May 18, 2022

Ann E. Misback
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, N.W.
Washington, DC 20551

Via Electronic Submission to Digital-innovations@frb.gov

Re: Money and Payments: The U.S. Dollar in the Age of Digital Transformation

Dear Ms. Misback:

We are pleased to submit this joint comment letter to the Federal Reserve Board (the "Board") regarding its Request for Comment (RFC). Phyllis Meyerson and David Walker support the Federal Reserve pursuing the development of a new U.S. payment system based on a central bank digital currency as a Federal Reserve liability with its value pegged to value of the U.S. dollar. Ms. Meyerson and Mr. Walker have a combined banking, payments (ACH, check and Fedwire), and IT experience of more than 90 years.

We view such a U.S. Central Bank Digital Currency (CBDC) as essential to maintaining the dominance of the U.S. dollar in the global economy.

We support providing CBDC services through commercial banks and regulated nonbank financial service providers. Our current payment systems use service providers for multiple functions and are integral to the inclusion of smaller banks and certain consumer segments. We encourage the continued use of these entities in the new digital CBDC environment so long as proper risk controls are in place as they are for many service providers today.

The current payment systems available in the U.S. can efficiently address most payment needs of U.S. consumers and businesses. However, the current payment systems do not address the need for fast, predictable, convenient payments for individuals and businesses in the global economy for cross border payments. We believe a digital currency that is a Federal Reserve liability based on the value of the U.S. dollar can best address this need. While there are several defensive reasons to pursue CBDC, such as international and non-bank competition in digital currencies and the risk of evolving, unregulated payment options, the primary opportunity before us is the creation for a payment system to support a global economy. None of our current payment systems satisfy this growing need.

The responses to the Specific Questions in the RFC are based on our following assumptions:

a. CBDC is to be a liability of the Federal Reserve – The alternative would be for CBDC to be investments and as such we would oppose the creation of CBDC.
b. CBDC deposits at commercial banks (as defined in the RFC) would fall under federal deposit insurance as are other commercial bank deposits.
c. CBDC would trade at par value.
d. CBDC is to be trackable as to who has "access" to each CBDC. The RFC uses the term "Access" but does not define it.
e. CBDC is to be immediately final and irrevocable.
f. CBDC is intended to be used for micropayments. It is assumed that by micropayments, the Board means small value payments. This raises several questions including, but not limited to; 1) what denomination(s) would be issued, 2) how would denomination(s) be subdivided into smaller denominations and 3) how would those subdivided denominations be recombined at some future time? See Specific Responses 1.d and 1.e below.
g. CBDC is to be used in cross border payments as a liability of the Federal Reserve and CBDC could potentially enhance and greatly simplify cross border payments. For example, the need for currency exchanges could be moved from the middle of the payment process to after the CBDC payment has been received. Also see Specific Response 4.b below.
h. The Board does not currently have the authority to create CBDC and therefore Congressional legislative action would be required to approve any such authority.
i. Regulation E, in its current form, would not apply. Modification to Regulation E would be needed which might require additional Congressional legislative action as well. The aspiration that CBDC would be immediately final and irrevocable is in direct conflict with the current provisions of Regulation E that provide consumers with protections from unauthorized transactions.
j. The Federal Reserve would only provide direct access to its CBDC services to commercial banks as provided in the Federal Reserve Act. Nonbanks would receive CBDC related services through commercial banks.
k. The value of CBDC would be pegged to value of the U.S. dollar.
l. Each commercial bank with deposits at the Federal Reserve would be required to have accounts for U.S. dollar and CBDC.
m. CBDC, as a new, trackable currency, would require multi-currency financial accounting by:
    1) the Federal Reserve for both the U.S. dollar and CBDC accounts and
    2) each commercial bank for its accounts with the Federal Reserve and
    3) each commercial bank for its customers' accounts that transact in CBDC and
    4) each bank customer for CBDC transactions with other bank customers.

n. CBDC will not interface with existing ACH or check payment systems because of liquidity risks and lack of tracking. Liquidity risks are created as the result of timing differences for processing and finality when interfacing a real-time system with a batch system with end-of-day processing.

o. CBDC will not interface with Fedwire because Fedwire does not have the ability to track CBDC access. Also see Specific Response 19.e below.

p. Only limited amounts of remittance data, if any, such as invoice information would flow through the new CBDC payment system for reasons described in Specific Response 2.g below.

q. The Federal Reserve will develop a security system that protects the CBDC system and CBDC payments.

Specific Responses to questions in the Request for Comment (RFC):

1. What additional potential benefits, policy considerations, or risks of a CBDC may exist that have not been raised in this paper?

   The RFC does not provide details as to how a new CBDC system might work. Those details are needed to answer this question and are also needed prior to the Federal Reserve moving forward. Some examples are:

   a. How will the Federal Reserve introduce the new currency? Presumably, the U.S. Treasury will issue CBDC to the Reserve Banks that will provide CBDC to each commercial bank. How CBDC is to be provided to commercial banks will need to be defined. For example, will Reserve Banks require that each commercial bank holds some minimal amount of CBDC? Or will the Federal Reserve provide commercial banks with CBDC only as the banks request the new currency? One reason to consider issuing some minimal amount of CBDC to all commercial banks would be to encourage the adoption and use of CBDC.

   b. If CBDC is issued in addition to existing fiat currency, the total money supply would be expanded. Alternatively, CBDC could be issued in lieu of some amount of fiat currency without expanding the existing money supply. This would reduce the overall value of fiat currency in circulation while keeping the total supply constant.

   c. Who will hold the CBDC records and perform consensus, validation, and tracking functions? Would this be the Federal Reserve, or commercial banks, or some combination of both along with nonbank processors, including third-party processors?

   d. In what denomination(s) would CBDC be issued? Will there be multiple denominations such as with existing fiat currency or will CBDC be issued in a single denomination? A single denomination that supports micro-payments suggests each CBDC would be issued in a small denomination. Alternatively, a larger denomination could be issued that could be subdivided into

multiple sub-denominations. The creation of new sub-denominations suggests that CBDC might also need to be combined into super denominations.

e. If CBDC denominations can be sub-divided into smaller denominations, will tracking of these sub-denominations be performed for each sub-denominated CBDC in the same way as for whole CBDC?
   1) If CBDC denominations can be sub-divided into smaller denominations, how would the smaller denominations later be combined into larger denominations?
   2) If recombination is not provided, then throughput could become an issue when a payment of $1,000 requires many thousands of sub-denominations to make up the total $1,000 value. This volume would be slow to process, difficult to reconciled, validate and costly to track and retain records of who has access.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?
   a. Consumers have many available options for most payments without the need for a new currency. CBDC is final and irrevocable, therefore Regulation E in its current form would not apply and consumers would lose some protections and some incentive to use CBDC. From the consumer's perspective, real-time or near-real-time payments offer essentially the same benefits as CBDC. If consumers were to select CBDC as the payment of choice in the absence of Regulation E modifications, some of the risks that are currently absorbed by banks or processors would be shifted to consumers. However, most consumers are not likely to understand the risk impact of selecting a CBDC payment over a non-CBDC payment. CBDC as payments, rather than investments, would offer few benefits to most consumers for most payments beyond other current alternatives. Even the substitution of CBDC for checks would have a de minimis benefit as consumers already write very few checks.
   b. For high value payments, consumers would continue to have Fedwire should immediate finality and irrevocability be desired but the volume of consumer Fedwire payments is relatively low. Therefore, CBDC holds little, new, additional value beyond that currently available from Fedwire.
   c. For the limited number of cyber payments currently made by consumers, CBDC could reduce the risk of unpredictable valuation. CBDC could stem the growth of these transactions in favor of a payment with a more predictable value. CBDC would address consumers' interest in cyber offerings as payments but would not address those payments requiring personal privacy since CBDC would be trackable.

d. Consumers with CBDC accounts would need to perform multi-currency accounting and reconciliation of each of their currency accounts.

e. Consumers who send/receive cross border payments would have a new benefit not available with other alternatives. As a Federal Reserve liability and a new digital currency, with a lower cost, greater cost predictability, streamlined processing and enhanced processing speeds, CBDC would create a new value that cannot be replicated by existing alternative payment systems. Also see Specific Response 4.b below.

f. Businesses would experience the same cross border benefits as consumers and these are not available in other existing alternatives.

g. Some payments, especially medical payments, include large volumes (boxes) of remittance data. This poses the question as to whether, in a CBDC environment, it would be efficient for all the data to flow through the payment system with the payment. Some business payments with low volumes of remittance data flow with the payment through the ACH and Fedwire systems. Most business payments with high volume remittance data continue to use checks. When writing checks, the remittance data flows from the check writer to the payee along with the payment. The payee then separates and retains the remittance data from the check which is then cleared through the check payment system. If large data volumes were to flow with the payment through the payment system, the system processing capacity would have to be multiple times larger than if it did not. Without sufficient processing capacity, the CBDC payment system could experience throughput issues resulting in slower than immediate payments or payments that are held over to the following day's processing cycle or worse yet, create system failures.

h. Businesses that send and/or receive remittance data with payments/receipts may not benefit from CBDC and especially for those payments associated with high volumes of remittance data. Also see Specific Response 2.g above. When the flow of remittance data is separated from the flow of CBDC payments, businesses must redesign their workflows. This workflow redesign applies to both the sender and the receiver of payments and creates more complicated reconciliation processes between payments, invoices, discounts, returns, etc. Although the speed of the payment might be accelerated, the receipt and reconciliation of the remittance data may be delayed, and the resulting complications may deter businesses from using CBDC for many payments. Similar remittance/payment processing functionality has been available to businesses for many years, but businesses have not yet widely adopted those options. The adoption of CBDC by businesses with high remittance data requirements will depend on how the processing of both the payment and the remittances are designed.

i. Businesses that currently use Fedwire to achieve immediate finality and irrevocability of payment might benefit from CBDC payments depending on the costs. Purchases of real estate, commodity shipments, just-in-time purchases, depend on knowing exactly when receipt of payment is completed. The exact timing of payment receipt may establish ownership in a real estate transaction or impact the price of commodity shipments. CBDC could address this need for timing certainty.

j. Many government payments tend to be less time sensitive than private sector payments. Therefore, government payments would benefit less from the adoption of CBDC.

k. Government receipts could benefit from the adoption of CBDC but would depend on whether payors would pay with CBDC or whether the government would mandate receipts be in CBDC.

3. Could a CBDC affect financial inclusion? Would the net effect be positive or negative for inclusion?

   a. One factor is who has "access" and how that "access" is granted. For example, if CBDC is issued by the U.S. Treasury to the Federal Reserve and the Reserve Banks provide direct "access" only to commercial banks, all parties would need bank accounts to use CBDC. If CBDC becomes widely accepted and used, inclusion would be diminished as CBDC replaces cash. Or indirect access to CBDC could be provided by regulated, nonbank providers that have accounts with commercial banks. The nonbank providers could service the unbanked without the need for a bank account. Then the answer will depend on the costs of CBDC services provided by those nonbank providers.

   b. Another factor is the importance of anonymous payments. For those individuals who value their privacy and who want all their payments to be anonymous, the tracking of CBDC would discourage its use. So long as cash is an alternative, CBDC would have only minor impact on inclusion. Otherwise, if the availability of a cash option declines, inclusion might diminish.

4. How might a U.S. CBDC affect the Federal Reserve ability to effectively implement monetary policy in the pursuit of its maximum-employment and price-stability goals?

   a. In today's environment, the Federal Reserve is limited in its ability to manage the total money supply because of the lack of a definitive measure of the amount of cash in circulation in the U.S. and across the globe. If all or a significant percentage of cash were replaced with trackable CBDC, the Federal Reserve's monetary management position should be improved.

   b. CBDC as a Federal Reserve liability could facilitate cross border payments. This could reduce the cost of doing business by allowing businesses and consumers to interact directly with parties across the globe without having to go through correspondent banks on each side of the border to affect the payment. For example, currency conversions could be repositioned outside of the

payment process. Parties in one country could send CBDC directly to parties in another country, eliminating multiple steps in the current process. Both parties could address currency exchange considerations with their own banks outside of the payment process. This could reduce the cost of international business and personal remittances and accelerate the time from payment initiation to payment receipt. No existing payment options can offer this efficiency.

c. CBDC could be used by the Federal Reserve to purchase securities instead of using other central bank money. Currently securities are purchased for the Federal Reserve by commercial banks using central bank money deposited in the commercial bank's account at the Federal Reserve. If CBDC were deposited into the commercial bank's account at the Federal Reserve, the commercial bank could use the CBDC funds in its account to make buys for the Federal Reserve. The substitution of CBDC for other central bank money would not impact monetary policy assuming that CBDC were not issued as an increase in the overall money supply but were issued instead of currency.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?
   a. The question does not specify whose financial stability and the answer depends, in part, on whether CBDC is a payment or an investment and whether CBDC is a liability of the Federal Reserve. Our assumption is that CBDC would not be an investment vehicle and would be a payment that is a Federal Reserve liability. For U.S. domestic payments, the addition of CBDC should not create financial instability for the Federal Reserve assuming that CBDC is safe and secure.
   b. CBDC should not affect the financial stability of the Federal Reserve if total central bank money including fiat currency and CBDC is not increased beyond the amount of currency that would be issued to the Federal Reserve in the absence of CBDC.
   c. If a multi-nodal security and tracking system is implemented, and one or more entire nodes are subject to takeover and/or replication, then the Federal Reserve and the U.S. economy would be exposed to significant instability.
   d. The implementation and adoption of CBDC could create some minor disruptions due to the complications of adjusting to a multi-currency system.
   e. Counterfeiting of U.S. fiat currency is a significant problem. CBDC as a partial replacement for currency could potentially reduce currency counterfeiting. But CBDC related security failures could result in electronic counterfeiting on a massive scale.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stable coins or other nonbank money?
    a. Assuming CBDC is not implemented to immediately replace all Federal Reserve payment liabilities, the industry would need to account for dual currencies; one that is trackable (CBDC) and one that is not trackable (fiat currency). Fiat currency is:
        1) trackable between the Federal Reserve and commercial banks and
        2) trackable between commercial banks and their customers but
        3) is not trackable for payments by bank customers.
    b. Dual currency accounting would create additional costs for commercial banks to implement and to manage.
    c. Current stable coins are not replacements for Federal Reserve liabilities and therefore lack the ability to function as a U.S. backed currency.
    d. Future stable coins could be based on CBDC and used as new commercial bank money.
    e. As a trackable currency, CBDC has the potential to reduce payment fraud as it is used in lieu of other payment types. Fraud reduction has two parts, prevention, and recovery. It may be impossible to prevent fraudsters from finding ways to defraud but early detection and recovery of fraudulent payments is essential to diminish its impact. Early detection and recovery are dependent on the inclusion of a robust research functionality.
    f. CBDC creates the opportunity for commercial banks to create new services to provide their customers. For example, commercial banks could create their own stable coins based on, pegged to, and convertible to CBDC.
    g. The use of stable coins backed by CBDC could strengthen the financial sector overall by replacing some stable coins with a more secure, CBDC-based stable coin for both commercial bank and nonbank issuers of stable coins.
    h. In the absence of regulatory controls, the stability of the financial sector could be adversely affected if non-CBDC, private sector digital currencies and securities continue to grow. The introduction and broad adoption of a U.S. CBDC that is a regulated, Federal Reserve liability would provide a more secure, predictable digital option for consumers and businesses.

7. What tools could be considered to mitigate any adverse impact of CBDC on the financial sector? Would some of these tools diminish the potential benefits of a CBDC?
    a. Providers of CBDC services to nonbanks should be regulated and examined as are commercial banks and systemically important financial institutions. This creates an impact to the financial sector but a necessary one to address risks.

b. There is a risk that nonbanks could take deposits of CBDC-backed payments and then convert them into non-CBDC-backed stable coin payments essentially laundering the funds to non-trackable monies. This makes it essential that commercial banks continue to perform due diligence and KYC in the new world of digital payments.

8. If cash usage declines, is it important to preserve the general public's access to a form of central bank money that can be used widely for payments?
   a. The easy answer is yes. However, privacy issues and adverse attitudes toward commercial banks makes this difficult to provide. How does the Board propose to address these issues with a trackable, immediately final, irrevocable CBDC?

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?
   a. The answer may depend on whether any non-U.S. central bank is successful in creating a CBDC that is safe, secure, stable and that gains widespread usage across the globe. In that environment, the U.S. dollar could lose its dominate position in the world and many negative impacts could result.
   b. In the absence of any such CBDC competitor, cross border payments would continue to work as they do today, through correspondent banks on each side of each border. This is a slow and costly process for personal remittances and will continue to deter some cross border business payments.

10. How should decisions by other large economy nations to issue CBDC influence the decision whether the United States should do so?
    a. The RFC suggests that CBDC is being considered by the Federal Reserve, in part, because other governments and nonbank, non-governmental entities are implementing or planning to implement digital currencies. It is important for the U.S. to offer a secure, stable digital alternative for U.S. consumers and businesses.
    b. It is important for the Federal Reserve to monitor developments in payments across the globe and to continually investigate potential enhancements to U.S. payments.
    c. It is also important for the Federal Reserve to not just follow what others are doing or plan to do without considering the unique U.S. environment and the U.S. position of considerable influence. Those considerations include but are not limited to the existing infrastructure, existing payment systems, the U.S. population, the size of the domestic economy, the size of cross border payments between the U.S. and other countries and the dominate position of the U.S dollar. The U.S. is in

the enviable position of being able to influence how other central banks implement new payment systems.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?
    a. No comment.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?
    a. No comment.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?
    a. No comment.

14. Should a CBDC be legal tender?
    a. CBDC should have the same legal standing as other Federal Reserve payment liabilities.

15. Should a CBDC pay interest? If so, why and how? If not, why not?
    a. We assume that this question refers to whether the Reserve Banks should pay interest on CBDC accounts that they hold for commercial banks. We assume that whether interest is paid on accounts held with private sector institutions is not a question for the Federal Reserve but rather a decision for each institution to make about its customers' accounts.
    b. Reserved Banks should pay interest or not pay interest as they do now and in the future for other U.S. currency accounts.

16. Should the amount of CBDC held by a single end user be subject to quantity limits?
    a. The amount of CBDC held by a single end user should be subject to the same quantity limits as for other U.S. currencies now and in the future.
    b. As a currency and not an investment, it is not clear how large CBDC holdings would be detrimental other than to limit broad usage of CBDC.

17. Should a CBDC have "offline" capabilities? If so, how might that be achieved?

a. As a new digital currency, offline capabilities could be offered as an extension of credit, based on creditworthiness of the parties. For example, the creditworthiness of:
    1) Commercial banks for CBDC payments between the Federal Reserve and commercial banks, and
    2) Commercial banks for CBDC payments between two correspondent banks, and
    3) Bank customers for CBDC payments between a commercial bank and its customers, and
    4) Bank customers for CBDC payments between two bank customers.
b. In the event that the need for offline capability is the result of internet outages or system or various system outages, it is unclear how such capabilities might work. If the various parties cannot communicate electronically, how would digital currencies be made available from one party to the other? If electronic options were unavailable, are the only options checks or fiat currency? If not, what would they be?

18. Should CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?
    a. If the Federal Reserve wants to encourage the use of CBDC in lieu of other payments, then, yes.
    b. Retailers would be interested in any widely accepted payment that does not include interchange fees or other such charges.
    c. Card issuers would stand to lose significant income from the loss of interchange fees and other such charges associated with the use of their cards. If, however, those same issuers were to develop new services based on CBDC or stable coins that are CBDC based, they could potentially offset some of their lost revenue from traditional card services with new revenue. These new services could be used for products and services both domestically and internationally.
    d. Some consumers will use any new payment service offered if it is convenient and free of direct cost to them. If offered, some consumers would want to use them anytime, anywhere including at the point of sale. It is unclear how consumers would benefit from CBDC at the point of sale compared with existing alternatives. The costs for retailers to support yet another payment option could result in higher prices and should Regulation E not apply to CBDC, consumers could lose some protections. Also see Specific Response 2.a above.

19. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?
    a. A new CBDC payment system would require new technical standards whether it was transferable to other payment platforms or not.

b. Transferability of CBDC across multiple payment platforms would require that each of those platforms add multi-currency accounting.

c. In order to avoid liquidity risks, each of the platforms would also need to support immediately final and irrevocable payments. This would likely be a considerable cost to develop, implement and maintain.

d. Each platform would further need to provide validation, consensus, tracking, and record keeping functions for CBDC payments.

e. It was suggested that CBDC might function as a bridge to legacy payment systems. This seems unlikely if the assumptions listed at the beginning of this letter are realized. For example, Party A initiates a CBDC payment to Party B, but Party B only accepts payments by ACH, check or Fedwire. Party B's processor accepts a real-time, immediately final, irrevocable CBDC payment from Party A and converts it to a same day or next day, batch ACH payment with 60-day revocability. In addition to losing immediate finality and irrevocability, the CBDC tracking would likely be truncated at the ACH processor. The same is true for check. While Fedwire might retain the real-time finality and irrevocability, it would also truncate the tracking. Some Fedwires are sent from the sender's bank through an intermediary bank to the receiver's bank further diminishing the value of trackability. Not to mention that Fedwire, if not replaced by CBDC, would likely be more expensive than an appropriately priced retail CBDC system. The loss of trackability is further compounded if a CBDC payment is sent to a non-CBDC payment system and then transferred to a second CBDC processor.

20. How might future technological innovations affect design and policy choices related to CBDC?

a. No comment.

21. Are there additional design principles that should be considered? Are there tradeoffs around any of the identified design principles, especially in trying to achieve the potential benefits of a CBDC?

a. No comment.

Thank you for the opportunity to comment. If you would like to discuss any of these responses, please contact either of the individuals below.

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