments assume that CBDC would be directly transferable and function essentially as a digital bearer instrument without depository financial institution intermediaries. The use of bearer instruments is, however, problematic from a financial crimes perspective.⁵¹ Physical bearer instruments are bounded by space – there is only so much money you can fit into a suitcase. Digital bearer instruments have no such limitation. Thus, to ensure appropriate scrutiny of transactions for AML, CFT, and sanctions compliance, the CBDC would likely need to be designed for distribution through a two-tier system with regulated and supervised financial institutions or intermediaries engaged in performing AML and CFT screening functions. But once you settle on a two-tier system, and on subjecting payments to AML and CFT screening, you have reintroduced much of the friction that the use of a digital currency in cross-border payments could otherwise address. In addition, a two-tier system would also severely limit the CBDC’s usefulness for financial inclusion purposes, given that the problem that needs to be solved is financial institution account access – something users of a CBDC would need to have in a two-tier system.

Cost and friction in cross-border payments are the result of differing legal jurisdictions through which the payment must travel, with different legal standards relating to payments and different AML and CFT regimes, all of which must be addressed by the financial institutions involved in handling the payment transaction. It is important to keep in mind that what creates friction in cross-border payments is not technology – and therefore will not be materially solved by technology. Government engagement on

⁵¹ See Paul Wong and Jess Leigh Maniff, “Comparing Means of Payment: What Role for A Central Bank Digital Currency?” FEDS Notes (Aug. 13, 2020) (available at: <https://www.federalreserve.gov/econres/notes/feds-notes/comparing-means-of-payment-what-role-for-a-central-bank-digital-currency-20200813.htm>) (at “Bearer Instrument,” noting that simply holding and transferring a bearer instrument convey value).

addressing and harmonizing different legal regimes relating to payments would be more likely to yield dividends in lowering costs and reducing friction than would a CBDC.

From a speed and efficiency standpoint, The Clearing House Payments Company, through its IXB Initiative, is already working to link its real-time payments system, the RTP network, with other real-time payments systems around the world and has completed a proof-of-concept of the underlying technology and announced an upcoming pilot.⁵² The linking of real-time payments systems across the globe will allow cross-border payments to clear and settle in real-time or near real-time with some minimal delay for intermediaries to complete their compliance functions. A CBDC cannot materially improve on the speed and efficiency that will be delivered through the linking of real-time systems.⁵³ In addition to IXB, improvements in international bank-to-bank wire transfers could also be facilitated through extended hours of operation (such as 24x7x365 Fedwire Funds Service operation),⁵⁴ broad adoption of ISO 20022 standards, increased implementation of SWIFT GPI, and other potential and current market improvement initiatives.

Facilitate monetary policy – Some proponents of a CBDC have suggested that it would provide the Fed with another tool through which it can conduct monetary policy. Because a CBDC could be programmable or involve a direct, ongoing relationship with the central bank it could, in contrast to paper Federal Reserve notes, be designed to include certain features to support monetary policy.⁵⁵ For example, a CBDC that pays interest might

⁵² The Clearing House, SWIFT, and EBA CLEARING, “EBA CLEARING, SWIFT, and The Clearing House join forces to speed up and enhance cross-border payments” (Oct. 11, 2021) (available at: https://www.theclearinghouse.org/payment-systems/articles/2021/10/10112021_cross-border-ixb); and “EBA CLEARING, SWIFT, and The Clearing House to deliver pilot service for immediate cross-border payments” (Apr. 28, 2022) (available at: https://www.theclearinghouse.org/payment-systems/articles/2022/04/ebacl_tch_swift_cross_border_ixb_04-28-2022).

⁵³ Linking real-time systems also has the benefit of leveraging a technology that is largely already in existence. As of 2021, there were more than 60 real-time payments systems, covering 65 countries/territories, in operation, and more under development. (See Central Banking, “Real-time payment systems for the real world” (Aug. 16, 2021) (available at: <https://www.centralbanking.com/fintech/7866816/real-time-payment-systems-for-the-real-world>).

⁵⁴ “Remarks by Under Secretary for Domestic Finance Nellie Liang to the National Association for Business Economics” (available at: <https://home.treasury.gov/news/press-releases/jy0673>) (Mar. 22, 2022) (noting that FedNow aims to be a 24/7 payment system that will be widely available).

⁵⁵ As David Andolfatto from the Federal Reserve Bank of St. Louis noted in his blog post, “[CBDC] gives the Fed an added [monetary policy] tool: the ability to conveniently pay interest on currency.” (See David Andolfatto, “Fedcoin: On the Desirability of a Government Cryptocurrency,” MacroMania (Feb. 3, 2015)). As researchers from Brookings put it, the implementation of monetary policy might be made more effective through CBDC issuance and dissemination in two ways: first, a central bank could institute a negative nominal interest rate and, in principle, encouraging such a rate should drive CBDC consumption; and second, large transfers of CBDC to eligible businesses, households, and individuals could occur quickly through a system in which official central bank accounts or electronic wallets are held by businesses, households, and individuals. (See Allen et. al, “Design choices for Central Bank Digital Currency,” Brookings Global Economy & Development Working Paper 140, pp. 62-64 (July 2020) (available at: https://www.brookings.edu/wp-content/uploads/2020/07/Design-Choices-for-CBDC_Final-for-web.pdf)). And as an economist from the Bank Policy Institute (“BPI”) has noted, “[a]dopting a CBDC would have two potential monetary policy benefits ... the potential for interest rates to no longer be constrained by the zero-

also allow the Fed to reduce interest rates below zero (or the zero-lower bound) in the event of a deflationary spiral, and could increase Federal Reserve control over interest rates.⁵⁶ Especially if programmable, a CBDC could also be designed to accommodate rules such as defined expiration, or limited usability, which could permit more targeted monetary policy.⁵⁷

The impact of a CBDC on monetary policy, however, is likely to present challenges alongside any benefits it poses. Specifically, a CBDC designed for monetary policy implementation could lead to rapid and huge reductions in reserve balances (the deposits of commercial banks and other depository institutions at the Fed) when there is a flight to quality, driving up money-market interest rates and potentially destabilizing financial markets. To prepare for such swings in reserve balances, and to accommodate the potential demand for a CBDC, the Fed would have to maintain a much larger balance sheet in normal times than it does now, possibly more than one-third of GDP.⁵⁸ If investors in banks and other corporations shifted into CBDC in periods of stress, which could occur very rapidly given the digital nature of CBDC, then the Fed would need to replace the lost funding by lending potentially huge sums to banks and non-bank financial institutions, while purchasing correspondingly huge amounts of government and private securities. For these reasons, The Clearing House believes that a CBDC is unlikely to be an effective monetary policy tool and agrees with the Fed's assessment that it would only serve to "complicate monetary policy implementation."⁵⁹

In addition, the programmable features that some suggest would provide the Fed with additional monetary policy tools in the form of a CBDC would also come with unique challenges. First the programmable feature of CBDC would itself provide a potentially attractive vector for malicious actors, including unfriendly nation states, to insert malicious

lower bound ... [and] increase[d] [Federal Reserve] control of interest rates[,] especially when the FOMC eventually decides to tighten monetary policy by lifting interest rates above zero: If everyone had access to the CBDC, no one would lend at less than the CBDC interest rate." (See Bill Nelson, "The Benefits and Costs of a Central Bank Digital Currency for Monetary Policy," Bank Policy Institute, p. 1 (Apr. 15, 2021) (available at: <https://bpi.com/wp-content/uploads/2021/04/The-Benefits-And-Costs-Of-A-Central-Bank-Digital-Currency-For-Monetary-Policy.pdf>.) Further, by incorporating an interest-related feature a CBDC system might permit interest rate-related decisions by the Federal Reserve to be rapidly effectuated. (See Federal Reserve, "Money, Interest Rates, and Monetary Policy," FAQs (March 1, 2017) (available at: <https://www.federalreserve.gov/faqs/money-rates-policy.htm>) (providing information on how the Federal Reserve conducts monetary policy).)

⁵⁶ Negative interest rates on a CBDC, however, could generate a public backlash. Additionally, preserving the ability to apply a negative interest rate may require policymakers to limit the ability of holders of central bank digital currency to convert to Federal Reserve notes, commercial bank money, or some other form of holding as doing so would thwart the ability of the central bank to impose such a negative rate. At the same time, the willingness of parties to accept a negative-interest-rate-paying central bank digital currency for payment may be diminished, particularly where other forms of payment are available.

⁵⁷ Programmability, as a design feature, means the ability to predetermine the execution of certain operations if a set of conditions is met in the future.

⁵⁸ See "The Benefits and Costs of a Central Bank Digital Currency for Monetary Policy," *supra* note 55, p. 7.

⁵⁹ "Money and Payments: The U.S. Dollar in the Age of Digital Transformation," *supra* note 1, p. 19.

code into the nation's money supply. In addition, the more features that are designed or programmed into CBDC the less likely it is to be fungible with other forms of the dollar and trade at a 1:1 ratio. The Fed would also need to consider, however, that the non-payment of interest would render a CBDC less attractive than bank deposits, particularly for financial inclusion purposes.

Preserve the dollar's international role as a reserve currency – Preserving the dollar's international role is vitally important, particularly given the recent events in Ukraine and the desire to effectively impose sanctions on Russia. Proponents of a CBDC may be recalibrating arguments in support of it in terms of a CBDC serving a national security purpose.⁶⁰ While this argument has timely emotional appeal, it makes little logical sense.

First, the existence of a U.S. CBDC does nothing to diminish the availability to Russia and other sanctioned parties of the digital yuan, bitcoin and other cryptocurrencies to avoid sanctions. Second, whether or not a U.S. CBDC is available is unlikely to materially influence the use of the dollar in international trade and finance and global reserves. The U.S. dollar plays the role it does because of qualities underpinning the dollar's value and stability – i.e., respect for the rule of law, stable government, well-regulated and efficient markets, sound U.S. economic policies, etc.⁶¹

Importantly, where studies have been undertaken to determine whether the introduction of a CBDC would likely affect use of a particular currency in international trade and finance, those studies have shown that it would not.⁶² This finding is consistent with findings by some of the Fed's own economists that while “[a] shifting payments landscape could [] pose a challenge to the U.S. dollar's [international] dominance ... it is unlikely that technology alone [(including the introduction and growth of official digital currencies)] could alter the landscape enough to completely offset the long-standing reasons the dollar has been dominant.”⁶³ The United States and most of the developed world already have a highly functioning payments system that supports international trade

⁶⁰ See, for example, Podcast featuring Hon. Nazak Nikakhtar and Steve Obermeier, Partners, Wiley Rein LLP, Erik Bethel, Senior Advisor, Project on Prosperity and Development at the Center for Strategic and International Studies, and Colin Leach, International Trade Specialist, Office of Finance and Insurance Industries, U.S. Dept. of Commerce (2022) (available at: <https://www.jdsupra.com/legalnews/digital-currency-and-national-security-i-34783/>).

⁶¹ See Carol Bertaut, Bastian von Beschwitz & Stephanie Curcuru, “The International Role of the U.S. Dollar,” FEDS Note (Oct. 6, 2021) (available at: <https://www.federalreserve.gov/econres/notes/feds-notes/the-international-role-of-the-u-s-dollar-20211006.htm>).

⁶² See European Central Bank, “The international role of the euro, June 2021,” at Box 8 (available at: <https://www.ecb.europa.eu/pub/ire/html/ecb.ire202106~a058f84c61.en.html#toc2>) (running model simulations on the impact of a digital euro on the international role of the euro and concluding that a digital euro “would not necessarily be a game changer for the international role of the euro, which will continue to depend to a large extent on fundamental forces, such as stable economic fundamentals, size, and deep and liquid financial markets”).

⁶³ “The International Role of the U.S. Dollar,” *supra* note 61.

and finance to which improvements are rapidly being made. It is therefore unlikely that a CBDC would have sufficient additive value to advance the dollar's role. Rather than adopt a CBDC, the U.S. should continue to do everything it can to ensure that the reasons the dollar plays the role it does continue – i.e., continue to support respect for the rule of law and stable government, and continue to ensure that U.S. markets are well-regulated and efficient and that U.S. economic policies are sound. Further, if technology becomes a factor at a later date, and there is demand from countries/persons/corporations for new or different payment solutions, then the private sector stands ready to meet those needs.

Finally, introduction of a CBDC could actually diminish the role of the U.S. dollar in international trade and finance. Political risk associated with an international U.S. CBDC could accelerate the world's movement away from using the dollar as the global reserve currency and currency of choice for international trade and finance because part of the attractiveness of the dollar today is the fact that U.S. commercial banks are generally averse to extra-judicial seizures of deposits, which gives depositors confidence in U.S. property rights and the rule of law generally. A U.S. CBDC that is international in scope would presumably lower the friction to freezing assets of foreign parties and could also be subjected to extra-judicial political pressure to freeze assets. Foreign countries/persons/corporations might see this as a reason to further diversify the currencies they use for international trade in order to avoid political interference with their foreign reserves.⁶⁴ Were a U.S. CBDC to become politicized or perceived as risky, then foreign countries/persons/corporations might also be reluctant to adopt, or simply avoid, a U.S. CBDC, similar to the way in which U.S. corporations have exhibited reluctance to participate in the Chinese financial product marketplace.⁶⁵

⁶⁴ See Akinari Horii, "The Evolution of Reserve Currency Diversification," BIS Economic Paper No. 18 (Dec. 1986) (available at: <https://www.bis.org/publ/econ18.pdf>) (observing different motivations for calibrating and recalibrating diverse reserve currency holdings); and Serkan Arslanalp and Chima Simpson-Bell, "US Dollar Share of Global Foreign Exchange Reserves Drops to 25-Year Low," International Monetary Fund Blog (May 5, 2021) (available at: <https://blogs.imf.org/2021/05/05/us-dollar-share-of-global-foreign-exchange-reserves-drops-to-25-year-low/>) (reporting a decrease in U.S. dollar holdings of central banks).

⁶⁵ See Jeremy Mark, "US-China financial market tensions: The road to riches or ruin?" Atlantic Council (Jan. 31, 2022) (available at: <https://www.atlanticcouncil.org/blogs/new-atlanticist/us-china-financial-market-tensions-the-road-to-riches-or-ruin/>) (noting that Chinese government data protection laws and requirements are impacting U.S. corporate behavior and investment). See also "U.S. Firms in China Cautious About Expanding Amid Crackdowns," Bloomberg News (Mar. 7, 2022) (available at: <https://www.bloomberg.com/news/articles/2022-03-08/u-s-firms-in-china-unwilling-to-expand-over-regulatory-concerns>) (noting that U.S. firms reported concern about increasing investment in China due to regulatory uncertainty and concerning Chinese state actions); and Department of Homeland Security, "Data Security Business Advisory" (Dec. 2020) (available at: <https://www.dhs.gov/publication/data-security-business-advisory>) (advising U.S. businesses of risks associated with doing business with firms influenced by the Chinese Communist Party and with efforts by the People's Republic of China to monitor and record data).

C. The additive value of a CBDC is unclear, particularly given existing efforts by the private and public sectors to modernize the payments system

The diverse and highly competitive payments system in the U.S. provides consumers and businesses with an extraordinary degree of choice at low cost and is constantly improving.⁶⁶ Further, significant private-sector efforts are already under way to improve cross-border payments, to facilitate person-to-person payments, to expand operating hours, and to generally reduce frictions in payments. These efforts will continue in the absence of a U.S. CBDC.

The Clearing House introduced its real-time payments system, the RTP network, several years ago.⁶⁷ The network currently has technical reach to roughly 75% of the demand deposit accounts in the country.⁶⁸ The RTP network gives the banking industry a modern platform for domestic payments, complete with rich data capabilities and immediate payment confirmation.⁶⁹ The system enables instantaneous settlement and availability, so funds that are transferred can be used or withdrawn as cash within seconds.⁷⁰ The Clearing House recently announced an increase in the value limit for transactions on the RTP network to \$1 million.⁷¹

Bank-led innovation is also evident in Early Warning Service's creation of the Zelle service for domestic P2P payments. The Zelle service enables individuals to transfer funds from their bank account to another domestic registered user's bank account using a mobile device or the website of a participating banking institution⁷² Zelle payments typically clear in a matter of minutes and are generally available to consumers that have accounts with participating financial institutions without cost.⁷³ The industry has also moved to make same-day payments readily available through the automated clearing house system

⁶⁶ See Congressional Research Service, "Central Bank Digital Currencies: Policy Issues" (Feb. 7, 2022) (available at: <https://sgp.fas.org/crs/misc/R46850.pdf>), pp. 19 & 20 (noting that retail digital payment options that operate over traditional payments rails are widely available in the U.S. and improving rapidly).

⁶⁷ The Clearing House, "First New Core Payments System in the U.S. in more than 40 Years Initiates First Live Payments" (Nov. 14, 2017) (available at: <https://www.theclearinghouse.org/payment-systems/articles/2017/11/20171114-rtp-first-new-core-payments-system>).

⁶⁸ See "Real-time payment systems for the real world," *supra* note 53.

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ The Clearing House, "TCH to Raise RTP® Network Transaction Limit to \$1 Million" (Apr. 6, 2022) (available at: https://www.theclearinghouse.org/payment-systems/articles/2022/04/tch_raise_rtp_network_transaction_limit_1million_04-06-2022).

⁷² See Zelle, "What's Zelle®? Glad you asked!" (2022) (available at: <https://www.zellepay.com/>). See also "Zelle (payment service)," Wikipedia entry (2022) (available at: [https://en.wikipedia.org/wiki/Zelle_\(payment_service\)](https://en.wikipedia.org/wiki/Zelle_(payment_service))).

⁷³ See Zelle, "How long does it take to receive money with Zelle®?" (2022) (available at: <https://www.zellepay.com/fag/how-long-does-it-take-receive-money-zelle>); and Zelle, "Sending Money Safely with Zelle®" (2022) (available at: <https://www.zellepay.com/blog/sending-money-safely-zelle>) (noting that transactions are typically completed within minutes and generally do not incur transaction fees).

(“ACH”).⁷⁴ The transaction value limit for same-day ACH payments was recently increased to \$1 million.⁷⁵ In addition to the RTP network, Zelle, and improvements to the ACH system, the Federal Reserve has plans to introduce its own real-time payments system sometime in 2023 or 2024.⁷⁶ These bank and central bank led developments join a host of non-bank fintech payment innovations that are present in the market, providing a robust and competitive payments marketplace.⁷⁷

With regard to cross-border payments, The Clearing House Payments Company through its IXB Initiative has demonstrated the feasibility of linking the RTP network with other real-time payments systems around the world and is proceeding with an actual pilot.⁷⁸ As of 2021, there were more than 60 real-time payments systems, covering 65 countries/territories, in operation and more under development.⁷⁹ The linking of real-time payments systems across the globe will allow cross-border payments to clear and settle in real-time or near real-time. A CBDC cannot materially improve on the speed and efficiency that will be delivered through the linking of real-time payment systems.⁸⁰

In addition to IXB, improvements in international bank-to-bank wire transfers could also be facilitated through extended hours of operation, such as 24x7x365 Fedwire Funds Service operation, which the Fed has indicated it is studying.⁸¹ Broad adoption of ISO

⁷⁴ See Nacha, “Same Day ACH \$1 million increase” (2022) (available at: <https://www.nacha.org/resource-landing/same-day-ach-resource-center>) (noting the history of same-day-funds-availability initiatives using ACH).

⁷⁵ *Id.*

⁷⁶ See The Federal Reserve FRBServices.org, “About the FedNow[SM] Service” (2022) (available at: <https://www.frbservices.org/financial-services/fednow/about.html>); The Federal Reserve FRBServices.org, “FedNow Instant Payments” (available at: <https://www.frbservices.org/financial-services/fednow>); and The Federal Reserve FRBServices.org, “Service Provider Showcase” (2022) (available at: <https://explore.fednow.org/explore-the-city?id=10&building=showcase-theater&page=1>) (providing details on the Fed’s real-time payments service, FedNow). See also Board of Governors of the Federal Reserve System, “Federal Reserve announces details of new 24x7x365 interbank settlement service with clearing functionality to support instant payments in the United States” (Aug. 6, 2020) (available at: <https://www.federalreserve.gov/newsevents/pressreleases/other20200806a.htm>) (noting a target launch date of 2023 or 2024).

⁷⁷ See “Delivering Financial Products and Services to the Unbanked and Underbanked in the United States - Challenges and Opportunities,” *supra* note 32, pp. 11-21 (noting non-bank financial products and services, and reasons why U.S. households and individuals use non-bank services).

⁷⁸ “EBA CLEARING, SWIFT, and The Clearing House join forces to speed up and enhance cross-border payments” and “EBA CLEARING, SWIFT, and The Clearing House to deliver pilot service for immediate cross-border payments,” *supra* note 52.

⁷⁹ “Real-time payment systems for the real world,” *supra* note 53.

⁸⁰ Linking real-time systems also has the benefit of leveraging a technology that is largely already in existence. As of 2021, there were more than 60 real-time payments systems, covering 65 countries/territories, in operation, and more under development. (See “Real-time payment systems for the real world,” *supra* note 53.)

⁸¹ See “Federal Reserve announces details of new 24x7x365 interbank settlement service with clearing functionality to support instant payments in the United States,” *supra* note 76; and Board of Governors of the Federal Reserve System, “Frequently Asked Questions,” at “Federal Reserve Actions to Support Instant Payments” (2022) (available at: https://www.federalreserve.gov/paymentsystems/fednow_faq.htm) (noting areas of Fed

2022 standards also holds promise. ISO 2022 is a global and open standard that creates a common language for payments worldwide and that will result in boosting operational efficiency, enhancing customer experience through more robust data standards and better data throughput, and enabling new, innovative services.⁸² More robust global implementation of SWIFT GPI also holds promise to improve the speed, efficiency, transparency, and data integrity of cross-border payments.⁸³

Given these improvements in both domestic and cross-border payments, it is difficult to understand what the additive value of a CBDC would be. A CBDC would take years to develop and implement, and ubiquitous real-time payments of dollars will likely already be the status quo if and when a CBDC were to become available.⁸⁴ While a CBDC has been touted as a way to reduce counterparty risk currently involved in settlement, real-time settlement will also reduce that risk.⁸⁵ The Clearing House agrees that there is no “compelling demonstrated need” for a CBDC, because central banks and private banks already operate trusted electronic payment systems that generally offer “fast, easy, and inexpensive transfers of value.”⁸⁶ Retail digital payment options that operate through the traditional payments system are “widely available and improving rapidly.”⁸⁷

Some have argued, however, that the government must preserve the public’s access to a form of central bank money with which to make payments, a “safe settlement asset.”⁸⁸ This argument ignores the reality, however, that cash has not been able to be used widely for many types of payments for decades as commerce has increasingly become less local in nature and increasingly internet based and digitized. Moreover, cash has never been practical for use in large-value payments due to its physical constraints. The narrative that the public has a right to make payments in central bank money ignores the reality that

study and interest). *See also* “Remarks by Under Secretary for Domestic Finance Nellie Liang to the National Association for Business Economics,” *supra* note 54.

⁸² SWIFT, “What is ISO 2022?” (available at: <https://www.swift.com/standards/iso-20022>).

⁸³ SWIFT, “SWIFT gpi[,] The new norm in cross-border payments” (available at: <https://www.swift.com/our-solutions/swift-gpi>). *See also* Money Mover, “What is SWIFT gpi?” (available at: <https://www.moneymover.com/about/faqs/what-swift-gpi/#:~:text=initiative%2C%20SWIFT%20gpi,-,What%20is%20SWIFT%20gpi%3F,a%20new%20set%20of%20rules>).

⁸⁴ “Central Bank Digital Currencies: Policy Issues,” *supra* note 66, pp. 2, 6-7 & 19. *See also* Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets, at American University’s Kogod School of Business Center for Innovation (Apr. 7, 2022) (available at: <https://home.treasury.gov/news/press-releases/jy0706>).

⁸⁵ “Central Bank Digital Currencies: Policy Issues,” *supra* note 66, p. 7.

⁸⁶ *See* “Central Bank Digital Currencies: Policy Issues,” *supra* note 66, p. 19 (quoting Governor Lael Brainard, “Cryptocurrencies, Digital Currencies, and Distributed Ledger Technologies: What Are We Learning?” (Mar. 15, 2018) (available at: <https://www.federalreserve.gov/newsevents/speech/brainard20180515a.htm>)).

⁸⁷ “Central Bank Digital Currencies: Policy Issues,” *supra* note 66, p. 19.

⁸⁸ *See* Governor Lael Brainard, “Private Money and Central Bank Money as Payments Go Digital: an Update on CBDCs” (May 24, 2021) (available at: <https://www.federalreserve.gov/newsevents/speech/brainard20210524a.htm>) (arguing that “[c]entral bank money is important for payment systems because it represents an safe settlement asset”).

consumers have been increasingly making payments in commercial bank money for decades without injury.⁸⁹

Further, given deposit insurance and the supervised nature of insured depository financial institutions, currency is not needed for such transactions. Digital payments that rely on the use of deposit accounts at commercial banks are largely equivalent, from a systemic standpoint, to the safety that a CBDC would provide. Further, if a CBDC were subject to holding or accumulation limits to ensure it does not disrupt the financial system, those limits would invariably need to be well below the deposit insurance limit, thereby potentially making a CBDC less attractive than commercial bank deposits (other than in times of stress), which would impair the use of CBDC for numerous types of large-dollar payments.⁹⁰

Finally, payment systems in the U.S. today are diverse and highly competitive, present consumers with a significant degree of choice,⁹¹ and ensure that the vast majority of consumers pay little to nothing for most domestic payments. A U.S. CBDC would compete with existing payment systems that utilize deposit accounts and stored value denominated in U.S. dollars, including payment systems operated by the private sector (e.g., the RTP network and PayPal), and payment systems operated by the Fed (e.g., FedACH and the Fedwire Funds Service). While private-sector payment systems have been able to compete with the government successfully to date, depending on the design of U.S. CBDC, this could be the first time that consumers and business will be able to make electronic payments without relying on private-sector intermediaries or networks. Whether this vibrant, innovative payments marketplace continues to thrive may well turn on whether there is a level playing field between the government and the private sector. Even with a level playing field, if the introduction of a general purpose CBDC is not carefully calibrated, it could lead to the effective nationalization of retail banking and alternative retail financial services.

⁸⁹ *Id.*

⁹⁰ The Clearing House recognizes that there is potential tension between arguing that a CBDC is likely to diminish the aggregate amount of deposits in the banking system and the argument that making payments in commercial bank money is largely equivalent to payments in central bank money because of deposit insurance and the regulatory and supervisory structure applicable to banks. While we cannot accurately predict consumer attitudes and preferences, either way this duality gets resolved is likely unacceptable. Either CBDC will be wildly successful, in which case it will likely decimate the current bank deposit and lending system, or it will not, in which case the government will have spent considerable time, money, and other resources constructing a system without substantial additive value.

⁹¹ See, for example, Anan, Barrett, Mahajan & Nadeau, “U.S. Digital Payments: Achieving the next phase of consumer engagement,” McKinsey & Company (Nov. 25, 2020) (available at: <https://www.mckinsey.com/industries/financial-services/our-insights/banking-matters/us-digital-payments-achieving-the-next-phase-of-consumer-engagement>) (noting that consumers use numerous forms of payment and technological developments are driving rapid changes in the U.S. payments landscape).

D. Enablement would require significant private-sector investment and risk without the support of a clear business case.

To be successful, a CBDC will need to achieve scale, which will require a CBDC to provide sufficient additive qualities over alternative means of storing value and making payments. Ultimately, any CBDC that is introduced will either fulfill the purpose/function for which it is advanced, in which case it will be successful and will impact existing financial and payments systems, or it will be unsuccessful because it does not provide sufficient additive benefits over alternatives. Both the intermediated CBDC framework and the development of a payment infrastructure capable of accepting CBDC will require significant investment from private firms. That investment will in turn require business cases that support such investment. Viable business cases for building the back-office and front-office infrastructure to facilitate CBDC-based payments, or, more fundamentally, to conduct KYC/AML/CFT/OFAC screenings, will be absolute prerequisites to any intermediary establishing a relationship with a CBDC holder. A sound business case, therefore, is imperative to the success of a CBDC. To date, such a business case is not apparent.

In addition, both the private and the public sector will need to consider investments in consumer education and the work needed to address consumer protection-related concerns. Consumers must have a clear understanding of the benefits and risks of using a CBDC, as well as an understanding of how CBDC is different from traditional payment instruments and rails so that they can make informed decisions. Additionally, new laws (or revisions to existing laws) will likely be needed to ensure that appropriate consumer protections, and transaction risk allocation, are in place, with a business model that enables potential losses to be absorbed.

E. In order to guarantee the safety and soundness of any CBDC framework involving intermediaries, such intermediaries should be subject to the regulatory and supervisory structure to which insured depository institutions are subject.

The role of potential intermediaries in any CBDC framework will be an important one – and will likely carry significant risks related to ensuring AML and CFT compliance as well as taking on the role of CBDC custodian. Having an adequate regulatory and supervisory structure for CBDC intermediaries should therefore be a priority. In light of the risks associated with CBDC intermediation, The Clearing House believes that the regulatory and supervisory structure to which insured depository institutions are subject is necessary to ensure the safety and soundness of any CBDC framework involving intermediaries. This requires careful consideration of important issues, such as the separation of commerce from banking, and the importance of community investment and equal access, as well as functionally similar supervision and examination frameworks. These frameworks should include examination at the holding company level as well as the wallet- or account-holding level, robust supervision, and the application of the many requirements that function to ensure the safety and soundness of depository institutions and the payments system today (e.g., capital, liquidity, privacy,

information security, information sharing, AML, CFT, KYC, operational resiliency and cybersecurity requirements).

To the extent Congress granted authority to the Federal Reserve to use non-depository institutions as intermediaries to distribute and hold CBDC, the Federal Reserve must be given supervisory and regulatory authority over those entities and apply an equivalent regulatory/supervisory framework as applies to banks to nonbanks. This regulatory and supervisory framework is necessary to ensure the safety and soundness of the operations of such intermediaries and to instill the confidence and trust of the public in an intermediated CBDC system.

F. Legal tender status is not necessary to make CBDC successful but if legal tender status is given to CBDC, there will be costs incurred by creditors, which will need to be able to accept and have a means to use it.

Most discussions of CBDC assume that the CBDC would be treated as currency of the U.S. and would therefore have legal tender status. This, however, is a choice. Today, federal law provides that U.S. coins and currency (including Federal Reserve notes and circulating notes of Federal Reserve Banks and national banks) are legal tender for “all debts, public charges, taxes, and dues.”⁹² Legal tender is not, however, required to be accepted for payment for goods or services under U.S. law.⁹³ As the acceptance of other forms of “money” to extinguish debts is not prohibited, Federal Reserve account balances, which are not legal tender, have become the preferred means of settling interbank payment obligations.

TCH does not believe legal tender status is necessary for a successful CBDC and notes that if legal tender status is given to U.S. CBDC, there will be costs incurred by creditors as they will need to be able to accept and have a means to use the CBDC. This will likely mean engaging a third party, such as a wallet provider, or investing in technology that is designed to work with U.S. CBDC. While policymakers will understandably want to consider whether conferring such status is useful,⁹⁴ both private and public sector factors

⁹² 31 U.S.C. § 5103.

⁹³ See Treasury, “Legal Tender Status” (2011) (available at: <https://www.treasury.gov/resource-center/faqs/currency/pages/legal-tender.aspx>) (noting that there is no requirement that legal tender currency or coin be accepted for payment).

⁹⁴ The importance of legal tender status as it relates to CBDC should be considered. As researchers from the National Bureau of Economic Researchers have reasoned:

[C]entral banks operate under regimes that have enacted legal tender laws whose function is to compel acceptance of their notes. Such laws do not require parties to contract in the currency of the central bank, but they deny legal recourse to a party who refuses to accept the legal tender of the country as payments for debts contracted in some other medium of exchange. This gives rise to Gresham’s Law, namely that bad money drives out good. At the same exchange rate, a

should be considered before deciding to grant CBDC legal tender status. If, after considering these factors, CBDC is meant to be an equivalent of Federal Reserve notes, then Congress must clarify that CBDC is currency of the U.S., and thus legal tender. The Clearing House notes that, if CBDC ultimately is designated as legal tender, the law may also need to address what constitutes an effective tender given the technology requirements for accepting a tender of CBDC and challenges associated with establishing infrastructure that enables CBDC acceptance.

G. Interoperability or transferability across multiple payments systems raises important questions that should be explored further.

For the most part, payment platforms are not designed today to allow transfers between them, and it is unclear how a CBDC would be designed to achieve transferability across multiple payment platforms. Essentially, each payment platform today has its own rules and statutory framework, different technological underpinnings, and different settlement mechanisms. And while most payment platforms today do two fundamental things – they transfer information and they settle the payment – interoperability across different systems would significantly increase operational and legal complexity and risk. New technology, technical standards, and rules might, to a degree, permit interaction between systems, but still may be insufficient to support true transferability in a manner within each system’s risk tolerance. In order to fully address the transferability question, it will be necessary to understand whether and how the Fed would be transforming all of its payments systems, including the Fedwire Funds Service, FedACH, and FedNow, to enable messages sent over those systems to result in settlement using CBDC. Because payments are settled in most intermediated systems through the use of accounts at the Federal Reserve Banks, or through proprietary ledgers that are information only but backed by a pool of assets/funds, it will also be vital to know whether intermediaries in a CBDC system will have access to Federal Reserve accounts.

Overall, it is The Clearing House’s view that the framework for a U.S. CBDC should be sufficiently flexible to allow other types of transfers, and to avoid payment rail isolation/non-interoperability. Similar to proposals being developed by private firms to

debtor is less likely, *ceteris paribus*, to pay in appreciated currency if he has the option to pay in depreciated currency.

Legal tender laws therefore confer a monopoly privilege on the government, allowing it to operate its printing press. Without such laws, central banks would simply be banks. If consumers were allowed to refuse acceptance of central bank currency for public and private debts, a regime of free banking would exist and the central bank would be forced to operate monetary policy in accord with the demands of its consumers and not according to political or policy goals untethered from the market....

(See Max Raskin and David Yermack, “Digital Currencies, Decentralized Ledgers, and the Future of Central Banking,” NBER Working Paper No. 22238, p. 7 (May 2016) (available at: https://www.nber.org/system/files/working_papers/w22238/w22238.pdf.)

create shared ledgers with different partitions to allow greater interoperability, establishing a CBDC framework would involve developing something new, and not transforming the infrastructures that exist today. New development presents new opportunities, and were the Fed to proceed with developing a CBDC, the following questions should be considered:

- Would commercial bank deposits (possibly as tokenized deposits) be able (and allowed) to be transferred over the same network as the CBDC?
- Would a CBDC rail that the Fed sets up be able to transfer tokenized liabilities of the Fed?
- How would the Fed’s other systems, including the Fedwire Funds Service, FedACH, and FedNow interact with a Fed CBDC system?
- Would a Fed CBDC system interact with other nations’ CBDC systems?
- Would the CBDC architecture allow for transmission of regulated liabilities generally?
- How would a CBDC system avoid becoming a payment system in isolation, particularly in light of the fact that what it would be transmitting is fundamentally different than what other payment systems transmit today?

IV. Conclusion

For the foregoing reasons, The Clearing House believes that the risks associated with the possible issuance of a CBDC in the U.S. outweigh its potential benefits and that the policy goals that have been articulated in support of a CBDC would best be addressed through less risky, more efficient, and more economical alternatives that are readily available in the market today.

Thank you for your consideration and review of these comments. If you have any questions or wish to discuss this letter, please do not hesitate to contact me using the contact information provided below.

Yours very truly,

/S/

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Appendix

Summary of Alternative Solutions to Achieve Potential Policy Goals Associated with CBDC

Purpose	CBDC	Alternative Solutions
Financial Inclusion/Distribution of Government Benefits	Pros: <ul style="list-style-type: none"> - Government support Cons: <ul style="list-style-type: none"> - Poorly suited for the U.S. unbanked population - May crowd out or compete with other systems and innovations - Potential to disrupt banking and payments ecosystems 	<ul style="list-style-type: none"> - No- and low-cost bank accounts - Bank On-certified accounts - Prepaid cards - Alternative financial products and services (e.g., fintech services) - Instant bank-centric payment systems with immediate funds availability (e.g., RTP network and FedNow)
To Defend Against Unregulated Private Currencies	Pros: <ul style="list-style-type: none"> - Provides government with additional tool in public-private currency competition Cons: <ul style="list-style-type: none"> - May crowd out or compete with other systems and innovations - Potential to disrupt banking and payments ecosystems 	<ul style="list-style-type: none"> - Regulate private currencies to the extent not captured under current regulatory schemes. In particular, stablecoins should be brought within the regulatory perimeter
To Improve Cross-Border Payments	Pros: <ul style="list-style-type: none"> - Could reduce the number of entities involved in a cross-border payment - Could reduce the number of networks involved in a cross-border payment Cons: <ul style="list-style-type: none"> - Not likely to be any more effective in improving cross-border payments than private sector efforts - May increase AML/CFT risk and sanction evasion - May crowd out or compete with other systems and innovations - Potential to disrupt banking and payments ecosystems 	<ul style="list-style-type: none"> - Improvements in International bank-to-bank wire transfers through extended hours of operations, adoption of ISO 20022 standards, SWIFT GPI, and other market improvement initiatives - Potential to extend reach of domestic instant payments systems to support cross border payments - Improved transparency in remittance transfers - Government efforts to remove frictions that only the government can address (e.g., disparate regulatory and consumer protection frameworks across jurisdictions)

	<ul style="list-style-type: none"> - Potential to disrupt foreign banking markets 	
To Facilitate Monetary Policy	<p>Pros:</p> <ul style="list-style-type: none"> - Unlocks new tools <p>Cons:</p> <ul style="list-style-type: none"> - Forces central bank to take a more active role in lending and to assume risks in times of crisis - Politicization of the central bank (requires mass adoption) 	<ul style="list-style-type: none"> - Traditional tools of the Federal Reserve, including interest on reserves, discount rate, buying and selling government securities
Preservation of U.S. dollar as a Reserve Currency	<p>Pros:</p> <ul style="list-style-type: none"> - U.S. would have a CBDC to defend against the introduction of CBDC by other governments <p>Cons:</p> <ul style="list-style-type: none"> - Potential to destabilize both domestic and foreign financial system 	<ul style="list-style-type: none"> - Ensure that the factors that have made U.S. dollar a reserve currency continue – stable government, rule of law, etc. are maintained - Conduct a wide-ranging study to determine whether there are ways in which the status of the U.S. dollar as the world’s reserve currency might be augmented without a U.S. CBDC

