From:
Sent: Sun, 24 Apr 2022 14:46:23 -0500
To:"Digital-Innovations" <Digital-Innovations@frb.gov>
Subject: Central Bank Digital Currency: comments

NONCONFIDENTIAL // EXTERNAL

The following are comments on " The U.S. Dollar in the Age of Digital Transformation."
1. In the paper, I think there's an unnecessary concern with the effects of CBDC issue on private financial institutions, and on financial stability. And the suggestions for mitigating perceived problems in these areas are wrongheaded, I think. First, CBDC should only be issued if the Fed somehow has an advantage in supplying digital means of payment. But, if that's the case, the introduction of CBDC will necessarily draw business away from private financial institutions. So, it's not a good idea to design CBDC in a way that makes it less attractive, and therefore prone to failure, for example by not paying interest on it, or putting caps on CBDC holdings. Second, the flight to safety problem that exists during financial crises has a standard solution, which is central bank crisis intervention. Flight to central bank liabilities gives the central bank an inflow of funds, which it can then lend to financial institutions that are solvent but illiquid. Again, don't make CBDC less attractive all the time, to solve a crisis problem that exists only some of the time, and which can be solved by other means.
2. If key benefits of CBDC are supposed to be the provision of privacy and more financial inclusion, those benefits are not going to be had by "intermediating" CBDC, i.e. offering it through private financial institutions. Those institutions do not protect privacy, and they are not inclusive - they're part of the problem.
3. It was hard to understand the concerns in the paper over monetary policy, as these seemed tied up with the current notion within the Fed that having a large supply of reserves in the system is a good thing. There's no good reason to think that monetary policy implementation is any easier or harder with CBDC issue than without.
Stephen Williamson
Stephen A. Jarislowsky Chair in Central Banking
University of Western Ontario

From:"Michal Wozny"
Sent: Tue, 26 Apr 2022 04:07:02 -0500
To:"Digital-Innovations" <Digital-Innovations@frb.gov>
Subject: Using CBDC offline

NONCONFIDENTIAL // EXTERNAL

Dear CBDC team

Since there has been a lot of interest in Central Bank Digital Currencies (CBDCs) in the past year, including the Federal Reserve considering its usage, I would like to bring to your attention to a specific use case.

Currently all CBDCs rely on being connected to either a dedicated network or to the internet to access either a dedicated database or a block chain ledger. There is no ability to manage these digital currencies without this connectivity. I believe that to make any form of CBDC into a robust, resilient and functional currency, it needs to be able to handle off-line (without connectivity) transactions. Therefore I have been working on the concept of how to enable the CBDCs to function both with and without internet connectivity. I have documented the concept in the following online article: https://medium.com/@woznot/going-offline-with-digital-currencies-6d42375ba7d7

I believe it would be worth considering as part of your evaluation of potential CBDCs. If you would like more details or to discuss it further please feel free to contact me, my details are below.

Thank you very much for your time.

Kind regards,

Michal Wozny

Email:
Phone:

CBDC Benefits, Risks, and Policy Considerations

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

A potential benefit not mentioned in this paper is the degree of competition the Federal Reserve could introduce into the financial services market through the introduction of a CBDC.

When the internet was commercialized more than forty years ago, there were hundreds of companies innovating and attempting to establish themselves to serve consumers. Over the years, we see a dramatic reduction in choices and concentration of market power among just a handful of companies: Microsoft vanquished companies like Netscape, WordPerfect, Lotus, etc. and effectively became a monopoly in many segments of the software industry. We are also, currently, witnessing this in the "internet search", as well as the oligopolies of mobile operating systems, cloud service providers, etc. The extraordinary concentrations of market power by some companies is not always due to superior products and services; evidence shows that some of these companies abused their monopolies in one product to require buying an unfavorable one from the company - a practice known as "bundling", while others simply violated anti-competitive laws.

If one has been paying attention to business practices of financial institutions over the years, as well as press releases from the Consumer Financial Protection Bureau (CFPB), it is apparent that financial institutions are not exempt from anti-competitive or illegal practices to appease their shareholders.

Through the introduction of a CBDC and a well-formed policy that supports regulated nonbank service providers, the Federal Reserve can preserve a competitive marketplace for the delivery of financial services. Forcing innovative software companies to partner with a regulated depository institution is a barrier to encouraging competition – especially when the software company might have better risk-mitigation technology than financial institutions. By defining policies and requirements by which service providers can enable retail transactions with CBDC in the regulated nonbank financial service industry (without the need to partner with a regulated depository institution), the Federal Reserve can bring many innovative and cost-effective solutions to the market.

Secondly, the U.S. is witnessing inflation rates unseen in four decades. As the Federal Reserve starts using tools it possesses to reduce inflationary pressures, it must wait – sometimes for months – to see if its deterrents are having any effect. Retail CBDC accounts that pay interest pegged to the rate of inflation, will be a powerful addition to the Federal Reserve's arsenal with the ability to provide minute-by-minute feedback on consumers' reactions.

A risk under-emphasized by this paper is that of the Federal Reserve *not* introducing a CBDC in light of countries like China having introduced one already, and more than 100 others – including US allies – exploring the introduction of a CBDC. The Russian-Ukrainian war has highlighted how sanctions imposed by western countries are causing a rise in transactions with "crypto currencies", with news reports indicating that some countries are negotiating the purchase of oil and commodities denominated in yuan and rubles. To the extent countries like China and others make their CBDCs easier to transact with, notwithstanding the US dollar's strengths, the perception of the US Dollar appearing "stodgy" could rob it of its unique position in the world. While having a US CBDC does not alleviate issues created by sanctions, not having one encourages the use of alternate digital currencies for financing transactions. A US CBDC that makes transacting in digital currencies easier will continue to keep the dollar preeminent in international transactions.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

Innovative technology – the internet, cheaper and faster computing devices, mobile communications, open-source software – created the impetus for digital transactions that enabled faster, cheaper and better access to financial services. However, some entrenched players continue to hold outsize market-share in some segments, while frequent Consumer Financial Protection Bureau (CFPB) press releases highlight actions of some of these companies

that cause consumer harm. Signs of intense lobbying to prevent the Federal Reserve from introducing a retail CBDC only serve to preserve such entrenched interests.

Some parts of the world are using legislation to break down walls entrenched interests have built around financial records that can aid consumers in getting better products and services from the market. The Second Payment Services Directive (PSD2) in the European Union and Consumer Data Rights (CDR) in Australia, for example are forcing banks to allow software companies who have the consent of consumers, to download financial data from the banks' databases and compete with the banks to provide better products and services. While the U.S. has no such "open banking" regulation, some software companies are eagerly awaiting the CFPB's proposed rule for "Consumer Access to Financial Records", which hopes to open up the walls built by U.S. financial institutions. However, this is not enough.

Technology is enabling the creation of digital currency all over the world. While *public key cryptography* that enables transaction *authenticity*, *confidentiality* and *integrity* was introduced more than three decades ago, and the programmability of software data structures such as *linked lists* were known for more than sixty years, an innovative paper on blockchain combined elements of both technologies, while adding other capabilities, to solve certain technical problems in a unique manner. Blockchain gave rise to an explosion of investment – and speculation – around its capability. While the philosophical debate around blockchain is likely to continue for years to come, knowledgeable software companies can take advantage of this concept, combine it with traditional – and proven – data security capability to deliver innovative financial services to consumers at lower cost.

In a world where a coffee bean farmer in East Africa can communicate instantly with almost any wholesale or retail buyer in the world over the internet, it is archaic to force money to move through systems and infrastructure built for a different age. As responsive as the private sector is with the availability of products and services to serve such consumer needs in the digital age, the last few decades have provided the world sufficient evidence that the private sector can make decisions endangering the world politically, economically and financially when driven purely by the profit motive.

As well as existing products, services and financial technology have served the world in the past, anything short of a full-fledged retail CBDC from the Federal Reserve will serve to only handicap the CBDC's potential and to serve entrenched, and potentially, nefarious interests. The future demands better.

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

Indeed, it could. The net effect would be positive if the following conditions were met:

1. CBDC must be legal tender;
2. USG agencies at all levels must enable support for CBDC to be received from, and disbursed to consumers where such transactions are appropriate;
3. The retail ecosystem should be encouraged to transact in CBDC through independent, royalty-free standards rather than technology-vendor driven associations. Mobile phone manufacturers should be given incentives to include such standards into their devices to enable rapid adoption. To the extent it is feasible, the Federal Reserve should coordinate the creation and deployment of such vendor-independent, royalty-free standards with other like-minded nations and the Bank of International Settlements (BIS) so CBDCs are not "balkanized";
4. The Federal Reserve should allow for the creation of regulated, non-depository service companies whose primary purpose is to enable transacting in CBDC – functioning much like payment processors in the credit-card industry - facilitating transactions without holding currency. Companies focusing on financial inclusion must be fast-tracked towards participating into this ecosystem as long as they meet security and privacy control requirements;
5. An identity policy and scheme must be defined and implemented to enable undocumented residents of the US to participate in the CBDC ecosystem. Even if they are not legally authorized to reside/work in the US, they are here. With an appropriate balance of policy, security, privacy and anti-money laundering (AML) controls, it is feasible to craft solutions that permit them to transact with CBDC without

exclusionary controls – or keeping them out of the digital age and subjecting them to usurious money-lenders in the analog ecosystem.

If any of these conditions cannot be satisfied, desired financial inclusion goals will remain unmet.

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

Maximum employment and price-stability is a function of many variables not exclusively under the control of the Federal Reserve. Interest rates and money supply are important determinants – but more depends on qualitative factors beyond the control of the Federal Reserve, such as:

- Access to education and training;
- A "level playing field" that ensures equal access to opportunity in many sectors;
- A reasonable safety-net that permits new entrepreneurs to take moderate risks with starting new businesses;
- USG agencies truly supporting small businesses rather than paying lip-service and buying from giant suppliers through small business resellers that add little value to the transaction.

Before the internet was invented, one could only envision the types of applications, tools and services that connectivity might foster. We have since learned that almost anything is possible once such an ecosystem is available and when creative minds develop new applications, tools and services.

A US retail CBDC is in the same place as the Advanced Research Projects Agency (ARPA) experiment with the *intergalactic computer network* was half a century ago: lots of promise and trepidation, but with limited ability to visualize the potential for positive change. Much as ARPA moved ahead to build the internet, the Federal Reserve should move ahead to create a retail CBDC. With appropriate privacy controls, macro-data generated from applications, tools and services that support the CBDC will provide the Federal Reserve with new tools that might better effect monetary policy. Nothing ventured, nothing gained.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

Any new form of money with the backing of the Federal Reserve is bound to create waves – not just in the US, but around the world.

Much as our ancestors evolved from using shells and beads, we must plan to evolve from paper and coin in the digital age. While many transactions appear to be digital in the current environment, much of the technology and infrastructure that underpins today's digital environment was created many decades ago. It does not have the end-to-end *authenticity*, *confidentiality* and *integrity* controls that are necessary to support a trustworthy store of value or a means of exchange. A truly trustworthy digital currency must be designed from the ground-up to serve the rest of the 21st century and beyond.

This is where a CBDC can help. It represents an opportunity to "reboot" digital payments to learn from our mistakes of the last few decades and create something better to serve humankind for the future. Notwithstanding the friction that exists within banking regulations and schemes across the world, the U.S. Dollar enjoys extraordinary trust everywhere. The world has taken note of the extraordinary wealth the internet has created for the U.S. While the internet may not have been primarily responsible for these economic benefits, the Gross Domestic Product (GDP) of the U.S. alone went from less than $4T to more than $20T in the last 40 years – the years the internet was commercialized and made available to the world.

Could the CBDC create such wealth for adopters around the world? It is too early to tell, but a few self-sufficient countries are not waiting to find out – they are plunging into it for better or for worse. The vast majority, however, are waiting for the U.S. to make its move. If any nation has the creativity, resources and regulatory framework to make a success of it, in the eyes of many nations, the U.S. does. Given the ubiquity of the internet, mobile devices,

availability of capable software technology, the U.S. has a once in a generational opportunity to create a framework that can bring more financial stability to the world – not just for the U.S. alone:

- In the hope that nations that "hitch their wagon" to the U.S. CBDC will see similar growth in GDP as the U.S. did with the internet, some countries will choose to align their financial regulatory frameworks more closely with the U.S. financial system;
- As a global, inter-operable CBDC ecosystem grows, authoritarian countries will find themselves increasingly isolated from the prosperity that will accrue to a rules-based ecosystem. While China will have the heft to build a CBDC ecosystem in conjunctions with other authoritarian nations, kleptocrats and despotic leaders, nonetheless, crave the imprimatur of the U.S. Dollar with their ill-gotten wealth; such individuals and nations will find themselves with fewer options in a financial ecosystem that is significantly tightened to support a U.S. CBDC;
- International trade will become easier and less expensive as more companies and individuals transact with the U.S. CBDC directly;
- Innovative software companies from all over the world will be encouraged to create products and services that interact with U.S. CBDC, thereby bringing innovation faster and cheaper to the world, rather than in regional pockets.

Might a U.S. CBDC create sufficient prosperity on earth that some of the problems we see currently evaporate? It is probable; however a half-hearted attempt that preserves inefficiencies of the current financial system will only exacerbate the divide from the "haves" and the "have nots". Only a "rebooted" digital payments infrastructure that builds *authenticity*, *confidentiality*, *integrity* and agility into its foundations will be able to deliver benefits the new ecosystem promises to deliver. CBDC represents that opportunity.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

It is important to acknowledge that failures within private money ecosystems caused the 2007-2008 global recession. But for taxpayer bailouts, the US might have fared worse consequences than it did. While policies enacted since then will (hopefully) mitigate a similar recurrence, the ecosystem needs invigoration that can prepare us for the rigors of the 21st century.

By offering a CBDC, the Federal Reserve can unleash a wave of innovation and competition that benefits consumers all over the world:

1. The velocity of money will increase, leading to consequential economic benefits for all. While most consumers and businesses currently have the ability to move money electronically, not only are the costs higher than they need be, but the more economically disadvantaged participants in the economy bear higher costs for those financial transactions. With a ubiquitous CBDC that can be transacted at lower costs, more people will be encouraged to use it – replacing cash, checks and/or money orders – that will increase the number of transactions;
2. New financial services will be spawned that benefit more consumers at lower costs. Large companies that invest in creating systems to manage financial products and services are encumbered with legacy products that are, sometimes, unable to evolve rapidly to changing market conditions and needs. Smaller companies with innovative ideas and solutions are hindered by their inability to access consumer financial data and/or connect to the Federal Reserve (since they are not depository institutions); this prevents them from bringing their innovation to serve the financial market. With access to retail CBDC through a transparent framework, companies that meet the Federal Reserve's regulatory requirements will be able to enabled to bring their innovation to market faster;
3. Global pandemics will cause milder economic disruptions to nations where CBDC exists. As rapidly as Congress passed legislation to distribute cash to individuals adversely affected by the recent pandemic's lockdown, the State of California alone lost more than $10 billion through fraud as it attempted to distribute money to unemployed Californians through the Employment Development Department (EDD). The Internal Revenue Service (IRS) also reported nearly $2 billion in fraud related activities in 2021 alone

from the pandemic relief funds. With a CBDC designed to operate on stronger and more secure infrastructure and applications, it is possible to not only distribute relief funds rapidly to registered and authorized retail CBDC accounts, but it is also possible to eliminate such fraud with appropriate technical security controls.

Undoubtedly, the introduction of CBDC will cause short-term disruptions to some incumbents since their applications are unlikely to have the most advanced security capability (*authenticity*, *confidentiality* and *integrity*) that eliminates/minimizes fraud. However, as ecosystems adapts to CBDC, with applications that have the appropriate security and privacy controls, we will see vast improvements in the financial sector.

CBDC offers a singular advantage that no stablecoin can offer – the full backing of USG, with a mandate to benefit all residents/citizens of the US. This alone may serve as a disincentive for private money speculation (who may presume that taxpayers can be counted on to bail them out because "banks are too big to fail"). With a retail CBDC backed by a Central Bank that will not fail, an alternative network for digital money will exist; as such, private money will bear the full risk of speculative investments without burdening taxpayers.

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?

It is our opinion that the goal of the Federal Reserve should be to focus on the benefits that residents/citizens of the USA will derive from the introduction of CBDC, without regard for the adverse impact of CBDC on the financial sector. While the Federal Reserve must certainly make sufficient information available to adopt CBDC (as it is doing so with the FedNow Service), it is impractical to expect that every company and financial institution will do so. Some companies may simply choose not to adopt CBDC for a variety of reasons, while "rent seeking" and unethical institutions are bound to lose with the introduction of the CBDC. They is simply unavoidable as technology evolves. For those who cannot adopt CBDC for lack of resources, the Federal Reserve must focus on enabling the bottom 80% of institutions within the financial sector should be provided open-source tools, lower costs, incentives and support to adapt to the requirements of CBDC.

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?

Absolutely! We are witnessing a global phenomenon where consumers are seduced to eliminate the burden of carrying cash from their lives; but, this leaves them forever beholden to private companies for transactions. Given that private companies must primarily focus on shareholders rather than the general public, this can have disastrous consequences for society as cash eventually disappears from the economy. While electronic payment transactions are, indeed, more convenient for a majority of transactions, the Federal Reserve has an obligation to preserve the general public's ubiquitous access to a central bank electronic money so they may always have an alternative to private electronic payment services.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

Since the Bank of International Settlements (BIS) is already committed to Nexus, an instant cross-border payments infrastructure is a given. However, the goal of Nexus is to enable cross-border payment flows within existing payment infrastructures. While this will deliver cross-border payments within 60 seconds (if all goes well), it does not envision the possibility of new products and services that a U.S. CBDC might enable in an environment where multi-CBDC economies are available.

Before the internet was invented and commercialized, the world had a communications system that was "instant": Morse code, Telex communications, etc. When the internet came to be, early products and services merely transplanted existing communication applications and schemes to the internet to make it faster and cheaper. However, the richness of what the internet enables today took decades of innovations.

The same is true of CBDC. Not only must we introduce a retail U.S. CBDC, but we must also participate in efforts to foster multi-CBDC. We cannot imagine what will result two decades from today unless we unleash the creativity that it will engender.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

Given that the introduction of CBDC by China is the one that matters, it is paramount that the USA introduce a CBDC expediently. What is at stake is not the payments ecosystem or the preeminent position of the U.S. Dollar, but the very soul of democracy.

Based on events of the last two decades, it is evident that China will not transition to a democracy in the near future. However, its ability to surpass the USA as the world's largest economy is strengthened with the introduction of the Chinese CBDC (among other contributing factors). The moral, political and economic consequences of a bloc of authoritarian nations upstaging a bloc of democratic nations cannot be overstated. And, if the most powerful of authoritarian nations shows leadership in an important segment of the global economy, it has the potential to create the nexus for a new world order in which the U.S. may not play an influential role.

By creating an inter-operable retail CBDC, based on a governance model supported by like-minded democratic nations, the United States will continue to offer the world an alternative. Given the current strength and position of the U.S. Dollar, it is imperative that the U.S. not be left behind in this race for ideology.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

Much as the creators of the internet could not foresee all its benefits and drawbacks before its inception, it is impossible to foresee everything with the introduction of a U.S. CBDC. However, important lessons can be learned from the failures of some parts of the internet - the Federal Reserve should put in safeguards from the outset to prevent similar mishaps. Specifically:

1. Notwithstanding the Internet Engineering Task Force (IETF) establishing royalty-free standards for establishing the *authenticity*, *confidentiality* and *integrity* of messages at the application layer nearly three decades ago – Secure Multi-purpose Internet Mail Extensions (S/MIME) – the vast majority of the internet ignored these standards even as the capability became ubiquitous within electronic mail messaging systems two decades ago.
   The Federal Reserve must mandate the use of technical standards that guarantee similar security controls within CBDC transactions – from end-to-end within applications – not just at the network layer as it is performed currently;

2. The vast majority of attacks to applications, systems and networks originate in the use of "shared secret" authentication schemes and protocols. Passwords, one-time passcodes (OTP), knowledge based authentication (KBA) are some examples of "shared secrets" which result in *scalable* attacks that compromise everybody when a single attack is successful.
   The IETF, once again, established royalty-free standards – X.509 Public Key Infrastructure Certificate – for the use of *passwordless* authentication based on *public key cryptography*, more than two decades ago. While deployed in some scale within government agencies, this capability is largely ignored in consumer facing applications even within banking and fintech sectors. This has resulted in more than 10,000 data-breaches with more than 11 billion sensitive data records compromised over this period.
   Newer protocols – Fast Identity Online (FIDO) – using *public key cryptography* have more recently become ubiquitous on all desktop/laptop and mobile platforms, and have been successfully demonstrated in multiple NIST National Cybersecurity Center of Excellence (NCCoE) projects as providing high-assurance authentication. Updated guidance from the Federal Financial Institutions Examination Council (FFIEC) in 2021, reference one such NIST NCCoE project – Multifactor Authenticator for e-Commerce - as an example of how to mitigate authentication risk for higher risk transactions with FIDO technology.
   The Federal Reserve must mandate the use passwordless authentication using public key cryptography for

all CBDC transactions; this will provide assurances that the single largest cause of data breaches is eliminated from CBDC infrastructure;

3. It is fashionable these days to assume the "cloud" provides an answer to all of one's information technology needs. However, it is our opinion that the "cloud" poses an enormous risk to something as critical as the CBDC infrastructure. Not only have attackers shown that Uber, Capital One, Twitch and many other companies can be completely compromised in the cloud, but the Bank of England's July 2021 Financial Stability Report identifies the cloud as presenting a risk to financial stability. The Governor of the Bank of England, Andrew Bailey, has gone on record that "secrecy" and "opacity" are prevalent in cloud deployments, and that cloud security is "of particular concern".

   While we believe that the cloud offers some capabilities that can be taken advantage of within information technology deployments, this must be done so with applications that have been designed from the ground-up to ensure sensitive data and transactions remain impervious to attacks in the cloud. The Federal Reserve must mandate that applications prove beyond reasonable doubt that sensitive data and transactions can never be compromised in a cloud.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

With the right balance of policy, procedures and technical controls, the Federal Reserve can balance the conflicting goals of consumer privacy with its objectives to prevent illicit financial activity. Specifically, the Federal Reserve can mandate that:

1. Participants are "on boarded" into the CBDC ecosystem only after specified "know your customer" (KYC) controls are satisfied;
2. Participant accounts (of the Sender/Payer) in the CBDC ledger are anonymized (through encryption and tokenization), while transactions involving those accounts remain publicly visible – particularly to the IRS and law-enforcement. Where details of specific transactions might leak the identity of participants, those details of transactions must also be anonymized;
3. Companies creating software facilitating CBDC transactions maintain a company-wide "transaction trail" of anonymized transactions that remains publicly visible;
4. Very small transactions – say, $20 or less – of a certain frequency within a defined period, may remain completely anonymous (for the Payer and Payee) if the policy chooses to support higher levels of privacy in the transaction trail. *It should be noted, however, even completely anonymous transactions might be traceable if the software facilitating such CBDC transactions adheres to KYC regulations with appropriate controls to prove compliance to such regulations;*
5. Companies creating software facilitating CBDC transactions are required to implement end-to-end security within the application software without having to rely upon network and system controls to provide that security. It would not be amiss for the Federal Reserve to require such software to be independently tested and certified to meet specific control requirements before being permitted to participate in the CBDC ecosystem;
6. When transactions need to be made visible to law enforcement and/or other regulatory authorities, this must be done through digitally signed warrants that are placed within the software company's transaction trail whose transactions are audited. Where necessary and justified, select details of the warrants may be anonymized; however, such anonymized search warrants must be subject to due process as prescribed in the Freedom of Information Act (FOIA).

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

While monetary and transition risks cannot be discounted, it is crucial to recognize that CBDC – unlike all other forms of money that preceded it – completely depends on computer technology to maintain the confidence of the general public. As such, the importance the Federal Reserve must accord to cyber risks cannot be overstated. The

technology industry has the distinction of being the only segment of the economy whose products and services are unregulated in the U.S. As a consequence, more than 10,000 publicly disclosed data-breaches have occurred in the US with more than 11 billion sensitive records disclosed. This is simply unacceptable!

While the answer to question #11 provides examples of mandates the Federal Reserve may specify to mitigate risk, given the significance of the CBDC initiative, it must go further and ensure that CBDC security supersede all other factors – especially "user experience" (aka UX) factors – when establishing the CBDC. To this end, the Federal Reserve should review Atlantic Council's Strategy Paper on "A Nonstate Strategy for Saving Cyberspace" and adopt elements of the specified strategy where appropriate. Additionally, this author has published an opinion on forbes.com titled "Disruptive Defenses are the Key to Preventing Data Breaches"; while the tactical measures specified in the article might appear daunting on the surface, based on more than two decades of work in cyber risk mitigation, this author advocates technologists to incorporate the specified measures into their applications as a "standard operating procedure".

14. Should a CBDC be legal tender?

Without a doubt!

CBDC Design

15. Should a CBDC pay interest? If so, why and how? If not, why not?

Yes, it should.

The U.S. is currently witnessing inflation rates unseen in four decades. Savers – especially, retired ones – are most affected as inflation eats into the value of their cash holdings. If the Federal Reserve had a tool to guarantee that savers' cash holdings are not devalued during inflationary times, it will incentivize consumers to hold cash leading to a reduction in inflationary pressures in the market. While private financial institutions could, technically, offer interest rates that were equal to, or better than inflation rates, they generally do not because they have neither an incentive nor a mandate to do so unless compelled by competitive forces. CBDC accounts that pay interest is a natural solution to this problem.

With Federal Reserve issued retail CBDC accounts, consumers can be paid interest on their CBDC holdings, pegged to the rate of inflation (adjusted at a frequency determined by Federal Reserve policy). As inflation rates move up or down, interest on CBDC can move commensurately. The higher the inflation rate, the greater the incentive for consumers to move their non-cash holdings to CBDC – thereby decreasing inflationary pressures in the market. This incentive will also work during recessionary periods should inflation rates become negative.

Secondly, the Federal Reserve will have the ability to receive "real-time" feedback automatically as it sees its holdings of CBDC go up or down depending on inflation rates in the market – it will not have to wait for weeks or months to learn if its inflation fighting tactics are having any effect on markets.

An approach for paying interest on CBDC is as follows:

1. Upon the creation of CBDC, the Federal Reserve creates a *CBDC* account within its ledger, similar to its *Cash* account;
2. It debits its *Cash* account by some chosen value – say 25% of its holdings – and credits its *CBDC* account with an equal amount of CBDC;
3. As consumers enroll for *Retail CBDC* (***rCBDC***) accounts and transfer their cash to their *rCBDC* account from external sources, consumers' *rCBDC* accounts are credited while their cash accounts are debited at

external sources. Commensurately, Federal Reserve's *Cash* account will be credited with consumers' transfers while its *CBDC* account is debited;

4. When interest accrues within consumers' *rCBDC* accounts, the Federal Reserve's *CBDC* account is debited, crediting consumers' *rCBDC* accounts when paid;
5. As the Federal Reserve's *CBDC* account dwindles, it continues to debit its *Cash* account and credit its *CBDC* account;
6. When increasing numbers of consumers enroll for *rCBDC* accounts, the Federal Reserve should see positions of its *Cash* and *CBDC* accounts change, eventually achieving a state of equilibrium within a narrow range reflecting the ebb and fall of demand for cash and CBDC;
7. Assuming rational investors, inflation rates should also achieve equilibrium barring adverse natural and political events.

Introducing *rCBDC* accounts and paying interest, pegged to the rate of inflation, would be the financial equivalent of shifting (no pun intended) from manual transmission controls to automatic transmission in automobiles – the speed of the vehicle (rate of inflation) automatically adjusts the gear (interest rate) at which the vehicle (economy) operates.

16. Should the amount of CBDC held by a single end-user be subject to quantity limits?

The introduction of a U.S. CBDC is bound to create some disruptions. Market participants will naturally want to observe how CBDC are received, and how the technical infrastructure will perform. Since the CBDC's primary function is to offer a cash-equivalent instrument to enable smoother and less expensive transactions (while enabling inclusion and being green), the Federal Reserve should, initially, limit the amount of CBDC held by single end-users to meet the instrument's primary goal. As markets adapt to CBDC, the Federal Reserve should increase quantity limits based on the performance and stability of the technical infrastructure.

It is not inconceivable that the amount of CBDC that can be held by a single consumer will become another tool in the Federal Reserve's arsenal to effect monetary policy. It would be natural to allow the Federal Reserve to vary this amount to effect monetary policy as it it does currently with interest rates.

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

Any company that can meet and comply with the regulatory requirements of the CBDC initiative should be permitted to serve as intermediaries for CBDC. There is neither a monopoly on creativity nor competence, and the Federal Reserve as well as the U.S., will be best served with many participants choosing to serve different markets with their ingenuity.

Since non-depository institutions are unlikely to hold CBDC or have similar privileges as depository institutions, the Federal Reserve should create a different regulatory structure to govern non-depository institutions without compromising on security and privacy controls.

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

Yes, it should. But, it need not be introduced on Day 1. Offline transactions will require many participants to adapt to different kinds of communication protocols. Depending on the devices that will choose to implement CBDC for online/offline transactions, the control requirements are likely to be different and this will require more time for adoption. It is recommended that the Federal Reserve adopt offline capabilities on a graduated deployment schedule to moderate expectations and disruptions to CBDC introduction.

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

Given the significance of a U.S. CBDC introduction, it will be prudent to set expectations to the market that security must take priority over convenience.

Despite some of the most advanced security technology being available for decades, private companies have persisted in using the weakest security and privacy controls within their applications, and are singularly responsible for the thousands of data breaches and billions of sensitive records being compromised. It does not matter if the company is a million, billion or a trillion dollar company: they have all been breached. This sorry state of the internet is simply because the vast majority of private companies have prioritized convenience over security.

When it comes to cybersecurity, it is our observed opinion that private companies respond to the stick more than the carrot. Consequently, if the Federal Reserve intends to build a stable and secure CBDC infrastructure for the long-term, it should stipulate strong security and privacy controls, and create the appropriate infrastructure to enforce those requirements.

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

CBDC represents a transition to a new ecosystem. Since almost every country is investigating an introduction of its own CBDC, it behooves the Federal Reserve to work with the BIS and establish global standards to facilitate interoperability. The standards must be open, royalty-free and available to anyone in the world – without cost – to implement.

New standards are definitely likely. However, there are many existing standards that can be updated to meet the challenge. Given that cryptography will play a central role in security CBDC, the design must incorporate algorithm agility and state-of-the-art security controls. In light of the data breaches of the last two decades, an abundance of caution is not unwelcome.

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

One cannot predict everything accurately in the technology world – everything is a matter of probability. As such, the Federal Reserve must make the assumption that principles and standards are the most important arbiters of success in an environment of continuous change. We have many tools in today's technological arsenal that can be applied to build a safe and secure technological ecosystem for CBDC; all that is required is the discipline to learn, adapt and apply the chosen principles/standards to craft the solution.

22. 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?

Software design, architecture and languages are like “hair styles of the geek world”. Every generation of software developers believes that the only viable technology to solve a specific problem is whatever is in fashion this year – and this is usually a function of the marketing messages of technology companies that invent a specific widget. As a consequence, we are at a point in technology history where we are living in software techno-babble. Senior executives responsible for delivery of information technology solutions are at the mercy of billion/trillion-dollar giants and have little understanding of what their application developers are doing. By the time, the company is in the news for the latest security breach, those programmers have long departed.

The Federal Reserve would be wise to emphasize its focus on principles and standards. And, build a regulatory environment with the resources to enforce those principles and standards.

2550 Wasser Terrace
Suite 400
Herndon, VA 20171

703-561-1100
nacha.org

May 11, 2022

Via Electronic Submission

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

Digital-innovations@frb.gov

Dear Ms. Misback:

Nacha welcomes the opportunity to submit this comment letter to the Board of Governors of the Federal Reserve System (the "Fed") in response to the discussion paper *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*.

Nacha views the effort to improve the U.S. payment system as a public-private partnership and appreciates the Fed's efforts to date to coordinate discussion among industry participants. As the Fed explores how a Central Bank Digital Currency ("CBDC") can complement existing financial services, Nacha will explore in this letter the potential for a CBDC to supplement existing inter-bank settlement mechanisms.

I. Nacha and the ACH Network

Nacha governs the thriving ACH Network, the payment system that drives safe, smart, and fast Direct Deposits and Direct Payments with the capability to reach all U.S. bank and credit union accounts. Just over 29 billion ACH Network payments were made in 2021, valued at $72.6 trillion. The ACH Network is governed by the Nacha Operating Rules ("Nacha Rules"), which are developed and maintained by Nacha. In our role as the standards organization for payments through the ACH Network and author of the Nacha Rules, Nacha represents over 10,000 participating financial institutions of all sizes and types throughout the United States, both directly and through 10 Payments Associations. Nacha's rules development process includes input and participation from all types of organizations, including both business and consumer end-user organizations, as well as the Fed and the Federal Reserve Banks.

II. Nacha's Participation in the Journey to Faster Payments

Nacha has long participated in the dialogue facilitated by the Fed among payment industry participants regarding payment system improvements, including faster payments. From its vantage point as the industry organization charged with oversight of the ACH system and its ongoing evolution, Nacha has been closely involved in the introduction of faster payments, specifically the Same Day ACH capability that in 2021 processed more than 600 million payments transferring $944 billion. With this capability, the modern ACH Network settles interbank payments four times per day.

III. CBDC as a Potential Settlement Mechanism

A CBDC has the potential to disrupt consumer and business payments as well as deposit-based lending in fundamental and profound ways. To mitigate the negative impacts of such a disruption, but recognizing the broad desire to modernize existing payment systems by expanding interbank settlement capabilities, Nacha suggests an incremental approach to the introduction of a CBDC. Specifically, Nacha encourages the Federal Reserve to introduce any CBDC initially as a form of central bank money solely for the purpose of settling interbank payments. The settlement function of a CBDC could initially operate in parallel to the National Settlement Service ("NSS"), the Fedwire Funds Service, and the liquidity management tool, which is currently positioned to be limited solely to participation in FedNow. The role of the CBDC could evolve to become a primary settlement mechanism and liquidity management tool as confidence in its use builds.

Currently, the private-sector ACH Operator performs settlement of ACH payments through NSS. This means that the private-sector ACH Operator cannot settle ACH payments when NSS is closed – nightly from 6:30 pm ET to 7:30 am ET the next morning, as well as weekends and holidays. Nacha and others have advocated since at least 2013 for the extension of operating hours of NSS to facilitate faster ACH payments, which would provide immediate public benefits in terms of faster payments for payrolls, bills and invoices, account transfers, and many other uses.

In January 2015, the Fed released its *Strategies for Improving the U.S. Payment System Report* ("SIPS Report") that included five strategies for the improvement of U.S. payment systems. Strategy 5 included a three-phase plan to implement the Fed's intention "to enhance the [NSS] to make it more attractive as a settlement vehicle for private-sector arrangements" with the exploration of 24x7 operating hours.[1] While the Fed has made some incremental progress towards these commitments since the SIPS Report was published, more substantial progress on the modernization of payment system-agnostic interbank settlement and liquidity management has lagged. To the extent that the Fed is prioritizing a CBDC, that should not be done to the detriment of additional improvements to existing interbank settlement services. Accordingly, it seems reasonable to prioritize each of these strategies by exploring the potential of a CBDC to serve as a 24x7x365 interbank settlement mechanism.

Initial deployment of a CBDC for the limited purpose of settling interbank transfers offers several potential benefits. First, it would demonstrate the viability of the CBDC design and functionality among a community of regulated users. Second, it would enhance the functionality and capabilities of existing settlement services in ways that fulfill long-stated Fed goals. Third, it would enable the United States to supplement its monetary system with the benefits conferred by the technological advancement of digital currency, while allowing further time to assess the potential implications for disintermediation, access to credit and consumer privacy that could result from models that allow a CBDC to circulate more broadly in the economy. Finally, it would allow the private sector to innovate in the creation and use of stablecoins without direct

[1] SIPS Report at 21.

competition from the central bank. Learnings from stablecoins could be applied to any eventual expansion of a CBDC to use by businesses and individuals.

* * * * *

Nacha appreciates the opportunity to provide comments in response to the FedNow Proposal. If you have any questions regarding our comments, please do not hesitate to call me at 703-561-3943.

Sincerely,

William D. Sullivan
Senior Director & Group Manager
Government & Industry Relations

May 15th, 2022

The contents of this document are strictly confidential, and information contained in this document, which is not public at the time of disclosure, is confidential to Mastercard. The contents of this document or any part thereof shall not be disclosed to any other party without the written consent of Mastercard.

Mastercard response to the Federal Reserve's consultation on Central Bank Digital Currencies

Mastercard welcomes the opportunity to share our views to the Federal Reserve's public consultation on Central Bank Digital Currency (CBDC). The rapid pace of technological change, including the advent of digital assets, has led policymakers around the globe to consider the impact of this transformation on the future of payments and to evaluate how best to safeguard the interests of the economy, monetary policy, consumers, and businesses.

Mastercard is committed to supporting central banks in their chosen path to payment system modernization; including the development of a central bank digital currency (CBDC) where this is relevant. As an operator of safe, scalable global payment networks Mastercard has invested in a range of cutting-edge approaches to payment infrastructure and services, including the use of blockchain technology. We are committed to bringing that expertise to bear in support of the design, testing, and deployment of CBDC networks where central banks choose to pursue their development.

We have responded to the questions raised by the Federal Reserve in the document below and via the online form. In summary:

- We strongly concur with the Federal Reserve's view that - provided the creation of a CBDC is determined to be warranted - an intermediated (two-tier) distribution model is preferable for the needs of the US economy, as it preserves the role of financial intermediaries and payment service providers, while utilizing existing resources. Open and competitive payment ecosystems with transparent and consistent governance are critical to enabling access, adoption, and use of payment options that serve a wide range of user needs and preferences. Moreover, ongoing payments innovation, expanded financial inclusion, and the efficiency of national and international payment flows all depend on vibrant private sector competition in the provision of payments
- An intermediated or 'two-tier' retail CBDC model can provide a secure, fast, and resilient technology environment that avoids the unnecessary expense of parallel infrastructure and ensures that compliance requirements remain primarily with industry. This approach ensures that the Federal Reserve retains institutional governance over core monetary infrastructure, while relying on private sector competition to drive innovation, efficiency, and a diversity of offerings
- Enabling acceptance points is one of the greatest challenges to driving mass adoption of a new payment solution. Consumers will be more likely to adopt a CBDC if it can be used on existing acceptance infrastructure and is supported by known and identifiable payment form factors (physical and digital) that are linked to the user's existing devices and

accounts. Therefore, linking a prospective CBDC to existing private payment networks with broad merchant acceptance would make adoption easier for both consumers and merchants

- Interoperability between payment systems avoids closed loops that reduce the fungibility of money, fragment liquidity, and limit competition. In the case of a U.S. retail CBDC, interoperability with other stores of value (e.g., commercial bank deposits, e-money etc.) would play an important role in strengthening the domestic payment ecosystem and reinforcing the role of central bank money at its core. Mastercard can bring experience from operating critically important retail payment infrastructure across both card and real-time payment systems
- While CBDCs are an exciting new tool in a central bank's toolbox, that does not mean they are the right tool to fix every problem nor that every country needs a CBDC. In some cases, a CBDC might be an appropriate tool for the job, but not the only appropriate tool. In other cases, established systems and services or innovations other than CBDCs may be a better fit to achieve a central bank's goals. While a CBDC could play a role in payments innovation, increased financial inclusion, visibility into economic activity, and improved efficiency of national and international payment flows, all of these potential benefits can also be achieved through facilitation of a vibrant private sector and competition in payments

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

The Federal Reserve's discussion paper provides a welcome and thoughtful analysis of the potential implications of implementing a CBDC in the United States. One topic that could warrant further discussion is the architecture and operating model that would – if the Federal Reserve decides to proceed with the creation of a retail CBDC - best align with (i) the underlying policy goals motivating the creation of a CBDC and (ii) the existing landscape of the U.S. financial system.

We strongly endorse the position of the Federal Reserve that – if a CBDC were to be created – the United States financial ecosystem and its consumers would be best served by an "intermediated" system where "*the private sector would offer accounts or digital wallets*". This public private cooperation on what is sometimes called a "two-tier" CBDC is critical to ensuring an open and competitive payment ecosystem characterized by strong innovation. However, there are many different ways to structure public-private cooperation within such a system, some of which may be more or less suited to the policy goals of a given CBDC. In any case, a clear governance framework which sets out the responsibilities of the public and private sector, is needed.

For example, in the 2021 Bank for International Settlements (BIS) Working Paper (#928) Auer and Böhme outline two distinct approaches to deploying a two-tiered

CBDC. The first is a 'Hybrid Architecture' where the central bank retains a copy of all retail CBDC holdings, and transactions are processed directly through updates to the central bank ledger. The second approach is an 'Intermediated Architecture', which we refer to as a 'Federated Architecture' (to avoid confusion with the Federal Reserve's use of the term intermediated). Under this approach, the central bank records wholesale balances, and private sector intermediaries clear and settle CBDC balances bilaterally.

Although we believe that further study is required to determine if a U.S. CBDC is warranted, a Federated Architecture is more likely to align to the goals of the Federal Reserve's policy objectives. This approach is aligned with the existing allocation of public and private responsibilities within the financial system, and by extending a broader set of capabilities to the private sector (compared with the Hybrid Architecture approach), it would also provide a more robust platform for the development of value-added innovations.

Critically, a Federated Architecture would also support the Federal Reserve's goal of creating a privacy-protected CBDC. As we discuss further in our response to Question 12, a Federated CBDC avoids the creation of a 'master ledger' at the central bank by fragmenting transaction data across supervised intermediaries and also eliminates the data-protection risks of centralizing all transaction data.

Beyond questions of CBDC architecture, two additional factors that will be important to consider are (i) the mechanisms by which CBDC payments are accepted and (ii) the incentive structure to ensure sufficient private sector investment in a secure, competitive, and innovative ecosystem. As we explore further in our response to Question 22, enabling acceptance points is one of the greatest challenges to driving mass adoption of a new payment solution. Adopting an 'open acceptance' framework, using existing acceptance technologies and networks to facilitate payments by CBDC, can maximize the day-one ubiquity of the system and minimize complexity of adoption for users and merchants alike.

Finally, while the selection of a Federated CBDC Architecture and the adoption of an open acceptance framework can minimize the complexity of integrating with a CBDC, there is no getting around the fact that building new wallet solutions, integrating with new payment infrastructure, and enabling the various links in the payment value chain are all costly activities. Sustainable payment ecosystems are dependent on a delicate balancing of incentives between those stakeholders who bear the costs of enabling payments and those who benefit from payment services. In order for a central bank's CBDC infrastructure to sustain a vibrant and competitive ecosystem of payments innovators, incentives will need to exist that allow payment service providers to generate an appropriate return on their investments.

If the U.S. chooses to develop a CBDC, we are ready to work with the Federal Reserve to ensure a CBDC will flow seamlessly across existing payment networks. As evidenced by our history, we are devoted to providing both system-wide resilience as well as open and user-friendly consumer choice. Mastercard has deep expertise in building and operating secure, high-performance payment networks. We govern & operate the world's fastest payments processing network (capacity of > 20,000 transactions per second), connecting consumers, financial institutions, merchants, governments, and businesses in more than 210 countries and territories.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

Below, we focus in our response on CBDC as a means of payment.

While a CBDC could play a role in payments innovation, increased financial inclusion, visibility into economic activity, and improved efficiency of national and international payment flows, all of these potential benefits can also be achieved through facilitation of a vibrant private sector and competition in payments. For example: real-time payment systems, certain stablecoins, and the development of blockchain based "tokenized deposit" capabilities by commercial banks and fintech companies have great potential to lower costs and improve the speed and efficiency of payment flows. Concurrently, the growth of open banking, open finance, and the ascendency of neo-banks will increase competition and support a more inclusive financial system. Therefore, while a CBDC is one approach to reducing frictions in payments and supporting a more inclusive financial system, it is not the only means of doing so.

Ultimately, while CBDCs are an exciting new tool in a central bank's toolbox, that does not mean they are the right tool to fix every problem nor that every country needs a CBDC. In some cases, a CBDC might be an appropriate tool for the job, but not the only appropriate tool. In other cases, established systems and services or innovations other than CBDCs may be a better fit to achieve a central bank's goals.

Further, the Federal Reserve should consider the precedent it would be setting in regard to inserting itself into a part of the financial system which has historically been driven and maintained by the private sector. Such a shift dramatically alters the stance of the public sector's role in facilitating payments innovation. Therefore, we believe that the Federal Reserve should carefully analyze the case for a CBDC, considering the unique features of the U.S. economy to find the approach that best fits our nation's unique payment needs.

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

A CBDC might have the potential to increase financial inclusion. However, the central features of a CBDC (i.e., digitized central bank money and a new method of payment) do not solve many of the problems that result in people being unbanked.

Lack of access and lack of trust are fundamental issues that keep people out of the formal banking system. Those issues can be addressed without a CBDC. For example, according to a report by Maiden Labs, "Centering Users in the Design of Digital Currency," many unbanked Americans are unbanked because they distrust banks, and this distrust is typically rooted in fee practices. In particular, unbanked Americans have concerns about not understanding when they will incur checking account fees. A CBDC will not have inherent qualities that would address this distrust, but improved transparency and competition of financial services in general may help. In the context of a CBDC, this responsibility would fall to the private sector intermediaries. The same is true of access. That is, the manner in which a CBDC is intermediated could improve access, but so could other innovations in our financial system that are constructed on the existing commercial bank money infrastructure.

Moreover, in line with our response to question 2, we believe it will be important for the Federal Reserve to carefully analyze the capacity of a CBDC to improve financial inclusion, comparing and contrasting the strengths and weaknesses of a CBDC with other approaches. For example, in their recent paper "The Treasury Option: How the US can achieve the financial inclusion benefits of a CBDC now", Jackson and Massad explore how an expansion of the U.S. Treasury Department's popular and well established Express Direct offering "*would facilitate distribution of federal benefits and provide low-cost, no-frills payment services*" providing "*a faster, easier way to achieve some of the primary objectives of those who favor a CBDC*". Such a program would be "*much easier to establish and could be implemented now*." A focus on enhancing existing programs, such as Express Direct, would not require the costly and technically complex deployment of new infrastructure or the navigation of macro-economic challenges unique to a CBDC (discussed further in our response to questions 4 - 7). Before proceeding with the development of a CBDC on the ground of financial inclusion, the Federal Reserve should closely analyze this premise, and compare it with other proposed approaches to fostering inclusion, to determine which are best positioned to meet the genuine needs of financial underserved Americans.

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

A U.S. CBDC would require the Federal Reserve to balance the potential adverse effects of deposit substitution with the potential to add new tools to effectuate

monetary policy. The Discussion Paper addresses the uncertainty surrounding the share of assets that individuals might choose to hold in a CBDC at any given time—particularly in relation to their holdings of commercial bank deposits. Here, the Federal Reserve faces a serious challenge. To be considered a success, a CBDC must have sufficient user adoption to justify the time and investment made by the Federal Reserve. A CBDC must also be used with enough frequency to provide a sustainable business model for multiple competing payment interface providers. However, it would clearly not be desirable if a CBDC becomes so popular as to drive large-scale substitution away from commercial deposits, undermining the stability of the U.S. financial system or disrupting established channels of credit creation.

Several factors may frustrate efforts to quantify and mitigate the risk of substitution. First, it will be difficult to determine the likely degree of substitution of CBDC for commercial deposits prior to the launch of a CBDC, particularly absent the launch of a CBDC in another major economy. To cite research by the Bank of England, "*gauging the likely shift from deposits into CBDC is challenging because to date no major economy central bank has introduced a CBDC.*" Second, until a CBDC system has run for a significant period, it will be difficult to ascertain how consumer's CBDC usage patterns will vary in response to exogenous factors. While the Discussion Paper remarks that "*[t]hese concerns could potentially be mitigated by CBDC design choices*," the implementation of design choices would be in the hands of independent intermediaries and outside of the direct control of the Federal Reserve. Finally, it is important to note the nature of digital services often enjoy extremely steep adoption curves, potentially limiting the period that the Federal Reserve would have to adjust a production system in response to early data.

None of these challenges should be taken to suggest that a CBDC could not be deployed; however, they suggest that modelling or observation of CBDC adoption trends in other jurisdictions may not be enough to accurately estimate substitution of CBDC for commercial deposits. Instead, effectively identifying substitution risks and formulating mitigation and management strategies may demand larger scale, and longer duration, controlled-access pilots than have been required for previous developments in U.S. payments.

The benefits of new monetary policy tools potentially made available through a CBDC also remain uncertain. For example, while a CBDC might offer a way to stimulate aggregate demand through direct transfers of money to the public (so-called helicopter drops), a key challenge to these transfers is the identification of recipients and accounts, and that challenge is not solved by a CBDC. The Bank for International Settlements (BIS) reaches this conclusion in a report titled "Central Bank Digital Currencies: Foundational Principles and Core Features." In fact, the BIS report concludes that "*monetary policy will not be the primary motivation for issuing CBDC.*"

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

Large-scale or volatile deposit substitution caused by a CBDC could have several implications for financial stability, many of which have been covered in detail by academic and central bank publications in recent years. Some of the frequently cited potential implications are discussed below.

1. **Implications on the cost and availability of loanable funds:** The introduction of a CBDC could lead to a reduction in commercial bank deposits, as bank customers would be able to choose to move some of their deposits to the CBDC. Since deposits constitute an important source of low-cost funding for banks' lending operations, the outflow of deposits at a significant scale could have adverse consequences for the cost and availability of credit in the broader economy.

2. **Implications on monetary policy implementation:** The introduction of a CBDC could potentially allow changes in policy to be passed on to households more quickly than via commercial banks; particularly if unconventional forms of monetary policy, such as direct central bank disbursements to consumers, were to be explored. Concurrently, an overall reduction in the stock of commercial bank money could theoretically reduce the effectiveness of more traditional monetary policy operations executed via changes to interest rates.

3. **Financial stability generally:** If consumers see a CBDC as less risky than traditional deposits during a period of financial stress, it could trigger a "rush to safety" that would undermine the stability of otherwise solvent banks. While consumers already have access to central bank liabilities through cash, a CBDC may have significantly fewer barriers to large scale transfers, as it would not require the consumer to physically obtain or transport cash and may be perceived as less subject to theft. The introduction of a CBDC may significantly increase the volatility of deposit substitution during times of crisis—placing pressure on commercial banks' liquidity and solvency positions.

Possible methods of mitigating these risks are discussed in response to question 7 below.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

The introduction of a CBDC has the potential to shift consumer demand for central bank money relative to commercial bank money. If deposit substitution were widespread or with significant volatility, it could potentially have unintended adverse

consequences for the cost and availability of loanable funds and the overall stability of banks. Please see our response to question 5 for a discussion of these issues.

Moreover, as we discuss in our response to question 4, it would be difficult to determine the likely degree of substitution of CBDC for commercial deposits prior to the launch of a CBDC, particularly absent the ability to observe the launch of a CBDC in another major economy. And, until a CBDC system has run for a significant period, it would be difficult to ascertain how consumers' CBDC usage patterns would vary in response to exogenous factors and therefore how deposit substitution will unfold.

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?

Since the rate of deposit substitution cannot be known now, and since the potential adverse implications of uncontrolled large-scale or volatile movements between commercial deposits and the CBDC are significant, many central banks have concluded that they will require policy tools for mediating the flow of deposits. Here, we outline three potential mechanisms for consideration and exploration by the Federal Reserve.

Limits: The most effective means of mediating the flow of funds between the CBDC and commercial deposits would be to limit an individual's holdings of CBDC at any given time. In order to implement this policy, while also ensuring that users could always receive a payment, the European Central Bank has suggested that a "waterfall" approach could be employed, whereby incoming CBDC in excess of the holding limit would be converted automatically to commercial bank money and be deposited in the payee's account.

Remuneration: Another approach would be to discourage the holding of a CBDC by introducing an opportunity cost to holding the CBDC relative to commercial deposits. This could mean providing a zero rate of return on CBDC holdings. This could be delivered on a tiered basis with holdings below a certain level providing zero-yield - similar to cash - and holdings above that level subject to a negative rate of interest. However, some commentators—including Burkhard Balz, Member of the Executive Board of the Deutsche Bundesbank—have expressed concerns that this approach may not be enough to halt a "digital bank run" during a financial crisis. Moreover, the use of highly negative rates to constrain deposit substitution during a crisis could face significant popular opposition.

Redistribution of funds: A third means by which the Federal Reserve might mitigate the implications of large-scale deposit substitution would be by offsetting the accumulation of liabilities on its balance sheet resulting from adoption of a CBDC with the provision of wholesale funding to financial institutions. Such a policy could be

effective in mitigating the impact of CBDC issuance on the cost and availability of credit in the U.S. economy. However, it is less likely that such a policy would—on its own—be an effective means of mitigating more volatile swings in public demand for the CBDC, such as during periods of intense financial stress.

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?

No, we believe it is not strictly necessary. This is because electronic methods of payment using commercial bank money have significantly expanded the array of payment options available to consumers and will continue to be a viable substitute for cash as the use of cash declines. For banked consumers in the United States, there likely would be no meaningful distinction between CBDC (central bank money) and deposits (commercial bank money) when making a payment electronically; as the two would presumably be easily interchangeable and readily available. Consumer choice in a payment method is determined by ease of use, acceptance by the merchant, and other benefits or incentives. Current electronic payment methods address consumer need and, thus, should obviate the need for CBDC as a way to compensate for a decline in cash use.

However, we recognize that some economists have suggested that if consumers were to be abandon their use of cash entirely it could have unintended consequences for a central bank's control of monetary policy. These concerns are best articulated by the Sveriges Riksbank in their 2018 "e-Krona Project Report 2" where they note that:

> "The fundamental trust in the Swedish monetary policy system risks declining. In times of financial unease, the knowledge that money in bank accounts can always be converted to risk-free state money in the form of cash comprises a linchpin. If cash is marginalized, this feature will be eroded."

In other words, if the accessibility or acceptance of cash were to significantly decline, consumers access to central bank assets would be reduced, which could potentially cause or accelerate a loss of confidence during a financial crisis. This concept was explored by the Bank of Canada in its May 2020 Staff Discussion Paper, where the authors concluded that in the absence of cash, a CBDC is not required to ensure monetary stability, provided that frameworks exist to ensure trust in commercial bank money (a framework already maintained in the United States). However, they note that in circumstances where cash has fallen into disuse, a CBDC may be helpful in other ways. Given this, they conclude that the question of whether a CBDC is required will be "a judgement call" that is subject to the unique context of a given country. This analysis suggests that a CBDC (or another method of public access to a form of central bank money) is likely not required to safeguard the monetary system of the United States,

but that it might be reasonable for the Federal Reserve to explore deploying to provide additional support for public confidence in money.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

In a scenario where the U.S. chooses not to issue a retail CBDC, there is no reason to believe that the U.S. payment landscape would not continue to be characterized by vibrant competition and world-leading innovation. Absent the issuance of a retail CBDC we would expect to see the continued development of safer, faster, lower-cost methods for domestic and cross-border digital payments. The existing U.S. payment system creates strong incentive for companies to improve payments. Recent developments, such as a private sector real-time payment system in the United States, demonstrate that industry is capable and willing to achieve meaningful evolution in payment methods. Also, the benefits of a CBDC for digital payments that the Federal Reserve identifies in the Discussion Paper—such as streamlining cross-border payments "*by using new technologies, introducing simplified distribution channels, and creating additional opportunities for cross-jurisdictional collaboration and interoperability*"—can be realized without a CBDC. U.S. companies realize this and are investing heavily in new technologies, such as blockchain and AI, to driver further improvements in domestic and cross-border payments.

However, we recognize that the evolution of the digital payments marketplace might benefit in the long run from a tokenized form of the U.S. dollar, particularly for wholesale payments, if other countries move to a digital currency model. Thus, it will be important to consider whether sustaining the U.S. financial system as the world's leader and the U.S. dollar as the world's reserve currency would be supported by the issuance of a CBDC in the United States. If so, the need for a CBDC might be limited to wholesale transactions between licensed financial institutions, which would present fewer challenges from a deployment, management, security, and macro-economic perspective than a CBDC that is available for retail use.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

The Federal Reserve should monitor the decisions by other OECD nations and evaluate whether the development of a U.S. CBDC would be important to maintaining the preeminence of the U.S. financial system and sustaining the role of the U.S. dollar as the world's reserve currency. Further, the Federal Reserve should not take a binary approach to any decision regarding the development of a CBDC, but rather should focus on use cases (wholesale, retail, etc.) and risk mitigation. By evaluating the decisions of other nations in this context, the Federal Reserve can best determine whether a CBDC is appropriate for the United States and, if so, the characteristics that CBDC should have.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

For ways to manage the different risks associated with CBDC, please refer to our answers to questions 7, 13, and 22.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

Comparisons are frequently made between a CBDC and the only other form of central bank money currently available to retail customers – physical cash. However, unlike cash which enables anonymous and untraceable transactions between counterparties, a CBDC must be structured in a way that enables it to achieve compliance with AML and CFT regulations, detect fraud, and adequately secure itself, its users, and its data, against cyberattacks and other malicious/illegal activity.

Identity verification will therefore be key to any successful CBDC deployment, particularly when we consider that any fast and easily accessible means of making payments attracts bad actors who seek to exploit the speed of payments to commit fraud (e.g., Account Takeover) and scams (e.g., romance scams, investment scams). Once consumers and businesses funds are stolen, criminals often use these illicit funds to support other criminal activities by moving the funds across the payments system through a complex chain of transactions across multiple financial institutions and jurisdictions.

At the same time, while any payment requires high levels of privacy and data protection to be attractive to consumers, a CBDC may face an up-hill battle – particularly given persistent concerns among certain groups that a CBDC could be used as a tool of government surveillance. In this respect, it is noteworthy that existing payment solutions already provide for high levels of privacy through sophisticated techniques such as encryption of payment information or tokenization of card numbers.

Fortunately, like any form of digital payment, a CBDC could be designed to provide personalized levels of privacy and optimize individual choice over how their personal information is used and shared. One of the simplest ways of doing this would be to adopt a two-tier federated approach to a CBDC (referred to by the BIS as a 'two-tier intermediated CBDC') where supervised intermediaries onboard CBDC users and execute retail CBDC payments from aggregated accounts held at the central bank. Under this approach the central bank retains full control over the issuance and distribution of the CBDC but does not have visibility into individual users' accounts and payments. Moreover, the fragmentation of data across the CBDC ecosystem avoids the creation of a data 'honey-pot', limiting the impact of any individual data breach.

Additionally, the Federal Reserve may want to consider how this approach would be combined with one or more forms of emerging technology designed to support user-privacy without sacrificing security or compliance, such as zero knowledge proofs (ZKPs), Shamir Secret Sharing (SSS), and Multi Party Computation (MPC). However, it will be important to remember that many of these techniques are in their technological infancy and would require significant testing and development in order to validate their security and scalability.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

One area of risk that was given limited consideration in the discussion paper is the enormous complexity of mitigating fraud and cyber-risk across a retail CBDC ecosystem. The cost to the global economy of cybercrime is expected to grow by 15 percent per year over the next five years, reaching $10.5 trillion USD annually by 2025. A retail CBDC will inevitably face sophisticated fraud and cyberattacks from both private and state-sponsored actors. CBDC users must trust that the system will be accessible and operational where and when it is needed; that their funds, accounts, identity, and other data are secure; and that they will be protected in the event of fraud.

Effectively deploying the strategies and techniques needed to secure a retail payment system will require the Federal Reserve to consider a number of new dimensions. Firstly, retail payment systems have significantly more endpoints than the wholesale payments system, with each opening offering a potential point of vulnerability. Effectively securing these endpoints requires the development of tools that work across the payment ecosystem proactively monitoring, detecting, and acting on security and cyber risks across their digital supply chain.

Secondly, while supervised intermediaries in a two-tier retail CBDC ecosystem will likely be responsible for conducting their own Know Your Customer (KYC) and Anti-Money Laundering (AML) activities, their inability to track transactions beyond their perimeter leaves them vulnerable to financial criminals—who have developed tools that exploit such limitations. To avoid inadvertently facilitating financial crime, central banks that issue CBDCs may need to do more than set stringent KYC and AML standards for supervised intermediaries; they may also need to curate a network-level view that empowers all intermediaries to more effectively identify and trace financial crime as it moves across the ecosystem.

Finally, it will be important to consider that modern cybercriminals exploit both organizational silos and national borders to undermine the safety and security of critical systems. The result is a world where no organization pursuing a strategy of

cybersecurity 'self-reliance,' regardless of their sophistication, can be confident that their systems are secure. The safest organizations will be those that 'travel together'—sharing critical insights in real-time from a network that is global in scope. To effectively secure a retail CBDC from both foreign and domestic threats, central banks will need to deploy ecosystem-level monitoring tools that are global in scope; relying on partners to provide critical intelligence from beyond their own borders.

14. Should a CBDC be legal tender?

If the Federal Reserve develops a CBDC, legal tender status would be desirable. Interestingly, the Federal Reserve explained in a research note titled "Preconditions for a general-purpose central bank digital currency" indicates that giving a CBDC legal tender status will not ensure the willingness of participants in the economy to accept CBDC as payment. Instead, that would largely depend on the credibility of the CBDC, including the soundness of the legal framework underpinning it. However, we agree with a comment from the European Central Bank executive board member Fabio Panetta that "*it would be quite awkward not to have legal-tender status for an additional instrument issued by a central bank*." The lack of legal tender status would likely be a material hurdle in getting the public to accept and use CBDC. In other words, legal tender status might be necessary (but possibly not sufficient) to establish the credibility of a CBDC with the public.

15. Should a CBDC pay interest? If so, why and how? If not, why not?

Paying interest on a CBDC may significantly exacerbate deposit substitution risk. The Discussion Paper acknowledges this, and we agree that "*an interest-bearing CBDC could result in a shift away from other low-risk assets, such as shares in money market mutual funds, Treasury bills*" reducing "*credit availability or raise credit costs for businesses and governments*."

However, preserving a technical option to add a coupon (negative or positive) to a CBDC may be of interest to the Federal Reserve if it were to develop a CBDC.

16. Should the amount of CBDC held by a single end-user be subject to quantity limits?

The establishment of quantity limits on individual holdings may be necessary to avoid destabilizing levels of deposit substitution, particularly during periods of financial crisis. Limits have the advantage of being easily understood by users and, if set at a reasonable level, should have little or no impact on consumer usability. Concurrently, they would provide commercial banks with a way to understand their potential

exposure to deposit outflows. While a range of technical issues might need to be addressed—for example, how inbound payments that would exceed a user's limit should be handled, or how a limit would be applied to an individual who has opened accounts with multiple private intermediaries facilitating CBDC access—these challenges appear solvable, particularly if addressed at the design stage.

However, research by the Swedish Riksbank suggests that the use of limits could have the unintended consequence of disrupting parity between the market valuation of retail CBDC deposits relative to commercial bank deposits, particularly during a crisis. In their 2018 "e-Krona Project Report 2", the Riksbank notes that:

> "It is the Project's assessment that limitations on access to e-krona may be associated with problems. For example, it may be difficult to maintain parity between Swedish krona in the form of cash, deposits in bank accounts and reserves. Assume, for example, that the e-krona becomes very popular but that there is a maximum limit imposed on each person's holdings. This could lead to the emergence of a market on which those who have not fulfilled their e-krona quota would be offering those who have the opportunity to buy e-krona in cash or by depositing money in a bank account at a higher than one-to-one price"

While this should not eliminate the use of limits from consideration, it does suggest that their design will require close consideration to ensure that any use of limits does not have unintended consequences.

If the Federal Reserve developed a CBDC with quantity limits, we would suggest that the Federal Reserve establish a system whereby the amount of a CBDC transfer to an individual that exceeds the individual's limit is allocated to a commercial bank account of the individual's choosing. Such a system is technically feasible and would avoid the complications and uncertainty that often surrounds failed payments.

Moreover, it may be possible to simplify the implementation of this capability by leveraging pre-existing payments infrastructure. Such a solution would need to be underpinned by instructions from customers during an onboarding process to permit the intermediary to perform this conversion and apply funds to a designated account. Due consideration would also need to be given to individuals who are unable to access a commercial bank account or choose not to have one. The Federal Reserve should study the most efficient means of shifting payments exceeding any CBDC holdings limit to ensure that the approach does not have unintended consequences on efficiency and stability of the U.S. payments system, nor on the financial inclusion of its most vulnerable users.

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

If the Federal Reserve issues a CBDC and develops a two-tier federated approach, intermediaries would play a critical role in creating trust, meeting the needs of users, and enabling the successful adoption of a CBDC. As in the current ecosystem, it is likely that some firms may provide end-to-end intermediary services while other firms would specialize in particular intermediary functions.

The goal of intermediary regulation should be to protect consumers, address AML/CFT risk, and mitigate systemic risk. Regulation should be functional and risk-based, so that intermediaries performing the same functions are subject to the same regulation, tailored to the risk related to the services provided. This approach is important to prevent gaps and arbitrage in the regulatory landscape and to enable fair competition.

CBDC intermediaries should be able to provide a CBDC experience that addresses the following issues:

> **Strong and varied user experience design:** Consumers expect payment journeys to be recognizable, intuitive, and in some cases tailored to their unique needs.
>
> **Ease of adoption:** The success of a CBDC will depend on the adoption rate which, in turn, will depend on many factors such as security and convenience. Consumer education and awareness on the characteristics and capabilities of the CBDC will be key.
>
> **Customer Identification:** Intermediaries will need to develop an efficient onboarding process (e.g., sign-up, KYC, funding of accounts), conduct ongoing AML/CFT monitoring, and provide user education.

Payment networks with strong payment technology expertise, such as Mastercard, will have an important role to play if a CBDC is to be usable for payments and otherwise transferable in a manner akin to cash. Network intermediaries should focus on the following value drivers:

> **Acceptance:** A CBDC must be usable for a variety of in-person and digital transactions to provide value as a payment mechanism. However, enabling acceptance points is a prominent challenge to driving mass adoption of a new payment solution. Consumers will be more likely to adopt a CBDC if it can be used on existing acceptance infrastructure and is supported by known and identifiable payment form factors (physical and digital) linked to the user's existing devices and accounts. Therefore, linking the CBDC to existing payment networks such as Mastercard would make adoption easier for both consumers and merchants. Commercial incentives could then encourage the private sector (e.g., wallet providers, merchants, etc.) to further expand the reach of those networks and achieve the key motivation for issuing a CBDC.

Interoperability: Interoperability between payment systems avoids closed loops that reduce the fungibility of money, fragment liquidity, and limit competition. Here, interoperability with other stores of value (e.g., commercial bank deposits, prepaid accounts) would be important.

Consumer Protection: Consumer trust is at the heart of payments. Individuals must have confidence that they are getting what they pay for and that they are protected in the event of fraud, disputes, refunds, or data misuse. This requires a framework of standards and rules that safeguard the security of every transaction while ensuring that all parties are treated fairly and equitably. The private sector could play a variety of roles in this effort, including the co-development of such framework and offering lines of cyber/fraud defense to the central bank or supervised private intermediaries. Additional consumer protection features may also be a value-added service offering.

Value Added Services: A CBDC has the potential to serve as a foundation for innovative and value-added financial products and services developed by competitors within the private sector. Such value-added services may be varied, but a notable consideration is programable payments—the ability for users to build simple conditional obligations (colloquially, "smart contracts") into a payment. Programmability could theoretically support a wide variety of use cases, including escrow services, automated insurance claims, and the provision of installment loans at the point of sale.

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

A defining feature of cash is that it does not require network connectivity to function. Offline payments would likely be a useful feature for CBDC in several edge cases. Emerging technologies may present opportunities to deliver this functionality while limiting the risk of fraud borne by payment counterparties. The handling of offline transactions by card-based ecosystems today may provide a model for facilitating offline CBDC payments – using a combination of technology and business roles to define liability and limit exposure. Mastercard uses 'counters' on the payment card chip to manage offline payments risk. These can be set to allow offline transactions only when the number of offline transactions is below a threshold. These configurable risk parameters allow the convenience of offline transactions for consumers and merchants at a manageable level of risk that is tolerable for all entities.

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

For a CBDC to provide consumers value as a payment mechanism, it must be usable for a variety of in-person and online transactions. However, enabling acceptance points is one of the greatest challenges to driving mass adoption of a new payment solution. Consumers will be more likely to adopt a CBDC if it can be used on existing acceptance infrastructure and is supported by identifiable payment form factors (physical and digital) that are linked to the user's existing devices and accounts. Therefore, linking the CBDC to existing private payment networks would make adoption easier for both consumers and merchants. Commercial incentives could then encourage the private sector (wallet providers, merchants, etc.) to further expand the reach of those networks.

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

Interoperability between payment systems avoids closed loops that reduce the fungibility of money, fragment liquidity, and limit competition. For a CBDC, interoperability with other stores of value (e.g., commercial bank deposits, e-money etc.) would play an important role in strengthening the domestic payment ecosystem and reinforcing the role of central bank money. Sustained collaboration between public and private sector participants will be critical to delivering this interoperability.

Mastercard is supportive of the Federal Reserve's proposed intermediated model (two-tiered) approach to a CBDC (provided development of a retail CBDC is deemed necessary), which will ensure that the Federal Reserve System retains strong institutional governance over the core CBDC infrastructure. This model will also facilitate the engagement of the private sector in the competitive development of innovative payment interfaces and use cases that allow transferability across multiple payment platforms. An intermediated (two-tier) model would allow participants to use networks to store, move, and transact CBDC. This would prevent lock-in risks and allows CBDCs to become accessible to retail customers as they flow across multiple networks.

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

We do not believe that it is possible to determine the future technological innovations that may affect the design and policy of CBDCs. The continued digitization and miniaturization of payments, driven by increased e-commerce and the rapid evolution

of parallel technologies like 5G, means that the future of payment systems will likely evolve in unpredictable ways.

Therefore, we recommend that the design of a CBDC should be structured to embrace the necessary scalability, extensibility, and flexibility to accommodate a rapidly changing payments landscape. The Federal Reserve's preference for an intermediated (two-tier) CBDC is an important first step in achieving that structure, as it provides the flexibility to add new issuance and distribution mechanisms without requiring the Federal Reserve to design and deploy those capabilities itself. The participation of private sector intermediaries allows the central bank to deploy incentives for the continuous innovation in new payment capabilities that will be required in order for a CBDC to remain relevant.

22. 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?

We focus this response on potential approaches to navigating the challenge of facilitating offline CBDC transactions, while at the same time supporting an 'identity verifiable' CBDC. Certain 'token-based' CBDC implementations may have the potential to enable low-risk offline CBDC transactions, however, the bearer nature of these assets' risks providing bad-actors with an improved set of tools for the facilitation of financial crime.

One approach to this challenge might be the creation of two forms of a CBDC with differing technical characteristics: a primary "account-based" system and a secondary "bearer token" narrowly designed to facilitate offline payments. The relationship between these two forms could be structured to "nest" the bearer token within the account-based system. Under such a framework, users could be required to first onboard to the primary account-based system—undergoing all necessary KYC checks—before having the right to either convert their account-based holdings to bearer tokens or receive bearer tokens from a third party. When combined with technical solutions to limit individual holdings of bearer tokens and the size and frequency of an individual transfers of bearer tokens, this framework could ensure most CBDC deposits would remain in the primary account-based system linked to the verified user's identity.

An alternative, and significantly simpler, approach to reconciling these policy objectives would be to deliver offline payments as a value-added service, with risk underwritten by supervised private intermediaries, rather than as a feature of the core system. The handling of offline transactions by card-based ecosystems today provides a model for how this could be accomplished by using a combination of technology and business roles to define liability and limit exposure. For example, Mastercard uses counters on the payment card chip to manage the risks of offline payments. These counters can be

set to allow offline transactions only when the number of offline transactions is below a threshold. These risk parameters may be set at a regulatory level or based on individual issuer risk tolerance. This allows the convenience of offline transactions for consumers and merchants at a manageable level of risk, acceptable for all entities in the ecosystem.

Within the context of the CBDC, this second approach would have the benefit of simplifying the Federal Reserve's ability to deploy policy tools—such as limits and tiered remuneration—and obviating the need to develop costly parallel infrastructure to enable a bearer token that operates parallel to the primary account-based system.

LIBERTY BANK

Competitive Rates • Superior Service • Since 1903
We are proud to be 100% LOCAL!!

www.liberty.bank

1002 N. Main St.
Liberty, IL 62347-0196
(217) 645-3434
(217) 645-3606 FAX

1001 Highway 106
Barry, IL 62312-0132
(217) 335-2321
(217) 335-7050 FAX

402 W. State St.
Payson, IL 62360-0115
(217) 656-3400
(217) 656-3900 FAX

4134 Broadway St.
Quincy, IL 62305-2807
217-214-3400
217-214-3900 FAX

Mark G. Field
President & Chairman
mfield@liberty.bank

May 18, 2022

Ann E. Misback, Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Ave. NW
Washington, DC 20551
VIA email: Digital-innovations@frb.gov

IN RE: Central Bank Digital Currency (CBDC) Feedback

Dear Secretary Misback,

Thank you for the opportunity to provide feedback on the Fed's consideration of issuing a Central Bank Digital Currency. If the Fed is singularly interested in providing a simple digital representation of our country's fiat form of dollars and cents, then it could possibly be done in such a way as to minimize disruptions to our entire economic engine. Straying from that simple goal will absolutely produce unintended and severe consequences to communities of all sizes across our entire continent.

The Fed should ONLY consider issuing a CBDC if it continues to use its existing partnerships with banks to be the ONLY intermediaries between the Fed and American consumers and businesses. The Fed should NEVER go direct-to-consumer with accounts, and they should NEVER pay interest on "cash holdings" of CBDC. Those efforts would have immediate devastating effects on credit availability in every one of our communities. The "money-multiplier" effect of our fractional-reserve banking system cannot function if the Fed holds onto those deposits directly.

Many of the use cases we have heard as to why the fed SHOULD issue a CBDC will actually be resolved once FedNow fully rolls out next year, so people will already have an instant, irrefutable payment method without requiring a CBDC. Further, our country will not lose it's dominant position as the world's currency of strength just because we do not yet have a digital form of fiat currency. Getting it RIGHT is far and away more important than just having it FAST.

Recent developments involving so-called stablecoins "breaking the buck" should not be given any weight in determining when we should ultimately roll out a CBDC. Those who wish to play in the wild, wild West of other digital and crypto-based currencies need to be reminded from time to time of the risks they are taking. The government can not and should not back up other peoples' efforts to disintermediate the American banking system.

CBDC will not enable any more access to banking services than digital banking currently provides, as

it is highly unlikely that a CBDC will be able to operate off-line. Keep in mind that you will not achieve 100% participation in "mainstream" banking services no matter what you do, as some people just do not trust things like the government's recent attempts to require banks to report transaction-level details to the IRS, and, thus, many folks will continue to cling to their coin and currency for that reason alone.

Technology can be a wonderful thing, but being on the leading edge/bleeding edge can cause more harm than good. The Fed needs to take this one step at a time and ensure the safety and security of any new system. They should guarantee that there will be a minimum of disruption to the existing banking system that has made our country's economic engine the envy of the world.

Respectfully yours,

Mark G. Field
President & Chairman
Liberty Bank

Chairman, Faster Payments Committee
Community Bankers Association of Illinois

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.

Phyllis Meyerson
972.333.9626
phyllis@tillerendeavors.com

David Walker
214.642.9268
david.walker@tillerendeavors.com

May 20, 2022

Board of Governors of the Federal Reserve System
Washington, DC 20551
https://www.federal reserve.gov/apps/forms/cbdc
Digital-innovations@frb.gov

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

Dear Governors:

The Global Resilience Federation (GRF) is pleased to be given the opportunity to submit this comment letter to the Federal Reserve Board regarding its Request for Comment (RFC) on development of a central bank digital currency (CBDC) with its value tied to the value of the U.S. dollar. These comments reflect my following experience:

1) The current Chair of the GRF;
2) Twelve years as the former CEO of the Financial Services Information Sharing & Analysis Center (FS-ISAC);
3) Eighteen years as the former EVP of NACHA, the rule-making body for the ACH Network; and
4) Ten years in treasury and lending positions in banking

I have also read draft comments from several others. I support the comments provided by Phyllis Meyerson and David Walker which are also attached.

Specifically, we support a U.S. CBDC as an essential tool to ensure the dominance of the U.S. dollar in the global economy.

Also, we support providing CBDC services through commercial banks, credit unions and regulated nonbank financial service providers as long as proper risk and security controls are implemented to protect financial institutions and their corporate and consumer customers.

By way of background, GRF is a nonprofit corporation with the following mission:

> *The Global Resilience Federation mission is to help assure the resilience and continuity of vital infrastructure and individual organizations against threats and acts that could significantly impact those organizations and these sectors' ability to provide services critical to the orderly functioning of the global economy and general safety of the public.*

In this role, GRF currently supports 17 different information sharing communities including companies and public sector organizations from the following sectors: financial institutions, insurance, payment processors, K12 school districts, law firms, space, aviation, auto, manufacturing, professional services, healthcare, higher education, retailers, government agencies and regulators, and three different energy subsectors.

GRF and its members have been firsthand witnesses to the use of cryptocurrencies as the primary mechanism used by cyber criminals to receive payment for ransomware and other types of cyberattacks. Every industry has been targeted with ransomware attacks including school districts, hospitals, energy companies, financial firms, government and law enforcement. An example of how ransomware attacks have affected critical infrastructure is the Colonial Pipeline attack crippled the fuel supply chain throughout the East coast for weeks. Another example is recent permanent closure of Lincoln College on May 13 due to a devastating ransomware attack that it could not recover from.

GRF has also reported on the massive amount of fraud created from misappropriated funds tied to cryptocurrencies and attacks against crypto exchanges, operators and holders of digital currencies. Measured in terms of dollar losses, these victims have suffered losses totaling in the billions. The following are some reports of some recent attacks that occurred in 2022 and 2021 against various platforms and cryptocurrencies:

- $620 million worth of Ethereum stolen by North Korean hackers North Korea-Linked Hackers Stole $620 Million in Crypto Heist: FBI (businessinsider.com)
- $613 million Poly Network, (source, Chainanalysis 2022 Crypto Crime Report)
- $200 million BitMart (source, Chainanalysis 2022 Crypto Crime Report)
- $150 million BadgerDAO (source, Chainanalysis 2022 Crypto Crime Report)
- $145 million Venus (source, Chainanalysis 2022 Crypto Crime Report)
- $139 million BXH (source, Chainanalysis 2022 Crypto Crime Report)

- $130 million Cream Finance (source, Chainanalysis 2022 Crypto Crime Report)
- $103 million Vulcan Forged (source, Chainanalysis 2022 Crypto Crime Report)

The present cryptocurrency market has a two-fold purpose: (1) use as a form of digital payment and (2) use as an investment. These uses have created their own set of problems. In the current unregulated environment, the former has its own issues involving its use by cybercriminals and certain nation states to create fungible assets from illicit cyberattacks. The latter has resulted in a market for cryptocurrencies as a risky and volatile investment. A CBDC with the following features would solve both of these problems.

One of the primary reasons that current payment systems such as Fedwire and FedACH have not been successfully hacked is that they use a secure centralized database and ledger systems owned and operated by the Federal Reserve System. Similar sandboxed payment systems are operated by The Clearing House and the major card companies. These systems are essentially "air-gapped" from the Internet so that traditional hacking techniques such as phishing, and web injects or drive by downloads from web browsing are not possible. Segregating devices, systems, applications and architectures ensures that these payments systems cannot be penetrated directly.

However, it should be noted that indirect attacks targeting financial institutions and their customers can be successful. Typically, these are the result of account takeovers and business email compromises. The resulting fraud is the responsibility of the financial institution if it did not offer a commercially reasonable security procedure. The business customer is responsible for the loss if it did not accept or follow the commercially reasonable security procedure provided by the financial institution. Consumers are protected under Regulation E and return time frames cited in the NACHA Operating Rules.

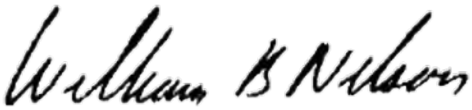
The largest publicized account takeover attack occurred in February 2016 and was due to a failure by the Bank of Bangladesh to properly secure their SWIFT financial transaction platform. It resulted in a successful theft of $81 million from their Federal Reserve Bank of New York account. Fortunately, the Federal Reserve Bank of New York successfully prevented further theft of funds but not until the $81 million were laundered successfully through casino operations in the Philippines. In that case, though, the resulting loss was not the fault of the Federal Reserve payment system since the security failure occurred at the Bank of Bangladesh. The Federal Reserve Bank of New York had received valid instructions to make that payment.

The above points illustrate that a CBDC operated by the Federal Reserve – while not preventing account takeover, business email compromise, or ransomware attacks targeting financial institutions or their customers – would provide a mechanism to enable secure cryptocurrency payments over a payments systems operated by the Federal Reserve. This would eliminate the possibility of massive losses due to hacks of cryptocurrency exchanges like have been seen in the last several years, most of which are being launched by North Korea.

Another major benefit of the Federal Reserve operating its own CBDC is the fact that the value of CBDC would be directly tied to the U.S. dollar, thus eliminating any risk of volatility in the value of the cryptocurrency. This would make it a stable international currency that could be used to facilitate trade on a global basis. Having such a constant and reliable international digital currency would ensure that the U.S. dollar would maintain its role as the primary reserve currency and secure its role in future global commerce.

Thank you again for the opportunity to comment on this important issue. Please also include my endorsement of the comments of Phyllis Meyerson and David Walker. Feel free to contact me if you have any questions.

Sincerely,



William B. Nelson

Global Resilience Chair

703-362-1509

bnelson@grf.org

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.

Phyllis Meyerson
972.333.9626
phyllis@tillerendeavors.com

David Walker
214.642.9268
david.walker@tillerendeavors.com

May 19, 2022

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

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

Dear Ms. Misback:

The Community Bankers Association of Illinois ("CBAI"), which proudly represents nearly 300 Illinois community banks, appreciates the opportunity to provide our observations and recommendations on the Federal Reserve System's ("Federal Reserve" or the "Fed") discussion paper titled, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* ("Discussion Paper"). CBAI acknowledges the statements in the Discussion Paper that, "Recent technological advances have ushered in a wave of new private-sector financial products and services, including digital wallets, mobile payment apps, and new digital assets such as cryptocurrencies and stablecoins." Further, "These technological advances have led central banks around the globe to explore the potential benefits and risks of issuing CBDC." In addition, that the introduction of a CBDC "would represent a highly significant innovation in American

money." And, the Fed has concluded that its "initial analysis suggests that a potential U.S. CBDC, if one were created, would best serve the needs of the United States by being privacy-protected, intermediated, widely transferable, and identity verified." CBAI agrees with the Fed's position that it not "proceed with issuance of a CBDC without clear support from the executive branch and from Congress, ideally in the form of a specific authorizing law." The Fed must also subject the proposition of distributing CBDC, holding CBDC in consumer accounts at the Fed, and paying interest on CBDC to a thorough and transparent analysis proving that the benefits far exceed the risks and costs.

Introduction

Five years ago, the CBAI formed a Payments Committee, consisting of leadership community bankers and senior staff, for the purpose of advising the CBAI Board of Directors on matters relating to payments, and emphasizing the need for community banks to have multiple viable options for access to the payments system on a non-discriminatory basis. The Payments Committee was engaged in meetings with associations, system experts, and regulators to discuss the broader payment landscape and to assess various developments, including options and improvements, to enhance the speed, safety, and efficiency of the system from the community bank perspective. The Committee also attended several public forums leading up the Fed announcing its FedNow Service. We are proud to have participated in that process and to have taken part in the formation of the U.S. Faster Payments Council as a founding member.

In recent months, the Committee has increasingly turned its focus to digitals assets including U.S. Central Bank Digital Currency ("CBDC"). The Committee finds that its advocacy objectives today regarding CBDC are quite similar to our objectives with the FedNow Service, namely, to include community banks in new technology and system improvements so that they can flourish and continue to be an indispensable part of the fabric of our nation's economic system.

Federal Reserve Functions and Guidelines

The Federal Reserve System, as the central bank of the United States, performs five key functions: conducts the nation's monetary policy, promotes the stability of the financial system, promotes the safety and soundness of individual financial institutions, fosters payment and

settlement system safety and efficiency and promotes consumer protection and community development.

The Federal Reserve is "guided by an understanding that any U.S. CBDC should, among other things

- provide benefits to households, businesses, and the overall economy that exceeds and costs and risks;
- yield such benefits more effectively that alternate methods;
- complement, rather than replace, current forms of money and methods for providing financial services;
- protect consumer privacy;
- protect against criminal activity; and
- have broad support from key stakeholders."

Currently, there are insufficient details about the rationale and design for U.S. CBDC. Therefore, CBAI is unable to support such a proposition unless several concerns are addressed, and certain conditions are met.

CBAI urges the Fed to consider its functions and follow its guidance in the analysis of CBDC, and the design and implementation of CBDC if it were to be created. If these functions and guidance are appropriately considered and followed, the interests of community banks should closely align with the public interest that the Fed is committed to promoting and fostering, and that community banks will thrive. To accomplish the necessary objectives, CBAI urges the Federal Reserve to incorporate the following observations and recommendations in its analysis and design for a potential CBDC.

Overriding Considerations

There are enormous differences between the United States economic model, which is built around our resilient and effective banking industry, and that of other nations. The U.S. is the only country in the world that possesses thousands of successful community banks, each of which takes great care to satisfy the banking needs of the customers and communities they serve.

These community banks serve as depositories and lenders, which are essential to support our economic system, and they are predominantly the lenders to small businesses which employ

most Americans. Community banks most recently distinguished themselves during the COVID-19 pandemic where they excelled at Paycheck Protection Program (PPP) lending which saved millions of small businesses from failure and their employees from being unemployed.

The United States has a capitalist economic system that has successfully produced the largest and most resilient economy in the world. Our economy is financed by the private sector banking industry. In our capitalist economy, the private sector leads in generating economic activity and consumers, households, and businesses are free to make the decisions they believe are in their best interest – not as centrally dictated by the government.

Ideally, and where necessary and desirable, the government works in partnership with the private-sector banking industry. Prominent examples of these successful cooperative efforts include the SBA 7(a) lending program where banks make loans to small businesses which are guaranteed by the SBA to mitigate credit risk, and residential mortgage loans which are sold to Fannie and Freddie to free-up funds for additional home mortgage lending. Also, the Federal Home Loan Bank System provides its members with advances to support lending and asset/liability management which they use to originate and sell residential mortgage loans to support housing finance. None of these government agency programs compete directly, but rather work cooperatively, with the private sector community banks to achieve the nation's small business and housing finance goals.

There are glaring examples where government agencies and programs do compete head-to-head with the private sector, where the reasons for their continued existence have long since passed, and where their government subsidies and other advantages are being weaponized against their private-sector community bank competitors. The poster children for this discrimination against community banks include credit unions and Farm Credit System lenders which use their tax and funding advantages to steal away the best consumer, small business, and agricultural lending opportunities from taxpaying community banks.

If a CBDC is offered by the Federal Reserve, and that should not be considered a confirmed assumption at this time, CBAI strongly urges the Fed to design the offering in such a way as to work cooperative with and not compete against (disintermediate) the private sector - particularly the nations thousands of community banks. The only CBDC that should be under consideration is one in which community banks continue to serve as the intermediary between the Federal Reserve and consumers.

CBDC Benefits, Risks, and Policy Considerations

We are pleased to comment on the following questions that the Federal Reserve has posted for the consideration of CBDC.

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

CBAI strongly supports financial inclusion and believes that every responsible and able consumer and business should have a banking relationship with their local community bank. The fact that 95% of the population is "banked" (as reported by the FDIC) is indisputable confirmation that the banking industry excels at reaching and serving the banking needs of American individuals and households. The challenge is to encourage the 5% of the population that remains "unbanked" to embrace traditional and responsible private-sector banks because not doing so is the more costly alternative and one that does not lead to a bright financial future.

CBAI believes the arguments in favor of CBDC to enhance the public good by enabling the "unbanked" to participate in financial services (i.e., financial inclusion) are specious and such assurances will fail to deliver. The reasons for individuals remaining "unbanked" include not trusting financial institutions, not having sufficient financial resources, not being able to satisfy Know Your Customer (KYC) requirements, not having managed past financial relationships in a satisfactory manner, and not having access to the internet or mobile devices. CBAI finds it impossible to believe that CBDC will responsibly enable individuals clear any of these hurdles to financial inclusion.

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

The Federal Reserve already has many tools in its toolbox to implement and manage monetary policy to control the money supply and promote sustainable economic growth. These tools include increasing or decreasing interest rates, lending directly to banks, and changing the reserve requirement. In addition, the Fed has bought securities on the open market (i.e., qualitative easing), it can lend to banks and others on an emergency basis, and it can indirectly

impact monetary policy through its policy statements and announcements. These tools have been successfully used by the Federal Reserve for many decades.

CBDC could potentially allow the Federal Reserve to inject money into the economy more quickly, but this would depend on its design and the extent to which CBDC is available, adopted, and accepted as a form of payment for goods and services. The drawbacks to CBDC, if it is designed improperly to compete with the private sector, will be so detrimental as to outweigh any potential monetary policy benefit, in the pursuit of maximum-employment and price-stability goals, by decimating the business model of the nation's thousands of community banks. This would undoubtedly be the case if there was a direct-to-consumer CBDC offering that would disintermediate community banks.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

To the extent a Federal Reserve CBDC would exist outside of the traditional banking system, which presupposes, in the extreme, where the Fed distributes CBDC, holds consumers' accounts at the Fed, and pays interest on CBDC, traditional banks would be disintermediated. The impact of disintermediation will fall hardest on the nation's thousands of community banks and will have a devastating impact on sustained economic growth.

An additional result of this misstep would be further consolidation in the banking industry. In this scenario, the largest banks would continue to grow larger, and the percentage of assets held by community banks would shrink. This consolidation would limit competition and harm consumers and small businesses because they would have fewer choices and face higher costs and fees. Also, American taxpayers would be responsible for bailing out the too-big-to-fail (and getting bigger, more interconnected, and more opaque) financial behemoths that regularly get themselves into trouble and risk destroying the banking industry, financial system, and our economy by their failure. The current pace of consolidation, and the already shrinking number of community banks, are very distressing. This trend must be reversed and not accelerated by a poorly designed CBDC.

If CBDC were widely available and accepted and with no restrictions on holdings, it would likely destabilize the financial system in an economic or financial crisis when there is a flight to

safety. The government is the ultimate too-big-to-fail institution and the Fed's CBDC, with no liquidity or credit risk, would be the one of the safest shelters in stressful times.

This perception/reality would harm community banks in particular because they are not too-big-to-fail. The government proved during the last financial crisis that it was willing to bailout the biggest banks and financial firms by providing direct equity injections and multiple guarantees. However, 500 community banks were considered too-small-to-save and failed, which was devastating for hundreds of communities across the country. In a flight to safety, and with a poorly designed CBDC, community banks would be harmed, and harming them would damage the banking industry and financial system (further consolidation), consumers (fewer choices and higher prices), and taxpayers (bailout risks).

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

Please also refer to the answer to Question 5 for the reasons why CBDC will adversely affect financial stability by adversely affecting the financial sector – particularly community banks.

Additionally, the Federal Reserve's distributing CBDC, holding consumers' accounts at the Fed, paying interest on CBDC, and the resulting disintermediation, impacts community banks and consumers significantly more than the largest banks because of our narrower business model and closer customer relationships. Community banks are responsible for distributing and handling currency and processing payments, holding depositors' funds in accounts, and lending money to individuals and businesses in their communities. A disintermediating CBDC model would break two-thirds of that bond between consumers and their community banks (i.e., currency/payments and holding accounts.)

A direct-to-consumer model would also deprive banks of the funds needed to make loans to customers in their communities. Any notion that a successful workaround to this problem would be for the Fed to lend money to banks which can then lend those Fed-borrowed funds to their customers, while technically is possible, would still destroy two-thirds of the community bank customer relationship and replaced it with an unnecessary public-sector government provided solution.

Regarding other forms of digital currency like stablecoins, cryptocurrency, and any other non-central government supported digital assets, while they are completely different types of digital assets their impact on the financial system and financial stability, based on their rapid growth, could be substantial and destructive. The risks they pose must be jointly and comprehensively addressed by policymakers.

Cryptocurrency is neither a stable store of value nor a reliable medium of exchange. Cryptocurrency does and should exist outside of the traditional banking industry precisely because it is not and cannot be considered money or currency in the traditional sense of the term. Notwithstanding its existence, and however it is defined as either a security or an investment, crypto must be thoroughly, thoughtfully, and comprehensively regulated so it does not pose risks to the financial sector or financial stability.

The proposition that stablecoins are a stable source of value and a reliable medium of exchange is a fallacy because while that may be true at times, the financial instruments in the reserve pools backing stablecoins are subject to fluctuations in value during times of economic and financial stress. Thus, at the beginning of a stressful period when demand for redemptions of stablecoins is high (i.e., a flight to safety), the value of the assets backing stablecoins will likely decline, which results in the threat of a run on stablecoins in much the same way commercial money market accounts were threatened during the financial crisis over a decade ago and in the early days of the COVID-19 pandemic. Both times, the government was forced to take extraordinary measures to protect commercial money market accounts. This same problem will likely occur in the future with stablecoins unless there are strict regulations to verify that the reserve pool assets exist and to force the quality of the assets backing stablecoins to be virtually immune from value fluctuations.

The most appropriate way to handle the likelihood of fluctuations in value of the stablecoin reserve pools is to require them to be backed by FDIC insurance. Consideration should also be given to a dedicated and segregated portion of the DIF robustly funded exclusively by stablecoin operators to protect the traditional use of the DIF to support insured deposits for traditional banks. In addition, serious consideration should be given to stablecoin operators establishing a robust and prefunded orderly liquidation funds (OLF) in the event of the need to liquidate one or more of these operators.

The risks posed by cryptocurrency and stablecoins are enormous, as well as the consequences for monetary policy, our financial system, the banking industry, and American taxpayers. They also

pose threats to the privacy and security of consumers and small businesses. Of great concern now is that there is no single regulator responsible for this rapidly growing sector that combines elements of currency, payments, securities, and investments, and there is insufficient transparency and lack of accountability in this ecosystem. Policymakers must quickly collaborate and cooperate in the development and implementation of a comprehensive approach to ensure a consistent Federal regulatory framework that does not permit any form of digital assets, either within or outside of the traditional banking system, to threaten the essential and highly successful business model of highly regulated and very responsible community banks.

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?

CBAI urges that only FDIC-insured traditional banks should be allowed to intermediate any form of CBDC. The Federal Reserve working with and through the traditional banking industry for a potential CBDC, just as banks do with the distribution of cash and holding accounts, would mitigate the most severe adverse impact to the financial sector and to financial stability from the most significant threat of CBDC (i.e., disintermediation).

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?

Consumers do not realize that there is any difference between central bank money and commercial bank money. All that they experienced and know is that every time a new method of payment has ever been introduced (i.e., coins, paper money, checks, wire transfers, ACH, and now real time payments with the FedNow Service) none of the other methods go away, though some may see less use over time.

In the event the Fed issues CBDC, the market will determine its place, at launch and in the future, among other forms of payment of goods and services. Any efforts by the government through policies and practices that would favor CBDC over other forms of payment would be exercising and inappropriate influence, and picking winners and losers, which is not the proper role of government particularly if it is in competition with (i.e., direct-to-consumer CBDC) private sector banks. Quite the opposite should occur, the Fed should support the diversity of various forms of payment to avoid concentrations and support consumer choice. The Fed should

establish a very narrow usage lane for CBDC, it should only be a simple digital representation of paper dollars and metal coins, and it should definitely not compete against private-sector community banks.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

CBAI believes there are unrealized benefits of the soon to be rolled out FedNow Service which should be thoroughly studied over time because they may facilitate cross-border payments and will otherwise likely impact the design and perhaps even the need for a CBDC. The use case for cross-border payments with CBDC is also more complicated than its use as a domestic form of payments. These challenges include cooperation and coordination between central banks, determining exchange rates, and currency conversion. In the event the Federal Reserve moves forward with CDBC, the cross-border payments issue should be dealt with at a much later time.

10. How should decisions by other large economy nations to issue CBDCs influence the decision on whether the United States should do so?

The decisions by other large countries in offering their version of central bank digital currency will be instructive and should be closely monitored by the Federal Reserve. Each country is unique in terms of the size of its economy and its banking and financial systems. Each have their own motivations for offering (or not) a central bank digital currency, and how best it will be designed for its uses and purposes.

While the experience of other countries will be beneficial to study, it is critical to analyze the development and use of U.S. CBDC through the lens of what is in the best interests of the United States, its banking industry, and financial system – including the nations thousands of community banks. The U.S. should not simply follow other countries in the development and implementation of its CBDC. The U.S. is distinguished among banking systems in the world by having thousands of community banks and that accomplishment should not be undermined.

For now, the Fed should stay engaged in the world digital asset ecosystem, monitor developments and enhancements of other country's central bank digital currency, and play an active role in developing international standards. The Fed should also prepare and be nimble in

doing what is necessary to preserve the dominance of the U.S. dollar among the world's currencies. Losing this preeminence would be a significant problem and must be avoided at all reasonable costs.

If the United States risks falling behind other world currencies and losing its position as the world's dominant currency, and CBDC can assist in some limited way in preventing that from happening, only then should there be a thoughtful consideration or reconsideration of CBDC to prevent harm – while not disintermediating community banks.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

Complete anonymity cannot currently be achieved in the financial system and banking industry, and it must not be a feature of the Federal Reserve's CBDC. Providing complete anonymity would draw miscreants to CBDC and this must be avoided.

In the event the Federal Reserve distributes CBDC, holds consumers' accounts at the Fed, and pays interest in CBDC, the Fed has essentially created the equivalent of a consumer deposit account on its own balance sheet. If this happens, then the Fed must comply with all the multitude of laws, rules, and regulations that community banks are subject to including, but not limited to, KYC, BSA, AML, CTRs, OFAC, and SARs. Identical to what is required of banks, the Fed will need to have detailed policies and procedures, independent audits and regulatory examinations (to ensure transparency and to avoid conflicts of interest with self-examination), and be subject to the same informal and formal regulatory actions that bankers are subject to for violations including board memorandums, cease and desist orders, civil money penalties, and removal, prohibition and suspension actions – and many of these will be made public. The Fed is obviously not prepared to perform these many and necessary deposit account related tasks and should not even consider direct-to-consumer accounts.

Access to CBDC documents and records must be strictly controlled and only made available to the courts, government agencies, and law enforcement agencies through due process of law including court-sanctioned subpoenas.

There will naturally be heightened suspicion by consumers about the intergovernmental sharing of information about a direct-to-consumer CBDC activity, and the government's attempting to

influence favor/disfavor certain recipients through CBDC. This information sharing must not be allowed to occur. The Fed must be direct, honest, and consistent in addressing these legitimate suspicions and concerns and what it is doing to prevent this potential abuse of governmental authority. Even then, for those who are highly suspicious of the government, this will not be enough, and they will not use CBDC – period.

Based on recent events, the greatest suspicion will likely be with the Federal Reserve sharing information with the Internal Revenue Service ("IRS") to facilitate tax collection. The current Administration is attempting to increase financial industry reporting to the IRS on account flows as small as $600.00. While this effort has been defeated (for now) by private-sector banks and consumer/taxpayer advocacy opponents, Congress and the Administration have not relented, and they are still seeking to implement this reporting requirement. Any invasion of reasonable and expected financial privacy will undermine confidence in the CBDC and all financial institutions.

A recent and troubling example of the government/financial regulators inappropriately interfering with and imposing its priorities, was *Operation Chokepoint*. During this operation, the Department of Justice and the Federal Deposit Insurance Corporation abused their powers and weaponized their authority to advance an ideological objective. They forced banks to either be criticized by examiners or terminate banking relationships with completely legal businesses that the government deemed inappropriate and unacceptable under the guise that financial institutions need to avoid potential *reputational risk*. Many will likely suspect that it is entirely within the realm of possibility that the Federal Reserve, or future administrations, or Congresses will use its authority over CBDC to impose on consumers what it deems most desirable and in their best interests, rather than allowing consumers to make their own choices about how they spend their money.

The fears identified above (and worse) are not farfetched – they are very legitimate. One needs to look no further than credible reports about how other governments are designing their central bank digital currencies to create a window into their citizens' financial activity which could give these governments control over their behavior.

If offered, CBAI urges the Federal Reserve to design its CBDC to maintain the reasonable privacy expectations of those who hold this digital asset and also maintain strict and uncompromising independence in the face of what could be withering political pressure.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

On the one hand, if the Federal Reserve distributes CBDC, and holds consumers' accounts, the Federal Reserve will present as an enormous and highly lucrative target for criminals to hack and steal. On the other hand, if the Fed does not directly distribute CBDC, and does not hold consumer accounts, but rather works with a through the traditional banking industry, the decentralized nature of the industry, particularly with thousands of community banks, will present fewer high-value targets for hackers. The Fed should embrace this decentralization which is a proven risk mitigation strategy as it contemplates its potential offering and design of a CBDC.

In the event the Federal Reserve chooses to distribute CBDC and hold consumer accounts, the Fed must be held, at a minimum, to the same GLBA standards as banks. The quality of the Fed's cybersecurity must be supported by detailed policies and procedures, independent audits, and examinations (to prove transparency and to avoid conflicts of interest with self-examination) and be subject to the same informal and formal regulatory enforcement actions for violations that bankers are subject to including board memorandums, cease and desist orders, civil money penalties, and removal, prohibition, and suspension actions – many of these being made public.

CBAI position on cyber security and hacks has been clearly and consistently stated in our federal policy priorities and must be adopted by the Fed if it chooses to move forward with CBDC. Our priorities state that the party responsible for a hack should be responsible for reimbursing all the parties harmed by the hack. In the case of losses in direct-to-consumer distribution and accounts because of a hack, then consumers would need to be reimbursed by the Fed, and if community banks are harmed, the Fed will need to reimburse them as well. CBAI recommends this be stated as an explicit and ongoing responsibility and liability of the Federal Reserve.

14. Should a CBDC be legal tender?

If the Federal Reserve issues CBDC, regardless of whether it is issued directly to consumers or through the established banking industry, it would be a difficult to maintain the proposition that this digital asset was something other than an alternate form of U.S. currency which is also "legal tender."

If CBCD will be considered "legal tender", it will need to be a widely accepted form of payment for goods and services. While the precise design of CBDC has not been determined, how CBDC will be tendered for payment or transfer will require the adoption of a national system for acceptance and processing. The widespread adoption of this new version of "legal tender" will likely take decades to achieve and cost consumers, business, and the Federal Reserve a considerable amount of money to implement. Given the pace of creation and adoption of digital assets, it is entirely possible that CBDC may not be a viable or popular form of payments within the next decade. CBAI urges the Federal Reserve to conduct a very thorough cost versus benefit analysis to determine if CBDC should being designated as "legal tender".

If the government mandates the acceptance of CBDC by determining that it is "legal tender" there must be a long period of implementation so individuals, businesses, and governments can have time to prepare to accept payments in CBDC, and for a certain period there will need to be an option to not accept it as "legal tender". The market will likely drive the pace of acceptance and usage, and the government should not influence that rate of acceptable by disfavoring other forms of payment, and not mandate its acceptance in an unreasonably short period of time.

15. Should a CBDC pay interest? If so, why and how? If not, why not?

CBAI is adamantly opposed to the Federal Reserve paying interest on CBDC held in direct-to-consumer accounts.

There are many who believe it would be objectional enough for the Federal Reserve to even issue a CBDC, and that it may be an unavoidable evil. In the event the Fed does issue CBDC, the Federal Reserve should not be in even greater competition with private-sector banks, especially community banks, for consumer deposit dollars by paying interest on CBDC. This is a completely inappropriate proposition and a line that the Federal Reserve should not cross.

The Federal Reserve paying interest on CBDC in consumers accounts would take even more deposits away from responsible community banks. The economy is harmed when community banks do not have deposits to lend to individuals and small businesses in their communities. CBAI urges the Federal Reserve to never tilt the playing field in its favor by paying interest on CBDC.

16. Should the amount of CBDC held by a single end user be subject to quantity limits?

CBAI believes CBDC should be narrowly focused on specific objectives and limited in quantity for each end user. CBDC should never be held in amounts that would permit it to be reasonably considered an investment, used for speculation, for the purpose of arbitrage, used as a hedging vehicle, or for other financially sophisticated schemes which are outside the bounds of consumers using CBDC for the sole purpose of purchasing routine goods and services or simple exchanges between consumers. Also, by necessity, CBDC that can be held by a business, government, or other type of non-consumer entity shall be limited in amount and duration sufficient to conduct these consumer transactions. CBAI sees no reason for CBDC to be held by foreign governments and particularly not in large amounts.

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

CBAI urges that only FDIC-insured banks should be able to distribute and hold CBDC in consumer accounts just as they do now with U.S. dollars in consumer bank accounts. The process of payments for goods and services with CDBC should be handled through all the existing payment methods (and the new FedNow Service) just as they are handled now for U.S. dollar transactions.

The regulatory structure for CBDC within the traditional FDIC-insured banking system would be the necessary variation of existing laws, rules and regulations for handling currency, accounts, and payments that FDIC-insured banks are already responsible for complying with now.

In the unfortunate event that intermediaries are other than FDIC insured banks, then these non-banks must be subject to the exact same laws, rules, and regulations as FDIC-insured banks to protect the holders of CBDC, the banking industry, the financial system, and the payments system. They must be rigorously examined and enforced against, just like the banking regulators are responsible for doing for community banks. If the regulatory examination and enforcement regime is any less stringent for these intermediaries than community banks, the playing field will be tilted, and will be an existential threat to community banks.

Conclusion

CBAI appreciates the opportunity to provide the Federal Reserve with our observations and recommendations about this Discussion Paper. Currently, few details have been articulated about the rationale and design for U.S. CBDC. Therefore, CBAI is unable to support such a proposition unless our concerns are addressed, and certain conditions are met.

The overriding concern CBAI has with CBDC is that it will put the Federal Reserve in direct competition for deposits with community banks and will lead to widespread disintermediation. The close bond consumers have with their community banks would be broken and replaced by a financial relationship with their government. This would not only be an existential threat to community banks but would also be an inappropriate function of government. The harm caused to community banks would devastate consumers, small businesses, the financial system, the banking industry, and our economy.

If a CBDC is offered by the Federal Reserve, CBAI strongly urges the Fed to design the offering in such a way as to work cooperative with and not compete against (disintermediate) the private sector - particularly the nation's thousands of community banks. The only CBDC that should be under consideration is one in which community banks continue to serve as the intermediary between the Federal Reserve and consumers.

CBAI understands the urgency of policymakers to address issues regarding digital assets, including CBDC, but a careful and thoughtful approach is needed, and getting it right is much more important than doing it quickly.

If you have any questions or require any additional information, please contact me at davids@cbai.com or (847) 909-8341.

Sincerely,

/s/

David G. Schroeder
Senior Vice President
Federal Governmental Relations

RETAIL INDUSTRY LEADERS ASSOCIATION

99 M Street, SE
Suite 700
Washington, DC 20003

www.rila.org

May 19, 2022

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

Dear Ms. Misback:

The Retail Industry Leaders Association (RILA) appreciates the opportunity to provide comments on the Federal Reserve's discussion paper entitled, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*. As highlighted throughout the paper, this is an opening conversation between the Federal Reserve and key stakeholders in the payment ecosystem about the potential positive and negative impacts central bank digital currencies (CBDCs) would have on the American economy.

RILA is the U.S. trade association of the world's largest, most innovative, and recognizable retail companies and brands. We convene decision-makers, advocate for the industry, and promote operational excellence and innovation. Our aim is to elevate a dynamic industry by transforming the environment in which retailers operate. RILA members include more than 200 retailers, product manufacturers, and service suppliers, which together account for more than $1.5 trillion in annual sales, millions of American jobs, and more than 100,000 stores, manufacturing facilities, and distribution centers domestically and abroad.

Competition is the hallmark of America's retail industry. It drives innovation and brings consumers lower prices and new products and services. However, the absence of competition in the payments ecosystem has resulted in the U.S. being one of the most expensive countries in the world to accept debit and credit cards. One of the core goals for the Federal Reserve if they move forward on the development of a CBDC, would be to ensure a more competitive payments market that is no longer controlled by the dominant legacy players. This competitive environment will benefit all parties in the payments arena, especially American consumers.

Outside of a competitive market, there are other factors the Federal Reserve should consider on the potential development of a CBDC. These topics include but are not limited to; addressing fraud in a new CBDC market, the type(s) of security and privacy regime(s) needed to be established to ensure consumers and retailers are protected, and what new financial products will be created to serve the underbanked and unbanked. Additionally, how retailers can partner in this effort, the role of Congress and lastly, ensuring that any CBDC be treated exactly like cash with no additional fees or interchange.

With the potential creation of a CBDC, fraud will be one of the most pressing issues that must be addressed from the onset. There are many lessons to be learned from today's payments system and the inequities and failures in the market, particularly around fraud. Strong authentication measures will need to be created and will have to constantly evolve and update to meet the growing threats in the market. It will be essential to prevent dominant legacy players from using proprietary technology to shift the fraud cost to one entity, or to use their market share to inhibit potential competitors from entering a new CBDC arena. In relation to fraud, it will also be vital to establish a privacy and security framework that protects consumers and businesses. RILA believes that a privacy framework should be designed to protect consumers and provide clear rules of the road for individuals, businesses, and the Federal Reserve. Any new CBDC must have strong fraud and consumer protections to be viewed as a safe and legitimate form of payment to American consumers and businesses.

The possible benefits of a CBDC could be substantial, unlocking future efficiencies and widespread adoption by consumers and businesses alike. But this will only happen at scale if merchants are viewed as key partners in the acceptance and facilitation of CBDCs. Therefore, it is essential the Federal Reserve make explicitly clear that just like checks and ACH transactions, a CBDC will clear "at par." This allows for competition from service providers, as is the case today with cash handlers, check clearing services, etc., to compete for a merchant's business, without introducing unnecessary networks that simply try to profit from hidden fees. In addition, business and operational rules that are developed should not require all merchants to accept a CBDC. Consumers and merchants should have the choice to use and accept digital currencies. Innovation and technological advancements should remove any unnecessary costs in the payments arena—not increase them. If the Federal Reserve does develop a CBDC, it should be treated exactly as cash, without any interchange fees tied to accepting this new type of payment. The federal law prohibiting the collection of interchange for check redemption, requiring they pass "at par", is clear precedence for such a protection. If interchange in any form is allowed to continue in a CBDC market, it will drastically limit the success of its acceptance and will mimic the frustrations and challenges merchants face today with credit and debit cards.

Finally, the creation of CBDC also has the potential to unlock and remove current barriers to the underbanked and unbanked and assist them to gain access to new financial instruments. As the Federal Reserve has highlighted in other reports, there are millions of Americans without access to the traditional banking and financial services arena. A new CBDC has the potential to address economic inequality across the country and RILA members are prepared to play an active role in achieving this goal.

Once again, RILA appreciates the opportunity to provide initial comments on the potential development of a CBDC by the Federal Reserve. As the association representing the most innovative and sophisticated retailers in the country, we look forward to future discussions on this topic to highlight the merchant perspective. RILA is also fully prepared to work as a collaborative partner with key stakeholders in the payment ecosystem and the Federal Reserve on possible future working groups to discuss the development of a CBDC. For additional information on this matter, please contact Austen Jensen, Executive Vice President, Government Affairs, austen.jensen@rila.org or at 703-244-0179.

Sincerely,

Executive Vice President, Government Affairs

MAXINE WATERS, CA
CHAIRWOMAN

United States House of Representatives
Committee on Financial Services
Washington, DC 20515

PATRICK McHENRY, NC
RANKING MEMBER

May 18, 2022

The Honorable Jerome Powell
Chair
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue NW
Washington, D.C. 20551

Chairman Powell:

We appreciate the Federal Reserve's (Fed) work on a U.S. Central Bank Digital Currency (CBDC) and the issues raised by its discussion paper, "*Money and Payments: The U.S. Dollar in the Age of Digital Transformation*."[1] As the Fed considers its next steps, we believe it is necessary to first understand the problems a CBDC would solve. Moreover, we believe the Fed should understand whether the benefits of a CBDC outweigh the risks to commercial banks, the existing payments system, and consumers. Last year, Committee Republicans released a set of principles to guide our review of a potential CBDC. These principles coalesce around many of the questions to which the Fed is seeking comment. As the Fed moves forward, we believe it should focus on the issues outlined below.

1. *Identifying the inefficiencies in the U.S. payment system, and whether a CBDC solves them, including whether a CBDC increases greater access to banking services for traditionally unbanked and underbanked communities.*

In its paper, the Fed suggests that a CBDC could provide a safe, digital payment option for households and businesses, particularly as the payments system continues to evolve and results in faster payments across national borders.[2] However, the paper fails to identify the current payment system inefficiencies a CBDC will address. We believe the Fed should first identify the challenges presented by the current payment system infrastructure and whether those challenges are best addressed by a CBDC. Separately, the Fed should analyze the intended scope of uses and potential users of a CBDC, including any barriers preventing prospective users from access and intended use. The analysis should also include a comparison of a CBDC to the forthcoming FedNow Service and the current and anticipated private sector payment mechanisms.

In a speech delivered earlier this year, Vice Chair Lael Brainard discussed critical changes and advancements within the U.S. financial system. These advancements are largely a result of private sector innovation. Specifically, Vice Chair Brainard emphasized that "some of these innovations hold considerable promise to reduce transaction costs and frictions, increase

[1] *Money and Payments: The U.S. Dollar in the Age of Digital Transformation,* Federal Reserve Discussion Paper, (Jan. 20, 2022) *available at* https://www.federalreserve.gov/newsevents/pressreleases/other20220120a.htm.
[2] *Id.*

competition, and improve financial inclusion."[3] As part of the Fed's next steps, it should closely examine how a CBDC removes inefficiencies in cross-border payments and understand how these solutions compare to existing and anticipated alternatives.

Separately, some stakeholders have advocated for the Fed to issue a CBDC to foster greater financial inclusion in the United States. To that end, the paper alludes to the difficulties unbanked individuals may experience paying minimum balance fees or distrust of banking institutions so much so, they avoid them altogether. However, it is unclear how a CBDC solves this problem.

As the paper acknowledges, the share of unbanked individuals has recently declined in the United States and without a CBDC. Moreover, the share of adults without a smartphone is nearly three times higher than the unbanked rate for U.S. households.[4] Please explain how a CBDC would increase financial inclusion. We are particularly interested in how financial inclusion would be broadened given the current levels of technological adoption and the outlays required by individuals to use a CBDC.

2. *Private Sector Must Lead the Way in Innovation*

The Fed has historically supported responsible private sector innovation. Future digital currency policies must continue to promote private sector innovation and foster competition. Potential regulations for emerging payment technology should seek to target the specific uses and activities and mitigate discrete, identified potential risks. Policies should not disallow or regulate the underlying technology.

Committee Republicans believe stablecoins, if issued under a clear regulatory framework, hold promise as a potential cornerstone of a modern payment system. Transacting in stablecoins has the potential to be a more efficient, faster, and less expensive payment option than what currently exists. These benefits would extend to the very consumers and small businesses a CBDC purports to help. Thus, we request the Fed provide a detailed analysis on any potential impact to the stablecoin market of a CBDC. The analysis should cite to any impact on competition and innovation that may result from a CBDC. This information will help Congress evaluate whether a CBDC and privately issued stablecoins can coexist within the payment system and ensure that innovation within our payments system continues apace.

3. *Impact on Monetary Policy Implementation and the Role of the Federal Reserve*

The Fed ensures that the United States has a safe, flexible, and stable financial system. As noted in the paper, a CBDC could impact monetary policy and interest rate control by altering the supply of reserves in the banking system and the long-term size of the balance sheet. A CBDC could also impact credit markets and involve the Fed in products and services that are traditionally reserved for retail banking institutions. Furthermore, expanding central bank activity

[3] *Preparing for the Financial System of the Future,* Federal Reserve Vice Chair Lael Brainard, (Feb. 18, 2022) *available at* https://www.federalreserve.gov/newsevents/speech/brainard20220218a.htm.
[4] Pew Research Center: Mobile Fact Sheet (Apr. 7, 2021), *available at* https://www.pewresearch.org/internet/fact-sheet/mobile/.

into retail banking is likely to result in increased politization of the Fed. This in turn raises serious concerns with respect to the Fed's ability to effectively perform its monetary and regulatory functions.

We request a detailed analysis on the possible impact of a CBDC on the Fed's monetary policy tools and decision-making. The analysis should evaluate whether a CBDC could result in adverse unintended consequences for monetary policy implementation; assess whether a CBDC facilitates the use of unconventional monetary policy tools (including negative interest rates) that the Fed has previously rejected or require a balance sheet that is politically unsustainable. We also request that the Fed examine any implications for financial stability through bank runs that may result from transfers of commercial bank deposits into CBDC accounts, as referenced in the paper.

4. *Ensure Privacy and Security*

The paper states "the analysis [completed] to date suggests that a potential U.S. CBDC, if one were created, would best serve the needs of the United States by being privacy-protected, intermediated, widely transferable, and identity-verified."[5] The Fed has acknowledged that ensuring adequate security for a CBDC would be challenging. Further examination is needed regarding how the Fed will balance privacy rights and transparency, particularly as it relates to deterring criminal activity and when anti-money laundering concerns are present. It is critical that we fully understand the potential impact a digital currency will have on Americans' civil liberties and privacy rights before any legislative action is considered.

Chair Powell, we understand this is the first step in an extensive discussion with Congress, the public, and other stakeholders. We look forward to continuing to work with you as Congress contemplates both the risks and benefits of a potential CBDC.

Sincerely,

Patrick McHenry
Ranking Member
Committee on Financial Services

Ann Wagner
Vice Ranking Member
Committee on Financial Services

[5] *See* Federal Reserve Discussion Paper, Money and Payments: The U.S. Dollar in the Age of Digital Transformation, supra note 1.

Frank D. Lucas
Committee on Financial Services

Pete Sessions
Committee on Financial Services

Bill Posey
Committee on Financial Services

Blaine Luetkemeyer
Committee on Financial Services

Bill Huizenga
Committee on Financial Services

Andy Barr
Committee on Financial Services

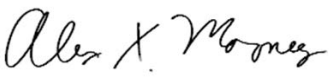
Roger Williams
Committee on Financial Services

French Hill
Committee on Financial Services

Tom Emmer
Committee on Financial Services

Lee M. Zeldin
Committee on Financial Services

Barry Loudermilk
Committee on Financial Services



Alexander M. Mooney
Committee on Financial Services

Warren Davidson
Committee on Financial Services

Ted Budd
Committee on Financial Services

David Kustoff
Committee on Financial Services

Trey Hollingsworth
Committee on Financial Services

Anthony Gonzalez
Committee on Financial Services

John Rose
Committee on Financial Services

Bryan Steil
Committee on Financial Services

Lance Gooden
Committee on Financial Services

William Timmons
Committee on Financial Services

Van Taylor
Committee on Financial Services

cc: The Honorable Lael Brainard, Vice Chair, Federal Reserve
The Honorable Michelle W. Bowman, Governor, Federal Reserve
The Honorable Christopher J. Waller, Governor, Federal Reserve

May 20, 2022

Digital-innovations@frb.gov
Ann E. Misback
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, N.W.
Washington, D.C. 20551

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 CBDC[11] 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 Fettig 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]henever 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/rivadeneyra_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://evonomics.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-bitfinexs-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 institution[72] 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)).

[73] *See* Zelle, "How long does it take to receive money with Zelle®?" (2022) (available at: https://www.zellepay.com/faq/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

20022 standards also holds promise. ISO 20022 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 20022?" (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, ceterus 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/

Robert C. Hunter
Director of Legislative & Regulatory Affairs and
Deputy General Counsel
(336) 769-5314
Rob.Hunter@TheClearingHouse.org

The Clearing House®

Appendix

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

Purpose	CBDC	Alternative Solutions
Financial Inclusion/Distribution of Government Benefits	**Pros:** – Government support **Cons:** – 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	– 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:** – Provides government with additional tool in public-private currency competition **Cons:** – May crowd out or compete with other systems and innovations – Potential to disrupt banking and payments ecosystems	– 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:** – 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:** – 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	– 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)

	– Potential to disrupt foreign banking markets	
To Facilitate Monetary Policy	**Pros:** – Unlocks new tools **Cons:** – 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)	– 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	**Pros:** - U.S. would have a CBDC to defend against the introduction of CBDC by other governments **Cons:** - Potential to destabilize both domestic and foreign financial system	– 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

HSBC submission to the Board of Governors of the Federal Reserve System discussion paper, 'Money and Payments: The U.S. Dollar in the Age of Digital Transformation'

Introduction and Summary

HSBC appreciates the opportunity to respond to the Federal Reserve System Board of Governor's ("Fed's") discussion paper, 'Money and Payments: The U.S. Dollar in the Age of Digital Transformation' ("discussion paper"). The paper is timely and important, not only because of the potential domestic effect of a USD-denominated CBDC ("U.S. CBDC"), but also the potential impact on the global financial services industry and wider global economy.

HSBC's global footprint and universal business model means we are always looking for ways to improve the efficiency of transactions for our customers and to widen financial inclusion. As the world's largest trade bank and one of the largest foreign exchange dealers, HSBC is actively involved and engaged with a number of Central Bank Digital Currency (CBDC) projects, including with individual central banks and the Bank for International Settlements (BIS). These projects have included both studies and proofs of concept for domestic and cross-border use cases.

We are committed to supporting the development of CBDCs where central banks and governments wish to examine or introduce them, for either wholesale or retail purposes. We are well-placed to support and advise central banks and public authorities as they tackle the policy, operating model and technology decisions that arise from CBDC development, and the rise of new forms of digital money more generally.

We see this discussion paper as an important step in a continuing process and dialogue between industry and the Fed. We are encouraged by the Fed's research on whether to issue a U.S. CBDC, which we have no doubt will be done carefully and with the wider implications for the financial system in mind, taking into account the research and experimentation underway elsewhere.

CBDCs have potential to improve payments in certain respects because they are legal tender in digital form and have the backing of central banks, such as the Fed in the U.S. This means that it would be transparent and stable and avoid many of the risks associated with stablecoins and cryptocurrencies. It may improve the range of transaction services provided to the public and also make available new fiscal and monetary policy tools.

However, depending on the design choices made, a U.S. CBDC may also reduce the overall efficiency of credit provision in the economy. The efficient provision of credit is vital for economic growth. Any aggregate increase in the cost of credit as a result of a policy decision in relation to CBDCs could have serious economic and social consequences, which could in turn undermine trust and confidence in authorities and the financial system they oversee. We would therefore recommend particular caution in this regard.

In particular, any U.S. CBDC that is interest-bearing could have a significant impact on the creation of money in the economy, alongside being likely to reduce the amount of available funding for commercial banks. Previous research from authorities in other jurisdictions has already noted the unpredictability of this new technology and its potentially negative implications for financial stability and retention of deposits from interest bearing CBDCs. For these reasons, we are encouraged to note that the FED appears to think that an interest-bearing CBDC should be avoided.

While design features can help to find a balance between the potential benefits and risks, there will nevertheless be trade-offs that need to be explored further and would therefore suggest that a possible next step could be for the Fed to conduct a more detailed assessment of these and the

commensurate risks and benefits, and in particular how a CBDC might build on the benefits of already planned improvements to US payment infrastructure, including Fedwire.

We recommend that this includes examining which technical approaches (e.g. centralized/decentralized, DLT or traditional) may be most suitable and also the application of innovations such as smart contracts or 'programmable' money. These could be explored usefully within an appropriate, safe framework, that is technologically agnostic – potentially in approved sandbox environments.

CBDC Benefits, Risks, and Policy Considerations

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

The Fed paper outlines well what the vast majority of central banks around the world engaged on this topic, and HSBC, believe to be the main policy considerations, benefits and risks of a retail CBDC.

Ultimately, the most important element to the success of any CBDC is trust. As the discussion paper mentions, a U.S. CBDC would be the safest digital asset available to the general public because it would be a digital liability of the Federal Reserve, free from liquidity and credit risk. It is critical that the public trust all forms of available money, whether digital or not, so that they may be used in confidence for daily transactions and as a store of value.

Existing digital money and associated infrastructure brings real benefits to the public. Consumers are increasingly able to transact from anywhere, at any time, using mobile phones and existing payment infrastructure such as the RTP network and the forthcoming FedNow Service. Improvements to critical US payment infrastructure, such as Fedwire, have already been planned.[1]

These improvements have, and will bring, real benefits, and offer the potential for further innovation, in terms of transaction speed, efficiency and settlement finality. All of these benefits are being achieved while maintaining full public trust in money. This balance of realising tangible benefits through innovation, while retaining full public confidence, should be maintained for any U.S. CBDC, and we believe that the tangible benefits of a U.S. CBDC should be specifically identified, over and above existing and planned improvements.

People interact with commercial banks and commercial bank money daily. It is likely that the majority of the public is not aware that existing digital money is commercial bank, rather than central bank, money. It can be reasonably inferred that most people trust private money either because they do not understand the difference between private and public money, or else see no practical difference.

The stability of money represents the practical reality of financial stability for most people rather than the technical infrastructure of central bank money, financial regulation and other tools that keep the relevant institutions safe. We believe that the public perception of any changes to money,

[1] Payments Risk Committee - Federal Reserve Bank of New York (newyorkfed.org)]

and the confidence that this creates, will be critical. In all circumstances, we believe that a healthy and resilient financial system will require the presence of both commercial and central bank money.

We therefore support the view that the optimal CBDC model for building trust is an intermediated design, due to its basis in partnership between central banks and authorised financial intermediaries. If designed well, CBDCs offer the possibility of faster and lower cost payments for consumers and businesses and could drive other innovations, such as programmable transfers to consumers and smart contracts to stimulate demand. They could improve identity and verification and security while respecting privacy, and enable business growth and investment. Furthermore, if designed well, CBDCs would also not incur the energy costs of some other digital assets.

In addition to the risks raised in the discussion paper, we also think that the potential impact of dependencies on wholesale markets requires careful thought. The replacement of commercial deposits with wholesale funding could lead to a number of undesirable consequences. If the cost of wholesale funding compared to commercial deposits is higher, there would be cost of credit implications. It could lead to less diversification of funding or increased concentration risk for bank liabilities, increased refinancing risk due to reduced market windows, and increased exposure to market volatility. Market capacity is also a factor and increased dependency on less stable investor bases may exacerbate exposure to market conditions and thus refinancing risk.

These concerns align to the Fed's previous analysis regarding the significance of the risks presented if a CBDC were pursued. In particular, we think it vital to consider carefully the effect on aggregate credit provision due to the potential loss of bank deposits.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

As noted above, the specific benefits that CBDCs can deliver compared with the benefits from improving existing transfer approaches will need to defined carefully. The paper references the already considerable ongoing work and investment by the industry and authorities in the U.S. to redesign and improve retail and interbank payment systems, namely the RTP network and the interbank FedNow Service, which will enable 24/7/365 payments. The required investment and change across the industry to adopt a retail CBDC will also need to be considered.

As the paper also notes, there are remaining challenges for the U.S. payment system, such as the speed and cost of cross-border payments. We do believe that CBDCs may represent an important technological opportunity to resolve key issues in these areas. The principal potential benefit is near instantaneous payment. Many financial transactions can be thought of as 'delivery vs. payment'. Delivery is a transfer of ownership of the asset while payment goes in the opposite direction. Distributed Ledger Technology allows a secure, certain and near instant transfer of delivery, but this is of limited value unless you can also process the related payment in a similar manner. CBDCs have the potential to further this goal.

Near instantaneous secure and certain payments and other transactions can reduce the number of intermediaries (and associated potential risks) involved in payment chains, reduce settlement risk, resolve issues related to time zone differences and reduce transaction costs. These benefits could be

passed along to consumers. Well-designed CBDCs could ensure that this is all done in a manner that corresponds with existing approaches to tackling financial crime.

There are continuing global efforts, notably by the Committee on Payments and Markets Infrastructure (CPMI), to enhance existing cross border payments infrastructure. This multiyear global effort aims to tackle identified frictions in order to enhance cross-border payments. These frictions include: fragmented data standards or lack of interoperability; complexities in meeting compliance requirements, including for anti-money laundering and countering the financing of terrorism (AML/CFT), and data protection purposes; different operating hours across different time zones; and outdated legacy technology platforms. HSBC is closely involved in discussing these developments with policy makers, and we are working to support improvements to the existing cross border payments regime.

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

It is not clear how or whether a CBDC could help those that remain 'unbanked', or whether it is best-placed to do so in comparison to existing initiatives. As the discussion paper mentions, the private sector 'Bank On' initiative already promotes low-cost consumer checking accounts.

Some claim that a CBDC with offline capabilities and which is mobile friendly might drive financial inclusion. This claim and others should be subject to evidence, and reference research regarding the factors that prevent some consumers accessing bank accounts, and others declining to do so.

Others, citing examples in very small developed economies, have claimed that a direct CBDC could help drive bank inclusion, but, in fact, direct CBDCs have only been adopted or proposed in economies that have relatively under-developed banking systems. They have not been proposed seriously for any advanced economy, and even major emerging markets have so far declined to create direct CBDCs. We do not think that a direct CBDC is an appropriate approach for the U.S.

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

The introduction of a CBDC could have an impact on the range and effectiveness of a number of monetary policy measures, and also a broader impact on markets. A CBDC should be designed so that it does not negatively impact the ability of the Fed to ensure financial stability and guide the positive development of the U.S. economy. We believe this may be possible but more research is needed to confirm the appropriate design considerations, as described below.

We believe that an interest-bearing CBDC should be avoided, as it would likely encourage a loss of bank deposits, which could threaten financial stability and wider economic growth. The October 2020 paper 'Central Bank Digital Currencies: foundational principles and core features' [2], by the Fed

[2] BIS, Oct, 2020: Central bank digital currencies: foundational principles and core features: Central bank digital currencies: foundational principles and core features (bis.org)

and a number of other leading central banks, states that an interest-bearing CBDC would create financial stability trade-offs and that more research is required in this area if such a possibility were to ever be considered.

The CPMI has noted that greater demand for CBDCs could affect repo and government bill markets and also reduce interbank activity. CBDC design choices could therefore have broader implications for the role of central banks in financial markets and monetary policy transmission mechanisms. These need to be carefully considered, and extending the Fed's work to consider these impacts in more detail would be an important step.

There is also the possibility that CBDCs could extend the range of policy options available to central banks and governments, via programmable money, or direct, and potentially conditional, fiscal transfers to citizens. Careful consideration must be given to questions of privacy and freedom of action, as well as determining whether new approaches would offer clear benefits over and above the approaches that have been used in some countries, including the U.S., during the COVID-19 pandemic.

We recommend that a 'do no harm' principle, as put forward by the BIS in the report on CBDC principles cited above, should be applied, so that the risks associated with a CBDC are fully considered before implementation. CBDC implementation requires a fuller understanding of how consumers and the financial markets would react to digital money before a CBDC can be issued in confidence.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

As the discussion paper indicates, there are trade-offs that must be considered fully. This includes the impact of a U.S. CBDC on financial stability both domestically and globally. The latter is important for the dollar's continuing status as the primary global reserve currency.

As mentioned in our answer to question 1, state-backed CBDCs certainly offer the potential to be more robust, transparent, stable and less risky than private digital currencies, such as stablecoins and cryptocurrencies. The introduction of CBDCs may help counter the adoption of these riskier assets.

Yet the behaviour of consumers in situations of general economic stress is a vital factor. We agree with the Fed that any 'flight to safety' from commercial to central banks that CBDCs could encourage might present or exacerbate liquidity issues for financial institutions and pose risks to the operation of markets and to financial stability. It is therefore vital that new forms of digital money do no lead to 'digital bank runs'.

Any CBDC that is interest-bearing could have a significant impact on the creation of money in the economy. It would likely reduce the amount of available funding for commercial banks and some banks may choose to compete to protect deposits by offering higher interest rates in order to influence consumer behaviour. They may do this based on the economic trade-off between raising

rates versus raising expensive and inherently riskier wholesale funding. Such a dynamic is undesirable for financial stability and credit provision.

It is for these reasons that we believe an interest-bearing CBDC should be avoided. As noted in the discussion paper, additional measures to protect financial stability could potentially include introducing limits to the amount of CBDC held by any end-user.

A U.S. CBDC could have a significant global impact, given the USD's continuing global primacy. Careful consideration should be given to the design of a U.S. CBDC so that it does not negatively impact global efforts to reduce financial crime, in which the U.S. continues to play a leading role. The Fed may also wish to consider whether a U.S. CBDC would materially increase the degree of offshore USD deposits, and what impacts this would have on the U.S. and global economies, and the Fed's associated management of the USD both domestically and internationally.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

As mentioned in our answers to previous questions, depending on the CBDC design, there are a number of potential impacts on the financial sector to consider when developing a CBDC. Benefits and risks both need to be considered carefully.

The introduction of new forms of digital money, including a U.S. CBDC, may improve the range of transaction services provided to the public. However, depending on the design choice made, some forms of digital money may reduce the overall efficiency of credit provision in the economy. Any aggregate increase in the cost of credit as a result of a policy decision in relation to new forms of digital money could have serious economic and social consequences, which could in turn undermine trust and confidence in authorities and the financial system they oversee.

The risks to financial stability are not just applicable to commercial banks but also systemic stablecoin issuers, where a rapid loss of consumer confidence triggering a material liquidation of the backing assets could have impacts for financial markets. As the financial system rapidly evolves towards a more digital environment, it is critical that regulatory regimes encompass the full scope of digital money instruments to ensure the safety and stability of the financial system. This should certainly include stablecoins, and we particularly note and support the conclusions of the 2021 President's Working Group on Stablecoins.

As the FSB noted in their October 2020 report on stablecoins, authorities agree on the need to apply supervisory and oversight capabilities and practices under *the 'same business, same risk, same rules'* principle. We think that proper regulation of stablecoins will be a critical component of a safe regulatory regime governing the new and evolving forms of digital money.

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?

The discussion paper has set out the potential benefits and adverse impacts of a retail CDBC. As mentioned previously, we agree that an intermediated CBDC model is the most promising and could

provide effective public access to central bank money in a digital world. It is the most similar to current market structure, with its basis in partnership between central banks and financial intermediaries and seems to us, and to many other commentators and authorities, to be on balance the most promising option under consideration.

Nevertheless, there are still substantial risks associated with this model. In particular, this includes potentially significant impacts on commercial deposits – with subsequent impacts on the supply of credit, financial markets activity and overall financial stability – that could develop very rapidly. The trade-off between the anonymity provided by cash, and potentially a CBDC depending on the design choices made related to anonymity, and the requirement to ensure high standards of AML/CFT must also be considered carefully.

Some of the potential negative impacts could be mitigated by avoiding an interest-bearing CBDC and introducing withdrawal caps on commercial deposits, although the latter needs to be considered carefully and tested.

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?

We think it is critical that, even as new forms of digital money are introduced, cash remains available for so long as there is public demand. Cash is a direct, tangible form of central bank money that has anchored transactions in the existing economic system. Losing access to cash could have important consequences for the U.S. economy and public interaction with the financial system. Those consequences could be especially important with regard to financial inclusion and the elderly, who on average use cash more. We think that cash should be retained until such time as there is no public demand for it.

As set out in our answers to previous questions, an intermediated CBDC would help to preserve sufficient access to cash by the general public, notwithstanding the risks and trade-offs that will need to be considered fully.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

We note the continuing global efforts – notably by the CPMI's Payments Roadmap – to enhance existing cross border payments infrastructure, both by improving existing systems and introducing new initiatives. This multiyear global effort aims to tackle identified frictions in order to enhance cross-border payments. These frictions include: fragmented data standards or lack of interoperability; complexities in meeting compliance requirements, including for anti-money laundering and countering the financing of terrorism (AML/CFT), and data protection purposes; different operating hours across different time zones; and outdated legacy technology platforms.

HSBC is closely involved in discussing these developments with policy makers, and we are supportive of the ongoing work to improve the existing cross border payments regime.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

The motivations for considering CBDCs vary for each jurisdiction, and are often driven by specific local circumstances. There are, however, common considerations that are seen across many major economies, and we think that these are well explored in this consultation. We appreciate the work of the G7 to coordinate global efforts on the development of digital money, particularly between advanced economies.

We note that no major advanced economy has yet fully launched a CBDC and most that are actively exploring or piloting CBDCs are largely focused on domestic retail models. As such, we believe it is too early to assess accurately the overall potential geopolitical implications of CBDCs, if any.

There has been much recent interest on whether certain potential or actual CBDCs could threaten the reserve status of the U.S. dollar. We note that economists and economic historians often suggest that reserve currency status requires a large and stable economy, perceptions of political stability from investors (that is, that the rules of their investment will not be changed as they hold it), and deep, liquid and accessible financial markets in that currency.

It is often also noted that whilst some other global currencies have fulfilled these criteria for decades, they have not affected the U.S. Dollar's reserve primacy. It remains to be seen whether CBDCs change any of these considerations. This is a fluid and complex debate and we will continue to follow it with interest, but we suggest that it would be premature to draw any firm conclusions at this stage.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

Please see our responses to previous questions. We think the paper is generally well considered and comprehensive.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

There are important design considerations regarding transaction data access, personally identifiable information and Anti-Money Laundering/Customer Due Diligence requirements that should be a primary focus of CBDCs research and testing. The ability to meet consumer privacy expectations, as well as legal and regulatory requirements around financial crime, will be critical to the success of any CBDC, because these factors are critical for trust.

CBDCs could create data that could negate anonymity. In considering CBDC designs, privacy needs and expectations must be balanced against other public policy priorities. Cash is almost fully anonymous once obtained through a transaction or withdrawn from an ATM, but full privacy and anonymity in digital payments could lead to a breakdown of the current Anti-Money Laundering regime.

Digital money should include data privacy and protection in designs to coexist with, and support, the wider legal and regulatory framework for the financial sector and the overall integrity of the financial system. Financial institutions must ensure that they comply with all laws related to privacy, and also that they respect their customer's privacy expectations. If a reduction in privacy is seen to outweigh the benefits to user, then confidence in these new forms of money will decrease, and usage will be negatively impacted.

There are some potential benefits from the use of data obtained from a CBDC, such as improved products and services. However, considerations around privacy need to be included throughout the design process. That includes the acknowledgement that under certain circumstances (e.g. anti-money laundering screening during onboarding), consent may not be possible or desirable. In other circumstances, it must be clear that only specific actors have access to certain types of customer data (e.g. bank level transaction data). For CBDCs to be trusted widely and therefore used, end users need to have clear information as to what data is being held by commercial banks, central banks or other actors, and know how their privacy rights are being maintained.

This design balance is possible with technologies that are under testing. There are options for developing new mitigations for privacy, as noted in the BIS paper "III: CBDCs: An Opportunity for the Monetary System". In certain retail CBDC designs the payment authentication process can be built to conceal personal data from commercial parties and public authorities. [3]

There may also be value in allowing different levels of information to be shared through reporting mechanisms, for example, by making more data on macroeconomic level monetary flows available to a central bank. This would need to be explored further and carefully considered.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

CBDCs have the potential to present increased operational and cyber resilience challenges, not least due to the significant monetary and data value for cyber threat actors. While cash is truly anonymous, any CBDC must enable the sharing of sufficient information for the purposes of tackling fraud and implementing anti-money laundering and countering terrorist finance measures. This provides the potential for threat actors to identify and track individuals, as well as hacking a CBDC both to disrupt operations and to steal currency. The architecture of a CBDC will have a bearing on the requisite degrees of anonymity and data privacy, cyber security and overall operational resilience.

As mentioned above, we note that CBDCs could have potential to develop new mitigations for privacy, cyber and broader resilience risks in the existing payments system. Testing and careful gradual implementation of digital money in real world situations with an appropriate regulatory framework for digital money is necessary. This would likely include proper evaluations, rigorous use

[3] III. CBDCs: an opportunity for the monetary system (bis.org)

case modelling and code and attack vectors testing, while complying with standardized, dedicated frameworks. This would allow the U.S. to explore the potential risks and the appropriate design options to mitigate them.

14. Should a CBDC be legal tender?

We believe that, in principal, a U.S. CBDC should be legal tender as it would be a digital form of the U.S. dollar. However, in practical terms, we note that consumers, merchants, and other payment actors would need access to CBDC technology to access a CBDC on similar terms to cash. This may in some cases limit the ability of some to accept a CBDC as a form of tender. This aspect should be considered carefully.

CBDC Design

15. Should a CBDC pay interest? If so, why and how? If not, why not?

Our answers to previous questions, particularly answer 4, explain why we do not think that a CDBC should be interest-bearing.

16. Should the amount of CBDC held by a single end user be subject to quantity limits?

We believe that four limits outlined in the Bank of England paper 'New Forms of Digital Money' are a good basis to manage the risks of a CBDC.[4] These are aggregate holdings, transaction limits, access eligibility and remuneration.

Before allowing digital money to be widely used or accessible to the public, we encourage the Fed to undertake assessment and testing to see what impacts those limitations may have on the risk created by new forms of digital money, particularly a CBDC, and also the realisation of its potential benefits.

We think that the first three limits mentioned are appropriate for any initial testing. It is possible that any final version of a CBDC should have all four limits in place when first implemented, with adjustments made as needed.

Of the four, the most important, and likely candidates for longer-term controls, seem to be the aggregate holding and transaction limits, in order to minimise the potential for 'digital bank runs'.

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

While competition and innovation should be encouraged and supported, authorities must also ensure the continued resilience and stability of the financial system, as well as the proper conduct of

[4] New forms of digital money | Bank of England

all market participants. The regulation to which banks are subject would appear at this stage to be appropriate for CBDC intermediaries.

An intermediated CBDC approach would ensure the continuation of division of labour between central banks and the market. This would see the private sector continue to perform customer-facing activities and operational tasks and enable the potential for greater innovation and competition. Assuming that central banks grant access to existing payment systems for appropriately regulated and licensed firms, these firms could compete to provide both CBDC wallets for consumers and/or a myriad of overlay services.

It is crucial that regulatory regimes encompass the full scope of digital money instruments, to ensure the overall safety and stability of the financial system. Authorities must apply supervisory and oversight capabilities and practise under the principle of 'same activities, same risks, same rules'. This will be a critical component of a safe regulatory regime governing CBDCs, and other types of digital money, such as stablecoins and cryptocurrencies.

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

As with existing electronic payment systems, we believe it will be very important for a U.S. CBDC to have offline capabilities. For CBDC transactions to become ubiquitous, building and maintaining merchant and end user trust and confidence is paramount. Central to this will be the ability make CBDC transactions anytime, anywhere. Offline capabilities bring several benefits, ranging from enabling better operating conditions to providing resilience in the event of major incidents. It is also seen by many authorities as critical to increasing financial inclusion by providing services to communities with limited or no network coverage and inconsistent electricity supply.[5]

Offline transactions would operate in a similar fashion to cash payments. While further study would be required, this might be achieved either by a stored value card or through a mobile phone application, using NFC and/or Bluetooth. This could be linked to existing payment rails with the cooperation of third parties or settlement via peer-to-peer using tokens removing the need for back-end settlement systems.

Several aspects would need to be considered in detail, including ensuring accurate balances and deposit outflows, frequency of transactions, transaction limit amounts, any offline periods, anonymity and traceability. Ensuring AML, CFT and fraud risks are mitigated and that double-spending is prevented would also be vital. Cooperation between software, hardware and service providers, in partnership with regulators and financial institutions, will be important in order to develop a harmonized framework and security standards.

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

A retail CBDC will have to compete with existing retail payment systems in the U.S. In order to succeed, it will need to achieve high levels of participation and adoption by multiple stakeholders,

[5] FSI Insights No 41 Central bank digital currencies: a new tool in the financial inclusion tool kit? (bis.org)

including banks, non-bank intermediaries, merchants and end-users. This will require seamless integration with existing payments infrastructure, a strong end-user and merchant experience and competitive yet fair incentives across both sides of the market to drive adoption.

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

Any CBDC must promise, credibly and consistently, to be fully interchangeable with existing forms of money. We note that the discussion paper does not go into the details of the specific requirements to achieve this, including technology requirements. At this early stage of thinking we are supportive of technological agnosticism. For example, it is not yet clear which technical approaches (e.g. centralized/decentralized, DLT or traditional) may be most suitable for a CBDC.

We also think it is important to support innovation, for instance with respect to smart contracts or 'programmable' money. These developments should be allowed to be explored within an appropriate, safe framework, that is technologically agnostic – potentially in approved sandbox environments.

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

At this early stage of design considerations, it is still unclear what the optimal technology solution might be for a U.S. CBDC. In our answer to Question 20, we have mentioned the importance at this stage of technological agnosticism.

While this will be resolved in due course, new challenges will arise that may be solved by new technologies, so the underlying principle of technology neutrality – possibly combined with open architecture – remains. This needs to be supported by a flexible and outcomes-based approach to public policy and regulation, in order to encourage safe and responsible innovation.

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

The previously mentioned joint report by the BIS and a group of central banks proposed that, however designed, there should be three underlying principles governing the design and use of CBDCs:

1. They should do no harm to monetary and financial stability;
2. They should co-exist with cash and other money in a flexible and innovative payments ecosystem; and
3. They should promote broader innovation and efficiency in the financial system.

While these are sensible and valuable guiding principles, the report also recognises that there are trade-offs that must be considered. Most notable is that of financial stability vs. the usability of a CBDC. Measures taken to mitigate financial stability risk could affect the level of parity between a

CBDC and cash and commercial bank money. Further study is required to better assess the impact.

The report also identified other trade-offs that the Fed could usefully consider as it progresses its thinking on a U.S. CBDC:

- Tackling fraud vs optimising user experience: to maximise consumer adoption, it is likely that multiple functionalities will need to be addressed. This added complexity would likely require additional safeguards to tackle fraud risk, which in turn could limit functionality and affect adoption.
- Resilience and privacy vs system performance: the development and roll out of new technologies requires firms and public authorities to pay ever closer attention to new forms of operational and cyber risk. CBDCs must therefore be developed and managed with operational security – as well as data privacy – at the heart. Depending on the design features, this could have an impact the performance of a system that would be required to settle instantly very large numbers of authenticated payments.

Credit Union National Association
CUNA

Washington, D.C.
99 M Street SE, Suite 300
Washington, D.C. 20003-3799
Phone: 202-638-5777
Toll-Free: 800-356-9655

May 20, 2022

Ms. Ann Misback
Secretary
Board of Governors of the Federal Reserve
20th Street and Constitution Avenue NW
Washington, DC 20551

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

Dear Ms. Misback:

On behalf of America's credit unions, I am writing in response to the Request for Information and Comment on the discussion paper entitled "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" (RFC or discussion paper).[1] The Credit Union National Association (CUNA) represents America's credit unions and their 130 million members.

We appreciate the Federal Reserve Board's interest and research into central bank digital currencies (CBDC) and its desire to encourage further technological developments from the financial services industry. Credit unions welcome developments that allow them to better serve their communities and to execute their mission: to promote thrift and provide access to credit for provident purposes.[2] As is clear from the questions posed in the RFC, the CBDC arena is expansive and remains in a sufficiently early stage that neither a shared understanding of definitions nor rules of engagement has yet developed.

There are currently many open questions surrounding CBDCs. We believe that a focused enunciation of the issues the Fed intends to solve through a CBDC, and a more refined outline of its proposed design, is necessary before a substantive dialogue among stakeholders is possible. We recognize this RFC is intended as an initial step in this process; we envision the conversation to be an iterative and extended process--one in which we are enthusiastic about participating. We have concerns, however, that under several scenarios the creation of a CBDC could significantly worsen the provision of financial services. We want to continue having this conversation and to work collaboratively to identify ways credit unions can address the problems described in the RFC, whether through existing tools or through newly created financial instruments.

The creation of a CBDC deserves serious and exacting consideration and we agree that implementation should not proceed without authorization from Congress because it could fundamentally transform the financial system. While there are no doubt opportunities for improvement, we believe most, if not all, can be addressed by innovations in the current financial services framework and through continued public-private partnerships, without the introduction of a novel digital currency that could destabilize the system.

[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).
[2] 12 U.S.C. § 1752.

Purpose of a CBDC

The discussion paper offers a litany of problems that a CBDC could conceivably address; however, not all of these problems can be solved in one fell swoop. Given that the vast majority of US payments are already being conducted through digital channels, the Fed must clearly state what problem(s) it is trying to solve. This purpose must be clearly defined to ensure the objective is advanced rather than undermined by the design and structure of the CBDC. For instance, a CBDC with the objective of streamlining cross-border payments would require a distinctive structure that differs significantly from a CBDC created to encourage financial inclusion. The CBDC's effort should be novel and not duplicative of current developments in the market, such as those by credit unions to advance the financial well-being of all and of the Federal Reserve itself through the nascent FedNow network.

Structure of a CBDC

The discussion paper uses a retail definition of CBDC: "a digital liability of a central bank that is widely available to the general public…analogous to a digital form of paper money."[3] The market has already provided a "digital dollar" in the form of commercial money and deposit accounts, thus a retail CBDC would make the Federal Reserve an all-powerful competitor to financial institutions. This competition would run afoul of the Fed's stated desire for a complementary, cooperative CBDC design that provides additive value to the market.[4] A wholesale CBDC, intended for settlement of interbank transfers and related wholesale transactions, would more seamlessly integrate into the system, introduce less risk because it would be akin to central bank reserves, provide more promise for advancement in cross-border payments, and would be less likely to create reductions in lendable deposit balances. However, its viability must be balanced with a rigorous examination of the current market and a determination of whether the benefits a wholesale CBDC could provide to the cross-border payments system would be more efficient, effective, and less costly than the solutions currently available and in development.

We appreciate the Fed's dedication to an intermediated model that preserves the direct relationship between the Federal Reserve and financial institutions. We agree that any proposed CBDC must be intermediated because a direct-to-consumer product would introduce unprecedented risks. One of the most pressing concerns with a retail CBDC would be in its design as a direct liability of the Federal Reserve, unlike commercial bank deposits which are liabilities of the financial institution. This would transform the role of the financial institution to one of custodian or wallet holder. In a retail CBDC model, the ability of consumers to transfer balances from commercial bank deposits to central bank currency could have a catastrophic impact on the ability of financial institutions to continue their operations. As the deposits are no longer on institutions' balance sheets, it is presumed that they will be unable to utilize these funds to support the lending and investment operations of the institution, thus reducing the credit supply, increasing the cost of credit, and causing a slow-down of the economy. This would be even more pronounced during times of economic uncertainty when central bank currency would be seen as the safest form of money because it serves as "the foundation of the financial system and the overall economy" and thus would become a risk-free store of value akin to cash stored under the mattress.[5]

One of the questions posed by the discussion paper is whether a CBDC should be legal tender. Again, this would depend on the use case. A wholesale CBDC would not necessarily require legal tender status as it could be the equivalent of Federal Reserve notes. A retail CBDC, on the other hand, would need to be legal tender if

[3] "Money and Payments: The U.S. Dollar in the Age of Digital Transformation," *supra* note 1, p. 1.
[4] *Id.*
[5] *Id* at 5.

the Fed intends for it to serve as a "digital dollar." In this case, consideration of the viability of the CBDC would have to include an accounting of the costs that would be incurred by merchants to accept and use the CBDC. The required interoperability and transmissibility for these systems would either pose structural challenges in the design to allow for use of current payment rails or would result in costly new technologies for all members of the payments system. Another question asks about offline capabilities. One of the challenges in the current digital payments system is its reliance on networks. Therefore, cash plays an important role in areas of the country that lack access to broadband or in times of natural disaster. If the Fed envisions a CBDC to serve the same role as cash, it will need to have offline capabilities, or its reach will be severely limited. Yet another vital determination will be whether a retail CBDC should be interest bearing. Without additional context on the purpose and structure of the currency, we cannot say definitively; however, if the Fed seeks to preserve an analogy between a CBDC and legacy central bank currency, then it should not pay interest. If a CBDC is interest bearing, the question arises of who will pay the interest. If it is the Fed, that seems to contradict the intermediated model and put the Fed in the role of "providing customer accounts." Conversely, if the intermediary financial institution is responsible, what will be the revenue source for paying interest? Furthermore, based on CBDC's risk-free status, it is safe to assume that an interest-bearing currency could exacerbate the loss of commercial bank deposits to central bank currency.

Role of Intermediaries

In a retail model in which the CBDC would be a liability of the Fed, the financial institution would seemingly act as a custodian holding the funds for the consumer without any ability to utilize them to further economic growth. This delegitimizes the intermediated financial institution by imposing considerable limitations on its ability to conduct basic banking functions with a currency viewed by the public as no different than paper money. Effectively ensuring the institution serves as no more than a conduit for the Federal Reserve, and not as the integral financial institution consumers have come to trust.

The intermediary role played by financial institutions within a CBDC framework does not detract from their responsibility to maintain the current commercial bank money account structure consumers have come to rely upon. Assuming the CBDC is based on a distributed ledger, how would the two networks coexist? Would there be interoperability between the networks? The answers to these questions play an important role in the cost-benefit analysis of a CBDC establishment.

Two cost-intensive areas include cybersecurity and compliance. The cybersecurity risks for a system of this magnitude would be substantial because the risk would be concentrated in a digital environment rather than diluted with paper money or distributed with commercial bank money. This factor is also dependent upon the structure and design of the CBDC. A distributed ledger is less risky than a single-centralized ledger that would be highly susceptible to interference and hacking by malicious actors, but Project Hamilton has shied away from use of a distributed ledger due to concerns about its payments throughput.[6]

Financial institutions currently adopt and operate under a strict cybersecurity regime imposed by the Gramm-Leach Bliley Act (GLBA). Conversely, the retail sector has no such requirements, and the financial institution bears the burden of breaches that occur. Any CBDC proposal must subject all parties in the system to strict cybersecurity regulations to preserve the safety and soundness of the central bank.

[6] *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.

Retail CBDC accounts would require compliance with Anti-Money Laundering (AML), Combating the Financing of Terrorism (CFT), and Know Your Customer (KYC) obligations. Where would the liability fall to comply with AML, CFT, and KYC requirements including filing necessary Suspicious Activity Reports (SARs): the financial institution as the intermediary or the Fed as the holder of the CBDC on their balance sheet? If it is the financial institution, many already have entire departments dedicated to these tasks, and the introduction of a CBDC would significantly increase this burden and be costly the institutions. If the Fed is deemed responsible for this compliance because the liabilities are held on their balance sheet, then this would be a novel obligation requiring unprecedented federal visibility to the individual transactions of consumers. This brings the identity verification pillar of a CBDC into direct conflict with the Fed's dedication to privacy protection. Much of the appeal of digital currencies has been the anonymity they provide, an immutable quality of cash as well. The discussion paper has likened adhering to these pillars as threading a needle; this eye becomes miniscule if the compliance burden falls with the Fed. This design specification would frustrate any goals related to greater financial inclusion, as discussed further below.

A proposal must also determine who can serve as an intermediary. The digital asset space has spawned great innovation and introduced new players into the marketplace, primarily financial technology companies (FinTechs). While these actors play a vital role in the development and execution of the digital assets space and have partnered with financial institutions to break down barriers to inclusion and introduce efficiencies into the system, their lack of rigorous regulation and supervision must be considered in an intermediary role. A requisite to serving as a CBDC intermediary would be access to Reserve Bank accounts and services. We discuss this topic in great depth in a recent letter to the Fed on their request for comment regarding "Proposed Guidelines for Evaluated Account and Services Requests," but any account access must be predicated on ongoing regulation and oversight on par with insured and regulated financial institutions.

Impact on Intermediaries

Compliance burdens are not the only costs associated with CBDC proposals. A cost-benefit analysis must include the cost of creating the wallets and ensuring they have interoperability with other systems, maintaining the systems, and guaranteeing online and mobile access to accounts. While on their own, these costs do not seem insurmountable, especially if the Fed is developing the currency and financial institutions are only serving as intermediaries, but the impact of these costs is magnified when current commercial bank money deposits are being substituted with a CBDC. These operational costs and compliance burdens make the operation of a cost-free wallet unlikely.

As described above, a CBDC would be a liability of the Federal Reserve and thus held on their balance sheet rather than the financial institution's. Presumably, circulation of a CBDC would rely on consumers to transfer their balances of commercial money, currently held in financial institution deposit accounts, to their Fed wallet and into CBDCs. A massive influx of currency, at a time of increasing inflation when the Fed is already implementing monetary policy to tighten wallets, would be counterintuitive and untenable. The resulting conclusion is that depository financial institutions will see an exodus of deposits from their ledgers to the Fed wallet. This is a loss of deposits that could otherwise be used for lending and investment. The credit supply is driven by deposit accounts and drains on this source of funding would limit economic growth and prosperity.[7]

This concern is echoed by the Philadelphia Reserve Bank that found a CBDC created by the government agency that prints the money would be valued more highly than commercial deposits, and consumers would choose to

[7] *See* Keister and Sanches, "Should Central Banks Issue Digital Currency?" Review of Economic Studies (2022). Analyzing the effects of a CBDC and its impact on increased cost of funding and decreased bank-financed investments and the impact on the economy.

hold their funds at the Federal Reserve instead of with retail financial institutions, establishing the Fed as a "deposit monopolist."[8] The Philadelphia Reserve found that even in the intermediated model, the ability to transfer deposits from commercial money to central bank money would create a deposit monopolist of the CBDC funds that cannot be utilized to service the financial system, effectively making the Federal Reserve an advantaged competitor to retail credit union deposits.[9]

This deposit substitution and its cascading effects would be compounded by the money supply multiplier effect. When financial institutions have lower liquidity levels and are unable to lend at their current rate, the money supply reserve multiplier decreases, thus limiting the overall benefit to the economy. Depository institutions play a key role in the creation of money through their intermediate role between savers and borrowers. A CBDC design that alters this role will have negative consequences not just for financial stability but also for overall economic activity and monetary policy. Decreased lending power by financial institutions would be particularly acute for community financial institutions like credit unions who are not-for-profit financial institutions and rely on deposit accounts to accumulate sufficient capital to support their members.

The discussion paper discusses a potential cap on the amount of funds that an individual can hold in CBDC as a mitigant for this deposit substitution.[10] The amount of total shares and deposit balances held by an average credit unions member as of December 2021 was $7,131, with an average for small credit unions[11] was $5,779.[12] While a limit on CBDC possession would be marginally helpful in preventing considerable deposit substitution, it is unlikely to significantly counteract the effect due to the low-level account balances. The operational burden in determining compliance with the cap would be costly for credit unions, and the cap would likely frustrate CBDC use cases. Operationally, credit unions would need to verify cap availability before a transfer is made. This delay would undermine real-time, instant payments objectives of a CBDC. The verification would be made difficult by consumers using accounts at multiple financial institutions to evade the cap and would introduce additional cost burdens on the financial system to develop technology to aid in this determination. Furthermore, any cap on CBDC holdings would limit potential benefits for business use cases such as cross-border payments and large transfers would still require use of the current system. The cap could further frustrate efforts to preserve the dominant international role of the U.S. dollar because CBDC would not be a viable mechanism for facilitating international payments.[13]

Other potential mitigating factors that have been discussed include reimbursement or compensation to financial institutions for expenses related to maintenance of the CBDC accounts system. While this effort would assist with operational expenses, it would not address the effects of deposit substitution.

Goals of a CBDC

Encourage Financial Inclusion

One discussed objective of the creation of a CBDC would be to encourage financial inclusion and increase financial availability to the unbanked and underbanked through reducing common barriers to financial services

[8] *See* Fernandez-Villaverde, et al., "Central Bank Digital Currency: Central Banking for All?" Federal Reserve Bank of Philadelphia Working Paper 20-19, p. 22 (June 2020).
[9] *Id.*
[10] "Money and Payments: The U.S. Dollar in the Age of Digital Transformation," *supra* note 1, p. 17.
[11] Small credit union defined as having assets below $100 million.
[12] *See* NCUA call report data, December 2021.
[13] *See* Garett et. Al, "Central Bank Digital Currency Design: Implications for Market Composition and Monetary Policy." (2021). This paper argues that a high interest rate on CBDC will result in further shrinkage of small financial institutions' market share as one of the potential outcomes of interest bearing CBDC. This could be detrimental to Credit Unions.

and lowering transaction costs. This is a noble and necessary cause that is near and dear to the hearts of credit unions and is the centerpiece of what we do. As not-for-profit, member-owned, and democratically controlled depository institutions, credit unions deliver big financial and nonfinancial benefits to their members and provide a more personal approach to consumer service. These benefits take the form of lower loan rates, higher yields, and fewer fees making credit unions a more accessible and beneficial option for most. In fact, as of December 2021, 71% of credit unions offer no cost share draft accounts for their members.[14]

If credit unions lose access to substantial deposits and must invest significant funding in new technology and the development of CBDC wallets, the benefits they are able to deliver to their members will inevitably suffer and it is unclear how these wallets could be operated on a no-cost basis for consumers. Credit unions are very limited in the number of available methods to raise capital and only certain credit unions can issue subordinated debt. This makes the risk of deposit substitution especially acute for credit unions and their members who rely on affordable credit and services.

A CBDC geared toward expanding financial inclusion would need to be paired with an expansion of broadband accessibility in order to best reach those in need. The FDIC survey of the unbanked found that more than one-third of respondents don't trust their financial institution.[15] This trust will not be earned by increasing federal oversight of individual transactions or destabilizing local financial institutions by reducing the supply and increasing the cost of credit. Instead, any proposed CBDC should complement and work in tandem with the existing financial system to enhance the consumer experience.

Streamline Cross-border Payments

A diverse array of US payments improvement initiatives are already in flight, spearheaded by both private sector consortia (The Clearing House's RTP, Nacha's Same Day ACH) and quasi-governmental entities (the Fed's own imminent FedNow service). It remains unclear how a CBDC model would deliver a faster, more efficient, more inclusive, and/or less expensive settlement solution than the innovations currently in market or in development.

It should be noted that it would be necessary for any US CBDC to interoperate with existing payment rails- absent a highly unlikely scenario in which a CBDC replaces rather than augments existing options. As stated elsewhere, a clear enunciation of the benefits of a CBDC- at a sufficient level of detail to enable thoughtful assessment- remains elusive.

The prospect for a CBDC to enhance cross-border payment capabilities is among the most appealing and relatively tangible use cases. The longstanding pain points impacting cross-border money movements are well documented and include challenges such as aligning regulatory, supervisory and oversight frameworks for cross-border payments, AML/CFR consistency, and payment system access.[16] Depending on the actions of other countries, a CBDC could also be an important tool in preserving the US dollar's status as a global reserve currency (in addition to a lever for domestic economic policy).

In this sphere as well, the recent announcement of the IXB initiative encompassing The Clearing House, SWIFT and EBA Clearing having entered the pilot phase is another indication of private sector collaboration making significant strides toward improvement. Given the legal, technical and political hurdles to be overcome before a

[14] *Id*.
[15] *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.
[16] *See* Central bank digital currencies for cross-border payments, Report to the G20. BIS, CPMI, Innovation Hub (July 2021).

CBDC could be implemented for cross-border usage, the time required before launching would cede private sector solutions a perhaps insurmountable lead.

Stablecoins offer another interesting twist. Assuming they are fully backed by dollar-based assets and appropriately audited and regulated as the President's Working Group recommends in its paper, these less volatile cryptocurrency-adjacent vehicles hold the promise to address several identified payments pain point- both domestic and cross-border- while avoiding many of the challenges posed by a CBDC.

Preserve the dominant international role of the U.S. Dollar

We appreciate the Fed's desire to ensure the U.S. dollar remains the dominant currency. With the number of open questions, it is difficult to say exactly what impact a CBDC would have on this goal, but we can look at the takeaways from similarly suited countries have had the topic. For example, Canada, Australia, Singapore, and the United Kingdom have separately found insufficient use cases for retail CBDCs in their countries, determining that "the international coordination and technical harmonization are simply not currently viable." China, on the other hand, has relentlessly pursued a retail CBDC. Given the extent to which China's financial system operates very differently from democratized nations- not to mention disconnects in the privacy expectations of society- we doubt many transferrable lessons can be drawn from China's experience.

To the extent preserving the US dollar's role as a global reserve currency is a key object of a CBDC, more details on the proposed design and interaction with existing payment instruments is necessary in order to make a fair assessment. We have previously discussed the favorability a CBDC would provide during times of economic unrest and instability within the United States, but those benefits do not end at the border. Individuals residing internationally might also appreciate the stability and security afforded by a retail CBDC and opt for it over their own country's currency.

Conclusion

The uncertainty surrounding the design and structure of a CBDC presents many challenges in evaluating the efficacy of its establishment; however, we have endeavored to provide insights and concerns based on general assumptions about its design. The speed of development in this area requires continual conversation and re-evaluation of the societal benefit a CBDC could provide. These benefits should represent novel advancements of the financial system where the contribution far outweighs the risks. We look forward to continuing this conversation and stress the importance of including credit unions in the conversation.

If you have questions about our comments, please do not hesitate to contact me at (202) 577-3463.

Sincerely,

Madison Rose
Director of Advocacy & Counsel for Payments and Technology

BANK POLICY INSTITUTE

May 20, 2022

Via Electronic Mail

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

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

Ladies and Gentlemen:

The Bank Policy Institute[1] appreciates the opportunity to comment on the Board of Governors of the Federal Reserve System's report "Money and Payments: The U.S. Dollar in the Age of Digital Transformation." We support the Federal Reserve's resolve to take a careful, data-driven approach to considering "whether and how a CBDC could improve the safe and efficient domestic payments system."[2] Because many uncertainties remain, and because the available evidence suggests that a CBDC could present serious risks to financial stability, BPI supports the Board's conclusion that it "will only take further steps toward developing a CBDC if research points to benefits for households, businesses, and the economy overall that exceed the downside risks, and indicates that CBDC is superior to alternative methods." In addition, for both legal and policy reasons, we agree that the Board should only pursue a CBDC with the consent of both the executive and legislative branches.

The Board's paper provides a high-level overview of some of the potential benefits and risks that an intermediated, account-based CBDC could pose, and also references potential alternative means of achieving those benefits. The paper also acknowledges the serious risks to the U.S. economy and financial system that could be posed by an intermediated CBDC.[3] In short, by attracting deposits away from banks, particularly during a period of economic stress, a CBDC likely would undermine the

[1] BPI is a nonpartisan public policy, research and advocacy group, representing the nation's leading banks and their customers. Our members include universal banks, regional banks and the major foreign banks doing business in the United States. Collectively, they employ almost 2 million Americans, make nearly half of the nation's small business loans and are an engine for financial innovation and economic growth.

[2] 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: The Fed - Money and Payments: The U.S. Dollar in the Age of Digital Transformation (federalreserve.gov).

[3] *Money and Payments* at 17.

commercial banking system in the United States, and severely constrict the availability of credit to the economy in a highly procyclical way.

Furthermore, many of the potential benefits cited by proponents of a CBDC are uncertain, and, moreover, many are mutually exclusive and thus could not be realized simultaneously.[4] For example, one of the most frequently cited reasons in support of a CBDC is that it would increase financial inclusion, yet, as discussed further below, we are unaware of any substantiated use case for CBDC that would benefit low- and moderate-income people.

While there are many different architectures that a CBDC could take, the Federal Reserve's paper only considers an intermediated, account-based model. (This approach is understandable given serious policy and operational problems with the alternative token-based approach.)[5] Consumers would hold their CBDC at an account at a bank or other intermediary, similar to the way a trust bank holds a security for a customer. The intermediary would have to provide CBDC on demand. The intermediary could not do anything with the customer's CBDC. This fundamentally distinguishes the current system, in which banks use customer deposits to finance loans and other investments in the real economy, and any future system with a CBDC, in which customers' CBDC could not be used by the bank to make any such loans or investments. Any transfer of a dollar deposit from a commercial bank or credit union to a CBDC is a dollar unavailable for lending to businesses or consumers. We believe that there is a widespread popular misconception on this point, which the Federal Reserve should strive to rectify.[6]

Under the intermediated approach under consideration, the operational tasks and costs, including account opening, account maintenance and enforcement of AML/CFT rules, and day-to-day customer service would be assumed by the intermediary, at considerable cost. While such an approach would help assure compliance with law and maintain good customer service, the costs involved are

---

[4] *See* Gregory Baer, BPI Staff Working Paper, "Central Bank Digital Currencies: Costs, Benefits and Major Implications for the U.S. Economic System" (April 7, 2021), available at: Central-Bank-Digital-Currencies-Costs-Benefits-and-Major-Implications-for-the-U.S.-Economic-System.pdf (bpi.com).

[5] Mirroring the two current forms of central bank money, two primary architectural designs have been considered for CBDCs: account-based and token-based. Either version could be wholesale (restricted to certain financial institutions) or retail (available to everyone). Account-based CBDC can be direct (everyone has an account directly with the central bank) or indirect (banks or other financial intermediaries manage the accounts and hold the CBDC like a security held in trust). However, to date, nearly every major central bank has declared that it intends to pursue an indirect solution using commercial banks to provide the distribution tier to consumers, similar to the role they play today. This includes the China E-Yuan pilot, which is the largest pilot to date. In a token-based system, the CBDC would be like cash. The legitimacy of the currency would be established by the payer's possession of an encryption key rather than tying ownership to an identity and an account. A token-based CBDC is unlikely. Because of its anonymity, a token-based CBDC would undermine the KYC-AML regime and be a boon to terrorists and criminals. Users would be at risk of losing all their CBDC if they lost their encryption keys or failed to keep them secret. A wholesale CBDC would not encourage financial inclusion, change retail payments processes, or the payment of government benefits. A wholesale account-based CBDC that was available only to depository institutions, which can already establish accounts at the Federal Reserve, would be little different from the current system. A direct, account-based CBDC would require the Fed to manage millions or potentially billions of accounts, including satisfying AML-KYC requirements.

[6] *See* Greg Baer and Bill Nelson, "A Costly Misunderstanding About CBDC" (December 17, 2021), available at: https://bpi.com/a-costly-misunderstanding-about-cbdc/.

likely to result in consumers being charged a fee for holding and transferring CBDC.[7] Thus, given that a CBDC by all accounts would not pay interest, consumers would have a cost of carrying CBDC.

Congressional action would be required before the Federal Reserve could launch such a CBDC, as the Federal Reserve does not appear to have legal authority to issue this CBDC.[8] Ultimately, legislation should be enacted only if Congress and other policymakers determine that a U.S. CBDC would have net benefits over the current monetary and financial system, as the Federal Reserve recognizes in its paper. Congress and other policymakers must evaluate whether a CBDC would provide benefits, such as those often cited by its proponents, and, even if it would, whether there are alternative methods to achieve those benefits with fewer risks, costs, or other downsides.

The possible benefits and costs of a CBDC should be considered with respect to, at a minimum, (i) financial intermediation and credit availability, (ii) data protection and privacy, (iii) payments efficiency, (iv) confidence in the U.S. dollar, (v) competition with stablecoins, and (vi) financial inclusion, among others.

i) *Financial intermediation and credit availability*

As referenced above, a CBDC could disrupt financial intermediation and thereby reduce credit availability to consumers and businesses, certainly in stress events (in a procyclical way), and likely even during normal times. An intermediated account-based CBDC would inevitably lead to some level of reduced commercial bank deposits, as customers would trade deposits for CBDC. This reduction in bank deposits would lead to more expensive credit intermediation and a reduction in the supply of credit, as a CBDC is a source of funding for the Federal Reserve, not for banks, in contrast to customer dollar deposits under the current system.[9] (We assume that the Federal Reserve would not use CBDC as a funding source to becoming a direct lender, as some have advocated.)[10] It is through credit intermediation that banks engage in maturity transformation by taking deposits and making loans. That system provides depositors a secure place to put their money with the right to withdraw it immediately, while allowing borrowers access to stable, low-cost, long-term funding.

Thus, if in a stress event, bank depositors chose to move deposits to the central bank in the form of CBDC, banks would face a massive shock to their funding. At best, this would result in a

---

[7] Currently, banks make money on payment systems predominantly by lending out deposits and earning net interest income, but, because a CBDC held in a digital wallet cannot be lent out to borrowers, it would come with zero net interest income for a bank or other intermediator. Banks (and FinTechs increasingly using rent-a-bank arrangements) also earn money through debit interchange, but it appears unlikely that interchange would be charged on a transfer of CBDC. Thus, deprived of traditional revenue sources to offset the costs of account maintenance, companies that set up a digital wallet to hold and transfer CBDC seemingly would have to charge consumers a considerable fee for that service.

[8] Paige Pidano Paridon, BPI, "Legal Authority to Issue a U.S. Central Bank Digital Currency" (June 9, 2021), available at: Microsoft Word - Legal Authority to Issue a U.S. Central Bank Digital Currency - vF.docx (bpi.com).

[9] *See* Greg Baer and Bill Nelson, BPI, "A Costly Misunderstanding About CBDC" (December 17, 2021*)*, available at: A Costly Misunderstanding About CBDC - Bank Policy Institute (bpi.com).

[10] Saule T. Omarova, "The People's Ledger: How to Democratize Money and Finance the Economy," 74 Vand. L. Rev. 1301 (2021), available at: The-Peoples-Ledger-2.pdf (vanderbiltlawreview.org.

corresponding reduction in loan supply funded by those deposits. Notably, this effect would occur even if depositors chose to run for only a day. And while this effect would occur under stress, we assume that regulators, anticipating such an event in liquidity stress tests, would consider deposits a less stable source of funding, and require loans increasingly to be funded by long-term debt. Such a regulatory response would result in a permanent increase in loan costs, and a permanent reduction in economic growth.

As discussed in greater detail in our response to the Federal Reserve's questions, funding risks could be reduced by limiting CBDC to retail use only (meaning that large corporate deposits could not run to CBDC) and by capping the value of CBDCs permitted to each account holder. However, these measures also would appear to forfeit many of the putative benefits of a CBDC. In particular, if there is a limit imposed, then there would have to be a bank (or other type of) account associated with the CBDC account to receive overflow, which would eliminate the benefit of a CBDC for those seeking alternatives to bank or other private sector accounts. Moreover, it may not be credible that limits would be maintained in periods of stress, as there may be significant pressure to raise those limits to allow households to shift their wealth into the risk-free asset the Federal Reserve had created. Indeed, the Federal Reserve succumbed to pressure to raise counterparty limits that were created for essentially the same reasons in connection with the overnight reverse repurchase agreement facility.[11]

ii) *Data protection and privacy*

Any CBDC would require extraordinarily robust measures to protect consumer data. The Federal Reserve, were it to hold the CBDC data of customers of all financial intermediaries, could be an even more attractive target for cybercriminals than the current more fragmented system is today in which customer data is held at various institutions, making data protection of paramount importance.

iii) *Payments efficiency*

Some proponents of a U.S. CBDC claim that a CBDC would make domestic and cross-border payments systems more efficient. While perhaps relevant in some countries, this rationale for a CBDC seems increasingly inapt in the United States, where The Clearing House's RTP real-time payment system, operational since 2017, continues to grow in use, consumers happily pay each other with Zelle or Venmo, and PayPal and Square thrive.

---

[11] *See* Frost, Josh, Lorie Logan, Antoine Martin, Patrick McCabe, Fabio Natalucci, and Julie Remache (2015). "Overnight RRP Operations as a Monetary Policy Tool: Some Design Considerations," Finance and Economics Discussion Series 2015-010. Washington: Board of Governors of the Federal Reserve System, available at: http://dx.doi.org/10.17016/FEDS.2015.010. When the ON RRP was created, many were worried that the facility would amplify flights to safety by being an unlimited, risk-free investment alternative. To placate those concerns, use of the facility was capped at the aggregate and individual levels. In reality, in almost every instance in which the caps came close to binding, they were raised. The FOMC's recent communications on the caps are illustrative: essentially, they have raised the caps precisely because the caps might bind. Moreover, as noted, the caps were put in place to placate those who were concerned that the facility would potentially be disruptive. Now that the facility is familiar, the Federal Reserve says about high usage – "The facility is doing what it is designed to do." Based on this experience, it would seem appropriate to be deeply skeptical of proposals to put binding limits on CBDC accounts.

It also has been asserted that a CBDC would have allowed the Treasury to make stimulus payments to consumers more quickly during the COVID crisis, and to more people.[12] Those payments were made through the ACH network for customers who had bank accounts, and paper checks for others. Those for whom the government had neither bank account information nor a physical address (probably because they had never filed a tax return) did not receive payments. We surmise those same individuals would be unlikely to have a digital wallet, and therefore the mere existence of a CBDC would not have allowed the government to locate people without accounts or known addresses any better. Certainly, if a customer set up a digital wallet with an intermediator, then a future stimulus payment could be made in the form of CBDC. However, with such an account established, payment could also be made in seconds through the existing RTP real-time payment system, or through the existing ACH system. Indeed, the Federal Reserve could modernize Fedwire – as it promised to do in 2018 – by making it operational 24/365 rather than 22/249, which would further increase the speed of payments.

Inefficiencies in the current cross-border system are to some extent attributable to regulation for AML/CFT purposes, which a CBDC would not reduce, although remittance costs are dropping significantly despite these regulations as a result of competition in this arena.[13] Further, other efforts are underway to improve cross-border payments outside of any potential CBDC issuance. Improving the existing cross-border payments system is a key priority of the FSB, which has devoted and indicated it will continue to devote significant resources to this effort. Most notably, The Clearing House, EBA CLEARING, and SWIFT have executed a proof of concept and announced plans to launch by the end of this year an immediate cross-border (IXB) payments system; it is being designed with the contribution of 24 financial institutions.[14] Again, if the Federal Reserve wished to assist in these and other efforts to modernize payments, it could finalize plans announced in 2018 to convert Fedwire to a 24/365 system.

As for the role of a CBDC in cross-border payments, several wholesale CBDC pilots are underway globally, but it is too early to draw conclusions as to whether a wholesale CBDC could improve cross-border payments. Given the steps involved in a cross-border payment, it is unclear what steps a CBDC would replace and how it would lower the cost of each. Thus, further research is required before drawing any conclusions about the potential benefits of a CBDC in enhancing cross-border payments efficiency. In addition, by the time CBDCs would be in circulation, other cross-border solutions likely will be in place.

---

[12] Light, Joe, "China Shows Off Digital Yuan at Olympics as U.S. Plays Catch-Up" Bloomberg (February 15, 2022), available at: https://www.bloomberg.com/news/articles/2022-02-15/china-is-showing-off-its-central-bank-digital-yuan-currency-at-beijing-olympics?sref=9xX5rA0h.

[13] Spencer Tierney, "Wise Money Transfer Review," Nerd Wallet (Nov. 15, 2021), available at: https://www.nerdwallet.com/article/banking/transferwise-review.

[14] *See* John Adams, "Banks gearing up to test real-time payments across borders," *American Banker*, (May 2, 2022), available at: https://www.americanbanker.com/payments/news/banks-gearing-up-to-test-real-time-payments-across-borders; *See also* "EBA Clearing, SWIFT, and The Clearing House to deliver pilot service for immediate cross-border payments" (April 28, 2022), available at: EBA CLEARING, SWIFT and The Clearing House to deliver pilot service for immediate cross-border payments (prnewswire.com).

iv) *Confidence in the U.S. dollar*

Some have posited that a foreign CBDC could threaten the dollar's reserve currency status. However, the dollar's prominent role in the global economy rests on several foundations, including:

- The strength and size of the U.S. economy;
- Extensive trade linkages between the United States and the rest of the world;
- Deep financial markets, including for U.S. Treasury securities; the stable value of the dollar over time;
- The ease of converting U.S. dollars into foreign currencies;
- The rule of law and strong property rights in the United States; and
- Credible U.S. monetary policy.

Indeed, Chairman Powell has explained well why one should not be concerned about another country's currency gaining an advantage over the dollar by taking on digital form, noting that the reason the dollar is the reserve currency is "because of our rule of law; our democratic institutions, which are the best in the world; our economy; our industrious people; all the things that make the United States the United States."[15] Further, given that the dollar is currently the reserve currency, a move to another currency – even a digital one – would be burdensome and inconvenient in practice.

Lastly, and at the risk of stating the obvious, recent geopolitical events demonstrate that the dollar's role as the reserve currency will be determined by factors other than whether it takes the form of digital commercial bank money or digital CBDC.

v) *Competition with stablecoins*

Others have cited a need to compete with so-called stablecoins as a reason to develop a CBDC. There are three general types of stablecoins currently. The first type – the so-called "unstable stablecoin" – is backed by assets like corporate debt and asset-backed securities and is thus similar to prime money market funds.[16] They pose systemic risk, as they are susceptible to runs, and their interlinkage with crypto markets heightens that risk. The second type are the "algorithmic" stablecoins that pose similar run risk.[17]

---

[15] Powell, Jerome, transcript of Federal Open Market Committee press conference, April 28, 2021, available at: https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20210428.pdf.

[16] Baer, Greg, "Making Stablecoins Stable: Is the Cure Worse than the Disease?", Bank Policy Institute (Sept. 27, 2021), available at: https://bpi.com/making-stablecoins-stable-is-the-cure-worse-than-the-disease/.

[17] These stablecoins generally "use an algorithm or smart contract to manage the supply of tokens and guide their value to some reference asset." Congressional Research Service, Insight, "Algorithmic Stablecoins and the TerraUSD Crash," (May 16, 2022), available at: IN11928 (congress.gov). These stablecoins also present run risk, and indeed, earlier this month, an algorithmic stablecoin lost its dollar peg, triggering a run on crypto, erasing over $400 billion in crypto market capitalization. Chow, Andrew R. "The Real Reasons Behind the Crypto Crash, and What We Can Learn from Terra's Fall," Time, (May 17, 2022), available at: What Terra's Crash Means For Crypto and Beyond | Time.

A CBDC has not been suggested as an answer to these problems; rather, the answer is universally agreed to be better regulation, disclosure, and enforcement of existing laws.[18] The calls by some policymakers for stablecoin regulation have escalated further in the wake of the recent run triggered by the failure of TerraUSD, an algorithmic stablecoin, to maintain its dollar peg.[19] Indeed, if the financial stability risks arising from these stablecoins' structural flaws are not fixed, providing a CBDC will not be sufficient to safeguard financial stability.

The third type of stablecoin that has been proposed – the so-called "stable stablecoin" would be backed solely by cash, government securities, or repos backed by government securities, which would make it safer than the other two types. Some have proposed that these more stable stablecoins could serve as a payments mechanism. It was concern over possible widespread use of these types of private sector digital currencies – particularly Facebook's Libra stablecoin proposal – that served as a catalyst for increased research around a possible CBDC.[20] Policymakers were concerned about the potential for Facebook to use its Libra stablecoin to move finance outside of the banking system, disintermediating the dollar. However, Facebook has abandoned its stablecoin project and sold its stablecoin subsidiary, now named Diem.[21] Although Facebook has abandoned its stablecoin plans, were another "stable" stablecoin – one backed by government securities and short-term Treasuries – to grow at scale, it would pose similar concerns as an intermediated CBDC: namely that investors would run *to*, not *from*, it, particularly in times of financial instability.

As BPI has previously suggested, a stablecoin that was designed to, and would in actuality, exist in a state of equilibrium with bank deposits (which would be impossible for a CBDC) could avoid undermining the banking system while still offering convenience to customers.[22] Banks could issue stablecoins *pari passu* with bank deposits. Indeed, a recent Federal Reserve research paper concluded that under a framework in which stablecoins were backed by commercial bank deposits that were used for fractional reserve banking, bank intermediation would not be disrupted, so long as "the treatment of stablecoin deposits [were] the same as non-stablecoin deposits in terms of the required reserve ratio,

---

[18] *See, e.g.*, The President's Working Group on Financial Markets (PWG), the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, "Report on Stablecoins," (Nov. 1, 2021), available at: Report on Stablecoins (treasury.gov); White House, "Executive Order on Ensuring Responsible Development of Digital Assets" (March 9, 2022)j; and Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets, U.S. Department of the Treasury (April 7, 2022), available at: Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets | U.S. Department of the Treasury.

[19] Chris Matthews, "Terra crash sharpens Washington's attention on crypto regulations," MarketWatch, (Updated May 18, 2022), available at: Terra crash sharpens Washington's attention on crypto regulations - MarketWatch.

[20] *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 one reason that the Federal Reserve is "sharpening" its focus on CBDC and that a CBDC may increase payment system resilience "relative to a payments system where private money is prominent.").

[21] Sam Sutton and Victoria Guida, "Facebook's crypto project sold after political backlash," Politico, (Jan. 31, 2022), available at: Facebook's crypto project sold after political backlash - POLITICO.

[22] *See* Baer (2022). ("There does seem to be one way for stablecoins to avoid undermining the fractional reserve system while still offering convenience to customers, and that is for them to reach a state of equilibrium with bank deposits. (With a CBDC, equilibrium is impossible).").

liquidity coverage and other regulatory and self-imposed risk limits."[23] In order for there to be true equivalency, the stablecoin deposits would need to be insured and subject to similar treatment as other deposits in terms of insurance premiums.[24]

Furthermore, this design would seem to align with the public sector's expectations for appropriate regulation of stablecoins. The President's Working Group on Financial Markets recommended that only insured depository institutions should be permitted to issue stablecoins.[25]

Yet even with this public sector encouragement, banks have not begun to issue retail payment stablecoins at a large scale because, as we understand from BPI members' payments experts, there has not been significant customer demand for a retail payment stablecoin. Banks' customers appear satisfied using RTP/real-time payment or ACH transfers,[26] and consumers continue to use Zelle, Venmo, debit cards, and credit cards.[27] Thus, there does not appear to be a current need to establish a CBDC to compete with a dollar stablecoin. Furthermore, even if in the future a stablecoin did grow in scale in both the online and physical worlds, it is not clear that a CBDC would be preferable over a properly regulated stablecoin as described in the report issued by the President's Working Group on Financial Markets joined by the FDIC and OCC.

---

[23] Liao, Gordon Y. and John Caramichael (2022). "Stablecoins: Growth Potential and Impact on Banking," International Finance Discussion Papers 1334, 13-14, Washington: Board of Governors of the Federal Reserve System, available at: https://doi.org/10.17016/IFDP.2022.1334.

[24] *Id*. at note 30. The authors noted that "It is conceivable that deposits associated with stablecoin issuance are categorized as either transactional or brokered deposits. The former type has a lower assumed "run rate" in assessments of liquidity coverage. To achieve full equivalence to retail deposits, stablecoins would also require FDIC insurance."

[25] *See* The President's Working Group on Financial Markets (PWG), the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, "Report on Stablecoins," (Nov. 1, 2021), available at: Report on Stablecoins (treasury.gov).

[26] The modern ACH Network experienced significant growth in 2021, with 29.1 billion payments valued at $72.6 trillion, and same day ACH payment volume grew nearly 74%. *See* NACHA, "ACH Network Sees 29.1 Billion Payments in 2021, Led by Major Gains in B2B and Same Day ACH.", February 3, 2022, available at: https://www.nacha.org/news/ach-network-sees-291-billion-payments-2021-led-major-gains-b2b-and-same-day-ach.

[27] The Clearing House's RTP network use has seen a seven-fold increase in volume since the first quarter of 2020 and in the fourth quarter of 2021 processed 37.8 million transactions. *See* TCH, "Real-Time Payments for All Financial Institutions.", available at: https://www.theclearinghouse.org/payment-systems/rtp. Mastercard reported a gross dollar volume increase of 25% year-over-year on branded cards and Visa reported a 17% increase in processed transactions year-over-year in 2020. *See* Mastercard Inc. (2021) Form 10-K, available at: https://s25.q4cdn.com/479285134/files/doc_financials/2021/q4/MA.12.31.2021-10-K-as-filed-Exhibits.pdf & Visa Inc. (2021) Form 10-K, available at: https://d18rn0p25nwr6d.cloudfront.net/CIK-0001403161/c2498d48-acd0-4f4d-8a36-9a10034f3060.pdf.

vi) *Financial inclusion*

One of the most frequently cited reasons in support of a CBDC is that it would increase financial inclusion. While many CBDC supporters have asserted this benefit in theory, we are unaware of any substantiated use case for CBDC that would benefit low- and moderate-income people.

The FDIC survey of the unbanked highlights the main reasons why unbanked individuals remain unbanked.[28] Most simply have no money to deposit. Many have concerns about minimum balance requirements or fees; others are concerned about privacy, although such concerns would not be addressed by a CBDC.

Meanwhile, low-cost banking accounts are proliferating. Bank On is a national program whose goal is to ensure that everyone has access to a safe and affordable bank or credit union account. It comprises local partnerships of city, state, and federal government agencies, financial institutions and nonprofit organizations. These local Bank On coalitions are joined nationally under the leadership of the Cities for Financial Empowerment (CFE) Fund. The account standards include a minimum opening deposit of $25 or less, and no or low ($5 or less) monthly maintenance fee. They do not permit penalty fees for overdrafts, non-sufficient funds, low balances or account dormancy. Accounts may allow for negative balances, but customers cannot be charged fees if this occurs.[29]

Bank On certified accounts are now offered by over 110 banks and credit unions at more than 39,000 branches nationwide.[30] Bank On accounts have proven to be highly popular with consumers: over 3.8 million accounts were open and active in 2020 at just 17 institutions that reported data, and growth increased in 2021.[31]

Furthermore, our research has shown that the take-up rate for Bank On accounts is greatest in areas with high concentrations of lower-income and minority households, as indicated by the ZIP codes associated with the accounts. Close to 60 percent of Bank On certified accounts opened in 2017 were for customers residing in areas with more than 50 percent minority population. Similarly, about 46 percent

---

[28] How America Banks: Household Use of Banking and Financial Services 2019 FDIC Survey; available at: https://www.fdic.gov/analysis/household-survey/index.html.

[29] The account standards are available here: https://2wvkof1mfraz2etgea1p8kiy-wpengine.netdna-ssl.com/wp-content/uploads/2020/10/Bank-On-National-Account-Standards-2021-2022.pdf.

[30] *See* Written Testimony Submitted to the U.S. House Committee on Financial Services, House Subcommittee on Consumer Protection and Financial Institutions. Hearing on "Banking the Unbanked: Exploring Private and Public Efforts to Expand Access to the Financial System," (July 21, 2021), Submitted by David Rothstein, Senior Principal, Cities for Financial Empowerment Fund, available at: hhrg-117-ba15-wstate-rothsteind-20210721.pdf (house.gov); Accounts – BankOn (joinbankon.org); The Bank On National Data Hub: Findings from 2020, available at: bankonreport_2020findings.pdf (stlouisfed.org).

[31] The Bank On National Data Hub: Findings from 2020, available at: bankonreport_2020findings.pdf (stlouisfed.org).

of accounts opened in 2017 were in ZIP codes with more than 50 percent LMI population. Thus, Bank On appears to be achieving significant success in reaching the population it has targeted.[32]

Given these facts, it is difficult to understand why a person who chooses not to establish a low-cost banking account would instead establish a digital wallet at a bank or other intermediary to hold a CBDC. The incentive would be further diminished given that the CBDC would pay no interest and the account might come with fees. Thus, a CBDC appears to be no answer to a diminishing problem. The Federal Reserve should recognize that a CBDC is not a talismanic solution to financial inclusion.

vii) *Other considerations*

In addition, policymakers should study the effect that a CBDC could have on monetary policy. A CBDC could have two potential monetary policy benefits:

- If the CBDC could pay negative interest, and if access to paper currency were limited, the Fed may be able to set interest rates as negative as necessary to stimulate growth; and
- If it paid interest, it could increase Fed control of interest rates: If everyone had access to the CBDC, no one would lend at less than the CBDC interest rate.

However, a CBDC could lead to rapid and large reductions in reserve balances when there is a flight to quality, driving up money-market interest rates and potentially destabilizing financial markets. These costs and benefits would have to be carefully weighed.

Finally, policymakers should consider other issues, such as the importance of the Federal Reserve's ensuring that a CBDC would be completely interchangeable with traditional currency to avoid creating two classes of dollars.

In addition, due consideration should be given to whether and how the existing prudential framework would apply to a CBDC. There are also a host of legal issues that would arise from a CBDC including clarity regarding legal claims to a CBDC, settlement finality in transactions, the use of a CBDC as collateral, and responsibility for liabilities with respect to the CBDC, including with respect to any fraud, loss, theft, or other wrongdoing, and operational matters, such as system outages. Finally, as noted, performing intermediation functions would impose costs on banks or other intermediaries, and the Federal Reserve and other policymakers must consider how the intermediaries would be compensated for providing those services.

[32] *See* Calem, Paul, *"Bank On" Transaction Accounts: Making Traditional Banking More Inclusive* (April 13, 2021), available at: https://bpi.com/wp-content/uploads/2021/04/Bank-On-Transactions-Accounts-Making-Traditional-Banking-More-Inclusive.pdf.

Conclusion

The Federal Reserve rightly recognizes that a CBDC could present serious risks to financial stability and may provide few, if any, benefits. Furthermore, to the extent a CBDC could produce one or more benefits, those benefits likely could be achieved through less harmful means. Because a CBDC could undermine the commercial banking system in the United States and severely constrict the availability of credit to the economy, the Federal Reserve appropriately concludes that it should only take further steps toward developing a CBDC "if research points to benefits for households, businesses, and the economy overall that exceed the downside risks, and indicates that CBDC is superior to alternative methods" and only with the support of the executive and legislative branches. In the Annex, we provide responses to select questions posed by the Federal Reserve in its report, "Money and Payments: The U.S. Dollar in the Age of Digital Transformation."

* * * * *

If you have any questions, please contact the undersigned by phone at 703-887-5229 or by email at paige.paridon@bpi.com.

Sincerely,

Paige P. Paridon

Paige Pidano Paridon
Senior Vice President,
Associate General Counsel
Bank Policy Institute

Annex

CBDC Benefits, Risks, and Policy Considerations

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

The Federal Reserve's paper, "Money and Payments: The U.S. Dollar in the Age of Digital Transformation," provides a helpful preliminary assessment of the benefits, policy considerations, and risks of a U.S. CBDC. The Federal Reserve's discussion paper makes clear that the Federal Reserve is only evaluating an intermediated model where "the private sector would offer accounts or digital wallets to facilitate the management of CBDC holdings and payments."[33]

As an initial matter, it is important that the Federal Reserve clearly define the problems it is trying to solve with a CBDC. This articulation would enable stakeholders to provide a more useful assessment of whether a CBDC would address those problems in the first instance, and if so, whether alternative methods would address those problems with fewer downsides or risks. For example, the paper notes that a "U.S. CBDC would offer the general public broad access to digital money that is free from credit risk and liquidity risk." However, the paper does not clearly articulate whether this is a primary goal of the Federal Reserve's – or whether it is a goal at all. If a key priority for the Federal Reserve is to provide the public with access to digital money, a stablecoin issued by banks that is *pari passu* with commercial deposits would provide very similar benefits with fewer of the attendant risks that come with a CBDC, as discussed further herein. A clearer articulation of the highest-priority problems with the current system that the Federal Reserve would seek to address with a CBDC would allow us to provide a more detailed evaluation of whether those problems may be addressed by a CBDC, whether other problems created by a CBDC outweigh the current problems, and whether potential alternative solutions could achieve the same goal but with fewer downsides.

---

[33] We do not address the potential benefits and risks of a wholesale CBDC in our response. We do note that there is ongoing research about the potential benefits of a wholesale CBDC by various central banks and other bodies, and thus, it would be premature to make any specific recommendations regarding a wholesale CBDC. However, the Federal Reserve should continue to monitor those projects as part of its overall research on a possible CBDC and its efforts to improve the speed and efficiency of the payments system, particularly in the cross-border context. *See, e.g.*, BIS Press Release "BIS, SNB and SIX successfully test integration of wholesale CBDC settlement with commercial banks" (January 13, 2022), available at: Press release: BIS, SNB and SIX successfully test integration of wholesale CBDC settlement with commercial banks; BIS Press Release "BIS, Bank of France and Swiss National Bank conclude successful cross-border wholesale CBDC experiment" (December 8, 2021), available at: Press release: BIS, Bank of France and Swiss National Bank conclude successful cross-border wholesale CBDC experiment.

In addition, while the paper provides a good overview of multiple potential benefits and risks of a CBDC, there are certain policy and legal issues that warrant further consideration. First, it is important that the Federal Reserve ensure that a CBDC would be completely interchangeable with traditional currency to avoid creating two classes of dollars.

Due consideration also should be given to whether and how the existing prudential framework would apply to a CBDC. There are also a host of legal questions that would arise from a CBDC including legal claims to a CBDC, settlement finality in transactions, the use of CBDC as collateral, and responsibility for liabilities with respect to the CBDC, including with respect to any fraud, loss, theft, or other wrongdoing, as well as systems outages or other operational risks.

Finally, as we noted in our cover letter, performing intermediation functions would impose costs on banks or other intermediaries, yet no one has identified who would pay the intermediaries – that is, providers of a digital wallet in which a CBDC would be held – for services attendant to holding and transferring CBDC. Those services likely would include, at a minimum, customer service, dispute resolution, AML and sanctions compliance (including both on-boarding and transaction monitoring), and fixed and variable technology expense.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

First, as we noted previously, we would be able to provide a more complete response to this question if the Federal Reserve provided a fuller explanation of its main priorities, as the potential benefits likely cannot be achieved simultaneously with one particular CBDC design.

However, based on current research and available information about the potential benefits often cited by proponents of a CBDC and referenced in the Federal Reserve's paper, we believe that it may be possible to achieve many of the potential benefits of a CBDC via alternate means that would not require a remaking of the financial system or the building of an infrastructure to support a CBDC. For example, and as discussed further in our cover letter, our prior writings, and our response to question 3, the potential financial inclusion benefits of a CBDC – at least in the United States – may be limited, and furthermore, could be addressed in other ways, including by private sector innovations. As another example, the paper notes that a CBDC could increase the speed and efficiency of payments, including in the cross-border context. As referenced in footnote 1 and discussed in response to question 9, below, it is too soon to draw conclusions about whether a CBDC would result in such benefits. We also discuss other ways to achieve payment system improvements in that response.

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

One reason often cited in support of a CBDC is that it could improve financial inclusion. We recognize that a CBDC might improve financial inclusion in some countries, particularly in less industrialized nations that do not have access to a strong national currency or competitive, safe and

reliable payments services that more industrialized nations do.[34] Given the reasons the unbanked cite for not having a bank account in the United States, however, a CBDC appears to be unlikely to improve inclusion materially.[35] According to a 2019 FDIC study, 5.4 percent of U.S. households (approximately 7.1 million households) are unbanked, a percentage that has been steadily falling and is currently at an all-time low.[36]

A significant number of respondents to the FDIC survey provided the following as their main reasons for not having a bank account: Don't Have Enough Money to Meet Minimum Balance Requirements (29%); Don't Trust Banks (16%); Personal Identification, Credit or Former Bank Account Problems (8%); Avoiding a Bank Gives More Privacy (7%); Bank Account Fees Too High (7%); Bank Account Fees Too Unpredictable (2%); Banks Do Not Offer Needed Products and Services (2%); Bank Locations are Inconvenient (2%); Bank Hours Are Inconvenient (2%).

An intermediated CBDC is unlikely to address such concerns. A CBDC likely would come with fewer services than a traditional bank account and no branches and thus would not satisfy the 6 percent of respondents who wanted more services or branches. The 16 percent of people who do not trust banks and the 7 percent who seek privacy likely would not be inclined to use an intermediated CBDC, as they would have to adopt a digital wallet provided by either a bank or a technology company. The government also may have some view into their spending habits. Thus, it seems, regardless of its features, this 23 percent of the unbanked likely would be unsatisfied with a CBDC. For those who are unbanked because they are undocumented or are paid in cash and are concerned that a bank may report their status or transactions to the government, a government-issued CBDC likely would hold even less appeal than a traditional bank account. And, again, an intermediated CBDC would require use of a bank or tech company.

In addition, as noted, certain respondents to the FDIC survey cited bank fees that are "too high" (7%) or "too unpredictable" (2%) as their primary reasons for not having a bank account. As discussed in

---

[34] *See* Raphael Auer, Holti Banka, Nana Yaa Boakye-Adjei, Ahmed Faragallah, Jon Frost, Harish Natarajan and Jermy Prenio, "Central bank digital currencies: a new tool in the financial inclusion toolkit?," FSI Insights on policy implementation No 41 (April 2022) at 6, available at: FSI Insights No 41 Central bank digital currencies: a new tool in the financial inclusion toolkit? (bis.org) (Noting that "in many [emerging market and developing economies\ and some [advanced economies] there is limited competition in the financial sector. This results in high markups (margins) by banks and other financial institutions, visible in a high cost of executing payments and a large wedge between lending and deposit rates for households and businesses. In many cases, low efficiency may mean that it is not profitable to serve low-income users, and a lack of competition among incumbent financial institutions can mean high prices and poor services." However, as discussed further herein, there is a robust and vibrant competitive marketplace in the United States for payments and other banking and financial services, and thus a CBDC is not necessary to enhance competition in this market. *See also* BPI-CFPB-JunkFeesRFI-response-2022.03.31.pdf.

[35] *See* Baer at 16-17.

[36] How America Banks: Household Use of Banking and Financial Services 2019 FDIC Survey; available at: https://www.fdic.gov/analysis/household-survey/index.html.

our response to question 1, an intermediated CBDC would not be costless, given the services that private sector intermediaries would be expected to provide. Thus, a CBDC would not necessarily address the concerns about bank fees cited by some as reasons for not having a bank account. Moreover, a CBDC is not necessary to address these concerns. The private sector is responding to the demand for lower-cost, more attractive banking options by the unbanked or underbanked—for example, through the introduction of low-cost "Bank On" bank transaction accounts.[37] Bank On accounts are certified by the Cities for Financial Empowerment Fund, a non-profit organization, and this type of account comes with a minimum balance requirement of only $25 and monthly fees of $5 or less; account opening is free, as is in-market ATM usage, and there are no overdraft charges.[38] Bank On-certified accounts are now offered by over 110 banks and credit unions at more than 39,000 branches nationwide.[39] Bank On accounts have proven to be highly popular with consumers: over 3.8 million accounts were open and active in 2020, and growth increased in 2021.[40]

Beyond the reasons cited in the FDIC survey for not having a bank account, CBDCs, by virtue of being digital, raise a potential technological barrier to financial system access. In order for a CBDC to be a viable option for the unbanked and underbanked, they must have access to reliable broadband internet, which has proven to be a challenge in some communities, particularly lower-income and rural communities.[41]

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

BPI has previously written on this topic, and we summarize that work here.[42] Adopting a CBDC would have two potential monetary policy benefits. The most significant is the potential for interest rates to no longer be constrained by the zero-lower bound (ZLB), assuming that a CBDC could pay negative interest and paper currency were eliminated. As a consequence, the Federal Reserve could

---

[37] For more information about Bank On, see https://joinbankon.org/.

[38] Bank On National Account Standards 2021-2022, available at: *https://2wvkof1mfraz2etgea1p8kiy-wpengine.netdna-ssl.com/wp-content/uploads/2020/10/Bank-On-National-Account-Standards-2021-2022.pdf.*

[39] *See* Written Testimony Submitted to the U.S. House Committee on Financial Services, House Subcommittee on Consumer Protection and Financial Institutions. Hearing on "Banking the Unbanked: Exploring Private and Public Efforts to Expand Access to the Financial System," (July 21, 2021), Submitted by David Rothstein, Senior Principal, Cities for Financial Empowerment Fund, available at: hhrg-117-ba15-wstate-rothsteind-20210721.pdf (house.gov); Accounts – BankOn (joinbankon.org); The Bank On National Data Hub: Findings from 2020, available at: bankonreport_2020findings.pdf (stlouisfed.org).

[40] The Bank On National Data Hub: Findings from 2020, available at: bankonreport_2020findings.pdf (stlouisfed.org).

[41] *See* Joyce Winslow, Pew Trust Magazine, "America's Digital Divide," available at: America's Digital Divide | The Pew Charitable Trusts (pewtrusts.org) (noting that the Federal Communications Commission estimates that more than 21 million people in the United States don't have internet access, including nearly 3 in 10 people—27 percent—who live in rural communities, and 2 percent of those living in cities; Microsoft estimates that the number of Americans without broadband access could be over 163 million; and that The Pew Research Center found that 44 percent of adults in households with incomes below $30,000 don't have broadband service).

[42] The Benefits and Costs of a Central Bank Digital Currency for Monetary Policy - Bank Policy Institute (bpi.com)

reduce interest rates as far as needed in the event of a deflationary spiral. In addition, a CBDC that paid interest could increase the Federal Reserve's control of interest rates, especially as the FOMC tightens 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.

On the monetary-policy cost side, a CBDC could lead to rapid and huge reductions in reserve balances (the deposits of commercial banks and other depository institutions at the Federal Reserve) 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 CBDC, the Federal Reserve would have to maintain a much larger balance sheet in normal times than it does now, possibly more than one-third of GDP. If investors in banks and other corporations shifted into CBDC in stress periods, the Fed would also need to replace the lost funding by lending potentially huge sums to banks and nonbank financial institutions. Moreover, because the inflow into CBDC would exceed the new loans to financial institutions, the Fed would also likely have to purchase large amounts of government securities.

Also on the cost side, negative interest rates on cash could make a CBDC unattractive to potential holders, resulting in low uptake and thus potentially frustrating the general acceptance of the CBDC as a transaction mechanism. If the CBDC did not pay negative interest and so did not enable a central bank to break through the ZLB, the monetary policy benefits would be modest, while the costs could still be considerable. If households were given a limited tranche of CBDC that paid an interest rate that could not go below zero, some of the monetary policy benefits of CBDC could potentially be achieved, and some of the costs lessened; however, the significant costs associated with flights to quality would remain. In sum, it is not clear that a CBDC in the United States would help the Fed, on net, to conduct monetary policy.

In addition, as noted previously, too much programmability to facilitate negative interest rates could impact the fungibility of CBDC with conventional currency, which could result in different valuations of a conventional dollar and a CBDC, thereby frustrating the ability to net or setoff CBDC obligations with conventional currency obligations.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

The Federal Reserve's discussion paper makes clear that the Federal Reserve is only evaluating an intermediated model where "the private sector would offer accounts or digital wallets to facilitate the management of CBDC holdings and payments."

The Federal Reserve discussion paper notes the key financial stability risk presented by such a CBDC:

> Because central bank money is the safest form of money, a widely accessible CBDC would be particularly attractive to risk-averse users, especially during times of stress in the financial system. The ability to quickly convert other forms of money—including deposits at commercial banks—into CBDC could make runs on financial firms more likely or more severe. Traditional measures such as prudential supervision, government deposit insurance, and access to central bank liquidity may be insufficient to stave off large outflows of commercial bank deposits into CBDC in the event of financial panic.[43]

Significant outflows of deposits at commercial banks would lead to an immediate disruption in the flow of credit to the real economy during regular times and would exacerbate the impact of any stress event. Those flights to quality would reduce the maturity transformation that results from deposit inflows occurring at the same time as draws on lines of credit, thereby increasing the cost of credit. Not only will the gains from that coproduction be lost, but banks would also have to hold reserve balances and Treasury securities as an even higher fraction of their balance sheets rather than loans to Main Street because liquidity requirements likely would be adjusted to reflect the changed properties of deposits as a source of funding.

The primary suggestions often made to address this significant concern are either to implement a non-interest-bearing CBDC or limit the amount of CBDC an end user could hold. These design features, however, likely would be necessary but not sufficient to address the financial stability concerns raised by a CBDC. In times of crisis, even if a CBDC paid no interest, it could still prove attractive due to its government backing and drain deposits from the financial system, which could be destabilizing. If the CBDC were interest-bearing, and especially if the interest rate were subsidized, the CBDC could have a similar effect by disintermediating banks, especially community banks, in normal times.

As noted in response to question 4, a CBDC also would require the Federal Reserve to increase further the size of its balance sheet because the Federal Reserve would have to hold assets equal to increases in CBDC not offset by declines in currency, and equal to the extra reserve balances needed as a buffer to offset potential increases in CBDC in times of stress.

Imposing a cap on the amounts held in CBDC wallets, as seems necessary to preserve financial stability, also raises several problems. Any cap would need to be relatively low for it to achieve the objective of limiting disintermediation of depository institutions, particularly in a crisis. As BPI has previously noted, even with a cap, a CBDC would have a significant impact on maturity transformation.[44]

---

[43] *Money and Payments* at 17.

[44] *Baer* at 9 (noting that "The ECB has suggested a €3,000 per citizen cap, but with 340 million citizens, that would equate to a €1 trillion deposit withdrawal from EU banks, less any physical euros that converted to digital form.)

Consequently, the ability of the CBDC to be a replacement for depository accounts and a vehicle for payments would be significantly curtailed. Furthermore, CBDC wallets would have to be linked to a private account such as a bank deposit account to receive payments that exceed the cap. Such an arrangement could raise privacy concerns if a transaction were initiated but disallowed because the recipient's account had reached its CBDC limit; the initiating entity would then know the status of the other party's CBDC balance.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

With respect to a CBDC's likely impact on the financial sector and financial stability, see our response to question 5.

As described in BPI's prior writing and below, the differences between the effects of a CBDC and a stablecoin on the financial sector would depend on the design of the stablecoin.[45] If a stablecoin were completely backed by safe and liquid assets, such as central bank reserves and short-term Treasuries, the stablecoin would have effects that are similar to those of a CBDC. If the stablecoin were backed by more risky, less liquid, and/or incomplete reserves, the stablecoin, like a prime money market mutual fund, would be subject to runs that could destabilize the financial system. Algorithmic stableoins rely "on financial engineering to maintain [their\ link to the dollar" and are also subject to runs.[46] If the stablecoin were made equivalent to a bank deposit, it would present neither flight to quality nor run risk.

Stablecoins backed only by central bank reserves and short-term Treasuries would be similar in design to a CBDC and would thus raise similar concerns with respect to the financial sector and financial stability, namely that the safety of the synthetic CBDC would appeal to depositors, particularly during times of crisis, and result in a flight to safety, draining the financial system of deposits that would lead to several knock-on effects, including increasing the cost of credit. Indeed, the Federal Reserve raised such concerns in response to a proposal by an entity called The Narrow Bank that proposed to establish a bank with a very narrow business model. Essentially, TNB sought a Federal Reserve master account for its state-chartered institution that would take deposits from institutional investors and invest most of the proceeds in balances at Reserve Banks. These balances would pass through the interest earned on excess reserves to TNB's depositors. TNB has not yet received a master account. The Federal Reserve highlighted its concerns with this type of "Pass-Through Investment Entity" (PTIE), noting that "by maintaining all or substantially all of their assets in the form of balances at Reserve Banks and having the ability to attract very large quantities of deposits at a near-IOER rate, [PTIEs] have the potential to complicate the implementation of monetary policy . . . [and] could disrupt financial intermediation in

[45] Making Stablecoins Stable: Is the Cure Worse than the Disease? - Bank Policy Institute (bpi.com)

[46] Alexander Osipovich and Caitlin Ostroff, "Crash of TerraUSD Shakes Crypto. 'There Was a Run on the Bank,'" (May 12, 2022), available at: Crash of TerraUSD Shakes Crypto. 'There Was a Run on the Bank.' - WSJ.

ways that are hard to anticipate, and could also have a negative effect on financial stability."[47] The Federal Reserve explained that PTIEs could negatively affect financial stability by attracting deposits during times of stress, which would divert funding away from nonfinancial firms, financial institutions, and state and local governments. In addition, the Federal Reserve explained that a "proliferation of similar PTIEs could magnify these effects across the financial system."[48]

Other stablecoin arrangements raise different concerns, which BPI has highlighted previously, and that the President's Working Group outlined in its November 2021 Stablecoin Report.[49] Stablecoins that are issued with backing from assets that include commercial paper, and, in some cases, receivables, including loans to crypto affiliates, present several risks to consumers and the financial system. First, some stablecoin issuers have failed, with consumers losing all their money – whether because the underlying declined in value, or in some cases when the money was simply stolen through hacking or defalcation.[50] Second, these stablecoins have been marketed as being backed by "reserves," which, in banking parlance, connotes very safe and liquid assets.[51] However, in reality, these stablecoins are

---

[47] Federal Reserve System, Advance notice of proposed rulemaking., "Regulation D: Reserve Requirements of Depository Institutions," 84 Fed. Reg. 8829 (March. 12, 2019) at 8830-31, available at: 2019-04348.pdf (govinfo.gov).

[48] *Id*. at 8830.

[49] The President's Working Group on Financial Markets (PWG), the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, Report on Stablecoins (Nov. 1, 2021), available at: Report on Stablecoins (treasury.gov). The PWG report highlighted that "[t\he mere prospect of a stablecoin not performing as expected could result in a "run" on that stablecoin – i.e., a self-reinforcing cycle of redemptions and fire sales of reserve assets. Fire sales of reserve assets could disrupt critical funding markets, depending on the type and volume of reserve assets involved. Runs could spread contagiously from one stablecoin to another, or to other types of financial institutions that are believed to have a similar risk profile. Risks to the broader financial system could rapidly increase as well, especially in the absence of prudential standards.").

[50] *See*, *e.g.*, Richi Jennings, "SafeDollar Stablecoin not Safe nor Stable: Hack Sends Value to ZERO," Security Boulevard (June 29, 2021), available at: SafeDollar Stablecoin not Safe nor Stable: Hack Sends Value to ZERO - Security Boulevard; Ryan Browne, "The world's biggest stablecoin has dropped below its $1 peg," CNBC (May 12, 2022), available at: Tether (USDT) stablecoin drops below $1 peg (cnbc.com); "The Biggest Threat to Trust in Cryptocurrency: Rug Pulls Put 2021 Cryptocurrency Scam Revenue Close to All-time Highs," (Dec. 16, 2021) (Chainanalysis report found that over $7.7 billion was stolen in cryptocurrency scams worldwide in 2021), available at: Crypto Scams: 2021 Rug Pulls Put Revenues Near All-Time High (chainalysis.com).

[51] *See*, *e.g.,* Hubbard, R. Glenn, Money, the Financial System, and the Economy, Addison-Wesley Publishing Company, Inc. June 1994, p. 306 ("Reserves consist of vault cash and banks' deposits with the Federal Reserve System" and "Because of their liquidity, bank holdings of U.S. government securities are sometimes called secondary reserves."), Mishkin, Fredric S., The Economics of Money, Banking, and Financial Markets, Eleventh Edition, Pearson Education, 2016, p. 698 ("Reserves. Banks' holding of deposits in accounts with the Fed plus currency that is physically held by banks (vault cash)"), and European Central Bank, Minimum Reserves, available at: https://www.ecb.europa.eu/mopo/implement/mr/html/index.en.html ("The ECB requires credit institutions established in the euro area to hold deposits on accounts with their national central bank. These are called "minimum" or "required" reserves (MRR)."). In addition, reserves can include pass-through deposits at another institution that keeps the funds on deposit at the Federal Reserve.

backed by commercial paper – essentially loans.[52] Thus, consumers have been deceived about the safety of these products.[53] If the backing of these stablecoins were called into question, a run could be triggered whereby consumers seek to redeem their stablecoins all at once.[54] Third, because stablecoins are currently regulated only at the state level as money service businesses, there is generally no requirement that they even disclose what is backing the stablecoins.[55] Fourth, financial stability risk could arise if the failure of a major stablecoin issuer prompted a run on other stablecoins, with those stablecoins forced to liquidate the assets backing those coins. As the President's Working Group, the President, the Secretary of the Treasury, and many other government officials have outlined, the risks of these instruments must be addressed by appropriate regulation, and we expect that regulation to address the significant run risk posed by these stablecoins will be forthcoming.[56] Indeed, algorithmic stablecoins also present run risk, which was illustrated earlier this month when an algorithmic stablecoin lost its dollar peg, triggering a run on crypto, and erasing over $400 billion in crypto market

[52] *See* Bill Nelson, Paige Pidano Paridon, American Banker, BankThink: "Stablecoins are backed by 'reserves'? Give us a break" (Dec. 10, 2021), available at: Stablecoins are backed by 'reserves'? Give us a break. | American Banker.

[53] *See* CFTC Orders Tether and Bitfinex to Pay Fines Totaling $42.5 Million | CFTC ("The Tether order finds that since its launch in 2014, Tether has represented that the tether token is a stablecoin . . . [but] that from at least June 1, 2016 to February 25, 2019, Tether misrepresented to customers and the market that Tether maintained sufficient U.S. dollar reserves to back every USDT in circulation with the "equivalent amount of corresponding fiat currency" held by Tether and "safely deposited" in Tether's bank accounts. In fact Tether reserves were not "fully-backed" the majority of the time.").

[54] The President's Working Group on Financial Markets (PWG), the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, Report on Stablecoins (Nov. 1, 2021), available at: Report on Stablecoins (treasury.gov). The PWG report highlighted that "[t\he mere prospect of a stablecoin not performing as expected could result in a "run" on that stablecoin – i.e., a self-reinforcing cycle of redemptions and fire sales of reserve assets. Fire sales of reserve assets could disrupt critical funding markets, depending on the type and volume of reserve assets involved. Runs could spread contagiously from one stablecoin to another, or to other types of financial institutions that are believed to have a similar risk profile. Risks to the broader financial system could rapidly increase as well, especially in the absence of prudential standards."

[55] *See* Awrey, Dan, Bad Money (February 5, 2020). 106:1 Cornell Law Review 1 (2020); Cornell Legal Studies Research Paper No. 20-38, Available at:
SSRN: https://ssrn.com/abstract=3532681 or http://dx.doi.org/10.2139/ssrn.3532681.

[56] *See*, e.g., PWG Report on Stablecoins, Executive Order on Ensuring Responsible Development of Digital Assets (March 9, 2022), available at: Executive Order on Ensuring Responsible Development of Digital Assets | The White House, and Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets at American University's Kogod School of Business Center for Innovation (April 7, 2022), available at: Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets | U.S. Department of the Treasury.

capitalization.[57] That event has prompted renewed calls for stablecoin regulation among policymakers.[58]

One way that a stablecoin could be offered without undermining the banking system would be for stablecoins to be designed to be equivalent to bank deposits. This design would be impossible for a CBDC given that it is a direct obligation of the government and no deposit at a financial institution could achieve that same status. However, banks could issue stablecoins that are *pari passu* with bank deposits. These stablecoins could also be available to fund bank lending. Thus, consumers and businesses would retain any convenience that comes with using a stablecoin, and consumer and commercial lending would continue apace. At the same time, there are significant developments underway to move to real-time, 24/7 payments – which generally would provide the same types of convenience and other benefits as retail payments stablecoins – and the use of P2P services, such as PayPal, Zelle, and Venmo, continues to grow.

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?

As discussed in response to question 5, the most widely cited suggestions to address the likely adverse impact of a CBDC on the financial system are either to implement a non-interest-bearing CBDC or limit the amount of CBDC an end user could hold. As noted, however, these design features likely would be necessary but not sufficient to address the financial stability concerns raised by a CBDC. In times of crisis, even if a CBDC paid no interest, it could still prove attractive due to its government backing and drain deposits from the financial system, which could be destabilizing. If the CBDC were interest-bearing, and especially if the interest rate were subsidized, the CBDC could have a similar effect by disintermediating banks, especially community banks, in normal times. Moreover, these mitigants would inherently reduce the benefits of the CBDC.

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?

Cash use has declined because consumers prefer to use less cash, but the amount of cash outstanding continues to grow. There is $2.3 trillion in currency in circulation as of May 11, 2022, compared with $1.1 trillion 10 years earlier. Consequently, there appears to be no reason at all to think the Fed is on course to reduce currency availability. Furthermore, the Federal Reserve states in the

[57] Alexander Osipovich and Caitlin Ostroff, "Crash of TerraUSD Shakes Crypto. 'There Was a Run on the Bank,'" (May 12, 2022), available at: Crash of TerraUSD Shakes Crypto. 'There Was a Run on the Bank.' - WSJ; Chow, Andrew R. "The Real Reasons Behind the Crypto Crash, and What We Can Learn from Terra's Fall," Time, (May 17, 2022), available at: What Terra's Crash Means For Crypto and Beyond | Time.

[58] Chris Matthews, "Terra crash sharpens Washington's attention on crypto regulations," MarketWatch, (Updated May 18, 2022), available at: Terra crash sharpens Washington's attention on crypto regulations - MarketWatch.

paper that it is "committed to ensuring the continued safety and availability of cash and is considering a CBDC as a means to expand safe payment options, not to reduce or replace them."[59]

If consumers choose to use less cash relative to other means of transacting, that would appear to be an endorsement of the other available means rather than an indication they need a replacement or supplement. Indeed, there are still segments of the population that use and likely will want to continue to use physical cash for a variety of reasons. For all of these reasons, we support keeping cash as legal tender so that for those who prefer to transact in cash, they have access to a form of central bank money that can be used widely for payments.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

Proponents of a CBDC often mention, as does the Federal Reserve's paper, that one potential benefit of a CBDC is that it could increase the speed and lower the cost of payments, including cross-border payments. However, whether this could be achieved in practice is a complex question that many central banks and international bodies are just beginning to study. Furthermore, there are other methods underway of improving payments – both domestically and internationally – that could achieve that goal without CBDC.

In the United States, there are other innovations underway that are improving and will continue to improve the domestic payments system. For example, The Clearing House runs its real-time payments system, the RTP network, which enables instantaneous settlement and availability.[60] The value limit for transactions on the RTP network will soon be increasing to $1 million.[61] Other private sector innovation has exploded in the payments space, including the bank-led development of Early Warning Services' Zelle service for domestic P2P payments and other P2P services offered by fintechs, such as Venmo.[62] The automated clearing house system (ACH) also has made same-day payments available and recently increased the value limit for same-day payments to $1 million.[63] In addition, the Federal Reserve itself is developing a real-time payments system, FedNow, that is scheduled to begin operating in 2023.[64]

Similarly, it is unclear whether a CBDC would materially improve cross-border payments. Indeed, in July of last year, the BIS and other entities highlighted the significant work that remains to

[59] *Money and Payments* at 16.

[60] 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).

[61] 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).

[62] Fraud on P2P Payment Apps Like Zelle and Venmo: A Primer - Bank Policy Institute (bpi.com).

[63] *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).

[64] *See* The Federal Reserve FRBServices.org, "About the FedNow[SM\ Service" (2022) (available at: https://www.frbservices.org/financial-services/fednow/about.html).

determine whether it is feasible that a cross-border CBDC could improve cross-border payments. In its report to the G20, the BIS noted that:

> To date, no major jurisdiction has launched a CBDC and many design and policy decisions are still unresolved. Also, most CBDC investigations by central banks focus on domestic issues and use cases. Given this early state of play, the considerations in this report are exploratory and examine cross-border implications of CBDCs in a situation in which CBDCs are widely used. In practice, domestic issuance of CBDC will be subject to considerable further economic and practical examination before exploration of cross-border use will gather pace. Furthermore, enhancements in other areas of the cross-border payments programme, such as aligning regulatory, supervisory and oversight frameworks for cross-border payments, Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) consistency, Payment versus Payment (PvP) adoption and payment system access will be critical for cross-border CBDC use.[65]

Further, there are several reasons why a CBDC may be unlikely to increase the speed of cross-border transactions, including remittances. First, the AML/CFT compliance issues that contribute to current friction in the cross-border payment system would have to be addressed – but those issues are not related to the underlying technology and could be addressed now under the current system. A CBDC (or the technology underpinning a CBDC) in and of itself would not address the frictions caused by AML/CFT compliance obligations. Central banks could agree to exempt transfers of CBDC from all the regulatory and compliance requirements that currently complicate them – like going through the same AML/CFT and sanctions processes that banks do currently, including a full Know Your Customer process – but they could take the same action under the current payments regime and for important reasons have decided not to do so. Thus, participating institutions will need to conduct the appropriate AML and sanctions due diligence to facilitate the transactions, adding additional friction to this multi-leg process. This includes compliance with the "Travel Rule," which requires financial institutions, including nonbank financial institutions, engaged in transmittal of funds (fiat or crypto), to transmit transactions and customer details to the next financial institution in the chain of payment in order to aid law enforcement agencies by maintaining an information trail of transaction originators and beneficiaries – something that a handful of crypto firms have only recently unveiled a compliance solution for.[66]

In addition, to use CBDCs on a cross-border basis, the sender likely would need to convert local fiat currency into CBDC, which likely would have a fee associated with that conversion. Assuming the recipient desires their own fiat currency, the recipient would then need to exchange the CBDC for the sender's currency and then convert that currency to the recipient's local currency. These transactions similarly would incur fees and likely involve F/X spreads. It is possible the recipient could exchange the sender's home country CBDC for the recipient's home country CBDC, although it is clear that any possibility of that capability is years away, and, furthermore, that transaction likely would incur costs

---

[65] BIS, CPMI, IMF, Innovation Hub, IMF, World Bank Group, "Central bank digital currencies for cross-border payments, Report to the G20," (July 2021) internal citations omitted, available at: Central bank digital currencies for cross-border payments (bis.org).

[66] *See* Keely, Aislinn, "Coalition of U.S. crypto firms unveils travel rule compliance platform, TRUST," February 16, 2022, available at https://www.theblockcrypto.com/post/134408/coalition-of-us-crypto-firms-unveils-travel-rule-compliance-platform-trust.

that would have to be borne by at least some parties in the chain, including, at a minimum, costs related to F/X spreads once again.[67]

There also are other efforts underway to improve cross-border payments, as the Federal Reserve notes in the paper. For example, the FSB has highlighted as a key priority the improvement of cross-border payments and established a roadmap achieve this goal.[68] The FSB issued its first progress report in October of 2021.[69] In that report, the FSB noted that its work in 2020-2021 primarily focused on "identifying specific quantitative targets at the global level that address the challenges of cost, speed, transparency and access faced by cross-border payments" and that "[t\he next stage of work in 2022 comprises not only further analysis but the development of specific proposals for material improvements of underlying systems and arrangements (e.g. for increased adoption of payment-versus-payment), as well as the development of new systems."[70] In March of this year, the FSB updated its work programme for 2022, targeting June 2022 to release a report on "Options to improve the adoption of the Legal Entity Identifier (LEI) to enhance cross-border payments," and October 2022 to issue its "Annual report on implementation of the cross-border payments" and "Key performance indicators to monitor progress towards the quantitative targets for the cross-border payments roadmap."[71] The Federal Reserve also could help to improve international bank-to-bank wire transfers by increasing Fedwire's operating hours.[72]

In addition, EBA CLEARING, SWIFT and The Clearing House have announced that they plan to launch a pilot service for immediate cross-border (IXB) payments by the end of this year.[73]

---

[67] For a discussion about the on-and-off ramp costs with respect to stablecoins (which present similar costs), *see* "Should Western Union Worry About Stablecoins?" JP Koning, CoinDesk Insights, Jan 3, 2022, available at Should Western Union Worry About Stablecoins? (coindesk.com). *See* generally, "Central bank digital currencies for cross-border payments," BIS Report to the G20, July 2021, available at https://www.bis.org/publ/othp38.pdf, which concluded that significant work remains to be done to determine whether CBDCs could reduce the current frictions in cross-border retail (or wholesale) payments, including with respect to regulatory, supervisory and oversight frameworks for cross-border payments, AMF/CFT consistency, PvP adoption and access to payment systems will be critical for CBDCs to reach their cross-border potential.

[68] The G20 countries agreed in 2020 to a multiyear roadmap to identify and deploy improvements to cross-border payments. *See* Financial Stability Board, Enhancing Cross-border Payments: Stage 3 Roadmap (October 13, 2020), available at: Enhancing Cross-border Payments: Stage 3 roadmap (fsb.org).

[69] FSB delivers a roadmap to enhance cross-border payments - Financial Stability Board;

[70] FSB: G20 Roadmap for Enhancing Cross-border Payments: First consolidated progress report, available at: G20 Roadmap for Enhancing Cross-border Payments: First consolidated progress report (fsb.org).

[71] FSB Work Programme for 2022 (March 31, 2022), available at: FSB 2022 Workplan March 2022.pdf.

[72] "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).

[73] *See* John Adams, "Banks gearing up to test real-time payments across borders," *American Banker*, (May 2, 2022), available at: https://www.americanbanker.com/payments/news/banks-gearing-up-to-test-real-time-payments-

At a minimum, further research is required before drawing any conclusions about the potential benefits of a CBDC in enhancing cross-border payments' efficiency or lowering costs. In addition, by the time CBDCs would be in circulation, other cross-border solutions may be in place.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

The Federal Reserve should observe the experiences of other jurisdictions in launching a CBDC to learn from those experiences in determining whether to issue a CBDC. The dollar is too important for the U.S. and global economies for the Fed to be the first mover into the uncharted territory of CBDC issuance. As noted, there is ongoing research about the potential benefits of a wholesale CBDC by various central banks and other bodies. The Federal Reserve should continue to monitor those projects as part of its overall research on a possible CBDC and its efforts to improve the speed and efficiency of the payments system, particularly in the cross-border context.

Some have posited that a foreign CBDC could threaten the dollar's reserve currency status. However, the dollar's prominent role in the global economy rests on multiple foundations, including:

- The strength and size of the U.S. economy;
- Extensive trade linkages between the United States and the rest of the world;
- Deep financial markets, including for U.S. Treasury securities; the stable value of the dollar over time;
- The ease of converting U.S. dollars into foreign currencies;
- The rule of law and strong property rights in the United States; and
- Credible U.S. monetary policy.

Indeed, as Chairman Powell has explained, the reason the dollar is the reserve currency is "because of our rule of law; our democratic institutions, which are the best in the world; our economy; our industrious people; all the things that make the United States the United States."[74]

Further, given that the dollar is currently the reserve currency, a move to another currency – even a digital one – would be burdensome and inconvenient in practice.

---

across-borders; *See also* "EBA Clearing, SWIFT, and The Clearing House to deliver pilot service for immediate cross-border payments" (April 28, 2022), available at: EBA CLEARING, SWIFT and The Clearing House to deliver pilot service for immediate cross-border payments (prnewswire.com).

[74] Powell, Jerome, transcript of Federal Open Market Committee press conference, April 28, 2021, available at: https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20210428.pdf.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

The Federal Reserve should continue to study possible ways to manage the potential risks that a CBDC could pose in connection with its ongoing consideration of whether to launch a CBDC.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

Designing a CBDC to preserve privacy yet effectively monitor criminal activity is a complex question that requires significant further study. Central banks and international bodies have considered this question and, in general, have concluded that there are potentially a range of options that could provide consumers with varying levels of privacy while also ensuring compliance with AML/CFT regulations, but that the answer to this question will turn on a number of factors, including the architecture of the CBDC, the parties involved in the CBDC ecosystem, and the technologies used. For example, the Bank of Canada released a paper evaluating a continuum of options and concluded that:

> The Bank could engineer a CBDC system with higher levels of privacy than commercial products can offer—but with trade-offs. Some combinations of requirements will not be feasible or may lead to high operational costs and excessive complexity and risk. Also, the user's overall privacy will depend on factors such as user behaviour and the privacy policies of other entities in the CBDC ecosystem.[75]

---

[75] Privacy in CBDC technology - Bank of Canada. The Bank also noted that "[p\rivacy design can apply building blocks of varying maturity and trade-offs:

- **Group signatures** (Chaum and van Heyst 1991) allow a set of entities to transact while obscuring their identities, revealing only that "someone in the group" transacted.
- **Secret sharing** (Shamir 1979) or **multi-signature** (Itakura and Nakamura 1983) schemes can guarantee that sensitive data are disclosed only when an adequate number of entities (e.g., three of five) agree.
- **Zero-knowledge proofs** (Blum, Feldman and Micali 1988) can prove claims about data without revealing them (e.g., they can prove an account balance is adequate for a transaction without revealing the balance).
- **Homomorphic encryption** (Rivest, Adleman and Dertouzos 1978) allows mathematical operations on obscured data (e.g., payment of interest on a balance that is encrypted).
- **Multi-party computation** (Yao 1982) allows several entities to securely contribute their data to a combined dataset for fraud detection while keeping their data private from one another.
- **Differential privacy** (Dwork and Roth 2014) and **anonymization** are techniques that ensure personally identifiable information cannot be extracted from sensitive datasets. The data are rendered safe and private for uses such as research and data analytics."

The Bank further stated that "[m\ore techniques not covered here could be explored by system designers for potential use: for example, private information retrieval (Chor et al. 1998) and deniable encryption (Canetti et al. 1997). Most of these are flexible enough to be used across a variety of technology platforms (e.g., centralized, DLT

The ECB tested a prototype and concluded that "in a simplified environment typical of a proof of concept, DLT can be used to balance an individual's right to privacy with the public's interest in the enforcement of AML/CFT regulations. It provides a digitalisation solution for AML/CFT compliance procedures whereby a user's identity and transaction history are nevertheless hidden from the central bank and intermediaries other than that chosen by the user."[76]

A BIS paper authored by several central banks, including the Federal Reserve, on CBDC interoperabilities concluded that "new developments in cryptography such as "zero-knowledge proofs", blind signatures, private decentralized networks, offline smartcards and the use of "layered" data management in payment systems are promising and could offer ways to enable a high degree of privacy whilst complying with existing AML and CFT standards. However, not all of them have been subjected to due cryptographic auditing, let alone stood the test of time. Implementing these techniques in CBDC may therefore require a significantly longer timeline."[77]

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

N/A

14. Should a CBDC be legal tender?

Yes. Section 31 U.S.C. 5103 of the Coinage Act of 1965, entitled "Legal tender," states: "United States 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." According to the Treasury Department, this section of the Coinage Act means that all forms of money identified in the statute are "a valid and legal offer of payment for debts when tendered to a creditor." [78] However,

---

and device-based) and can be combined and customized to achieve fine-grained CBDC privacy goals." Finally, the report noted that "[c\ryptographic techniques such as zero-knowledge proofs are in their infancy and remain areas of active research. The skill set needed to employ them is not as widely available as in more mature technical areas. Few systems have deployed these techniques in production, even in private industry. The risk here is that their technical complexity combined with their immaturity could mask vulnerabilities. Further, no known deployments have scaled up to a national population. The risk in this case is the unknown technical obstacles in applying these techniques to the Canadian population and beyond for future uses, such as micropayments at internet-of-things endpoints."

[76] ECB, "In Focus: Exploring Anonymity in Central Bank Digital Currencies" (Dec. 2019) at 3 (internal citation omitted), available at: In focus- Exploring anonimity in central bank digital currencies (europa.eu)

[77] Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors Federal Reserve System, Bank for International Settlements, "Central bank digital currencies: system design and interoperability (September 2021) at 8, available at: CBDC - System design and interoperability (bis.org).

[78] Legal Tender Status (treasury.gov).

according to the Treasury Department, "there is no federal statute which mandates that private businesses must accept cash as a form of payment. Private businesses are free to develop their own policies on whether or not to accept cash unless there is a State law which says otherwise."[79]

Furthermore, as discussed in response to question 1, a CBDC would have to be fungible with traditional currency, which has legal tender status. As noted, legislation would be required for the Federal Reserve to issue a CBDC, and, similarly, would also appear to be required to designate any potential CBDC as "legal tender."

However, there likely would be significant costs to build the infrastructure necessary for CBDC to be widely used. Thus, these and other costs, as well as the risks of a possible U.S. CBDC, must be balanced against any possible benefits of a CBDC, which, as we discuss in this response and extensively in BPI's prior writings on CBDC, are far from assured.

CBDC Design

15. Should a CBDC pay interest? If so, why and how? If not, why not?

In considering whether any future CBDC should pay interest, the Federal Reserve first must consider its authority to do so. The Federal Reserve Act provides that the Federal Reserve may pay earnings on "balances maintained at a Federal Reserve bank by or on behalf of a depository institution."[80] A CBDC held by a depository institution for a consumer in the direct model may not be considered a "balance maintained" by or on behalf of a bank. Thus, statutory authorization may be required before the Federal Reserve could pay interest on a CBDC.

Assuming the authority exists or is provided, however, and the Federal Reserve paid interest on a CBDC, the government could subsidize the interest rate for financial inclusion or other reasons. Such subsidization, however, would put the government, rather than the private sector, in control of determining the cost and availability of deposits, and thus of credit. In addition, so far as a CBDC is meant to be digital cash – a means of payment, not a vehicle for saving – then it would make sense for the CBDC to not pay interest, although that decision could negatively impact low-and-moderate income consumers if they could earn interest by placing their money at a private sector entity.

See also responses to questions 5 and 7.

16. Should the amount of CBDC held by a single end user be subject to quantity limits?

See responses to questions 5 and 7.

[79] U.S. Bureau of Engraving and Printing - Laws and Regulations (bep.gov).

[80] Section 19 of the Federal Reserve Act provides that the Board may prescribe regulations concerning the payment of interest on balances at a Reserve Bank. *See* 12 U.S.C. § 461(b)(12).

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

Potential intermediaries in any CBDC framework would, at a minimum, have to perform BSA/AML/CFT compliance functions and serve as a CBDC custodian. In addition, the intermediary would have to have a Federal Reserve master account to be able to deposit reserves with the Federal Reserve. As we have discussed in connection with the Federal Reserve's proposed guidance regarding master account applications, any CBDC intermediary should be subject to the regulatory and supervisory structure to which insured depository institutions and regulated bank holding companies are subject to ensure the safety and soundness of the CBDC ecosystem and the financial system more broadly.[81]

To the extent that the Federal Reserve were given the authority to authorize entities that are either not subject to supervision by a federal banking regulator at both the institution and holding company level or uninsured to distribute and custody CBDC, and thereby have a Federal Reserve master account and access to services and the payments system, the Federal Reserve Board must have supervisory and regulatory authority over those entities and apply an equivalent regulatory and supervisory framework as applies to banks and bank holding companies under federal banking law, including those regarding capital, liquidity, operational and other risk management, operational resilience, cybersecurity, anti-money laundering/countering the financing of terrorism, consumer protection, affiliations and affiliate transactions and other prudential requirements.[82]

In addition, as noted previously, intermediaries would need to be compensated for their services at reasonable rates.

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

N/A

---

[81] *See* Letter to the Federal Reserve, from the Bank Policy Institute and Independent Community Bankers of America re: Proposed Guidelines for Evaluating Accounts and Services Requests (July 12, 2021), available at: https://bpi.com/wp-content/uploads/2021/07/BPI-ICBA-Comment-to-Fed-Accounts-Proposal-July-12-2021.pdf [TO ADD CITE TO BPI's letter re: supplemental guidance once submitted\

[82] For further discussion of the importance of entities with Federal Reserve accounts and access to services and the payments system, *See* Letter to the Federal Reserve, from the Bank Policy Institute and Independent Community Bankers of America re: Proposed Guidelines for Evaluating Accounts and Services Requests (July 12, 2021), available a:t https://bpi.com/wp-content/uploads/2021/07/BPI-ICBA-Comment-to-Fed-Accounts-Proposal-July-12-2021.pdf; Letter to the Federal Reserve, from the Bank Policy Institute, The Clearing House Association, American Bankers Association, Independent Community Bankers of America, Mid-Size Bank Coalition of America, and Consumer Bankers Association re: Supplemental Notice re: Proposed Guidelines for Evaluating Accounts and Services Requests (April 22, 2022), available at: BPI Joint Trades Comment Letter to Federal Reserve re Fed Accounts Supplemental Proposal (4-21-22)FINAL.pdf.

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

N/A

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

N/A

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

N/A

22. 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?

As discussed throughout our response, virtually every design choice comes with tradeoffs. For example, as privacy increases, BSA/AML enforcement generally becomes more difficult. If limits are imposed to mitigate certain negative effects, benefits, too, are reduced. All of these choices and tradeoffs must be carefully weighed and a CBDC considered only "if research points to benefits for households, businesses, and the economy overall that exceed the downside risks, and indicates that CBDC is superior to alternative methods."[83]

[83] *Money and Payments* at 21.

incrediblebank℠

Submitted via email to Digital-innovations@frb.gov

May 20, 2022

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

RE: Request for Comment Regarding the Federal Reserve Bank Board of Directors Public Consultation Paper, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*

Dear Ms. Misback:

I am writing in response to the research article published by the Federal Reserve Board of Governors titled "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" in January of 2022. I am the Chief Operating Officer/Chief Information Officer at IncredibleBank, a community family-owned bank with over 15 locations in Wisconsin and Michigan's Upper Peninsula. IncredibleBank focus on providing businesses and residents with top-notch banking products and services. We thrive on providing incredible customer experiences in every aspect of banking relationship and have been in the industry since 1967.

In regard to the idea of creating a U.S. Central Banking Digital Currency (CBDC), I am very concerned. The Fed defines a CBDC as "**a digital liability of a central bank that is widely available to the general public**." While Americans are already accustomed to holding money in digital form – as bank deposits recorded as computer entries on commercial bank ledgers – a CBDC differs from bank deposits in that it is not a liability of any commercial bank, but of the Federal Reserve itself. Because it is a liability of the central bank, it is a form of central bank money, and can be seen as a digital analog of paper money. This concept allows banks to lend against CBDC balance if CBDC were deposited into consumers' bank account, thereby converting it into commercial bank money and a liability of the bank.

The research article cited potential benefits of a CBDC:

1. **Free of Credit and Liquidity Risk**: Giving consumers direct access to central bank money would allow them to transact without worry about credit and liquidity risk.

2. **Cross-Border Payments**: Advocates claim that CBDC could reduce the cost and friction of cross-border payments.

3. **Financial Inclusion**: Advocates of a CBDC say that it could promote financial inclusion by allowing low-income individuals to transfer money or receive payments digitally, without having to pay the fees associated with a traditional deposit account or for

remittances. Advocates argue that if a CBDC had existed in 2020, the relief payments in response to the COVID pandemic could have been distributed more quickly and equitably to the unbanked and underbanked.

4. **Competitiveness**: As other central banks worldwide consider creating a CBDC and as stablecoins gain wider adoption, a U.S. CBDC could help the dollar stay competitive and retain its status as a global reserve currency.

While there are potential benefits to a CBDC as noted above, they are unclear and unpredictable. There are too many details remain unknown. I am concerned that a CBDC poses risks:

1. **Loss of Deposits/Reduced Access to Credit:** Because banks would be unable to lend against customer deposits stored in CBDC wallets, the capacity of community banks to lend in the communities they serve would be decreased.

2. **Privacy/Cyber Security:** A CBDC would require a public record of all transactions conducted in CBDC to be maintained by the central bank, significantly undermining the privacy of consumers. The Federal Reserve's role as central processor of the CBDC ledger would dramatically increase its profile as a target for hackers – including by sophisticated criminal gangs and hostile nations. If the CBDC was disrupted by hacking, it could undermine confidence in the dollar as a global reserve currency.

3. **Gateway to Public Banking**: While the current proposal is for a CBDC to be intermediated through wallets offered by financial institutions and regulated non-banks, a CBDC may be the first step towards direct customer accounts with the Federal Reserve. This potential disintermediation of banks would have a disastrous effect on the availability of credit, particularly to the small businesses served by community banks.

4. **Cost of Compliance**: In an intermediated model, banks would be saddled with all of the customer service, know your customer (KYC), anti-money laundering (AML), privacy protections, sanctions screening and other compliance burdens with no clearly identified revenue stream to compensate banks for these services. Because the Fed has proposed that banks would compete with regulated non-banks in an open market, community banks would be at risk of losing customers to wallets offered by less regulated companies.

5. **Effects on Monetary Policy**: The introduction of CBDC could damage the Federal Reserve's ability to conduct monetary policy and interest rate control by altering the supply of reserves in the banking system. Because a liability of the central bank is essentially riskless, depositors may prefer CBDC over bank deposits in a crisis, leading to runs.

6. **Uncertain to Achieve Promised Benefits**: While advocates of a CBDC claim it will enable faster payments and increased financial inclusion, it is unclear that a CBDC is the best tool to reach these goals. Current initiatives like FedNow may be more effective than

a CBDC at reducing cost and increasing speed in the payments system. Fees and technological barriers seem likely to prevent access to a CBDC by the underbanked.

Creating a CBDC poses many challenges for community banks such as IncredibleBank. A CBDC would be an extreme change to the structure of the U.S. financial system, altering the roles and responsibilities of the private section and the central bank. The Fed has not taken into account unintended consequences, and data from global CBDC pilots reveal no compelling reasons to support a CBDC at this time. I respectfully urge the Federal Reserve to reconsider creating a CBDC.

I appreciate the opportunity to comment on this important matter. Should you have any questions, please contact me at kstrasser@incrediblebank.com or 715-348-1418.

Sincerely,

Kathy Strasser
EVP, Chief Operating Officer/Chief Information Officer

incrediblebank℠

Submitted via email to Digital-innovations@frb.gov

May 20, 2022

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

RE: Request for Comment Regarding the Federal Reserve Bank Board of Directors Public Consultation Paper, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*

Dear Ms. Misback:

I am writing in response to the research article published by the Federal Reserve Board of Governors titled "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" in January of 2022. I am the Chief Operating Officer/Chief Information Officer at IncredibleBank, a community family-owned bank with over 15 locations in Wisconsin and Michigan's Upper Peninsula. IncredibleBank focus on providing businesses and residents with top-notch banking products and services. We thrive on providing incredible customer experiences in every aspect of banking relationship and have been in the industry since 1967.

In regard to the idea of creating a U.S. Central Banking Digital Currency (CBDC), I am very concerned. The Fed defines a CBDC as "**a digital liability of a central bank that is widely available to the general public**." While Americans are already accustomed to holding money in digital form – as bank deposits recorded as computer entries on commercial bank ledgers – a CBDC differs from bank deposits in that it is not a liability of any commercial bank, but of the Federal Reserve itself. Because it is a liability of the central bank, it is a form of central bank money, and can be seen as a digital analog of paper money. This concept allows banks to lend against CBDC balance if CBDC were deposited into consumers' bank account, thereby converting it into commercial bank money and a liability of the bank.

The research article cited potential benefits of a CBDC:

1. **Free of Credit and Liquidity Risk**: Giving consumers direct access to central bank money would allow them to transact without worry about credit and liquidity risk.

2. **Cross-Border Payments**: Advocates claim that CBDC could reduce the cost and friction of cross-border payments.

3. **Financial Inclusion**: Advocates of a CBDC say that it could promote financial inclusion by allowing low-income individuals to transfer money or receive payments digitally, without having to pay the fees associated with a traditional deposit account or for

remittances. Advocates argue that if a CBDC had existed in 2020, the relief payments in response to the COVID pandemic could have been distributed more quickly and equitably to the unbanked and underbanked.

4. **Competitiveness**: As other central banks worldwide consider creating a CBDC and as stablecoins gain wider adoption, a U.S. CBDC could help the dollar stay competitive and retain its status as a global reserve currency.

While there are potential benefits to a CBDC as noted above, they are unclear and unpredictable. There are too many details remain unknown. I am concerned that a CBDC poses risks:

1. **Loss of Deposits/Reduced Access to Credit:** Because banks would be unable to lend against customer deposits stored in CBDC wallets, the capacity of community banks to lend in the communities they serve would be decreased.

2. **Privacy/Cyber Security:** A CBDC would require a public record of all transactions conducted in CBDC to be maintained by the central bank, significantly undermining the privacy of consumers. The Federal Reserve's role as central processor of the CBDC ledger would dramatically increase its profile as a target for hackers – including by sophisticated criminal gangs and hostile nations. If the CBDC was disrupted by hacking, it could undermine confidence in the dollar as a global reserve currency.

3. **Gateway to Public Banking**: While the current proposal is for a CBDC to be intermediated through wallets offered by financial institutions and regulated non-banks, a CBDC may be the first step towards direct customer accounts with the Federal Reserve. This potential disintermediation of banks would have a disastrous effect on the availability of credit, particularly to the small businesses served by community banks.

4. **Cost of Compliance**: In an intermediated model, banks would be saddled with all of the customer service, know your customer (KYC), anti-money laundering (AML), privacy protections, sanctions screening and other compliance burdens with no clearly identified revenue stream to compensate banks for these services. Because the Fed has proposed that banks would compete with regulated non-banks in an open market, community banks would be at risk of losing customers to wallets offered by less regulated companies.

5. **Effects on Monetary Policy**: The introduction of CBDC could damage the Federal Reserve's ability to conduct monetary policy and interest rate control by altering the supply of reserves in the banking system. Because a liability of the central bank is essentially riskless, depositors may prefer CBDC over bank deposits in a crisis, leading to runs.

6. **Uncertain to Achieve Promised Benefits**: While advocates of a CBDC claim it will enable faster payments and increased financial inclusion, it is unclear that a CBDC is the best tool to reach these goals. Current initiatives like FedNow may be more effective than

a CBDC at reducing cost and increasing speed in the payments system. Fees and technological barriers seem likely to prevent access to a CBDC by the underbanked.

Creating a CBDC poses many challenges for community banks such as IncredibleBank. A CBDC would be an extreme change to the structure of the U.S. financial system, altering the roles and responsibilities of the private section and the central bank. The Fed has not taken into account unintended consequences, and data from global CBDC pilots reveal no compelling reasons to support a CBDC at this time. I respectfully urge the Federal Reserve to reconsider creating a CBDC.

I appreciate the opportunity to comment on this important matter. Should you have any questions, please contact me at kstrasser@incrediblebank.com or 715-348-1418.

Sincerely,

Kathy Strasser
EVP, Chief Operating Officer/Chief Information Officer

State Street Corporation

Joseph J. Barry
Senior Vice President and Global Head of
Regulatory, Industry and Government Affairs

State Street Financial Center
One Lincoln Street
Boston, MA 02111-2900

Telephone: 617.664.1254
E-mail: jjbarry@statestreet.com
www.statestreet.com

May 20, 2022

Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, NW
Washington, DC 20551

E-mail: Digital-innovations@frb.gov

Discussion Paper – Money and Payments: the US Dollar in the Age of Digital Transformation

Dear Sir/Madam:

State Street Corporation ("State Street") welcomes the opportunity to comment on the discussion paper issued by the Board of Governors of the Federal Reserve System ("Board") regarding the potential implementation of a United States ("US") central bank digital currency ("CBDC"). This includes an assessment by the Board of key policy and design considerations for a CBDC 'that is a digital liability of the Federal Reserve System….widely available to the general public' and the implications of these considerations for the structure and stability of the financial system. While we recognize the considerable interest which exists relative to the potential development of such a retail-focused CBDC, we believe that essential decisions regarding design features, commercial model and operational structure are likely to benefit from initial work by the Board and other stakeholders on the development of narrower CBDC solutions for the wholesale market.

Headquartered in Boston, Massachusetts, State Street is a global custody bank which specializes in the provision of financial services for institutional investor clients. This includes investment servicing, investment management, data and analytics, and investment research and trading. With $41.72 trillion in assets under custody and administration and $4.02 trillion in assets under management, State Street operates in more than 100 geographic markets globally.[1] State Street is organized as a US bank holding company, with operations conducted through several entities, primarily its wholly-owned Massachusetts state chartered insured

[1] As of March 31, 2022.

depository institution subsidiary, State Street Bank and Trust Company. Our primary prudential regulators are therefore the Massachusetts Division of Banks and the US Federal Reserve System.

We appreciate the opportunity to comment on the Boards discussion paper. The implications of a CBDC for the US financial system are vast and complex, and include the potential disruption of existing bank funding models, the disintermediation of key components of the short-term funding markets, such as money market funds and commercial paper, and the potential for greater susceptibility of the system to financial stability risk. We therefore welcome the deliberative manner in which the Board has chosen to proceed with its assessment of policy considerations for a CBDC and their related benefits, costs and risks.

The digital transformation of the US financial system, driven by emerging technologies such as tokenization, blockchain and artificial intelligence, is real and will result over time in material improvements to market efficiencies, with important benefits for long-term investors. However, in order to fully achieve these outcomes, we believe that the digital transformation must be supported by new and robust payment functionality, capable of facilitating the real-time movement of cash. Furthermore, it is also crucial for this new functionality to be offered in a way that preserves commercial parity among banks, as is the case today for the Fedwire Funds Service system.

In Footnote 14 of the discussion paper, the Board notes that while its analysis is focused on the issues raised by a retail CBDC, a 'narrower focused CBDC could also be developed, such as one designed primarily for large value institutional payments and not widely available to the public'. [2] It then notes its interest in receiving comments from stakeholders on the potential uses of a more narrowly defined CBDC. In our view, efforts to thoroughly assess the benefits, costs and risks of a potential retail CBDC, and the ability to make informed decisions regarding key design features and operational structures, are likely to benefit from initial work by the Board on the development of narrower CBDC solutions for the wholesale market. In particular, we believe that the Board should prioritize efforts to develop a CBDC solution for the interbank payment system (both domestic and cross-border), an initiative which can then be deployed over time to achieve greater efficiencies in various high-volume processes in the wholesale markets, such as trade settlement and the management of collateral.

This approach has a number of advantages. First, it would enable the Board to focus its initial attention on existing wholesale market processes where the need for greater efficiencies is already well-established and understood by industry participants. Second, this approach would offer the Board the opportunity to study and test various design features in a 'sand box' type environment with stakeholders that have considerable experience in managing complex system-wide change before assessing solutions with broader applicability. Third, our proposed use case is achievable in the near-to-medium term, and is therefore likely, once complete, to

[2] Consultation Paper, page 13.

create positive momentum for further innovation focused on addressing clear instances of market inefficiency. This includes, for instance, further progress in reducing the settlement cycle for securities transactions, the reengineering of various asset administration functions, such as the processing of corporate action events and income payments, the tokenization of asset-backed instruments and related payment entitlement flows, and the streamlined management of collateral. Finally, this approach would help minimize disruptive changes to the financial system that may result from the implementation of a broad-based retail CBDC and the potential for these changes to heighten systemic risk. This includes, in particular, the greater vulnerability of the banking system to sudden deposit outflows, particularly in periods of acute market stress, as customers seek to hold funds as a direct liability of the Federal Reserve System regardless of pricing or other normal course considerations.

In order to help realize the practical benefits of a wholesale CBDC, we encourage the Board to work collaboratively with the private sector on discrete initiatives, supported by careful planning, ongoing dialogue and an active commitment to the full and comprehensive management of risk. This includes additional efforts to understand the potential benefits of bank-issued stable-coins in preserving the role of the US dollar in global payments and as a reserve currency. Furthermore, we recommend the use of well-defined test pilots, supported by clear and transparent systems specifications and comprehensive industry wide-testing. Finally, we also recommend clear governance standards for new wholesale payments functionality and the coordination of the Boards work with other national or regional central banks to help encourage the emergence of consistent and broadly interoperable solutions.

CONCLUSION

Thank you once again for the opportunity to comment on the policy considerations raised by the potential implementation of a US CBDC. To summarize, State Street believes that efforts to understand and deploy the transformative implications of a US CBDC are best supported by initial work on narrower focused CBDC solutions designed to address existing inefficiencies in the wholesale market. In particular, we recommend that the Board prioritize efforts to develop and implement CBDC functionality for the inter-bank payment system, both domestic and cross-border, which can then be leveraged over time to address other promising use cases.

Please feel free to contact me at jjbarry@statestreet.com should you wish to discuss the contents of this submission in greater detail.

Sincerely,

Joseph J. Barry

Submitted via email to Digital-innovations@frb.gov

May 20, 2022

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

RE: REQUEST FOR COMMENT REGARDING THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM PUBLIC CONSULTATION PAPER, *MONEY AND PAYMENTS: THE U.S. DOLLAR IN THE AGE OF DIGITAL TRANSFORMATION*

Dear Ms. Misback,

The Independent Community Bankers of America (ICBA)[1] appreciates this opportunity to respond to the Board of Governors of the Federal Reserve System's (the Board) research and analysis paper "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" (CBDC Report).[2] The paper is positioned as a "first step" in a public discussion between the Federal Reserve and stakeholders about the potential risks and benefits of a Central Bank Digital Currency (CBDC). A CBDC is defined as "a digital liability of a central bank that is widely available to the general public" and it is intended to function as a digital equivalent of paper money.

After careful consultation with community bankers, ICBA opposes a CBDC because the creation of a CBDC will introduce significant privacy and cybersecurity risks into the nation's monetary system and disrupt the stability of America's banking system. A CBDC could threaten the health of the U.S. financial system by destabilizing existing banking and payments systems that are the backbone of our economy and markets. It would alter the roles and responsibilities of the private sector and the central bank in an unprecedented way. It remains unclear that a government sponsored cryptocurrency will ever be able

[1] The Independent Community Bankers of America® creates and promotes an environment where community banks flourish. ICBA is dedicated exclusively to representing the interests of the community banking industry and its membership through effective advocacy, best-in-class education, and high-quality products and services.

With nearly 50,000 locations nationwide, community banks constitute 99 percent of all banks, employ more than 700,000 Americans and are the only physical banking presence in one in three U.S. counties. Holding more than $5.8 trillion in assets, over $4.8 trillion in deposits, and more than $3.5 trillion in loans to consumers, small businesses and the agricultural community, community banks channel local deposits into the Main Streets and neighborhoods they serve, spurring job creation, fostering innovation and fueling their customers' dreams in communities throughout America. For more information, visit ICBA's website at www.icba.org

[2] Board of Governors of the Federal Reserve System, Research & Analysis, "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" (January 2022), available at: https://www.federalreserve.gov/publications/files/money-and-payments-20220120.pdf.

to achieve the potential benefits of payments modernization or increased financial inclusion. It is even more unlikely that creating a CBDC is the most effective method to achieve these goals compared to existing initiatives that the government has already invested significant resources into such as the FedNow℠ system. In short, a CBDC appears to be a solution in search of a problem. While we support the Federal Reserve's efforts to ensure the U.S. payments and monetary system remains modern and competitive, **creating a CBDC would introduce risks without providing benefits to households, businesses, and the overall economy that exceed costs and risks, and would not yield benefits more effectively than alternative methods,** which is described as a prerequisite of creating a CBDC in the CBDC Report**.**

The nation's community banks, whose interests ICBA represents, will be dramatically impacted by the creation of a CBDC. Many community banks, both state-chartered and national banks, are members of the Federal Reserve System (FRS), which means they hold stock in their regional Federal Reserve bank. All community banks, whether or not they are FRS members, serve as financial intermediaries, facilitating payments between consumers, merchants, and government. Because of the critical role that community banks play in the payments system and as small business lenders, as well as their unique understanding of how the system works, we urge the Board to give appropriate weight to their staunch opposition to a CBDC.

We appreciate the Federal Reserve's investment of time and resources to study this important topic as central banks across the globe are evaluating the opportunities and risks of a CBDC. We also recognize the urgency of understanding the impacts of digital assets more broadly, as highlighted in President Biden's Executive Order on "Ensuring Responsible Development of Digital Assets."[3] However, we believe that, even as the public awareness of these issues has grown, it is important to proceed with a cautious, deliberative approach.

While we believe that the Federal Reserve Board has an important and legitimate role in the conversation surrounding the creation of a CBDC, we strongly urge it not to proceed down too far down this path without explicit statutory authorization and oversight from Congress. In testimony before the Senate Banking Committee, Federal Reserve Chairman Jerome Powell said that the Fed would "want very broad support in society and in Congress and ideally that would take the form of authorizing legislation as opposed to a very careful reading of ambiguous law."[4] While we appreciate the Chairman's commitment to a continued dialogue, **we do not believe that the authority to issue a CBDC exists under current law.**

The Fed committed in its report not to move forward "without clear support from the executive branch and from Congress, ideally in the form of a specific authorizing law." Federal legislation would be required to establish the roles and responsibilities of the various stakeholders—including the Treasury Department, Federal Reserve, and the private sector. Congress would need to exercise its authority to

[3] President Joseph R. Biden Jr., "Executive Order on Ensuring Responsible Development of Digital Assets," (March 9, 2022), available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2022/03/09/executive-order-on-ensuring-responsible-development-of-digital-assets/.

[4] "The Semiannual Monetary Report to the Congress," United States Senate Committee on Banking, Housing, and Urban Affairs (July 15, 2021) (Testimony of the Hon. J. Powell).

preclude any actions that would disrupt the stability of the economy and inject safety and soundness risks to the financial system. The creation of a CBDC would be among the most significant changes to the nation's monetary system in history, on par with the Legal Tender Acts or the creation of the Federal Reserve System. In light of the magnitude of this change, it would not be appropriate for the Federal Reserve to issue a CBDC without statutory authorization.

Executive Summary

ICBA's position is that the Federal Reserve should not issue a CBDC because the associated risks would outweigh any potential benefits. It seems exceedingly unlikely that a CBDC would achieve its policy goals that cannot be better achieved by other means. On the other hand, it would introduce clear risks into the financial system by reducing the amount of deposits than can be lent against, thereby increasing the cost of credit, and by increasing the likelihood and severity of bank runs during times of financial crisis. A summary of the risks of a CBDC and the ways it fails to achieve its potential benefits is below. Our letter will discuss each in detail.

Risks of a CBDC Are Clear

1. **Loss of Deposits/Reduced Access to Credit** – Because banks would be unable to lend against customer deposits stored in CBDC wallets, a CBDC would obstruct banks' ability to provide vital lending services to customers that rely on their local banks as a source of credit. The CBDC Report states the "substitution effect could reduce the aggregate amount of deposits in the banking system, which could in turn increase bank funding expenses, and reduce credit availability or raise credit costs for households and businesses." This potential disintermediation of banks would have a disastrous effect on the availability of credit, particularly to the small businesses served by community banks. The Federal Reserve must preserve the vital role of community banks as economic engines of the U.S. economy.
2. **Privacy/Cyber Security –** Because a CBDC would require a public record of all transactions conducted in CBDC to be maintained by the central bank, it could significantly undermine the privacy of consumers. In addition, the Federal Reserve's role as central processor of the CBDC ledger would dramatically increase its profile as a target for hackers – including by sophisticated criminal gangs and hostile nations. If the CBDC was attacked by hackers, it could undermine confidence in both the CBDC and the dollar as a global reserve currency.
3. **Gateway to Public Banking –** While the current proposal calls for a CBDC to be "intermediated" through wallets offered by financial institutions, a CBDC may be the first step towards direct customer accounts with the Federal Reserve. ICBA is adamantly opposed to direct-to-consumer accounts offered by the Federal Reserve. Consumers are best served by thousands of competing private institutions, which have a duty to ensure their needs are met.
4. **Cost of Compliance –** In an intermediated model, banks would be saddled with all of the identity-verification, customer service, Know Your Customer (KYC), Anti-Money Laundering (AML), privacy protections, sanctions screening and other compliance burdens with no clearly identified revenue stream to compensate banks for these services. Because the Fed has proposed that banks would compete with regulated non-banks in an open market, community banks would be at risk of losing customers to wallets offered by less regulated companies.

5. **Effects on Monetary Policy –** The introduction of a CBDC could damage the Federal Reserve's ability to conduct monetary policy and interest rate control by altering the supply of reserves in the banking system. The Fed believes it may have to significantly increase the size of its balance sheet to offset demand for CBDC. This would involve "substantially expanding its holding of securities." In a system like ours, which depends on fractional reserve banking, where most money creation is done by commercial banks rather than the Federal Reserve, creating an alternative to bank deposits will have a contractionary effect on the supply of money.
6. **Regulatory Arbitrage Risk –** The Fed proposal states, "Under an intermediated model, the private sector would offer accounts or digital wallets to facilitate the management of CBDC holdings and payments. Potential intermediaries could include commercial banks and regulated nonbank financial service providers and would operate in an open market for CBDC services." ICBA strongly opposes direct access to Federal Reserve accounts by fintech companies and other nonbank providers that sit outside the regulatory perimeter, avoiding the supervisory and regulatory framework that applies to banks while adding risk to the financial system. In order to guarantee the safety and soundness of a CBDC framework involving intermediaries, all intermediaries should meet the same level of regulatory and supervisory compliance to which insured depository institutions are subject.

Potential Benefits of a CBDC Remain Uncertain

1. **Unclear and Uncertain Value Proposition –**The additive value of a CBDC is unclear, particularly given existing efforts by the private and public sectors to modernize the payments system. The economics of a CBDC – both direct costs to build/deploy and the impact to the economy – are not well understood and are not explained by the Fed in the CBDC Report. There are other, less risky and more efficient alternatives to achieve the purported policy goals outlined in the Fed proposal. The CBDC Report sets a high bar for determining that a CBDC is needed, including providing benefits to households, businesses, and the overall economy that exceed costs and risks, and yielding benefits more effectively than alternative methods. In our view, these conditions have not been met nor are guaranteed by a U.S. CBDC. A Federal Reserve FED Notes white paper surmises "…it is unlikely that all benefits of a CBDC will be able to co-exist in practice."[5] Additionally, a CBDC would take many years to create and launch, as pointed out by Treasury Secretary Janet Yellen in a recent speech.[6] The policy goals stated in the CBDC Report may be more effectively achieved through other means by the time a CBDC would be generally available.
2. **Alternative to Stablecoins –** Giving consumers direct access to the central bank would allow them to transact without worry about credit and liquidity risk. While this could make a CBDC an attractive alternative to stablecoins, the credit and liquidity risk of U.S. banks is already tremendously low. Prudential standards make bank failures rare, and FDIC insurance has never

[5] Maniff, Jesse Leigh and Wong, Paul, "Comparing Means of Payment: What Role for a Central Bank Digital Currency?," FED Notes, August 2020 https://www.federalreserve.gov/econres/notes/feds-notes/comparing-means-of-payment-what-role-for-a-central-bank-digital-currency-20200813.htm.

[6] U.S. Department of the Treasury, Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets (April 7, 2022), available at: https://home.treasury.gov/news/press-releases/jy0706.

failed to repay insured deposits to any depositor. In short, a safe and regulated alternative to stablecoins already exists in traditional deposit accounts.

3. **Payments –** Advocates claim that a CBDC could reduce the cost and friction of payments. Advocates argue that if a CBDC had existed in 2020, the relief payments in response to the COVID pandemic could have been distributed more quickly and equitably to the unbanked and underbanked. However, the Treasury Department did not utilize currently-available faster payments options for stimulus payments, including Same Day ACH and RTP®, which would have offered faster transaction clearing. Because payments modernization is a major goal of the FedNow project, we believe it would be imprudent to introduce a CBDC before giving FedNow a chance to become operational, widely adopted and successful. CBDC proponents argue that more competition is needed in the payments system, and a CBDC could solve for this. There is a wealth of evidence that demonstrates the U.S. has a diverse and highly competitive payments system today, with significant consumer choice. Safe, efficient Federal Reserve and private-sector interbank payment systems exist now that offer increased transaction speed and reduced costs.
4. **Financial Inclusion –** Advocates of a CBDC say that it could promote financial inclusion by allowing low-income individuals to transfer money or receive payments digitally, without having to pay the fees associated with a traditional deposit account or for remittances. In our view, it seems incredibly unlikely that a technologically complex, government issued cryptocurrency, which will depend on fee-based private wallets, is the best way to reach the underbanked. In public comments, Nellie Liang, Undersecretary for Domestic Finance at the Treasury Department, discussed additional means of addressing unequal access to the financial system, including FedNow.[7]
5. **Global Competition –** ICBA recognizes that the U.S. dollar must remain the foundation of the U.S. financial system to safeguard and strengthen national security. As other central banks worldwide consider creating a CBDC and as stablecoins gain wider adoption, advocates say a U.S. CBDC could help the dollar stay competitive and retain its status as a global reserve currency. However, this argument also appears to lack merit because the reason for the dollar's reserve currency status stems from the strength of the U.S. economy and the responsible conduct of monetary policy by the Federal Reserve. It seems exceedingly unlikely to us that participants in global financial markets will suddenly begin to esteem China's yuan or other CBDCs as global reserve currencies, simply because a digital version becomes available. The decision should not be based upon whether our peers and rivals choose to create a CBDC.

Background

In the CBDC Report, a CBDC is defined as "a digital liability of the Federal Reserve that is widely available to the general public."[8] The report states that a CBDC could be defined as legal tender – though our view is that it does not meet the definition of legal tender in 31 U.S.C. 5013 – and that it would be distinct from digital money that people are used to dealing with today – which exists in bank accounts as

[7] Nellie Liang, U.S. Department of the Treasury, "Remarks by Under Secretary for Domestic Finance Nellie Liang to the National Association for Business Economics" (March 22, 2022), available at: https://home.treasury.gov/news/press-releases/jy0673.

[8] CBDC Report at 3.

computer entries on commercial bank ledgers. In this way, a CBDC would be central bank money, rather than commercial bank money or nonbank money, which the report defines as follows:

- **Central bank money** is a liability of the central bank. In the United States, central bank money comes in the form of physical currency issued by the Federal Reserve and digital balances held by commercial banks at the Federal Reserve.
- **Commercial bank money** is the digital form of money that is most commonly used by the public. Commercial bank money is held in accounts at commercial banks.
- **Nonbank money** is digital money held as balances at nonbank financial service providers. These firms typically conduct balance transfers on their own books using a range of technologies, including mobile apps.[9]

Understanding this distinction is important because it is what separates a CBDC from digital money as customers are accustomed to dealing with it today. Because a CBDC is a liability of the central bank – and not a liability of a commercial bank like a demand deposit – a CBDC would have no credit or liquidity risk. Today, credit and liquidity risk of commercial bank money are almost completely irrelevant to the average consumer – that is because bank failures are rare, the United States has a comprehensive system of prudential regulations designed to prevent them, and FDIC deposit insurance exists to guarantee the safety of consumer deposits up to a $250,000 threshold.

Because the risk of not being able to convert commercial bank money (bank deposits) into central bank money (physical cash) on a 1:1 basis is infinitesimally small, commercial bank money is accepted by merchants in the form of debit transactions interchangeably with cash. However, some forms of non-bank money, which are also often thought of as being equivalent to the dollar, bear less trivial credit and liquidity risk. For example, money stored in accounts by non-bank financial technology companies and used for peer-to-peer (P2P) digital transfers and payments is not usually covered by FDIC insurance. Customers using these apps run the risk of losing some or all of their account balance if the app provider experiences a default.

Currently, money is moved between financial institutions, businesses, and consumers through the payments system. Most payments in the United States rely on an interbank payment system such as the ACH network, which moves money from a sender's account to a recipient's account at another bank. The CBDC Report notes that there have recently been improvements to payment systems to enable faster payments, including the Clearing House's Real Time Payments (RTP) system and the FedNow system, which will be released in 2023. According to the report, these systems "will enable commercial banks to provide payment services to households and businesses around the clock, every day of the year, with recipients gaining immediate access to transferred funds."[10]

A central bank digital currency would differ significantly from this process because it would not travel over the traditional payment rails. Instead, a CBDC would likely use cryptographic technology to transfer balances between CBDC wallets. The central bank would act as a central transaction processor, validating these transactions, as outlined by the Federal Reserve Bank of Boston and Massachusetts

[9] CBDC Report at 5.

[10] CBDC Report at 7.

Institute of Technology (MIT) as part of their collaboration on an experimental CBDC design known as Project Hamilton: In their experimental design, users interact with a central transaction processor using digital wallets storing cryptographic keys and transfer wallet balances.[11]

A CBDC Would Damage the Financial System

If the Federal Reserve issues a CBDC it will cause significant disruptions in the financial system, potentially leading to permanently tightened credit conditions and institutional failures. It is difficult to predict the effects of a CBDC because no similar experiment has ever been attempted with a major global currency, but a CBDC would be a significant source of competition for banks in attracting deposits. As the CBDC Report points out, because banks depend on the ability to lend against deposits, a reduction in deposits would result in reduced access to credit and higher borrowing costs for consumers. The extent of this contractionary effect would depend on the characteristics of a CBDC and the extent of its adoption by consumers, but it would likely be severe.

In the United States, we have a system of fractional reserve banking, wherein banks take deposits from the public, hold a portion as a reserve in cash or balances at the central bank, and lend out the remainder. When commercial banks lend, they are, in effect, creating new money that can reenter the banking system as new deposits. These deposits can, in turn, be lent against, again leading to further money creation. In a fractional reserve banking system, the central bank creates base money, but the majority of money creation is done by commercial banks. The central bank can influence the money supply through asset purchases, adjusting the reserve requirements of commercial banks, and interest rate targeting, but it does not control money creation directly.

In this system, a reduction in deposits will lead to a reduction in commercial banks' ability to create money. This monetary tightening will result in an increased cost of credit and decreased credit availability, slowing economic growth or leading to an economic contraction. A CBDC will lead to a reduction in deposits because a CBDC wallet would allow customers to send and receive money digitally, without the credit or liquidity risk of bank deposits.

During a time of financial crisis, the risk to bank deposits posed by a CBDC could be even more dramatic. Because a CBDC would not have credit or liquidity risk, there is a risk that, during times of financial stress, depositors would "run on the bank" and transfer their balances to CBDC wallets. Like a traditional bank run, this may lead to forced liquidations, which could plunge financial markets and the economy into a collapse. It could also lead to liabilities for the FDIC if forced liquidations lead to bank failures. Unlike a traditional bank run, however, which is somewhat constrained by the difficulties associated with handling large amounts of cash, a run to CBDC would be entirely digital. This would enable large depositors to flee from deposit accounts into CBDC wallets with unprecedented speed, worsening the effects of the run.

[11] *See* Federal Reserve Bank of Boston, "Project Hamilton Phase 1 A High Performance Payment Processing System Designed for Central Bank Digital Currencies" (February 3, 2022), available at: https://www.bostonfed.org/publications/one-time-pubs/project-hamilton-phase-1-executive-summary.aspx.

In a different economic environment, bank deposits may be competitive with a CBDC because banks pay interest on deposits. A CBDC should not accrue interest, nor should interest be paid on balances stored in CBDC wallets. However, because interest rates have been reduced to historically low levels by the policies of the Federal Reserve, commercial banks currently pay relatively low rates of interest on deposits.[12] These low rates, which are negative in real terms, are unlikely to provide a meaningful incentive to persuade consumers to store money in deposit accounts as opposed to CBDC wallets. While banks could raise the interest paid on deposits to be competitive with a CBDC if one was issued, doing so would increase the rates they would be required to lend at and would also cause them to incur a reduction in the value of existing loans.

A CBDC Creates Significant Privacy and Cybersecurity Risks

Advocates of a U.S. CBDC frequently assert that the creation of a CBDC is important for the U.S. dollar to maintain its international competitiveness. It is sometimes argued that the People's Bank of China's (PBOC) "Digital Yuan" (e-CNY) could challenge the dollar as a global reserve currency.[13] This thinking asks the financial community to believe that simply because America's geopolitical rivals are experimenting with a new technology, we should be as well – for fear of ending up on the wrong side of a CBDC gap. Before we accept this premise, however, it is worth taking a moment to investigate the motives of the Chinese government for creating a CBDC.

In the Chinese system, the PBOC issues e-CNY – defined as M0, central bank money or base money – while eight "Tier 2" institutions (state-owned banks and Chinese internet banks) offer customer wallets to store and transact in e-CNY. Similar to the intermediated CBDC model being discussed in the United States, these Tier 2 institutions would be responsible for customer service associated with the use of wallets and for Know-Your-Customer (KYC) requirements. However, while the day-to-day requirements of offering wallets is delegated to the banks, the PBOC is responsible for validating all transactions in CBDC. In other words, the Chinese central bank has a direct line of sight into every e-CNY transaction. While the system includes a feature called "controlled anonymity," which would allow e-CNY users to conceal their identity from counterparties – this anonymity does not extend to protecting users from surveillance by Chinese law enforcement.[14]

In a surveillance state like China, the appeal of this level of visibility into private transactions is obvious. However, in the United States, we should think carefully before going down the same path. In April of 2021, Federal Reserve Chairman Powell testified before Congress that "[t]he currency that is being used in China is not one that would work here. It's one that really allows the government to see every

[12] According to Bankrate.com's survey of depository institutions, the average interest on deposits was 0.06% as of the week of April 6, 2022. Bankrate, "What is the average interest rate for savings accounts?" (April 7, 2022), available at: https://www.bankrate.com/banking/savings/average-savings-interest-rates/.

[13] *See e.g.* Eustance Huang, "China's digital yuan could challenge the dollar in international trade this decade, fintech expert predicts," CNBC.com (Mar. 15, 2022), available at: https://www.cnbc.com/2022/03/15/can-chinas-digital-yuan-reduce-the-dollars-use-in-international-trade.html.

[14] *See* Deutsche Bank, "Digital yuan: what is it and how does it work" (July 14, 2021), available at: https://www.db.com/news/detail/20210714-digital-yuan-what-is-it-and-how-does-it-work.

payment for which it is used in real time."[15] Chairman Powell's hesitancy regarding the privacy of a CBDC is well founded because this level of government surveillance would be unprecedented in a developed democracy.

In 2021, ICBA launched the #KeepMyBankingPrivate campaign to oppose a proposed requirement for banks to report account flows of their customers to the Internal Revenue Service without customer consent. According to a Morning Consult poll commissioned by ICBA, 67% of registered voters opposed the proposal and, in response to our campaign, over 500,000 Americans sent letters to Congress opposing the proposal. The lesson from the IRS tax reporting proposal is clear – Americans do not support government intrusion into their transaction records. The creation of a CBDC, which could give the Federal Reserve visibility into every transaction between CBDC wallets, is even more invasive than the IRS tax reporting proposal and would generate equivalent levels of public backlash.

Ultimately, if Americans believed that their transactions were being monitored by the federal government, it is possible that they would remove their funds not only from CBDC wallets but from the banking system as a whole. A CBDC would open up the possibility of government interference in payments to politically disfavored but otherwise legal industries – from firearms to fossil fuels. After Operation Choke Point, it is difficult to conclude that the fear of being deplatformed from the banking system is unfounded.

In addition to fears of government monitoring of CBDC transactions and the politicization of a CBDC, there is also cybersecurity risk posed by criminal hackers and rogue states. A CBDC would depend on the Federal Reserve to serve as a hub, validating all transactions between CBDC wallets. If hackers were able to compromise the Federal Reserve's cybersecurity system, not only could they potentially disrupt or misdirect countless transactions, the hackers would also do permanent damage to the credibility of the CBDC and to the dollar itself. The damage that such a hack would do is a far greater threat to the dollar's status as a global reserve currency than competition from a Chinese CBDC.

As a FEDS Notes report concluded, "In addition to potential counterfeiting, a CBDC may be subject to fraud and double spending, which could weaken trust in a CBDC. Like the anti-counterfeiting measures used for physical currency, a variety of measures would need to be incorporated into a CBDC to prevent users from copying, modifying, or double spending the same asset...Attacks on existing payment systems are a risk, and CBDCs would likely encounter similar pressures … It is difficult to assess the explicit security needs of a CBDC without a clear system design as approaches to security would need to be tailored to the unique design and architecture that is implemented for each CBDC." [16] The responsibility for ensuring the security of a CBDC would be a significant technical challenge with extremely high stakes.

---

[15] *See* Henry Kenyon, "Privacy issues seen reducing appeal of central bank digital currencies," Roll Call (November 16, 2021), available at: https://rollcall.com/2021/11/16/privacy-issues-seen-reducing-appeal-of-central-bank-digital-currencies/.

[16] Tarik Hansen and Katya Delak, FEDS Notes, "Security Considerations for a Central Bank Digital Currency" (Feb. 3, 2022), available at: https://www.federalreserve.gov/econres/notes/feds-notes/security-considerations-for-a-central-bank-digital-currency-20220203.htm.

Furthermore, the risk of a cybersecurity breach is not limited to the central bank. Banks would also be required to invest significant resources into ensuring that customer CBDC wallets are secure. This would be duplicative of their efforts to provide security to deposit accounts in compliance with the Gramm-Leach Bliley Act's Privacy and Safeguards rules. While banks have an excellent record of cybersecurity, it is naive to assume that breaches can be entirely prevented, and CBDC wallets would create a new vector for cyber threats both for the hub (the Federal Reserve) and the spokes (financial institutions that provide customer wallets.)

In addition to the risk of hacks, the credibility of the dollar could also be jeopardized by operational failures of a CBDC. This risk should not be overlooked as speculative because the Eastern Caribbean Central Bank, which has rolled out a pilot CBDC, experienced a service outage in February of 2022.[17] This outage caused transactions to fail and created significant uncertainty for users of the ECCB's DCash platform. If a similar outage were to occur with a U.S. CBDC, it would almost certainly happen at a larger scale, undermining trust in the U.S. payments system.

A CBDC Is a Gateway to Public Banking

As the CBDC Report acknowledges, "the Federal Reserve Act does not authorize direct Federal Reserve accounts for individuals, and such accounts would represent a significant expansion of the Federal Reserve's role in the financial system and the economy."[18] Therefore, the report instead proposes using an "intermediated" model where banks and other financial institutions would provide CBDC wallets. While we agree that the Federal Reserve Act does not permit the Fed to issue a CBDC directly, an intermediated model would require a sufficiently viable business model to incentivize private companies to undertake the technical and compliance expenses required to provide CBDC wallets to customers. Because banks would not be able to lend against funds stored in CBDC wallets in the same way that they lend against deposits, the business model would necessarily depend on service fees, which is not an attractive option for banks or their customers.

If the Federal Reserve issues a CBDC and it experiences low levels of adoption due to the fees intermediaries would need to charge in order to offer wallets, it is highly foreseeable that there could be calls from Congress for the Federal Reserve to offer CBDC wallets directly to consumers. While we understand that this is not included in the Fed's current proposal, the conversation surrounding a CBDC is not taking place within a vacuum. The idea of public banking has been garnering increased attention in recent years and prominent members of Congress have already introduced legislation designed to increase the federal government's role in providing banking services.[19] Issuing a CBDC without statutory authorization will be a dramatic expansion of the Federal Reserve's role in the financial system and increases the likelihood that it is eventually called on by Congress to offer banking services directly to

[17] *See* "Eastern Caribbean CBDC platform crashes," Finextra (Feb. 1, 2022), available at: https://www.finextra.com/newsarticle/39606/eastern-caribbean-cbdc-platform-crashes.

[18] CBDC Report at 13.

[19] *See e.g.* Senator Sherrod Brown's Banking Act for All, S.3571 (116th) and Senator Kyrsten Gillibrand's Postal Banking Act, S.2755 (115th).

consumers. This amounts to a tacit endorsement of public banking, which is a foreseeable outcome of such an expansion.

ICBA has long opposed public banking in all its forms, including postal banking, because it would divert deposits from community banks which reinvest them in the communities they serve. This reduction of deposits in the banking system could reduce the availability of credit for homebuyers and small business unless the government also becomes a lender. In our view, federal, state, and local governments simply lack the expertise necessary to become creditors and if they did, it could create devastating liabilities for taxpayers if a financial crisis caused a significant number of borrowers to default.

Offering CBDC Wallets Will Create Significant Compliance Burdens

In an intermediated model, banks offering CBDC wallets will be required to comply with the full range of identity verification, cybersecurity, Know Your Customer (KYC) and Anti-Money Laundering (AML) regulations, as they do when they offer deposit accounts. We believe that an intermediated model better answers the risks of money laundering and terrorist finance than a model where the Federal Reserve offers CBDC wallets directly to customers.

In a direct model, the Federal Reserve itself would be required to conduct a tremendous amount of customer due diligence and it currently has no analogous experience. Hiring additional staff with specialized experience would be required and the Federal Reserve would open itself up to reputational risk if a successful cyberattack occurred or if CBDC wallets offered by the Federal Reserve were used to facilitate money laundering. These events would be damaging to the reputation of the affected financial institution if they occurred in an intermediated system, but in a direct system, it would damage the credibility of the Federal Reserve and the dollar itself.

Commercial banks, by contrast, already comply with the Bank Secrecy Act, the Gramm Leach Bliley Act, and their associated regulatory framework which requires customer due diligence and cybersecurity infrastructure to protect customer privacy while still monitoring and reporting suspicious transactions. However, these compliance functions are not costless – far from it – and therefore creating the technical and compliance infrastructure for CBDC wallets will require a compensation model that could include charging fees to users. The fees banks will be required to charge in order for CBDC wallets to be a viable business will significantly offset any potential benefit to financial inclusion presented by a CBDC. Currently, the price of deposit accounts to customers is subsidized both by a bank's ability to lend against deposits and to collect interchange fees on transactions. Neither of these business models will be available with a CBDC, so customers may likely be required to pay for access to wallets with an account maintenance fee to offset bank investments to provide and maintain these services.

Because of the cost and complexity of offering CBDC wallets, as well as the problems presented by a fee-based business model, smaller financial institutions like community banks and credit unions are less likely to offer them than larger banks and financial technology companies. Community banks are largely dependent on their core processors to provide banking software and solutions, so the added cost and time it will take for these technology partners to develop and deploy CBDC wallets will disadvantage their customers. To the extent that a CBDC gains adoption, it would likely transfer deposit market share away from community banks, and towards their larger bank peers. This is not a new phenomenon – in

1921, there were 30,456 banks in the United States. In the post-FDIC insurance era, the commercial bank population reached a peak of 14,496 in 1984. Today, there are only 4,377 FDIC-insured depository institutions.[20]

There are many reasons for industry consolidation, but among the most significant is regulatory compliance burden. Creating a new system for storing and transferring value, which is what a CBDC would do, and then layering it on top of the existing banking system, will create new compliance burdens and will be a much larger proportional challenge for community banks than for large banks and fintech companies. A foreseeable result, then, is further consolidation as small banks are required to get bigger in order to compete. The creation of a CBDC, then, amounts to the Federal Reserve picking winners and losers among bank business models and asset sizes – with traditional community banks being less favored than big banks and financial technology companies. Because of community banks' outsized role in small business lending, agriculture lending, and providing access to financial services in underserved urban and rural areas, we believe this would be a serious mistake.[21]

By way of example, according to the FDIC, only 75.6% of rural people had access to a smartphone, compared with 86.2% in urban areas and 88.4% in suburban areas. The report also found that 68% of rural households had access to the internet in their home, a much lower rate than urban (79.5%) or suburban (84.5%) households.[22] These rural households, which depend on community banks for access to financial services, will not easily be able to access or use a CBDC. A shift to a CBDC will disadvantage these communities and isolate them from the financial services ecosystem.

A CBDC Will Harm the Formation of Banking Relationships

The core of the community bank business model is relationship banking. Community banks provide more than simply access to payments rails and credit. Instead, community bankers work with their customers – both retail and small business – and help them manage their finances and make informed financial decisions. This guidance can range from teaching a retail customer how to balance their checkbook, to guiding a family through the process of applying for a first mortgage, to helping a small or midsized business apply for government guaranteed loans and other forms of more complicated financing that suit their individual business needs. In other words, relationship banking is more than simply taking deposits and extending credit, it is about creating mutually beneficial trust by acting as an educator and advisor to customers.

[20] William R. Emmons, St. Louis Federal Reserve, "Slow, Steady Decline in the Number of U.S. Banks Continues" (Dec 2021), available at: https://www.stlouisfed.org/on-the-economy/2021/december/steady-decline-number-us-banks#.

[21] As the only physical banking presence in one in five U.S. counties, community banks meet the needs of areas left behind by other financial services providers. See https://www.fdic.gov/regulations/resources/cbi/report/cbsi-execsumm.pdf

[22] FDIC, "How America Banks: Household Use of Banking and Financial Services" (2019), available at: https://www.fdic.gov/analysis/household-survey/2019report.pdf.

For most customers, the banking relationship begins with opening a deposit account. If the creation of a CBDC disintermediates this step, it could upend the ability of community banks to form this relationship with their customers. Community banks may not be able to offer CBDC wallets as cheaply or conveniently as larger-scale, less-regulated financial technology providers. Because CBDC wallet balances will not be able to be lent against, some community banks will likely choose not to offer CBDC wallets at all because the business case is not sustainable.

If a CBDC nips this relationship formation in the bud, it will have effects that harm the customer's financial health in the long term. For example, if a customer chooses to transact entirely through a CBDC wallet, that customer will not build a credit history. A community banker could advise them that, by using a bank-issued credit card and paying off the balances in a timely way, they will be able to improve their credit score in a way that will reduce the cost of borrowing for major purchases like a home or business loan. If customers are forced to rely on large-scale, online providers of CBDC wallets that do not offer the same level of high-touch customer service as community banks, the end result could be a decline in financial literacy and an increase in customers making adverse financial decisions due to a lack of guidance.

The lack of relationship building may also lead to lower levels of small business formation. According to the FDIC, "Despite holding only 15 percent of total industry loans in 2019, community banks held 36 percent of the banking industry's small business loans. Community banks focus on building relationships with small business owners and tend to make loans that require more interaction with the borrower."[23] According to the same study, in rural areas, "Community banks are an important source of financing for U.S. agriculture, funding roughly 31 percent of farm sector debt in 2019, with half of that total financed by community-bank agricultural specialists … Community-bank agricultural specialists have shown a strong commitment to lending to farmers through the peaks and valleys of cycles in the agricultural sector."[24] If potential small business owners or farmers never walk through the door of a community bank to open a deposit account, they will lose a potential financial partner who could help them navigate the challenges of business formation or adverse economic cycles.

Creating a CBDC Could Alter the Federal Reserve's Ability to Conduct Monetary Policy in Unpredictable Ways

A CBDC could have a significant impact on the Federal Reserve's ability to conduct monetary policy. As argued in an analysis by Bill Nelson at the Bank Policy Institute (BPI), "a CBDC could lead to rapid and huge reductions in reserve balances (the deposits of commercial banks and other depository institutions at the Federal Reserve) when there is a flight to quality, driving up money-market interest rates and

[23] FDIC, Community Banking Study (December 2020), available at: https://www.fdic.gov/resources/community-banking/report/2020/2020-cbi-study-full.pdf.

[24] *Id*.

potentially destabilizing financial markets."[25] Because a CBDC would be M0, it would not bear the credit or liquidity risks associated with bank deposits – making it an attractive alternative in times of uncertainty. This is dangerous for the stability of the banking system because a flight out of bank deposits could lead to bank failures and would also limit the ability of commercial banks to create money by lending against reserves. Therefore, a CBDC would have a contractionary effect on the money supply, the effect of which would be impossible to predict.

However, while the BPI white paper acknowledges the risk of a CBDC to monetary policy it also argues that a CBDC could have some benefits – for example, removing the Zero Lower Bound on monetary policy "assuming that a CBDC could pay negative interest and paper currency were eliminated."[26] In essence, in the event of a deflationary spiral, the Federal Reserve could reduce the CBDC interest rate below 0, essentially penalizing consumers for holding cash and encouraging spending. Academically, this makes some sense, but we do not believe it should ever be done in practice because consumers' relationship to money has an emotional component that is not captured in an academic exercise. It would significantly undermine confidence in the dollar if it were possible for the Federal Reserve to reduce consumers' CBDC wallet balances in real time in order to facilitate a monetary policy goal.

Furthermore, a CBDC could infringe on the sovereignty of foreign countries' central banks because, if a U.S. CBDC is easier to store and transport than physical cash, it may become a preferred alternative to local currencies, particularly in the developing world. This is potentially damaging to these countries because the ideal monetary policy for their country may be either more dovish or more hawkish than the monetary policy of the United States. However, the ability for foreign central banks to control the value of their own currency could be severely diminished if a digital dollar is more widely used within their borders than their nation's currency.

Creating a CBDC Is Not a Substitute for Regulating Stablecoins and Other Cryptocurrencies

Some government officials, including Federal Reserve Governor Lael Brainard,[27] have argued stablecoins create risks for consumers, who may view them as equivalent to a dollar despite lacking federal deposit insurance or any other federal guarantee of their value. In ICBA's view, stablecoins currently represent a risk to the financial system because while they are called "stable," as recent developments such as Tether and Terra losing their peg to the dollar show, they are often anything but a stable source of value. Without being subject to regulation and supervision stablecoins may deceive customers into thinking that they are as secure as bank deposits.

[25] Bill Nelson, Bank Policy Institute, "The Benefits and Costs of a Central Bank Digital Currency for Monetary Policy" (Apr. 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.

[26] *Id.*

[27] *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).

Furthermore, large technology companies like Meta (previously branded as Facebook), have experimented with creating their own corporate-backed stablecoins. ICBA is concerned that corporate guaranteed stablecoins could present a backdoor way for large commercial firms to offer bank-like deposit and payment products without becoming subject to appropriate prudential regulations. In the United States, there is a separation between banking and commerce, which is designed to reduce the transmissibility of shocks in the financial markets to commercial firms and to prevent undue concentrations of economic power or too-big-to-fail firms that may create systemic risk. If Big Tech or other large commercial companies are allowed to issue stablecoins it will erode the separation of banking and commerce and create deposit-like products without appropriate regulatory oversight. ICBA urges policymakers to preserve the separation of banking and commerce.

However, while stablecoins present novel challenges to the legal and regulatory landscape of the financial services industry, creating a CBDC as an alternative to privately issued stablecoins is not a substitute for regulation, nor does it come down to a binary choice of a CBDC or stablecoins. A CBDC will neither outcompete stablecoins out of existence nor solve the regulatory challenges presented by stablecoin arrangements, including ensuring they are adequately capitalized and do not create systemic risk.

The President's Working Group on Financial Markets has recommended that:

> "[W]ith respect to stablecoin issuers, legislation should provide for supervision on a consolidated basis; prudential standards; and, potentially, access to appropriate components of the federal safety net. To accomplish these objectives, legislation should limit stablecoin issuance, and related activities of redemption and maintenance of reserve assets, to entities that are insured depository institutions. The legislation would prohibit other entities from issuing payment stablecoins. Legislation should also ensure that supervisors have authority to implement standards to promote interoperability among stablecoins."[28]

ICBA believes it is critical that stablecoins are subjected to appropriate federal prudential oversight, which includes bringing them within the regulatory perimeter in order to address serious risks to financial stability, national security, and consumer protection. Unregulated stablecoins threaten to disintermediate community banks and heighten risks for disruptions to the wider economy.

A CBDC Will Not Improve the U.S. Payments System

In the United States, we already have digital money to a large degree – most commercial bank money is stored as electronic ledger entries in deposit accounts, and it can be transferred and spent using methods customers are already familiar and satisfied with. It is not obvious that a CBDC will serve the challenges of facilitating payments more efficiently than these existing methods. For example, the CBDC Report argues that a CBDC has the potential to improve cross boarder payments. Not only will this require, "significant international coordination to address issues such as common standards and

[28] 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).

infrastructure," it would also require a CBDC to handle tremendous payment volume, preventing limits on CBDC wallets.

Because cross border payments require significant KYC/AML checks, wallet providers (banks and regulated non-banks) would still likely be required to charge for these services, making a CBDC no more cost effective than current payment rails. In order to improve cross-border payments, central banks would have to create interoperability between their respective CBDCs. Interoperability or transferability of CBDC across multiple payments systems is a problem without a clear solution. There are additional problems of currency conversion and compliance with local policies.

ICBA has long been a supporter of efforts to modernize the payments system. However, creating a CBDC would be an expensive and risky way to duplicate the capabilities of the existing payments system. It is, in many ways, redundant of the extensive work already done on FedNow. FedNow is the "instant payment service that the Federal Reserve Banks are developing to enable financial institutions of every size, and in every community across the U.S., to provide safe and efficient instant payment services in real time, around the clock, every day of the year."[29]

In March, Treasury Under Secretary for Domestic Finance Nellie Liang observed, "We also recognize that there are developments that could address some of these issues [costs and fees associated with having a bank account and making payments]. For example, FedNow aims to be a 24/7 payment system that will be low cost to users and widely available. Because FedNow relies on the banking system, there already are safeguards for consumers and businesses. In addition, bank-based money usually has deposit insurance and banks are generally eligible to obtain access to the lender of last resort."[30]

It seems unnecessary to create a CBDC for the purpose of realizing faster or lower cost domestic payments when significant effort, time, and expense has already been invested in developing FedNow. When the FedNow system is launched, it is likely to improve the speed and lower the cost of payments, delivering one of the key potential benefits of a CBDC without the associated risks and uncertainties. FedNow should be allowed to deliver on its promised benefits before duplicative expenses to develop a CBDC are made. As Deputy Treasury Secretary Liang noted, the banks that will use the FedNow system operate within a well-established regulatory framework that provides safeguards to consumers. If a CBDC is created, it will require the creation of a new regulatory and technical architecture.

A CBDC Will Not Promote Financial Inclusion

A CBDC will have a negative effect on financial inclusion. According to an FDIC Report, 36% of unbanked households report that they do not have a bank account because "avoiding a bank gives more privacy."

[29] The Federal Reserve, FRBServices.org, "About the FedNow Service," available at: https://www.frbservices.org/financial-services/FedNow/about.html.

[30] Nellie Liang, U.S. Department of the Treasury, "Remarks by Under Secretary for Domestic Finance Nellie Liang to the National Association for Business Economics" (March 22, 2022), available at: https://home.treasury.gov/news/press-releases/jy0673.

And 34.2% report that they do not have a bank account because "bank account fees are too high."[31] Neither of these problems, which are both among the most commonly cited reasons for not having a bank account, will be solved by a CBDC.

In an intermediated CBDC model, as proposed by the CBDC Report, banks and other financial institutions would offer wallets to customers to store their CBDC. For customers who do not trust these institutions because of privacy concerns, it is not clear why this objection would vanish with a CBDC wallet. Furthermore, the central bank would have more visibility into CBDC transactions than transactions processed by the existing payments system. In other words, a CBDC would be less private than the current system and is unlikely to attract the customers who are unbanked due to a desire for privacy or distrust of banks.

Finally, since a CBDC would be an entirely digitally native form of money, it seems likely to require internet access to manage and spend. Because it would depend on complicated cryptographic technology, it may be difficult for customers to understand. For customers who are unbanked or underbanked due to a lack of reliable access to the internet or because of low financial literacy, a CBDC appears to put up new barriers to accessing the money and payments system, rather than promoting financial inclusion.

A CBDC Is No Guarantee of the Dollar's Status as World Reserve Currency

Creating a CBDC is not necessary for the dollar to maintain its status as the world's preeminent reserve currency. Even now, when the dollar has entered a period of higher-than-average inflation, it has gained value against the currencies of peer countries. The Dollar Index (known as the DXY or Dixie, is a widely traded index maintained by the Intercontinental Exchange (ICE) containing the euro, Japanese yen, British pound, Canadian dollar, Swedish krona and Swiss franc) has increased 15.26% since December 31, 2020 and 7.69% since the start of 2022.[32] What the increase of the value of the dollar compared to other world currencies demonstrates is that, despite the past two years of a global pandemic and the unprecedented expansion of the supply of U.S. dollars, it remains a bastion of relative strength. We are confident that the dollar will remain the global standard without creating a CBDC variant.

For the China yuan, or any less widely used currency, offering a digital version of its currency is an attractive gimmick that may drive some adoption of its currency in countries with less stable local currencies. The dollar needs no such gimmick to be accepted as a store of value or a mode of transaction because it is backed by the full faith and credit of the United States government and its supply is managed through the prudence of the Federal Reserve's monetary policy. As long as the United States retains a preeminent place in world affairs and the Federal Reserve carefully manages the money supply according to its dual mandate of stable prices and low unemployment, the dollar will have value worldwide. Any corporation or private individual who finds the value proposition of a digital yuan more compelling is free to choose to use it, but they should be mindful of the potential for currency

[31] Federal Deposit Insurance Corporation, "How America Banks: Household Use of Banking and Financial Services" (2019), available at: https://www.fdic.gov/analysis/household-survey/2019execsum.pdf.

[32] *See* CNBC.com, DXY US Dollar Currency Index, (calculated on 5/7/2022) available at: https://www.cnbc.com/quotes/.DXY.

manipulation, surveillance, limitations on transactions, or confiscation, as opposed to the protections of storing dollars in an FDIC-insured bank account.

Finally, as analysis by the Bank Policy Institute has shown, other global currency leaders are already beginning to pull back from the creation of a CBDC, "the Bank of Canada has sidetracked its CBDC effort, noting that it does not see a compelling need for one. Likewise, Australia, where the central bank governor noted of CBDCs that 'we have not seen a strong public policy case to move in this direction, especially given Australia's efficient, fast and convenient electronic payments system.' In the U.K., the Lords Economic Affairs Committee recently found that none of the witnesses who came before the committee (including the Governor of the Bank of England) was able to make a convincing case for a retail CBDC, and concluded that the introduction of a CBDC could pose significant risks."[33]

The Federal Reserve has asked, how "should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?"[34] In our view, the fear of missing out should not be a driving motivator to fundamentally change the nature of the money system and the role of the Federal Reserve. Therefore, the decisions of other nations to create a CBDC – or not – should have a minimal effect on our reasoning here in the United States. The decision should be based on the substantive merits for and against the creation of a CBDC – and we believe the risks decisively outweigh any potential benefits – and undertaken only with explicit statutory authorization from Congress and with the support of the financial services industry and the customers it serves.[35]

Conclusion

In conclusion, the nation's community banks view the creation of a CBDC as a mistake that would disrupt existing depository institutions and create significant risks to financial stability. Creating a

---

[33] Greg Baer and Paige Paridon, Bank Policy Institute, "The Waning Case for a Dollar CBDC" (Feb. 18, 2022), available at: https://bpi.com/wp-content/uploads/2022/02/The-Waning-Case-for-a-Dollar-CBDC.pdf; *citing:* Ljunggren, David, "Bank of Canada not planning to launch digital currency, at least for now," Reuters, Oct. 18, 2021, available at https://www.reuters.com/world/americas/bank-canada-not-planning-launch-digital-currency-least-now-2021-10-18/.; Lowe, Philip, "Payments: The Future?", speech on Dec. 9, 2021, available at https://www.rba.gov.au/speeches/2021/sp-gov-2021-12-09.html.; House of Lords Economic Affairs Committee, 3rd Report of Session 2021–22, HL Paper 131, "Central bank digital currencies: a solution in search of a problem?", Jan. 13, 2022, available at https://committees.parliament.uk/publications/8443/documents/85604/default/

[34] CBDC Report at 22.

[35] *See* the comments from Federal Reserve Chairman Jerome Powell at a panel discussion hosted by the International Monetary Fund, "We do think it's more important to get it right than to be first and getting it right means that we not only look at the potential benefits of a CBDC, but also the potential risks, and also recognize the important trade-offs that have to be thought through carefully." Reuters, "Fed's Powell: More important for U.S. to get digital currency right than be first" (October 19, 2020), available at: https://www.reuters.com/article/us-usa-fed-powell-digitalcurrency/feds-powell-more-important-for-u-s-to-get-digital-currency-right-than-be-first-idUSKBN2741OI. ICBA agrees with Chair Powell's approach of carefully weighing the risks and trade-offs of a CBDC before creating one simply to be first, but we urge the Federal Reserve to leave open the possibility that, after a careful analysis has been conducted, the risks may simply be too great to create a CBDC in the United States.

CBDC will introduce new risks into our financial system, disintermediate depository institutions, and increase the cost of credit for consumers and small businesses. Its creation is not to be taken lightly and cannot be justified by a desire to enter a monetary arms race with other nations. It is foreseeable that a CBDC will be a first step towards offering direct customer accounts at the Federal Reserve, ushering in an era of public banking, granting the Federal Reserve visibility into every transaction and eroding privacy, and disintermediating private banks. But even if these worst fears never come to pass, it is clear that a CBDC would be a significant competitor for bank deposits – which would limit the ability of community banks to lend and have a contractionary effect on the money supply and the economy.

We are not convinced that a CBDC will meet the prerequisites established by the Fed, nor will it yield benefits that exceed the costs and risks. It is puzzling that the Federal Reserve would begin developing a new, alternative payment system before giving FedNow, a platform that the Federal Reserve has invested significant time and resources to create, a chance to succeed. A CBDC would be a technologically complex system and would require internet access to utilize, meaning that it will likely have a negative effect on financial inclusion. Without the ability to lend against wallet balances, the business case for banks to offer CBDC wallets is unclear. The dollar's recent strength throughout the pandemic demonstrates that it will retain its reserve currency status without creating a digital variant.

Thank you again for the opportunity to provide feedback in response to the Board's research and analysis paper "Money and Payments: The U.S. Dollar in the Age of Digital Transformation." We look forward to continued engagement with the Federal Reserve on this critical topic. Please feel free to contact us at Deborah.Phillips@icba.org or (202) 697-1266 or Michael.Marshall@icba.org or (202) 821-4411, if you have any questions about the positions stated in this letter.

Sincerely,

/s/

Deborah Matthews Phillips
Senior Vice President, Payments and Technology Policy

/s/

Mickey Marshall
Director, Regulatory Legal Affairs

May 20, 2022

Ann E. Misback
Secretary, Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue NW
Washington, DC 20551
Sent via Email: digital-innovations@frb.gov

Re: FTA Comment on Board of Governors of the Federal Reserve System White Paper
Money and Payments: The U.S. Dollar in the Age of Digital Transformation

The Financial Technology Association (FTA) appreciates the opportunity to respond to this request for comment issued by the Board of Governors of the Federal Reserve System (the "Board") on the topic of payments innovation and the potential of a U.S. central bank digital currency (CBDC) or "digital dollar." FTA is encouraged by the Board's forward-leaning and proactive public engagement on how new financial technologies can enhance and improve payments systems for domestic and global consumers, merchants, and financial market participants. The following comment is focused on supporting continued payments innovation and increasing payments choice, competition, and security.

The Financial Technology Association & Payments Innovation

The FTA is a nonprofit trade organization that champions the transformative role of financial technology for American consumers, businesses, and the economy.[1] Representing leading fintech companies, FTA elevates fintech's power to increase competition and drive financial inclusion through responsible products and services. As our members' voice in Washington, FTA advocates for the modernization of financial regulation to support inclusion and innovation.

A core pillar of the FTA's effort to advance consumer-centric financial services development in the U.S. is supporting ongoing payments innovation and related policy frameworks. Fintech innovators are leveraging internet and mobile technologies to offer consumers new payment and money transfer options that can significantly reduce costs, speed access to funds, improve transparency and convenience, and enhance financial inclusion. Fintech payments innovation is

[1] FIN. TECH. ASS'N, www.ftassociation.org (last visited May. 11, 2022). The FTA's members include Afterpay, Betterment, Block, BlueVine, Brex, Carta, Figure, Klarna, Marqeta, MoneyLion, MX, Nium, Plaid, Ribbit Capital, Sezzle, Stripe, Truework, Wise, Zest AI, Zilch, and Zip.

dramatically reducing the cost consumers and small business merchants pay for a range of payment services, including those that cut across borders where legacy services can charge more than 20% of the transaction amount in fees.[2]

New payments models are further improving the speed at which consumers access funds, which can improve cash flow and reduce overdraft fees, while also offering easy mobile access. Mobile access has been a big driver in providing un-or-under-banked individuals with an onramp into the financial system.

Additionally, payments innovators are partnering with consumer-facing businesses to advance "embedded finance" or "banking as a service" payments models; these solutions provide consumers with low-cost and compliant financial services products without the business partner bearing the cost or complexity of building unique payments infrastructure. By leveraging API-based connectivity and open banking frameworks, platform payments companies are democratizing financial services, empowering small businesses to digitize and entrepreneurs to scale, enabling digital banks to innovate, and enhancing consumer access to digital payments solutions.

It is also notable that fintech payments companies are often at the forefront of improving pricing transparency for consumers, a critical benefit. Government-supported research in the United Kingdom has found that consumers and small businesses are often unaware of exchange rate markups, and are significantly more likely to choose the best option when total costs are disclosed.[3] The Australian government has added that consumers should have access to digital tools that enable them to see the full composition of cross-border payments fees and how that

[2] Sonia Elks, *Migrants losing $25 billion per year through remittance fees - UN*, Reuter (Sept. 20, 2018), available at https://www.reuters.com/article/us-global-migrants-un/migrants-losing-25-billion-per-year-through-remittance-fees-un-idUSKCN1NP2BA.

[3] The Behavioural Insights Team, *The impact of improved transparency of foreign money transfers for consumers and SMEs* (Mar. 21, 2018), available at https://www.bi.team/publications/the-impact-of-improved-transparency-of-foreign-money-transfers-for-consumers-and-smes/.

impacts the final price of a transfer.[4] Fintech innovation – which relies on digital – is best suited to continue a push for pricing transparency and consumer-centric pricing competition.[5]

FTA Recommendations

Ongoing Payments Innovation

Notwithstanding the payments innovations noted above, the Board properly notes the many existing instances where payments systems remain "slow and costly." FTA shares these concerns, and strongly supports the Board's ongoing payments modernization efforts.

Specifically, in 2019, the Board announced intentions to develop a new 24/7 real-time payment and settlement service called FedNow to support faster payments. FTA believes this faster payments rail will help to address many of the speed issues identified in the Board white paper. FedNow also will accelerate ubiquitous availability of real-time settlement capabilities among all financial institutions and their end-users. Speed and ubiquity are enormous benefits of real-time settlement, but only to the extent that such benefits are widely available via competitive, diverse providers.

To this end, allowing broader entity access to Federal Reserve services will significantly enhance the nation's payment infrastructure in several ways. First is cost. Different business models may be less reliant on fees because they provide a wider suite of services to consumers and businesses, and competition from these and other types of firms will lower costs and facilitate economic resiliency. Second, as digital channels online and offline continue to evolve at an accelerating pace, a diversity of business models and technology capabilities will keep pace with ever changing marketplace demands. Third, wider access would also address payments and concentration risks the Board outlines in its white paper by addressing single points of failure presented by the status quo. Indeed, allowing fintech firms to reduce their sole reliance on banks would diversify significant infrastructure risk away from single points of failure, as nearly half of all ACH payment originations nationwide are currently generated by only two banks.

---

[4] Australian Competition & Consumer Commission, *Transparent pricing of foreign currency conversion services* (December 2019), available at https://www.accc.gov.au/system/files/1651FAC_FX%20busines%20guide%20Transparent%20pricing%20D02.pdf.

[5] *See* Financial Technology Association, *Letter to CFPB Re: Promoting Transparency & Empowering Consumers in International Payments* (Dec. 1, 2021), available at https://www.ftassociation.org/wp-content/uploads/2021/12/FTA-International-Payments-Transparency-1.pdf.

Unfortunately, unlike other global jurisdictions, direct access to the federal payments system is largely restricted in the U.S. to traditional depository banks. Providing fintech companies, including those with federal or state banking charters, with access to the federal payments infrastructure would substantially lower costs for fintech companies offering payments services, which ultimately benefits consumers through lower-cost products. FTA appreciated the opportunity to provide comment to the Board on its original and supplemental proposed account access guidelines,[6] and believes this issue is core to the future of U.S. payments innovation.

CBDC Exploration

FTA also believes it is prudent and important for the Board and the broader U.S. government to explore the potential of a digital dollar in order to ensure the central role of the US Dollar now and into the future. A digital dollar could be an important catalyst of further financial services innovation and financial inclusion. This exploration should be subject, however, to key principles:

- First, any decision to move forward with production of a digital dollar should be based on real-world testing in order to fully understand use-cases and implications for consumers, merchants, existing payments systems, and the broader economy. Any standards or rules should be determined through collaboration that includes government, consumer groups, and an equal cross-section of industry stakeholders, including fintechs and non-banks that serve end-users. Similarly, a diverse range of private sector players can contribute to CBDC design, construction and day-to-day operation of underlying infrastructure. Such wide integration - with appropriate oversight and safeguards - can enhance the impact and reliability of the CBDC infrastructure for businesses and end-users.
- Second, the Board should focus on the importance of interoperability of a potential digital dollar with existing payments systems in order to promote consumer choice and payments competition. To this end, a potential CBDC should operate alongside existing forms of payment.

[6] *See* Financial Technology Association, *Response to Request for Comment on Proposed Guidelines for Evaluating Account and Services Requests* (July 12, 2021), available at https://www.ftassociation.org/wp-content/uploads/2021/07/FTA_Response-to-Fed-Payments-Access.pdf; Financial Technology Association, *Response to Request for Comment on Supplement to the Board's Proposed Guidelines for Evaluating Account and Services Requests* (Apr. 22, 2022), available at https://www.ftassociation.org/wp-content/uploads/2022/04/FTA-Letter-on-Fed-Updated-Proposal_April-2022.pdf.

- Third, a potential digital dollar should be distributed through trusted private sector intermediaries, including regulated fintechs and banks. Distributing a CBDC through fintechs holds substantial promise in expanding financial access and inclusion, as well as leveraging leading-edge technologies and promoting further payments innovation to better serve all payment users equitably.

Conclusion

FTA appreciates the opportunity to comment on the Board's request for comment on the topic of payments innovation and CBDC exploration. FTA believes that consumer-centric payments innovation – in all of its forms – is in the national best interest. Whether by way of FedNow implementation, Fed services access, or CBDC exploration, policymakers should leverage the capabilities, reach, and technological expertise of fintechs to best achieve broader public policy objectives. We look forward to further engagement with the Board on these important topics.

Sincerely,

Penny Lee
Chief Executive Officer
Financial Technology Association

May 20, 2022

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

RE: Comments on "Money and Payments: The U.S. Dollar in the Age of Digital Transformation"

Dear Ms. Misback:

Thank you for providing the opportunity to comment on "Money and Payments: The U.S. Dollar in the Age of Digital Transformation." This step in the public discussion of a potential central bank digital currency (CBDC) is an important one for the future of U.S. currency and the U.S. economy. The National Association of Convenience Stores (NACS) strongly supports the Federal Reserve creating a CBDC to modernize U.S. currency, improve payments, and strength the position of the United States in the world economy for the years to come.

Background on NACS

NACS is an international trade association representing the convenience store industry with more than 1,500 retail and 1,600 supplier companies as members, the majority of whom are based in the United States. The convenience industry's sole objective is to sell legal products, in a lawful way, to customers who want to buy them.

Among those products are motor fuels. The industry's fuel retailers sell 80 percent of the motor fuels in the nation and are generally independent businesses. Although some might bear the name of a large oil company, this is not indicative of any ownership stake in the business or the real estate, but simply of a marketing relationship or announcement to passing motorists that a certain company's product is available for purchase at that location (comparable to a soft drink advertisement in a grocery store window).

The convenience and retail fuels industry employed approximately 2.34 million workers and generated more than $705 billion in total sales in 2021, representing more than 3 percent of U.S. gross domestic product.

The industry, however, is truly an industry of small businesses. More than 60 percent of convenience stores are single-store operators. Less than 0.2% of convenience stores that sell gas are owned by a major oil company and about 4% are owned by a refining company. More than 95% of the industry, then, are independent businesses.

Members of the industry process more than 160 million transactions every single day. That means about half the U.S. population visits one of the industry's stores on a daily basis. In fact, ninety-three percent of Americans live within 10 minutes of one of our industry's locations. These businesses are particularly important in urban and rural areas of the country that might not have as many large businesses. In these locations, the convenience store not only serves as the place to get fuel but is often the grocery store and center of a community.

Problems with U.S. Payments

One assumption articulated in the Federal Reserve's paper on digital currency requires more focus. The paper states that the U.S. payment system is "generally effective and efficient."[1] In our view it is not. According to the Federal Reserve Bank of San Francisco's Diary of Consumer Payment Choice, credit cards accounted for 28 percent of consumer transactions in 2021, debit cards accounted for 29 percent, and cash was 20 percent.[2] But there are profound problems with credit and debit card payments in the United States. These payments carry with them the most fraud and the highest interchange fees in the world. These outcomes are the result of serious competition law and policy problems with payment cards. While the Federal Reserve's Regulation II has made substantial improvements with regard to the debit card market, some challenges remain. And, the credit card market has far more extensive problems.

The U.S. Senate Committee on the Judiciary had a hearing on the lack of competition in payments on May 4, 2022. The testimony submitted by NACS discussing those issues is attached to these comments in order to provide the Federal Reserve with background on the extensive problems currently plaguing the U.S. payment system. In particular, competition problems in U.S. payments have the most negative effects for lower income Americans. The negative cost externalities associated with the dominance of two payment card networks hit the most vulnerable Americans hardest and work against financial inclusion. The findings of the report recently released by the Hispanic Leadership Fund verify and dimension some of these inequities, confirming earlier findings from the Boston Federal Reserve.[3] These and other failures with current U.S. payments establish part of the reason why establishment of a CBDC should be a top priority.

Role of U.S. Currency in the World

Establishing a CBDC is also important to maintain the position of the U.S. dollar as the world's reserve currency and its use in many contexts around the world. Much of commerce and modern life has moved (or is moving) to digital platforms. Everything from large business deals to everyday transactions are increasingly happening in a digital environment. That is leading moves worldwide toward CBDCs. The United States needs to move in that direction to ensure that the dollar can continue to fulfill its role in the world economy. If there is no CBDC for the U.S. dollar, technological progress will ultimately mean that another currency takes the dollar's place.

That is particularly true given the clear momentum from nations around the world to adopt digital currencies. According to the Atlantic Council, nine nations have launched CBDCs, fifteen are in the pilot phase, sixteen are in development, and forty nations (including the United States) are categorized to be in the research phase.[4] In light of these moves, the United States should keep pace with the rest of the world so that it does not risk the prominence of the U.S. dollar.

[1] "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" at 8.
[2] Emily Cubides and Shaun O'Brien, "2022 Findings from the Diary of Consumer Payment Choice," Federal Reserve Bank of San Francisco (May 5, 2022) available at https://www.frbsf.org/cash/publications/fed-notes/2022/may/2022-findings-from-the-diary-of-consumer-payment-choice/#_ftn2.
[3] *See* Efraim Berkovich and Zheli He, "Rewarding the Rich: Cross Subsidies from Interchange Fees," (May 3, 2022) available at https://hispanicleadershipfund.org/new-hlf-report-highlights-effect-of-retail-swipe-fees-on-consumers-and-small-businesses/.
[4] *See* "Central Bank Digital Currency Tracker," Atlantic Council, available at https://www.atlanticcouncil.org/cbdctracker/.

Key Policy Considerations

When establishing a CBDC, the Federal Reserve should be fully aware of the following considerations.

Open Financial Offerings and Innovation

The Federal Reserve should ensure that there is an open market for financial services relating to CBDCs. While regulated banks would clearly provide such services, limiting financial services to those institutions would be a mistake that would inhibit innovation and the development of the market to the detriment of American consumers. Technologies relating to CBDCs could develop at a very rapid pace if technology providers are allowed to do that. We are already seeing important innovations with open banking systems around the world which can provide some helpful examples of ways to ensure that new technologies and players are able to participate in financial services and bring innovations to the market. Regulators in the European Union, United Kingdom, Australia, Hong Kong, and other nations have moved toward open banking.[5]

For a CBDC, the Federal Reserve should ensure that consumers have access to wallets or other technologies that allow individuals to hold CBDC without the involvement of a bank being necessary. Banks should be able to offer such services and compete for consumer-owned CBDC funds, but that industry should not be a required part of the chain for consumers to have and use CBDC.

Facilitating new innovations may be even more important in a world with CBDCs. Traditional banks will not have the incentive to provide innovative financial products and services if they have a monopoly on servicing consumers with CBDCs. That monopoly will get in the way of consumers getting the best products and services that new technological innovations can provide. The Federal Reserve should allow and encourage those innovations.

There are several functions for intermediaries to perform and the markets for those functions should be as open as possible. That is, whatever regulations are necessary to ensure businesses meet key standards, any business meeting the standards should be allowed to participate in the market – and regulations should not be designed to favor one industry (such as banking) or block others from participating. So, for example, as wide a variety as possible of financial companies and technology providers should be able to offer wallets, processing services, infrastructure and more. This should include a robust set of entities that can develop and deploy these services directly to consumers and businesses to allow everyone to use the CBDC to the greatest extent possible.

No Monopoly Providers

Similar to the need for an open market for financial services providers, the dominant payment card networks should not be brought into the Federal Reserve tent to develop CBDCs or systems for handling them. In whatever manner the Federal Reserve uses to develop CBDC technology, Visa and Mastercard should not be contractors to create it. As noted in the testimony included with this comment letter, those two companies have used and continue to use their positions of market power to dominate the payments market and unfairly disadvantage their competitors. They should not be put into a favored position in which they create a CBDC which could allow them to build-in advantages for themselves and their

[5] "Open Banking Around the World," Deloitte, available at https://www2.deloitte.com/global/en/pages/financial-services/articles/open-banking-around-the-world.html.

business models.

Clearance at Par (no exchange fees)

A benefit of a CBDC is that it would be currency. It must then be accepted as such. One of the Federal Reserve policies that had the greatest impact allowing the checking system to grow and benefit the U.S. economy in the twentieth century was the prohibition on exchange fees on checks – that is, the requirement that checks clear at par. That prohibition did not undermine the ability to develop value-added services. Instead, it ensured that value-added services had clear price cues to the customers deciding to use that service (such as a check guarantee service) rather than having a system of fees burden transactions that are not charged directly to the user of the service (and therefore are not transparent).

The counterexample that provides a cautionary tale is the development of credit cards. That market is characterized by a duopoly and has stifled innovation – particularly relating to security and fraud. Because of the interchange fees that are not transparent, credit card transactions have grown more expensive as the cost of handling transaction data has dropped and innovation has been limited to creatively assigning liability for fraud rather than preventing it (as well as increasing consumer rewards that further obscure actual price cues). As detailed in the attached testimony submitted to the U.S. Senate Judiciary Committee, that structure has led to negative outcomes for the U.S. economy, consumers, and merchants. A CBDC should be designed to ensure that such a system could not develop with respect to CBDC transactions.

Interoperability and Standard-Setting

One important way to ensure the benefits of a CBDC is facilitating the interoperability of different services to handle and transfer CBDC among and between consumers and businesses. As noted, there should be a wide variety of such services and providers to ensure innovation and create value for all users. Interoperability of systems to handle and process CBDC will be important to ensure it is accepted like physical cash and that Americans get the full convenience and value from a CBDC that they expect from cash.

Ensuring interoperability likely requires some standard-setting. The Federal Reserve should ensure that such standards are set by a broad cross-section of affected industries and not by organizations controlled by Visa or Mastercard. Such closed organizations include EMVCo and PCI. For a more detailed explanation of some of the ways in which Visa and Mastercard use standards as a tool to secure and expand their market power, we recommend reviewing a report from RPGC Group titled "Payment Insecurity: How Visa and Mastercard Use Standard-Setting to Restrict Competition and Thwart Payment Innovation."[6] Standards should facilitate open markets and interoperability, not solidify market share for dominant players.

Off-line Functionality

Providing for off-line functionality can help ensure financial inclusion and make a CBDC better fulfill the role played by physical currency. There are times when online functionality is not available. A CBDC should not be unusable in these contexts. To be an effective form of currency, a CBDC should be designed to meet as many use cases as possible. That can and should include times when there is no online option. Meeting these situations will be particularly useful for low-income consumers and those who live

[6] Available at Microsoft Word - Payment Insecurity V0.1 (2 Columns)-c2.docx (securepaymentspartnership.com).

in more remote locations across the nation. Americans expect to be able to use physical currency in virtually any scenario and the same should be true for a CBDC.

Speed of Settlement

Payment systems should increase the speed at which transactions are settled. This is particularly relevant in light of the current economic environment with rapidly changing inflation and interest rates. But, transaction speed is always an important facet of payments. The current card-based payments systems in the U.S. – particularly dual message debit and credit – should settle faster. The Federal Reserve's faster payment efforts will help improve the overall payment landscape and move things toward real-time settlement. A CBDC could significantly advance these efforts. A CBDC, because it is actual currency, could transfer in real time. And, allowing open interoperability with a full range of technologies may allow any number of additional services to be enabled and enhanced by this speed of settlement. Transaction speed can and should be a key consideration in the development of a CBDC.

* * *

Payments in the United States need greater innovation and competition. The current card-based system is dominated by a duopoly which increases costs and squelches innovation. A CBDC can help bring technology to bear in a way that will increase efficiency across the economy, open up new advances in financial services designed to handle the CBDC in ways that enhance Americans' experiences on a global scale, and it can protect and extend the critical role that U.S. currency already plays in the world. Moving forward expeditiously should be seen as an imperative for the nation.

We look forward to future opportunities to engage with the Federal Reserve during its work on a CBDC and urge you to ensure a full role for retailers across the nation during the consideration and work on a CBDC so that the diversity of business cases engaged in by these businesses and their customers are served by a CBDC. Retailers should be involved in every step of the development of a CBDC to ensure it meets the significant transaction needs of the industry – and to help protect against the potential for the businesses that currently dominate the card-based payment system and make it less efficient and effective than it should be to extend that dominance to the design of a CBDC. A CBDC can and should be an opportunity to improve upon the current state of the U.S. payments system and avoid the problems that market dominance by a small number of firms has created.

Thank you for your work and for the opportunity to comment.

Sincerely,

Doug Kantor
General Counsel

Attachment

TESTIMONY OF
DOUG KANTOR
GENERAL COUNSEL, NATIONAL ASSOCIATION OF CONVENIENCE STORES
BEFORE THE
U.S. SENATE COMMITTEE ON THE JUDICIARY
HEARING ON
"EXCESSIVE SWIPE FEES AND BARRIERS TO COMPETITION IN THE CREDIT AND DEBIT CARD SYSTEMS"
MAY 4, 2022

1600 Duke Street | Alexandria VA 22314-3436 | 703.684.3600 office | 703.836.4564 fax

Thank you for providing me with the opportunity to testify on the swipe fees that are imposed by the credit card industry on merchants. Most consumers are not aware of these fees and do not see the effects they create on the cost of goods and services and the U.S. economy, but those effects are dramatic. For merchants, the fees are a constant source of stress and financial difficulty, while for the economy the fees reduce economic efficiency and contribute significantly to inflation.

I am testifying today on behalf of my association, the National Association of Convenience Stores (NACS), as well as a coalition that we helped found to try to address these issues, the Merchants Payments Coalition (MPC). NACS is an international trade association representing the interests of the convenience industry. In the United States, the industry includes more than 148,000 stores employing 2.3 million people. It is truly an industry of small business with a full 60 percent of the industry comprised of single-store operators. The industry handles about 165 million transactions each day – a number equivalent to about half of the U.S. population. An efficient and competitive payment system is critical to the health of the industry and its employees.

The MPC is a group of retailers, supermarkets, restaurants, drug stores, convenience stores, gas stations, online merchants, and other businesses focused on reforming the U.S. payment system to make it more transparent and competitive.

I. Executive Summary

The credit and debit card systems in the United States are burdened by anti-competitive conduct that makes the systems less efficient and effective than they should be. Two payment card networks, Visa and Mastercard, dominate the market and bring together thousands of banks across the nation to wield market power in ways that harm competition in the marketplace. Merchants have no realistic options to the dominant networks. With very few exceptions, merchants must accept all credit and debit cards that run over those two networks no matter how high the fees the networks charge and no matter how onerous the rules and conditions they impose. The high fees that result from this exercise in market power inflate the costs of goods and services across the nation in a way that harms consumers.

Visa and Mastercard each separately set the fee rates for the swipe, or interchange, fees that all the banks that issue cards with those networks charge to merchants. Because the swipe fees are centrally set in this way, the banks don't compete on price. That leads to problems that are common for anti-competitive arrangements – high and escalating prices and neglect of key aspects of the service (such as protection against fraud). Visa and Mastercard also dictate a complex set of terms or rules that govern how credit card transactions happen. These terms further insulate swipe fees from competitive market pressures and, in most cases, keep the fees confusing for merchants and hidden from consumers.

In particular, by imposing a rule that requires a merchant to accept all cards issued with a Visa (or Mastercard) logo if the merchant wants to accept any cards carrying those networks, the two largest networks remove the incentives for banks to negotiate with merchants on price or acceptance of their cards – and remove almost all bargaining power that merchants otherwise might have had. This is a central element of the credit and debit card systems in the United States today and creates additional competition policy problems.

The problems caused by all this for consumers, merchants and the economy are immense. Total card fees imposed on merchants were $138 billion last year – up from $64 billion in 2010. Of that total, $77.5 billion are fees for Visa and Mastercard branded credit cards and $28 billion are fees for Visa and Mastercard branded debit cards - $105.5 billion on just those two networks. The size of the fees and the

fact that they are set largely as a percentage of transaction amounts means that they are an inflation multiplier. The United States already pays the highest swipe fees in the industrialized world. The roles played by the two dominant card networks and the fees and terms they set cause other problems as well by reducing incentives for innovation in new payment products and improvements in services such as fraud protection. The United States should have the most efficient, effective and innovative payment system in the world, but we don't. This market desperately needs changes so that there are competitive market forces that improve payments for everyone.

This testimony will cover a few topics relating to swipe fees. First, it will lay out some background on how credit and debit card payments work. Second, it will address the competition policy problems created by those payment systems. Third, the testimony will discuss the negative impact these fees have on merchants. Fourth, the testimony will note the negative impact of the fees on consumers. Fifth, it will describe the negative impact of swipe fees on the U.S. economy. Sixth, it will walk through a number of the myths that the credit card industry regularly espouses in order to distract from the problems with these payments.

II. How Card Payments Work

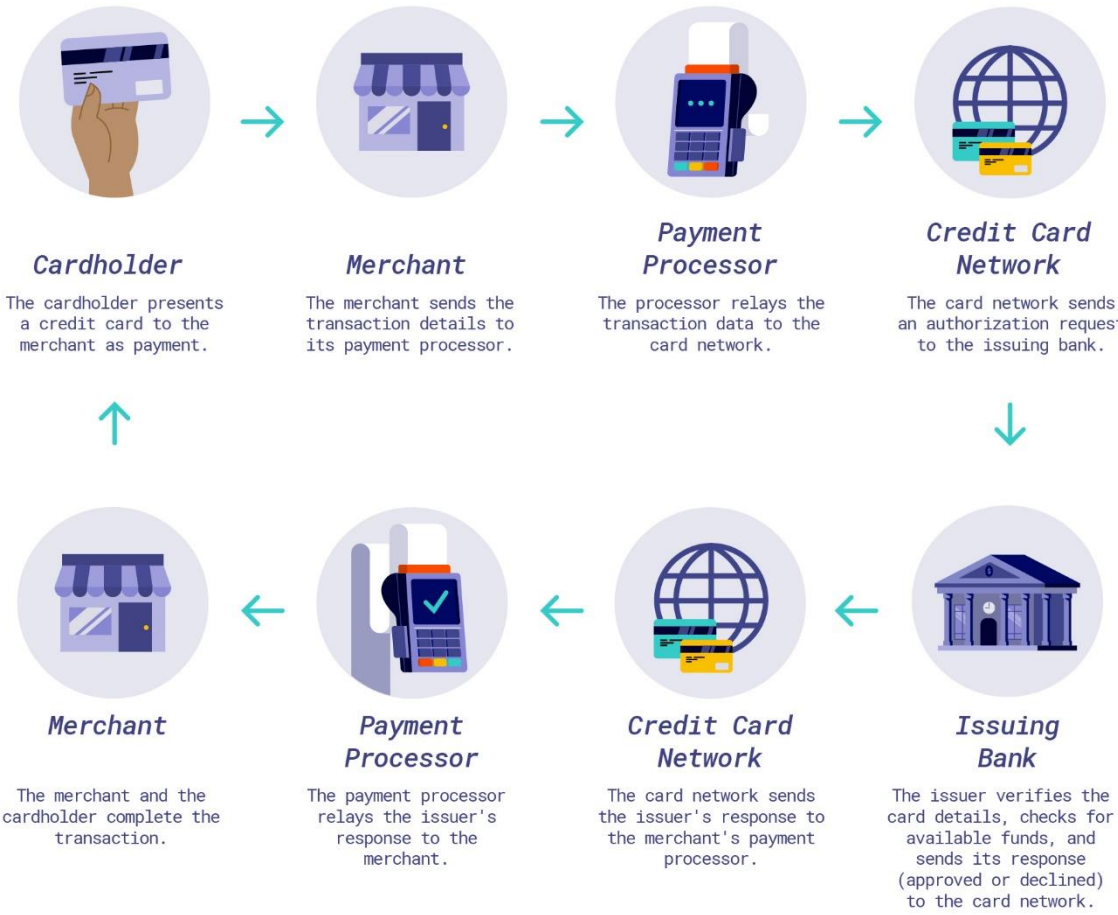
In order to understand the competition problems with the credit and debit card markets, it helps to have some background on how these payments work. Neither Visa nor Mastercard, the two largest card networks, has a direct relationship with individual cardholders. Financial institutions such as banks and credit unions actually enter into agreements with individuals and issue cards to them. The structure is similar with merchants. The merchants contract with banks or payment processors to handle the merchants' acceptance of payment cards.

Visa and Mastercard actually started as associations of their bank members.[7] They do a few things to make card payments happen. They maintain data lines that connect the banks that issue cards to consumers with the banks that work with merchants. They also advertise their brands to make the cards more appealing to consumers and businesses. And, they set the prices that the card issuers charge to merchants as well as the rules that govern how cards are issued and processed. It is this price- and rule-setting role that raises antitrust issues to be addressed below.

A good explanation of the process of a card payment can be found at knowyourpayments.com.[8] In the simplest terms, when an individual dips or swipes a payment card at a store, the information necessary to process that payment goes to the merchant's bank (or processor) who sends the information to a card network (e.g., Visa or Mastercard) and that network sends the information to the card issuer (the bank that gave the consumer that card), then a message authorizing the transaction (or declining it) goes back through each of those entities to the merchant's payment terminal allowing the transaction to take place. The clearance and settlement of the funds takes place later through a similar process. The graphic below depicting this basic process can be found at corporatetools.com.

[7] Both companies changed their structures in the 2000s in order to try to insulate themselves from antitrust liability after a court of appeals held in 2003 that Visa and Mastercard "are not single entities; they are consortiums of competitors" and that the rule then challenged by the DOJ was "a horizontal restraint adopted by 20,000 competitors." *United States v. Visa U.S.A. Inc.*, 344 F.3d 229, 242 (2d Cir. 2003). Some major banks still own billions in restricted shares in the companies that they cannot sell pending final outcomes of antitrust litigation.

[8] *See* Know Your Payments » Transaction Basics.



According to the Federal Reserve Bank of San Francisco's Diary of Consumer Payment Choice, credit cards accounted for 27 percent of consumer transactions in 2020, debit cards accounted for 28 percent, and cash was 19 percent.[9] This represented a large jump in credit card payments, which had been 24 percent of payments in 2019.

There are fees that each player involved in the processing of the card takes out of the amount that the merchant gets paid in the transaction. By far the largest fee is the swipe fee, or interchange fee, which goes to the bank that issued the consumer the card. That fee alone can account for about 80-85 percent of all of the fees involved in the transaction. The networks, such as Visa and Mastercard, impose their own separate fees, called network fees, in addition to the swipe fees. And, the merchant's processor or bank receives a fee for its services. Processing is a reasonably competitive market. Merchants don't always like how much they pay in those processor fees, but they have options to do business with different processors (or negotiate new agreements) and that helps discipline that cost. Merchant concerns about network fees are different than concerns about swipe fees. Networks set their own fee amounts, which is appropriate. Unfortunately, the two major networks have structured and applied their network fees to have certain anti-competitive effects to protect and grow their market power. The networks' market share and the way the networks bring together the card-issuing banks has enabled them to do this. Those concerns are related to,

[9] Kelsey Coyle, Laura Kim and Shaun O'Brien, "2021 Findings from the Diary of Consumer Payment Choice," Federal Reserve Bank of San Francisco (May 5, 2011) available at 2021 Findings from the Diary of Consumer Payment Choice – Cash (frbsf.org). Credit cards make up a larger percentage of payments in e-commerce.

but different than, the problem created by anti-competitive behavior in the setting of swipe fees by the two major networks on behalf of card-issuing banks, which is discussed below.

Credit card issuing is very concentrated among a small number of very large banks. The ten largest credit card issuers in the United States collectively have about 80 percent of the credit card issuance market.[10] Those issuers compete to get consumers to get and use their cards. They do this through a complex set of pricing mechanisms that include interest rates, a variety of rewards offerings, and a number of potential penalty fees and related terms. These complex pricing mechanisms can be difficult for consumers to evaluate and may lead them to choose offers that are less favorable than other offers.[11] And, the enticement of credit card offers can lead consumers to create financial problems for themselves that are challenging to fix.

Because credit card issuers receive fees from merchants every time one of their cards is used, they have a strong incentive to push for those cards to be used as many times as possible. They have been particularly aggressive in trying to get consumers to use their cards for small, everyday purchases. Using credit for everyday purchases, of course, can create financial problems for consumers if they are not careful. Unfortunately, card issuers can be less concerned about individuals' financial problems due to the revenue those issuers earn from merchants.

Though there are problems, consumers at least have the benefit of competition among different credit card issuers that try to get their business. That can lead to helpful offers. Merchants, however, do not have that benefit due to the way that the two dominant card networks bring together card issuers from across the country into their two networks.

III. The Credit Card Industry's Anti-Competitive Activity

The central problem with credit cards in the United States is that the two largest networks, Visa and Mastercard, set the amounts of the swipe fees that the card-issuing banks charge for each transaction and they set the terms governing how these transactions happen. All of those card-issuing banks – particularly the largest ones which have the vast majority of credit card market share – could set their own prices and compete with each other for merchants' business. Those card issuers all compete that way for consumers' business. But, they refuse to compete for merchants' business. One hundred percent of the banks that issue cards with Visa logos agree to charge merchants the same schedule of network-fixed fees. The same is true for the banks that issue cards with Mastercard logos on them.

There is no avoiding the destructiveness of these agreements not to compete on price. Merchants have no ability to refuse accepting payment from virtually all the banking institutions across the nation. That is in part because retail is incredibly competitive in the United States. There are many different types of merchants trying to out-compete each other on price and service for the business of the American consumer. If one of them stops taking these credit cards, the competitor across the street will take some of their business. So, merchants take the cards and the fees increase at dramatic rates. In fact, economists with the Kansas City Federal Reserve Bank have studied these fees and found that, in light of the central fee-setting structure and the competitiveness of U.S. retail, swipe fees will increase to the point that retailers

[10] Bianca Peter, "Credit Card Market Share by Issuer," (Feb. 24, 2022) available at https://wallethub.com/edu/cc/market-share-by-credit-card-issuer/25530.

[11] For an explanation of some of these confusing prices and terms, *see* Consumer Reports, "What Credit Card Offers and Rewards are Best for you?" (November 2012) available at https://www.consumerreports.org/cro/magazine/2012/11/the-best-credit-card-for-you/index.htm; and Adam Levitin, "Testimony Before the U.S. Senate Committee on Banking, Housing, and Urban Affairs," (July 19, 2011) available at https://www.banking.senate.gov/imo/media/doc/LevitinTestimony71911.pdf.

may go out of business.[12] That is the only effective brake on the steep rise on these fees.

It is also important to note that the swipe fees banks charge merchants to accept their cards (the ones set by Visa and Mastercard) are not the same every time. In fact, they can vary dramatically. Visa and Mastercard set complex schedules of fee rates, and the fees vary based on the level of rewards associated with the card, the type of merchant accepting the card, the manner in which the card is accepted (online versus in-person and other aspects of acceptance) as well as, in some sectors, the card network's view of the merchant's level of security.[13] The fees for the most expensive cards can be about triple the amount of the fees for the least expensive cards for some merchants.

In addition to the fee-setting, however, Visa and Mastercard impose a set of terms that further insulate those prices from the possibility of any competitive market forces keeping the fees in check. There are hundreds of pages of these terms and problems with them are detailed well in ongoing antitrust litigation that is pending in the U.S. District Court for the Eastern District of New York.[14]

There are a few of these terms that merit particular attention. One, of course, is the central price-setting engaged in by Visa and Mastercard noted above. Another is the so-called "honor all cards rule." This "rule" is imposed by both Visa and Mastercard on merchants. It creates an all-or-nothing proposition for every merchant across the country and says that if a merchant wants to accept any Visa- (or Mastercard-) branded credit card, that merchant must take every credit card with that brand (and the same with debit cards). "Honor all cards" completely removes any possibility for a merchant to negotiate prices or terms with any bank – and completely removes the incentive for any bank to try to negotiate prices or terms with any merchant.

Removing those normal market incentives for price competition and negotiated deals is very significant. Because the fees are so much higher for some cards than for others, merchants very sensibly might want to accept some of them but not others (for fear of going out of business). But, they can't make that choice. If they could, of course, banks issuing the most expensive cards might be inclined to cut their prices, but they don't need to worry about that because Visa and Mastercard have removed the normal market dynamics from the playing field.

Visa and Mastercard also put restrictions on banks to stop competition from creeping into the picture. They both prohibit banks from making any network that competes with them active on those banks' credit cards.[15] That way, one hundred percent of the transactions on credit cards that have Visa enabled on them go through the Visa network (and the same is true for Mastercard).

These prohibitions are very similar to rules that were the subject of litigation the U.S. Department of Justice filed against Visa and Mastercard in 1998. The rule in question was known as the exclusionary rule. It prohibited banks that issued cards under Visa's or Mastercard's brands from issuing cards from any of their competitors (including companies such as American Express and Discover). The U.S. Circuit Court of Appeals for the Second Circuit ruled in favor of the Department of Justice in that case and the

---

[12] Fumiko Hayashi, "A Puzzle of Card Payment Pricing: Why Are Merchants Still Accepting Card Payments?" Federal Reserve Bank of Kansas City (2004) available at https://ideas.repec.org/p/fip/fedkpw/psrwp04-02.html.

[13] There are other factors that can change the economics as well such as other services (including tokenization, fraud detection, and other services) that the networks have tried to control.

[14] A redacted version of the complaint filed in the case by NACS and others can be found at: https://constantinecannon.com/wp-content/uploads/2022/04/13-cv-5746-Doc.-183-6th-Amd.-Complaint-Redacted.pdf.

[15] Federal Reserve Regulation II prohibits these types of exclusivity requirements on debit cards.

exclusionary rule is no longer permitted.[16] NACS filed comments with the Federal Trade Commission last fall discussing how Visa and Mastercard's prohibitions against banks issuing credit cards with other networks on them violates the antitrust laws and harms competition.[17]

Visa and Mastercard also have a long history of restricting how merchants price their products to their customers. These restrictions formed a veil of secrecy around swipe fees that further insulated the fees from competitive market pressures. Some of those restrictive terms have been eroded through legal challenges over time. For example, the Department of Justice and seventeen states entered into a consent decree with Visa and Mastercard that became final in 2011 which prohibited those two networks from preventing merchants from offering their customers discounts for using less expensive payments.[18] Prohibiting merchants from giving American customers discounts strikes directly at the heart of how competitive markets should work. But, that is just one in the long line of actions the two largest networks have taken to undercut competition in the credit card market.

In fact, Visa and Mastercard's fee- and term-setting have turned competition on its head. While competition normally causes businesses to try to keep prices low in order to attract market share, Visa and Mastercard don't compete for merchants' business. The honor all cards rule and lock-up of all the banks takes care of that. Instead, Visa and Mastercard only compete to attract banks to issue more of their cards. They do that by trying to push the swipe fees they set on behalf of those banks higher and higher.[19] It is the opposite of what real competition does and demonstrates how the market is broken.

The major card networks have also taken actions that erode competition from smaller networks. One recent example of these anti-competitive activities was the subject of an opinion by the U.S. Fifth Circuit Court of Appeals in litigation brought by Pulse, a debit network, against Visa. In that case, the Fifth Circuit found that Pulse's claims that Visa had violated antitrust laws to squeeze Pulse out of the debit market should be decided by a jury, "And a reasonable jury could find that some of Visa's volume-based agreements amount to exclusive-dealing contracts designed to squeeze Pulse out of the PIN-less transaction market."[20] That was just the latest legal action raising troubling concerns about what the largest payment networks do to harm competition.

Visa has also sought to bolster its hold on the market and keep out innovative competitors through acquisition. Its attempt to acquire Plaid – a potential competitor in the debit market – led to a lawsuit from the Department of Justice to block the deal.[21] Plaid offers a potential alternative technology for consumers to access funds in their bank accounts to pay for things which "likely would drive down prices for online

---

[16] *United States v. Visa* U.S.A., Inc., 344 F.3d 229 (*2d Cir. 2003*), cert denied, 543 *U.S.* 811 (2004), available at Second Circuit Decision in U.S. v. Visa (02-6074) | ATR | Department of Justice. American Express and Discover each sued for the damages they suffered due to the rule and reached settlements with Visa and Mastercard. Discover, Visa and MasterCard settle antitrust suit | Reuters.

[17] NACS-Comments-to-FTC-on-Unfair-Contract-Clauses-Fi.pdf (convenience.org).

[18] Final Judgment as to Defendants Mastercard International Incorporated and Visa Inc. | ATR | Department of Justice. The states that joined the action and consent decree were: Arizona, Connecticut, Idaho, Illinois, Iowa, Maryland, Michigan, Missouri, Montana, Nebraska, New Hampshire, Ohio, Rhode Island, Tennessee, Texas, Utah, and Vermont.

[19] Andrew Martin, "How Visa, Using Card Fees, Dominates a Market," New York Times (Jan. 4, 2010) available at https://www.nytimes.com/2010/01/05/your-money/credit-and-debit-cards/05visa.html ("Competition, of course, usually forces prices lower. But for payment networks like Visa and MasterCard, competition in the card business is more about winning over banks that actually issue the cards than consumers who use them. Visa and MasterCard set the fees that merchants must pay the cardholder's bank. And higher fees mean higher profits for banks, even if it means that merchants shift the cost to consumers.")

[20] *Pulse Network, LLC v. Visa, Inc.*, No. 18-20669, 18 (5th Cir. Apr. 5, 2022).

[21] Complaint, *U.S. v. Visa, Inc. and Plaid, Inc*. (Nov. 5, 2020).

debit transactions, chipping away at Visa's monopoly and resulting in substantial savings to consumers."[22] Visa wanted to block the innovation and cost savings that Plaid could bring to the market by acquiring it – similar to Visa's past pattern of trying to block competition.[23] Acquisitions, exclusivity contracts and other moves have been used by Visa to protect its market power and block potential competition. All of this, of course, has been a detriment to the market, merchants, consumers, and the economy.

IV. Swipe Fees Hurt Merchants

Credit and debit card swipe fees are huge business and are growing at an alarming rate. Collectively, U.S. merchants paid $138 billion in fees to accept card payments last year.[24] That was a huge jump from the $110 billion that merchants paid in 2020.[25] That is on top of the fees nearly doubling in the decade between 2010 (when the fees were $64 billion) and 2020.[26] And, it followed the decade between 2001 and 2010 when the fees more than tripled from $16 billion to $64 billion.[27] The huge multiples by which the fees have grown seem impossible, but that is what happens when there is price-fixing in place of competition.

In the convenience industry, recent fee increases have been even more dramatic. In 2021, the fees paid by convenience retailers to accept payment cards jumped by 26.5 percent.[28] Not only that, but the rate of increase has been even higher thus far in 2022 – and that was even before Visa and Mastercard moved forward with rate increases in April that, combined with the rate increases that Visa publicly said it would delay last year amount to an additional $1.2 billion per year in additional fees.[29] These increases are completely unsustainable.

Even before these dramatic jumps, swipe fees, on average, were convenience retailers' second-largest operating cost after labor. In fact, that is true for retailers in every sector. That means swipe fees are more than the average retailer pays for rent or utilities or for any other operating cost. Some convenience retailers have even reported that the fees are approaching their labor costs.

One reason for these dramatic increases is the destructive interaction between swipe fees and inflation. The majority of the amount of credit card swipe fees are set as a percentage of the total amount of each transaction. That means swipe fees increase along with every dollar of inflation. And, those swipe fees act as an inflation multiplier forcing retailers to try to increase their revenues to keep up with the spiraling fees.

During its last two earnings calls, in fact, Visa made clear that it is "a beneficiary of inflation," and that inflation is "a positive for us."[30] Most Americans and American businesses would not say the same of

---

[22] *Id*. at ¶ 8.
[23] *Id*. at ¶¶ 44-45.
[24] Nilson Report (March 2022) available at Nilson Report | News and Statistics for Card and Mobile Payment Executives. As noted, $77.5 billion of the total are Visa and Mastercard credit card fees and $28 billion are Visa and Mastercard debit card fees.
[25] Nilson Report (July 2021) available at Nilson Report – Merchant Processing Fees in the United States—2020.
[26] Stephen Mott, "Industry Facts Concerning Debit Card Regulation Under Section 920," (Oct. 27, 2010) at 14, available at http://www.federalreserve.gov/newsevents/files/merchants_payment_coalition_meeting_20101102.pdf.
[27] *Id*.
[28] NACS State of the Industry (April 2022).
[29] Lynne Marek, "There was no stopping credit card fee hikes this year," Payments Dive (April 7, 2022) available at https://www.paymentsdive.com/news/there-was-no-stopping-credit-card-fee-hikes-this-year/621741/.
[30] *See* Logan Kane, "Visa: A Great Business, But Wait for a Pullback," Seeking Alpha (April 26, 2022) available at https://seekingalpha.com/article/4503588-visa-great-business-wait-for-pullback; "Visa (V) Q2 Earnings Call Transcript," Motley Fool Transcribing (April 27, 2022) available at https://www.fool.com/earnings/call-transcripts/2022/04/27/visa-v-q2-

themselves.

An area that has among the largest impacts for the convenience industry and for American consumers are gas prices. This industry sells about 80 percent of the gasoline used across the nation. Retailers, similar to their customers, like an ample supply of gasoline and low prices. That is because as gas prices rise, the margins retailers make actually get smaller. Competition in the market means that retailers cannot pass along their own increased wholesale costs as quickly as they pay those costs. At the same time that retailers' margins are getting squeezed, however, their credit card fees are rising because they are a percentage of the total transaction amount. That means there have been many times during the past few months when retailers were paying more in swipe fees (often about 10 cents per gallon) than they were ultimately making on those sales. That makes no sense given the costs retailers incur and risks they take to maintain a site with underground storage tanks, transport fuel, and sell it to customers (often staying open 24 hours per day in the midst of a labor shortage and, in the past two years, a pandemic). Processing those transactions should not cost more than the profits that can be made after all of that effort.

What is particularly troubling for many businesses, however, is that they are powerless to plan for or deal with these rising costs. They can take measures to keep other costs in check – installing more energy-efficient equipment, using a different supplier, and the like. But there is no dealing with swipe fees because of the competition problem noted above and the unpredictability of the increases. Businesses just don't know how much the fees will go up. Even after new rates are announced it is difficult to predict how those rates will impact a merchant's fees because the card networks have made the system so complex. GAO reported that Visa and MasterCard each had four credit card rate categories in 1991, but by 2009 Visa had 60 rate categories and MasterCard had 243.[31] The numbers have grown since that time and that complexity helps obscure the consistent, large fee increases that merchants must bear.

It is worth noting that the fees increase even when Visa and Mastercard do not "raise" them. As noted, inflation is one reason that happens. Another reason is that the banks issuing cards simply push higher fee cards into the market. That is true for their new and existing customers. Many cardholders receive notification from their bank that they now have a different level of rewards or other perks. It might not be clear to the cardholder why that is, but it is not a mystery to merchants – it means the merchant must pay higher swipe fees. By systematically moving cardholders to more expensive cards, banks can drive up swipe fees without Visa and Mastercard changing their rate schedules at all.

Of course, merchants do not have visibility into the card issuing decisions that drive up their fees. Frankly, merchants have very little visibility into the price-setting engaged in by Visa and Mastercard. Merchants don't receive direct communications of these changes from Visa and Mastercard. Those notifications go to banks and processors. Typically, when sent, those notifications are confidential so that they cannot be passed along to merchants. The price changes that can so dramatically impact merchants' bottom lines become rumors in the marketplace until they are sprung on merchants with very little notice. The price increases that both Visa and Mastercard instituted just a couple of weeks ago followed this pattern of poor communication and notice. The lack of clarity is just another sign of how broken this market is.

2022-earnings-call-transcript/.

[31] Government Accountability Office, "Credit Cards: Rising Interchange Fees Have Increased Costs for Merchants, but Options for Reducing Fees Pose Challenges," (2009) at Credit Cards: Rising Interchange Fees Have Increased Costs for Merchants, but Options for Reducing Fees Pose Challenges | U.S. GAO.

V. Swipe Fees Hurt Consumers

Ultimately, of course, all of us pay for these overinflated swipe fees in the prices of the goods and services we buy. The fierce price competition in retail ensures this. Retail profit margins are notoriously low. As of January of this year, for example, net profit margins for general retailers were 2.65 percent.[32] For convenience stores, those margins were 2.47 percent.[33] For grocers and other food retailers, those margins were even narrower – 1.11 percent.[34] With those margins, which are around or below the level of swipe fees these businesses pay, those fees must be passed on to consumers or retailers would go out of business.

It is worth noting that while retailers' margins are notoriously thin, banks' and credit card networks' margins are very large. The money center banks that dominate credit card issuing have net margins of 32.61 percent.[35] Visa's net profit margin as of the end of 2021 was 51.59 percent and Mastercard's was 46 percent.[36] All of those margins are instructive as to the relative competitiveness of these sectors. No other industry sector reported on by NYU had net profit margins as large as the money center banks, and it is likely that none would dare dream of margins at the level of Visa's and Mastercard's.

The current system fools consumers by hiding the large interchange fees that are built into the cost of their purchases. To quote one of my fellow witnesses today, Ed Mierzwinski of U.S. PIRG, "Interchange fees are hidden charges paid by all Americans, regardless of whether they use credit, debit, checks or cash. These fees impose the greatest hardship on the most vulnerable consumers – the millions of American consumers without credit cards or banking relationships. These consumers basically subsidize credit card usage by paying inflated prices – prices inflated by the billions of dollars of anticompetitive interchange fees. And unfortunately, those credit card interchange fees continue to accelerate, because there is nothing to restrain Visa and MasterCard from charging consumers and merchants more."[37] In addition, over the years, consumer groups including the Consumer Federation of America, Consumer's Union, and Consumer Action have all submitted Congressional testimony criticizing the current system of swipe fees because it is not fair to consumers.

In addition, the European Commission has found that interchange fees harm consumers. In December 2007, the Commission found MasterCard's multilateral interchange fee illegal and Competition Commissioner Neelie Kroes said that interchange "inflated the cost of card acceptance by retailers without leading to any advantage for consumers or retailers. On the contrary, consumers foot the bill, as they risk paying twice for payment cards. Once through annual fees to their bank. And a second time through inflated retail prices . . ."[38] Kroes concluded that MasterCard's interchange "acts like a 'tax on consumption' paid not only on card users but also by consumers using cash and cheques."

One of the most troubling aspects of the high swipe fees imposed by the broken credit card market is the way they impact low-income Americans. The fees get baked into the prices of goods and services with very few exceptions in part due to the longtime pricing constraints imposed by Visa and Mastercard.

---

[32] New York University, "Margins by Sector (US)," at Operating and Net Margins (nyu.edu).
[33] NACS State of the Industry (April 2022).
[34] *Id*.
[35] *Id*.
[36] *See* Visa Profit Margin 2010-2021 | V | MacroTrends and Mastercard Profit Margin 2010-2021 | MA | MacroTrends.
[37] "Testimony of Ed Mierzwinski before the House Judiciary Committee Antitrust Task Force," (May 15, 2008).
[38] "**Commission Prohibits MasterCard's intra-EEA Multilateral Interchange Fees:** Introductory remarks at press conference," available at https://www.parlement.com/id/vhqtky3qp9z8/nieuws/toespraak_eurocommissaris_kroes_over.

So, those who do not have or cannot qualify for credit cards pay the cost of these fees as well – as do cardholders with basic cards that don't carry rewards. In 2009, the Hispanic Institute published a paper showing how payment card swipe fees and rewards systematically transferred wealth from low income to high income individuals.[39]

A working paper published by Boston Federal Reserve economists came to the same conclusion: that swipe fees combined with rewards programs amount to a regressive system in which low-income Americans subsidize high-income Americans.[40] This disproportionate negative effect on low-income consumers is particularly unfair.

An updated study was just released by the Hispanic Leadership Fund. That study found:[41]

1) "Lower income Americans are losing money to higher income individuals.
   - American families earning less than $75,000 per year send a total of $3.5 billion to families earning more than $75,000 per year
   - More than $1.9 billion of that money goes into the pockets of those making more than $150,000 per year.
   - Families making less than $20,000 per year pay more than $1.2 billion of the $3.5 billion that gets transferred to higher income people"

2) "Black families are disproportionately harmed by today's credit card schemes.
   - The average American Black family pays nearly $60 per year to subsidize higher income people's rewards through these fees
   - Black families in the United States lose more than $1 billion each year from these transfers"

3) "The current swipe fee structure drives up shelf prices for all Americans regardless of how you pay.
   - The study found that swipe fees cost some retailers between 17 and 19 percent of annual profit.
   - Annual variation in interchange costs drives profit up and down by about 4.5 percent for smaller stores. This added risk generates economic inefficiency, and the entire economy suffers from this unneeded risk."

Those findings are staggering. Low income Americans should not be forced to pay for their wealthy neighbors' airline tickets, but that is precisely what Visa and Mastercard's anti-competitive practices cause.

Not only have fees increased dramatically and moved money from low-income to high-income Americans, but these fees change the nature of the credit card business in a way that hurts consumers. As Georgetown Law professor Adam Levitin observed in testimony before the House Judiciary Committee, the huge fee revenue the banks earn from credit card transactions taking place has created bad incentives.

---

[39] Hispanic Institute, "Trickle-Up Wealth Transfer: Cross-subsidization in the payment card market," by Efraim Berkovich (Nov. 2009) available at Trickle-Up Wealth Transfer: (thehispanicinstitute.net).

[40] Marie-Helene Felt, Fumiko Hayashi, Joanna Stavins, and Angelika Welte, "Distributional Effects of Payment Card Pricing and Merchant Cost Pass-through in the United States and Canada," Federal Reserve Bank of Boston (Dec. 2020) at 4, available at https://www.bostonfed.org/publications/research-department-working-paper/2020/distributional-effects-payment-card-pricing-merchant-cost-pass-through-united-states-canada.aspx.

[41] Efraim Berkovich and Zheli He, "Rewarding the Rich: Cross-Subsidies from Interchange Fees," Hispanic Leadership Fund (May 2022) available at https://hispanicleadershipfund.org/.

He testified, "The card industry's business model is the heart of the problem and needs to change. Just as with subprime mortgages, the credit card business model creates a perverse incentive to lend indiscriminately and let people get into so much debt they can't pay it back."[42]

Others have clearly observed this trend as well. For example, Acting Comptroller of the Currency Julie Williams said in March 2005, "Today the focus for lenders is not so much on consumer loans being repaid, but on the loan as a perpetual earning asset . . . it's not repayment of the amount of the debt that is the focus, but rather the income the credit relationship generates through periodic payments on the loan, associated fees, and cross-selling opportunities."[43] These changes mean that banks are less worried than they should be about consumers' welfare. It should be in the interest of banks for consumers to do well and be able to pay back credit card loans. But the huge fee income the banks generate through interchange and other means gives them another incentive – milk consumers for all they are worth and don't worry about the money getting paid back.

The bottom line is that abuse of consumers by banks will continue as long as they have the incentive to treat people that way. Interchange fees are the key incentive with which Congress has not yet dealt. The abuses of consumers and using credit cards as predatory lending vehicles will continue until something is done about interchange fees.

The credit card industry strenuously argues that if anything at all happens to reduce swipe fees, then other fees paid by consumers will increase and consumers will be in a worse position than they are today. This is false. In fact, the European Commission's Directorates for Competition and Financial Services jointly conducted a comprehensive study into the European payment card industry in general, and Visa and MasterCard in particular. The Commission found no evidence to support the card systems' arguments that the high fee levels associated with the existing interchange system benefit consumers. In particular, the Commission rejected arguments that lower interchange fees to merchants would result in higher fees to consumers:

> "There is no economic evidence for such a claim. Firstly, the inquiry's data suggests that in most cases card issuers would remain profitable with very low levels of interchange fees or even without any interchange fees at all. Secondly, the international card networks have failed to substantiate the argument that lower interchange fee would have to be compensated with higher cardholder fees. The evidence gathered during the inquiry rather suggests that the pass-through of higher interchange fees to lower cardholder fees is small. Consumers already pay the cost of the interchange fee without knowing it. This cost is now hidden in the final retail price and is therefore non-transparent."[44]

VI. Swipe Fees Hurt the U.S. Economy

Payments should not cause all of these negative outcomes. The purpose of having money is to reduce transaction costs and make buying and selling things more efficient. Our credit card system does

---

[42] Adam J. Levitin, Testimony before the House Judiciary Subcommittee on Commercial and Administrative Law, "Consumer Debt – Are Credit Cards Bankrupting Americans?" (April 2, 2009).

[43] Remarks by Julie L. Williams, Acting Comptroller of the Currency, Before the BAI National Loan Review Conference, New Orleans, LA, (March 21, 2005) available at http://www.occ.treas.gov/ftp/release/2005-34a.pdf.

[44] European Commission, Directorates on Competition and Financial Services, *Competition: Final report on retail banking inquiry – frequently asked questions*, Jan. 31, 2007, *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/40&format=HTML&aged=0&language=EN&guiLanguage=en.

the opposite. The comparison to our hundred-year-old system of paper checks is instructive. It was not that long ago that the originals of those checks had to be transported around the country to the proper banking institutions in order to clear payments. That was an expensive way to do things. But, remarkably, the Federal Reserve had prohibited the equivalent of swipe fees (known as exchange fees) from being charged on checks. There were (and are) still costs to processing checks, but the system works efficiently and those who accept and handle checks are able to make decisions about how to conduct business and how best to keep their costs under control.

Electronic payments should be much more efficient than paper payments. The actual costs of handling electronic payments are indeed lower. But, the prices paid by all of society are much, much higher due to competition problems inflating the associated fees.

The United States is an outlier in the world in this area – and not in a good way. Swipe fee rates are higher in the United States than anywhere in the industrialized world.[45] This harms American retailers and consumers – disadvantaging them compared to the rest of the world. Just to take one example, merchants and consumers in China pay much lower rates than their American counterparts.[46]

These fees are stunting business growth and hurting efforts to hire more workers and expand operations. One study of this impact in 2010 concluded that without the higher prices caused by fees above and beyond costs plus a reasonable rate of return, consumers would have an additional $26.9 billion to spend and the economy could add 242,000 jobs.[47] Of course, the fees have nearly tripled since that report was written. The lost economic growth during that time period is immense.

The overinflated swipe fee rates cause other economic problems as well. The U.S. credit card system has the most fraud in the world.[48] These problems are related. The high fees reduce the economic incentives for the credit card industry to fight fraud – because they make money even with relatively high fraud rates and would have to spend money to make the system safer for all of us. And, not incidentally, much of the fraud on credit cards gets charged back to merchants so the credit card industry does not lose those funds – the merchants do.

Rather than taking straightforward actions that have proven to be effective in fighting fraud, like requiring the entry of personal identification numbers (PINs) or using other means of authenticating the person making the transaction, the card networks have pushed most of the costs of fighting fraud onto merchants. The switch to chip cards in the United States is a primary example. While the vast majority of the world required PINs as part of that switch, Visa and Mastercard not only did not do that, but they threatened retailers that tried to require PINs with fines.[49] Instead of the common-sense measure that had been successful around the world, merchants were forced to spend $30 billion to upgrade their point-of-sale equipment and software to make the transition to chips without the protection of PIN usage. And, for their trouble, many merchants were still required to pay more to cover fraud.

---

[45] *See* Kansas City Federal Reserve, "Credit and Debit Interchange Rates in Various Countries August 2021 Update," CreditDebitCardInterchangeFeesVariousCountries_August2021Update.pdf (kansascityfed.org).
[46] *Id*.
[47] Robert J. Shapiro and Jiwon Vellucci, *The Costs of Charging It in America: Assessing the Economic Impact of Interchange Fees for Credit Card and Debit Card Transactions*, Feb. 2010, at 2.
[48] "Credit Card Fraud Statistics," Shift Processing (Sept. 2021) available at Credit Card Fraud Statistics [Updated September 2021] Shift Processing.
[49] Robin Sidel, "Kroger Sues Visa Over PIN Debit Transactions," Wall Street Journal (June 27, 2016) at Kroger Sues Visa Over PIN Debit Transactions - WSJ.

In fact, a 2019 report found that the card networks use their positions in setting card security standards to entrench their own market share at the expense of focusing on card security and fraud protection. They do this through their control of a standard-setting body called EMVCo.[50] According to the report, "Our research reveals an insidious pattern in which the card companies use EMVCo as a tool to maximize their share of transaction volumes: when the card companies feel threatened by competitive pressures or economic challenges, they — or EMVCo supporting their strategies — assume responsibility for the definition of a standard, which results in technical specifications that only benefit the card companies, not the U.S. payments industry at large."[51] Security standards should be made to protect against fraud, not to secure market share for already-dominant companies.

The large amounts of fraud on U.S. credit cards add costs to the economy. All of us must pay for that as well as swipe fees. The collective price tag for all of these inefficiencies is far higher than it should be. The United States has the largest economy in the world and should have the most effective and cost-efficient payment system. It doesn't. That should change.

VII. Dispelling Myths the Card Industry Uses to Distract From Its Anti-Competitive Behavior

As noted, anti-competitive behavior on the part of the major card networks causes serious problems for merchants, consumers, and the U.S. economy. Because the card networks cannot justify their actions and do not want to defend them, they typically try to distract any focus on their activities with complaints about the reforms Congress and the Federal Reserve put in place more than a decade ago to deal with anti-competitive activity in the debit card market. These arguments are a distraction, as well as factually wrong, and the Committee should not let the card networks try to distract its attention with those points – particularly when legislative attempts to derail those reforms have repeatedly failed over many years.

Nonetheless, the section below addresses many of the most often repeated myths that the credit card industry raises in order to ensure that you actually have the facts before you on these claims.

- Consumers and Businesses Have Benefitted from Debit Reform

Debit reform authored by Senator Durbin, which was enacted in 2010 and took effect in 2011, has been helpful in curtailing debit swipe fee rates and providing competition among networks.[52] One report showed that debit reform saved consumers $5.86 billion in 2012 alone - the first year the reforms were in effect.[53] That was nearly 70 percent of the overall savings from debit reform that year with merchants saving an additional $2.64 billion.[54] Collectively, these savings supported more than 37,000 jobs[55] – a significant economic stimulus.

In addition, *Moody's Investor Service* has reported that debit reform savings have shielded

[50] RPCG Group, "Payment Insecurity: How Visa and Mastercard use standard setting to restrict competition and thwart payments innovation," (Dec. 2019) available at https://securepaymentspartnership.com/paper.pdf. EMVCo was started by Visa, Mastercard and Europay but the governing body now includes American Express, Discover, Japan's JCB and China's Union Pay.
[51] *Id*. at 8.
[52] While reform has been beneficial, the rates paid by merchants remain higher than they should be. Costs have declined over the past decade and the rates are not proportional to costs.
[53] Robert Shapiro, "The Costs and Benefits of Half a Loaf: The Economic Effects of Recent Regulation of Debit Card Interchange Fees," (Oct. 2013) available here.
[54] *Id*. at
[55] *Id*. at

consumers from higher prices that would have resulted from increases in other operating costs for businesses such as transportation and fuel costs. The report says, "As merchant acquirers pass on debit fee savings to retailers, we believe retailers will use them to help shield customers from the impact of these other rising costs."[56] The report also noted, "While on the surface it would be easy to presume that retailers would benefit from a reduced debit interchange fee, we do not expect retailers to see a material improvement in their earnings due to the Durbin Amendment."

The Moody's report is supported by analysis of how pricing moved following the implementation of debit reform. The data shows that there was inflation in the U.S. economy in the years after debit reform was implemented. Cost increases, as reflected in the Producer Price Index for retail trade industries, rose 9.4 percent from the time reform went into effect in October 2011 through the end of 2016, while price increases to consumers, reflected in the Consumer Price Index, increased only 4.3 percent.[57] That is a large spread between the higher costs that merchants had to pay for the goods they sold and the prices that they charged consumers. Those numbers demonstrate clearly that merchants shielded their customers from the majority of the cost increases the merchants themselves faced. And, that experience has held true even during the past year with increased inflation. During 2021, the Producer Price Index rose by 9.7 percent while the Consumer Price Index rose by 7 percent.[58]

Retail profit margins show the same pattern. Those margins did not grow following debit reform. In fact, in the grocery industry, pretax profit margins in the two years prior to debit reform were 2.3 percent – and following debit reform those margins fell to 2.1 percent (in 2012) and 1.9 percent (in 2013).[59]

This data reconfirms the intensely competitive nature of U.S. retail. It is very clear that savings from debit reform (and more) have been consistently passed along from merchants to consumers in the form of prices that are significantly lower than what consumers would have been forced to pay in the absence of those reforms.

Anyone who believes free markets work would need to recognize that cost savings to retail businesses help hold down prices to consumers – unless they believe that there is a market failure in the retail sector of the economy. Of course, there is not. Retail is one of the most competitive sectors of the U.S. economy and has been for decades. Without a market failure, there is no question that reduced costs pass-through into lower prices. By arguing otherwise, it makes it sound as though the credit card industry has lived with centralized price-setting so long that they have forgotten how real competitive markets work.

The credit card industry likes to point to a report released by the Richmond Federal Reserve to try to disprove consumers' clear benefits from debit reform. The problem is that, in talking about that report, they never mention the cautionary notes that the study's authors themselves included in the report – which make clear it should not be used to prove the point for which the credit card industry tried to use it. First,

---

[56] "New Debit Rules Hurt Banks and Reshape the Payment Processor Market," Moody's Investor Service (June 20, 2012) at 10.
[57] Producer price index figures from the St. Louis Fed can be found here: https://fred.stlouisfed.org/series/PCUARETTRARETTR and consumer price index figures from the Minneapolis Fed can be found here: https://www.minneapolisfed.org/community/teaching-aids/cpi-calculator-information/consumer-price-index-and-inflation-rates-1913.
[58] The U.S. Bureau of Labor Statistics' release on the producer price index can be found here: Producer Price Index News Release summary - 2021 M12 Results (bls.gov) and the 2021 increase in the consumer price index can be found here: CPI Home : U.S. Bureau of Labor Statistics (bls.gov).
[59] "Grocery Store Chains Net Profit," FMI available at FMI | Grocery Store Chains Net Profit.

the report made clear they did not look at actual costs and prices - it was just an opinion survey.[60] Second, the survey sample was small and could have been biased by getting responses primarily from those dissatisfied with the way the Fed wrote its regulation. Finally, it is worth noting what may be obvious given today's economic environment. Inflation is always present and matters. The actual data shows that merchants held prices down as their costs increased. That is real consumer savings. But a survey that asks whether prices were reduced would not get that information.

- Free Checking Increased Following Debit Reform

The credit card industry like to claim that consumers had fewer options for free checking accounts following debit reform, but their claims are demonstrably wrong. At the outset, it should be noted that the banking industry has admitted that "free" checking is a fallacy, "Customers never had free checking accounts. They always paid for it in other ways, sometimes with penalty fees."[61]

In addition to Bank of America's doubts about free checking ever having existed, it should be noted that the banking industry rapidly got rid of many free checking account offerings in the years *before* debit reform ever took effect. First, the banking industry blamed the financial crisis as the reason why they had to take away free checking and charge consumers higher fees.[62] Then, the industry pivoted and started blaming overdraft regulations for their decisions to increase checking account fees.[63] In fact, some even

---

[60] Renee Haltom and Zhu Wang, "Did the Durbin Amendment Reduce Merchant Costs?" (Dec. 2015) at 4, available here.

[61] Bank of America spokeswoman, Anne Pace, quoted in "Bank Accounts: Free Checking Fading Fast," The Christian Science Monitor (Oct. 19, 2010), available at http://www.csmonitor.com/Business/Latest-News-Wires/2010/1019/Bank-accounts-Free-checking-fading-fast

[62] *Rising Bank Fees are Setting Records,* USA Today (Oct. 27, 2008), available at http://www.usatoday.com/money/industries/banking/2008-10-26-atms-fees-checks-banks_N.htm ("The high fees come at a time when banks are struggling to unload bad mortgage loans."); *Banks Boost Customer Fees to Record Highs,* Wall Street Journal (Nov. 12, 2008), available at http://online.wsj.com/article/SB122645109077719219.html ("Banks are responding to the troubled economy by jacking up fees on their checking accounts to record amounts."); *Banks Find Ways to Boost Fees; Checking Accounts Latest Target,* USA Today (May 28, 2009), available at http://www.usatoday.com/money/industries/banking/2009-05-27-checks-fees-banks_N.htm ("Banks defend their policies, saying that as unemployment rises, consumers have become riskier, and the higher fees reflect that risk. Banks may also be raising some account fees to compensate for higher borrowing costs and to keep prices in line with other financial institutions, says Scott Talbott of the Financial Services Roundtable, which represents the nation's largest banks."); *Bank Fees Rise as Lenders Try to Offset Losses*, New York Times (July 2, 2009), available at http://www.nytimes.com/2009/07/02/business/02fees.html?_r=1 ("Scott E. Talbott, a lobbyist for the Financial Services Roundtable, said that the banks' fees reflect the cost of providing those services and the rise in overdraft charges reflects increased risk. 'There is an increased riskiness around repayment because of the recession, he added.'").

[63] *Is Free Checking on its Way Out?* CNNMoney.com (July 2, 2009), available at http://moremoney.blogs.money.cnn.com/2009/07/02/is-free-checking-on-its-way-out/ ("Bank customers used to the perks of free checking accounts -- unlimited check writing, online banking, debit card use and ATM access, to name a few -- might have to recalibrate their expectations soon. That's because overdraft fees, which banks use to subsidize the expense of free checking accounts, have been under fire by consumer advocacy groups."); *Banking Expert: Free Checking Accounts aren't Long for this World,* WalletPop.com (Aug. 31, 2009), available at http://www.walletpop.com/2009/08/31/banking-expert-free-checking-accounts-arent-long-for-this-worl/ (Following the Credit Card Accountability Responsibility and Disclosure Act and overdraft regulations, "banks are already trying to think of new ways to make their profits."); *Banks' Struggle May Mean End of Free Checking,* msnbc.com (Nov. 10, 2009), available at http://www.msnbc.msn.com/id/33840681/ns/business-consumer_news/ ("The change by Citi comes as Congress considers legislation that would limit banks' ability to levy overdraft fees on checking accounts."); *The End of Free Checking?* MoneyTalksNews.com (Dec. 30, 2009), available at http://www.moneytalksnews.com/2009/12/30/the-end-of-free-checking/ ("[N]ew Congressional regulations like the CARD Act have limited the amount of money banks can make from credit cards. The Federal Reserve also has plans to address the highly lucrative "overdraft fee industry", estimated to be worth $38.5 billion in 2009 by industry consultants Moebs Services. In other words, free checking accounts may soon be going the way of the dinosaur."); *The End of Free Checking,* NPR Planet Money

had the temerity to suggest that they had to increase checking fees because they couldn't make the same money from risky mortgages anymore.[64]

All of these various excuses for the steep drop in free checking offerings were made long before debit reform came into being. The litany of excuses was summed up well in a 2011 article written when banks were blaming debit reform for their increases in checking fees – remarkably, doing this even before debit reform had ever taken effect – "The pattern is getting old and weary. Banks will raise checking fees whenever and wherever they think they can get away with it. And they will blame any convenient development for their choices."[65]

This background matters because the credit card industry typically relies on two fatally flawed studies to try to show that reductions in free checking that came before debit reform – reductions they blamed on the financial crisis and limits on overdraft fees – were actually caused by debit reform. These studies take January 2009 as the measuring point for free checking prior to debit reform even though those reforms did not come into effect until October 2011, nearly two full years later. And, they pushed these studies onto the Government Accountability Office which cited them in a recent report without recognizing that the timing of the studies meant that the studies were blaming debit reform for things that happened prior to reform coming into effect.[66]

The number of checking accounts without monthly fees fell by 11 percentage points just from 2009 to 2010 – still a year before debit reform.[67] But, by counting the remarkably swift and steep reduction in the number of free checking accounts that occurred during the financial crisis and blaming that on debit reform (which came later), these studies magically find that debit reform reduced free checking. It didn't.

Banking industry data demonstrates that free checking increased from the time debit reform went into effect at least for its first few years in operation. The ABA reported that 61 percent of banks had free checking in 2014 which compares favorably to the 50 percent of banks with free checking that the ABA reported in 2010 and the 39 percent of large banks that Moebs Services reported offered free checking two

---

(June 17, 2010), available at http://www.npr.org/blogs/money/2010/06/17/127899418/you-may-have-to-pay-for-that-checking-account ("It costs banks a few hundred bucks a year to maintain a customer's checking account. Banks have been able to make that up (and more) largely by charging overdraft fees. But new federal rules mean banks can only charge those fees to customers who sign up for overdraft protection."); *The End of Free Checking,* The Atlantic (June 21, 2010), available at http://www.theatlantic.com/business/archive/2010/06/the-end-of-free-checking/58444/ ("Free checking is on life support. . . . The main reason why, of course, is the imminent prohibition of overdraft fees, which had been a boon for banks."); *End of Free Checking a Financial Squeeze: How Employers Can Help*, The Huffington Post (June 28, 2010), available at http://www.huffingtonpost.com/clare-j-morgan/end-of-free-checking-a-fi_b_627540.html ("The free checking accounts many Americans enjoy will soon be a thing of the past as banks scramble to find new ways to recoup overdraft charges and other fees they're no longer allowed to impose.").

[64] *The End of Free Checking? Not at Credit Unions!* Credit Unions Online (June 17, 2010), available at http://www.creditunionsonline.com/news/2010/The-End-of-Free-Checking-Not-at-Credit-Unions.html ("Since banks can no longer charge many credit card fees of the past and high risk (high fee) mortgages are gone, banks are finding themselves short of revenue. . . . Now the banks are coming after your checking account to make up the difference.")

[65] David Balto "The Bankers' New Goat," HuffPost (May 25, 2011) available at https://www.huffpost.com/entry/the-bankers-new-goat_b_834615.

[66] *See* "Banking Services," Government Accountability Office (Feb. 2022) available at https://www.gao.gov/assets/gao-22-104468.pdf.

[67] *Region Banks Refrain from Raising Checking Account Fees,* Nwi.com (Nov. 9, 2010), available at http://www.nwitimes.com/business/local/article_337b378b-3f74-5a00-9d86-b9e6b3d58799.html ("Bucking a national trend, the region's community banks aren't raising fees or putting the breaks on free, non-minimum-balance checking accounts, yet. A recent Bankrate.com national survey on checking accounts indicates the percentage of checking accounts with no monthly service charges and no minimum balance fell to 65 percent in 2010 from 76 percent in the 2009 study.")

months prior to debit reform taking effect.[68]

- Rewards Will Not End (and the Sky Will Not Fall) if Competition Comes to Credit Cards

The credit card industry consistently argues that any reforms to the current credit card market will end credit card rewards. In fact, they have spread advertisements all over the Internet depicting Senator Durbin as a cartoonish figure and alleging that he wants to end credit card rewards. That is remarkable given that neither Senator Durbin nor any other Senator has to date proposed legislation to reform the competition problems with credit cards. You might think that the credit card industry would want to review any such proposal and analyze its effects before giving a reasoned evaluation of its impact – but you would be wrong. The industry clearly prefers insult to reasoned debate. And, of course, the credit card industry wants to warn other Senators that they could be the subject of its ridicule if they have the temerity to support potential reforms.

The credit card industry resorts to these tactics because the facts are not on its side. The nation with the longest track record of credit card fee reforms is Australia. After more than a decade under reforms there, the Reserve Bank of Australia has found, "The existence of significant credit card rewards programs suggests that credit card interchange fees are currently materially higher than is necessary for banks to provide payment cards with credit functionality. The Bank's 2013 Payments Cost Study shows that – for the average-size transaction for each payment method – the existence of the interest-free period and rewards means that the effective price paid by a cardholder to use a credit card is lower than that for a debit card, even though the resource costs are substantially higher."[69]

When Australia acted, MasterCard said it would mean the end of the credit card system in that nation – arguing that there would be a "death spiral."[70] They were wrong. More consumers use more cards for less than ever before in Australia. In fact, rather than Visa and MasterCard competing to raise interchange fees so that banks will issue more of their cards, they have had to give consumers what they really wanted – lower interest rates on their cards. This interest rate competition has benefitted consumers immensely. The only ones who don't like it are Visa and MasterCard (and their member banks) because they don't make as much on interchange fees and must now compete more thoroughly on the value they deliver to consumers. The Reserve Bank of Australia reviewed the interchange reforms instituted there and concluded, "Overall, consumers are benefiting from this greater competition and lower merchant costs . . . one group of consumers clearly better off are those who regularly borrow on their credit cards. They are now able to obtain a card with an interest rate of 10 to 13 per cent, rather than the 16 to 18 per cent payable on traditional cards. For many consumers the resulting savings can run into hundreds of dollars per year . . . Consumers who do not use credit cards at all are also benefiting from the reforms as they are paying lower prices for goods and services than would otherwise have been the case. For many years,

---

[68] Cadence Bank, "ABA: Most Americans Pay Nothing for Bank Services," available at https://cadencebank.com/about/resources/aba-survey---most-americans-pay-nothing-for-bank-services; American Bankers Association, "ABA Survey Shows Majority of Bank Customers Pay Nothing for Monthly Bank Services," available at http://www.prnewswire.com/news-releases/aba-survey-shows-majority-of-bank-customers-pay-nothing-for-monthly-bank-services-104516904.html; Ismat Sarah Mangla and Tali Yahalom "Bank Accounts: Get a Fair Shake, not a Shake-Down," CNN Money (Aug. 31, 2011) available at https://money.cnn.com/2011/08/31/pf/bank_accounts.moneymag/index.htm ("This was backed by data from Moebs Services, which found that 39% of big banks offered free checking in 2011, down from 64% in 2010").

[69] Reserve Bank of Australia, "Review of Card Payments Regulation," at sec. 3, available at https://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/conclusions-paper-may2016/interchange-fees-and-transparency-of-card-payments.html.

[70] *See* Alan S. Frankel, "Toward a Competitive Card Payments Marketplace," at 40, available at https://www.rba.gov.au/payments-and-infrastructure/resources/publications/payments-au/paymts-sys-rev-conf/2007/5-compet-card-payment.pdf.

these consumers have helped subsidise the generous reward points of the credit card issuers through paying higher prices for goods and services. The reforms have helped unwind some of this subsidy."[71]

Lower fees, competition, and other reforms in other countries have not stopped Visa and Mastercard from aggressively marketing their networks to banks around the world. It is clear that there is plenty of revenue in nations with far lower fees for the credit card business to be very profitable.

- Visa and Mastercard Do Not Provide a Meaningful Break on Swipe Fees at Gas Pumps

Swipe fees have jumped by enormous amounts on motor fuel purchases during the past year. As noted, the convenience industry saw its fees rise by 26.5 percent in 2021 and are seeing more rapid increases this year. These large increases add a significant economic pressure to increase gas prices at the worst possible time. The card industry has tried to defend themselves from criticism for these rapidly rising fees by saying that they have capped swipe fees at $1.10 per fill-up. But they know that cap is largely ineffectual. The average amount of gas put in a car during a fill-up is 11.7 gallons.[72] So, using the average credit card interchange rate of 2.22 percent, a cap of $1.10 does not impact what the merchant pays for that fill up until gas costs about $4.25 per gallon. Other than in California, even recent gas prices have only rarely reached that number.

Swipe fees are often near 10 cents per gallon on a fill-up today. That is simply too much for local retailers or their customers to bear.

- Visa and Mastercard Do Not Need to Set Prices for Large Banks

One of the few ways that the credit card industry has tried to justify the centralized setting of prices by the networks for the banks that issue cards is by citing the large number of banks on each side of a credit card transaction. With thousands of banks issuing cards and thousands of banks and processors handling the merchant side of processing, they argue that it is too complicated and difficult for the prices of all those combinations to be negotiated in a free market.

But, the research has found that the card industry's protestations don't fit the facts. Nicholas Economides of New York University has studied this and found that credit card issuing and, on the other side, acquiring/processing of credit card transactions is very concentrated among small numbers of banks and processors with large market shares. As a result, in 2009, he found that a mere 90 negotiated agreements would cover a full 72 percent of all Visa and Mastercard transaction volume.[73] That, of course, is very doable – and there has been significant additional concentration in both markets since then.[74] There is no reason why the largest banks couldn't do business like other companies operating throughout the economy and negotiate their own pricing.

---

[71] Payments System Board Annual Report, *Reserve Bank of Australia*, 2005 at 14.

[72] https://www.statista.com/statistics/1143194/average-fuel-transaction-volume-us-gas-stations/#:~:text=Average%20quantity%20of%20fuel%20purchased%20per%20transaction%20in%20the%20U.S.%202019%2D2020&text=Americans%20bought%2011.7%20gallons%20of,the%20gas%20pump%20in%202020.

[73] Nicholas Economides, "Competition Policy Issues in the Consumer Payments Industry," at 122 In R. Litan & M. Baily, Moving Money: The Future of Consumer Payment, Brookings Institution (2009) available at 06-0277-1 CH 06 (nyu.edu).

[74] The top 5 Visa/Mastercard issuing banks accounted for more than 70% of purchase volume in 2021, and the top 10 banks comprised more than 80%. *See* Nilson Report, Issue No. 1214 at 8-9 (Feb. 2022).

- The Combination of Thousands of Banks Under the Visa and Mastercard Umbrellas Means that Merchants Can't Just Stop Taking Credit Cards

Economists have found that due to the market power of Visa and MasterCard, merchants have no real choice but to accept credit cards. While the credit card industry likes to say merchants have a choice, this argument would be like AT&T claiming in the 1980s that no one should worry about its monopoly because people could choose not to have a telephone. Accepting cards is essential for most businesses – as the U.S. Department of Justice has concluded.[75]

In fact, the Kansas City Federal Reserve studied this and concluded, "Only monopoly merchants who are facing an inelastic consumer demand may deny cards when the fee exceeds its transactional benefit. . . Merchant competition allows the network to set higher merchant fees. The network can always set higher merchant fees in more competitive markets. Moreover, in competitive markets the merchant fees in the long run may exceed the sum of the merchant's initial margin and the merchant's transactional benefit. . . . As long as the merchant fee does not exceed the level that gives merchants negative profits, merchants may have no choice but to continue accepting cards."[76] The courts also agree that Visa and MasterCard both have market power which means they have the ability to raise their prices above what would be sustained in a competitive market.[77]

- Debit Reform Has Helped Small Banks and Credit Unions Compete

Currently, the way that credit card swipe fees are fixed disadvantages small banks and credit unions. Those institutions typically have higher costs than do large institutions (which, unlike small banks, often pay nothing to the credit card networks). Credit union representative John Blum, for example, testified on behalf of the National Association of Federal Credit Unions in 2010 and told the House Judiciary Committee: "Credit unions have a higher per-transaction cost for processing card payments."[78] Community banks have similar disadvantages because of their relatively small size resulting, in many instances, in the need to outsource card operations.[79] By fixing fees for all banks at the same level, however, large banks have for years been guaranteed higher profit margins than their smaller competitors. Those large banks have used their advantage to aggressively market themselves to consumers. That is one of the reasons why the credit card market is more concentrated than the debit card market. Many consumers who have accounts and debit cards at small banks and credit unions receive credit card and other offers from large banks. The large banks take the small banks' customers in this way on a regular basis – paid for by their excess interchange earnings. The result is that large banks have a bigger share of both the credit and debit card markets than their share of deposits.[80]

---

[75] *See* Complaint, U.S. v. Visa, Inc. and Plaid, Inc. (Nov. 5, 2020) at ¶3.
[76] Fumiko Hayashi, "A Puzzle of Card Payment Pricing: Why Are Merchants Still Accepting Card Payments?" Federal Reserve Bank of Kansas City (2004) available at https://ideas.repec.org/p/fip/fedkpw/psrwp04-02.html.
[77] *U.S. v. Visa U.S.A., Inc.*, 344 F. 3d 229 (2d Cir. 2003).
[78] John Blum, Hearing before the Task Force on Competition Policy and Antitrust Laws, House Judiciary Committee, May 15, 2008, House Report No. 110-179, at 80.
[79] Dave Carpenter, Hearing before the House Judiciary Committee on the Credit Card Fair Fee Act of 2009, Apr. 28, 2010.
[80] *See* Adam J. Levitin, *Interchange Regulation: Implications for Credit Unions*, 2010, at 39 (noting that 10 banks alone account for almost 90 percent of the credit card market and 51 percent of the debit card market, even though those 10 banks hold only 36 percent of insured deposits), *available at* http://www.federalreserve.gov/newsevents/files/levitin_filene_paper.pdf.

Debit reforms have helped to level the playing field. The Philadelphia Federal Reserve published a study on the impact of debit reform on small financial institutions in February 2016. The study found that after reform, "the volume of transactions conducted with cards issued by exempt banks *grew faster* than it did for large banks."[81] The study concluded that "the evidence does not support the claim that competitive forces have effectively imposed the interchange fee ceiling on small banks."[82]

The Credit Union Times has reported that debit reform created "a powerful way for credit unions to accumulate market share" and "what some say is a huge opportunity for credit unions."[83] According to Texas Trust President and CEO Jim Minge, debit reforms created "…a huge opportunity for credit unions like the Mansfield, Texas Trust Credit Union and everybody else below the $10 billion threshold…" Debit swipe fee reform "applies only to financial institutions with more than $10 billion in assets, which has created a huge opportunity for credit unions – especially those that want to attract millennials."[84]

Centralized price-setting of credit card swipe fees harms smaller financial institutions. More competition in the market would help give them additional levers to try to compete with the largest banks including by allowing them to negotiate among the different networks.[85]

- Debit Reform and Network Competition Enhanced Fraud Protection

Competition pushes businesses to provide lower prices and better service. That has been the impact that debit reform brought to payments a decade ago. By prohibiting exclusivity arrangements so that more than one network had to be available to handle debit card transactions, the market changed so that networks needed to find a way to improve their offerings. One way they did that was with enhanced protections against fraud. As soon as the debit reforms came into effect, the networks started introducing full end-to-end encryption of data.[86] They also accelerated the transition to chip cards in the United States.[87]

The credit card industry sometimes argues that high swipe fees are needed to cover fraud costs, but this is not the case – as is clear from the fact that fraud is much lower in nations with much lower swipe fee rates. Economists with the Federal Reserve Bank of Kansas City have found that fraud costs are not a

---

[81] James Disalvo and Ryan Johnston, "How Dodd-Frank Affects Small Bank Costs," Economic Insights: Federal Reserve Bank of Philadelphia (Feb. 2016) available at https://www.philadelphiafed.org/-/media/frbp/assets/economy/articles/economic-insights/2016/q1/eiq116.pdf.

[82] *Id*.

[83] "Credit Unions Revive Debit Rewards" (Jan. 22, 2016) available at http://www.cutimes.com/2016/01/22/credit-unions-revive-debit-rewards; "Credit Unions Pile Into Debit Rewards" (Jan. 20, 2016) available at http://www.cutimes.com/2016/01/20/credit-unions-pile-into-debit-rewards?page=1&slreturn=1453333652.

[84] "6 Winning Credit Union Payments Strategies" (Apr. 15, 2016) available at http://www.cutimes.com/2016/04/15/6-winning-credit-union-payments-strategies?slreturn=1487974414&page=2.

[85] The two largest networks favor larger financial institutions in the terms of their deals. *See* "2019 Interchange Fee Revenue, Covered Issuer Costs, and Covered Issuer and Merchant Fraud Losses Related to Debit Card Transactions," Board of Governors of the Federal Reserve System (May 2021) at 15, available at https://www.federalreserve.gov/paymentsystems/files/debitfees_costs_2019.pdf.

[86] *See*, e.g., Tracy Kitten, "Visa's New End-to-End Encryption Service," Bankinfo Security (Sept. 12, 2012) available at https://www.bankinfosecurity.com/interviews/visas-new-end-to-end-encryption-service-i-1650.

[87] *See* Visa presentation to Federal Reserve (Jan. 8, 2014) at 2, available at http://www.federalreserve.gov/newsevents/rr-commpublic/visa-meeting-20140108.pdf.

justification for over-inflated interchange fees. They wrote, "Card organizations have often argued that the reason why they impose proportional fees stems from the cost they bear from their 'payment guarantee' service which insures merchants against customers who pay with cards without having sufficient funds. We argue that the cost of fraud and insufficient funding is negligible compared with fees at the range of 1% to 3% commonly imposed by brand name cards. For example, industry studies show that the average net fraud losses are around 0.05% for signature debit cards, which do not extend credit to card users."[88] And, as noted above, the majority of fraud is paid by merchants, not banks.

The swipe fee system on debit cards prior to reforms created disincentives to the card industry taking fraud protection more seriously. Because the fees were much higher than losses from fraud, financial institutions were not highly motivated to make changes to cut down that fraud. A June 2011 Consumer Reports article pointed out these problems. It noted that thieves could "easily and cheaply" copy U.S. debit card data that is usually stored unencrypted in a magnetic stripe on the back of the card. According to the article, "The U.S. and some non-industrialized countries in Africa are among the only nations still relying on magstripe payment cards, which came into wide use in the 1970's."[89]

A representative from the New York Police Department explained in the Consumer Reports piece that the NYPD had "recommended to several of the large financial institutions that the biggest deterrent to skimming would be using the kind of cards that are issued in Europe and Canada with a chip that makes them pretty much impossible to skim."[90] The article noted that financial institutions had been reluctant to do that due to their large card revenues. After debit reform, however, the card industry had newfound motivation to reduce fraud and pushed the transition to chip cards – though, unfortunately, they failed to push PIN usage as they had in other parts of the world.

- Merchants Absorb More Card Fraud Than Banks

While the card industry often talks about a "payment guarantee," merchants are not guaranteed payment on credit or debit card transactions. In fact, merchants are forced to absorb the majority of the cost of fraudulent card transactions. When the merchant is forced to pay for the fraud, this is called a "chargeback." It means that the money the merchant was supposed to receive on the transaction is taken away (in other words, charged back). This can happen to a merchant without notice even months after the transaction takes place.

The Federal Reserve has collected data on debit card fraud every two years since debit reform was passed. Its 2019 data shows that merchants covered 56.3 percent of debit card fraud while card issuing banks only covered 35.4 percent.[91] The picture is similar for credit cards as merchants absorb most fraud

[88] Oz Shy and Zhu Wang, "Why Do Card Issuers Charge Proportional Fees?" The Federal Reserve Bank of Kansas City Economic Research Department, (December 2008) at 3 available at https://www.kansascityfed.org/documents/5325/pdf-rwp08-13.pdf.

[89] "House of cards: Why your accounts are vulnerable to thieves," Consumer Reports Magazine (June 2011).

[90] *Id*.

[91] "2019 Interchange Fee Revenue, Covered Issuer Costs, and Covered Issuer and Merchant Fraud Losses Related to Debit Card Transactions," Board of Governors of the Federal Reserve System (May 2021) at 4, available at https://www.federalreserve.gov/paymentsystems/files/debitfees_costs_2019.pdf.

losses – particularly since Visa and Mastercard implemented a liability shift to push chip card usage which pushed a significant share of fraud onto merchants. In fact, the Federal Reserve has reported that the merchant share of fraud on dual message debit cards (processed in similar fashion to credit cards) is more than 60 percent.[92]

Of course, all of the fraud chargebacks merchants must pay are on top of the swipe fees they pay. Those swipe fees amount to a prepayment of all fraud charges (and much more) to card-issuing banks. Merchants should not have to prepay for fraud and they should not have to pay when the fraud happens in addition to prepaying for it. They also shouldn't have to hear about the great "payment guarantee" they receive on credit and debit cards when the merchants pay for fraud multiple times.

It is worth noting that even with debit reform, merchants prepay all the fraud that banks otherwise cover. Federal Reserve Regulation II, which implements debit reform, includes 5 basis points as part of the regulated debit swipe fee to cover fraud losses by banks. That number was pegged to 100 percent of the fraud losses on debit cards paid by the average bank covered by the regulation. Of course, that means that fraud is a guaranteed profit center for many of the banks covered by the regulation (those with below average fraud losses). And, the vast majority of banks across the nation are not subject to the Fed's fee regulation. They charge even higher fees that exceed their fraud losses on debit cards. Why merchants must pay chargebacks to cover the majority of fraud that they have already prepaid (and then some) to the banks is inexplicable.

* * *

The harm done to merchants, consumers and the U.S. economy due to the anti-competitive actions of the card industry is far too large and should end. Market competition improves economic efficiency, innovation, and price competition. Bringing competition to the credit card market would produce real economic benefits across the spectrum. It is time for that to happen.

[92] *Id*.

From:"Accornero, Matteo" <Matteo.Accornero@ecb.europa.eu>
Sent: Fri, 20 May 2022 10:47:28 -0500
To:"Digital-Innovations" <Digital-Innovations@frb.gov>
Cc:"Karla Mckenna" <Karla.Mckenna@Gleif.org>
Subject:ISO/TC68/AG2 - Standards Advisory Group - Feedback produced on the paper “Money and Payments: The U.S. Dollar in the Age of Digital Transformation”

NONCONFIDENTIAL // EXTERNAL

Dear Board of Governors of the Federal Reserve System,
I write with reference to the response provided by the ISO/TC68/AG2 - Standards Advisory Group to the consultation paper “Money and Payments: The U.S. Dollar in the Age of Digital Transformation”.
The responses provided through the web-form for the following three questions (Q20, Q21, Q22) contain some typos.
For these three questions, we would be grateful if you could consider the text below instead of the one transmitted via web-form.
Best regards

Matteo Accornero
DGS/SFI/FIMA
matteo.accornero@ecb.europa.eu
+49.17.22.78.35.18

Q. 20: How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?
The response is submitted by the Standards Advisory Group (SAG) of Technical Committee 68 (TC 68) of the International Organization for Standardization (ISO). The SAG as a subgroup of TC 68 (TC68/AG2) acts as an advisory sounding board to support and engage with regulators on financial services standards requirements, for the effective and efficient use and development of financial services standards, delivered using a cooperative relationship approach. In this context, the response will concentrate on the technical standards that can be leveraged for CBDCs.
There are several technical standards of ISO/TC 68 that can be leveraged for CBDCs as the consistent use of standards is the foundation of achieving transferability across multiple payment platforms. First, is a standard that has been in place for some time and is used widely for the identification of fiat currencies. This is the ISO 4217 standard. This standard has been examined by ISO/TC 68 subject matter experts with the conclusion that the ISO 4217 standard is fit for purpose for the identification of both conventional and digital forms of fiat currencies.
Another standard to be leveraged for CBDC is ISO 17442, the Legal Entity Identifier (LEI), which could be used for the identification of counterparties in CBDC transactions and to identify holders of CBDC. The LEI the only global standard for legal entity identification with the identifier connecting to key reference information that enables clear and unique identification of legal entities participating in financial transactions and related activities. LEIs data records contain information about an entity’s ownership structure and thus answers the questions of 'who is who’ and ‘who owns whom’. Further benefit can be derived from data that accompanies a LEI record which can be automatically retrieved or verified at no charge from the Global LEI System.

The central banks will decide which use cases are possible for their CBDC. If consumers of the country involved (or of other countries) are allowed to use the CBDC, the LEI of the issuing central bank will contribute to further consumer protection (and fraud prevention).
Finally, there are financial messaging standards used in payments and credit and debit card transactions. First, the suite of ISO 20022 standard financial messages for payments and card transactions is very comprehensive. There is the ability for additional messages to be created, if required, using the ISO 20022 development and governance processes, to support any specific needs for CBDCs.
Second, the ISO 8583: 2003 Financial transaction card originated messages standard supports that all ISO 4217 Currency Codes are included in these messages. If central banks would encourage use cases that their CBDCs and commercial bank money are both used in card messages a further review of the standards would be required.

Q. 21: How might future technological innovations affect design and policy choices related to CBDC?
The response is submitted by the Standards Advisory Group (SAG) of Technical Committee 68 (TC 68) of the International Organization for Standardization (ISO). The SAG as a subgroup of TC 68 (TC68/AG2) acts as an advisory sounding board to support and engage with regulators on financial services standards requirements, for the effective and efficient use and development of financial services standards, delivered using a cooperative relationship approach. In this context, the response will concentrate on the technical standards that can be leveraged for CBDCs.
Use of standard identifiers for currency codes (ISO 4217) and for legal entity identifiers (ISO 17442) are technology agnostic and can continue to be leveraged with future technological innovations.
The concept of the ISO 20022 is based upon defining a business model to capture the interactions of the actors/counterparties and information needed to execute specific activities, such as instructions for CBDC payment or card transactions. As technologies innovate and change, the business model can be leveraged when implementing to support new technologies used in financial messaging.
If central banks would encourage use cases that their CBDCs and commercial bank money are both used in card messages a further review of the ISO 8583 standard in relation to the ISO 4217 standard would be required.

Q. 22: 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?
The response is submitted by the Standards Advisory Group (SAG) of Technical Committee 68 (TC 68) of the International Organization for Standardization (ISO). The SAG as a subgroup of TC 68 (TC68/AG2) acts as an advisory sounding board to support and engage with regulators on financial services standards requirements, for the effective and efficient use and development of financial services standards, delivered using a cooperative relationship approach. In this context, the response will concentrate on the technical standards that can be leveraged for CBDCs.
Given that often firms operate in multiple jurisdictions and also are connected to more than one RTGS, use of common technical standards in the CBDC space will allow firms that operate in multiple jurisdictions and/or trade in multiple currencies (including CBDCs), as well as technology providers (as developers of RTGS systems), to avoid the complexities that would exist if different standards are used.
In case Central Banks would encourage that their CBDCs be used for the payments leg of securities transactions with financial instruments based on the ISO 6166: 2021 ISIN standard (wholesale and/or retail), a further review of the business process would be required.

May 20, 2022

Via email: digital-innovations@frb.gov
Via submission form: www.federalreserve.gov/apps/forms/cbdc

Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue NW
Washington, DC 20551

Response to Request for Comment on "*Money and Payments: The U.S. Dollar in the Age of Digital Transformation*"

PayPal appreciates the opportunity to provide this letter in response to the request for comment issued by the Board of Governors of the Federal Reserve System (Board) on its paper entitled "Money and Payments: The U.S. Dollar in the Age of Digital Transformation." The paper marks a thoughtful and important step in the exploration of a U.S. central bank digital currency (CBDC) or "digital dollar." PayPal commends the Board for its leadership in this space and offers the following feedback and recommendations to assist the Board in its ongoing work. PayPal agrees with the Board that a "CBDC would represent a highly significant innovation in American money" and, if properly designed, could provide individuals and small businesses with substantial benefits, including increased access to financial services, lower costs, faster transaction speeds, enhanced privacy, and greater optionality, leading to overall improved financial health.

I. Introduction

Across the globe, governments are actively studying the merits of CBDCs, with 87 countries (representing over 90 percent of global GDP) noting active exploration.[1] **We believe the United States should take a leadership role in this space.**

The U.S. Dollar plays a critical role not just domestically, but across the globe. As the primary global reserve currency, the dollar is used to conduct international transactions based on the availability and prevalence of financial instruments denominated in dollars as well as the depth and integrity of U.S. financial markets. The relative stability of the

[1] Atlantic Council - Central Bank Currency Tracker, accessed 05/12/22, https://www.atlanticcouncil.org/cbdctracker/.

dollar against other currencies instills trust and confidence that dollars will serve as an effective medium of exchange and store of value. The importance of dollars in international transactions makes the Federal Reserve one of the leading central banks that can provide international liquidity.[2]

The importance of the U.S. dollar and its ubiquity in international payments is based on many factors, including the country's underlying economic infrastructure, governmental and financial stability, rule of law, and global trust. While several countries aim for their currencies to play a greater role internationally to reduce dependence on the dollar, the persistent strength of the dollar indicates the formidable advantages it enjoys.

If the U.S. dollar is to remain the world's primary reserve currency in the unfolding century, then being at the forefront of technological innovation that reduces friction in payments should be an area of focus. **Accordingly, the U.S. government and the Board should actively explore and consider new digital forms of money that can most effectively operate in an increasingly digital world. PayPal believes that a digital dollar could be a logical next iteration to futureproof the U.S. dollar.** A properly designed digital dollar could promote diversification of the payment system and spur financial innovation, inclusion, and global currency interoperability.

To maximize the benefits of a CBDC, the private sector should play a key role in developing new technologies, partnering with the Fed on implementation and distribution, and expanding digital dollar access to the un- and underbanked to drive financial health.

The following sections outline PayPal's feedback on key aspects of a CBDC, including the potential benefits to financial health and inclusion, the role of intermediaries, key technology elements, privacy, the evolution and future of money, and opportunities for further exploration and collaboration. Underpinning these sections is a belief in certain core tenets of a digital dollar. **To that end, PayPal agrees with the Board that "a potential U.S. CBDC, if one were created, would best serve the needs of the United States by being privacy-protected, intermediated, widely transferable, and identity-verified."**

[2] The Digital Dollar Project, *Exploring a US CBDC,* May 2020, http://digitaldollarproject.org/wp-content/uploads/2021/05/Digital-Dollar-Project-Whitepaper_vF_7_13_20.pdf.

Building on these principles, we believe a future digital dollar should:

- Operate alongside existing and future payment options and innovations, including but not limited to ACH, wire, credit, and private digital currency payment solutions;
- Be offered to retail and wholesale users;
- Be facilitated and distributed through accounts and digital wallets at regulated banks and financial services companies, such as trust companies and money transmitters;
- Ensure individual privacy, while satisfying law enforcement requirements;
- Promote global digital currency and network interoperability;
- Be flexible in its design to account for future technology, policy, or economic changes; and
- Encourage private sector innovation and collaboration.

II. The Need for More Robust Financial Health

We believe that financial inclusion and access are key prerequisites to achieving and maintaining the broader goal of "Financial Health." Financial Health is a framework for assessing how well a person's daily financial systems help people cope, build resilience, and create opportunities to pursue one's goals. Whether rural or urban, in countries both developed and developing, people share a common aspiration for financial health.

Being financially healthy is both a feeling and a metric. It's the sense of security gained by knowing you have enough money to pay the bills and have a cushion for a rainy day or unexpected event. It's the ability to develop and stick to a plan and achieve a goal. Helping people to accomplish and/or maintain strong financial health is at the heart of PayPal's mission to democratize the movement and management of money.

We firmly believe that how we pay for goods and services is fundamental to financial health, meaning that consumers must have choice in payment methods, understanding of payment options, visibility into their financial standing, financial options to achieve their goals, and the ability to exercise those needs in the coming digital age. Central bank digital currencies are an integral part of that overall framework.

As a financial technology platform bringing together consumers and merchants for over 20 years, we have played an instrumental role in fostering the growth of digital finance. **PayPal helped enable the digital evolution of payments** with the onset of online commerce. **We believe that digital assets will help to enable the next generation of payments.** In furtherance of that vision, we now enable our customers to buy, sell, hold, and check out with 4 select cryptocurrencies. The advent of stablecoins presents another option that could be widely used, as it is pegged to fiat currency and could enable faster cheaper financial transactions in the digital and coming web3 environment. And, we would want to develop the ability to hold and transfer CBDC through PayPal as well.

Depending on how a CBDC is designed, it could potentially fulfill currently unmet and future payments needs. For example:

- Further digitization of the small business sector, which makes up 99% of all businesses in the United States, can be facilitated by a retail CBDC.
- Sending international remittances to loved ones overseas may incur lower fees and take fewer days in a more efficient infrastructure.
- The disbursement of government-to-person (G2P) payments could take place quickly at scale, which can provide critical relief in times of disaster and crisis.

These are tremendous opportunities, and they would be dependent on the design choices of CBDCs, which are complex and need to be carefully researched.

III. Financial Innovation Should Be Viewed through the Lens of Financial Health & Inclusion

Given PayPal's long-standing focus on technology-driven innovation that can improve the financial lives of consumers and small business owners around the world, we bring a unique perspective to the topic of digital money and its potential evolution. Indeed, PayPal has remained at the forefront of the digital payment revolution for more than 20 years. By leveraging technology to make financial services and commerce more convenient, affordable, and secure, the PayPal platform is empowering more than 425 million consumer and merchant accounts in more than 200 markets to join and thrive in the global economy.

The Board's paper identifies the potential for greater financial inclusion and access as among a CBDC's greatest potential benefits. We agree. It is well documented that nearly 7.1 million households in America remain unbanked, with the majority of such households being Black and Hispanic. Despite some evidence of progress, roughly 13.8% of Black households and 12.2% of Hispanic households were unbanked according to a 2019 FDIC survey.[3] Notably, a separate 2021 survey found that one of the primary reasons individuals remain unbanked is due to distrust of banks given experience with surprise punitive fees, such as overdraft.[4] That is why facilitating access through different regulated financial intermediaries is important to the distribution of a U.S. CBDC.[5]

The underbanked represent an additional subsegment of the U.S. population that is currently underserved by the financial system. Approximately 20% of U.S. households are considered underbanked, meaning that they used alternative financial products outside the banking system.[6] 30% of Americans worry daily about the amount of debt they carry and 32% have difficulty paying for basic household expenses including food.[7] A further 67% of Americans are not financially healthy, meaning they have little financial cushion if economic conditions worsen.[8] 69% of Americans are living paycheck-to-paycheck, meaning they would experience financial difficulty if paychecks were delayed for a week.[9] And, 77% of Americans report feeling anxious about their financial situation.[10]

---

[3] Federal Deposit Insurance Corporation, *How America Banks: Household Use of Banking and Financial Services 2019*, Oct 2020, https://www.fdic.gov/analysis/household-survey/2019execsum.pdf.

[4] Maiden and MIT DCI, *Centering Users in the Design of Digital Currency,* Dec 2021, https://static1.squarespace.com/static/59aae5e9a803bb10bedeb03e/t/61bb7af28a8f1708b6da3bc3/1639676662775/Maiden_US+CBDC+Report+Executive+Summary_Dec16_v3.pdf.

[5] *Id*.

[6] Federal Deposit Insurance Corporation, *2017 FDIC National Survey of Unbanked and Underbanked Households,* updated Dec 2021, https://www.fdic.gov/analysis/household-survey/2017/index.html.

[7] Aspen Institute, *It's Time for the US to Commit to Public Financial Health by Building More Inclusive Financial Systems,* Oct 2021, https://www.aspeninstitute.org/blog-posts/its-time-for-the-us-to-commit-to-public-financial-health-by-building-more-inclusive-financial-systems/.

[8] Financial Health Network, *U.S. Financial Health Pulse: 2020 Trends Report*, Oct 2020, https://finhealthnetwork.org/research/u-s-financial-health-pulse-2020-trends-report/.

[9] PRNewswire, *Number of Americans Living Paycheck to Paycheck on Decline Despite Pandemic,* Sept 2020, https://www.prnewswire.com/news-releases/number-of-americans-living-paycheck-to-paycheck-on-decline-despite-pandemic-301134207.html.

[10] CNBC, *77% of Americans are anxious about their financial situation—here's how to take control,* May 2022, https://www.cnbc.com/select/how-to-take-control-of-your-finances/.

Concurrently, there is growing global evidence of gradual decreases in the use of physical cash. Though likely impacted by the COVID-19 pandemic, a recent survey found that cash only accounted for 19% of transactions by individuals in 2020, marking a decline of seven percentage points from 2019.[11] An early 2021 survey conducted by PayPal found that 26% of consumers in the United States hoped to use *less* cash during the year and 58% liked the idea of not having to carry cash or coins.[12] Additionally, 73% of those surveyed in the United States stated they would be likely to use a secure U.S. CBDC that is usable online and everywhere cash is accepted. That percentage was even higher with younger demographics, including millennials.

Against this backdrop, the potential appeal and inclusionary benefits of a digital dollar begin to crystallize.

First, if a U.S. CBDC were made available through a digital wallet service offered by regulated financial services firms, it is likely that a meaningful percentage of **currently un- and underbanked individuals would find benefits** from a digital dollar.[13.] There are numerous and complex causes that contribute to unbanked and underbanked populations. We need to study these and address them individually – there will be no one solution to this global problem. It is a problem that deserves thought and action, which may need to come in small doses to test solutions for effectiveness, or recalibrate to achieve the desired results. While a U.S. CBDC may not succeed in converting all unbanked and underbanked persons into those that fully utilize the needed financial services, even impacting a small percentage of the 20% of U.S. households that are underbanked is worthwhile and should be fully considered.

Non-bank financial services providers like PayPal and Venmo typically offer free onboarding and carry no minimum balance. Additionally, PayPal's two-sided platform connects both consumers and merchants in a seamless manner. Our services provide a favorable experience for the consumer and entree into a digital marketplace that does not typically accept cash or checks.

Digital wallets could be tailored to offer access to digital dollars, custody, and related payments services. These offerings would be in parallel with other payments services,

---

[11] Federal Reserve Bank of San Francisco, *2021 Findings from the Diary of Consumer Payment Choice,* May 2021, https://www.frbsf.org/cash/publications/fed-notes/2021/may/2021-findings-from-the-diary-of-consumer-payment-choice/.

[12] PayPal, *Research Study: The Third Wave of FinTech Innovation,* Oct 2021, https://newsroom.paypal-corp.com/2021-10-18-Research-Study-The-Third-Wave-of-FinTech-Innovation.

[13] The Digital Dollar Project, *Exploring a US CBDC,* May 2020, http://digitaldollarproject.org/wp-content/uploads/2021/05/Digital-Dollar-Project-Whitepaper_vF_7_13_20.pdf.

providing competition and consumer choice. Once onboarded through a digital wallet service, a previously unbanked or underbanked individual would find herself connected to the global financial system and e-commerce platforms.

Second, the impact on G2P payments could be immense. Far too many Americans waited months to receive stimulus checks at the onset of the COVID-19 pandemic. A combination of a CBDC and digital identity could enable these individuals to receive their money through direct deposit in a far more timely manner. G2P payments provide a lifeline to millions of Americans and can be made far more efficient through a CBDC.

The pandemic underscored the importance of access to accurate, timely, safe, efficient, and affordable payments for all Americans and the high cost associated with being unbanked and underbanked. While the large percentage of pandemic relief payments moved via direct deposits to bank accounts, it took weeks to distribute relief payments in the form of prepaid debit cards and checks to households that did not have up-to-date bank account information with the Internal Revenue Service. Approximately 35 million individuals had to wait for months to receive their stimulus checks, if they received them at all.[14]

PayPal was honored to participate in the disbursement of stimulus checks. In the first round alone, 100,000 Direct Deposits were made via PayPal and Venmo. In the second round, 117,000 direct deposits were made via PayPal and Venmo. Instead of waiting for physical checks to be printed and mailed and later cashed and deposited, individuals and households could submit their PayPal account details directly to the IRS website and elect to receive their stimulus payment through Direct Deposit into a PayPal CashPlus account. The challenges of getting relief payments to these households highlighted the benefits of delivering payments more quickly, cheaply, and seamlessly through **new digital infrastructure**, and CBDCs can be a means of increasing financial inclusion and improving financial health.[15]

Third, given the likely speed, efficiency, and cost benefits of a digital dollar, low-income individuals should be able to **shift certain financial activity away from high-cost legacy providers**, including check-cashers and payday lenders, that often come with significantly higher fees.

---

[14] CNBC, *35 million stimulus checks are still outstanding. What you need to know if you're waiting for your money,* June 2020, https://www.cnbc.com/2020/06/08/35-million-stimulus-checks-havent-been-sent-out-who-is-waiting-for-money.html.

[15] PayPal, *Addressing Your Questions About Government Stimulus Payments,* accessed May 5, 2022, https://newsroom.paypal-corp.com/covid-19-addressing-your-questions-about-government-stimulus-payments#:~:text=Elect%20to%20receive%20your%20stimulus,and%20you%27re%20all%20set.

Fourth, a digital dollar could render cross-border **remittance transactions more efficient and cost effective.** Many individuals face high fees sending money across borders due, in part, to numerous intermediaries; an interoperable digital dollar that could be readily exchanged across borders and converted into another digital fiat currency holds promise in connecting funds more directly, quickly, and efficiently to those who need them.

Fifth, a digital dollar could **support small business merchants** by providing them (and customers) with a new form of payment, especially given reduced physical cash dealings and the trend toward reduced cash usage. Indeed, as economies move away from physical money, it is prudent to offer the public access to a modern, digital form of cash. A digital dollar can offer important competition against other forms of payment and allow participants access to central bank money through regulated intermediaries.

Finally, a digital dollar would be **responsive to clearly shifting preferences** among consumers. Younger generations are increasingly reliant on mobile access to digital services, and a digital dollar meets them where they are. Offering public money in a digital format would appear to be the next step in the natural evolution of the dollar.

IV. The Importance of Regulated Non-Bank Financial Services Providers

PayPal has long worked to expand financial inclusion and health in the digital realm. We frequently work in partnership with banks and traditional financial institutions as a regulated financial services provider. **We believe that a US CBDC holds particular promise in advancing inclusion and financial health if it recognizes the benefits of open systems and broad distribution of digital dollars by regulated entities beyond traditional banks.**

More specifically, as this paper notes above, the traditional banking system has faced challenges in reaching all segments of the population, especially historically disadvantaged, minority, and low-income groups. Recent research underscores this dynamic by noting that non-bank fintech providers were far more effective in reaching minority-owned businesses during the COVID-19 pandemic to offer them Paycheck

Protection Program (PPP) relief. [16] For example, PayPal's PPP loan program is over-indexed in the majority of the top 30 counties that have the highest density of Black business activity and heightened incidence of COVID-19. More specifically, the coverage rate for PayPal-facilitated PPP loans is above average in 23 out of these 30 counties, [17] in sharp contrast to the overall PPP, in which the coverage rate is below average in 22 out of these 30 counties.[18]

Indeed, there is clear evidence that non-bank financial technology providers are increasingly providing key services for underserved women and minority consumers.[19] For example, PayPal Working Capital (PPWC) loans are distributed to areas with greater concentrations of minority populations, helping to close the gap in access for minority entrepreneurs. The percentage of total PPWC loans going to census tracts with greater than 25% African American population share is slightly higher than traditional SMB loans (13% vs. 11%). Also, this same group of borrowers are growing more quickly than the average SMB (22% vs. 9%).[20]

Given the ability of non-bank fintechs to reach broader populations, it is critical that a U.S. CBDC be offered and distributed through both regulated banks and non-banks, including state-regulated money transmitters and trust companies. As previously noted, **distribution would likely occur through digital wallet services,** which would offer tailored custodial and payments services. Such offerings are ideal products for fintechs that specialize in nimble, consumer-friendly applications, as well as connectivity with other service providers. A U.S. CBDC offers a unique opportunity to leverage a broader set of regulated entities to help expand access to digital financial services.

---

[16] Washington Post, *Racial bias affected Black-owned small businesses seeking pandemic relief loans, study finds,* Oct 2021, https://www.washingtonpost.com/national/ppp-bias-black-businesses/2021/10/15/b53e0822-2c4f-11ec-baf4-d7a4e075eb90_story.html.

[17] PayPal, *Resilience and Growth During the COVID-19 Pandemic: A Study of Digital Small Businesses,* Sept 2021, https://publicpolicy.paypal-corp.com/sites/default/files/2021-09/C19_and_Digital_SMBs_PayPal.pdf.

[18] Federal Reserve Bank of New York, Double Jeopardy: COVID-19's Concentrated Health and Wealth Effects in Black Communities, *Aug 2020,* https://www.newyorkfed.org/medialibrary/media/smallbusiness/DoubleJeopardy_COVID19andBlackOwnedBusinesses.

[19] Federal Reserve Bank of Cleveland, *Fintech Lenders and Their Potential to Reach Underserved Women- and Minority-Owned Small Businesses,* accessed 05/12/22, https://www.clevelandfed.org/newsroom-and-events/events/2017/policy-summit/coverage/fintech-lenders-and-small-business.aspx.

[20] PayPal, *Alternative SMB Financing: Fueling Underserved Entrepreneurs,* Nov 2020, https://publicpolicy.paypal-corp.com/sites/default/files/2020-11/Alternative_SMB_Financing_Fueling_Underserved_Entrepreneurs.pdf.

A brief note on "Nonbank Money":

The Consultation refers broadly to three categories of money: Central Bank Money, Commercial Bank Money, and Nonbank Money. "Nonbank money" is a newly defined concept for the Fed, which "are broadly defined as institutions other than banks that offer financial services." Thus, within this category of "nonbank money" are a range of financial products, from prepaid access and gift cards to money market mutual funds (MMFs) to stablecoins. This is a large category of numerous financial services providers, some of which are considered Commercial Bank Money, and each carry different levels of risk that should not be grouped together.

To be clear, when a customer holds a balance at a nonbank financial service provider, the funds underlying that balance are fully supported by permissible investments in an amount that meets outstanding customer liabilities, as defined by state banking law. For example, permissible investments include categories such as cash, bank deposits, and U.S. government securities. These are bankruptcy remote reserves that are available in the event of default by the service provider. This is just one category of nonbank money that is subject to rigorous state banking laws and examinations. By stating that Nonbank Money as a category contributed to the financial crisis, the Consultation casts a bold shadow across a significant segment of regulated financial service providers, most of whom were not contributors to those crises.

As a result, we urge the Fed to discuss these various forms of financial products and services as distinct, each with varying levels of associated risk. Many of these firms have been helpful in supporting and connecting the global economy in a responsible way. As a bottom line, through these labels, the Consultation implies that providers of "Nonbank Money" may not be appropriate for holding and facilitating access to CBDC on behalf of customers which, in our view, would eliminate a significant benefit that can be achieved from a digital dollar.

V. CBDC Technology

PayPal has long been at the forefront of financial services and technological innovation. By leveraging the Internet and mobile technologies, PayPal has focused on expanding access to financial services, reducing consumer friction and cost, as well as increasing

transaction speed. We view this next generation of digital asset technology as part of this evolution and one, if properly harnessed, that can unlock benefits for consumers and small businesses alike.

By facilitating greater automation, digital asset technology holds the promise to drive key benefits across the payments system including increased speed and efficiency; greater security; innovative new functionality; interoperability; and, programmability. As the Board and Reserve Banks consider design choices and related technology solutions for a digital dollar, it is important to ensure satisfaction of these elements. We unpack each element below.

One of the central benefits of digitized modern payments rails that leverage some of the innovations in blockchain and cryptography is the ability to **automate t**he settlement of payments and maintenance of the ledger. It is this automation that can eliminate costly, time-consuming, and sometimes manual processes associated with legacy infrastructure. This advantage can reduce transaction times and costs. It can further simplify the payments system by removing siloed databases and providing access to consumers and businesses to previously closed networks.

These features can result in a dramatically **more efficient and speedy financial system**. This in turn could result in reduced costs compared to the current system. The use of a digital dollar that transacts on more efficient rails should include regulated digital wallet providers who can process payments on the designated rails (and help manage or ensure proper governance of the rails) and the central bank operator of the CBDC system. Settlement times that today take days can be reduced to minutes, and errors that can be introduced due to the many intermediaries and systems through which a payment typically flows can be significantly reduced. As a result, financial system participants will not only have greater transparency into the movement of funds but will also enjoy greater liquidity and improved cash flow, further stimulating the economy.

A properly designed CBDC can also serve as a foundation for a **safer and more secure** payments network. Because digital currencies can employ multi-layer security in addition to strong authentication and authorization assurances, they can be subject to secure processes like multiparty authentication or enhanced transaction verification. Additional features embedded in a digital currency can facilitate compliance with reporting requirements, support AML and anti-terrorist financing efforts, and assist law enforcement in the prosecution of financial crimes. Notably, emerging encryption technologies can provide these benefits while preserving consumer privacy and control in how their data is used and shared.

The third feature of CBDC technologies is the ability to **spur additional innovations** across the financial sector. At PayPal, we have seen firsthand the impact that digitization has had on the economy and society. The ability to perform many different kinds of financial transactions directly on a mobile device has improved accessibility, particularly in rural locations and banking deserts. Giving small businesses the ability to accept payments digitally has enabled them to compete on a national or global scale. With more aspects of our lives taking place online, it's easy to see that a secure and open digital dollar could power use cases that we couldn't even conceive of today.

The fourth key feature of CBDC-related technology is the potential for **enhanced interoperability**. Domestically, this means operating alongside, and easily convertible to, other forms of digital currency, such as privately issued digital currencies like bitcoin and stablecoins, as well as digital representations of fiat currency. The system should facilitate consumer and business optionality and choice. The breaking down of silos provides an opportunity to connect digital economic systems, including other global CBDCs and financial networks. Interoperability, however, is predicated on careful coordination between the central bank issuers of CBDCs and related stakeholders, along with the development of standards. For this reason, **we urge the Board to assume a global leadership role in developing interoperability standards for CBDCs, including with respect to privacy and security**.

The final technological benefit of a CBDC is its **programmable nature**. This refers to "smart contracts" which enable tokens or currencies to be "programmed" to perform specific functions, like paying a mortgage on a certain date. Programmable money could help to reduce money laundering and terrorist financing by embedding eKYC and sanctions screening functionality. Tied to the concept of automation, digitized money can be wrapped in smart contracts and coded to include certain features and behave in determinable ways. The programmable nature of digital money means that regulation and compliance requirements can be embedded in money itself, and that business logic can drive desired outcomes. For example, a digital dollar could be programmed for humanitarian distribution in a disaster zone and only usable for the purchase of essential food and medical supplies in the first instance. In the context of financial markets, digital dollars could be programmed to facilitate clearing and settlement of transactions at efficient intervals. Programmability ultimately relies on interoperability, as noted above, to ensure that a digital dollar is usable across a range of digital economic spheres and use cases.

VI. Getting Privacy Right

One of the most important elements of a U.S. CBDC is ensuring user privacy while satisfying legitimate law enforcement requirements. Many have expressed concern that CBDCs could allow for government surveillance of citizen payment transactions, especially to the extent that the digital currency transacts upon highly centralized government rails. On the other hand, some worry that treating a CBDC as a pure analog to cash along with its anonymity features will facilitate illicit activity and threaten national security.

Given these important considerations, it is imperative that the United States gets privacy right when it comes to a digital dollar. With thoughtful design and implementation, the digital dollar could enjoy competitive advantages relative to other national CBDCs that permit unchecked surveillance. One advantage the United States already enjoys is existing legal due process and protections when it comes to individual financial information. These protections, which include those under the 4th Amendment of the U.S. Constitution, should be embedded within the design of a digital dollar and associated authorizing legislation.

Notwithstanding the importance of privacy, it is also important that a CBDC system be capable of meeting key law enforcement requirements and objectives. A CBDC design that relies on regulated entities to serve as digital wallet service providers can ensure implementation of key KYC/AML requirements. **Additionally, we encourage the Board to actively explore leading-edge privacy technologies that can help satisfy privacy and law enforcement objectives simultaneously. For example, zero-knowledge proofs are an area of development that allows network participants to validate certain information without having direct access to underlying, sensitive information.** In the context of KYC/AML, this might mean verifying that an individual is not on a sanctions list without revealing the identity of the individual to the entity seeking verification.

VII. The Future of Money

As it stands today, the current payment rails are inconvenient and expensive, taking days to settle transactions, providing limited visibility to businesses conducting international payments, and charging high fees – especially to lower-income and

underbanked segments of the population that are forced into costly check cashing, money order, payday lending, and remittance services.

Technology and regulation provide an opportunity to reshape the financial system to benefit the underserved; to support businesses, professionals, and creators with faster, lower cost payments as well as access to credit; and, to relieve financial stress for the general public. Responsible innovation in payment systems, lending, digital currencies, digitized protocols, digital identity and in the fight against fraud and financial crime can bring a new era of equitable, low cost, and accessible financial services. **The time is ripe to modernize and upgrade the technological infrastructure of the financial system – and we want to help businesses and consumers adapt and engage.**

The combination of public research funding, private innovation, global attraction of talent, and appropriate regulation cemented the role of the United States at the center of the digitization of communications, media, commerce, and financial services in the form of web 1.0 and web 2.0. Achieving the same leadership position in web3 is possible but should not be taken for granted.

Advances in technology, including the use of digital assets and smart contracts, have the potential to fundamentally change the way in which payment activities are conducted and the roles of financial infrastructures. The introduction of a CBDC may provide an important foundation for beneficial innovation and competition in retail payments in the United States, giving people choices that feel meaningful to them and their financial health.

Interest in CBDCs has accelerated over the past year and half because of the digitization of all economic activities, in part due to the COVID-19 pandemic. At PayPal, we have seen the digitization of verticals that have traditionally been brick and mortar, such as groceries and meal delivery. We have also seen the growing importance of omni-channel capabilities for commerce, which is especially important as we support economic recovery by supporting the integration of small businesses into the digital economy.

We have been learning a great deal about CBDCs through our collaborations with institutions. This includes supporting MIT's Digital Currency Initiative (DCI) to advance its independent central bank digital currency research and development as well as participation in the Atlantic Council's CBDC Private Roundtable Series with the goal of making the technology more accessible and understood by the public. Additionally, in early 2022, we established a cross-disciplinary advisory council for our Blockchain, Crypto and Digital Currencies unit comprised of some of the world's leading experts in

cryptography, distributed technology, regulation, economics and capital markets. We also have staff serving on the Digital Dollar Project's Advisory Board. We're committed to working with central banks and regulators to help responsibly shape the future of digital financial services.[21] We believe CBDCs could be a great addition to the payment options available to businesses and consumers and complement the current retail payments system.

VIII. Conclusion - Preferred CBDC Design & Path for Collaboration.

We believe that any exploration into a new digital dollar necessarily includes collaboration between government and industry representatives experienced in technology, financial services and payments, and illicit finance. It is critical that any digitized dollar be carefully and thoughtfully planned and tested, and tested again, to ensure the vibrancy of U.S. currency for centuries to come. The private sector will play an important role in distributing a CBDC, enabling interoperability, and facilitating use among consumers, including the un- and under-banked. We would be happy to collaborate through discussions, pilots, or testing.

[21] PayPal, *2021 Global Impact Report*, April 2022, https://s26.q4cdn.com/519805829/files/doc_downloads/PayPal-2021-Global-Impact-Report.pdf.

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

May 20, 2022

The Honorable Jerome H. Powell
Chair
Federal Reserve Board
20th Street and Constitution Avenue, N.W.
Washington, DC 20551

Re: Comments on the Federal Reserve's *Money & Payments: The U.S. Dollar in the Age of Digital Transformation* paper regarding the implementation of a CBDC

Dear Chairman Powell:

The Merchant Advisory Group ("MAG") respectfully submits this letter in response to the Board of Governors of the Federal Reserve System's ("Board") request for public comment on the Board's discussion paper, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* ("*Money & Payments*") regarding the implementation of a Central Bank Digital Currency ("CBDC") in the United States.

About the MAG. The MAG plays a vital role in helping merchants and the industry shape innovative approaches to payments. Providing unparalleled collaboration, the MAG works together with payments industry stakeholders and advocates for merchants' interests. The MAG represents over 150 U.S. merchants which account for over $4.8 trillion in annual sales at over 580,000 locations across the U.S. and online. Roughly $3.5 trillion of those sales and over 100 billion card payments are electronic, which represents approximately 62% of total U.S. card volume. MAG members employ over 14 million associates.

Introduction. The MAG and its members appreciate the Board's open consideration of the potential benefits and risks of implementing a CBDC in the U.S. and the opportunity to comment on the issues set out in the *Money & Payments* discussion paper. MAG members play a fundamental role in the monetary and payments ecosystem, competing to offer the highest quality goods and services to consumers for the lowest prices. MAG members are deeply invested in seeing an American monetary system that facilitates modern, innovative, and competitive payments.

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

Like the development of the instant payments service FedNow, the introduction of a U.S. CBDC has enormous potential to repair and further modernize the U.S. payments system—a system that in some ways lags behind that of other developed countries. The MAG understands that the decision to implement a CBDC carries a range of policy and design implications that could greatly impact the utility of the CBDC. As an organization comprised of the country's largest merchants, the MAG's comments focus primarily on the importance of ensuring that a CBDC in the U.S. spurs competition and innovation in the retail payments industry, and on the design elements that underlie a successful and widely adopted CBDC.

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

1. **A U.S. CBDC could modernize and repair the U.S. payments system.**

Nearly a century ago, the U.S. dollar became the world's reserve currency, cementing it as the most widely used currency for international trade and other transactions. The dominance of the dollar enables the U.S. to shape global monetary and financial standards and helps effectuate U.S. foreign policy interests. But as the world has evolved and digital transactions have become the norm, and as novel forms of currency and payments have emerged tailored to the digital ecosystem, the U.S. dollar also must evolve to maintain its utility and relevance.[1] Because traditional forms of currency, like paper cash, no longer adequately serve consumers' transacting needs, new digital currency concepts, including cryptocurrencies, have emerged to try to meet the demands of consumers to store currency value securely and at low cost, and to transfer that value quickly, reliably, and cheaply across the globe.

As a result, central banks around the world have begun to study and launch CBDCs to meet markets' demand for a truly digital currency, issued by the central bank. Because a CBDC is a form of currency designed for digital transactions but also issued directly by the central bank, it can be a safer and more stable way to transact digitally than other forms of private money. Accordingly, the Board should take care to avoid placing the U.S. in a position where foreign central banks implement more efficient monetary and payments systems which may supplant reliance on the U.S. dollar while denying Americans and U.S. merchants the benefits of a truly digital national currency.

To ensure that the U.S. dollar remains relevant globally, and to provide consumers with a superior form of currency and a more efficient means to transact digitally, the MAG strongly believes the Board should proceed to develop and launch a CBDC. Properly implemented, a CBDC could help further modernize the payments sector, spur competition and innovation, lower transaction costs, and lead to widespread adoption. Of chief concern to the MAG is, as the Board recognized in its discussion paper, the promise that a CBDC can offer a range of benefits including "supporting faster and cheaper payments."[2]

[1] *See* Dion Rabouin, *The U.S. Is Losing the Global Race to Decide the Future of Money—and It Could Doom the Almighty Dollar*, TIME (Sept. 21, 2021), https://time.com/6099105/us-china-digital-currency-central-bank/.

[2] *Money & Payments* at 3.

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

In particular, the MAG strongly agrees with the Board's observation that despite advances in technology, "some payments . . . remain slow and costly."[3] These high costs have led several countries whose businesses and residents rely on cross-border transactions (e.g., remittances) to launch or prepare to launch CBDCs after concluding that CBDCs could be an effective means to improve and lower the costs of cross-border transactions.[4]

While *Money & Payments* rightly calls out the excessive cost of cross-border payments, the design of a CBDC also should address the high cost and inefficiencies in *domestic* transactions as well. In his March 9, 2022, Executive Order regarding digital assets, President Biden reaffirmed the U.S. policy interest in "reducing the cost of domestic and cross-border funds transfers and payments."[5] The vast bulk of retail payments transactions today are slow and expensive card-based payments, a sector marked by a persistent lack of competition. This lack of competition has resulted in higher prices and lower quality, including higher rates of fraud in the U.S. than in other developed countries. The MAG urges the Board to consider and address the systemic inefficiencies in the U.S. retail payments system when it designs and launches a CBDC in the U.S.

a. A CBDC could address the lack of competition in the U.S. payments system, which has led to high fees and comparatively low quality.

By offering maximum flexibility on who can participate in the storage and transfer of a reliable, safe, cash-like CBDC, the Board could meaningfully foster payments competition and thereby lower costs, improve quality, and increase public access to the U.S. digital payments ecosystem.

Currently, debit and credit cards comprise the vast majority of digital payment transactions at U.S. merchants.[6] Merchants and consumers incur high costs for these transactions. When a consumer uses a credit or debit card to complete a purchase, payment card networks like Visa and Mastercard and their issuing banks charge the merchant interchange and network fees to process the payment. Those fees have risen sharply, particularly on digital

[3] *Money & Payments* at 8.

[4] *See*, *e.g.*, BIS Report to the G20, *Central bank digital currencies for cross-border payments* (July 2021) at 4-5, https://www.bis.org/publ/othp38.pdf.

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

[6] *See* The Nilson Report, Issue No. 1210 (Dec. 2021) at 6.

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

transactions. Between 2009 and 2025, merchants' overall costs of acceptance will have doubled, much of it driven by rising fees and increased use of payment types—such as mobile or virtual card transactions—which the payment networks charge even higher fees to process.[7]

This increase in merchant-side fees has occurred despite lower issuing bank costs for card transactions.[8] The resulting increased disparity between processing costs, interest expenses, and fees charged to merchants underscores that the payments markets are not functioning properly in the U.S., where merchants pay some of the highest acceptance fees in the world.[9] This April, in the midst of continued pandemic disruptions and rising inflation, Visa and Mastercard implemented rate changes estimated to cause a $1.2 billion increase in acceptance fees disproportionately affecting digital transactions.[10] Because they operate in highly competitive, low-margin environments, merchants must pass these fees on to consumers in the form of higher retail prices.[11]

The current marketplace lacks the competition necessary for the free market to set appropriate pricing. This lack of competition has harmed U.S. consumers and the economy. In recently intervening to block Visa's acquisition of Plaid, which provides "pay-by-bank" technology that could allow U.S. consumers to pay instantly for goods and services directly from their bank accounts, the Department of Justice noted that Visa has a durable 70% share of the online debit market, resulting in what the Department of Justice described as

[7] CMSPI Insights, *U.S. Payments Acceptance Costs Set to Double by 2025* (June 15, 2021), https://cmspi.com/nam/en/resources/content/us-payments-acceptance-costs-set-to-double-by-2025/.

[8] For debit transactions, where cost reporting is mandated, issuing bank costs nearly halved from $0.077 in 2009 to $0.039 in 2019. *See* Board of Governors of the Federal Reserve System, *Interchange Fee Revenue, Covered Issuer Cost, and Covered Issuer and Merchant Fraud Loss Related to Debit Card Transactions* (May 2021) at 20-21, https://www.federalreserve.gov/paymentsystems/files/debitfees_costs_2019.pdf.

[9] CMSPI Insights, *Global Review of Interchange Fee Regulation* (Nov. 2020) at 46, https://cmspi.com/nam/en/resources/content/cmspi-global-interchange-report-available-now/.

[10] CMSPI Insights, *April 2021 Interchange Fees Changes* (Feb. 2021), https://cmspi.com/nam/resources/april-interchange-changes/; CMSPI Insights, *US Card Swipe Fees are Changing in April - Is Your Business Prepared?* (Feb. 23, 2022), https://cmspi.com/nam/en/resources/content/us-card-swipe-fees-are-changing-in-april-is-your-business-prepared/.

[11] *See*, *e.g.*, Comments of the United States Department of Justice, *Debit Card Interchange Fees and Routing, Docket No. R-1748, RIN 7100-AG15* (Aug. 11, 2021), https://www.federalreserve.gov/SECRS/2021/September/20210902/R-1748/R-1748_081121_140725_318718138961_1.pdf, at 2 ("Lacking competitive alternatives [to Visa and Mastercard], merchants must pay higher transaction fees that are passed on to consumers in the price of goods and services.").

"monopoly power."[12] The creation of a CBDC should foster competition by enabling other avenues for value to be transferred when an electronic transaction occurs. In a functioning payments market, competition leads to innovation, which includes lower fraud. Today, the majority of card fraud is concentrated in card-not-present transactions including ecommerce. The Board has an opportunity to build a CBDC with enhanced security tools and features to prevent and reduce fraud. This in turn would encourage other market participants to drive efforts to meaningfully reduce fraud in the system.

A CBDC could bring greater competition to the payments industry to improve innovation and lower transaction costs. This is in keeping with the president's recent Executive Order, which encouraged the Board to analyze how "CBDCs could improve the efficiency and reduce the costs of existing and future payments systems."[13]

In keeping with this Order, it is imperative that the Board implement a CBDC in a way that maximizes competition and drives down costs in the existing U.S. payments system. As discussed in Section 2 below, a set of CBDC design principles should be adopted that would fully open the market for CBDC services and maximize users' ability to freely store and transfer value. By adhering to those design principles, the Board could modernize the U.S. payments system while addressing high domestic and cross-border payments fees.

b. A CBDC could both improve and complement the U.S. payments ecosystem.

A well-designed and implemented CBDC could quickly improve the U.S. payments system and meet the growing digital payments needs of consumers. This can be accomplished in a way that complements and enhances the existing financial sector. As a currency directly issued by the Federal Reserve, a CBDC would address the demand for an efficient digital currency.

First, CBDCs are well-suited to the digital way that consumers store and transfer their money, enabling digital transactions to clear instantly and reliably. As discussed above, the current status quo leaves as the dominant option for paying for goods existing bank-based payment networks which are relatively slow (taking days for settlement), inefficient, and

[12] Complaint at 2, 8, *United States v. Visa, Inc.*, No. 3:20-cv-07810 (N.D. Cal., filed Nov. 5, 2020). One Visa executive admitted that it was in Visa's and its issuing bank members' "collective interest to manage the evolution of these payment forms in a way that protects the commercial results [they] mutually realize through card-based payments." *Id.* at 10.

[13] 87 Fed. Reg. 14,143 at 14,146.

costly.[14] Indeed, the growing adoption and use of stablecoins and other cryptocurrencies demonstrate the demand for more efficient ways to store and transfer digital value.[15] Notwithstanding implementation of a CBDC, the MAG supports the Board's and other agencies' ongoing work to ensure that stablecoins are properly regulated so that their advantages to the U.S. payments ecosystem are realized and their risks minimized.[16].

But the ability for a CBDC to effectuate secure and real-time payments could spur competition and innovation in the financial sector. As the discussion paper states, faster payment alternatives hold promise to reduce the costs of "lower-value payments," while noting that "the costs and fees for certain payment methods (e.g., card transactions) may remain comparatively high for some parties to the extent that instant payments do not serve as a close substitute for those methods."[17] Deployment of a CBDC could address the Board's perceived limitation of faster payments, potentially reducing the costs of *all* transaction values.

Without a CBDC that promotes competition and innovation in the retail payments sector, including, to the extent the CBDC is intermediated, allowing more types of commercial entities to serve as intermediaries, U.S. merchants will continue to pay some of the highest costs of acceptance in the world while continuing to shoulder some of the highest rates of fraud.[18] As the use of traditional cash decreases, payment card networks and banks will likely continue to increase fees for digital purchases, where competition is most limited.[19]

---

[14] The built-in delay in settlement further increases the cost of card payments to merchants, especially in today's higher-interest-rate environment. As for processing speed, the recent study by the Boston Federal Reserve and MIT shows that a CBDC could be implemented with a transaction throughput of between 170,000 and 1.7 million transactions per second (depending on the implementation), compared with 65,000 transactions per second on Visa's networks. Federal Reserve Bank of Boston, *Project Hamilton Phase 1 Executive Summary* (Feb. 3, 2022), https://www.bostonfed.org/publications/one-time-pubs/project-hamilton-phase-1-executive-summary.aspx.

[15] *Money & Payments* at 14.

[16] *See*, *e.g.*, Report on Stablecoins, President's Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, (Nov. 2021), https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf.

[17] *Money & Payments* at 7 n.5.

[18] *See* The Nilson Report Issue No. 1209 (Dec. 2021) at 5.

[19] *See*, *e.g.*, CMSPI insights, *Online Routing: The Barriers Costing Retailers $3.1bn a Year* (June 5, 2020), https://cmspi.com/nam/en/resources/content/online-routing-the-barriers-costing-retailers-31bn-a-year/; Jennifer Surane, *Visa Changes Rules for Gas Stations to Avoid $125 Pump Limit*, Bloomberg (Apr. 1, 2022), https://www.bloomberg.com/news/articles/2022-04-01/visa-changes-rules-for-gas-stations-to-avoid-fuel-pump-shutoffs (quoting a Mastercard statement that justifies increases in digital fees on the basis that "electronic payments have proven even more valuable since the start of the pandemic").

But a CBDC that provides a viable alternative means of transferring legal tender would immediately enhance competition.

A CBDC that spurs competition and innovation in the payments industry should be considered complementary to the financial sector and should be pursued by the Board. Indeed, the Board recognizes that a CBDC could "provide a safe foundation for private-sector innovations to meet current and future needs and demands for payment services."[20] Existing payments entities in the private sector, including processors, banks, and fintech companies, could benefit from the foundation provided by a CBDC. Users could have the option to store and transfer their CBDC using existing payments intermediaries. Payments entities would have to compete for volume by offering cost-effective value-add services, thereby advancing innovation, driving down system costs, and increasing digital transaction output systemwide. The competition fostered by a CBDC has the potentital to benefit all stakeholders, including existing financial players, consumers and merchants.

Moreover, a CBDC can complement other real-time payments rails that are new to the market or are in development, like FedNow, the public money transfer alternative set to launch in 2023. While FedNow will provide an instant, irrevocable, and less expensive payments rail, a CBDC can offer even greater built-in functionality. Among other things, FedNow balances can be held only by banks, so FedNow will likely require users to have a bank account.[21] In contrast, a CBDC could be designed to be held through non-bank intermediaries without the user having a bank account, like cash, and based on more flexible technology. For example, a CBDC has the potential to support smart contracts and efficient automation of payments, including government benefit disbursements and redemption.[22] Moreover, ongoing improvements to FedNow could make it a useful alternative to a CBDC for certain types of transactions if a central bank prefers to offload the costs of maintaining the CBDC ledger.[23] A CBDC would be an important complement *and* supplement to FedNow and other real-time payments solutions.

---

[20] *Money & Payments* at 14.

[21] Paul Wong and Jesse Leigh Maniff, *Comparing Means of Payment: What Role for a Central Bank Digital Currency?* FEDS Notes. Washington: Board of Governors of the Federal Reserve System (Aug. 13, 2020), https://doi.org/10.17016/2380-7172.2739 ("[Real Time Gross Settlement] systems [like FedNow] that have achieved ubiquity remain limited to those with a bank account (up to 93.5% of U.S. households). . . . A CBDC that used either bank accounts or smartphones as an entry point could reach 96.7% of households).

[22] Wong, Paul, and Jesse Leigh Maniff (2020).

[23] *Id.*

The high costs of card-based transactions have persisted despite decades of attempts to regulate payments markets and foster competition.[24] A CBDC provides a unique opportunity to address the fundamental lack of competition and resulting durable market power held by a very few legacy players in the U.S. payments ecosystem.

2. A U.S. CBDC design should combine the benefits of cash and digital currency to further a modern, open, and secure U.S. payments system.

If properly designed and implemented, a CBDC would effect meaningful change for retail payments. To advance its monetary and financial policy goals, the Board should adhere to certain high-level design elements when implementing a CBDC. A CBDC should aim to replicate the best properties of traditional cash wherever possible—including finality of payment, transfer at full value, and immediate usability of funds—while incorporating the efficiencies associated with digital currency, including the ability to transact instantly and securely across the globe. Additionally, a CBDC design should address the need to promote open and competitive access to payments.

a. *If a CBDC is intermediated, the Board should ensure maximum openness.*

Although the Board's discussion paper suggests that a U.S. CBDC should likely be intermediated—meaning that consumers cannot interact directly with the Federal Reserve to open CBDC accounts or transfer their CBDC—the MAG does not believe this should be a foregone conclusion. There are several advantages to issuing CBDCs directly to users. Such a CBDC would most closely resemble the treatment of cash while also adding the superior transferability of digital money. A direct CBDC also would be the least complex to implement and the easiest for the Board to regulate because it would involve fewer private intermediaries, which increase system costs. At the same time, it could create a foundation for private-sector competition and innovation.

[24] *See*, *e.g.,* Final Judgment as to Defendants Mastercard International Incorporated and Visa Inc., *United States v. American Express Co.*, No. 10-cv-4496-NGG-RER (E.D.N.Y. July 20, 2011), ECF No.143; *United States v. Visa U.S.A. Inc.,* 344 F.3d 229, 239 (2d Cir. 2003); *In re Visa Check/MasterMoney Antitrust Litig.*, No. 96-cv-5238(JG), 2003 WL 1712568, *3, *4 (E.D.N.Y. Apr. 1, 2003); *United States v. Visa U.S.A. Inc.*, 163 F. Supp. 2d 322, 340, 342 (S.D.N.Y. 2001). Visa's high market shares have particularly persisted in debit despite significant efforts by Congress to increase competition via the Durbin Amendment, which is Section 1075 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376, 2068-74 (July 21, 2010), amending the Electronic Fund Transfer Act (15 U.S.C. § 1693 et seq.) with a new Section 920, codified at 15 U.S.C. § 1693o-2.. *See*, *e.g.*, The Nilson Report Issue Nos. 1097 (Oct. 2016) at 8, 1191 (Feb. 2021) at 5, & 1200 (June 2021) at 7 (reflecting Visa's 63.9% share of U.S. general purpose debit volume in 2010 and 59.1% share in 2020).

A direct CBDC or intermediated CBDC with separate accounts for each user would enable the government to easily distribute payments right to consumers. For example, the government could seamlessly transfer stimulus payments directly into users' CBDC wallets rather than mailing paper checks or payment cards issued by financial intermediaries. During the COVID-19 pandemic, the Treasury Department provided nearly $25 billion in stimulus payments via Visa prepaid debit cards issued by Metabank, an issuing bank exempt from regulated debit fee caps.[25] Without a better way to transfer stimulus funds, merchants paid hundreds of millions in fees to Metabank, as these prepaid debit cards cleared at credit-like unregulated rates. A direct-to-consumer CBDC—one that also could be programmed for certain uses—could correct this problem.

If the Board determines that a U.S. CBDC should be intermediated such that only private sector entities may offer digital wallets to facilitate CBDC holdings and payments, the MAG believes that it is critical that the system be designed to ensure maximum participation. As the Board notes, potential players in an intermediated CBDC system would have to operate in an "open market for CBDC services." The current digital payments system is dominated by a few players – i.e., banks, which have a legal monopoly over access to Federal Reserve master accounts through which existing USD payment systems operate, as well as a monopoly over issuing bank status in card schemes – and is therefore marked by high fees and comparatively low quality, and this has led to unnecessary costs imposed on the storage and transfer of money. A CBDC implementation should not replicate the same paradigm. To avoid this outcome, nonbanks should be permitted to serve as CBDC intermediaries (subject to obtaining necessary licenses and satisfying proportionate, risk-based requirements).

Accordingly, a CBDC should create the ability for value to be stored and transferred between parties in a seamless manner. Importantly, a CBDC design should not unnecessarily restrict how users can store or transfer their CBDC. The Board should not unnecessarily restrict which intermediaries can participate in effectuating CBDC payments, and the Board should take care not to limit participation to traditional banks. The goals of a CBDC can only be achieved if there exists a healthy, competitive marketplace with a large number of participants innovating and competing to offer CBDC users the best functionality for the lowest price.

[25] *See* Press Release, *MetaBank Serves as Agent for Distributing Prepaid Debit Cards as part of Economic Impact Program* (Mar. 22, 2021), https://www.globenewswire.com/news-release/2021/03/22/2197234/0/en/MetaBank-Serves-as-Agent-for-Distributing-Prepaid-Debit-Cards-as-part-of-Economic-Impact-Program.html.

b. A CBDC design should address financial inclusion.

Ensuring open participation in the CBDC ecosystem also would promote financial inclusion and give financial access to the economically vulnerable, a stated priority of the Board.[26] In 2020, five percent of U.S. households were unbanked and 13 percent were underbanked, meaning these households did not have a bank account or did not have adequate access to financial services.[27] As traditional cash declines, ensuring open access to a central bank currency becomes even more imperative. Today, banks' minimum balance requirements, high fees, distrust for private banks, and privacy concerns consistently rank as the top reasons given for being unbanked.[28]

A CBDC could directly address the needs of the unbanked by providing users a means to safely store and transfer money with a mobile phone or other device. Central banks that are piloting or have launched CBDCs recognize the value of CBDCs in financial inclusion.[29] As discussed further below, offline CBDC functionality would promote financial inclusion, especially as the use of cash declines. To the extent that a CBDC offers an alternative to more costly payment methods that are lower quality and less functional, a CBDC could drive down the cost of traditional payments, reduce the barriers to financial inclusion, and introduce greater functionality throughout the payments system.

Design elements should incorporate the reasons why certain households remain unbanked: a CBDC account should be easily accessible and simple to use, protect privacy (while remaining traceable and auditable), clear at par like cash or checks, and it should not have minimum balance requirements. Importantly, users should not be limited to holding their CBDC at banks. Entrusting only financial institutions as CBDC access points would have a negative impact on financial inclusion because many unbanked consumers do not trust banks or otherwise do not want to open a bank account.[30]

---

[26] *Money & Payments* at 16.

[27] Federal Reserve, *Report on the Economic Well-Being of U.S. Households in 2020* (May 2021), https://www.federalreserve.gov/publications/2021-economic-well-being-of-us-households-in-2020-banking-and-credit.htm.

[28] FDIC, *How America Banks: Household Use of Banking and Financial Services, 2019 FDIC Survey*, at 3, https://www.fdic.gov/analysis/household-survey/2019report.pdf.

[29] Raphael Auer, et al, *Central bank digital currencies: a new tool in the financial inclusion toolkit?*, BIS Paper, FSI Insights on Policy Implementation No 41 (Apr. 2022), https://www.bis.org/fsi/publ/insights41.pdf.

[30] *See* Jesse Leigh Maniff, *Inclusion by Design: Crafting a Central Bank Digital Currency to Reach All Americans*, Federal Reserve Bank of Kansas City (Dec. 2, 2020), https://www.kansascityfed.org/research/payments-system-research-briefings/inclusion-by-design-crafting-central-bank-digital-currency/.

The MAG supports a CBDC designed to promote financial inclusion and provide ubiquitous access to the digital financial system.

c. A CBDC design should maximize acceptance and interoperability.

Relatedly, a CBDC should facilitate seamless payments by maximizing ease of use at any point of interaction or transfer.[31] One of the potential advantages of a CBDC is the ability for it to be easily used by consumers. If implemented with simple technology, a well-designed CBDC could enable users to transfer CBDC without more than a low-end mobile phone. Accordingly, it is crucial that merchants not be required to implement major infrastructure changes to accept CBDC. To ensure that CBDCs have maximum applicability to different users and use cases, CBDC architecture should be flexible to easily allow technological upgrades or value-added services to be layered on top.

Additionally, the Board should ensure that the CBDC is easily interoperable with current (and future) payment methods. For example, a consumer (at their discretion) should be able to effectuate the transfer of CBDC to a merchant using a variety of payment methods, including payment cards, digital wallets, or simply direct transfers between CBDC wallets. Likewise, users should be permitted maximum flexibility to store their CBDCs. There is no technological or policy impediment to doing so. Currently, cash deposits can be transferred using a variety of payment rails, and CBDC should allow for users to replicate that environment. In fact, the ability to use CBDC ubiquitously across payment forms would foster innovation in the payments system because private actors would compete for CBDC transaction volume and deposits.

d. A CBDC should include offline functionality.

To maximize CBDC's value as a ubiquitous payment method, a CBDC should ideally have both online and offline functionality. When users are online (i.e., connected to the internet), the transfer of CBDC is communicated to the network and can be memorialized virtually instantly, resulting in seamless and automated processing and clearing across countless transactions. Because these online transactions are cleared instantly, they are final and irrevocable. Limiting the potential use of a CBDC to online environments, however,

[31] The point of interaction, or point of sale, is anywhere a consumer can effectuate payment for goods or services. This could include a brick-and-mortar store's checkout area, the purchase page of a website, or in-app shopping. As payments have evolved and the point of interaction evolves (e.g., checkout-free shopping or in-app purchases), it becomes even more imperative to ensure that the payments system is open and competitive. Easy transferability of CBDCs could help to address the problem of "walled-garden" platform ecosystems that require users to use only one preferred payment method.

would reduce its utility and ubiquity. Indeed, businesses of all sizes commonly experience periodic network outages, and history has shown through natural disasters that there will be moments when online connectivity is not available but access to currency is imperative. The Board should therefore ensure that a CBDC remains functional when users are offline.

Implementing offline CBDC functionality may introduce complexity and fraud concerns. Because the network is unaware of the offline transaction, it cannot verify that the user has sufficient CBDC for a transaction, nor can it prevent a user from double-spending CBDC.[32] While this risk does not exist with cash, which by its nature operates offline, such an event would reduce consumer confidence in the CBDC.

Although these added risks make offline CBDC implementation more complex than online implementation, there are existing security protocols designed to solve for the risks of offline CBDC.[33] EMV technology is adopted throughout the world (except in the U.S.) to provide offline as well as online authentication; a common offline implementation is transit, where transactions are stored and forwarded by batch later. Some central banks are in various stages of implementing CBDC that can operate in both online and offline environments.[34] Because a secure offline CBDC solution is considerably more challenging to achieve, the Board could implement a two-phased approach and launch an online CBDC while continuing to develop and pilot offline functionality. The MAG's ultimate goal is for a reliable and safe CBDC that can be used in both online and offline environments.

e. A CBDC with quantity limits must take into account the different needs of users.

The Board should not impose a minimum balance requirement on a user's account or wallet. A minimum requirement is unnecessary and would be contrary to the Board's stated goal to prioritize financial inclusion. And while the MAG does not have a position on whether the Board should limit the total amount of CBDC an end user or single account could hold, any limits should take into account that certain types of users may have needs

---

[32] *See*, *e.g.*, Mihai Christodorescu, et al., *Towards a Two-Tier Hierarchical Infrastructure: An Offline Payment System for Central Bank Digital Currencies,* at 7 (Dec. 14, 2020), https://arxiv.org/pdf/2012.08003.

[33] *Id.*

[34] Sweden, for example, is currently piloting offline e-Krona. Similarly, China's e-CNY operates in offline environments. *See* Gabriel Soderberg, *Behind the Scenes of Central Bank Digital Currency*, International Monetary Fund, at 13-14 (Feb. 2022), https://www.imf.org/en/Publications/fintech-notes/Issues/2022/02/07/Behind-the-Scenes-of-Central-Bank-Digital-Currency-512174 http://www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021071614584691871.pdf; *E-CNY Progress Report Reveals Telling Details About the Chinese Retail CBDC Project*, https://www.forbes.com/sites/vipinbharathan/2021/07/19/e-cny-progress-report-reveals-telling-details-about-the-chinese-retail-cbdc-project/?sh=481100216a59.

for high limits. Large merchants, for example, would have to be able to accept substantial amounts of CBDC, especially if the CBDC becomes widely used by consumers. A limitation that would have the effect of requiring holders such as merchants to immediately convert CBDC would reduce the utility of the CBDC or effectively prevent a merchant from accepting CBDC at the point of sale (so as to avoid the possibility that a consumer's payment will fail simply because the merchant temporarily hit its balance limit). Likewise, businesses that hold large cash reserves should be permitted to hold CBDCs in the same manner.

One option to address the needs of different users is to provide different limits for different classes of users. The Bahamas, for example, offers individual and merchant CBDC accounts, each with different holding and transaction limits.[35] The Board could follow a similar approach to balance its concerns about capping CBDC holdings with merchants' needs to conduct their business effectively.

f. A CBDC should balance privacy and security considerations.

A critical consideration of a CBDC is balancing the public's interest to transact privately and anonymously with the necessity to minimize illicit activity. This balance is best achieved if CBDC transactions can be anonymous to private participants while still subject to the same laws and regulations that apply to the existing payments space (e.g., AML/KYC).[36] That way, a CBDC would emulate cash with the ability to transact quickly and privately, while providing law enforcement the ability to deter, investigate and track criminal activity.

A well-designed CBDC also could lower U.S. payment fraud. Leveraging the immutable ledger technology employed by cryptocurrencies, CBDCs can be resilient to payment fraud, especially if existing authentication and security features are embedded into the transfer process from the outset. Nonetheless, the Board should address and provide clear guidance as to the allocation of the risks of fraud. As a starting point, a CBDC should operate like cash, where a transfer is final upon delivery, and absent fraud, the risk of loss rests with whoever has custody of the money at the time of loss. Of course, the Board should implement additional CBDC features that could facilitate recovery of CBDC in the event a user loses or cannot access their CBDC.

---

[35] Individual accounts have up to an $8,000 holding limit and $10,000 monthly transaction limit; merchant accounts have up to $1,000,000 holding limit and unlimited annual transactions. *See* https://www.sanddollar.bs/merchants. Of course, some high-volume merchants in the U.S. would need much higher CBDC holding limits, as they conduct tens or even hundreds of millions of sales each day.

[36] Federal Reserve Chairman Jerome Powell recently agreed that a central bank digital currency would need to ensure user privacy but also would need to be "identity verifiable," similar to the way U.S. bank accounts are identifiable to prevent illicit activity like money laundering. *See* Craig Torres, *Powell Says Digital Dollar Must Ensure Privacy, Identification* (Mar. 23, 2022), https://www.bloomberg.com/news/articles/2022-03-23/powell-says-digital-dollar-must-ensure-privacy-identification.

MAG
MERCHANT ADVISORY GROUP®
4248 Park Glen Road
Minneapolis, MN 55416
(952) 928-4648

3. <u>Merchant and other key stakeholder buy-in is critical to the success of a CBDC.</u>

The implementation of a CBDC has the potential to substantially alter the U.S. payments landscape. Done well, it marks a generational opportunity to modernize the payments system, empower consumers, promote competition, and foster innovation. However, if a CBDC does not include carefully considered policy and design elements, inefficiencies in the current payments system—marked as it is by dominant players with durable market power—will be extended into the future, and a valuable, once-in-a-generation opportunity will have been lost.

To ensure the best design, it is imperative that the Board solicit and reflect the demands of consumers, and incorporate the voices of key stakeholders when implementing a CBDC. Merchants, who are particularly impacted by changes to the payments landscape, should be involved early and often throughout the process. Merchants will need to understand and provide feedback on proposed fraud and security measures, and they will need detailed specifications for reconciliation with their existing payments processes. A lack of merchant buy-in and readiness could jeopardize the CBDC's viability and widespread adoption.

Accordingly, the MAG strongly encourages the Board to continue holding forums and establish workgroups that include merchants to weigh in on the design and implementation of a CBDC, and to help merchants understand what to expect throughout all stages of development. Incorporating the feedback of key stakeholders like merchants will increase public support and adoption, and will better ensure that a U.S. CBDC ecosystem works efficiently, competitively, and fairly.

The MAG appreciates the opportunity to provide its comments to the Board regarding the creation of a potential U.S. CBDC. Ultimately, a well-designed CBDC has the potential to modernize the U.S. payments system to meet consumers' need to transact digitally, while also injecting needed competition to spur innovation, greater functionality, and reduced costs that will benefit consumers and the economy as a whole.

Sincerely,

John Drechny
CEO
Merchant Advisory Group

May 20, 2022

Circle appreciates the opportunity to provide suggestions to the Federal Reserve on the risks, benefits and policy considerations on central bank digital currencies (CBDCs). Since Circle's founding, we have prioritized responsible financial services innovation and constructive engagement with regulators and public authorities in the United States and around the world.

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

The Federal Reserve's discussion paper on a potential U.S. CBDC raises many of the challenges that exist in the current domestic financial system: a lack of access to the formal financial system for low-income, unbanked, and under-banked individuals; slow and inefficient payment rails; and high transaction costs for cross-border payments and remittances. The discussion paper posits several possible designs of a CBDC that could solve these problems and the related benefits of solving them, including preserving the dominant role of the U.S. dollar in the global financial system. Financial technology can improve upon these conditions, but a CBDC is not superior to other private-sector led innovations.

Many of the potential benefits of a CBDC detailed in the discussion paper are already being met by existing blockchain-based payment system innovations. This is particularly true as public blockchain technology reaches scale and begins to integrate as a settlement option among global payment providers, banks, and financial technology ("fintech") companies. Similarly, improvements to real time payment systems and wholesale payment integrations can satisfy policy goals for how people send, spend, save and secure their money – including in an internet-native form. Bringing stablecoins like Circle's USD Coin ("USDC") under common-sense regulatory guidelines would ensure proper supervision over an asset that is already achieving many of the Federal Reserve's objectives in a potential CBDC. In the longer term, the ability for existing blockchain-based payment system innovations to meet their maximum potential will be greatly enhanced once Congress passes a federal framework for regulating all digital assets.

Circle agrees with the risks detailed in the discussion paper, but wants to highlight several others. Because the discussion paper focuses on an intermediated model for a CBDC that would preserve the two-tiered banking system, these comments will focus on the risks presented by an intermediated model.

First, the discussion paper does not address the costs associated with researching, designing, implementing and maintaining a CBDC. A CBDC would require new technologies, additional human capital and a significant public educational campaign. These costs merit thorough analysis because, while the Federal Reserve is self-funded and does not receive Congressional appropriations, future Federal Reserve expenditures related to a CBDC will ultimately affect taxpayers.

Second, the discussion paper notes how a CBDC might support innovation. However, Circle is concerned that it would instead stifle U.S. innovation, particularly for new market entrants. Already, a host of companies, including Circle, have leveraged blockchain technology to support

trillions of dollars of economic activity with fiat-referenced stablecoins. The introduction of a CBDC by the Federal Reserve could have a chilling effect on new innovations that could otherwise make the U.S. economy and financial sector more competitive both domestically and abroad.

Finally, as detailed in response to question three below, Circle is concerned that a CBDC could in fact worsen issues related to financial inclusion and access. The implementation and deployment of a CBDC could further strain public trust in government and raise concerns about the level of control exercised by government over public money and the financial system. There are legitimate questions about whether a CBDC would remedy existing issues of trust and access for unbanked and underbanked individuals.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

Many of the benefits of a CBDC are already being met by private-sector innovations, like USDC, through blockchain-based payment systems. USDC is a regulated, fully-reserved U.S. dollar digital currency that is backed by cash and short-duration U.S. government obligations so that it enjoys price parity with the U.S. dollar. The reserves are held in the care, custody and control of the U.S.-regulated banking system and issued in compliance with money transmitter requirements. Each month, Circle publishes attestation reports by a global accounting firm regarding the reserve balances backing USDC in circulation.

USDC does not detract from, but in fact supports, the dollar's role as the world's reserve currency. USDC has supported over $4.3 trillion in on-blockchain transfers as of May 12, 2022, and over 70,369 active wallet addresses have conducted transactions with USDC in the last 28 days. These data demonstrate how USDC is generating novel economic activity based on the U.S. dollar. Private sector-driven activity using blockchain-based payment system innovations offer an alternative pathway to a resilient, dominant dollar in the face of centralized challenges from China and other countries proceeding with CBDC versions of their currencies. USDC has gained widespread market adoption and brought digital versions of the dollar to international markets in the global digital asset economy. The network effects of this widespread market adoption will continue to advance the cause of the U.S. dollar in digital form.

USDC will continue to play a growing role in lowering the costs and increasing the speed of cross-border payments. In partnership with MoneyGram and the Stellar Development Foundation, USDC can now be used to efficiently send payments internationally at a fraction of the cost of traditional cross-border payments in fiat.[1]

Circle is also working to advance financial inclusion, starting in the United States. Circle's mission of raising global economic prosperity through the frictionless exchange of financial value is part of Circle Impact.[2] Circle has allocated a meaningful share of USDC dollar reserves to community banks and Minority-owned Depository Institutions across the United States, strengthening their balance sheets and therefore communities. An additional pillar of Circle Impact is to drive digital financial literacy and entrepreneurial efforts in collaboration with leading academic institutions

[1] https://stellar.org/blog/moneygram-international-launches-a-new-pilot-on-stellar
[2] https://www.circle.com/blog/improving-financial-inclusion-and-economic-prosperity-for-all

and other partners, including historically black colleges and universities; the first partnership is with Bowie State University in Maryland and Rhodes University in South Africa.

Circle has established key partnerships to help combine some of the best practices of well-regulated, traditional financial and payments institutions with the inherent benefits of open, public blockchains; collaborations with BlackRock[3], Visa[4], Mastercard[5] and Worldpay[6] are just a few examples.

Circle is also opening up new corridors to provide humanitarian relief in the U.S. and globally. For example, Circle has helped the legitimate, elected government of Venezuela distribute millions of dollars in desperately needed aid to the nation's front-line medical workers as they battled the COVID-19 pandemic under horrendous conditions. Circle partnered with the Bolivarian Republic of Venezuela (led by President-elect Juan Guaidó), U.S.-based fintech Airtm and the U.S. government to send the relief funds in USDC. The joint initiative established a disbursement pipeline that leveraged USDC to bypass the controls that Nicolás Maduro's authoritarian government placed on Venezuela's financial system.[7]

Circle's deep expertise operating USDC has also led to innovations that have the potential to address problems that have plagued society, in particular the challenge of verifying digital identity. About one billion people globally face challenges proving who they are, limiting their ability to access basic services and economic opportunity.[8] In recent months, Circle has worked with Block, Coinbase and the Centre Consortium to develop Verite, a set of free, open source decentralized identity protocols and data models that allow people and institutions to cryptographically prove claims about their identities.[9] Verite has the potential to reduce friction, protect privacy and increase compliance with Know Your Customer (KYC) and anti-money laundering and countering the financing of terrorism (AML/CFT) controls.

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

The Federal Reserve should more clearly articulate how a CBDC would improve financial inclusion in the United States. A CBDC with financial institutions or nonbank financial service providers acting as intermediaries could simply replicate the current challenges for financial inclusion that exist. According to a 2019 FDIC study, one-half of unbanked Americans do not have a bank account because they cannot meet minimum balance requirements.[10] This poses questions about whether the Federal Reserve would require financial institutions to waive these fees if an individual held CBDCs. Another one-third of unbanked Americans noted a lack of trust in financial institutions, which may not be allayed in an intermediated CBDC system. It is possible that because the public's confidence in government institutions and banks has been declining, a

[3] https://www.circle.com/en/pressroom/circle-announces-400m-funding-round
[4]https://www.coindesk.com/markets/2021/05/05/visa-circle-team-up-with-fintech-firm-to-drive-crypto-adoption-in-emerging-markets/
[5] https://www.circle.com/blog/mastercard-taps-circle-for-usdc-settlement-pilot
[6]https://www.circle.com/en/pressroom/worldpay-from-fis-becomes-first-global-merchant-acquirer-to-offer-direct-usdc-settlement-driving-digital-currency-adoption-to-businesses
[7] https://www.ft.com/content/2a271032-35b4-4969-a4bf-488d4e9e3d18
[8] https://id4d.worldbank.org/global-dataset
[9] https://www.circle.com/blog/unlocking-decentralized-identity-with-verite
[10]https://www.fdic.gov/analysis/household-survey/2019appendix.pdf

CBDC could make the unbanked or underbanked even less likely to engage with financial institutions.[11] Other design choices could also harm financial inclusion; as noted, an interest-bearing CBDC could cause negative impacts to the two-tiered banking system and hurt consumer access to credit and/or raise the cost of credit, potentially increasing the number of Americans who are underbanked.

Additionally, in a scenario where the Federal Reserve issues an interest-bearing or non-interest-bearing CBDC, individuals would presumably have two choices when holding their money at a financial institution or regulated non-bank financial service provider. Such an arrangement would add another layer of complexity to what many unbanked and underbanked individuals see as an already-confusing financial system and could negatively affect one of the key stated goals of a CBDC, namely promoting financial inclusion. Even the financially-literate may not understand the full implications of holding their money in CBDC versus commercial bank deposits. It seems likely that should the Federal Reserve issue a CBDC, a significant public education campaign would be needed to overcome confusion about the new system and possible distrust in a government-supplied solution.

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

Monetary policy, conveyed through the two-tiered banking system, should remain a public sector sovereign activity under the independent oversight of central bankers. The introduction of CBDCs, which could have potentially corrosive pressure on bank deposits and increase consumer distrust in which forms of money are presumed to be the safest, could diminish the transmission chain of monetary policy.

It is possible to promote fair, responsible free market competition for the movement of money within the oversight of central banks and inside the U.S. regulatory perimeter. One way to achieve this standard is to review the possibility of granting digital legal tender status to various forms of privately issued electronic money and digital currencies, where the underlying reserve assets are in the care, custody and control of the U.S. regulated banking system (and possibly even held directly with the Federal Reserve).

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

A CBDC, both in interest bearing and non-interest bearing forms, creates potential domestic flight-to-quality or flight-to-safety problems which could destabilize the two-tiered banking system. The potential systemic effects of a CBDC could pose serious and detrimental effects to the banking system and the wider economy.

It is not clear from the Federal Reserve's discussion paper that a CBDC would avert run risk or other financial stability concerns. The report notes "[t]he ability to quickly convert other forms of money—including deposits at commercial banks—into CBDC could make runs on financial firms more likely or more severe. Traditional measures such as prudential supervision, government

[11] https://news.gallup.com/poll/1597/confidence-institutions.aspx

deposit insurance, and access to central bank liquidity may be insufficient to stave off large outflows of commercial bank deposits into CBDC in the event of financial panic." In discussing solutions to such a problem, the Federal Reserve's discussion paper proposes limitations on the overall amount of CBDC that an end user could hold, or hold at a given time. Such limitations raise serious questions about the usefulness of a CBDC as money.

The scenarios contemplated by the Federal Reserve could create more confusion for end users of a CBDC and raise the possibility of negative consequences for the broader financial system. The creation of a non-interest bearing CBDC to reduce flight-to-quality effects could cause confusion about the different "types" of money offered at an individual's bank or that individuals could hold. If a non-interest bearing CBDC were issued by the Federal Reserve, it is difficult to say how an end user might evaluate the choice of whether to hold their funds in a CBDC rather than a commercial bank deposit. Absent more information about end user choice and attitudes toward the use of a CBDC, the risks of a non-interest bearing CBDC versus commercial bank deposits remain unclear. The current model offered by privately-issued digital currencies provides an important "air gap" between reference assets – such as cash, cash equivalents and high quality assets inside the banking system – and tokenized assets on public blockchains that results in no new money creation and preserves the two-tiered banking system. Importantly, the transmission of monetary policy is also preserved.

As cryptocurrencies, digital assets, and public blockchains have developed over the past decade, entrepreneurs in this space have built a $2 trillion dollar sector. This period has seen risks, death spirals and failures, lessons learned and growing regulatory understanding and clarity on how to responsibly harness these innovations. These risks should remain within the free market. The United States should espouse and practice activity-based, technology-neutral regulations, and regulate the economic behavior of digital assets rather than a catch-all approach. Not all digital assets behave in the same way or perform similar functions. If a digital asset behaves like a currency or payment system, it should be afforded the benefits of digital legal tender status or conformity with well-laid money transmission, e-money, financial markets infrastructure and prudential rules.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

Early evidence suggests the introduction of CBDCs could put domestic capital flight pressure on the two-tiered banking system because the presumption could emerge that a CBDC represents a lower-risk currency when compared to fractional reserve banking or other forms of money and payments in circulation. Additionally, depending on which form of CBDC is adopted, CBDCs could also disrupt other forms of payment and money circulation such as e-money and debit/credit card networks, among others. While a non-interest-bearing CBDC might limit the shift away from commercial bank deposits compared to an interest-bearing CBDC, a non-interest-bearing CBDC could still pose risks to the two-tier banking system by introducing a "risk free" form of money that end users may prefer to hold and transact with. In this case, a non-interest-bearing CBDC arrangement would put pressure on the two-tier banking system by curtailing liquidity and the flow of funds through traditional payments processors, thereby shifting that activity directly within the scope of the central bank.

Ironically, the advent of the digital assets industry and blockchain-based payment systems, which were originally framed as threats to traditional banks and financial services firms, have created and protected wholesale industries in both the analog and digital financial markets. Continuing to harness this private sector innovation, while attracting the billions in investor capital and entrepreneurial talent into the world's important financial centers – particularly those in the United States – can ensure an always-on internet economy exists amid global regulatory competition.

Another challenge in the financial sector is that a CBDC could obligate banks, e-money issuers, card networks and financial technology firms, among others, to adopt a government-issued or mandated technology standard. This might weaken economic competitiveness and growth, potentially limiting payment system and money movement optionality in both domestic and cross-border settings. Finally, CBDCs could potentially diffuse critical financial crime compliance, anti-money laundering and other shared responsibilities in the financial sector for combating illicit finance. This is another area in which the advent of competitive blockchain-based payment systems is producing exponential gains in financial integrity and forensics.

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?

The use of cash in the United States has been declining steadily over the last several years, in large part due to the advancements made by the private sector to improve the custody and payments of dollars. For instance, Worldpay found the use of cash declined by over twenty percent from 2018 to 2020 and will only account for ten percent of point-of-sale transactions in the United States by 2024.[12] It is Circle's view that the Federal Reserve should allow the private sector to continue to responsibly innovate to support consumer-driven trends away from cash as a means of payment. A CBDC would not be a substitute to the physical dollar; it would be more akin to a substitute for the privately-issued electronic money that individuals use today.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

The market and technological infrastructure for domestic and cross-border payments has changed significantly and quickly over the past three decades. USDC brings the benefits of digital currency – fast, lower-cost, highly secure, global and interoperable – without the drawbacks of extreme volatility that has plagued other cryptocurrencies. Fiat-backed stablecoins with transparent reserves have provided an efficient "digital dollar" settlement layer for digital asset trading markets. Through robust competition and growth in the digital asset space, stablecoins are now used in a wide-variety of applications. Other financial market participants, such as major credit card companies, small businesses, remittance companies and others are making USDC a native settlement option for their businesses. This increases market competition and choice for consumers for payments, while building a bridge between digitally-native financial services and real-world use cases.

[12] https://worldpay.globalpaymentsreport.com/en

As mentioned in the response to question two, Circle is innovating in payments by partnering with Worldpay and Moneygram, and piloting new uses of stablecoins and digital assets to lower transaction costs and facilitate the efficient movement of money across borders using USDC.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

Over 80 countries are in some stage of researching, developing, piloting or launching a CBDC to establish the dominant currencies of the internet.[13] This is a high-stakes competition that will shape the political and economic value systems of this century's digitally-native global economy. By nearly every measure, the United States and the U.S. dollar are already winning this digital currency race because of private sector innovation that uses open-source technology and open standards and protocols. While the United States considers ideas for a CBDC, a prospect that will likely take many years to develop and pose significant risks, private sector innovation is solving many of the intended goals of a CBDC.

One reaction to the developing digital asset industry is to seek to heavily regulate and curtail free market activities, to nationalize the technology and infrastructure, and to launch and administer government-controlled digital currencies. Some countries, such as China, have already taken this approach. The introduction of a CBDC might seem like the only logical U.S. policy response to compete in the digital currency space race. However, it is the values of openness, the preservation of privacy, free-market competition, and open intellectual property that have powered U.S. economic growth and made the dollar the world's reserve currency. These principles have helped the United States lead in internet technology standards and industries and are the same values that have led to the flourishing market for digital currency and blockchain technology today. Other countries are closely watching how the U.S. government proceeds with a CBDC, and so the United States should serve as a model for how to balance public sector oversight and private sector innovation. While the Federal Reserve may develop a CBDC with the proper guardrails to protect consumers, the U.S. cannot guarantee that other countries would do so responsibly and the U.S. should be cautious to endorse a system that could be easily abused by autocratic governments.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

The Federal Reserve's discussion paper does not expand on the potential adaptation costs associated with the implementation of a CBDC, including for businesses and individuals that would need to accommodate transactions involving a CBDC. These costs could range from new back-end settlement processes to customer-facing point-of-sale (POS) systems, and they could affect millions of businesses and individuals transacting with a potential CBDC. Additionally, financial institutions such as banks, credit providers, lenders and others could bear associated costs with absorbing a new asset class in the form of a CBDC, and integrating that asset within their existing systems – including determining how to offer novel products and services in a CBDC.

[13] https://www.atlanticcouncil.org/cbdctracker/

Additionally, the paper does not discuss in detail how a Federal Reserve-issued CBDC would manage existing financial crime compliance programs used by financial institutions pursuant to the Bank Secrecy Act. Given the complexity and difference in approaches taken by regulated entities, the Federal Reserve should have more specificity for how the public sector might manage the risks, versus the current model that is dependent on the private sector.

Privately-issued stablecoins represent a clear alternative to manage the risks and challenges of a CBDC that the Federal Reserve has outlined in its discussion paper, and to those mentioned above that have not yet been contemplated. The United States must still fully regulate the private issuance of digital currencies, like stablecoins, at the federal level. A well-designed federal regulatory regime for private stablecoin issuance would likely make a Federal Reserve-issued CBDC redundant. The timing of the deployment and implementation of a CBDC is also an important factor. As U.S Treasury Secretary Janet Yellen said in an April 2022 speech, " [W]e must be clear that issuing a CBDC would likely present a major design and engineering challenge that would require years of development, not months." The Federal Reserve's plan to launch the FedNow Service, a new instant payment system, provides an instructive example of the time that may be required to deploy a CBDC.

It could be challenging for the Federal Reserve to issue a CBDC on a technology standard that does not quickly become obsolete, given the pace of technological advancements. In the meantime, trusted, regulated stablecoins like USDC are building on the latest technology – such as open, public blockchains, and blockchain-based payment systems – and meeting the market's demands for speed, lower costs and efficiency in a manner that is safe, transparent and compliant with existing regulations.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

The presumption of privacy and the universally free and lawful use of money is an important principle and human right. CBDCs and centralized payment system innovations, particularly those that are government-led or developed by potentially repressive countries, pose serious potential breaches of this public trust. The prospect of social credit scoring, deplatforming individuals from public money or creating financial redlines, among other risks, are real public policy challenges that should be considered when contemplating a CBDC.

In the intermediated system described by the Federal Reserve, it seems likely that the Federal Reserve would, technically, be able to have access to an individual's interaction with a CBDC depending on the design structure. In this scenario, the transaction records, geolocation, and spending habits of end users might be viewable by the Federal Reserve and potentially stored in vulnerable "honeypot" databases.

While digital assets in the past have been synonymous with anonymity and illicit activity, the industry is now moving toward standards that preserve an individual's right to privacy while allowing for the prevention and detection of illicit financial flows. This duality is critical for digital assets to be part of the domestic and international financial systems. Circle has, with other partners in the industry, developed Verite, a digital identity model that would provide a verifiable and proven identification that is scalable, usable by anyone, and interoperable across systems,

while also providing individuals with the certainty that only the minimal amount of information is shared (to protect their own privacy).[14]

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

The centralized technological frameworks that are being proposed and evaluated to issue a CBDC could amplify existing cybersecurity vulnerabilities in the U.S. financial system, potentially exposing the Federal Reserve to new and worsening cyber attacks. The cyberattacks against Equifax, Solar Winds and the Colonial gas pipeline are just three examples of attacks that have had widespread, damaging implications for the economy in recent memory. However, the development of public blockchains continues to leverage the inherent cyber resilience of distributed systems. Just as the failure of any one bank erodes confidence in banking, a CBDC would also transition this risk to central banks, possibly negating the benefits of strategic risk-sharing structures and operational "air gaps" between participants in the financial system.

14. Should a CBDC be legal tender?

In May 2021, the Federal Reserve issued a public statement that said:

> *"As the Federal Reserve explores the potential benefits and risks of CBDCs, the key focus is on whether and how a CBDC could improve on an already safe, effective, dynamic, and efficient U.S. domestic payments system in its ability to serve the needs of households and businesses. 'We think it is important that any potential CBDC could serve as a complement to, and not a replacement of, cash and current private-sector digital forms of the dollar, such as deposits at commercial banks,' [Federal Reserve Board Chair Jerome H.] Powell said. 'The design of a CBDC would raise important monetary policy, financial stability, consumer protection, legal, and privacy considerations and will require careful thought and analysis—including input from the public and elected officials.'"*

As mentioned in previous answers, it is possible to promote fair, responsible free market competition for the movement of money within the oversight of central banks and inside the U.S. regulatory perimeter. One way to achieve this standard is to review the possibility of granting digital legal tender status to various forms of privately issued electronic money and digital currencies, where the underlying reserve assets are in the care, custody and control of the U.S. regulated banking system – possibly even held directly with the Federal Reserve.

In his January 2022 testimony before the Senate Banking, Housing and Urban Affairs Committee, Chair Powell said that a CBDC could coexist with well-regulated, privately issued stablecoins. If the Federal Reserve issues a CBDC, it should be designed to ensure fair competition with private stablecoins like USDC.

The Federal Reserve's discussion paper contemplates both interest-bearing and non-interest bearing forms of a CBDC. The paper's analysis of an interest-bearing CBDC indicates that an

[14] Example: Forbes, 2017, *The Equifax Breach and the Case for Digital Identity,* at: https://www.forbes.com /sites/dantedisparte/2017/10/02/the-equifax-breach-and-the-case-for-digital-identity/?sh=160605634e24.

interest-bearing CBDC would likely replace cash and deposits at a commercial bank, contradicting the Federal Reserve's desire for a CBDC to be complementary to cash and commercial bank deposits. While an interest-bearing CBDC might prove attractive to individual end users, such an arrangement raises intermediation concerns mentioned in previous answers. Further, as mentioned previously, if a CBDC is not designated legal tender, it would compel the Federal Reserve to communicate what incentive programs the private sector and other market participants would have to absorb a CBDC.

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

Additional time should be spent investigating the costs associated with the maintenance of the technology associated with a CBDC. It is conceivable that the costs to maintain and update a Federal Reserve-issued CBDC that incorporates the latest technology stacks and network infrastructure would be substantial beyond the initial implementation and deployment stages. To manage these cost risks, it is possible that Congressional action in the form of new legislation and appropriations may be necessary. Additionally, there remain undiscussed adoption risks related to the centralized model for a CBDC. It is unclear from the discussion paper whether the Federal Reserve would implement an incentive structure for market participants to operate with a potential CBDC (including for businesses) and use it. And, if a CBDC were designated as legal tender, would market participants be compelled to use and accept it? As discussed in above responses, the introduction of a CBDC would necessitate robust public education around its purpose and use, not only for end users, but also for businesses and other financial service providers.

May 20, 2022

Ann E Misback
Secretary,
Board of Governors of the Federal Reserve System
20th St. and Constitution Ave., NW
Washington, DC 20551

RE: Comments on *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* discussion paper, issued January 20, 2022

Ms. Misback:

Fiserv, Inc. (NASDAQ: FISV) appreciates the opportunity to provide feedback on the Board of Governors' (Board) discussion paper entitled "*Money and Payments: The U.S. Dollar in the Age of Digital Transformation."* Fiserv is encouraged by the early engagement the Board has done to solicit input on the net impacts of a potential CBDC, given the significant and wide-ranging implications that digital issuance of U.S. currency would have on the financial system. As this comment will highlight, the private sector is already responding daily to the demands and expectations of an evolving financial system. Should the Board decide to continue considering CBDC issuance following examination of public comments from this discussion paper, Fiserv urges the Board to clearly define what market conditions a CBDC would be addressing, how long it would take the Board to fully deploy a CDBC, and to solicit further input from the public.

As the Board is well aware, the U.S. economy is undergoing a rapidly accelerating digital transformation that is changing the way people interact, work, shop, learn, and pay for goods and services. The financial system has continued to iterate and evolve to meet the demands and expectations of consumers. The Board's discussion paper recognizes that *"a wave of new private-sector financial products and services, including digital wallets, mobile payments apps, and new digital assets such as cryptocurrencies and stablecoins"* are entering the market to meet consumer expectations for more digital and interoperable user experiences.

We agree with the Board that the digital transformation of the U.S. economy and payment systems has led to improvements in the speed, cost, simplicity, and accessibility of money movement and payments options. And we firmly believe that the private sector and government should continue working collaboratively on an environment that enables technology to further advance and improve user experiences while maintaining the integrity of the U.S. monetary system.

Recognizing that the Board is charged with ensuring the stability of the monetary policy system in the United States, it is easy to comprehend why the Board is invested in exploring and examining emerging market dynamics that could impact the strength or confidence in the U.S. dollar. The Board has a central role to play in the review of how consumers engage with currency and how evolving forms of currency movement, storage, and operations impact the Board's mission. With this direction in mind, Fiserv appreciates the Board starting to review the potential issuance of a CBDC.

However, like the paper notes, "*A crucial test for a potential CBDC is whether it would prove superior to other methods that might address issues of concern*." Fiserv doesn't believe this assessment can truly be

completed until the Board more clearly explains the potential architecture behind, and need for, a CBDC.

About Fiserv
Fiserv, Inc. is a global leader in payment processing and financial services enabling technology. Our company aspiration is to move money and information in a way that moves the world. Fiserv interacts daily with financial institutions, businesses, and individual consumers to support the needs of the financial system and enable commerce.

Fiserv is a leading account processor, commonly referred to as a "core" services provider, delivering digital solutions to financial institutions in the United States. In payment processing, Fiserv securely processes online and in-person transactions for the nation's largest retailers as well as the nation's smallest businesses so they can receive purchases from consumers who have come to rely on safe, secure, and timely access to digital payment solutions.

For the past 35 years, Fiserv has been enabling digital transformations and reimagining entire product lifecycles. As a technology provider to financial institutions and businesses, Fiserv is uniquely positioned to showcase the successes and highlight the remaining challenges of the digital financial ecosystem, and to be a thought partner with the Federal Reserve.

Digital Financial Services Landscape
Thanks to the digital transformation and continued adoption of technological capabilities, such as the rise in mobile devices and the emergence of application programming interfaces (APIs), consumers have more ways to engage with the financial system than ever before. Financial institutions and merchants of all sizes and in all corners of the nation are integrating new tools, products, and services to expand reach and access. These increases in capabilities are providing consumers with access to more tailored financial services that reflect their needs.

While the Board's discussion paper acknowledges the intent of the market to improve speed, cost, and access to services and highlights several examples of such improvements in practice, the Board also spends time highlighting what it sees as continuing challenges or barriers to access within the financial system. Specifically, the discussion paper notes: *"a significant number of Americans currently lack access to digital banking and payment services. Additionally, some payments – especially cross-border payments – remain slow and costly."* Further the Board quotes the most recent statistics on under and unbanked households from the Federal Deposit Insurance Corporation.

Fiserv agrees more work can and should be done to further expand access and choice for consumers looking to engage in the financial and payment systems. As already discussed, technology can be an equalizing force that assists in providing greater consumer choice while decreasing cost of services. Both startups and established market players are working to reimagine the financial system to further support access to banking services, cross-border payments, and streamlined payment services.

As the Board continues to contemplate the creation of a CBDC, we believe it is vital for the Board to take stock of the emerging technologies, products, and services at each phase of a CBDC review. It is important for the Board to understand the speed with which products are being deployed and their adoption rates. Fiserv plays a leading role in enabling the technologies and processes employed by financial institutions and merchants to reach new audiences and provide consumers with greater choice.

As such, we are uniquely positioned to provide input on the existing capabilities, strengths, emerging technologies, and additional needs of the financial system.

Focusing solely on the three market challenges identified within the discussion paper – access to banking services, payment services, and money movement cost and speed – that could be improved by a CBDC, there are several products in the market today and additional products that have announced release dates, which are already driving improvements in these three areas. Presently, there are five interconnected subsectors of the banking and payment space that Fiserv would like to call to the Board's attention: digital account opening and mobile wallets; faster payments networks; peer-to-peer payment systems; open finance; and stablecoins. Each of these is driving market efficiencies and improving consumer capabilities and access throughout the financial system.

Digital account opening (DAO) functionality dramatically increased in the last two years, driven by a need for the financial system to serve its customer base during the COVID-19 pandemic. Consumers have now grown more accustomed to and comfortable with originating accounts and accessing accounts digitally. Coupled with increased adoption of smartphones, there is unprecedented access to banking services across the country. No longer are consumer banking options limited to the financial institutions located in their communities.

Beyond the access to a broader network of financial institutions and nonbank financial technology companies (fintechs), DAO and mobile banking expand consumer choice for how consumers want to engage in the digital financial ecosystem. As the discussion paper's footnotes demonstrates, distrust in financial institutions is one of the primary reasons the under and unbanked population remains outside the banking system. Mobile wallets linked to fintechs are enabling banking and payment solutions that provide alternative options to help support the needs of the under and unbanked population.

The rise in mobile wallet adoption facilitates greater access to faster and more frictionless money movement options. The Clearing House's Real Time Payment (RTP) network launched in 2017, providing near real time clearing and settlement of payments. Additionally, next year, the Federal Reserve's own real time gross settlement network, FedNow, will launch. Both RTP and FedNow will reduce the cost and complexity of money movement for consumers and ensure consumers have on-demand access to needed funds. Further, faster money movement networks are aiding the adoption and use of peer-to-peer payments platforms. These platforms provide a wide range of functionality from paying a friend back to paying for goods and services in a digital, fast, and often free manner.

To support consumer demand and desire for access to mobile wallets, peer-to-peer payments, and DAO banking services, the banking and payments systems are moving towards an "open finance" environment. Open finance, while yet to be universally defined, is essential to the concept of creating an interconnected and cohesive digital financial experience for consumers. A financial experience that enables seamless integration and interoperability of deposit banking solutions with emerging fintech solutions, open finance further expands the products and services available to consumers.

Providing a path for consumers to access innovative solutions securely and quickly, at low or no cost, the private sector is building extensions to the banking and payment system that will be able to iterate with greater efficiency and at the speed of life. For example, it is exponentially easier to fund a fintech digital wallet in 2022 than it was in 2020. By expanding the reach of what a financial institution can digitally

offer a customer through secure data transfers, this subsector of the financial system is making it easier for consumers to access the latest innovations in banking and money movement.

Integrating all the aforementioned capabilities, stablecoins are attempting to broaden the reach of the overall financial system by digitizing currency. Stablecoins are cryptocurrencies backed by a more stable asset, such as the U.S. dollar. As we have learned recently, not all stablecoins are equally "stable," but those backed one-to-one by fiat currencies, like the U.S. dollar, are more likely to withstand market volatility. One of the key benefits of stablecoins is the ability to traverse multiple payment systems, providing more optionality on how data and payments are communicated between parties, and at a lower cost. Secured by cryptography, stablecoins can be an extremely accurate, transparent, and fast means of money movement that enable real time domestic and cross-border payments.

In addition to the potential efficiencies stablecoins offer the banking and payment space, well capitalized stablecoins backed by the U.S. dollar also afford the Board a private sector competitor to foreign CBDCs and aid in the preservation of the U.S. dollar's global status.

In light of the pace with which all this innovation is taking place, we encourage the Board to continue to carefully examine if the deployment of a Board-controlled and issued product or service, such as a CBDC, is filling a gap in capability that the private sector is not developing or cannot develop.

Feedback on a U.S. Central Bank Digital Currency

As noted in the discussion paper: *"The Federal Reserve, as the nation's central bank, works to maintain the public's confidence by fostering monetary stability, financial stability, and a safe and efficient payment system."* Fiserv believes this is an indispensable role that supports and protects the U.S. economy. Further, Fiserv believes that a central component of the Board fulfilling this vital role is to closely examine current market structures and facilitate money movement services within the financial system that are not or cannot be served by the private market.

The Board has a long history of engaging in the payments system to assist in the enablement of money movement and banking operations; however, it has equally supported and empowered the private sector to deploy new market technologies. This balanced approach to monetary policy has encouraged private sector innovation that benefit consumers across the U.S. economy and has further entrenched the dominance of the U.S. dollar globally. It is incumbent upon the Board to continue this balanced approach as it reviews emerging global technology trends, such as the development of a CBDC.

At this time, Fiserv does not have a firm support or oppose position on whether the Board should deploy a CBDC. Fiserv is a central integrator of essential banking and payments technologies for a diverse cross-section of the American economy. Our role is to deploy systems, products, and services that merchants, banks, and credit unions want and need to be successful attracting customers in the digital world. Should the Board make the decision to deploy a CBDC, we would work with the Board and our customers to support the enablement of the technology, as we have with the Board's other new payment offerings, such as FedNow.

Further, Fiserv appreciates the Board's willingness to solicit early comments and feedback on the potential creation of a CBDC. A CBDC has the potential to irrevocably alter the balance of the financial system in the U.S., requiring purposeful and careful consideration by the Board of all potential impacts.

The Board, through the discussion paper, poses a series of questions for the private sector to weigh and respond. Fiserv understands that the Board is early in its review of capabilities and impact of a CBDC; however, it is difficult to provide sufficient qualitative feedback on the sweeping questions posed. For Fiserv to be of greatest value to the Board's research into the potential net impacts of a CBDC, we believe the Board needs to expand further on the objectives, use cases, and entry points a CBDC would have within the U.S. economy.

As the discussion paper currently stands, there are too many theoretical capabilities and uses for a CBDC, which makes it a challenge to accurately provide feedback on impacts. For example, the Board poses the question: *"Should a CBDC pay interest? If so, why and how? If not, why not?"* Fiserv believes to appropriately answer this question, we would first need to understand the actors, architectures, and deployment models the CDBC is proposed to have. Any emergence of a new interest-bearing product could have sweeping implications on the stability of the current financial system.

The Board highlights within the discussion paper: *"A widely available CBDC would serve as a close—or, in the case of an interest-bearing CBDC, near-perfect—substitute for commercial bank money. This substitution effect could reduce the aggregate amount of deposits in the banking system, which could in turn increase bank funding expenses, and reduce credit availability or raise credit costs for households and businesses."* Even within this statement, the Board presents several different design models and potential ramifications. Different participants within the private sector may have a defined, individualized stake in whether a CBDC should be interest-bearing or not, but outside of that particular subset, it's exceedingly difficult to succinctly articulate the cost benefit analysis of a new Fed product paying interest.

To sufficiently answer the Board's question on interest, based on the information currently provided, Fiserv would feel obligated to theorize several different architectures for a CDBC and present feedback on the impacts of paying interest, or not, on each. This would be an extensive exercise and review process for both the Board and Fiserv and detract from the more pressing determination and contemplation for the Board. Namely: what is the Board solving for by developing and deploying a CBDC? Without a clear understanding of this essential question, we cannot comment more specifically.

Should the Board continue to believe an evaluation of the deployment of a CBDC in the U.S. is necessary following the analysis of comments provided to the discussion paper, it would be beneficial for the Board to further solicit private sector feedback by releasing several potential architectures of CBDCs with a clear description of what each model is intended to alter or improve within the market. We do not believe the Board needs to have an established position on whether to create a CBDC in order to solicit this feedback. (In fact, we would argue that it benefits the Board *not* to have one.) Fiserv believes this slight alteration to how the Board solicits input on the impacts of a CBDC will result in more detailed and effective responses for the Board to consider.

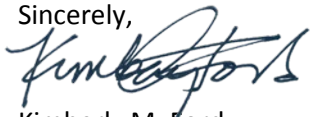
Conclusion

The Board's discussion paper notes that several improvements have been made to the financial system in recent years. Technology is iterating and emerging at unprecedented rates, which is driving market improvement. Yet, as highlighted in the discussion paper, further work must be done to ensure adequate access to banking and payment services, as well as the delivery of more efficient, timely, and cost-effective digital payment options. Fiserv believes established market participants and startups alike are driving to improve these processes daily.

We appreciate the Board's willingness to engage the public in this meaningful conversation about the future of our nation's monetary policy system. It depicts the balanced approach the Board takes to its role overseeing monetary policy and further portrays the Board's understanding of the work the private sector is doing to responsibly innovate.

Fiserv stands ready to provide further feedback and support to the Board as it works to review the potential impacts of a CDBD. Given our scope of work throughout the market, we believe that with additional information released by the Board, we are uniquely positioned to provide detailed, qualitative data on this subject and look forward to further engagement.

Sincerely,



Kimberly M. Ford
Senior Vice President, Government Relations
Kim.ford@fiserv.com

National Consumer Law Center

NATIONAL HEADQUARTERS
7 Winthrop Square, Boston, MA 02110
(617) 542-8010

WASHINGTON OFFICE
Spanogle Institute for Consumer Advocacy
1001 Connecticut Avenue, NW, Suite 510
Washington, DC 20036
(202) 452-6252

NCLC.ORG

May 20, 2022

digital-innovations@frb.gov
Board of Governors of the Federal Reserve System
Washington, DC

Re: Central bank digital currency

Thank you for the opportunity to comment on the question of whether the United States should create a central bank digital currency (CBDC) as outlined in the discussion paper by the Board of Governors of the Federal Reserve System: Money and Payments: The U.S. Dollar in the Age of Digital. Below please find our responses to the questions posed. Except for this introduction, the responses to the questions have also been submitted through the online feedback form.

These comments are submitted on behalf of the low-income clients of the National Consumer Law Center. Since 1969, the nonprofit National Consumer Law Center® (NCLC®) has worked for consumer justice and economic security for low-income and other disadvantaged people, including older adults, in the U.S. through its expertise in policy analysis and advocacy, publications, litigation, expert witness services, and training.

These comments focus on the perspective of individual consumers, in particular lower income consumers. Our comments assume that a CBDC would take the form identified by the paper that "would best serve the needs of the United States": one that is privacy-protected, intermediated (i.e., handled by financial institutions and possibly nonbank entities, not through FedAccounts), widely transferable, and identity-verified (subject to existing know-your-customer and other fraud controls). Even within those parameters, however, there are a vast number of uncertainties, many more than are outlined in these comments.

In brief, we have a hard time finding any significant benefits of a CBDC for consumers. The discussion paper largely seems to ignore consumers and does not explain how a CBDC would benefit them. Weighed against the lack of obvious benefit, a CBDC would pose a vast number of risks and uncertainties that could negatively impact consumers. The discussion paper identifies a number of issues, in particular the potential for unclear but fundamental change in the U.S. financial system, and also the need to strike a balance between consumer privacy and the prevention of financial crimes. But the paper does not discuss, or inadequately addresses, these significant risks and uncertainties:

- Significant privacy concerns from government access to data that will be difficult to address and cannot be minimized simply by asserting that a CBDC would be "privacy protected";
- Misuse of CBDC technology by the government to monitor or control spending by public benefits recipients;
- Fraud at greater scale and velocity, with no protection;
- Reduction in access to credit;
- Cost of accounts;
- Unclear coverage and application of the Electronic Fund Transfer Act (EFTA);
- Unclear application or preemption of other important state and federal consumer protection laws;
- Easier garnishment by debt collectors and the government for debts, including for the wrong amount or against the wrong person; and
- Reduction of community reinvestment activities.

It is difficult to see how a CBDC could foster financial inclusion, especially in an intermediated model. A CBDC would not solve the problems that keep people out of banks today and could exacerbate those problems by excluding consumers who distrust the government.

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

a. **Misuse of CBDC technology to monitor or control spending by public benefits recipients.** A CBDC could be used to make benefits payments. As one blog notes: "A government-issued CBDC would allow the government to dictate how, where, and when currency holders spend their funds. As an example, consider unemployment money issued in the form of a CBDC. The government could restrict the funds to not work at businesses categorized as liquor stores or bars." TANF recipients are already prohibited from using their cards at liquor stores, 42 U.S.C. § 608(12), even though for those without transportation or in neighborhoods without convenient grocery stores, the corner store holding a liquor license is also the place to buy milk and bread and use the ATM. Lawmakers have intruded on the privacy of poor people and restricted where they can use or access their money to undermine support for public benefit programs. Even if monitoring or restrictions were initially prohibited, a future Congress could authorize them.

b. **Fraud at greater scale and velocity with no protection.** The paper mentions the risk of money laundering and the financing of terrorism but does not address the potential explosion of other financial crimes like fraudulent inducement scams. A CBDC would "need to be final and completed in real time," leading to the same fraud problems that have plagued Zelle and Venmo. Problems could be more widespread with the ubiquity of a CBDC. While Zelle and Venmo – as the middlemen between the sender and receiver – play a role in fraud prevention and error resolution, what role would the Fed play? Moreover, the EFTA lacks adequate fraud protection for instant push-payment systems like CBDC transactions. See more in our digital wallets

hearing statement. Fraud problems would be compounded if nonbanks were allowed to be intermediaries (see below).

c. **Reduction in access to credit.** Banks would have less capital and less money to lend, and perhaps would be less inclined to lend money to people who keep their funds in CBDC.

d. **Cost of accounts.** Intermediaries would likely charge for accounts to access CBDCs, as they would bear costs in administering them and providing access devices. The accounts could be costly for low-income consumers given that banks would not benefit from the use of the funds or interchange fees. Any CBDC legislation should guarantee free or very low-cost ($5/month) access to accounts with no overdraft or NSF fees.

e. **Unclear coverage and application of the EFTA**. The EFTA provides the core protections for accounts and payments but only for transfers that authorize a "financial institution" to debit or credit an "account." Legislation must ensure that CBDC is covered. But adapting the EFTA to CBDC would raise many knotty problems. Error resolution could be complicated – who is responsible, the federal government or the intermediary? Will they work together?

f. **Unclear application or preemption of other important state and federal consumer protection laws.** Federal and state laws have important consumer protections for bank accounts and money transfers, and it is unclear whether they would apply to the federal government or to CBDCs. Particular laws might have definitions or a scope that do not contemplate CBDCs or funds held by the federal government. Critical laws include state laws that limit bank account garnishment by judgment creditors, federal rules that financial institutions must follow before allowing garnishment of Social Security, the FCRA (which applies to account screening agencies), and bankruptcy laws. The government does not have processes in place to ensure compliance with many of those laws. Courts might find that the federal government is not subject to states laws or might erroneously treat private intermediaries as exempt agents of the government. See Starr Int'l Co. v Federal Reserve Bank of NY, 742 F.3d 37 (2d Cir. 2014). Any rules should explicitly subject CBDCs and CDBC accounts and payments to all applicable state and federal laws.

g. **Easier for garnishment by debt collectors and the government, including for the wrong amount or against the wrong person**. Debt collectors could have an easy, central place to go to serve garnishment orders, evading state protections against wage garnishment by garnishing wages after they are in a CBDC account. It is unclear if state garnishment protections would apply to the federal government, and the government may not be equipped to comply with 50 state laws. Collectors routinely pursue debts not owed or fail to serve consumers with notice. The government could also much more easily empty out accounts without court process, similar to what is currently done with tax refund offsets, but with more dire effects on regular income needed for necessities.

h. **Reduction of community reinvestment activities.** The Community Reinvestment Act only applies to insured depository institutions. Funds in CBDC accounts might reduce bank CRA obligations.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

To promote financial inclusion, financial institutions should be required to offer Bank On accounts with low monthly fees and without overdraft or NSF fees. The CFPB should adopt rules to prevent abusive use of overdraft fees that push people out of accounts. The rules governing international remittances should be improved to address hidden costs. See CFPB junk fees comments.

From the consumer perspective, it is hard to understand any significant benefits of a CBDC; any benefits seem far outweighed by the potential risks and uncertainties described above. The paper identifies five potential benefits but does not really explain how a CBDC would provide any benefits to consumers beyond what FedNow will provide. The potential benefits of a CBDC should be more clearly explained. Even for the benefits already stated in the paper, many can be better achieved in other ways.

The discussion paper identifies four potential benefits:

(1) "Safely meet future needs and demands for payment services." What needs and demands would a CBDC serve that today's money, coupled with FedNow capability, will not? Digital money in the form of commercial bank money is widely available and deposit insurance makes that money safe. For individuals with accounts under $250,000, the risk of a bank failure is both remote and, even if it occurs, results in little disruption. Many new payment mechanisms have emerged using today's digital money. To the extent that a CBDC is aimed at more safely serving the audience that is using stablecoins and cryptocurrencies, a CBDC will not be an alternative for those who are interested in investment speculation or a payment system outside of government control.

(2) "Improvements to cross-border payments." How would a CBDC improve cross-border payments? The major problems today are due to inflated and hidden costs imposed by remittance providers, and the costs of and delays posed by the sending and receiving infrastructure. See CFPB junk fees comments. It is unclear how putting a CBDC in the middle would change anything significantly. Stronger rules to make remittance fees transparent and protect consumers from errors and liability would do more to improve cross-border payments. Moreover, faster, final CBDC payments to international locations could increase payment fraud and make it harder to reach scammers.

(3) "Support the dollar's international role." That may be a benefit on the macro level, but it does not impact consumers individually.

(3) **"**Extend public access to safe central bank money". Why is commercial bank money with deposit insurance not good enough for consumers with less than $250,000 in one account? What would the public gain from such access? Additionally, many immigrant communities are fearful of central bank control over currency, preferring to remain unbanked or bank with smaller community banks. See more below.

(4) "Financial inclusion." Any benefit is not explained and is better addressed through other measures. See below.

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

It is difficult to see how a CBDC could help financial inclusion, especially in an intermediated model. A CBDC would pose the same issues that keep people out of banks today: Mistrust of banks, not enough money, cost of accounts, KYC and checking account screening agencies. Mistrust of the federal government and privacy concerns could compound those reasons. A CBDC could hurt financial inclusion if (1) it became the de facto preferred payment system but many consumers were shut out of or distrustful of it, or (2) it deprived banks of the capital and funding used to support low-balance accounts.

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?

It is more important to prevent impediments to the acceptance of cash and the ability to use cash than it is to create a new form of central bank money. It is important to preserve a form of money that (a) can be used by those shut out of bank accounts either because they don't trust them, can't afford them, or are improperly blocked by fraud/account screening controls, and (b) can be used anonymously. But CBDC would not achieve this.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

The discussion paper understates the challenges of ensuring privacy, dismissing those concerns quickly by stating that a CBDC would be "privacy protected" and that, in an intermediated model, "intermediaries would address privacy concerns by leveraging existing tools." But our national privacy laws are woefully inadequate. CBDC must not enable the federal government – or intermediaries – to have more personal information about individuals than they do today. To the extent that privacy laws do apply, they do not address the issues posed by the federal government's access to data generated by use of CBDCs, even in an intermediated model. CBDCs may also enable collection of more detailed information about spending and payments than today's forms of money do. Moreover, even if legislation establishing a CBDC had additional privacy protections, those protections are likely to be a compromise and less robust than state protections – and yet there will be a push to preempt state protections. Data uses also change making it difficult for legislation and regulations to keep up with the growing use and commercialization of data.

But it is also critical not to facilitate illicit financial activity— not just money laundering and the funding of terrorism, but also scams. Much more robust KYC controls and monitoring than we have today are necessary to ensure that accounts do not provide a vehicle for scammers to receive funds. Will the Fed or intermediaries monitor CBDC accounts to ensure that they are not being used for illegal activities or to pass funds onto scammers, even if the threshold is less than the $10,000 for mandatory SARs? With a fast and final payment system like CBDC, robust fraud monitoring of receiving accounts is essential.

14. Should a CBDC be legal tender?

Yes.

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

Only insured depositories whose parent companies are subject to the Bank Holding Company Act should be allowed to serve as intermediaries. Nonbank entities and ILCs that do not have the same full oversight and obligations of insured institutions should not be allowed, as explained in our comments on the Fed's proposed guidance on access to master accounts. Allowing nonbank intermediaries would be especially problematic given the lack of federal supervision and the bigger problems they have had appropriately handling KYC issues. Nonbanks have both permitted widespread opening of fraudulent accounts (not only for stimulus money but also as vehicles for receiving money from payment scams) while at the same time overreacting to fraud concerns and shutting down or freezing legitimate accounts and preventing people from accessing their money.

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

If possible, any CBDC should have offline capabilities that sync up once the user is back online. To the extent a CBDC is a cash replacement as cash usage and acceptance decreases, it is still helpful to have a form of payment usable by those who do not have smartphones and for use when there is no internet connectivity, including in rural areas and during times of power outages and natural disasters. Moreover, even if a CBDC has offline capabilities – and especially if it does not – it is still important to preserve access to and acceptance of cash.

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

A CBDC should be designed to be usable at the point-of-sale. Money management is more difficult if funds are siloed into different assets that can be spent in limited ways. POS use emphasizes the need for EFTA protection and the chargeback rights that credit cards have under TILA. A CBDC used at point-of-sale without chargeback rights would be less safe than a credit card, and less safe than a debit card if there are issues regarding EFTA coverage or enforcement (see above).

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

Interoperability is essential. Funds must be easily convertible, at no cost, between CDBC and bank deposits. Otherwise, if funds are siloed between two types of money, both are less useful, as families living paycheck to paycheck will face more challenges in trying to access and spend their funds on day-to-day obligations.

Thank you for the opportunity to submit these comments. If you have any questions, please contact me at lsaunders@nclc.org.

Yours very truly,

Lauren K. Saunders
Associate Director
National Consumer Law Center
(on behalf of its low-income clients)

American Bankers Association
Building Success. Together.

Rob Morgan
SVP Innovation and Strategy
(202) 663-5387
rmorgan@ABA.com

Submitted via email to Digital-innovations@frb.gov

May 20, 2022

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

To Whom It May Concern

The American Bankers Association (ABA) welcomes the opportunity to comment on the Federal Reserve Board's (Federal Reserve) discussion paper *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*.[1] The debate on Central Bank Digital Currency (CBDC) has significant implications for our financial system, economy, and most importantly for the American consumer.

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

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

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

[1] Federal Reserve Board, *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*, (January 2022) (hereinafter, "CBDC Report" or "discussion paper"), https://www.federalreserve.gov/publications/files/money-and-payments-20220120.pdf.

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

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

sector innovation in banking and payments has made a significant contribution to establishing the U.S. dollar as the reserve currency of the world and is best positioned to support the dollar's preeminent position in the years to come.

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

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

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

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

Similarly, a CBDC does not appear well-positioned to support the role of the U.S. dollar internationally. While many countries have experimented with a CBDC, many have focused on a wholesale model, something not contemplated by the Federal Reserve's discussion paper. In addition, many have pulled

[4] CBDC Report, *supra* n.1, at 1.

[5] *Id.* at 2.

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

[7] A "wholesale" CBDC means a CBDC designed for use among financial intermediaries only.

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

these experiments back as the costs of implementation have become apparent. The Federal Reserve notes that the dollar's status as the global reserve currency is driven by 1) the strength and openness of our economy, 2) the depth of our financial markets, and 3) the trust in our institutions and rule of law.

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

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

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

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

Given the high stakes, it is important we get this right, which is why ABA supports the Federal Reserve's thoughtful and considered approach. The Federal Reserve's discussion paper takes a balanced view of the opportunities and risks associated with issuing a CBDC in the United States. The discussion paper also sets an appropriately high bar for action on a CBDC. We believe that the Federal Reserve should not move forward without a clear analysis that shows the benefits of issuing a CBDC outweigh the risks and

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

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

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

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

that doing so would not create adverse impacts on consumers, markets, or the economy. This analysis must necessarily take into account whether a CBDC is the most effective way to realize these benefits. We share the Federal Reserve's view that the introduction of any CBDC should be subject to Congressional approval in the form of an authorizing law.

The recent Executive Order on Digital Assets[13] places an increased focus on CBDC. While much of the executive order calls on federal agencies to assess the expanding marketplace of digital assets before recommending new rules, we are concerned that it clearly directs federal agencies to begin pursuing a CBDC even before determining whether a U.S. CBDC is actually "in the national interest" as the order also requires. Secretary Yellen recently commented on this work, noting that "issuing a CBDC would likely present a major design and engineering challenge that would require years of development, not months."[14]

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

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

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

A CBDC is not likely to promote financial inclusion

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

The pandemic has laid bare the consequences of being unbanked, from delays in receiving stimulus payments to navigating additional barriers in the Paycheck Protection Program. Sustainable economic opportunity requires a long-term banking relationship, but according to the FDIC's 2019 "How America Banks" survey, despite some encouraging trends, over 7.1 million U.S. households—5.4%—remain

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

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

unbanked, and another 24 million households are underbanked.[15] While the FDIC observed "particularly sharp" declines between 2017 and 2019 in the rates of unbanked Black and Hispanic households, 13.8% of Black households and 12.2% of Hispanic households remained entirely unbanked in 2019, "substantially above" the unbanked rate for White households (2.5%).[16] Our nation and industry can do better.

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

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

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

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

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

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

The dollar's status as the world's most widely used currency for payments and investments results from numerous historical, economic, political, legal, and technical factors, but fundamentally stems from the overall size of the U.S. global economic presence, our open financial markets, their deep financial liquidity, widespread international trust in U.S. public and private institutions, and the U.S. commitment

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

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

[17] *Id.* at 3.

to the rule of law.[18] Other countries' use of non-dollar CBDCs will not automatically duplicate any of these key factors. To the extent a non-dollar CBDC is claimed to offer improvements in payments functionality and financial inclusion, as demonstrated above, these innovations are already occurring in U.S. dollar markets, independent of any introduction of a U.S. CBDC. Moreover, as discussed in more detail below, a CBDC could enable government control over private financial activity in novel ways that could potentially threaten property rights, privacy, and freedom of private economic activity.

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

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

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

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

While depositors at FDIC-insured banks have never lost a penny of an insured deposit, it is hard to compete for deposits with a government agency that prints that money. The Philadelphia Federal Reserve

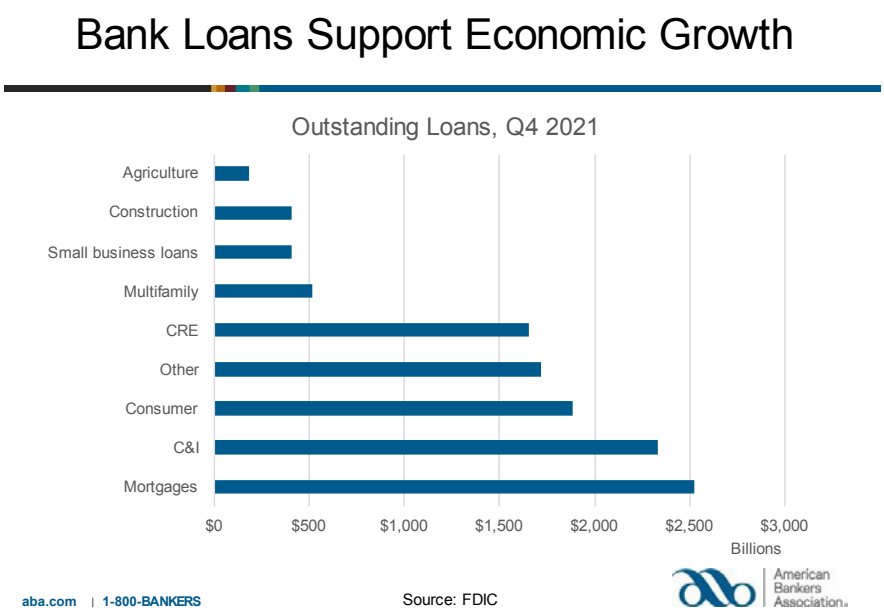
[18] CBDC Report, *supra* n.1, at 15.

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

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

Bank found that depositors value this advantage and will, in equilibrium, choose to hold their funds at the Federal Reserve instead of at retail banks, thereby establishing the Federal Reserve as a "deposit monopolist."

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



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

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

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

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

often cited in arguments for CBDC's ability to promote international payments and, thus, international competitiveness.

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

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

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

While estimating the effects a CBDC would have on deposits through a period of stress, and the resulting economic impact, is by its nature speculative, we can look to regulatory conventions about the behavior of retail and small business to form a reasonable estimate of stressed deposit outflows. For example, the Liquidity Coverage Ratio[27] assumes that three percent of insured retail and small business deposits will be withdrawn during a time of stress. It is reasonable, then, to assume that at least a comparable amount of

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

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

[25] CBDC Report, *supra* n.1, at 17.

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

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

deposits would be converted to a CBDC during an economic or financial disruption. Based on the analysis discussed above, an additional $1.3 billion, $2.1 billion or $3.2 billion could potentially flow out of banks to the Federal Reserve's balance sheet during a time of stress, under a regime with an account cap of $2,500, $5,000 or $10,000, respectively.

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

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

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

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

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

Brunnermeier and Niepelt[29] have argued that this replacement risk could be addressed by a swap or transfer of CBDCs with bank deposits. This would neutralize the deposit loss for banks from the switch to CBDCs and, hence, not impact their funding to supply credit. This would also help neutralize any impact on monetary policy. Unfortunately, there is no clarity regarding the contractual agreement between the Federal Reserve and banks for such swaps—Would this be a loan from the Fed? What would be the interest rate charged by the Federal Reserve for such loans?[30] What would be the term of these loans (to replicate the duration of different types of deposit accounts)? In addition to fundamentally altering the

[28] CBDC Report, *supra* n.1, at 1.

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

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

asset/liability management (ALM) process for the U.S. banking system, there are numerous other important considerations which would likely render it difficult for the Federal Reserve to fully replace the lost deposits for banks. For example, deposit flows to banks are not stationary, and it would just not be possible for the Federal Reserve to replicate the dynamics of these flows. How would the Federal Reserve conduct CBDC-deposit swaps if non-banks are allowed to offer CBDC wallets?

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

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

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

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

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

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

A significant challenge associated with CBDC is ensuring that the central bank is able to identify users and track the movement of funds. Unlike cash, which can be moved anonymously, digital transactions, including CBDC, offer the ability to track the movement of funds. This is a key component to the transparency required to combat illicit finance, since transparency and sharing that information with appropriate government authorities and law enforcement agencies when suspicious transactions involving

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

CBDC are detected is critical. The responsibility for tracking and monitoring for potentially suspicious transactions is a new responsibility that would fall on the Federal Reserve, something it has never handled previously. The critical element is to ensure that the Federal Reserve could determine whether anything is suspicious or out of the ordinary for that customer and should be brought to the attention of authorities through the filing of a suspicious activity report (SAR).

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

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

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

A CBDC would expand the role of government

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

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

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

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

The Federal Reserve's discussion design leaves open (or at least does not expressly exclude) the possibility it could exercise affirmative control over private parties' holdings of CBDC. The objectives could vary widely: as an extreme example, the possibility of restricting use of CBDC, or even mandating its expiration or cancellation, could be viewed as a powerful monetary tool, either for tightening (restricting or cancelling existing CBDC), or for stimulus (adding CBDC to the financial system that will expire if not spent within a specified time). The potentially enhanced ability for law enforcement to track private financial activity, noted above, and to impound or seize CBDC would serve very different policy objectives (and may well be appealing in pursuing those objectives), but would create similar uncertainties for holders of CBDC. Particularly when impounds could be executed based only on probable cause, if the mechanics of CBDC lead to more such seizures, the adequacy of procedural safeguards would likely need reexamination. The potential for enhanced surveillance raises similar concerns.

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

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

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

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

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

Others suggest that some big tech firms could provide CBDC service. This would place customer security and privacy at risk. Most big tech firms mine their customer data and use it to direct more products to

them, or they sell that data to third parties who use it to do the same thing. Data about financial transactions can be the most sensitive data a person has. Granting large technology firms and their business partners access to that financial data would put customers at risk.

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

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

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

Caps on Account Size

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

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

Moreover, experience with determination of FDIC-insurable balances demonstrates the complexity of knowing whether end-user account balances are below the limit even at financial intermediaries singularly. For example, how would CBDC balances be allocated for multiple owners of a CBDC account at an institution? And suppose some of those same individuals had other accounts at that institution? The FDIC allows accounts to be insured up to the "Standard Minimum Deposit Insurance Amount" in nine categories;[33] would the CBDC limit apply in these same categories? If not, how would the limit apply

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

with respect to other accounts for overlapping end-users or for accounts of employee benefit plans and trust accounts? The FDIC can attest that trust accounts pose particularly thorny issues.

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

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

Not Paying Interest on Deposits

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

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

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

Limit a CBDC to Consumers

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

[34] CBDC Report, *supra* n.1, at 19.

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

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

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

Financial Inclusion: Bank On

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

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

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

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

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

Payments system efficiency

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

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

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

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

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

Bank-issued stablecoins

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

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

A key recommendation made by this group is that stablecoin issuers be regulated as "insured depository institutions." ABA agrees with the recommendations of the PWG and believes this recommendation is particularly important. The stable nature of these assets means that they are a credible alternative to traditional bank deposits. The regulatory structure that banks are subject to is designed to evaluate the quality of a bank's reserves and ensure that the appropriate consumer protections are offered. While some have proposed a lower standard similar to Money Market Mutual Funds, we do not believe this is sufficient. Acting Comptroller Hsu agrees, recently pointing out that "[i]f stablecoins were just an

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

investment product, a money market fund approach based on public disclosure could, in theory, serve as a starting point. There are notable limits to disclosure's effectiveness in preventing runs, however. The need for money market fund emergency lending facilities in the 2008 financial crisis and in the spring of 2020 as part of the pandemic response stand out."[36]

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

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

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

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

Other models of CBDC do not offer a more compelling case

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

---

[36] Hsu Remarks, *supra* n.9, at 4.

[37] Quarles on Inflation, Politics at the Fed and CBDCs (May 3, 2022), https://podcasts.google.com/feed/aHR0cDovL2ZlZWRzLmxpYnN5bi5jb20vMjYxNjUzL3Jzcw/episode/Yzc4NTA5NGYtNTFjZi00NTkzLWI5NjMtMTUyNTc5NGY2MTE0?sa=X&ved=0CAUQkfYCahcKEwjglLWfjNH3AhUAAAAAHQAAAAAQDA&hl=en.

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

Direct Model

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

Wholesale Model

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

IV. Conclusion

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

Sincerely,

Rob Morgan

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

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

Appendix: Impact Analysis

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

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

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

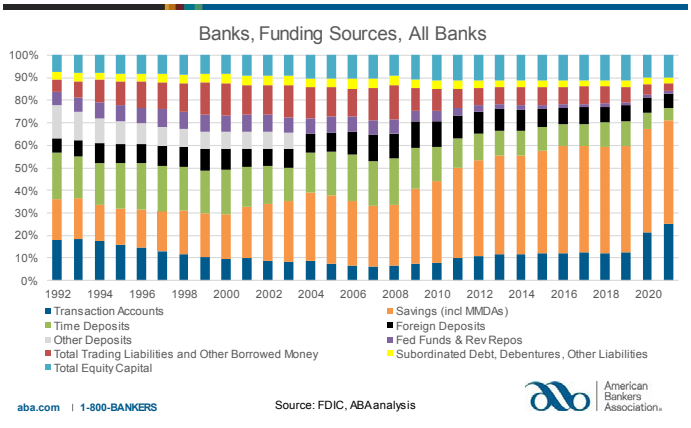
Assessing the potential impact of a CBDC requires making assumptions about design choices and how a CBDC would be used by the public. We first explore how a CBDC that is a perfect substitute for deposits would affect the industry. We find that a perfect substitute CBDC would create significant deposit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

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

The impact of a perfect substitute CBDC

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

Chart 1: Banking Industry Funding Sources

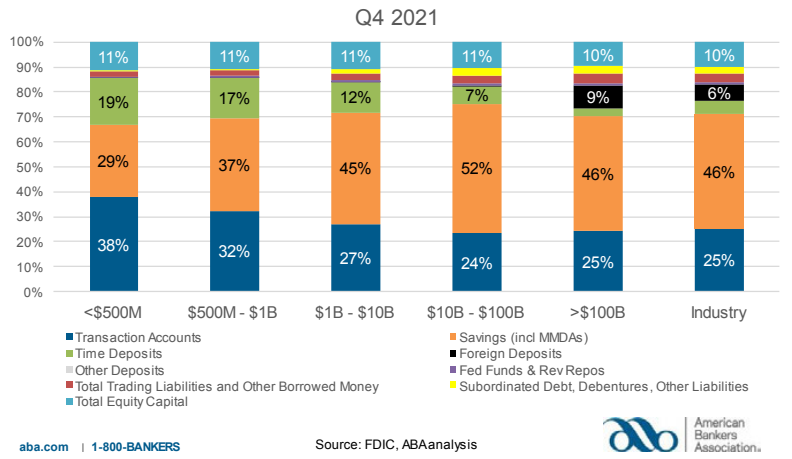


An interest-bearing CBDC could offer either positive or negative remuneration. In fact, the ability to set the monetary policy rate below the 0-bound is one of the primary benefits cited by CBDC advocates. Since CBDC would be an advantaged competitor to bank deposits, it reasons bank deposits would offer more

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

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

Chart 2: Banks, Funding Sources, by Asset Size



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

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

Table 1: 2002 - 2010 Average Cost of Funds

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

Source: FDIC, ABA analysis

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

volatility into banks' cost of funds, which, in turn, would fundamentally change their business models, including completely exiting certain product lines, customer segments, and geographies.

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

The impact of a capped, non-interest bearing CBDC

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

Table 2: 2019 Median Checking Account Balance, by Income Percentile

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

Source: Fed Survey of Consumer Finances

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

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

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

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

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

Table 3: Expected Checking Account Balances Converted Into CBDC

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

Source: Federal Reserve, ABA analysis

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

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

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

Table 4: Transaction Accounts' Share of Banks' Total Funding, by Asset Size						
Share of Funding	<$500M	$500M - $1B	$1B - $10B	$10B - $100B	>$100B	Total Banks
<10%	126	116	174	33	7	456
10-20%	181	72	142	40	15	450
20-30%	413	96	92	8	4	613
30-40%	846	172	121	6	1	1,146
40-50%	831	184	160	18	2	1,195
50-60%	354	89	73	11	5	532
60-70%	89	15	15	3	-	122
>70%	22	4	10	2	-	38
Total Banks	2,862	748	787	121	34	4,552
Source: FDIC, ABA analysis. Q4 2021 consolidated by holding company						

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

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

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

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

Table 5: ABA CBDC Survey Results						
Asset Size	Share of depost accounts (#) with balances less than			Share of depost dollars ($) with balances less than		
	$ 2,500	$ 5,000	$ 10,000	$ 2,500	$ 5,000	$ 10,000
<1B	35%	44%	51%	4.6%	6.1%	20.6%
$1B-$10B	40%	49%	57%	2.4%	4.9%	9.4%
$10B-$100B	40%	48%	54%	3.6%	6.1%	10.0%
>$100B	38%	45%	50%	1.8%	3.5%	6.2%
All respondents	38%	46%	53%	3.3%	5.4%	13.1%
Source: ABA member survey. Number of accounts based on schedule RC-O item RCON F050. Total transaction account deposit dollars based on schedule RC-E item RCON 2215						

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

BRYANT BANK

Submitted via email to Digital-innovations@frb.gov

May 20, 2022

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

RE: REQUEST FOR COMMENT REGARDING THE FEDERAL RESERVE BANK BOARD OF DIRECTORS PUBLIC CONSULTATION PAPER, *MONEY AND PAYMENTS: THE U.S. DOLLAR IN THE AGE OF DIGITAL TRANSFORMATION*

Dear Ms. Misback:

We appreciate the opportunity to comment on this most important topic regarding Digital Transformation and potential impacts affecting the American consumer, American business and potentially the viability of meeting the needs of the American economy.

The Federal Reserve Bank has been considering whether the Central Bank should create a central bank digital currency (CBDC) and has provided information regarding a potential structure for a CBDC which could have far reaching impacts to the U.S. Financial System, the roles of the Central Bank and result in a reduction of credit availability to common American citizens and its businesses, particularly, its small businesses.

It has been well documented through various studies in the past by the Conference of Bank Supervisors, the Small Business Administration and other banking industry publications that community banks provide a majority of credit to small businesses in the United States. This fact was seen even more vibrantly during the 2020 and 2021 deployment of the Payment Protection Program (PPP) loans to businesses throughout the country to distribute needed funds during the pandemic to businesses to mitigate the impact of the pandemic on the U.S. economy. Specifically, community banks made 60% of all PPP loans and 72% of PPP loans to minority businesses. Banks serve our communities and customers effectively.

Under an intermediated model contemplated by the Fed, "the private sector would offer accounts or digital wallets to facilitate the management of CBDC holdings and payments. Potential intermediaries could include commercial banks and regulated nonbank financial service providers and would operate in an open market for CBDC services." This is problematic due to implications to the U. S. Financial System, its core structure, the inversion of roles from the banking industry to the Federal Reserve Bank and ultimately result in the community banks and other banks losing deposits to the government (Federal Reserve Bank). This structure would impact the deposits of banks that fund credit to provide loans to serve customers and perpetuate the economic engine of the United States. This impact to the banking infrastructure would weaken the U. S. economy.

CBDC positions would become a liability of the Federal Reserve Bank balance sheet. This structure positions the Federal Reserve Bank as a direct competitor for bank deposits that fund lending efforts in the communities served by banks. In the Fed's own study it concedes that a CBDC "substitution effect could reduce the aggregate amount of deposits in the banking system, which in turn increase bank funding expenses, and reduce credit availability or raise credit costs for households and businesses."

A question that has not been answered is what "Use Case" or "Issue" is solved in creating a central bank digital currency? Some say that "other countries are pursuing central bank digital currency so we have to also". If CBDC creation and structure causes less credit availability and increases the banking industries cost of deposits which also impacts the consumer and business customers' cost which ultimately affects the U.S. economy, what is being truly achieved in the creation of a CBDC?

Some comments include that more inclusion would be achieved in the financial system if a CBDC were to be created. However, the Federal Reserve has not articulated how a CBDC would promote financial inclusion. Demand for CBDC would balloon the Federal Reserve Bank's Balance Sheet even more and distort its ability to effectively conduct monetary policy to control inflation and promote full employment.
We have not seen a compelling argument that CBDC would enhance privacy either. There is a fundamental conflict between privacy and efforts to use a CBDC to prevent financial crime. We would suggest that creating a CBDC would create more "opportunities" than resolutions to issues that would face the banking system infrastructure.

The Federal Reserve Act of 1913 established the Federal Reserve System as the central bank of the United States to provide the nation with a safer, more flexible, and more stable monetary and financial system. The intermediated model to create a CBDC would create an environment where banks would be burdened with all of the identity verification, customer service, Know Your Customer (KYC), Anti-Money Laundering (AML), privacy protection, sanctions screening and other compliance burdens with no clearly identified revenue stream to compensate banks for these services. The Fed proposes that banks would compete with regulated nonbank financial service providers and would operate in an open market for CBDC services. This could introduce regulatory arbitrage risk and unfairly advantage these nonbank providers if they are not regulated as stringently as banks. We believe for the strength and integrity of the payments system, all participants should be regulated by the same rules and regulations. We are concerned that the experiment of creating a CBDC would present risks and costs to our strong banking infrastructure that would far outweigh any potential perceived benefits for community banks, American consumers, businesses and the U. S. economy.

We are opposed to the creation of a Central Bank Digital Currency (CBDC). Thank you for the opportunity to comment.

Sincerely,

David Long
EVP Correspondent Banking/Capital Markets

BankORION
Performance... again and again.

May 20, 2022

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

Dear Ms. Misback:

BankORION appreciates the opportunity to respond to the Federal Reserve System's discussion paper on digital assets. We acknowledge that there are now several different forms of digital assets and that the Federal Reserve is exploring issuing a U.S. central bank digital currency (CBDC). We have concerns which we urge the Federal Reserve to consider in its analysis, potential approval, and design of a U.S. CBDC.

If the Federal Reserve were to directly distribute a CBDC, particularly if it is held in accounts at the Fed, and more so if these accounts were to pay interest, the Federal Reserve would then be in direct competition for deposits with community banks like ours. The close bond that community banks have with their customers would be broken and replaced by a customer financial relationship with the government. This disintermediation would be an exestential threat to community banks, an inappropriate function of our government, and the harm it would cause would devastate consumers, small businesses, the financial system, the banking industry, and our economy.

The only central bank digital currency that should be under consideration by the Federal Reserve is one in which our country's community banks are the "intermediary" between the Fed and the consumer.

Also, the payments system will be greatly enhanced by the upcoming inplementation of the FedNow Service. This modernization will provide for an instant and guaranteed payment method and may invalidate the need for a CBDC. A careful study of the adoption and use of the FedNow Service is warranted. We understand the urgency of policymakers in addressing issues regarding digital assets, including CBDC, but a thoughtful approach is needed and getting it right is much more important than doing it quickly.

Thank you for considering our position on this important issue.

Sincerely,

Matthew P. Bollinger
President & CEO

May 20, 2022

VIA EMAIL: DIGITAL-INNOVATIONS@FRB.GOV

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

Re: ***Comments on Central Bank Digital Currency (CBDC)***

Ms. Misback:

The National Retail Federation (NRF) is the world's largest retail trade association. Its members include department stores, specialty, discount, catalog, internet, and independent retailers, chain restaurants, grocery stores, and multi-level marketing companies. Members also include businesses that provide goods and services to retailers, such as vendors and technology providers. NRF represents the largest private-sector industry in the United States that contains over 3.8 million retail establishments, supporting more than 52 million employees contributing $2.6 trillion annually to GDP.

Nearly all the NRF's members accept electronic payments, primarily in the form of payment cards, and the fees paid to payment networks and card issuers represent a major expense for each of these retailers. As such, NRF members have a significant interest not only in reforming the existing broken payments system but also in the development of new payment options that would result in benefits to both merchants and consumers. With that in mind, we appreciate the opportunity to share our views on the prospect of the Board's consideration of a CBDC in the United States.

NATIONAL RETAIL FEDERATION
1101 New York Avenue, NW, Suite 1200
Washington, DC 20005
www.nrf.com

Involvement of Visa, Mastercard, and the Banks in a CBDC system

As detailed in a white paper prepared by the NRF for the Federal Trade Commission,[1] and in the NRF's recent comments submitted to the Board in relation to its proposed revisions to Regulation II,[2] a significant portion of the blame for today's broken payments system lies at the feet of the global networks -- Visa and Mastercard -- and the banks that facilitate their anticompetitive schemes. The existing payments system is highly profitable both for the global payments networks and for the banking industry and protecting these profits is one reason that they have taken myriad steps over the years to either destroy[3] or coopt[4] any innovative technological developments that could challenge their dominance and affect their supracompetitive profits. The NRF recognizes that the Board's consideration of CBDC is, at most, at a nascent stage, and that the Board has not yet decided whether to even move forward with any initiatives relating to digital currency. However, we believe that even at this stage, due consideration should be given to avoiding pitfalls that could ultimately result in any CBDC solution being hindered by the same issues that have plagued the existing payments system.

We are of the view that, if either Visa or Mastercard is permitted to participate in the development or facilitation of a CBDC system, they will leverage that involvement to ensure that any such system does not interfere with the status quo, or that it be designed or operated in a manner that technologically or economically forces merchants to use Visa or Mastercard in some capacity for their access to CBDC. Much in the same way that Visa and Mastercard have forced their tokenization services upon the industry and then used their power over those tokens to deprive merchants of debit network routing choice, the NRF has every reason to believe that the global networks will use the same tactics to subvert competition if afforded the ability to do so in relation to CBDC. Accordingly, neither should serve any role in the development of the system, and the system should be designed in a manner that does not utilize the services of either Visa or Mastercard as a necessary input.

We recognize that banks will, of necessity, be involved in at least a consultative role in the development of any CBDC system that might be implemented, and that they will ultimately provide services in relation to such a system. However, banks should not be placed in a position that gives them either actual or *de facto* control over any portion of a prospective CBDC system. To that end, consumers and merchants should each be afforded the ability to hold CBDC, and to

---

[1] A copy of the white paper prepared by the NRF is publicly available on the Federal Reserve website at https://www.federalreserve.gov/regreform/rr-commpublic/merchant-network-meeting-20190611.pdf.

[2] A copy of the NRF's comments submitted to the Board is available on the NRF's website at https://cdn.nrf.com/sites/default/files/2021-08/Interchange-2021-Letter%20to%20Board%20of%20Governors%20re%20Regulation%20II%20NPRM%20-%2010%20AUG.pdf.

[3] See, e.g., the manner in which Visa, Mastercard, and issuing banks have taken steps to ensure that card not present payment solutions offered by other competitive debit networks are not made available to merchants, as detailed in the NRF's white paper and NRF's comments to the Board cited in fns. 1-2 above.

[4] *See*, *e.g.*, Visa's attempted acquisition of Plaid, which was abandoned only after the U.S. Department of Justice challenged it as an effort by Visa to eliminate a competitive threat to its monopoly posed by an innovative payment technology. (https://www.justice.gov/opa/pr/visa-and-plaid-abandon-merger-after-antitrust-division-s-suit-block).

consummate transactions end-to-end, without bank involvement. Allowing banks to serve as a necessary gateway or, more accurately, a chokepoint for CBDC transactions will afford them the same opportunities to abuse their position as in the existing payment system and defeat one of the main benefits that may otherwise arise from the introduction of a CBDC.

Avoidance of Nonvoluntary Transaction Fees

As with FedNow, a CBDC system could help break the cartel that currently requires merchants and consumers to pay a usurious tax on electronic payment transactions. The NRF believes that merchants and consumers should each have the freedom to choose value-added services in relation to their payment transactions, and the ability to negotiate payment to the provider of those services. This will encourage the development of innovative services and increase both merchant and consumer welfare. However, neither merchants nor consumers should be *required* to make payments to any third party for the ability to access and consummate CBDC transactions. In other words, the system should be designed such that if a merchant and consumer wish to perform a transaction on the system, and neither wishes to purchase any value-added services in relation to that transaction, they may consummate the transaction end-to-end without paying any fees to third parties.

Offline Access to CBDC

While online connectivity is generally ubiquitous, there are still situations in which it is unfeasible or uneconomic to establish such connections, and other circumstances in which existing online connectivity fails. Any CBDC system should be designed to handle these "offline" transactions as the inability to do so would affect both the perceived and actual ability of the currency to serve as a true substitute for cash.

Identification of CBDC as Legal Tender

In its solicitation of feedback, the Board asked whether a CBDC should be deemed legal tender. While NRF does not have a view as to the full legal ramifications of such a designation, we believe that merchants should not be required to accept CBDC as a form of payment should they not wish to do so. In the same manner that merchants today are able to create their own policies with regard to their acceptance of cash, they should be permitted to decide whether and how to accept CBDC. If designation of CBDC as legal tender would require merchants to accept CBDC, NRF does not believe it should be designated as such.

Continued Access to Cash

In its solicitation of feedback, the Board asked whether, in the event cash usage declines, it is important to preserve the general public's access to a form of central bank money that can be used widely for payments. The NRF believes that a key benefit of CBDC is the ability of the public to access and hold central bank money electronically, rather than only being able to do so in the form

of physical bank notes. However, regardless of the success of any such system, it is nonetheless important for physical cash to remain available to the public as a method of consummating transactions. This is particularly important to protect the unbanked and underbanked population in this country. A CBDC should be used to expand the methods through which the public may access and hold central bank money, rather than serving as a replacement for the existing cash system.

Thank you for your consideration of our comments. We are available to meet at any time to discuss these issues further should you have any questions.

Sincerely,

Stephanie Martz
Chief Administrative Officer
and General Counsel

May 20, 2022

The Honorable Jerome H. Powell
Chair
Board of Governors of the Federal Reserve System
Washington, D.C.

An abbreviated version of Annex 2 also submitted via:
https://www.federalreserve.gov/apps/forms/cbdc

Dear Chair Powell,

U.S. Federal Reserve Discussion Paper on central bank digital currency

The Institute of International Finance (**IIF**) welcomes the opportunity to respond to the Federal Reserve System Board of Governors (**Fed**) Discussion Paper on a potential U.S. central bank digital currency (**CBDC**), Money and Payments: The U.S. Dollar in the Age of Digital Transformation (**Discussion Paper**). We commend the Fed for taking this step forward in investigating this momentous issue.

The IIF and our members have developed a substantive response to the Discussion Paper in view of the significant implications that any design or issuance decision around a CBDC may have for the U.S. economy and financial system, and the resulting global and cross-border impacts of any USD-denominated CBDC (**U.S. CBDC**) given the role of the U.S. dollar (**USD**) in the global economy.

As a global membership-based organization representing a wide range of financial sectors, the IIF is particularly concerned to ensure that the cross-border dimensions of any CBDC choices are fully considered, alongside all appropriate domestic cost–benefit and political economy considerations.

We understand that the Discussion Paper and questions are focused primarily on a retail CBDC, and we have approached the task of crafting answers to the Fed's questions in that light. We note at the outset that a possible wholesale CBDC may present a different range of costs/risks and benefits, and the balance between them may be more readily apparent and less disruptive than in the case of a retail CBDC. On the question of pursuing a CBDC, regardless of wholesale or retail, we are initially attracted to the potential for a sovereign digital settlement asset that may cross borders more efficiently and offer a chance to build an innovative, interoperable global payments system, though we are conscious of avoiding possible retail deposit substitution effects and systemic run risks. To that end, we support the Fed's ongoing efforts; analysis should consider the use of distributed ledger technology (**DLT**) for wholesale payments through the Technology Lab's study of how DLT could be used to support interbank settlement.

As for a retail U.S. CBDC, we see many challenging trade-offs and design choices ahead. In our view, these issues are of such fundamental importance to the future of the economy including the banking sector's ability to support the real economy through mortgage and SME lending that, before determinations are made about key design choices, should a U.S. CBDC be found likely to be appropriate and in the national interest, there should be a **quantitative and qualitative impact assessment** by the Fed and/or other relevant agencies of: 1) a range of possible designs for a retail CBDC, 2) mitigants against identified risks (including stress testing), and 3) the effects of those designs and mitigants on the financial system's ability to service the real economy including through mortgage and SME lending. Critical elements of such a study would include impacts on bank funding costs, lending rates and volumes, bank strength and capital ratios, and broader measures of the real economy.

Such an assessment should be done in close collaboration with regulated financial institutions (**FIs**) and payment service providers (**PSPs**). If the timeline built into President Biden's Executive Order on Ensuring Responsible Development of Digital Assets (**Executive Order**)

does not allow for such an assessment to be done before the submission of the Treasury's report on a U.S. CBDC under section 4(b) of the Executive Order (due by September 5, 2022), it could be added as an explicit further step in the process after that waypoint. We would also stress the importance of gaining a fuller understanding of these impacts through pilots and market testing exercises executed directly with regulated financial intermediaries should the Fed pursue development of a U.S. CBDC.

As to the **economic and liability model**, we observe that a mismatch between significant new risks for intermediaries (for example, AML/CFT risk and cyber theft risk) and a lack of a viable business model may drive regulated financial intermediaries away from offering CBDC wallets. Of concern to our members is the potential for CBDC and its attendant infrastructure to crowd out private sector financial innovation and investment. Any distribution or intermediation model that sees significant cost and risks placed onto the intermediary layer without commensurate compensation may only attract intermediaries with business models that depend on extracting maximum economic value from user data (in other words, BigTech providers).

In **Annex 1**, we suggest key policy considerations we hope may be of assistance to the Fed, and the other actors considering a potential U.S. CBDC in the broader framework of the Executive Order. In **Annex 2**, we set out our answers to the Fed's detailed questions, as submitted in abbreviated form (where necessary) through the web form the Fed has provided.

In line with the above, we would foremost stress the importance of the Fed developing its thinking around a potential U.S. CBDC in close collaboration with the private sector. The IIF stands ready to assist further with these momentous decisions, for example by convening or attending roundtables or bilateral discussions as appropriate, or by assisting with data gathering. Please do not hesitate to contact me or Clay Lowery with any follow-up questions, data requests, or invitation for further dialogue.

Yours sincerely,

Jessica Renier
Managing Director, Digital Finance

Annex 1 – Key policy considerations

1. We believe that the following threshold considerations are crucial prior to any proposed launch of a U.S. CBDC (retail or wholesale):
    a. the **public policy objectives** sought to be advanced by a U.S. CBDC are clearly enunciated and prioritized;
    b. it is determined that **a U.S. CBDC would be more effective than other means** in achieving those public policy objectives;[1]
    c. **trade-offs** between those objectives have been clearly enunciated and determined;
    d. the **preferred scope** – e.g., whether retail or wholesale – is clearly defined;
    e. **infrastructure and an economic and liability model** required for implementing the preferred scope of CBDC is determined.[2]
2. Any U.S. CBDC should be introduced only after it has successfully passed a **robust pilot phase**, including stress testing for market operations and major operational risks, including AML/CFT[3], privacy, cyber security and operational resilience. Iterative and close engagement with the private sector, specifically FIs and PSPs, would be essential at this stage, prior to launch, particularly in a two-tier distribution framework.
3. Any CBDC should strengthen, not weaken, the financial system. In particular:
    a. any CBDC should not materially harm the financial system's ability to finance the real economy through lending and maturity transformation, including through mortgage and SME lending, or materially threaten financial stability, including in times of crisis;[4]
    b. any CBDC should **interoperate** with private sector means of payments and existing infrastructure. This entails integrating CBDC with existing payment instruments like credit transfers, payment cards and mobile money. It requires interoperability with other cross-border CBDC systems and with government payment and collection streams; [5, 6]
    c. any CBDC could be based on the Federal Reserve's proposed **"intermediated" system** where "the private sector would offer accounts or digital wallets". This public-private cooperation, often referred to as a "two-

---

[1] The IIF would not expect a U.S. CBDC to be more effective than other means on every metric in achieving those public policy objectives; however, when considered as a whole, the cumulative effectiveness of a U.S. CBDC in achieving those policy objectives should be determined to, on substantial grounds, be superior to those achieved by other means. Other means could include changes to the law or regulation, or technical means or initiatives, including forms of private money or ongoing innovations or policy changes in existing payment systems.

[2] This should be determined in close coordination with financial institution (**FI**) intermediaries. This could be facilitated through establishment of a mechanism similar to that of the European Central Bank's Market Advisory Group for the digital euro project.

[3] As used in this submission, the term "**AML/CFT**" (anti-money laundering and countering the financing of terrorism) includes countering financial crime or financial crime risks, and also screening for politically exposed persons (PEPs) and sanctioned individuals/entities.

[4] To that end there may be merit in exploring whether and, if so, how the fractional banking model could operate upon customer-held CBDC balances operated by FDIC insured institutions. This would involve a range of implications and evaluation of whether changes to bank capital or liquidity regulation would be necessary.

[5] Auer et al, (2022), Central bank digital currencies: a new tool in the financial inclusion toolkit?, *FSI Insights* No. 41.

[6] A broad range of use cases could facilitate wider adoption of a potential CBDC. Preferably, a CBDC would make use of existing acceptance infrastructure that is linked to the user's existing devices and accounts. This would make adoption easier for both consumers and merchants and would be crucial to maximize the day-one ubiquity of the system and minimize complexity of adoption for users and merchants.

tier" CBDC, is critical to ensuring an open and competitive payment ecosystem characterized by strong innovation; and

   d. access to the system should be provided only to **regulated FIs or PSPs subject to effective oversight and supervision** who are eligible to hold Federal Reserve master accounts.

4. The **economic and liability model** should be clearly resolved and adequate incentives for participation by regulated FIs or PSPs should be considered. A business model that sees significant cost (for example, for AML/CFT compliance) and risks (for example, around cyber theft from customer wallets) placed onto the intermediary layer without commensurate reward may not attract any intermediaries other than business models that depend on extracting maximum economic value from user data (in other words, BigTech providers).
   a. The ability of intermediaries to deploy viable business models that encourage further innovation and investment in the development of value-added services will be important for operationalizing a CBDC.
   b. Costs of connecting to central infrastructure and funding cyber security investments, and liability for cyber attack or AML/CFT risk, should be transparent and clarified *ex ante*.
   c. We would note that arriving at a workable business model, as of yet, is proving challenging for our members. Collaboration with regulated FIs and PSPs on this point, as well as potential design aspects of a CBDC, would be critical.
5. **Mitigants for identified risks**, including risks to financial stability, and **other design features** should be identified and evaluated for their effectiveness and their effects on the financial system *ex ante*.
   a. Reductions arising from such mitigants in the effectiveness of a CBDC in delivering the public policy objectives should be acknowledged and included in the assessment referred to above.
   b. Mitigants should not open arbitrage opportunities between a CBDC and cash on the one hand, and a CBDC and commercial bank deposits on the other. In other words, they should not threaten fungibility or the "singleness" of the unit of account.
   c. Similarly, design features should be carefully evaluated in terms of risks including as to fungibility (in the case of programmability, for example, which programs (if any) should be deployed).
6. The **international dimension** of any CBDC is critically important. In this regard, crucial considerations to be assessed include:
   a. the possible contribution (or lack thereof) of a CBDC to the attractiveness of the USD as a reserve currency;
   b. the possible effects on the U.S. or on other economies, particularly but not exclusively emerging economies, of "digital dollarization", including the possible tendency of those in low- or zero-interest rate economies to accumulate large holdings of digital dollars;
   c. possible market impacts, including on exchange rates, that may arise from foreign demand for a U.S. CBDC; and
   d. the further work that would be required to develop international interoperability standards.[7]
7. **Privacy controls** need to be further articulated for any CBDC to proceed.
   a. It is not sufficient simply to delegate all privacy aspects to the intermediary layer. Any personally identifying information held by the operator(s) of the core CBDC infrastructure should be subject to a legally binding privacy regime. For

[7] This work could build on technical work already undertaken by the Bank for International Settlements (**BIS**) such as Project Dunbar, and perhaps include agreement on a Common Domain Model similar to that which has been developed for the derivatives industry, and/or build on applicable financial messaging standards such as ISO 20022.

example, restrictions on individual or corporate holdings, assuming multiple intermediaries, or applying to offline capability, would seem to require at least pseudonymity at the level of the core ledger.

   b. Privacy expectations should also be set for intermediaries in a legally binding and user-centric way which does not discriminate against regulated FIs or PSPs. At the same time, payments data plays an essential role in the provision of financial services, e.g., to analyze risks better and provide credit more accurately and at a better price. Intermediaries should therefore be allowed **to access transactional data to provide value-added services**, while complying with applicable data protection legislation.
   c. A particularly critical aspect to be tackled is the degree to which intermediaries would be permitted to earn remuneration by monetizing user data, and potential impacts on protecting consumer privacy. Explicit and well-informed user consent must be at the heart of any data monetization, as should maintaining the principle of "same business, same risks, same regulation" as between regulated FIs and PSPs on the one hand, and any other permitted wallet providers (including BigTech providers) on the other.

8. **Cyber security** (resistance and resilience), particularly with regard to hostile state and state-sponsored actors, and **operational resilience** will both be fundamental. Any sustained outage of a retail CBDC system would be hugely disruptive, and possibly crippling, to both the U.S. and global economies.
   a. Each bank in the Federal Reserve System could be an issuer of CBDC and a validator of transactions in a consensus mechanism, for example.[8]
   b. Another mitigant could be to provide for segregation of systems operating any retail CBDC from those operating any wholesale CBDC. This could provide for the continued availability of commercial bank money even if the retail CBDC were offline.
9. For resilience reasons during natural disasters or major incidents, an **offline capability** of any CBDC would appear to be essential. AML/CFT and financial crime risks must be mitigated, likely through holdings limits, either at the individual or device level. This may require establishment of a, possibly tiered, digital identity solution to be effective.
10. The **energy and climate footprint** of any CBDC should be evaluated.
11. **Independent oversight** of adherence of the CBDC system to applicable regulatory and technical standards would be an expectation of our members. An independent body could be set up to oversee compliance in this regard; for instance, an inspectorate, reporting directly to the Board of Governors, and independent of the operation and planning of the CBDC system, could be established to ensure operational resilience of the system. Such a body would also usefully cooperate with other global, regional or national bodies internationally with similar CBDC oversight responsibilities.
12. The applicable **standards** should be based on appropriate models such as the CPMI–IOSCO Principles for Financial Market Infrastructures, and be available to intermediaries to aid them with their own resilience planning.

In our view, the issues around a U.S. CBDC are of such fundamental importance to the future of the economy, including the ability of the banking sector to support the real economy through mortgage and SME lending that, before determinations are made about key design choices or on the larger question of whether to proceed with issuing a U.S. CBDC, there should be a **quantitative and qualitative impact assessment** by the Fed and/or other relevant agencies. The assessment should, at a minimum, attempt to model:

- a range of possible designs for a retail CBDC;

---

[8] In this regard, we acknowledge the observations of the Financial Stability Institute (**FSI**) to the effect that DLT has both positive and negative cyber-security aspects. See Auer et al, (2022), Central bank digital currencies: a new tool in the financial inclusion toolkit?, *FSI Insights* No. 41.

- a range of mitigants against identified risks (including systemic risk); and
- the effects of those designs and mitigants on the financial system's ability to service the real economy, including through mortgage and SME lending.

Critical elements of such a study would include impacts on bank funding costs, lending rates and volumes, bank strength and capital ratios, and broader measures of the real economy. It is important that these are sufficiently understood and tested prior to concluding that a retail CBDC should be pursued. [9]

[9] Such an assessment would preferably be done in close collaboration with regulated FIs. If the timeline built into the Executive Order does not allow for such an assessment to be done before the submission of the Treasury's report on a U.S. CBDC under section 4(b) of the Order (due by September 5, 2022), it could be added as an explicit further step in the process after that waypoint.

Annex 2 – Answers to consultation questions

Note: the Fed's web form allows for only 5000 characters to be submitted per question. In the case of those answers that go beyond that limit, we have submitted an abbreviated form of the answer through the web form and the whole answer (including full references) is set out below.

Consultation questions	IIF position
CBDC Benefits, Risks, and Policy Considerations	
1. What additional potential benefits, policy considerations, or risks of a CBDC may exist that have not been raised in this paper?	The Discussion Paper raises most of the relevant issues, but some only in very general terms. Below are some of the issues that the IIF suggests merit further work and, where appropriate, further quantitative or qualitative assessment. **Mitigants** for identified risks, including financial disintermediation risk and systemic run risk, should be clearly identified and evaluated for their effectiveness and their effects on the financial system *ex ante*. Possible mitigants for the risk of financial disintermediation, and the heightened risk of systemic runs from bank deposits, that have been identified in the literature include: • limits on holdings by single individuals, households, or corporations; • tiered remuneration designed to render use of the CBDC as a store of value unattractive (relative to a means of payment); and • limits on transactions or accumulations within a particular time. There may also be merit in exploring whether and if so how the fractional banking model could operate upon customer-held CBDC balances operated by FDIC insured institutions. This would involve a range of implications and evaluation of whether changes to bank capital or liquidity regulation would be necessary. Any reduction in effectiveness of a CBDC in delivering the public policy objectives arising from such mitigants should be identified and evaluated in a quantitative and qualitative assessment undertaken by the Fed and/or other U.S. authorities.

	The Fed and other U.S. authorities should clarify their attitude toward the relevant mitigants and say which ones they would not consider, only consider as transitional or emergency measures, or consider as permanent features, and why. Mitigants should not open arbitrage opportunities between a CBDC and cash on the one hand, and a CBDC and commercial bank deposits on the other. In other words, they should preserve fungibility and "singleness" of the unit of account. **Privacy controls** need to be further articulated for any CBDC to proceed. • It is not sufficient simply to delegate all privacy aspects to the intermediary layer. Any personally identifying information held by the operator(s) of the core CBDC infrastructure should be subject to a legally binding privacy regime. For example, restrictions on individual or corporate holdings, assuming multiple intermediaries, or applying to offline capability, would seem to require at least pseudonymity at the level of the core ledger. • Privacy expectations should also be set for intermediaries in a legally binding and user-centric way which does not discriminate against regulated FIs or PSPs. At the same time, payments data plays an essential role in the provision of financial services, e.g., to analyze risks better and provide credit more accurately and at a better price. Intermediaries should therefore be allowed **to access transactional data to provide value-added services**, while complying with applicable data protection legislation. • A particularly critical aspect to be tackled is the degree to which intermediaries would be permitted to earn remuneration by monetizing user data, and potential impacts on protecting consumer privacy. Explicit and well-informed user consent must be at the heart of any data monetization, as should maintaining the principle of "same business, same risks, same regulation" as between regulated FIs and PSPs on the one hand, and any other permitted wallet providers (including BigTech providers) on the other. **Cyber security** (resistance and resilience), particularly with regard to hostile state and state-sponsored actors, and **operational resilience** will both be fundamentally important. Any sustained outage of a retail CBDC system would be hugely disruptive, and possibly crippling, to the economy.[10]

[10] In this regard, we note with concern that the Eastern Caribbean CBDC system went offline on January 14, 2022 and was still offline six weeks later, as reported in Forbes magazine on February 28.

	• Each bank in the Federal Reserve System could be an issuer of CBDC and a validator of transactions in a consensus mechanism, for example. [11] • Another mitigant could be to provide for segregation of systems operating any retail CBDC from those operating any wholesale CBDC. This could provide for the continued availability of commercial bank money even if the retail CBDC were offline. **Costs** of connecting to central infrastructure and funding for cybersecurity investments, and liability in case of cyber attack or AML/CFT[12] risk, should be transparent and clarified *ex ante*. Intermediaries should be regulated financial institutions (**FIs**) or payment service providers (**PSPs**) who are eligible to hold Federal Reserve master accounts. Further work on structuring, issuance and strategy for **distribution** with particular attention to access considerations and liability frameworks across the ecosystem will be necessary. These decisions will involve important trade-offs that require clearly articulated policy objectives. The **energy and climate footprint** of any CBDC should be fully evaluated. **Independent oversight** of adherence of the CBDC system to applicable regulatory and technical standards would be an expectation of our members. An independent body could be set up to oversee compliance in this regard; for instance, an inspectorate, reporting directly to the Board of Governors, and independent of the operation and planning of the CBDC system, could be established to ensure operational resilience of the system. Such a body would also usefully cooperate with other global, regional or national bodies internationally with similar CBDC oversight responsibilities. The applicable **standards** should be based on appropriate models such as the CPMI-IOSCO Principles for Financial Market Infrastructures and be available to intermediaries to aid intermediaries with their own resilience planning.
2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?	Other means may be as effective, or more effective, than a CBDC in delivering some of the potential benefits identified of a CBDC. For example (taking the "potential benefits" identified by the Fed as a proxy for a U.S. CBDC's public policy objectives): • Safely meet future needs and demands for payment services:

[11] In this regard, we acknowledge the observations of the FSI to the effect that DLT has both positive and negative cyber-security aspects. See Auer et al, (2022), Central bank digital currencies: a new tool in the financial inclusion toolkit?, *FSI Insights* No. 41.

[12] As used in this submission, the term "**AML/CFT**" (anti-money laundering and countering the financing of terrorism) includes countering financial crime or financial crime risks, and also screening for politically exposed persons (PEPs) and sanctioned individuals/entities.

	○ The private sector in partnership with the Fed already delivers a range of high-quality, cost-effective payment services to U.S. residents and businesses. ○ Direct payments to billers and peers by electronic commercial bank money are fast, efficient and reliable. Most FIs offer a degree of programmability with scheduled and recurring payments. ○ Existing initiatives such as the Clearing House's RTP service and FedNow, scheduled to debut in 2023, will improve the existing performance of the payments system over time. Performance could also be improved by extending Fedwire's operating hours, acknowledging there may be additional costs and risks with such a change as mentioned in our January 14, 2022 submission to CPMI on this topic. ○ As the President's Working Group (**PWG**) *et al.* November 2021 report on stablecoins and the Discussion Paper have noted, well-designed and appropriately regulated stablecoins might potentially support fast, efficient, and inclusive payment options, though more research is needed to verify this. ○ A wholesale CBDC, i.e., a digital liability of the central bank that is not widely available to the general public, would be another, and possibly less risky, means to provide a platform for payment innovation than a retail CBDC. There may be some benefits from the introduction of a wholesale CBDC for use between financial institutions. While the wholesale operations of the monetary system are already efficient, a wholesale CBDC may help to further enhance efficiency in securities trading and settlement, but further exploration and experimentation are necessary.[13] ○ While a CBDC might generate new capabilities to meet the evolving speed and efficiency requirements of the digital economy, more plausibly, complex features such as programmability and micropayments would likely be built by intermediaries on top, and these features could equally apply to other underlying asset types including commercial bank money. • Improvements to Cross-Border Payments: ○ There are other more immediate means to improve the speed, cost, transparency and accessibility of cross-border retail payments than a retail CBDC. Of course, most of the building blocks of the G20's cross-border payments roadmap, which the IIF is helping to take forward, are not currently predicated on a retail CBDC.

[13] House of Lords (2022), CBDCs - A solution in search of a problem, at para. 125.

	○ As the Fed acknowledges, however, realizing potential improvements through a CBDC would require significant international coordination to address issues such as common standards and infrastructure. Even if the Fed wished to coordinate closely with other central banks considering or already piloting a CBDC, such as the People's Bank of China, such coordination measures may be hampered by the fact that technical choices in many jurisdictions have already been or are already being made, setting *de facto* standards. *Ex post* data standardization may take a long time and be only partly complete. ○ The most salient alternative measures include: ▪ Linking domestic faster payment systems together on a cross-border basis, such as is occurring bilaterally in South-East Asia, and could take place multilaterally through projects such as the BIS Innovation Hub's Project Nexus. This could involve the activation of One-Leg-Out instant payment schemes with higher payment limits to increase the scope of such schemes to cover business payments. ▪ Based on our understanding of proof-of-concept efforts such as Project Jasper and Project Ubin, programmability could help achieve efficiency within an enclosed system of special purpose CBDC that is designed to facilitate cross-border payments. ▪ Addressing data barriers that arise from **regulatory fragmentation** (e.g., in implementation of KYC and AML/CFT rules) or **inconsistent implementation** of international payment message standards and the data required to be included within payment messages, including the potential for PSPs to interpret domestic requirements on an individual basis,[14] or different jurisdictions providing their own individual guidance. • Support the USD's International Role ○ The question whether CBDC would support the USD's international role is a complex one. ○ On the one hand, a retail CBDC is neither sufficient nor likely necessary for reserve currency status. In our view, the key drivers of reserve currency status are not likely to be the availability of a retail CBDC but rather the rule of law, monetary and financial stability, and full convertibility.

[14] See further IIF (2022), Response to FSB request for written feedback on data frameworks affecting cross-border payments, 14 January.

	○ Digital networks may also drive "digital dollarization" even if they permit users outside the U.S. to hold only e-money or commercial bank money representations of USD or stablecoins, and not CBDC.[15] ○ On the other, hand, wide availability of a retail U.S. CBDC, together with its availability to non-residents, may drive some invoicing to be denominated in USD that is not already. ○ There may also be intangible perception effects associated with the non-issuance of a retail CBDC in circumstances where other competing economies, particularly other advanced economies including the European Union (**EU**), have moved forward. The U.S. would need to consider interoperability and possible effects on cross border payments in that context, and design a plan to address those issues. • Financial Inclusion: ○ As the House of Lords report on a U.K. CBDC concluded, it is likely that there are more straightforward and targeted ways to support access to financial services than to launch a CBDC.[16] ○ One way is to tackle the problem of the unbanked in more direct ways, such as by extending low-cost basic account services, including through public subsidies or tax incentives where necessary. In the US, certified Bank On accounts have been successful to date and should remain a core component of efforts to reduce un-/under-banked populations. ○ Inside and outside the regulated banking sector, there are an increasing number of PSPs providing private digital wallets or mobile payment solutions including to "unbanked" customers. Removing unnecessary regulatory barriers to entry to these services, including through State-based mutual recognition schemes, would help. ○ The encouragement (through chartering reforms) of low-cost, digital-only banks can help reach those consumers who are digitally literate but cost sensitive, would also assist. ○ Another means would be to increase the level of digital financial inclusion by improving internet broadband services, and access to simpler, more accessible devices for the elderly, visually impaired or those with other disabilities.

[15] For the concept of "digital dollarization", see Brunnermeier et al. (2021), The digitalization of money, BIS Working Papers No 941
[16] House of Lords (2022), CBDCs - A solution in search of a problem, at para. 5.

	○ Improving financial literacy through schools and college and the provision of useful information in a range of community languages could assist. ○ Other important drivers of financial inclusion include: access to secure identity (digital or otherwise); and sufficient savings or earnings to make engaging with the formal financial system worthwhile. ○ We note that a CPMI and World Bank report highlighted the potential risk that CBDCs could crowd out private sector initiatives that could be equally or better suited to providing individuals with a basic means of payment, such as fast payment systems.[17] ○ We also note that ensuring CBDC systems are interoperable with private sector digital payment systems and arrangements is important for financial inclusion.[18] • Extend Public Access to Safe Central Bank Money: ○ Offering the public access to commercial bank money via unquestionably strong, well-regulated FIs, backed with solid deposit insurance, continues to be an obvious alternative means of providing access to safe money, albeit not a central bank liability. ○ Well-regulated stablecoins could also potentially play this role, pending an assessment of their impacts on credit formation and financial stability. ○ Other means to ensure ongoing access to cash could see public subsidies of bank branches, or (as has taken place in Australia) the growth of low-cost or zero-cost agency banking services at local post offices. Continued operation and maintenance of ATMs, including those serving higher-denominations bills, could reduce the displacement of cash in the economy.
3. Could a CBDC affect financial inclusion? Would the net effect be positive or negative for inclusion?	Overall, the IIF is sceptical that a retail U.S. CBDC itself would materially improve financial inclusion. Rather, a neutral effect appears more likely. A CBDC would neither be sufficient nor necessary to drive higher rates of financial inclusion. On lack of sufficiency, other more important drivers of financial inclusion include: financial literacy; digital literacy and measures to address the "digital divide"; access to secure identity (digital or otherwise); and sufficient savings or earnings to make engaging with the formal financial system worthwhile. See our response to question 2 for further detail.

[17] CPMI and World Bank (2020), Payment aspects of financial inclusion in the fintech era, cited in Auer et al, (2022), Central bank digital currencies: a new tool in the financial inclusion toolkit?, *FSI Insights* No. 41.
[18] Auer et al, (2022), Central bank digital currencies: a new tool in the financial inclusion toolkit?, *FSI Insights* No. 41

	To illustrate the lack of necessity, measures of financial inclusion have risen sharply in Latin America in recent times, partly in response to the choices made by governments in delivering pandemic relief. Prior to the pandemic, an average of only 55% of Latin American adults had an account at an FI.[19] COVID-19 related social benefits programs, including pandemic relief payments to bank accounts, through payment apps and to private digital wallets, helped financially integrate more than 40 million people in Brazil, Colombia, and Argentina alone. Brazil reduced its unbanked population by 73%, while Colombia and Argentina also made reductions of 8% and 18% respectively. If similar programs in Chile, Peru, and Uruguay had a similar effect, it is estimated that the unbanked population in all of Latin America will have been reduced by 25% due to the impact of COVID-19 social benefit programs alone.[20] Further, a recent report[21] suggests that the fact that many Americans are currently unbanked would not simply be resolved by introducing a U.S. CBDC, as distrust of the banking system is among the main reasons for financial exclusion.
4. How might a U.S. CBDC affect the Federal Reserve's ability to effectively implement monetary policy in the pursuit of its maximum-employment and price-stability goals?	The answer to this question is highly sensitive to the choice of mitigants for financial stability risks (chiefly, disintermediation risk and systemic run risk) that may be exacerbated (in probability or impact) by a displacement of bank deposits by retail CBDC holdings. See our answer to question 7 below on possible mitigants for these risks. Any mitigants involving non-zero remuneration on CBDC balances (positive or negative) would likely confer on the central bank a **proliferation of new policy tools** that may unduly complicate the conduct of monetary policy, or on the other hand, provide the Fed greater flexibility in crisis scenarios. There could arise at least 4 different policy rates for which the central bank would be responsible: • the federal funds target rate; • the remuneration rate on "payments" or smaller holdings of retail CBDC; • the remuneration rate on "store of value" or larger holdings of retail CBDC; • the remuneration rate on wholesale CBDC.

[19] Mastercard and Americas Market Intelligence (AMI) (2020) Financial Inclusion during COVID, October, citing the World Bank.
[20] Mastercard and AMI (2020), *op cit*. Figures measured as at August 2020 relative to pre-pandemic levels. As cited in IIF (2022), Cloud in Latin America: Opportunities and Challenges for Financial Services, 28 February (IIF members only).
[21] Maiden and MIT Digital Currency Initiative (2021), The Future of Our Money: Centering Users in the Design of Digital Currency, December 16.

	The complicated signaling effects from having so many interacting policy levers may be undesirable.[22] On the other hand, a fixed policy that CBDC balances must be zero remunerated clearly strengthens the zero lower bound to monetary policy. This effect would be attenuated to the extent that it did not apply to wholesale CBDC, but this could "break" par between the retail and wholesale instruments, driving significant arbitrage.
5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?	The economic literature around CBDC, disintermediation and financial stability suggests a CBDC could negatively affect financial stability. *Systemic run risk* As the BIS and a group of central banks including the Fed have found, CBDC and certain new forms of digital money could increase the **latent risk of systemic bank runs,** where depositors may seek to run from bank deposits to CBDC across all or many banks.[23] A period of rapid substitution from deposits to CBDC would be equivalent to a run on the banking system. The cost and frictions of running to CBDC would likely be much lower than running to cash. [24] Importantly, the lower costs of running to CBDC compared to cash imply that more depositors would quickly withdraw at a lower perceived probability of a system-wide bank solvency crisis.[25] In addition to the potential impact of CBDC in benign conditions, during crisis periods a CBDC could be perceived as a safe haven making bank deposits, particularly uninsured deposits, more flighty and thus increasing the risk of bank runs.[26] Evidence from previous systemic bank runs indicate how powerful the impetus of a bank run is, and therefore how reduced transaction costs of a CBDC could exacerbate bank runs. [27] Large-scale money-market fund outflows in the global financial crisis (GFC) and at the onset of the Covid-19 pandemic also indicate that a CBDC could increase the risks of "runs" from non-banks in stressed conditions.[28]

[22] As to signalling effects, see Panetta et al, (2021) Central Bank Digital Currency: functional scope, pricing and controls, *ECB Occasional Paper* 286, p. 13.
[23] BIS and Group of Central Banks (2021), Central bank digital currencies: Financial stability implications, September, p. 2.
[24] Bank of England (2020), Central Bank Digital Currency: opportunities, challenges and design, 22 March, p. 38
[25] BIS and Group of Central Banks (2021), Central bank digital currencies: Financial stability implications, p. 9, citing Broadbent (2016) and Callesen (2017).
[26] BIS and Group of Central Banks (2021), *Ibid.,* p. 13.
[27] BIS and Group of Central Banks (2021), *Ibid.,* p. 13.
[28] BIS and Group of Central Banks (2021), *Ibid.,* p. 14.

	Thus, the introduction of a CBDC or new forms of private money such as stablecoins could affect the latent risk of systemic runs, and banks may also need to adapt their own practices.[29] According to the CPMI and the Markets Committee, although the existence of deposit insurance helps to ensure bank runs are rare, there is a concern CBDCs could make such events more "frequent and severe", with them unfolding with "unprecedented speed and scale." Depending on the context, the shift in deposits could be large in times of stress.[30] Authorities may also need faster-acting crisis management tools. The potential for a CBDC or new private forms of digital money to increase the pace of bank runs may also necessitate examining crisis measures such as limits or controlling fund outflows from bank deposits. *Effects of possible mitigants to systemic run risk* Possible mitigants for the risk of financial disintermediation, and the heightened risk of systemic runs from bank deposits, that have been identified in the literature include: • limits on holdings by single individuals, households, or corporations or "end users"; • tiered remuneration designed to render use of the CBDC as a store of value unattractive (relative to a means of payment); • limits on transactions or accumulations within a particular time; and • crisis measures such as limits or controlling fund outflows from bank deposits. More research and analysis is needed on the viability of limits, and the trade-offs between limiting the speed of possible bank runs to CBDC and reducing the usefulness of CBDC in normal times.[31] This observation applies to tiered remuneration and other mitigants as well. Changing the interest rate charged on CBDC balances in times of stress or crisis, even if the tool were available, would be unlikely to reduce systemic run risk given that savers fearing a loss of all their savings may not be price sensitive to interest charges over relatively short periods.[32]

[29] BIS and Group of Central Banks (2021), *Ibid.,* p. 16, citing Juks (2018).
[30] BIS and Group of Central Banks (2020), Central bank digital currencies: foundational principles and core features, 9 October. A crucial element in such system-wide shifts is the stronger sensitivity of depositors to the actions of others. The more other depositors run from weaker banks, the greater the incentive to run oneself. It would be difficult to stem runs under such conditions, even when providing large lender of last resort facilities: *ibid.*
[31] Bank of England (2020), Central Bank Digital Currency: opportunities, challenges and design, 22 March, p. 38
[32] BIS and Group of Central Banks (2021), Central bank digital currencies: Financial stability implications, p. 17.

	Therefore, it is plausible that a CBDC supplied in unlimited quantities and without other control tools, as for banknotes, could make bank runs worse, as it would neither create physical security issues nor be subject to scarcity-related price disincentives. A poorly designed CBDC could facilitate deposit runs during banking crises.[33] Any attempt to introduce holding or transaction limits or tiered pricing may either reduce the appeal of a retail CBDC significantly, or open a pricing basis or spread between it and cash on the one hand and commercial bank money on the other, thus fragmenting the 'singleness' of the currency as a unit of account, and opening up opportunities for arbitrage. The cross-border and global dimensions of CBDCs available to non-residents could be especially pronounced during times of generalised flight to safety. Under such conditions, exchanging a CBDC for an international currency could potentially enable faster deleveraging in capital markets. If CBDCs accelerated flights from risk, deleveraging pressures could manifest themselves in the form of tight funding conditions and sharp movements in foreign exchange markets.[34] *Systemic risks arising from increased funding costs* Authoritative studies and modelling strongly suggest that introduction of a retail CBDC would increase bank lending interest rates and reduce bank strength, as detailed in our answer to question 6. Reduced bank net interest income, as well as its constraining effect on lending to the real economy, including through mortgage and SME lending, can be expected to weaken financial stability if it impairs the ability of FIs to raise capital to meet prudential capital requirements, including in times of stress.
6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?	A retail CBDC could adversely affect the financial sector through a reduction of funding that would translate into a reduced availability of credit and an increase in lending costs to the real economy (including of mortgage and SME lending), with business model implications for FIs. Studies suggest there would be substitution away from retail bank deposits to CBDC in normal times, as end users take advantage of the low credit risk associated with CBDC. Estimates of

[33] Panetta et al (2021), Central Bank Digital Currency: functional scope, pricing and controls, ECB Occasional Paper 286, 15 December, p. 9, citing Bindseil and Panetta (2020).
[34] BIS and Group of Central Banks (2021), *Op. cit.,* p. 18.

	this effect vary considerably, but one study estimates that up to 55% of commercial bank deposits could be diverted.[35] This can be expected to significantly increase funding costs for banks wishing to keep lending at the same level, as they would need to raise the rate of interest on deposits considerably or source more expensive wholesale funding in order to do so. This would in turn substantially impede banks' ability to create credit for the broader economy, including through mortgage and SME lending. It can also be expected to generate strong incentives to considerably increase the role of the Fed in credit creation by deploying CBDC reserves to acquire bonds or provide other forms of wholesale funding. While central banks can in principle also be a source of alternative funding, such funding – whether temporary or structural – may need to be provided against lower quality collateral as only that would increase HQLA for banks.[36] We would suggest that a situation in which the Fed has an ever-greater role in the provision of credit because CBDC crowds out bank lending is inconsistent with market economy principles. According to quantitative modelling by the BIS and a group of central banks including the Fed, bank return on equity (**RoE**) would be negatively affected monotonically with both the substitution effect and the wholesale:deposit spread, such that at a 25% outflow from deposits to CBDC, with a 2% pts spread, RoE would decline by 0.9% pts.[37] The same study also found there would need to be a significant increase in the banking sector lending rate to maintain net interest income, such that at a 25% outflow, with a 2% pts wholesale to deposit spread, lending rates would increase by 0.7% pts.[38] The possibility that banks could try to offset the higher cost of funding by engaging in riskier forms of lending could in turn create financial stability risks.[39] Reduced bank net interest income, as well as its constraining effect on lending to the real economy, could be expected to weaken financial

[35] One study has found that households could be expected to hold from 4% to 55% of their combined cash and deposit holdings in a CBDC, depending on whether the CBDC had more 'cash like' features or whether it was more competitive with bank deposits. See Li (2021), Swiss National Bank, 'Predicting the Demand for Central Bank Digital Currency: A Structural Analysis with Survey Data', 18 November.
[36] BIS and Group of Central Banks (2021), Central bank digital currencies: Financial stability implications, p. 10,
[37] BIS and Group of Central Banks (2021), Central bank digital currencies: Financial stability implications, p. 9, Graph 3.
[38] Ibid.
[39] CPMI and Markets Committee (2018), Central bank digital currencies, p. 16, cited in BIS and Group of Central Banks, Central bank digital currencies: foundational principles and core features, 9 October and in turn in House of Lords (2022), CBDCs - A solution in search of a problem, at n. 115.

	stability if it were to impair the ability of FIs to raise capital to meet prudential capital requirements, including in times of stress.
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?	Possible mitigants for the risk of financial disintermediation, and the heightened risk of systemic runs from bank deposits to retail CBDC, that have been identified in the literature include: • limits on holdings, or limits on transactions or accumulations within a particular time, by single individuals, households, or corporations; • tiered or no remuneration designed to render use of the CBDC as a store of value unattractive (relative to a means of payment); • providing alternative sources of funding to compensate commercial banks for the loss of bank deposit funding; and • crisis measures such as limits or controlling fund outflows from bank deposits. All of these mitigants introduce complications which may render them unusable or ineffective, or reduce trust in the integrity of the system if there is wide-scale abuse: • Limits on individual holdings, and tiering of remuneration above certain limits, require either a secure national or digital identity scheme, both for individuals and corporations, or a certain, high tolerance for duplicate accounts being created through multiple intermediaries. • Access by corporations to a retail CBDC would also introduce the ability for individuals to 'hide' CBDC wallets inside corporations. Such corporations could be sold on the secondary market. Aggregating holdings across these corporations would be extremely difficult. • Any inability to aggregate limits over individuals' multiple or corporate holdings could diminish trust in the integrity of the system and in the central bank, and may undermine AML/CFT efforts. • Once a retail CBDC exists, political pressure to make it competitive with commercial bank deposits on inclusion and other grounds may lead to the relaxation of holding limits and increases in interest rates paid. • More generally, assuming trusts over CBDC wallets are recognized by law, limits on individual holdings could be rendered ineffective unless details of trust holdings are registered.

	Transaction limits could be considered to reduce systemic bank runs, including in a crisis. They may however also open wide basis between the retail CBDC and cash, or the CBDC and commercial bank money (or other instruments such as stablecoins) in a crisis. There may also be merit in exploring whether and if so how the fractional banking model could operate upon customer-held CBDC balances operated by FDIC insured institutions. This would involve a range of implications and evaluation of whether changes to bank capital or liquidity regulation would be necessary. If viable, this could be a mitigant to bank deposit disintermediation risk, but not a complete solution.
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?	We would suggest the central bank has a role to play in ensuring the ongoing availability of cash for several reasons, including resilience, the existence of a digital divide, and a lack of financial education within a significant part of the population that is unlikely to be resolved by issuance of a retail CBDC (and may even be exacerbated). That said, if the use of cash does otherwise decline significantly, it may be necessary to provide an alternative (in the form of a retail CBDC) to citizens to preserve the monetary anchor. It is unclear, however, to what extent the use of cash would have to be reduced before this monetary anchor would be endangered.
9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?	As for the domestic payments agenda, the Discussion Paper usefully summarizes some of the key developments, including RTP and FedNow. We note ongoing consideration of the possibility of extending RTGS operating hours, by CPMI and others.[40] In the absence of a CBDC, efforts can be expected to continue to be made to regulate stablecoins, either through regulatory guidance or through actions by the Congress.[41] We would also expect FIs and PSPs to continue to innovate and prepare themselves for more digital and integrated payments and settlement systems. We note in this regard the recommendations of the recent report of the PWG and other agencies on stablecoins. Adequate regulation and additional research will be essential in order to consider the viability of these instruments as long-term options for cross-border digital payments.[42]

[40] See the IIF's submission to CPMI dated January 14, 2022, in which we observed that there would be considerable cost and risk associated with moving to 24/7 operation of RTGS systems.
[41] See e.g. Brunnermeier et al. (2021), The digitalization of money, BIS Working Papers No 941
[42] PWG, FDIC and OCC (2021), Report on Stablecoins, November

	Cross-border payments are of course a key priority for the G20 through its 2020 cross-border payments roadmap, to which the IIF has contributed through comment letters, by co-convening the Global Payments Forum, and by establishing a formal task force. We fully support the objectives of the roadmap, while we would suggest adjustments in aspects of its implementation, and are committed to working with our members and the official sector on its implementation. Most of the building blocks in the roadmap could be accomplished independently of the establishment of CBDC. We are confident that the goals of the roadmap could be accomplished without a retail U.S. CBDC. Separately, private sector and public-private initiatives that have helped and will continue to help improve cross-border payments around speed, cost, transparency and accessibility include: • SWIFT gpi, a new initiative developed to improve the experience of making a payment via the SWIFT network for both customers and banks. SWIFT gpi combines the traditional SWIFT messaging and banking system with a new set of rules. • SWIFT GO, a service whereby FIs can enable their SME and retail customers to send predictable, fast, highly secure, and competitively priced low-value cross-border payments anywhere in the world, direct from their bank accounts. • The continuing roll-out of ISO 20022, including ongoing efforts to improve the alignment of implementation. • Initiatives to directly connect faster payments schemes, both bilaterally (such as the recent Singapore–Thailand link) and multilaterally (such as the coming Singapore–Thailand–Malaysia link), and the work of BIS Innovation Hub's Project Nexus. • Initiatives to introduce digital identity schemes and digital verifiable credentials schemes domestically and across borders, such as the IIF's Open Digital Trust Initiative and the Global Assured Identity Network proof of concept. • The advent of increasing competition from Paytechs in the cross-border payments space, including those exploiting a multilateral netting model. • Well-regulated stablecoins, pending an assessment of their impacts on credit formation and financial stability.
10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?	The U.S. should extract lessons learned from what the central banks of other large economies do, including the EU, and consider the geopolitical and interoperability implications of their actions, including in relation to cross-border payments. However, those experiences may have

	limited relevance to the U.S. economy, given the USD's unique role in the global economy as the reserve currency and should not, in and of themselves, determine U.S. action. The experience of small countries, including on cyber issues, will also be instructive. Retail CBDC is neither sufficient nor likely necessary for reserve currency status. In our view, the key drivers of reserve currency status are not likely to be availability of a retail CBDC but rather the rule of law, monetary and financial stability, and full convertibility. Digital networks may drive "digital dollarization" even if they permit users outside the U.S. to hold only e-money or commercial bank money representations of USD or stablecoins, and not CBDC. [43] That said, wide availability of a retail U.S. CBDC, together with its availability to non-residents, may drive some invoicing to be denominated in USD that is not already. There may also be intangible perception effects associated with the non-issuance of a retail CBDC in circumstances where other competing economies have done so. The USD and supporting payment networks should continue to interoperate with currencies of major economies. Should major economies develop a CBDC system that would not otherwise be interoperable with existing U.S. payment systems or USD-denominated stablecoins, the Fed may wish to consider the implications and risks associated with being unable to participate in such a system. This should not, however, drive the U.S. to prematurely adopt CBDC.
11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?	Possible mitigants for the risk of financial disintermediation, and the heightened risk of systemic runs from bank deposits to retail CBDC, that have been identified in the literature are set out in our answer to question 5. Additionally, authorities could impose a "systemic run tax" or "haircut" on CBDC transactions during times of crisis to disincentivise runs into the CBDC. However, this could be unpopular and may open a basis between bank deposits and CBDC during a crisis.
12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?	The Bank of England has suggested a "platform model" whereby: • A CBDC payment system would need to be compliant with AML/CFT regulations and requirements. This means the identity of CBDC users would need to be known to at least some authority or institution in the wider CBDC network that can validate the legitimacy of their transaction.

[43] For the concept of "digital dollarization", see Brunnermeier et al. (2021), The digitalization of money, BIS Working Papers No 941

	• In the platform model, one possibility is that the core ledger only stores pseudonymous accounts and balances, but that each account in the core ledger is linked to a Payment Interface Provider (**PIP**) who knows the identity of each user. • PIPs would be responsible for applying AML/CFT checks to users, and for reporting suspicious transactions to the authorities. • This arrangement means that the Bank would not hold granular personal data on any user, reducing the privacy concerns that could arise in connection with holding personal user data, but AML/CFT requirements could still be met by the CBDC system as a whole. AML/CFT responsibilities could be handled entirely by the PIPs.[44] We consider that the Bank of England 'platform' model with pseudonymity could be a useful model for the Fed to investigate further. However, payments data plays an essential role in the provision of financial services, e.g., to analyze risks better and provide credit more accurately and at a better price. Payments data is also a core element of offering improved personalized solutions. Many potential value-added services will rely on access to and use of this data. Therefore, it is important that the central bank's focus on privacy does not translate into a general restriction on the use of data from CBDC transactions. Intermediaries should be allowed **to access transactional data to provide value-added services**, while complying with applicable data protection legislation. CBDC design should ensure that data is used in a responsible way, ensuring both security and privacy. The Fed paper states that a general-purpose CBDC would generate data about users' financial transactions in the same ways that commercial bank and nonbank money generates such data today, and that in the intermediated CBDC model that the Federal Reserve would consider, intermediaries would address privacy concerns by leveraging existing tools. **Privacy controls** need to be further articulated for any CBDC to proceed. • It is not sufficient simply to delegate all privacy aspects to the intermediary layer. Any personally identifying information held by the operator(s) of the core CBDC infrastructure should be subject to a legally binding privacy regime. For example, restrictions on individual or corporate holdings, assuming multiple intermediaries, or applying to offline capability, would seem to require at least pseudonymity at the level of the core ledger.

[44] Bank of England (2020), Central Bank Digital Currency: opportunities, challenges and design, 22 March, p. 31

	• Privacy expectations should also be set for intermediaries in a legally binding and user-centric way which does not discriminate against regulated FIs or PSPs. At the same time, payments data plays an essential role in the provision of financial services, e.g., to analyze risks better and provide credit more accurately and at a better price. Intermediaries should therefore be allowed **to access transactional data to provide value-added services**, while complying with applicable data protection legislation. • A particularly critical aspect to be tackled is the degree to which intermediaries would be permitted to earn remuneration by monetizing user data, and potential impacts on protecting consumer privacy. Explicit and well-informed user consent must be at the heart of any data monetization, as should maintaining the principle of "same business, same risks, same regulation" as between regulated FIs and PSPs on the one hand, and any other permitted wallet providers (including BigTech providers) on the other.
13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?	**Cyber security** (resistance and resilience), particularly with regard to hostile state and state-sponsored actors, and **operational resilience** will both be fundamentally important. While cyber risk is unavoidable, the impact of a hostile state actor attack on the core ledger of, or major wallet providers to, a U.S. CBDC cannot be overstated. Any sustained outage of a retail CBDC system would be hugely disruptive, and possibly crippling, to the U.S. and global economy. In this regard, we note with concern that the Eastern Caribbean CBDC system went offline on January 14, 2022 and was still offline six weeks later, as reported in Forbes magazine on February 28. • Each bank in the Federal Reserve System could be an issuer of CBDC and a validator of transactions, for example. • Another mitigant could be to provide for segregation of systems operating any retail CBDC from those operating any wholesale CBDC. This would provide for the continued availability of commercial bank money even if the retail CBDC were offline. For resilience reasons during natural disasters or major incidents, **offline capability** of any CBDC would appear to be essential. AML/CFT and financial crime risks must be mitigated, likely through holdings limits, either at the individual or device level. **Independent oversight** of adherence of the CBDC system to applicable regulatory and technical standards would be an expectation of our members. An independent body could be set up to oversee compliance in this regard; for instance, an inspectorate, reporting directly to the Board of Governors, and independent of the operation and planning of the CBDC system, could be established to ensure operational resilience of the system. Such a body would also

	usefully cooperate with other global, regional or national bodies internationally with similar CBDC oversight responsibilities.
14. Should a CBDC be legal tender?	Yes, any retail U.S. CBDC should be legal tender to avoid opening up an undesirable basis and differentiation between it and its cash and commercial deposit representations of the currency, with resulting fragmentation risk and loss of fungibility.
CBDC Design	
15. Should a CBDC pay interest? If so, why and how? If not, why not?	We are conscious that a CBDC could confer on the central bank a **proliferation of new policy tools** that may complicate the conduct of monetary policy. The IIF also acknowledges, however, that it may provide the central bank additional avenues of flexibility during crises. That said, interest being payable on CBDC by the central bank would strongly add to such complication. The IIF finds this unfavorable. The BIS study results earlier cited about bank net interest earnings and lending rates are quite sensitive to the spread between wholesale and deposit rates.[45] Further, substitution effects are *very* sensitive to the characteristics of the CBDC, including the extent to which it replicates cash (and is zero coupon) or replicates bank deposits.[46] As such, we would advocate that retail CBDC not be remunerated at a rate above zero. An interest-bearing CBDC, as well as potentially increasing systemic risk, could also raise issues as to fungibility with cash and commercial bank money and could create legal and fragmentation risks. Wholesale CBDC is subject to different financial stability considerations, so remuneration of that asset would be subject to a different range of considerations. As a starting point, any wholesale CBDC should be remunerated at the same rate as commercial bank reserves. As to the lower bound of retail CBDC remuneration, in times of negative or near-negative interest rates, considerations around the zero lower bound and the stability of the bank deposit base would suggest that negative interest rates should apply to CBDC and be applied to retail holdings at a level intended to dissuade large-scale substitution into CBDC. However, negative interest rates may lack public acceptance and may create political issues for the central bank.

[45] BIS and Group of Central Banks (2021), *op. cit.*
[46] Li (2021), Swiss National Bank, 'Predicting the Demand for Central Bank Digital Currency: A Structural Analysis with Survey Data', 18 November.

	There may also be concerns about fungibility if a retail CBDC can be programmed to have negative interest rates.
16. Should the amount of CBDC held by a single end user be subject to quantity limits?	As stated in our answer to question 7, any tiering of remuneration in such a manner as to incentivize use of a CBDC as a means of payment, and not as a store of value, would introduce added complications, which may render limits unusable or ineffective, or reduce trust in the integrity of the system if there is wide-scale abuse. Limits on individual holdings, or periodic limits on transactions or accumulations, and tiering of remuneration above certain limits, require either a secure national or digital identity scheme, both for individuals and corporations, or a certain, high tolerance for duplicate accounts being created or operated through multiple intermediaries. Access by corporations to a retail CBDC would also introduce the ability for individuals to 'hide' CBDC wallets inside corporations. Such corporations could be sold on the secondary market. Aggregating holdings across these corporations would be extremely difficult. Any inability to aggregate limits over individuals' multiple or corporate holdings could diminish trust in the integrity of the system and in the central bank.
17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?	Except as provided below, regulated FIs and PSPs that are eligible to hold Fed master accounts should be the only firms qualified to serve as intermediaries for CBDC. Non-resident firms could be permitted to qualify, so long as they qualify under the above. Consideration could also be given to permitting equivalently regulated firms, so long as they conform with relevant requirements such as appointing local agents, submitting to local jurisdiction, maintaining a local responsible officer, undertaking basic reporting, etc. This implies that, at least insofar as they are custodians of CBDC, they could be permitted to hold retail CBDC offshore. The privilege of being an intermediary for a U.S. CBDC should be limited to institutions that operate within robust regulatory and supervisory frameworks in the following areas: • safety and soundness; • fiduciary operations; • AML/CFT; • tax withholding and reporting; • risk-based capital requirements; • personal/consumer data privacy;

	• cybersecurity (resistance and resilience); and • operational resiliency. Intermediaries that perform services for end users and incur the costs and liability involved (e.g., for hacking, AML/CFT or operational errors) will need to be compensated for taking on these risks to make the business model feasible for a U.S. CBDC.
18. Should a CBDC have "offline" capabilities? If so, how might that be achieved?	For resilience reasons during natural disasters or major incidents, an **offline capability** of any CBDC would appear to be essential. This could be achieved, for example, through a stored value card with merchant readers, or through a mobile phone application with an NFC peer-to-peer capability. AML/CFT risks must be mitigated, likely through holdings limits, either at the individual or device level. However, our observations in our answer to question 7 above about the issues with individual holding limits apply. One possible specific mitigant (beyond an individual holding limit) would be to limit the wallet size for offline capability to one wallet per individual mobile number. That way, some AML/CFT information would be available at the mobile operator, which would presumably be shared with the intermediary at time of "charging" of the offline wallet. The cost of new offline wallets could be quite high to dissuade trafficking of wallets, at the expense of deterring tourists from using the offline CBDC.
19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale?	Costs of connecting to central infrastructure and funding cybersecurity investments, and liability in case of cyber attack or AML/CFT risk, should be transparent and clarified *ex ante*. Intermediaries should be regulated FIs or PSPs that qualify for access to Fed master accounts, subject to effective oversight. We would observe that pricing a CBDC at below cost may risk crowding out other private sector payment methods.
If so, how?	Intermediaries would, over time, be expected to design features that render a CBDC attractive to retail users. Some of these features may include programmability, multi-asset wallets, tokenization features, and peer-to-peer payment capabilities.
20. How could a CBDC be designed to achieve transferability across multiple payment platforms?	The G7, including the U.S., have said that "CBDCs should coexist with existing means of payment and should operate in an open, secure, resilient, transparent and competitive

	environment that promotes choice and diversity in payment options."[47] This principle of coexistence is a "must have" and any U.S. CBDC design should deliver on this requirement. We note that the BIS, through projects such as Project Dunbar, is actively investigating technical means of ensuring connectivity between CBDC platforms. We would note that technical means of interoperation are not the same as agreement on the governance layer which would need to sit at the top of any such system. Such a governance layer, which would likely consist of agreements or understandings, as well as protocols, among system operators, would seem to need to be robust to growing geopolitical stresses, including the possibility of war among member states.
Would new technology or technical standards be needed?	It is likely that the central bank would need to promulgate technical standards to which the intermediaries would be expected to adhere, as well as to maintain and publish all APIs and data schemata needed by the system as a whole. Interoperability of CBDC internationally would further require development of a broader Common Domain Model or similar data architecture, building on the ISO 20022 standard, so that similar concepts in particular CBDCs could be readily mapped and translated (where not identically expressed).
21. How might future technological innovations affect design and policy choices related to CBDC?	Any CBDC system will need to be adaptable to emerging security threats and technological change, including fast-developing quantum computing.[48] The Fed will need to keep aware of design choices by other economies pursuing CBDCs and consider the extent to which they could positively or negatively impact the interoperability of its own design choices, should it pursue a U.S. CBDC.
22. Are there additional design principles that should be considered?	No comment.
Are there tradeoffs around any of the identified design principles, especially in trying to achieve the potential benefits of a CBDC?	In our view, the main tradeoff is between financial stability and usability of the CBDC. As discussed, many mitigants to financial stability risk breaking the "singleness" of the CBDC and opening basis with cash on the one hand and with private money such as commercial bank deposits and stablecoins on the other.

[47] Group of Seven (**G7**) (2021), G7 Public Policy Principles for Retail CBDC, 14 October.
[48] House of Lords (2022), CBDCs - A solution in search of a problem, p. 5.

	The International Monetary Fund (**IMF**) has also identified in its report on CBDC that there is a potential policy trade-off between limiting competition with bank deposits and ensuring an effective transmission mechanism of monetary policy. [49] The G7 has identified some of the other main tradeoffs.[50] It identified four key trade-offs, being: • **Cyber security vs system performance, utility and adoption**: Cyber resilience and system security is fundamental to trust and confidence – a system at risk of breach will not be used. But any requirements may have knock-on implications for system performance (speed, range of functions including the potential applications of programmability). This, in turn, may impact CBDC adoption and utility, particularly in how far such CBDCs can support innovation. • **Operational resilience vs diversity and competition:** CBDC will be critical infrastructure, so operational resilience is of upmost importance. But compliance requirements to deliver this resilience may risk excluding smaller firms with fewer resources from participating and may limit diversity and competition. • **Reducing illicit finance vs privacy and inclusion:** CBDC systems might enable enhanced transparency and rigorous standards of documentation and verification which are not possible with cash. This could help reduce illicit finance and ensure sanctions compliance. But this could have implications for users' privacy and the ability of those without documentation to access the CBDC system.[51] • **Privacy vs diversity in business models and financial inclusion:** Strong standards of privacy support inclusion by giving confidence to use CBDC. But strict restrictions on data use could serve to reduce the range of possible business models in a CBDC system, and increase costs to users, which could deter use or encourage the use of less private alternatives.

[49] IMF (2022), Behind the Scenes of Central Bank Digital Currency, February 9.
[50] Group of Seven (**G7**) (2021), G7 Public Policy Principles for Retail CBDC, 14 October.
[51] The IMF has also identified that anonymity can be used for illicit purposes and can undermine AML/CFT measures. Anonymity, therefore, poses a policy trade-off—the more anonymity, the larger the risk for illicit use. See IMF (2022), *op. cit.*

U.S. Chamber of Commerce

1615 H Street, NW
Washington, DC 20062-2000
uschamber.com

May 20, 2022

The Honorable Jerome Powell
Chair
Board of Governors of the Federal Reserve System
20th Street & Constitution Ave., NW
Washington, DC 20551

Chair Powell:

The U.S. Chamber of Commerce appreciates the opportunity to comment on the Federal Reserve Board's discussion paper on *"Money and Payments: The U.S. Dollar in the Age of Digital Transformation."* The discussion paper examines the pros and cons of a potential U.S. central bank digital currency, or CBDC, and the Federal Reserve Board invites comments from the public on how a CBDC could improve the safe and effective domestic payments system.

The Chamber does not offer an opinion for whether the Federal Reserve should issue a U.S. CBDC. We have long respected and advocated to protect the independence of the Federal Reserve's role in implementing monetary policy. The purpose of our comments is to provide the perspective of the broader business community as the Federal Reserve weighs the implications of a U.S. CBDC for the payments system and global economy.

It is important the Federal Reserve continues its deliberative approach, including consulting with the private sector, in determining whether it is appropriate to issue a U.S. CBDC. The discussion paper correctly recognizes the potential for far-reaching consequences if the Federal Reserve were to issue a U.S. CBDC. The decision would likely affect every U.S. citizen, U.S. businesses, and stakeholders around the globe given the Federal Reserve's central role in the global financial system and the status of the U.S. dollar as the world's reserve currency.

We appreciate that the discussion paper recognizes the role of elected officials in this process. The discussion paper notes, *"The Federal Reserve does not intend to proceed with issuance of a CBDC without clear support from the executive branch and from Congress, ideally in the form of a specific authorizing law."* Congress, and the President, could not have contemplated a digital currency in any form when the Federal Reserve Act was signed into law in 1913. The consent of elected officials, including Congress and the President, is critical to ensuring the long-term longevity of any digital currency that may be issued by the Federal Reserve.

We hope the Federal Reserve will carefully weigh the history of the private sector in payments innovation and the potential consequences to our financial system if the Federal Reserve issues a U.S. CBDC. The discussion paper rightly notes *"A crucial test for a potential CBDC is whether it would prove superior to other methods that might address issues of concern in this paper.*" As a threshold matter, the Federal Reserve should determine whether there is a specific market failure, a failure of public-private collaboration, or a shortcoming with other payments initiatives, including those led by the Federal Reserve, that a U.S. CBDC would address that cannot be addressed by, for example, a privately issued stablecoin that is backed 1-to1 by U.S. dollars.

We believe the discussion paper adequately identifies the relevant pros and cons of the Federal Reserve issuing a U.S. CBDC. We offer comment on 13 of the 22 questions for comment thoughtfully proposed in the discussion paper. We hope the Federal Reserve will provide an additional opportunity to comment on many of these questions when, or if, it establishes the specific use cases and designed features for a U.S. CBDC. Until then, our ability to comment on many of these questions is limited. This is consistent with a recommendation from the Bank of International Settlements, *"To maintain that trust and understand if a CBDC has value to a jurisdiction, a central bank should proceed cautiously, openly and collaboratively."*

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

The Federal Reserve should be able to clearly articulate what market failure it is endeavoring to solve before issuing a U.S. CBDC and whether its objectives can be achieved by other means. This is a critical test for all public policy. To address this question, the Federal Reserve should undertake a careful analysis of stablecoins, including reserve-backed stablecoins, that are issued by private sector entities, and the potential for other participants to enter the market, before determining if the Federal Reserve should issue a U.S. CBDC.

The Federal Reserve should conduct a broad assessment of the role privately issued stablecoins and permissionless blockchains play in expanding access to new economic activity, as well as the potential for new market entrants. This information is critical to informing whether a U.S. CBDC would be addressing a specific market failure. The Federal Reserve should be prepared to specify use cases for a U.S. CBDC that are not, and cannot, be addressed by privately issued stablecoins.

A U.S. CBDC should be fungible and interchangeable at par with conventional USD. The Federal Reserve should bear in mind that fungibility could be undermined by programmability or other factors that can affect CBDC's value.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

The Federal Reserve should carefully consider alternatives to achieving the benefits of U.S. CBDC, including public-private collaboration or initiatives to improve payments led by the Federal Reserve. Again, the Federal Reserve should be able to explicitly identify market failures and offer use cases for why a U.S. CBDC would address them.

Chairman Powell has stated that CBDCs and stablecoins can coexist. When asked by Senator Patrick Toomey "If Congress were to authorize the Fed to pursue a central bank digital dollar, is there anything about that that ought to preclude well-regulated, privately-issued stablecoins from coexisting with a central bank digital dollar?" the response from Chairman Powell was "No, not at all."[1] Therefore, it is important to understand how and where stablecoins will exist within financial markets before the Federal Reserve might issue a U.S. CBDC that somehow precludes the existence of stablecoins.

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

It is important to state, however, that a U.S. CBDC should not be used as a backdoor for creating retail accounts at the Federal Reserve for individuals. The discussion paper appropriately states, *"The Federal Reserve Act does not authorize direct Federal Reserve accounts for individuals, and such accounts would represent a significant expansion of the Federal Reserve's role in the financial system and the economy."*

It is also important to remember that stablecoins promote financial inclusion. Stablecoins are being used today, for example, to decrease costs on cross-border payments.

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

The Chamber strongly supports the independence of the Federal Reserve in implementing monetary policy. It is appropriate that Congress has set the broad objectives of U.S. monetary policy—full employment and stable prices—managing

[1] United States Senate Committee on Banking, Housing, and Urban Affairs Nomination Hearing January 4, 2022. (117th). https://www.banking.senate.gov/hearings/01/04/2022/nomination-hearing

these goals requires deep analytics and expertise, a long view, and flexibility, all of which argue for the Federal Reserve maintaining its unique independence in this area. With this mission in mind, it is understandable why the Federal Reserve is inquiring and exploring the net impacts of a U.S. CBDC on monetary policy.

A U.S. CBDC could be a new transmission channel for monetary policy and could have a consequential impact on the velocity of money in the financial system. It should not be understated that a U.S. CBDC would be a direct liability of the Federal Reserve – this would be a major policy shift. This would likely require the Federal Reserve to increase the size of its balance sheet *"similar to the balance-sheet impact of issuing increasing amounts of physical currency."*

The answers to these questions, however, are contingent upon the design choices that could be made with a U.S. CBDC. It behooves the Federal Reserve, well prior to the issuance of a U.S. CBDC, to solicit additional public comment when the characteristics and architecture of the proposed coin are known. Such a comment process will enable the public to provide the Federal Reserve with more quantitative data and economic analysis about the net impacts of such a new offering on monetary policy.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

The Federal Reserve should study the financial stability risks of a U.S. CBDC. Our response to Question 6 emphasizes the importance of a full analysis of how a U.S. CBDC could, for example, implicate the intermediation of credit in our financial system.

The Federal Reserve should also remain focused on working within the President's Working Group (PWG) on Financial Markets, including the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation, and Congress, to develop a regulatory framework for privately issued stablecoins. We believe the PWG Report on Stablecoins ("PWG Report") was an important step forward in structuring a public dialogue for how to regulate stablecoins, including addressing consumer protection and financial stability risks. We were disappointed, however, about the extremely limited discussion about the potential benefits of stablecoins compared to the potential risks. The potential use cases, and benefits, of U.S. CBDC and privately issued stablecoins are theoretically identical – the primary difference being that the former is backed by the full faith and credit of the United States.

A U.S. CBDC would not have the same financial stability risks as a privately issued stablecoins, but increasing the role of the Federal Reserve in financial markets

cannot be a universal solution for addressing financial stability risks. The growth of our economy depends on risk taking by private capital. In fact, most of the money the public engages with on a daily basis is created by private sector firms. The discussion paper notes, *"Over the long term, the Federal Reserve might have to increase the size of its balance sheet to accommodate CBDC growth..."* The Federal Reserve no doubt has an important role in our financial system, but it also has the potential to crowd out private capital. Crowding out private capital comes with a cost, albeit sometimes difficult to measure, but the Federal Reserve must strongly weigh whether this capital will seek economic returns elsewhere, including outside of the U.S. economy. This result could have the unintended consequence of weakening the U.S. dollar.

The PWG Report rightly points out the risks of privately issued stablecoins. The U.S. Chamber of Commerce supports appropriate prudential regulation and consumer protection regulation for stablecoins and has been encouraged by the bipartisan activity from Congress to enact a regulatory framework that provides clarity to stablecoin issuers and other market participants. We believe it is important that Congress first enact legislation for stablecoins before a decision can be made for whether the Federal Reserve should issue a U.S. CBDC. The contours of this regulatory framework, and the privately issued stablecoins that can be developed within it, need to be understood before policymakers can understand the potential role of a U.S. CBDC.

6. **Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?**

A U.S. CBDC has the potential to adversely affect how the financial sector currently functions. This is not to say that the financial sector would not, or could not, adapt, but the Federal Reserve should be careful to not disrupt the provision of credit in the U.S. economy.

In a 2020 report, the Bank of International Settlements notes, *"The possible adverse impact of a CBDC on bank funding and financial intermediation, including the potential for destabilising runs into central bank money, has been a concern of central banks. Any decision to launch a CBDC would depend on an informed judgment that these risks can be managed, likely through some combination of safeguards incorporated in the design of a CBDC and financial system policies more generally."*[2]

As a threshold matter, policymakers should be concerned that small business lending by U.S. financial institutions dropped by nearly 50 percent – loans less than $1 million dropped from 2.5 percent of gross domestic product in 2001 to 1.7 percent in

[2] Bank for International Settlements (2020). Central bank digital currencies: foundational principles and core features. Retrieved from https://www.bis.org/publ/othp33.pdf

2017, and such loans make up a smaller portion of total bank assets, dropping from 4.0 percent in 2001 to 2.1 percent in 2016.[3]

Small business loans are already treated punitively by prudential requirements imposed on banks. The effective risk weight used in CCAR for small business loans is between three and five times the Basel III risk-weight. An increase in the cost of bank's deposit funding, which is comparatively less expensive than other forms of funding, would likely have the outcome of making small business credit less available.

A 2019 Bank of Japan Working Group Paper finds that a CBDC could distort resource allocation in the economy: *"Central banks are neither destined to make loans directly to individuals and non-bank private firms, nor superior to commercial banks and other private entities in terms of the capacity to make judgment on risks and returns of various projects. Therefore, if CBDCs replace not only banknotes but also bank deposits substantially, they could distort efficient resource allocation in the economy."*[4]

Small businesses depend on depository institutions, including banks and credit unions, for the credit they need to operate and grow. It is unclear what alternative or new sources of credit would be available to small businesses if depository institutions are compelled by market dynamics to decrease the availability of, or increase the cost of, credit.

A Staff Working Paper from the Bank Policy Institute explains: *"A necessary consequence of any CBDC would be to shift money out of bank deposits and into cash – in this case, digital cash. As a result, those deposits would no longer fund bank loans, which are the primary asset of banks, as well as Treasuries and other assets. Banks' lending would decrease in supply and increase in cost as banks paid higher rates to persuade businesses and consumers to hold deposits rather than CBDC."*[5]

In its discussion paper, the Federal Reserve seems to acknowledge this problem: *"This substitution effect could reduce the aggregate amount of deposits in the*

---

[3] Angel, J. (fall 2018). Impact of Bank Regulation on Business Lending. U.S. Chamber of Commerce Center for Capital Markets Competitiveness. Retrieved from https://www.centerforcapitalmarkets.com/wpcontent/uploads/2018/09/CCMC_RestoringSmallbizLendingReport_9.10.18-1.pdf

[4] Yanagawa, N. and Yamaoka, J. (February 2019). Bank of Japan Working Group Series: Digital Innovation, Data Revolution and Central Bank Digital Currency. Retrieved from https://www.boj.or.jp/en/research/wps_rev/wps_2019/data/wp19e02.pdf

[5] Baer, G. (April 2021). Bank Policy Institute Staff Working Paper: Central Bank Digital Currencies: Costs, Benefits and Major Implications for the U.S. Economic System. Retrieved from https://bpi.com/wp-content/uploads/2021/04/Central-Bank-Digital-Currencies-Costs-Benefits-and-Major-Implications-for-the-U.S.-Economic-System.pdf

banking system, which could in turn increase bank funding expenses, and reduce credit availability or raise credit costs for households and businesses." The Federal Reserve, however, does not offer any solutions or alternatives in its discussion paper.

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?**

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

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?**

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

9. **How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?**

Domestic and cross-border digital payments will continue to evolve with or without a U.S. CBDC. The Federal Reserve is engaged on digital payments solutions that would continue to evolve in the absence of a U.S. CBDC, including through the development of the FedNow system. The fundamental question is whether the public or private sector should be driving this evolution, and an appreciation for what direction for what a CBDC would mean for the future of payments innovation.

The U.S. government has embraced regulated stablecoins to reduce the cost of cross-border digital payments, assuming the potential risks are appropriately addressed. The White House Executive Order on Ensuring Responsible Development of Digital Assets notes, *"The United States continues to support the G20 roadmap for addressing challenges and frictions with cross-border funds transfers and payments for which work is underway, including work on improvements to existing systems for cross-border funds transfers and payments, the international dimensions of CBDC designs, and the potential of well-regulated stablecoin arrangements."*[6] Nellie Liang, the Undersecretary of the Treasury noted in a recent speech that *"They [stablecoins] have the potential to make payments faster and more efficient, but they could also*

[6] White House Executive Order on Ensuring Responsible Development of Digital Assets (March 2022). Retrieved from https://www.whitehouse.gov/briefing-room/presidential-actions/2022/03/09/executive-order-on-ensuring-responsible-development-of-digital-assets/

pose significant concerns..."[7] And, stakeholders outside the U.S. government have recognized the potential.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

The Federal Reserve should not be influenced by decisions by other large economy nations as to whether it should issue a U.S. CBDC. The Federal Reserve should focus on the principles that make the U.S. dollar the world's reserve currency. The status of the U.S. dollar as the world's reserve currency is fundamentally underpinned by our democratic institutions and rule of law that attracts capital from around the globe. As noted above, the winning model for the U.S. has been private-sector innovation and rigorous public-sector oversight; we should not abandon this model if only for the reason other countries have.

The Federal Reserve, however, could be informed by how other large nations are designing and using CBDCs. Chairman Powell has noted, "We don't feel an urge or need to be first" and that "Effectively, we already have a first-mover advantage because [the U.S. dollar is] the reserve currency."[8] The U.S. has the benefit of studying how other nations use CBDCs, and observing how private payments solutions develop, before issuing its own U.S. CBDC.

There are also important design factors that may greatly differentiate how some choose to implement CBDCs – not all CBDCs will necessarily be the same in terms of how they digitally represent currency. Other nations, for example, may have different policy objectives than the U.S., especially if they do not share our commitment to democracy and the rule of law.

One of the characteristics that makes the U.S. dollar the world's reserve currency is the efficiency by which it can be transferred globally. The Federal Reserve should study if CBDCs issued by other central banks make it easier to internationally transfer funds. The European Central Bank, for example, notes that "The introduction of a digital euro would not necessarily be a game changer for the international role of the

---

[7] Liang, N. (March 2022). Remarks by Under Secretary for Domestic Finance Nellie Liang at the Institute of International Bankers' Annual Washington Conference. Retried from https://home.treasury.gov/news/press-releases/jy0635

[8] Fed's Powell: CBDC Will Be Years, Not Months, Away. PYMNTS.com. (2021, January 14). Retrieved May 18, 2022, from https://www.pymnts.com/news/payment-methods/2021/fed-powell-cbdc-years-not-months-away/

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."[9]

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

Consumer privacy is an important question that should be carefully weighed in the design of any U.S. CBDC. Again, this is a question of design features for a potential U.S. CBDC.

Privacy, in general, will be less of an issue if the Federal Reserve does not attempt to issue a U.S. CBDC that disintermediates the private sector financial system. For example, direct retail access to Federal Reserve accounts would certainly expose consumers to privacy risks given their government would invariably have access to payment history.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

Operational and cyber resiliency must be a key consideration for the infrastructure design of a U.S. CBDC. As the Federal Reserve's February 2022 note, Security Considerations for a Central Bank Digital Currency outlines, there are several frameworks which may be applied to ensure cyber resiliency.[10] We encourage the Federal Reserve to conduct outreach to appropriate government agencies (e.g. NIST) and experts in the private sector to appropriately mitigate risk.

14. Should a CBDC be legal tender?

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

---

[9] The European Central Bank (June 2021). The International Role of the Euro. Retrieved from https://www.ecb.europa.eu/pub/ire/html/ecb.ire202106~a058f84c61.en.html#toc18

[10] Hansen, T. and Delak, K (February 2022). The Board of Governors of the Federal Reserve System: Security Considerations for a Central Bank Digital Currency. Retrieved from https://www.federalreserve.gov/econres/notes/feds-notes/security-considerations-for-a-central-bank-digital-currency-20220203.htm

15. Should a CBDC pay interest? If so, why and how? If not, why not?

The Federal Reserve should be cautious in designing a CBDC that pays interest. A CBDC that pays interest, depending on design features, could be analogous to direct retail bank accounts at the Federal Reserve – the discussion paper notes, "*The Federal Reserve Act does not authorize direct Federal Reserve accounts for individuals…"*

The Federal Reserve should also consider what governance it would institute to avoid policy decisions on interest rates from becoming subject to political pressure. Would the decision be made by the Federal Reserve without influence from other parts of government, including the Executive Branch? If the decision were to reside within the Federal Reserve, how would it design a decision-making process for U.S. CBDC interest rate policy?

A U.S. CBDC that pays interest could have negative implications for the banking system. Depending on the amount of interest offered, a CBDC could be a more attractive location to store funds than depositing funds with private financial institutions. As discussed, this could increase the cost of funding for these institutions, which would have knock-on effects across the financial system including for the availability of credit.

Finally, the Federal Reserve should consider that a U.S. CBDC will likely always be "safer" than a privately issued stablecoin and is therefore an inherently more attractive location to store funds. The Chamber supports a regulatory framework for stablecoins that protects consumers.

16. Should the amount of CBDC held by a single end-user be subject to quantity limits?

The amount of U.S. CBDC held by a single end-user should be subject to quantity limits. The quantity limit, however, would depend on the specific use cases for a U.S. CBDC that have yet to be articulated by the Federal Reserve. The Federal Reserve would need to establish appropriate use-cases before a comprehensive answer can be offered about end-user limits.

Limits on a U.S. CBDC holding by individuals and commercial entities would cap the amount of funds shifting to a U.S. CBDC from commercial bank deposits. However, limits on U.S. CBDC holdings by commercial entities may limit payment utility for larger payment amounts and for international holders. Both may impact the utility of the USD; this could limit the support a U.S. CBDC would provide in the USD reserve currency status.

The threshold(s) should be insulated from political influence. There should be a predefined rationale and/or mechanism for how this threshold is increased. For example, after determining the initial appropriate threshold, the Federal Reserve should consider indexing it to inflation.

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

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

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

19. Should a CBDC be designed to maximize ease of use and acceptable at the point of sale? If so, how?

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

It is critical that, if a CBDC were to be issued, that it would be transmittable across a wide range of payment platforms. Without clear understanding of the specific use cases and architecture for a CBDC, the Chamber cannot provide a detailed response on the type of technology needed for interoperability. We appreciate the interest and commitment of the Federal Reserve to comprehensively understand the net impacts of a U.S. CBDC on existing payment and financial systems.

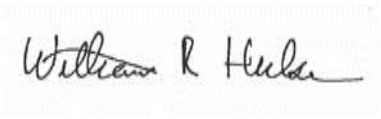
21. How might future technological innovations affect design and policy choices related to CBDC?

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

22. 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?

We do not offer specific comments at this time, but we look forward to remaining engaged with the Federal Reserve on this topic.

Respectfully,



Bill Hulse
Vice President
Center for Capital Markets Competitiveness
U.S. Chamber of Commerce

May 20, 2022

VIA EMAIL: DIGITAL-INNOVATIONS@FRB.GOV

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

Re: ***Comments on Central Bank Digital Currency (CBDC)***

Ms. Misback:

The National Retail Federation (NRF) is the world's largest retail trade association. Its members include department stores, specialty, discount, catalog, internet, and independent retailers, chain restaurants, grocery stores, and multi-level marketing companies. Members also include businesses that provide goods and services to retailers, such as vendors and technology providers. NRF represents the largest private-sector industry in the United States that contains over 3.8 million retail establishments, supporting more than 52 million employees contributing $2.6 trillion annually to GDP.

Nearly all the NRF's members accept electronic payments, primarily in the form of payment cards, and the fees paid to payment networks and card issuers represent a major expense for each of these retailers. As such, NRF members have a significant interest not only in reforming the existing broken payments system but also in the development of new payment options that would result in benefits to both merchants and consumers. With that in mind, we appreciate the opportunity to share our views on the prospect of the Board's consideration of a CBDC in the United States.

NATIONAL RETAIL FEDERATION
1101 New York Avenue, NW, Suite 1200
Washington, DC 20005
www.nrf.com

Involvement of Visa, Mastercard, and the Banks in a CBDC system

As detailed in a white paper prepared by the NRF for the Federal Trade Commission,[1] and in the NRF's recent comments submitted to the Board in relation to its proposed revisions to Regulation II,[2] a significant portion of the blame for today's broken payments system lies at the feet of the global networks -- Visa and Mastercard -- and the banks that facilitate their anticompetitive schemes. The existing payments system is highly profitable both for the global payments networks and for the banking industry and protecting these profits is one reason that they have taken myriad steps over the years to either destroy[3] or coopt[4] any innovative technological developments that could challenge their dominance and affect their supracompetitive profits. The NRF recognizes that the Board's consideration of CBDC is, at most, at a nascent stage, and that the Board has not yet decided whether to even move forward with any initiatives relating to digital currency. However, we believe that even at this stage, due consideration should be given to avoiding pitfalls that could ultimately result in any CBDC solution being hindered by the same issues that have plagued the existing payments system.

We are of the view that, if either Visa or Mastercard is permitted to participate in the development or facilitation of a CBDC system, they will leverage that involvement to ensure that any such system does not interfere with the status quo, or that it be designed or operated in a manner that technologically or economically forces merchants to use Visa or Mastercard in some capacity for their access to CBDC. Much in the same way that Visa and Mastercard have forced their tokenization services upon the industry and then used their power over those tokens to deprive merchants of debit network routing choice, the NRF has every reason to believe that the global networks will use the same tactics to subvert competition if afforded the ability to do so in relation to CBDC. Accordingly, neither should serve any role in the development of the system, and the system should be designed in a manner that does not utilize the services of either Visa or Mastercard as a necessary input.

We recognize that banks will, of necessity, be involved in at least a consultative role in the development of any CBDC system that might be implemented, and that they will ultimately provide services in relation to such a system. However, banks should not be placed in a position

---

[1] A copy of the white paper prepared by the NRF is publicly available on the Federal Reserve website at https://www.federalreserve.gov/regreform/rr-commpublic/merchant-network-meeting-20190611.pdf.

[2] A copy of the NRF's comments submitted to the Board is available on the NRF's website at https://cdn.nrf.com/sites/default/files/2021-08/Interchange-2021-Letter%20to%20Board%20of%20Governors%20re%20Regulation%20II%20NPRM%20-%2010%20AUG.pdf.

[3] See, e.g., the manner in which Visa, Mastercard, and issuing banks have taken steps to ensure that card not present payment solutions offered by other competitive debit networks are not made available to merchants, as detailed in the NRF's white paper and NRF's comments to the Board cited in fns. 1-2 above.

[4] *See*, *e.g.*, Visa's attempted acquisition of Plaid, which was abandoned only after the U.S. Department of Justice challenged it as an effort by Visa to eliminate a competitive threat to its monopoly posed by an innovative payment technology. (https://www.justice.gov/opa/pr/visa-and-plaid-abandon-merger-after-antitrust-division-s-suit-block).

that gives them either actual or *de facto* control over any portion of a prospective CBDC system. To that end, consumers and merchants should each be afforded the ability to hold CBDC, and to

consummate transactions end-to-end, without bank involvement. Allowing banks to serve as a necessary gateway or, more accurately, a chokepoint for CBDC transactions will afford them the same opportunities to abuse their position as in the existing payment system and defeat one of the main benefits that may otherwise arise from the introduction of a CBDC.

Avoidance of Nonvoluntary Transaction Fees

As with FedNow, a CBDC system could help break the cartel that currently requires merchants and consumers to pay a usurious tax on electronic payment transactions. The NRF believes that merchants and consumers should each have the freedom to choose value-added services in relation to their payment transactions, and the ability to negotiate payment to the provider of those services. This will encourage the development of innovative services and increase both merchant and consumer welfare. However, neither merchants nor consumers should be *required* to make payments to any third party for the ability to access and consummate CBDC transactions. In other words, the system should be designed such that if a merchant and consumer wish to perform a transaction on the system, and neither wishes to purchase any value-added services in relation to that transaction, they may consummate the transaction end-to-end without paying any fees to third parties.

Offline Access to CBDC

While online connectivity is generally ubiquitous, there are still situations in which it is unfeasible or uneconomic to establish such connections, and other circumstances in which existing online connectivity fails. Any CBDC system should be designed to handle these "offline" transactions as the inability to do so would affect both the perceived and actual ability of the currency to serve as a true substitute for cash.

Identification of CBDC as Legal Tender

In its solicitation of feedback, the Board asked whether a CBDC should be deemed legal tender. While NRF does not have a view as to the full legal ramifications of such a designation, we believe that merchants should not be required to accept CBDC as a form of payment should they not wish to do so. In the same manner that merchants today are able to create their own policies with regard to their acceptance of cash, they should be permitted to decide whether and how to accept CBDC. If designation of CBDC as legal tender would require merchants to accept CBDC, NRF does not believe it should be designated as such.

Continued Access to Cash

In its solicitation of feedback, the Board asked whether, in the event cash usage declines, it is important to preserve the general public's access to a form of central bank money that can be used widely for payments. The NRF believes that a key benefit of CBDC is the ability of the public to access and hold central bank money electronically, rather than only being able to do so in the form

of physical bank notes. However, regardless of the success of any such system, it is nonetheless important for physical cash to remain available to the public as a method of consummating transactions. This is particularly important to protect the unbanked and underbanked population in this country. A CBDC should be used to expand the methods through which the public may access and hold central bank money, rather than serving as a replacement for the existing cash system.

Thank you for your consideration of our comments. We are available to meet at any time to discuss these issues further should you have any questions.

Sincerely,

Stephanie Martz
Chief Administrative Officer
and General Counsel

stripe

May 20, 2022

Submitted Electronically via
digital-innovations@frb.gov

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

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

Stripe, Inc. ("Stripe") appreciates the opportunity to comment on the report by the Board of Governors of the Federal Reserve System ("Federal Reserve") on "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" (the "CBDC Report").

Stripe is a financial technology company that builds economic infrastructure for businesses to transact on the internet. Millions of businesses around the world use our software and tools to accept payments and manage their businesses online. Stripe is committed to expanding access to the online economy and to supporting responsible innovation in financial services.

Stripe exists because of the need for faster, more inclusive, more efficient, more programmable payments, domestically and across borders. In our decade of existence, we have been focused on making payments great for businesses and ultimately consumers. Given the potential implications for the payments ecosystem, Stripe is closely following developments and discussions related to CBDCs, and we appreciate the opportunity to work with the Federal Reserve and central banks around the world to explore their long-term potential.

We support the Federal Reserve's exploration of the potential benefits, risks and optimal design of a digital dollar. We discuss our specific comments on the CBDC Report below.

1. **The design of a CBDC should aim to support lower cost of payments, competition, and innovation.**

Getting the design right, especially for the distribution of central bank money in a digital world, will be critical to realizing its potential benefits, including: supporting innovation, promoting competition, and creating a more inclusive financial system. For example, with respect to inclusion, if properly designed, CBDCs could potentially help address the need for convenience by getting to a cash delivery point faster, withdrawing money sooner, and making payments

instantaneous and accurate. In short, a CBDC could be designed to maximize ease of use and acceptance at the point of sale.

At the same time, Stripe recognizes that the design of a CBDC must address other important interests, such as financial stability and financial crime risk. Proceeding with caution is prudent when dealing with the world's primary currency reserve. Security will be a paramount consideration to achieve accuracy and reliability in the digital payment system, which in turn would be integral to wide-scale adoption.

2. **A diversity of players beyond banks should be able to participate in the CBDC distribution chain.**

A CBDC design should permit the participation of a range of different market actors, including from outside the traditional banking sector, where much of the innovation in payments over the past decade has been occurring. This will help ensure competition and the best results for consumers and businesses. The acceleration of the transition into digital payments due to Covid demonstrates the important role of financial technology companies, particularly in moments of crisis. Stripe supports CBDC distribution through banks and other regulated institutions that can expand reach, access, and service innovation. If the introduction of a CBDC were to take place without sufficient safeguards to avoid market dominance and fail to ensure interoperability, it could lead to concentration and systemic risk. As new forms of digital money and innovations in digital finance spread payment flows across more systems, ***interoperability***–including in technical standards and liquidity–will be important in order to support innovation and system-wide reliability.

For the Federal Reserve to consider access to participating in the CBDC distribution chain, institutions should be evaluated in a consistent and transparent manner that promotes a safe, efficient, inclusive, and innovative payment system, consumer protection, as well as the safety and soundness of the financial system.

3. **A broad set of views and capabilities–including a diverse range of private sector players–should contribute to the design and functioning of a CBDC infrastructure.**

Private sector players should–with appropriate oversight and safeguards–be able to contribute to, integrate with, and enhance the functionality of the underlying CBDC infrastructure in order to enhance its impact and reliability for businesses and consumers.

A ***private-public sector partnership*** is needed to ensure that the Federal Reserve remains at the cutting edge for how future technological innovations could affect design and policy choices related to CBDC. The rapid changes happening in payments are hard to understate, let alone predict. In less than three years, over 80 countries (representing over 90 percent of global gross domestic product) have begun exploring a CBDC. To succeed, the Federal Reserve should partner closely with the private sector.

We encourage the Federal Reserve to fully leverage the expertise of the private sector through deep, ongoing, and technical dialogue. Stripe's experience of participating in consultative fora in

other jurisdictions, such as the Bank of England's CBDC Technology Forum and the European Central Bank's Digital Europe Market Advisory Group, have illustrated to us the value that can be gained from leveraging the collective insights of a broad range of market participants at a technical as well as policy level.

Stripe is encouraged by the Federal Reserve's exploration of the next frontier in the digital transformation of money and payments. We look forward to continuing this important dialogue and to advancing our collective understanding of the potential benefits, risks, and design of a U.S. digital dollar.

Sincerely,

Katherine M. Carroll
Global Head of Policy

STATE BANK OF TOULON

May 23, 2022

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

Dear Ms. Misback:

State Bank of Toulon appreciates the opportunity to respond to the Federal Reserve System's discussion paper on digital assets. We acknowledge that there are now several different forms of digital assets and that the Federal Reserve is exploring issuing a U.S. central bank digital currency (CBDC). We have concerns which we urge the Federal Reserve to consider in its analysis, potential approval, and design of a U.S. CBDC.

If the Federal Reserve were to directly distribute a CBDC, particularly if it is held in accounts at the Fed, and more so if these accounts were to pay interest, the Federal Reserve would then be in direct competition for deposits with community banks like ours. The close bond that community banks have with their customers would be broken and replaced by a customer financial relationship with the government. This disintermediation would be an exestential threat to community banks, an inappropriate function of our government, and the harm it would cause would devastate consumers, small businesses, the financial system, the banking industry, and our economy.

The only central bank digital currency that should be under consideration by the Federal Reserve is one in which our country's community banks are the "intermediary" between the Fed and the consumer.

Also, the payments system will be greatly enhanced by the upcoming inplementation of the FedNow Service. This modernization will provide for an instant and guaranteed payment method and may invalidate the need for a CBDC. A careful study of the adoption and use of the FedNow Service is warranted. We understand the urgency of policymakers in addressing issues regarding digital assets, including CBDC, but a thoughtful approach is needed and getting it right is much more important than doing it quickly.

Thank you for considering our position on this important issue.

Sincerely,

Douglas E. Parrott
President/CEO

Kewanee Banking Center
635 TENNEY ST
KEWANEE, ILLINOIS 61443-0408
TELEPHONE 309-852-3366
FAX 309-852-0918

State Bank of Toulon
102 W MAIN ST
TOULON, ILLINOIS 61483-0609
TELEPHONE 309-286-2861 FAX 309-286-7112
TOLL FREE 1-800-470-2861

Galva Banking Center
210 SW 2ND AVE
GALVA, ILLINOIS 61434-0088
TELEPHONE 309-932-2131
FAX 309-932-3010

www.statebankoftoulon.com

AFR Americans for Financial Reform

Ann E. Misback
Secretary
Board of Governors of the Federal Reserve
230 S LaSalle Street
Chicago, IL 60604

Sent via electronic mail to digital-innovations@frb.gov

May 20, 2022

Request for Information – Federal Reserve White Paper - Money and Payments: The U.S. Dollar in the Age of Digital Transformation

Submission from Americans for Financial Reform Education Fund and Demand Progress Education Fund

CBDC Benefits, Risks, and Policy Considerations

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

The Fed white paper assumes that a central bank digital currency, issued by the Federal Reserve and promulgated using distributed ledger technology (DLT, e.g., a blockchain), would be the primary and/or preferred means by which a federally issued or 'public' digital currency might be issued. This paper also assumes that such technology and its associated institutional architecture may be able to address key financial inclusion issues, such as lack of access to bank accounts, the need for faster, more secure, and reliable payment systems, etc., and can do so while offering sufficient privacy and consumer protections for CDBC holders and users.

For reasons related to efficiency, privacy concerns, consumer protections, and financial inclusion, we urge the Fed to reconsider this fundamental premise and work with other financial regulators to make room for a more polycentric institutional and technological architecture, which may or may not incorporate blockchain-based tokens, if they prove to be as or more effective than other option and do not present comparatively higher risks.

Indeed, that structure could incorporate both existing Fed systems and new innovative approaches that are not dependent on DLT technology. For example, we would support the acceleration of the Fed Now program, with consumer fraud protections incorporated, which would expand the availability of real-time payments as a first step. We would additionally see promise in the deployment of a privacy-protecting Fed Accounts system that would expand the capacity of the Fed to provide account-based deposit and payment systems, with low or no fee services, beyond commercial banking institutions to retail customers. Such a system could be coupled with proposals to implement a postal banking program where the post office, which already provides payments-based services such as money orders, could serve as a front-end point of contact for retail users.

Finally, we support proposals to create "e-cash" – offline, hardware-based digital cash, built using existing technology, and issued by the Fed, Treasury or some combination of agencies – that could serve the same function as physical cash, without the risks to privacy, consumer fraud and structural imbalances that a Fed-issued, blockchain based digital currency may present. Indeed, such systems already exist outside the US, where payment systems using SIM-card based hardware tied to mobile phone platforms are a popular means of making payments. Card and chip-based hardware already in use for commercial smartcards and U.S. military payments technology[1] could be modified or altered to serve as digital cash, and there are many measures that could be employed to ensure the safety, security and authenticity of such digital cash using existing or modified technology to make such e-cash comparable to paper cash by these measures.

There is precedent for such a diversified approach to providing different forms of money via varied technology or systems. Currently, account-based systems of money and token-based systems of money (e.g., cash) already coexist, are distributed in tandem, and converted from one system to the other effectively, with known and understood points of friction. This is also true for other public service systems that not only deal with cash but have unique payment systems for that service - such as transit systems that allow customers to pay fares using both stored value 'cash' cards, as well as account-linked cards, to serve diverse needs of its users (e.g., short-term riders vs. long-term commuters). The same can and should be true for digital currencies and payment systems.

Additionally, while the Federal Reserve plays a key role in managing monetary policy both historically and currently, the Fed is not the only federal agency with the capacity, expertise, and mandate to offer payment system services and issue currency. The Mint, the Bureau of Engraving and Printing, Treasury and the Postal Service have all played this role or continue to do so. Indeed, situating a US digital currency outside of the Fed may help address concerns regarding credit allocation, run risk, and other structural issues that could arise with having the Fed become the issuer of a US digital currency. It might also distribute responsibility for monetary policy more evenly between the Treasury and the Federal Reserve, such that the Fed would have comparatively more capacity to focus on oversight of the banking system.

By expanding the scope of options beyond solely blockchain-based currency vehicles and payment approaches issued by the Federal Reserve (with the risks and limitations such an approach is likely to bring) the Administration would be better able to ensure individuals, commercial entities and other parties have access to a diverse array of publicly issued digital financial instruments and tools, each offering unique properties with respect to efficacy, reliability, speed, security, and privacy.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way

The Fed could accelerate implementation of Fed Now - with measures to protect Fed Now users against real-time payments or 'inducement' fraud - thereby increasing the speed of the current payments system in ways that could directly benefit consumers – particularly low-income consumers who are more likely to be negatively impacted by slow rates of payment processing. Fed Now not only has the potential to increase real-time payments, but, if deployed using the ISO 20022 standard, could increase

[1] https://fiscal.treasury.gov/eaglecash/

the utility of the system to contain more information, and offer options for more sophisticated payment activities (such as encoding invoices within a payment), without the need for DLT-based system.

The Fed could also pursue a "Fed Accounts" program that extends the account-based money services it provides to commercial banks to retail consumers. Such an accounts-system – which will need to balance AML compliance with robust privacy protections for consumers – need not rely on a CBDC as the 'fuel' for such transactions but could use the current form of money issued by the Federal Reserve. Doing so would avoid a costly and time-consuming effort to generate a new form of digital, DLT-dependent currency that could meet robust privacy and security standards.
Critically, the Fed should seriously consider how the roll-out of this program could address longstanding distrust of both government and financial institutions. One way we believe this could be accomplished is by renewing the Postal Service's capacity to provide low or no-cost banking services as well as other financial services, including access to and management of Fed Accounts. The Postal Service played this role in the past, until such activities were largely phased out or scaled back in the 1970s. The Postal Service is a familiar, accessible agency for many that operates as a public service for all, regardless of wealth or income levels. The service is not without its challenges and has faced malign political interference from various angles in recent years. However, the Postal Service's role in providing vital services during the pandemic despite these challenges showcases how the agency can offer essential infrastructure in times of crisis. Additionally, the recent passage of the bipartisan Postal Service Reform Act of 2022 will provide much needed funding and financial stability for the service, which could set the stage for further expansion of postal banking services to facilitate Fed Accounts. A form of public banking service relying on Fed Accounts and a lead agency could also coordinate or partner with similar public banking proposals being considered or developed at the state level, such as in California. Doing so could provide a broader array of accessible, low or no cost financial services to underserved populations while leveraging both the state/national banking infrastructure and oversight mechanisms.

Finally, as described above, other agencies could produce a non-blockchain, non-ledger, truly peer-to-peer form of digital fiat currency, that would replace the functionality of physical cash as it is currently used, ensuring that individuals and communities unlikely to fully embrace or be integrated into account-based systems (public or private) still have a method of payment that is secure, reliable, private, easy to use and is backed by the government.

It is worth noting that these services could work not only on their own, but in tandem to provide some of the services that CBDCs are intended to provide. For example, future proposals to directly deposit or issue government assistance in the form of tax credits or direct payments could be distributed either by Fed Accounts, e-cash, or combination of the two, with the postal service playing an intermediary role where needed.

Outside of these public innovations, the Fed could require commercial banks to offer Bank On accounts, which have low or no monthly fees, as a condition of receiving Fed Master accounts. Additionally, the Fed and other financial regulatory agencies could make sure existing remittance rules and infrastructure are adapted to streamline payments hurdles, and address hidden costs, without the use of CBDC as a payment infrastructure. And, beyond the Fed's remit, the CFPB could adopt rules to prevent the abuse of overdraft and insufficient funds fees, which have significant negative impacts on low-income banking consumers.

Lastly, while beyond the scope of this paper, we would strongly urge the Fed to resist arguments that privately created and circulated cryptocurrencies are a viable alternative to a CBDC. Digital assets have flaws and vulnerabilities too numerous to name in full, but the concerns we and many others have about these assets' security, reliability, volatility, stability, and viability as payment systems should be enough to move the Fed to keep digital assets largely 'off the table' as a realistic solution for financial inclusion.

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

Regarding potential negative effects, a CBDC (in general, or a poorly designed/deployed one) might: 1) Expose users to undue violations of privacy; 2) Undermine access to and availability of physical cash; 3) Push the Fed to take more of a role in the economy and financial markets than may be wise, either by buying more assets to offset CBDC liabilities, or by exercising more control over bank's debt and credit decisions, constraining banks' and consumers' access to credit; 4) Impact funding or support for the community reinvestment act program, negatively impacting access to banking services for low income communities; and 5) Be used or abused to unfairly restrict people's use of public benefits, or to garnish wages to serve private or government debts.

Regarding positive effects, it is difficult to determine how to enumerate the potential positives without a clearer understanding of and more detail regarding which CBDC approach the Fed intends to put forth. However, as a starting point, a CBDC would need to demonstrate some of the following attributes (as well as others to be determined) for it to be equipped to address financial inclusion challenges properly.

Firstly, a CBDC would need to establish principles, systems, and standards of trust. For example, CBDC users would need to have confidence in the safety of the credit being used and issued via a CBDC. Users would also need to have confidence that the CBDC issuer would minimize the generation, collection and retention of data produced by the use or holding of a CBDC. Users would also need confidence that the issuer, related government agencies or infrastructure would be treated as a public utility under 'common carrier' standards - meaning all users would have equal access and use of the CBDC and would not be subject to tiered access based on cost or other criteria. Similarly, users would need to have assurances that a CBDC would not be used as a means of political censorship.

Second, a CBDC would need to be well-designed from a user interface (UI) and user experience (UX) perspective. Prospective users already have experience using digital tools and apps that are designed with UI and UX in mind. The best of these apps is clear and easy to use, reliable, accessible for different users, and enjoyable to use. A CBDC should strive to meet this same standard, both to provide its users with a similar level of service as private sector tools, and to ensure uptake and mainstream use of a CBDC.

Thirdly, a well-implemented CBDC should be widely accessible and interoperable. Anywhere a consumer might be able to use a private payment system (e.g., credit cards such as Visa, Mastercard; payment apps such as Venmo or PayPal), CBDC users should be able to use a CBDC with comparable levels of ease. This has implications for both how the CBDC would be issued to users as well as how vendors would need to be engaged to ensure this standard is met. Doing so would not only address equitable access concerns, but would also ensure CBDC use becomes mainstream, a critical measure of viability for a CBDC.

However, as expressed elsewhere in these comments, alternative measures could also promote inclusion and avoid or more easily address some of the challenges to doing so than a digital currency based on distributed ledger technology, and we are concerned that a CBDC using an intermediated model would more likely fail to achieve the assumed financial inclusion goals from the start.
Using a CBDC to increase financial inclusion might run afoul of problems with digital inclusion; many people still do not have widespread access to reliable, affordable high-speed internet. Surveys indicate this digital divide persists across racial, class and ethnic lines today. For example, a 2021 Pew Research Survey found that while eight-in-ten white adults report having a broadband connection at home, smaller shares of Black and Hispanic adults reported the same – 71% and 65% respectively.[2] Meanwhile, adults living in low-income households (making less than $30,000 a year report having significantly less access to smartphones, desktop or laptop computers, tablets, or home broadband than more affluent households.[3] Low income broadband users also report more trouble paying for their high-speed internet service, in particular during the height of the COVID-10 pandemic.[4] This lack of access to internet service and computing technology could mean that low-income, African-American or Hispanic households would have less reliable or affordable access to digital currencies or payment systems, relative to more affluent, white households. While calls for expanding broadband access have been long standing, there is no clear path for extending universal coverage of which we are aware. Hence, relying primarily on a digital currency that is distributed online and on-chain under current digital access conditions could perpetuate or exacerbate efforts to increase financial inclusion.

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

(No answer submitted)

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

(No answer submitted)

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stable coins or other non-bank money?

(No answer submitted)

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?

(No answer submitted)

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?

---

[2] https://www.pewresearch.org/fact-tank/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s/

[3] https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes- make-gains-in-tech-adoption/

[4] https://www.pewresearch.org/fact-tank/2021/06/03/34-of-lower-income-home-broadband-users-have-had-trouble-paying-for-their-service-amid-covid-19/

If and as the use of physical cash declines, it is important that people have access to a form of digital fiat currency that can be widely used for payments which provides the same features of physical cash – in particular, the ability to conduct transactions 'offline' with a reasonable expectation of privacy, no transaction costs, no need to have access to special purpose equipment, and reduced chance of public authorities unduly 'censoring' individuals by constricting their financial activity. Physical cash has been in existence and has coexisted with the use of ledger-based accounting systems for thousands of years. Even today, the use of physical cash is a necessity for tens of millions of individuals in the US and abroad, many of whom are unbanked or underbanked, and use cash to conduct financial transactions, purchase goods or services, or engage in peer-to-peer exchanges of value in a low or no cost manner, with some reasonable expectation of privacy.

Account-based money uses ledger systems that record payments which represent contractual obligations between the account holder and account manager to be settled on demand. This system has attributes that, properly administered, can provide benefits to account holders, including fraud prevention and consumer protection. However, relying on account-based money also involves trade-offs. An individual's account deposits can be exposed to risk should the firm holding those funds become insolvent. Additionally, accounts held with financial institutions are subject to AML/KYC monitoring and compliance, which necessarily reduces an account holder's expectation of privacy, even in situations where a ledger records transaction or other identifying information, without an account manager involved. As such, some people may have legitimate reasons for wanting to use a means of transaction that is less dependent on financial intermediaries, ensures some measure of privacy and allows people to take direct custody of the assets they own.

Physical cash, or token-based forms of money, differs from account-based money in that such tokens are transferable bearer instruments. The legal ownership of such tokens resides with the person who currently possesses them - either as a stack of physical cash under a bed, in someone's wallet, or existing in digital form on a server or in a piece of offline hardware. This distinction means an individual does not need to rely on a third party to claim this asset, nor refer to a historically continuous ledger of ownership transfer. They do not receive the protections that account-based money might provide, but neither do they incur the potential liabilities involved. Additionally, two individuals can use token-based cash to transact in goods or services without a financial intermediary, and without generating a default record of the transaction that persists beyond the two parties involved.

Reliance on physical cash is not merely an adherence to more 'traditional' means of payment but is rooted in long-standing economic inequities and institutional racism which have fostered distrust of commercial banking institutions and related government entities. Unbanked individuals often lack the income, identification documents or credit worthiness that private financial institutions often require for even basic checking or savings accounts. There is also a long history of exploitation of marginalized populations by private financial institutions. This has come in many forms - discriminatory lending policies; exclusion from traditional financial advisory services; predation by firms offering sub-par alternatives, such as payday lending, and more. Finally, low-income, and marginalized communities have experienced decades of unequal and unfair surveillance, harassment, and policing by law enforcement agencies. Finance itself has been used to facilitate such discriminatory policing via practices such as civil or criminal asset forfeiture, bail requirements and other exorbitant fees and punitive measures levied by the criminal justice system.

These practices have fostered within these communities and individuals a deep distrust of both private financial institutions as well as government efforts to extend the financial services franchise to them unless or until profound measures are taken to restore trust, reduce barriers to access, and protect individuals' privacy. Thus, access to physical cash and cash-based transactions without use of intermediaries is already highly desired by many and perceived by some to be a necessity. Furthermore, should more aspects of the financial services sector become digitized and subject to either private or government surveillance without transformational changes in privacy law, such need or demand may grow.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

(No answer submitted)

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

(No answer submitted)

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

(No answer submitted)

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

A DLT-based government issued digital currency presents a conundrum for anyone who holds the following positions: 1) Illicit finance is a critical global problem that harms untold numbers of people and must be addressed by regulators, law enforcement, and governments using a range of effective and fair tools; 2) The suite of laws and regulations that constitute the US AML/CFT regime has serious flaws and has been misused or abused by law enforcement and national security authorities in ways that have disproportionately harmed low-income and BIPOC communities, many of whom are often victims of the crimes facilitated by illicit finance in the first place. This includes the selective application of the AML/CFT regime, such that often, major financial institutions or wealthy individuals have easy access to financial services while avoiding full prosecution or penalties, while ordinary individuals - say, immigrants seeking to send remittances home - face disproportionate restrictions, scrutiny and penalties; and 3) The US lacks comprehensive laws that protect individuals' digital privacy and has a history of regulation and judicial jurisprudence that has greatly undermined individuals' right to privacy as understood under the Fourth Amendment.

It is certainly possible that technological approaches exist for developing DLT systems that could provide a measure of privacy for those individuals using a CBDC. However, we believe these technological fixes are unlikely to be sufficient to address how intrusions into CBDC users' privacy would unfold.

One use case for a DLT-based digital currency is that the ledger itself provides both transparency (regarding transaction activity and holdings) and anonymity (with respect to the identity of holders of

tokens and/or wallets). There is some validity to this insofar as, at least under some scenarios, law enforcement has been able to directly gather data on-chain, or via intermediaries (exchanges) in order to investigate illicit finance, while at the same time, wallet holders who hold their tokens off-chain in private non-custodial wallets may achieve some degree of privacy (though most individuals still purchase crypto assets with bank deposits, and regulators are asserting some jurisdiction over wallets and wallet issuers).

With a publicly issued DLT-based digital currency, in theory such a balance could still hold. Transaction information about digital tokens would exist on a government created chain; tokens themselves would be held in private wallets, issued either by private entities (banks, or non-bank payment providers) or by government entities (say, for example, by the post office).

However, it is unclear how regulators and the courts would differentiate or distinguish between the privacy protections that exist for an account-based payment system (either through a private institution or government entity) and a DLT-system where individuals hold digital tokens in digital wallets which may or may not be linked to accounts held by private or public entities.

In theory, an individual has more assurances of privacy regarding their physical wallet versus what is held in their bank account (though as mentioned elsewhere, privacy rights for one's physical assets are also not secure under current law). However, it doesn't take much imagination to envision how, when all these elements are connected by one stream of data, such distinctions might be eroded, either explicitly (through court rulings or new statutes) or implicitly, through suspension of privacy restrictions in the name of national security; via information sharing agreements between agencies after initial use of the data for a specified purpose; or the deanonymization of flows from digital wallets by cross-referencing such information with other data.

The situation also becomes murkier when third party digital service providers play a role either on the back end or front end of such a system. Major digital service providers have business models that harvest data from individuals' online activities. Securing access to an individual's financial transaction data record as well would be hard for such companies to resist. As such, we are concerned that legislative or regulatory attempts to bar access to such data would be insufficient or subject to regulatory capture by the industry. Lastly, in the past, such service providers have either offered or have been compelled by law enforcement to disclose data previously deemed private. It is reasonable to assume the same would hold true for CBDC data collected and stored by such digital service providers as well.

In sum, unless there are fundamental reforms to data privacy and financial privacy laws, it will be difficult to ensure that a CBDC, regardless of its structure and concept, can provide sufficient privacy for consumers that is well-balanced with respect to the competing need for access to financial information for AML/KYC purposes.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

(Not intending to answer)

14. Should a CBDC be legal tender?

(No answer submitted)

CBDC Design

15. Should a CBDC pay interest? If so, why and how? If not, why not?

(No answer submitted)

16. Should the amount of CBDC held by a single end-user be subject to quantity limits?

(No answer submitted)

17. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?

While we have foundational concerns about the use of an intermediated model overall, one key concern we have is the possibility of non-depository institutions serving as intermediaries. Non-banks (and ILCs) are not held to the same supervisory and oversight standards and have had problematic records - allowing fraudulent accounts to be opened while also unduly freezing or shutting down legitimate accounts in overreaction, KYC compliance, and other issues. At a minimum, only insured depositories whose parent companies are subject to the Bank Holding Company Act should be eligible to be intermediaries.

Even so, relying on intermediaries, as mentioned above, could create problems with credit allocation, expand the Fed's balance sheet, and, ironically, could end up excluding individuals using traditional banking accounts and systems from greater access to preferred financial services.

We would also note that one argument for introduction of a CBDC is to bring government issued money – a public good - into the digital age. Yet, pursuing an intermediated CBDC model could in some scenarios bring about a backdoor privatization of that good, with commercial banks continuing to play an outsized role in determining how financial services are operationalized. Embedding that dynamic within a CBDC system could simply perpetuate some of the existing inequities in our current system.

Given these risks, as discussed earlier in this comment, we would prefer a system that relies more on public institutions or agencies, such as the Postal Service, the Mint, Treasury, or other appropriate agencies, to play an intermediary role if needed. This could help address privacy concerns and conflicts of interest that may be present when private entities play a custodial role, and could also ensure there is a viable public option for a digital currency and payment system that can provide vital public services and good directly to people without intermediaries - an arrangement that can offer resilience in times of crisis when private sector supply chains and production processes founder.

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

(No answer submitted)

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

(No answer submitted)

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

(No answer submitted)

22. 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?

(No answer submitted)

For any questions or comments about this submission,

Please contact Mark Hays with AFREF/DPEF, markhays@ourfinancialsecurity.org

Dan D. Graham
President / CEO

Flora Bank & Trust

1478 N. Worthey St.
Flora, IL 62839

Phone (618) 662-2639
Fax (618) 662-6503

May 15, 2022

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

Dear Ms. Misback:

Flora Bank & Trust appreciates the opportunity to respond to the Federal Reserve System's discussion paper on digital assets. We acknowledge that there are now several different forms of digital assets and that the Federal Reserve is exploring issuing a U.S. central bank digital currency (CBDC). We have concerns which we urge the Federal Reserve to consider in its analysis, potential approval, and design of a U.S. CBDC.

If the Federal Reserve were to directly distribute a CBDC, particularly if it is held in accounts at the Fed, and more so if these accounts were to pay interest, the Federal Reserve would then be in direct competition for deposits with community banks like ours. The close bond that community banks have with their customers would be broken and replaced by a customer financial relationship with the government. This disintermediation would be an exestential threat to community banks, an inappropriate function of our government, and the harm it would cause would devastate consumers, small businesses, the financial system, the banking industry, and our economy.

The only central bank digital currency that should be under consideration by the Federal Reserve is one in which our country's community banks are the "intermediary" between the Fed and the consumer.

Also, the payments system will be greatly enhanced by the upcoming inplementation of the FedNow Service. This modernization will provide for an instant and guaranteed payment method and may invalidate the need for a CBDC. A careful study of the adoption and use of the FedNow Service is warranted. We understand the urgency of policymakers in addressing issues regarding digital assets, including CBDC, but a thoughtful approach is needed and getting it right is much more important than doing it quickly.

Thank you for considering our position on this important issue.

Respectfully,

FLORA BANK & TRUST

Dan D. Graham
President & CEO

Re: The Geopolitics of Digital Currency

Dear Secretary, Congressional Leaders and Chair:

The U.S. Federal Reserve, Treasury Department, and Congress have begun considering the viability of a Central Bank Digital Currency (CBDC), a legal tender national digital currency for consumer use. They are understandably focused on domestic policy issues such as potential impact on U.S. financial stability or expanding public access to financial services. The national security implications of CBDCs are not yet central considerations for U.S. policymakers, but they should be.

Digitized currency is data. Digital currency will move across international borders, potentially revealing information harmful to individual, corporate, or national interests. The United States could play a critical role in fostering open and collaborative technologies that protect this data -- upholding privacy and security standards while maintaining lawful auditability in a fully digital economic world. But the United States lags other nations in its consideration of a CBDC.

China has been working toward a CBDC for almost a decade.1 It will be first among the world's major economies to widely deploy a retail CBDC.
Accordingly, China is well positioned to shape the global standards and processes governing this financial transformation. The results could transcend data privacy and security.

New global payment exchanges could undermine components of the international financial system that enhance U.S. financial power and help sustain norms of international behavior. Vulnerable components include the SWIFT2 messaging service, which facilitates the movement of money across international borders and, among other things, is fundamental to the U.S. financial sanctions regime. American leadership will be required to adapt international financial systems to CBDC technologies without compromising U.S. interests.

These considerations should inform and accelerate U.S. consideration of a CBDC and prompt greater American engagement in developing global standards and cross-border payments processes.

Read
The Geopolitics of Digital Currency
https://www.belfercenter.org/sites/default/files/files/publication/Geopolitics%20of%20Digital%20Currency%20-%20Sarah%20Sewall%20Ming%20Luo.pdf

Take time to review this paper and give it the weight it deserves.

Yours sincerely,
Robert E. Rutkowski

coinbase

To:

The Board of Governors
of the Federal Reserve System

20th Street & Constitution Ave NW
Washington, DC 20551

Date:

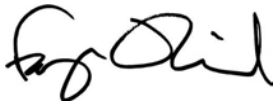
20 May 2022

Re: Coinbase's response to the Federal Reserve's discussion paper on a U.S. CBDC

Coinbase Global, Inc. (**Coinbase**) welcomes the opportunity to comment on the discussion paper, "Money and Payments: The U.S. Dollar in the Age of Digital Transformation," released by the Board of Governors of the Federal Reserve System (the **Fed**).

We appreciate your outreach to a wide range of stakeholders and look forward to continued engagement with you on the development of a U.S. central bank digital currency (**CBDC**).

Sincerely,



Faryar Shirzad
Chief Policy Officer
Coinbase Global, Inc.

coinbase

Money and Payments: The U.S. Dollar in the Age of Digital Transformation
Coinbase's response to the Federal Reserve's discussion paper on a U.S. CBDC

Coinbase's mission is to increase economic freedom in the world. Everyone deserves access to financial services that can help empower them to create a better life for themselves and their families. We believe that crypto is a pillar of financial inclusion and, by building the cryptoeconomy, we are helping to create a fairer, more accessible, efficient, and transparent financial system. Coinbase started in 2012 with the radical idea that anyone, anywhere, should be able to send and receive Bitcoin easily and securely. Today, we provide a trusted and easy-to-use platform relied on by approximately 98 million verified users, 13,000 institutions, and 230,000 ecosystem partners in over 100 countries to access the broader cryptoeconomy.[1]

We recognize that launching a U.S. CBDC is an important public policy decision, and our voice is one among many in your consideration of the interests of the American public. We expect that consumer demand for digital forms of money will grow as the technology improves and awareness increases. In parallel, we expect that the U.S. government's interest in implementing a CBDC will grow as other countries adopt CBDCs of their own to meet this demand. For these reasons, we think the Fed should carefully consider what role a CBDC can and should play in the U.S. financial system, as well as how best to design and launch a U.S. CBDC if it would serve the public interest.

The Fed has already signaled one key design decision, which is for individual users to receive CBDC services from private sector intermediaries, not the Fed itself. This creates specific design considerations as to what role the Fed expects private sector firms to play and how to properly incentivize appropriate business practices for those firms.

If the Fed were to pursue a U.S. CBDC, we believe the interests of the public must be at the center of every decision, and the design should aim to:

- Promote financial inclusion
- Define expectations for intermediaries on key aspects of users' experience
- Preserve the balance between data privacy protections and law enforcement needs
- Provide offline capabilities
- Enable programmability and interoperability
- Recognize that a U.S. CBDC and stablecoins can coexist
- Prioritize the interests of the public over incumbent financial institutions

[1] About Coinbase, https://www.coinbase.com/about

coinbase

We hope that the Fed will continue engaging with the public on these points with additional opportunities to comment as plans for a potential U.S. CBDC become more developed.

Financial inclusion

Too many individuals in the United States remain unbanked or underbanked. According to the Fed's own report on the Economic Well-Being of U.S. Households in 2020, 5% of U.S. adults are unbanked and 13% are underbanked.[2] Many of these individuals are members of marginalized communities – for example, while only 12% of White adults are underbanked or unbanked, 40% of Black adults and 30% of Hispanic adults are underbanked or unbanked.[3] In a similar survey conducted by the FDIC, commonly cited reasons for not having a bank account included not having enough money to meet minimum balance requirements, and fees being too high or unpredictable.[4]

Surveys on Americans' level of interest and attitude towards digital assets supports the argument that they have the potential to promote financial inclusion. A 2020 survey conducted by Coinbase found that Black Americans show more interest than other respondents in understanding digital assets, with 70 percent being interested, compared to 42 percent of White Americans.[5] College-educated Black Americans are nearly twice as interested as their White American counterparts, with 75 percent interested in learning more versus 39 percent of their White American counterparts. When broken down by age, 21 percent of Black Americans over the age of 55 are very interested in learning about crypto, compared to 6 percent of White Americans over the age of 55.

A CBDC could make the U.S. payment system faster and more efficient, and thereby reduce the overall cost of financial services. A CBDC could also make financial services more accessible and more appealing for all Americans, including unbanked and underbanked individuals. Coinbase strongly urges that the design of a potential CBDC prioritize financial inclusion.

---

[2] Fed, Report on the Economic Well-Being of U.S. Households in 2020 (May 2021)
[3] Id.
[4] FDIC, How America Banks: Household Use of Banking and Financial Services, 2019 FDIC Survey (October 2020)
[5] Coinbase Reports: Black Americans & Crypto (13 Feb 2020)

coinbase

Private sector intermediation
We agree that the Fed should not provide CBDC services directly to individuals. Doing so would require the Fed to develop massive infrastructure in retail banking and finance, where it has no experience or expertise. Adopting an intermediated model will position the private sector to continue in its fundamental role as the primary driver of innovation and economic growth.

Intermediaries should be subject to rigorous standards regarding their operational resilience, financial resources, technical expertise, risk management and compliance programs, among other key areas. Any company that meets these standards, including both banks and nonbanks, should be eligible to provide CBDC services. Allowing regulated nonbanks to intermediate CBDC will create opportunities for a wider, more customized, and more compelling set of digital services to users.

Based on our experience serving retail customers over the past decade, we believe the Fed should set clear expectations in the following areas:

- **User experience**. A positive user experience for CBDC services should include a simple onboarding process, intuitive interface, clear views of relevant information on assets and transactions, and responsive customer service. We believe the best approach is to set minimum standards, but not to impose uniformity. A wide range of intermediaries should develop competitive CBDC service offerings, empowering consumers to test the options in an open market that incentivizes continuous improvement.

- **Customer support**. A robust customer service function will be important to establishing trust with users, especially during the initial period of a potential U.S. CBDC launch. This should include, at a minimum, 24/7 availability of phone support from a capable human being with little hold time, a virtual chatbot and a clear FAQ page.

- **Customer protection.** Intermediaries should have policies and procedures addressing any CBDC-specific consumer protections and a thorough understanding of what those protections mean from a user's perspective. For example, intermediaries should be responsible for clearly informing users of their rights and any limitations on their ability to halt, reverse, or dispute transactions that may arise from a U.S. CBDC's ability to achieve settlement finality more quickly than traditional payment rails.

Across all of these points, we recommend that the Fed work closely with private sector intermediaries on development, testing and pilot projects well in advance of a potential launch. We believe that early engagement and collaboration between the Fed and intermediaries will result in a better user experience and quality of services for the American public.

Anti-money laundering and data privacy

U.S. anti-money laundering (**AML**) regulations under the Bank Secrecy Act (**BSA**) require financial gatekeepers, such as banks and money services businesses (**MSBs**), to implement effective an AML program, which includes collecting identifying information on customers, monitoring transactions, screening for sanctions, maintaining records, and filing suspicious activity reports, among other things. The same framework applies to virtual asset services providers (**VASPs**), which are required to register as MSBs with the Financial Crimes Enforcement Network (**FinCEN**). VASPs, such as centralized exchanges, must implement effective AML programs to prevent bad actors from misusing the financial system. Some VASPs, including Coinbase, also participate in mandatory 314(a) information sharing, which requires them to respond to requests for information issued by FinCEN and law enforcement.

Any U.S. CBDC transaction conducted through a regulated intermediary should be covered by the same AML controls. Whether a VASP or any other type of financial institution, law enforcement should have the ability to use the information collected under these programs to monitor for large-scale trends in illicit activity and investigate specific bad actors.

It is important to recognize that digital assets provide greater visibility to law enforcement than fiat currency-based payments because they are recorded on a permanent and public blockchain that contains key transactional information, such as the date and time, type of asset, amount transacted, wallet addresses involved, and unique transaction identifiers. When combined with analytic tools, law enforcement (and compliance teams) can trace the entire history of a wallet from the very first transaction, follow transactions in real time, and even group transactions according to risk-level based on wallet addresses. A blockchain-based U.S. CBDC provides similar benefits to law enforcement. Given the unique benefits that digital assets provide to law enforcement, it is unnecessary for any incremental surveillance features to be built into a U.S. CBDC.

In considering a CBDC it is important to balance these benefits against exposing consumers to privacy risk. Imposing additional surveillance or KYC requirements on a U.S. CBDC would run counter to the public interest. Successful implementation of a U.S. CBDC

requires consumer confidence, which would be undermined by the imposition of unnecessary, burdensome, and invasive additional requirements. Requesting further personal information from users above and beyond that which is already required by financial intermediaries also creates opportunities for exploitation by bad actors. Lastly, given the existing BSA requirements imposed on the very financial services companies that would serve as intermediaries for a U.S. CBDC, law enforcement already has good mechanisms for obtaining information on potentially illicit activity.

Offline capabilities

A U.S. CBDC should have the ability to operate in the absence of a reliable internet connection, so that users are consistently able to access their funds. A loss of CBDC access could exacerbate the negative effects of a natural disaster or disruption to the power grid, or leave users vulnerable during more common situations, such as driving through rural and low communication service areas.

We believe it is important to consider designs that would mitigate these concerns. For example, CBDC accounts could be linked to a plastic card or similar physical device, which would make CBDC usable at least as broadly as debit and credit cards today. A more complete offline solution may also involve providing the functionality for a device such as a smartphone to store offline information about pending transactions and execute these transactions once returned to connectivity. Any solution that the Fed considers should be subject to extensive testing to ensure its integrity and avoid potential problems such as double spending.

Programmability and interoperability

Programmability and interoperability are critical for the benefits of a U.S. CBDC to be fully realized as payment systems continue to evolve. Programmability refers to the existence of money in a digital form, with a mechanism for specifying its automated behavior through a computer program – in short, making it possible for developers to build applications that serve users in new and creative ways.[6] Interoperability refers to the ability of payment systems to communicate, execute instructions and transfer data among one another.[7]

We urge the Fed to enable programmability and interoperability to the fullest extent that can be achieved in line with its other policy objectives. A U.S. CBDC should support smart

[6] FEDS Notes, What is programmable money? (23 June 2021)
[7] BIS, Central bank digital currencies: system design and interoperability (September 2021)

contracts that make it possible for transactions to be executed automatically when specified conditions are met. It should also be interoperable with as wide a range as possible of other payment instruments, including both U.S. and non-U.S. fiat currencies as well as other digital assets. We believe that integrating these features into the design of a U.S. CBDC will, over time, unlock a wealth of innovative potential far beyond what may be foreseeable when it is launched.

Coexistence of stablecoins and a CBDC

A number of commentators have noted the risk that a U.S. CBDC could "crowd out" privately issued digital currencies, such as stablecoins, or even argued that "crowding out is the point of introducing a CBDC."[8] It would be a serious mistake to make this a significant goal in its own right, and we do not believe the Fed intends to do so.[9] In designing a U.S. CBDC, we urge the Fed to focus solely on providing the greatest value to the public. We trust in the innovative power and resilience of the digital asset ecosystem to handle any short-term issues that may arise as a byproduct of this ultimate objective.

In the long run, we believe that a U.S. CBDC can coexist with and complement privately issued stablecoins. This is particularly likely to be true to the extent that a U.S. CBDC's functionality is limited for policy reasons, e.g. interest rate and balance limits, as discussed below. In contrast, the private sector will always be more flexible and responsive to users' needs and demands. So long as a U.S. CBDC is not hostile to innovation, the private sector will find ways to capitalize on the opportunities created by a U.S. CBDC to provide better services to the public. For example, a stablecoin that is backed by a U.S. CBDC could effectively extend its functionality to new and existing public blockchains, or enable its use in a greater range of smart contracts and applications. The U.S. financial system has fostered prosperity for decades with a combination of public and private money, and we believe the country is best served by maintaining this balance in the digital assets space.

Prioritize the public's interest over incumbent interests

Many policymakers and analysts globally have expressed a concern that CBDCs will disintermediate banks or catalyze bank runs by enticing consumers to move their money out of commercial bank deposits into CBDCs. Policy solutions to minimize this risk have been proposed, particularly the setting of limits on the amount held by any one party and the avoidance of paying interest on CBDC. The European Central Bank, for example, is

[8] Congressional Research Service, Central Bank Digital Currencies: Policy Issues (7 Feb 2022) p. 15
[9] Bloomberg, Powell Says Private Coins Could Compete With Fed Digital Dollar (11 Jan 2022)

considering imposing limits on individuals' holdings of a digital euro to no more than €3,000 at a time.

While we recognize this topic spans a monetary policy conversation that may extend beyond the scope of Coinbase's focus as a business, we urge the Fed to recognize user acceptance and practicality as important goals, and to impose limits on individuals' U.S. CBDC holdings and transaction volumes only to the extent they are necessary to other fundamental policy objectives.

First, while we recognize that limits may be necessary on the amount of interest that can be paid on CBDC balances, or on the amount of CBDC that an individual can hold or use, the Fed should also consider the extent to which these limitations could make a U.S. CBDC less attractive, especially compared to other options that are currently available to the general public (such as opening a savings account that earns interest with a bank). We understand that paying interest on a CBDC would create new competitive pressures for incumbent banks. In our view, competition is an attribute of a healthy financial market, and like banks do today, they would need to find ways to incentivize customers to use their services. Provided that the policy framework can allow these market forces to play out without undue risk of financial instability, we believe there is a path forward that would make a U.S. CBDC attractive.

Second, numerous practical challenges of using a CBDC could arise if quantity limits are set on the amount held by any one party. For example, a small business with a seasonal cycle may have significant mismatches in the timing of its annual revenues relative to its annual expenses, which means that limits on the amount of CBDC holdings at one time could impact such a business differently from one whose revenues and expenses are more aligned over the course of a year. Such a business could accordingly experience a greater operational challenge if it is limited to holding only a certain amount. To address this, an exception could be made for certain small businesses to hold a larger amount of CBDC, but to do so will require care and foresight. If quantity limits are necessary for the design of a CBDC, an alternative is to set quantity limits as high as feasible to bear such users' interests in mind. Coinbase therefore recommends that the principal concern in these design decisions should be to best serve the public, without undue focus on preserving incumbent financial institutions' current role in the financial system.

Conclusion

Coinbase appreciates the Fed's active engagement in the ongoing discussions on exploring the possibility of a U.S. CBDC. We look forward to continuing to share our experience and expertise for the benefit of the public.

We thank the Fed for addressing this important issue and for considering our response.

Comments
Federal Reserve Board Discussion Paper
Central Bank Digital Currency

Bruce J. Summers
summersbj@vmi.edu
March 14, 2022

These comments are in response to the Board of Governors of the Federal Reserve System's January 20, 2022, discussion paper *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*. The discussion paper frames the Board's current thinking on Central Bank Digital Currency (CBDC) in general, and a U.S. dollar CBDC (USD CBDC) in particular. The Board is seeking answers to twenty-two specific questions to help guide its thinking and ultimate decision whether or not the Federal Reserve should issue a USD CBDC.

The Board defines CBDC as a digital liability of a central bank that is widely available to the general public and as "analogous to a digital form of paper money." As such, CBDC would combine the attributes to two monetary liabilities now carried on the Federal Reserve's balance sheet – paper currency and bank reserves.

The principal purpose of my response is to encourage the Board to take a step back and re-frame how it is analyzing CBDC. My response has five main parts. The first part provides an overview of these comments. The second part challenges the assumption that the Federal Reserve role includes provision of safe assets to the general public. The third part highlights public benefits of physical currency not provided by CBDC and risks that the Federal Reserve would scale back its commitment to maintaining this form of money. The fourth part advocates that the Board center its thinking on USD CBDC as a component of the monetary base. The fifth part answers the specific questions raised by the Board in its discussion paper.

1. Overview of these comments

The Board has framed consideration of CBDC in a way that draws attention to payment market access and efficiency, while tending to overlook questions CBDC raises about the nature, size and scope of the Federal Reserve's operations and services. Adopting a USD CBDC would likely increase the size of the Federal Reserve balance sheet at a time when the public is expecting a "normalized" and smaller balance sheet. The balance sheet expansion would come about as the Federal Reserve expands the central bank safety net to deposits held by the general public.

The federal deposit insurance agencies now protect the general public, within limits, from bank credit and liquidity risk. If the public needs greater access to safe assets issued or guaranteed by the government, then there are several reasonable approaches to expanding access to cash-equivalent U.S. Government securities. Two such approaches are described in these comments. Safe assets in the form of government liabilities need not be and are best not provided by the Federal Reserve.

There is a danger that too concentrated a focus on digital currency will distract the Federal Reserve from its duties as issuer of Federal Reserve Notes and from the substantial operational task of maintaining the quality and integrity of the currency supply. Further, there is a danger of overlooking the unique qualities of paper money, including public preferences for dealing in cash and as the last line of defense that paper currency gives against broad-scale disruption to digital payments.

Several large-economy central banks are actively pursuing CBDCs. Some central banks are motivated to increase their dominance of domestic payments and to increase international reliance on their currencies of issue. The Federal Reserve's motives are much different. The Federal Reserve should keep its own counsel within the international central banking community, and it should resist peer pressure to open its balance sheet to the general public.

2. The Federal Reserve should not act as safe asset repository for the general public

The narrowly-defined public money supply, or M1, consists of currency in circulation and checkable deposits held at commercial banks. In December 2021, M1 totaled approximately $20.6 trillion, of which $2.2 trillion was currency in circulation (Federal Reserve Notes in circulation) and $18.4 trillion was checkable bank deposits. As noted in the Board's discussion paper, the Federal Deposit Insurance Corporation and National Credit Union Administration insure bank deposits against the risk of bank failure, up to $250,000 per depositor per bank. Accordingly, the federal insurance agencies explicitly protect most depositors against loss of bank deposit money. In practice, however, public policy has typically prevented the outright failure of commercial banks, thus extending de facto federal insurance protection to everyone.

The first potential benefit of a CBDC cited in the Board's discussion paper is to "…offer the general public broad access to digital money that is free from credit risk and liquidity risk." This way of thinking appears to reject the nation's tradition of private banking and expectation that the public should exercise judgment in protecting their monetary assets by carefully choosing the banks where they hold their deposits. Moreover, the thinking casts doubt on the sufficiency of federal deposit insurance arrangements as they have evolved since the Banking Act of 1933, and on the effectiveness of bank supervisory actions to protect the broader financial system during panics. The Board seems to suggest that it, not the FDIC and NCUA, would best insure against bank failures and, moreover, that "safe asset" protection should be unlimited.

Assuming that there is a public policy case for providing the general public with readier access to safe monetary assets in the form of government liabilities, the Board could facilitate the development of other, more market-oriented, solutions. Two possibilities come to mind. First, the Federal Reserve could reinvigorate its fiscal agency services by cooperating with the Treasury to improve direct public access to cash-equivalent U.S. Government debt. Second, the Federal Reserve could foster the development of commercial bank stablecoin-like products that are backed by U.S. Government debt, or even by bank reserves, to improve indirect public access to cash-equivalent U.S. Government debt.

Improving *direct* public access to cash-equivalent U.S. Government debt. Individuals and businesses have direct access to short-term U.S. Government debt, including cash-equivalent Treasury Bills, through <TreasuryDirect.gov>. The on-line TreasuryDirect access option replaced in-person fiscal agent services that were at one time offered by the Federal Reserve Banks, which staffed teller windows at their offices. I note that the TreasuryDirect service has not changed much in several years, notwithstanding shifts in public preferences for holding U.S. Government securities, as evidenced by demand for mutual funds whose portfolios consist mainly of short-term Treasury and Agency securities. If the Board believes the general public should have more and better access to safe monetary assets, then it could consider reinvigorating the fiscal services it provides the U.S. Treasury with a view to better meeting public needs for access to safe assets in the form of cash-equivalent U.S. Government securities. In this manner, demand for safe assets would directly broaden public investment in Treasury securities, and avoid expansion of the Federal Reserve's customer base and its balance sheet.

Improving *indirect* public access to cash-equivalent U.S. Government debt. Since the 1970s, the public has relied money market mutual funds (MMMF) as cash management tools and as safe-asset repositories. Federal MMMFs that restrict their holdings to short-term Treasury and Agency debt have been close substitutes for direct purchases of Treasury securities, attracting investors and money managers due to their ease of use and low cost. Money market mutual funds in general, and federal MMMFs in particular, are now, for a variety of reasons, including regulatory concerns, much less attractive and accessible as safe asset repositories. Eroding confidence in, and limitations in, access to federal MMMFs create an opportunity for regulated, safe-asset repositories. If the Board believes the general public should have more and better access to safe monetary assets, then it could devote analytical and regulatory resources to help devise bank-sponsored stablecoin products that meet pubic needs and pass the Board's regulatory tests. For example, one could envision properly-chartered and -supervised commercial banks offering stablecoin products that are fully backed by safe assets in the form of Treasury securities or bank reserves. Individuals and businesses might use products such as these to supplement the limited guarantees provided by federal deposit insurance. This is another way in which public needs for safe assets could be met while avoiding expansion of the Federal Reserve's customer base and balance sheet.

3. Physical currency provides unique benefits that CBDC cannot replicate

While the Board's discussion paper provides assurances that there is no official intention to phase out physical currency, that possibility cannot be discounted in the face of a major Federal Reserve CBDC initiative. Over time, as appointments to the Board cycle, and as the normal budget process churns on and governors seek to increase efficiency and cut costs, pressure will mount to consolidate around one (not several) forms of public money. The risks of under-funding and under-supporting Federal Reserve Bank cash operations should be recognized in considering whether to introduce an USD CBDC.

It is critically important that the Board recognize important and unique benefits that physical currency provides to society and the economy. While the data and analysis the Board presents in its discussion paper make this general point, I offer a more pointed personal view of the importance of physical currency.

I have now lived in a rural community for a number of years. I am regularly reminded in checkout lines (at the farmers' co-operative, pharmacy, grocery store, gas station, etc.) of the strong personal preference the local population has for cash. When wallets open, "plastic" and digital means of payment are often bypassed in favor of cash. The cash economy is alive and well in rural America, where personal preferences for using cash may be stronger and more visible than in urban areas.

In addition, physical currency, as is recognized in the Board's discussion paper, is the payment method of last resort during localized disasters. I urge the Board to consider similar but wider scenarios where cash is the ultimate backstop to loss of digital connectivity and power supplies. Increased attention is being given to so-called Black Sky hazards, defined as "a catastrophic event that severely disrupts the normal functioning of our critical infrastructures in multiple regions, for long durations." One need look no further than today's national-scale aggression, accompanied by threats of catastrophic consequences for anyone opposing the aggression, to grasp the reality of such hazards. While not pleasant to contemplate, the Board should incorporate tail-risk hazards, such as Black Sky events, into its CBDC assessment. As in the case of geographically-limited disasters, multi-region disasters, lasting a long time, pose very serious threats to the nation. In the event, physical currency is all that prevents our payment system from reverting to barter.

4. CBDC would grow the Federal Reserve balance sheet and complicate monetary policy

The Board's thinking about CBDC is motivated principally by concerns related to payment market access and efficiency, and by the Federal Reserve's standing as a payments system innovator. The implications for the conduct of monetary policy, and for the scope and scale of the Federal Reserve's banking operations and services, do not appear to be top of mind. The twenty-two questions the Board asks especially give this impression.

Monetary-control considerations are taken up in the section of the discussion paper titled "Efficacy of Monetary Policy Implementation." By focusing on implementation, the Board sidesteps major policy issues, including the appropriate role of the central bank and the size of the central bank balance sheet. The appropriate role and size of the Federal Reserve are policy issues that can be illuminated by concretely depicting USD CBDC as a balance sheet liability and as a component of the monetary base.

The introduction of a digital form of paper money would add a new, potentially (if not likely) large USD CBDC liability to the Federal Reserve's balance sheet. Indeed, the Board's discussion paper gives the impression that USD CBDC balances could be large and somewhat volatile. It is ironic that the Federal Reserve is initiating discussion of a new CBDC service that enlarges its balance sheet while embarking on policy "normalization," which is aimed at shrinking the balance sheet. A large balance sheet and accompanying ample supply of reserves add to the complexity of monetary policy implementation.[1] Understanding this complexity and the balance sheet expansion attributable to USD CBDC should be the Board's first priority.

If the Federal Reserve introduced a USD CBDC, then a new digital currency component, call it C^d, would join currency in circulation (C) and reserves (R) as part of the monetary base formulation. Accordingly, the monetary base would appear as:

$$MB = C + R + C^d$$

As of December 2021, the values of C and R, respectively, were $2.2 trillion and $4.2 trillion, combining for a total MB of $6.4 trillion. The Board should estimate and then clearly communicate the size of C^d and the resulting change in composition and growth of the monetary base.

The Federal Reserve supplies whatever amount of C is necessary to accommodate the public's demand for currency (Federal Reserve notes and coin outside the U.S. Treasury and Federal Reserve Banks); this demand tends to be very stable and predictable. The supply of R is an outcome of policy-induced large-scale asset purchases in an environment of "ample reserves." Altogether, accommodating the public's demand for currency and creating the quantity of reserves needed to support large-scale asset purchases has resulted in a massively increased monetary base and central bank balance sheet. Ample reserves tend to push the interbank rate to or below the zero lower bound, and the Federal Reserve's targeted (positive) inter-bank rate is determined by paying an administered interest rate on reserve balances.

The Board envisions C^d being a complement to, not a substitute for C, although it is possible that physical and digital currency could at least be imperfect substitutes. The Board also envision C^d being a substitute for commercial bank demand deposits, and that the mix between the two will be determined in part by the public's aversion to credit and liquidity risk, which could shift unpredictably over short periods of time.

[1] Daily average reverse-repurchase agreements with financial intermediaries, including money market mutual funds, totaled about $1.9 trillion during the last week of December 2021.

Therefore, it is likely that C^d would increase the monetary base and increase the challenge of estimating the composition of the monetary base.

The Board's discussion paper envisions C^d having payment attributes that align it closely with C. Yet, the questions posed in the discussion paper appear to align C^d with reserves, notably, the question whether interest should be paid on USD CBDC balances. The Board should clarify how closely its thinking aligns C^d and R, and can do so in part by addressing questions such as the following:

a. Would the administered rate on overnight reserves be applied to R and C^d, and equally so?[2]
b. Would (intermediary) banks' R and C^d deposits be interchangeable for purpose of satisfying reserve requirements (if and when reserve requirements are again set above zero)?
c. Would the Federal Reserve enter into C^d swap agreements with foreign central banks?
d. Would the Federal Reserve make discount window loans to replenish C^d balances?

In summary, there is a lot of thinking-through remaining to be done in order to clarify the implications of a USD CBDC for the monetary base. The Board should focus on the balance sheet effects of a USD CBDC and help the public understand how large the balance sheet expansion is likely to be and how the composition of the monetary base is likely to change. These are the biggest public policy questions.

5. Answers to specific questions posed by the Board

My answers to specific questions posed in the Board's discussion paper are provided below. The questions and answers are identified in sequence using the numbers assigned in the discussion paper.

1. Q. What additional potential benefits, policy considerations, or risks of a CBDC may exist that have not been raised in this report?
   A. In no particular order:
      a. Loss of seigniorage to the U.S. Treasury, especially if CBDC is interest-bearing.
      b. Black Sky hazards.
2. Q. Could some or all of the potential benefits of a CBDC be better achieved in a different way?
   A. Yes, absolutely. See the description of two specific alternatives described in part 2 above. These two alternatives, and there may be more, keep CBDC off of the Federal Reserve's balance sheet.
3. Q. Could a CBDC affect financial inclusion? Would the net effect be positive or negative for inclusion?
   A. Of course, a CBDC could affect financial inclusion. However, financial inclusion is a relatively small problem in the payment landscape that should be tackled in ways other than CBDC.
4. Q. How might a U.S. CBDC affect the Federal Reserve's ability to effectively implement monetary policy in the pursuit of its maximum-employment and price-stability goals?
   A. Adding CBDC to the Federal Reserve's monetary liabilities would likely complicate the Federal Reserve's monetary control responsibilities, perhaps dramatically so, and in unexpected ways. The CBDC component of the monetary base would likely increase substantially the size of the Federal Reserve's balance sheet would be difficult to forecast.

[2] The Board's question whether USD CBDC balances should earn interest is difficult to interpret in light of its recent refusal to allow pass through deposits of reserves by institutional money managers, including money market mutual funds striving to offer the equivalent of the overnight interest rate on reserves to retail investors. See: Gavriel Schreiber. "The Narrow Bank Update: SDNY dismisses TNB suit." *JustMoney* Policy Spotlight.

Further, there may be significant substitution between CBDC and the other two monetary liabilities. See the discussion in part 4 above.

5. Q. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?
   A. A CBDC would directly extend the Federal Reserve safety net to all of the public's monetary assets and reduce the public's incentives to manage own bank risk. The trade-off between increased moral hazard and greater stability needs to be considered.
6. Q. How could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank moncy?
   A. A CBDC would profoundly affect the financial sector, and probably negatively so. The addition of CBDC to the Federal Reserve's balance sheet would crowd out production of commercial bank money and dampen market competition for bank deposits. Bank deposit rates could become a de factor rates administered by the Federal Reserve. Finally, one needs to ask how the Federal Reserve's responsibilities as a competitor under the Monetary Control Act affect this policy discussion.
7. N/C
8. Q. 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. This is a frightening question. It reveals a thought process that equates the adoption of CBDC with the decline and possible elimination of currency and coin. See part 3 above, which cautions that this thought process could be a self-fulfilling prophesy.
9. Q. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?
   A. One need only look to the roll out of the FedNow service, and market adoption of faster-payments services world-wide, to understand the evolution of digital payments. The Federal Reserve would be well-advised to concentrate its attention on the successful introduction of FedNow.
10. Q. How should decisions by other large-economy nations to issue CBDCs influence the decision whether the United States should do so?
    A. The Federal Reserve should be <u>very careful</u> not to equate its interest in CBDC with CBDC initiatives in other countries. In particular, the benefits and uses envisioned by the Board may not be at all what is intended by other countries, China and the People's Bank of China being a notable case in point.[3] The Federal Reserve should not be naïve about CBDC initiatives whose intent is to strengthen the dominance of central governments in domestic finance and to advance the competitive positions of their national currencies. The Federal Reserve needs to be clear-headed about, and to keep its own council on, the appropriateness of a USD CBDC.
11. Q. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?
    A. This question would be more tractable if it identified the specific types of risks that the reader is asked to address, i.e., policy, operational, reputational, etc.
12. Q. How could a CBDC provide privacy to customers without providing complete anonymity and facilitating illicit financial activity?
    A. If the Board is serious about wanting to devise a CBDC that is "analogous to paper money," then there is no room for compromising complete anonymity. The Board and the concerned

[3] People's Bank of China. "Progress of Research & Development of E-CNY in China." July, 2021.

public need to face the fact that there is no such thing as complete privacy in the world of digital money.

13. Q. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?
    A. As noted in section 3 above, Black Sky tail risks are real. Further, CBDCs would be prime targets for cyber criminals and state-sponsored adversaries. The rise in security breaches in what are still the early years of real-time payments should give the Federal Reserve pause as it contemplates digital greenbacks bearing its brand.
14. Q. Should a CBDC be legal tender?
    A. This question needs to be elaborated before it can be reasonably answered. For example, does the question assume the principle of intermediated CBDC and, if so, is it envisioned that intermediated CBDC would have different legal-tender qualities compared to, say, commercial bank demand deposits?
15. Q. Should a CBDC pay interest? If so, why and how? If not, why not?
    A. If the Federal Reserve were to issue USD CBDC, then, as described in part 4 above, a new component of high-powered money called C^d would be added to the monetary base. On the one hand, it is inconceivable that the Federal Reserve would not pay interest (including zero interest) symmetrically across all digital components of the monetary base. On the other hand, it is politically and socially inconceivable that the Federal Reserve would ever levy an explicit, confiscatory negative interest rate on the general public. Maintaining a paper form of legal tender in circulation that would serve as a haven from explicit governmental confiscation of the public's monetary wealth further complicates this question. This is yet another pandora's box opened by the Federal Reserve's becoming a "retail banker."
16. Q. Should the amount of CBDC held by a single end-user be subject to quantity limits?
    A. Does the Board want to guarantee the establishment of another highly complex and expensive compliance monitoring program, probably alienating the general public in the process?
17. Q. What types of firms should serve as intermediaries for CBDC? What should be the role and regulatory structure for these intermediaries?
    A. Consideration of this question is informed by the analogous case of paper currency. Many different types of entities, including non-banks and non-financial firms, play roles in various stages of note production, distribution, quality assurance, storage, and the like. Further, many merchants maintain cash drawers and vaults for their inventories of notes. Today's currency management processes suggest that the Board could think broadly about the roles different types of intermediaries play.
18. Q. Should CBDC have "offline" capabilities? If so, how might that be achieved?
    A. Absolutely. To be effective, "offline" must mean independence from local networks and from all external power sources. Again, the Board has said "analogous to paper money" and presumably this definition includes operational attributes.
19. Q. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? Is so, how?
    A. Of course. Otherwise, CBDC is not "money" in a complete and meaningful sense. This is a question that would be answered, in the event, by the brightest minds in the worlds of digital design and digital engineering.
20. Q. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technology standards be needed?
    A. The Board is getting way ahead of itself asking highly technical design and engineering questions such as this. This question leads "into the weeds."

21. Q. How might future technological innovations affect design and policy choices related to CBDC?
    A. Again, the question leads into the weeds and the Board is getting way ahead of itself.
22. Q. Are there additional design principles that should be considered? Are there tradeoffs around any of the identified principles, especially in trying to achieve the potential benefits of a CBDC?
    A. The foremost design principle which the Board should hold fast is that the American banking system is a two-tier system, with a clear division of labor distinguishing the role of the Federal Reserve from the role of commercial banks. This principle distinguishes the Federal Reserve from most other great-power central banks sitting around the table at forums such as the Bank for International Settlements. The Board's discussion paper and its list of specific questions lead one to wonder whether this distinguishing principle is a foundation stone of CBDC analysis.

May 20, 2022

Digital-Innovations@frb.gov
Ann E. Misback
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, N.W.
Washington, D.C. 20551

Re: *"Money anb Payments: The U.S. Dollar in the Age of Digital Transformation."*

Dear Ms. Misback,

JPMorgan Chase & Co. ("JPMC") appreciates the opportunity to respond to the Board of Governors of the Federal Reserve System's ("FRB") request for feedback on its January 2022 paper, "Money and Payments: the U.S. Dollar in the Age of Digital Transformation" (the "Money and Payments Paper"). JPMC has actively engaged with, and generally supports the views expressed by, the American Bankers Association ("ABA"), the Bank Policy Institute ("BPI"), the Clearing House ("TCH"), the Financial Services Forum ("FSF"), and the Securities Industry and Financial Markets Association ("SIFMA").

JPMC is a leading global financial services firm with over $3.7 trillion of assets and worldwide operations. We serve more than 65 million households in the United States as well as many of the world's most prominent corporate, institutional and government clients through our JPMorgan and Chase brands. JPMC is the top U.S. payments provider and in 2021, processed more than 31 billion transactions, with a value of $1.7 trillion, on behalf of its clients.[1]

Given JPMC's role as a leading retail bank and payments service provider in the United States, we have carefully considered the development of a U.S. dollar central bank digital currency ("CBDC") and wish to provide specific feedback on this consultation, which has the potential to significantly alter the landscape of the U.S. financial system. We are actively contributing to the overall conversation on the issuance of CBDCs globally and have worked with other central banks as they consider CBDC issuance. JPMC would be pleased to continue to work with the FRB as it analyzes the wide range of issues raised by the potential issuance of a CBDC.

[1] JPMC has earned the top spot in the U.S. among payment providers in terms of both annual transactions and dollar volume, according to the March 2022 Nilson Report. See Nilson Report, Issue 1215, March 2022. Available at: https://nilsonreport.com/publication_newsletter_archive_issue.php?issue=1215

JPMC appreciates the FRB's thoughtful, balanced approach to this consultation and the indication in the paper that the FRB only intends to issue a U.S. dollar CBDC if the benefits outweigh the costs. We also value the many questions that the FRB has included in this initial paper and believe that these serve to meaningfully clarify the issues surrounding the potential issuance of a CBDC and advance the discussion among policymakers and other stakeholders. Further consultation will be needed as this paper only scratches the surface of the many issues that require resolution prior to a decision on whether the issuance of a U.S. dollar CBDC would be additive to the U.S. economy. We appreciate the FRB's approach of seeking industry feedback and believe this is a critical component of this analysis.

Executive Summary:

Does CBDC Meet the Objectives the FRB Identified in the Money and Payments Paper?

JPMC fully supports the FRB's policy objectives of increasing financial inclusion and improving the efficiency of cross-border payments. Nonetheless, as the FRB acknowledges, the introduction of a CBDC could introduce significant new risks to the U.S. financial system. Consequently, the introduction of a CBDC should be approached with caution and supported by clear evidence that it will further these policy objectives without the introduction of undue costs or excessive risks. It is also important to note that there are a number of private sector initiatives that are already underway to address the objectives identified by the FRB, many of which have significant momentum and are making meaningful progress towards achieving these goals. As such, a U.S. dollar CBDC should include an analysis of incremental benefits and incremental costs vs these existing and in-flight efforts.

What are Some of the Potential Unintended Consequences of a CBDC?

Since the global financial crisis, the U.S. has implemented a number of significant enhancements to the bank regulatory and monetary policy frameworks that have significantly improved the safety and soundness of the U.S. financial system. Introducing a CBDC would represent a material change to the monetary system that could have unintended consequences for the U.S. banking system and beyond that would need to be carefully considered if the FRB chooses to pursue this path. Most importantly, and as acknowledged by the FRB, a CBDC could result in a significant reduction in existing bank deposits and an increased risk of runs on bank deposits in times of stress, which could in turn reduce access to and increase the cost of credit offered by the banking system.

Furthermore, while a CBDC could allow for creative new forms of monetary policy for the FRB to implement, it could similarly hamper the ability of the FRB to implement traditional

monetary policy. Though a CBDC could be designed to mitigate these risks, including balance limits and not bearing interest, the FRB and Congress could face significant political pressure to relax these constraints, particularly during periods of economic or financial market stress.

What Other Considerations Should the FRB Evaluate Prior to Issuing CBDC?

The firms with which the FRB partners for the distribution and safekeeping of a CBDC would play a critical role in the U.S. payments system. If the FRB does move forward with issuing a CBDC, we believe that the FRB's partners should be federally regulated insured depository institutions ("IDIs") or other firms subject to comparable regulation and supervision, similar to what the FRB has recently proposed with respect to FRB master account access. We also believe that compliance with existing know your customer ("KYC") and anti-money laundering ("AML") regulations and sanctions enforcement standards and compliance with custody standards will be critical to the success of a CBDC—including both banks and non-bank intermediaries (e.g., FinTech). These requirements are, however, complicated and costly to administer in practice and could raise significant barriers to entry which could limit the involvement of smaller and community banks.

JPMC would welcome the opportunity to work with the FRB on the issues stated above as the FRB considers the structure, implementation, and distribution to help maximize potential benefits and mitigate potential risks.

Policy Objectives

Financial Inclusion

JPMC wholly supports the FRB's goal of increasing financial inclusion and, to this end, has taken a number of steps through our Chase brand. If the FRB seeks greater financial inclusion as a primary goal in issuing a CBDC, more research should be conducted against a detailed design proposal to understand the likelihood of lower-income and unbanked Americans utilizing a CBDC to manage their finances. We remain concerned that the issuance of a U.S. dollar CBDC as described in the FRB paper would not have a significant positive impact on financial inclusion given the documented reasons for individuals as to why they are underbanked or unbanked.

In its 2019 survey, the FDIC found that the proportion of U.S. households that were unbanked was the lowest since it began surveying in 2009, with only about half of this gain accounted for by improvements in the socioeconomic improvements for households during this time.[2] While there is still more progress to be made, JPMC is pleased that the number of unbanked Americans has reached a new low in this latest survey and hopes the changes that the retail banking industry continues to make for consumers will help these gains persist.

The survey requested information about the interest of unbanked Americans in having a bank account, with about 56% of respondents stating they were "not at all interested" in having a bank account.[3] Some of the main reasons cited by respondents provide insight into the concerns of unbanked Americans including: nearly 50% of respondents "didn't have enough money to meet minimum balance requirements" and 36% of respondents indicated that "avoiding a bank gives more privacy."[4] If these feelings persist among Americans, especially those related to concerns about privacy, which banks cannot easily address through product features, it is likely there will always be some population of unbanked Americans. Of note, privacy-related concerns are the reason some consumers use cryptocurrency rather than the traditional banking system but as these products become more regulated, this population may lose comfort with the level of privacy provided, raising the question of whether a retail CBDC would help address the concerns of this population. In addition, JPMC notes that many unbanked individuals may be unbanked because they don't have the appropriate KYC documentation. If CBDC has equivalent KYC standards (which JPMC agrees is critical), this may make CBDC no more attractive than typical bank accounts. Despite these dynamics, the industry has been taking a number of steps to provide banking services to those who have been previously unbanked or underbanked.

---

[2] Federal Deposit Insurance Corporation, "How America Banks: Household Use of Banking and Financial Services," 2019 survey, https://www.fdic.gov/analysis/household-survey/2019report.pdfhttps://www.fdic.gov/analysis/household-survey/2019report.pdf, p.1.

[3] Ibid, p. 3.

[4] Ibid.

As mentioned above, JPMC has launched a number of programs designed to better serve lower-income and underbanked consumers. These include initiatives to improve access to low-cost bank accounts, free educational resources, and improve credit availability. JPMC continues to evolve our banking products and services to better serve our customers and reach these consumers.

JPMC and other private companies have also taken steps to address issues related to the affordability of bank accounts. For example, respondents in the FDIC survey cited minimum balance requirements. JPMC offers Chase Secure Banking, which has been certified by Bank On for meeting the National Account Standards as a low-cost, low-fee account since 2019. Chase Secure Banking checking accounts do not have minimum balance requirements if the account holder receives an auto-deposit of $500 per month. To date, more than 8.4 million Bank On-certified accounts were opened across 17 reporting institutions; 82% of those accounts were opened by customers who were new to the financial institution.[5] JPMC has also eliminated overdraft fees for customers who are less than $50 short in their checking account on a given day and eliminated Returned Item Fees when Chase doesn't make a wire payment because the customer has insufficient funds.

In addition, JPMC believes that addressing financial inclusion requires far more than a limited payment account, which could indicate limited utility of a CBDC for underbanked and unbanked Americans. It is estimated that 22 million households are underbanked, meaning these households have a bank account but rely on alternative financial services such as money orders, check cashing services, and payday loans.[6] Holistic solutions to address the needs of unbanked Americans should include access to basic checking account features to enable payments and deposits but also credit extension and investments to help this population avoid use of high-cost financial services and build wealth.

For consumers considering banking with Chase, we've launched an initiative to make credit available to those who were previously considered "credit invisible" because they lack a traditional credit score despite a history of making on-time payments. We've also established a grant program to extend up to $5,500 to help more customers cover closing costs when buying a home in any of 6,700 minority neighborhoods nationwide. The separation of payments into a digital framework that does not provide these other benefits and services could make financial inclusion more challenging to solve.

Financial inclusion also requires the ability to reach consumers where they're located. To this end, we've opened 100 new branches and are opening 16 Community Center Branches in

[5] Federal Reserve Bank of St. Louis, "The National Bank On Data Hub: Findings from 2020," https://www.stlouisfed.org/-/media/project/frbstl/stlouisfed/files/pdfs/community-development/bank-on/bankonreport_2020findings.pdf.
[6] Ibid.

underserved communities across the country. These Community Center branches offer additional services and resources in communities that have historically lacked access to traditional banking.

As the Project Hamilton paper raises, the mechanism of delivery and the ability to reach those who do not have internet access is especially important as cash usage declines.[7] While the vast majority of Americans have internet access some do not, creating what is known as the digital divide. At the end of 2017, more than 21 million Americans lacked access to broadband internet.[8] The digital divide would only become more severe if one's lack of broadband access resulted in an inability to access financial services and conduct day-to-day financial transactions easily. A similar issue was noted in Sweden's CBDC pilot. Sweden found that, despite having an economy that is less reliant on cash than the U.S., the availability of cash was still important for certain groups of consumers.[9] If a U.S. CBDC were to be issued, the U.S. would need to invest in infrastructure and systems to get the CBDC into the hands of Americans who would otherwise be left out of the digital transition.

If the goal is to reduce dependency on cash, then a CBDC should have offline capabilities to allow unbanked Americans the same level of access to CBDCs. The allowance for offline capabilities has software, hardware, and security considerations. The use of smartphones as the interface to initiate payment seems like the most straightforward option as 85% of Americans own a smartphone.[10] However, leveraging smartphones could still risk excluding certain populations, in particular those over age 65 or in rural areas, who may be me more likely to rely on checks and cash.

Most smartphones and other portable devices have NFC (Near Field Communication) sensor capability which does not require access to the internet to make merchant payments (e.g., tap to pay) and similar technology could be applied to CBDC transactions to support offline payments. Certain payment providers have given consumers the ability to conduct offline payments through the use of QR codes. In these transactions, the merchant scans the consumer's QR code to collect payment without the need for the consumer to have internet.[11] While the use of QR codes increases offline access to digital payments, it may present serious security risks if used widely.

---

[7] The 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," February 3, 2022, https://www.bostonfed.org/-/media/Documents/Project-Hamilton/Project-Hamilton-Phase-1-Whitepaper.pdf.

[8] Federal Communications Commission, "2019 Broadband Deployment Report," May 29, 2019, https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf.

[9] The New York Times, Alderman, Liz, "Sweden's Push to Get Rid of Cash Has Some Saying, 'Not So Fast," November 21, 2018, https://www.nytimes.com/2018/11/21/business/sweden-cashless-society.html.

[10] Pew Research Center, "Mobile Phone Ownership Over Time," https://www.pewresearch.org/internet/fact-sheet/mobile/.

[11] Alipay Docs, "Transaction QR Code Payment," February 26, 2021, https://global.alipay.com/docs/ac/transactionqrcodenew/intro.

Cross-Border Payments

The paper also cites the potential issuance of a CBDC to improve cross-border payments. We agree that the current speed of cross-border remittances leaves space for innovation and improvement but believe a CBDC is not a critical step toward improving cross-border payments given innovations that are currently underway, or already implemented to some extent. For example, JPM Coin offers our corporate clients a blockchain based, JPM deposit and allows for more efficient cross-border payments.

The FRB's paper does not address how to handle differences in technological choices across jurisdictions, which would be of particular importance given the policy interest of using a CBDC for cross-border payments. In our experience, the delay in effecting cross-border payments is due to the inconsistency amongst counterparty banks in different jurisdictions related to certain processes for AML and the verification required to comply with sanctions, which JPMC believes are important measures for the financial system and for national security. Across the world, many systems have been built to address KYC/AML and sanctions compliance but these systems have been built in silos, without connection and compatibility with similar systems. Addressing these silos and barriers would likely be a multi-year process and could prove challenging but JPMC believes would be a worthwhile goal to improve the efficiencies of cross-border payments over time.

It's not clear to JPMC how a U.S. CBDC could reduce the costs of cross-border payments given the continued need to verify identity of the sender and recipient. Implementing cross-border payments for a U.S. CBDC would require bank and regulated non-bank distributors to build new technology with significant start-up costs, which could prove problematic for smaller financial institutions like community banks.

Another challenge that causes delays in cross-border payments is the number of intermediaries required to complete payments. A 2019 BIS study found that between 2012-2019, active relationships in the global network declined by about 20% causing a "lengthening of the payment chain."[12] As the number of intermediaries required to execute payments increases, so does the number of opportunities for payments to be delayed and costs to increase. Some of the common issues faced by intermediaries include: 1) uneven implementation of regulatory regimes for sanctions across network participants, 2) repeated validation checks, 3) limited operating hours, and 4) legacy technology platforms. Unless specifically addressed by the FRB, these issues would persist with a U.S. retail CBDC facilitated through commercial banks.

[12] Bank of International Settlements, Committee on Payment and Market Infrastructures, New Correspondent Banking Data, https://www.bis.org/cpmi/paysysinfo/corr_bank_data/corr_bank_data_commentary_2008.htm

Other barriers to the speed of cross-border payment exist as well. For example, as the paper mentions, the FRB would need to coordinate closely with other countries pursuing CBDCs to integrate any U.S. dollar CBDC into existing digital currency systems. Given that each jurisdiction is pursuing the issuance of CBDC on potentially different platforms, the FRB should focus on interoperability of any CBDC system that they develop with other jurisdictions across the globe. Another barrier to timely cross-border payments is that they create foreign exchange risk. Without integration into the foreign exchange markets directly and instantly, one party to a cross-border transaction will necessarily hold foreign exchange risk until the transaction settles.

As an alternative solution, there has been significant evolution of the payments landscape occurring in the absence of a CBDC, which aims to improve real-time money movement and facilitate faster cross-border payments.

Programs to address challenges in real-time money movement include:

- **The Clearing House's Real Time Payments Network (RTP):** RTP's network is 24/7/365 and is open to all federally insured U.S. depository institutions. It has experienced exponential growth with 13% quarter over quarter growth in Q4 2021.[13] TCH intends to expand RTP to cross-border payments between the U.S. and Europe.
- **FedNow**: Instant payment service offered by the FRB with a planned launch in 2023.
- **Use of a Standard Messaging Schema, ISO 20022:** RTP operates using ISO 20022 and FedNow will use this schema when launched. The global high-value clearing systems along with SWIFT are in the process of migration to the ISO 2022 format (2022-2025). Use of this format will enable improved payment processing and enable potential additional interoperability of payment rails.
- **Zelle®**: Today, consumers and businesses of nearly 10,000 financial institutions—an increase of 3,000 institutions within the past year—participate in the Zelle Network®, whether accessing Zelle® through their financial institution's mobile banking app or enrolling their debit cards in the Zelle® app. During 2021, Zelle® users sent 1.8 billion payments, an increase of 49% from a year earlier, totaling $490 billion, up 59%. [14] Zelle® reduces counterparty credit risk as each Zelle® transaction's associated message is communicated in near real-time between financial institutions while settlement of most bank-to-bank funds processes nightly via ACH. Last year, two large retail banks

[13] The Clearing House, Real Time Payments, https://www.theclearinghouse.org/payment-systems/rtp.
[14] Zelle®, Press Release, "Nearly Half a Trillion Dollars Sent by Consumers and Businesses with Zelle® in 2021," February 2, 2022, https://www.zellepay.com/press-releases/nearly-half-trillion-dollars-sent-consumers-and-businesses-zelle-2021.

announced they will begin settling Zelle® payments in real time through use of the RTP network. [15]

Programs to address challenges faced in cross-border payments include:

- **SWIFT Go:** provides banks the ability to more quickly and securely effect low-value cross-border payments to pay to accounts, cards, and wallets and enable programmable money.
- **SWIFT GPI:** launched in 2017, SWIFT Global Payments Innovation is a new initiative to develop an improved payment experience via the SWIFT network for consumers and banks. SWIFT GPI combines the traditional SWIFT messaging with additional rules to address challenges around lack of visibility over funds once sent, routing fees charged by intermediaries, and payment delays.
- **Expanded Hours for Pre-validation platforms:** these platforms are in development to improve certainty and reduce post-transaction handling. Both the U.S. and other jurisdictions are aiming to reach 24/7/365 or extended hours for payments. The G20 cross-border payments program Building Block 12 also focuses on the operating hours.
- **Partior:** A technology company jointly founded by JPMC, DBS Bank, and Temasek, is currently piloting a multi-currency blockchain-based platform for the clearing and settlement of payments amongst banks, with the objective of making cross-border payments more operationally efficient, faster, and more transparent to banks in the payment chain. Partior further intends to provide solutions for trade finance and foreign exchange settlements on the platform in the future. Partior's platform is available to financial institutions and is designed to be used as a transparent ledger amongst counterparty banks where the status of a transaction is known in real time amongst all counterparty banks and payments settle quickly.

Given the innovations described above and the forthcoming availability of FedNow to address real-time domestic payments, recent progress makes it clear that a CBDC is not critical to improving the speed of payments or addressing existing concerns with domestic and cross-border payments. JPMC would be interested in working with the FRB to explore whether FedNow could be expanded for use in global payments to meet some of the policy goals of a CBDC and to discuss other opportunities to further increase the speed of payments.

[15] Payments Journal, Grotta, Sarah, "Zelle Announces Real-time Settlement with Bank of America and PNC," February 25, 2021, https://www.paymentsjournal.com/zelle-announces-real-time-settlement-with-bank-of-america-and-pnc//.

Maintenance of the U.S. Dollar as the Reserve Currency in a Digital Age

The U.S. dollar is the world's reserve currency and some have cited the risk that, absent U.S. CBDC being issued, this status could change if other jurisdictions issue CBDCs that make movement of their currency globally more efficient than that of the U.S. dollar.[16] JPMC does not believe that the U.S. needs to issue a CBDC in response to CBDC issuance in other nations in order to maintain this important status. The U.S. dollar is dominant globally due to a number of factors, including:

- The stability of U.S. law and the availability of U.S. courts to enforce that law;
- The generally stable value of the U.S. dollar despite its decoupling with gold; and
- The size of the U.S. economy, with world's largest GDP; U.S. markets are the deepest and most liquid globally.

These factors cannot be easily replicated in other nations. Other jurisdictions lacking the three fundamental components described above are not considered likely to unseat the U.S. dollar as the word's reserve currency, despite piloting CBDCs. Jurisdictions that are more competitive with the U.S. on these factors, like the EU, could become a greater risk to the U.S. dollar's reserve currency status, especially given the Euro's prominence as the second most commonly held reserve currency.[17] If the EU issued a CBDC, making it easy to transact cross-border, then this could become a risk to the U.S. dollar's status, unless other forms of digital payments based in U.S. dollars were to become more prevalent. Even in the case of an EU issued CBDC, blockchain based deposit products from IDIs and regulated U.S. dollar fiat backed stablecoins could be used to help move funds for payments across borders, which would likely negate the effect of any externalities of an EU-issued CBDC. Therefore, even if other countries issue CBDCs, any global erosion of desire to use of the U.S. dollar as the reserve currency would be mitigated by the numerous existing systems in place or that are rapidly being designed to facilitate the movement of U.S. dollars across various countries (e.g., SWIFT, Partior).

Potential Unintended Consequences

CBDC issuance could introduce new risks to the U.S. financial system

As the FRB understands, retail banks are an important component of the U.S. financial system. They take deposits, facilitate payments transactions, and make affordable loans to individuals and businesses. The Money and Payments paper notes that one goal of the use of an

[16] The Brookings Institution, Sung, Michael and Thomas, Christopher, "The Innovators Dilemma and U.S. Adoption of a Digital Dollar," March 24, 2022, https://www.brookings.edu/techstream/the-innovators-dilemma-and-u-s-adoption-of-a-digital-dollar/.

[17] International Monetary Fund, Currency Composition of Official Foreign Exchange Reserves, data as of March 31, 2022, https://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4.

intermediated CBDC model would be to "reduce prospects for destabilizing disruptions to the well-functioning U.S. financial system." Fundamentally, however, the CBDC would be a liability of the central bank, and the intermediary's role limited to providing distribution and safekeeping services. As we detail below, JPMC remains concerned that, even with an intermediated model and design considerations, a CBDC would significantly alter retail banking with potentially fundamental consequences for the U.S. financial system.

Reduction of Retail Bank Deposits

JPMC believes that even small amounts of CBDC will alter retail banks' deposit bases. We estimate that even if limits were very low (~$2,000 per account) the risk of disruption of the system remains significant depending on customer adoption of a CBDC. The FRB's paper acknowledges that consumers may be inclined to hold CBDC rather than remain in traditional bank deposits and describes the use of account limits or controls on the volume of CBDC that could be accumulated in a short period of time. However, while conceptually helpful any limits may be difficult to maintain in the long term. Assuming a CBDC was viewed as an attractive tool for payments and store-of-value services, policymakers would likely face significant political pressure from households and businesses to increase or abandon such limits, given the lower credit risk arising from directly facing the FRB. This pressure could become acute in times of market stress, which would then introduce significant run risk.

Risk of Bank Runs

The risk of a run on bank deposits, especially during times of stress, is a risk that central banks have identified and seek to mitigate. A commonly cited mitigant for this risk is two-tiered distribution through banks and regulated non-banks with sufficiently low limits on individual holdings. The Money and Payments paper also helpfully suggested additional limits on the holders ability to rapidly grow their balances, which arguably could be helpful during times of stress. As noted above, however, such limits may prove to be politically untenable, particularly in times of stress. The Money and Payments paper also suggests that if the CBDC does not pay interest or pays a relatively low amount of interest, bank deposits that pay interest would compete for deposits.[18] Whatever effect this feature may have in normal market conditions, we believe it is unlikely to be meaningful in a stress environment, where remuneration would be secondary to credit concerns.

Risk of Less or More Costly Credit

Today, banks heavily rely on retail deposits to fund reserve balances at the FRB and in turn rely on FRB reserve balances to fund payments made under loans and other credit facilities. As noted above, we believe the introduction of CBDC could result in deposits flowing into CBDC.

[18] Bank of International Settlements, "Central Bank Digital Currencies: Financial Stability Implications," September 2021, https://www.bis.org/publ/othp42_fin_stab.pdf.

All else being equal, this would reduce banks' FRB reserves available to fund loan and other credit facility payments, potentially reducing the amount of credit made available by banks.

Banks could seek to compensate for lost deposits by sourcing greater amounts of more expensive equity or wholesale debt funding. Such a funding model could result in higher costs of credit for borrowers as well as increase financial interconnectedness.

One way to potentially offset these effects may be for the FRB to finance bank lending in a business-as-usual environment. Namely, instead of banks funding payments on loans and other credit facilities out of their own accumulated reserve balances, banks could fund payments on such loans and facilities using FRB advances secured by such loans and facilities. This would represent a significant shift, however, as FRB liquidity is currently generally meant to serve only as a temporary back-stop for market liquidity.

CBDC may make it more challenging for the FRB to conduct monetary policy

The introduction of a CBDC could complicate the implementation of traditional monetary policy in several respects.

First, a widely adopted CBDC could, over the long run, cannibalize bank deposits and therefore bank reserves. This would entrap liquidity that could otherwise be used to facilitate payments and meet regulatory liquidity requirements (e.g., the Liquidly Coverage Ratio). To maintain an ample reserve regime, and avoid funding market incidents such as September 2019 and March 2020, the FRB would likely have to counteract that dynamic by supplying additional reserves relative to what would now be considered the lowest comfortable level.

Second, FRB balance sheet management would likely be more difficult and less precise over the short-run. The ease with which deposits can be substituted for CBDC and *vice versa* creates the risk of rapid shifts between the two. This could lead to volatility in the supply of bank reserves that make it more difficult to target a specific size or composition in practice, particularly during periods of economic or financial market stress. This effect could potentially be mitigated by running a larger balance sheet to provide a buffer against this volatility.

Third, in the extreme, flows out of bank deposits and into CBDCs increase the risk of liquidity shocks and bank runs. This risks much tighter financial conditions under stress and a greater need to provide liquidity to the banking system, which would likely lead to more QE over time.

All three of these concerns point to the FRB balance sheet being larger over the long run, all else equal, which poses known and unknown risks. On the former, greater operational demands on FRB asset purchases likely reduce the efficacy of QE and other non-traditional monetary policy tools as a communications tool and source of economic stimulus and financial stability. On the latter, the implications of a persistently large FRB footprint relative to economic activity and the size of the financial system on price discovery and efficient market

functioning (e.g., term premium, substitution effects versus risky assets) are uncertain but potentially significant.

JPMC notes, however, that CBDC may allow for alternative, innovative forms of monetary policy (e.g., China's recent plan to have their CBDC disappear if not spent within 30 days) that are highly targeted and precise. JPMC believes that the loss of traditional monetary policy tools should be carefully measured against any potential new innovative tools provided by CBDC to determine if the issuance of CBDC is additive to the FRB's overall toolkit for managing this risk.

Cost of Servicing CBDC

In designing a U.S. dollar CBDC, the decisions the FRB makes would dictate retail bank economic performance. Distribution of a CBDC issued by the FRB would be the equivalent of starting a new product offering within a consumer bank. This would include operational and technical buildouts, training for consumer-facing staff, additional compliance burdens, and increased servicing costs for accounts. It would also require new fraud capabilities and ongoing AML monitoring to ensure CBDC activity complies with existing regulations. U.S. retail banks would need significant lead time and clarity from the FRB on all of the technical and servicing requirements for a CBDC as the definition of these requirements will be critical for banks to be able to quantify their risks and costs and determine whether CBDC distribution offers a viable business model. JPMC also notes that this operational and technical buildout may prove even more challenging for smaller banks. In fact, such additional operational and compliance costs could result in fewer new banks entering the system due to the higher cost of entry.

We understand that the FRB is contemplating having distributors responsible for KYC and AML verification of wallet holders to protect against the risk of illicit use of the CBDC. We agree that distributors should be tasked with KYC and AML functions and believe IDI's are best suited for the task as they already have infrastructure and resources dedicated to complying with such obligations. If the FRB determines that non-IDIs may also act as distributors, then such non-IDI actors should be subject to the same KYC and AML obligations as IDIs. Such a level playing field would help mitigate the risk of fragmentation between CBDC and commercial deposits.

Similar to many other forms of digital money, CBDC's reliance on digital wallets and rapidly evolving new technologies contribute to a significant amount of new cyber risk. For example, digital wallets offer a wide variation of levels of protection from hacks and theft and imbedded smart contract software could be vulnerable to viruses and other forms of malware. While the paper does not provide many details about who should bare cyber-related risks, the allocation of who must bear the cost of defending from such risks and the cost of related losses will likely impact the cost analysis of CBDC. In the current banking system, banks protect the security of their customers' accounts and take steps to make their retail customers whole in case of fraud or theft. Would the consumer be solely responsible for the security of the wallet that stores their digital dollars? If a fraudulent transaction takes place, would there be any way to unwind it and make the customer whole and what liabilities and responsibilities would distributors have in regards to fraudulent activities? If the distributor must assume this additional risk the costs

may be a significant additional burden on small banks and could render the cost of entry for new banks too high.

Another cost to financial institutions could come from compliance with custody regulations, assuming they would not only distribute the CBDC but would establish wallets for these consumers to hold their CBDC. The specific rules around such custody could add significant cost and burden to financial institutions. The FRB paper does not specify whether custody regulations would apply to CBDC distributors but this is an important consideration that warrants further attention for traditional financial institutions.

In the worst case scenario, CBDC could significantly reduce the economic performance of the traditional banking sector due to the loss of deposits and increased costs of serving customers due to increased risk and limited ability to recoup KYC-AML costs, leading to a contraction in or increased cost of lending by banks. Under this scenario, retail banks may be unable to offer certain products and services that consumers have come to enjoy, for example low-cost checking accounts. Checks remain a prominent form of payment in the U.S. and would likely remain so in the near-term, even with the introduction of a CBDC. Some populations of consumers, particularly lower-income and older consumers who may be less likely to adopt digital payments, may be inclined to end their banking relationships if these products were no longer available or came at a greater cost.

Potential Existing and Near-Term Private Sector Alternatives

Given the aforementioned concerns, JPMC believes that the expanded use of appropriately regulated private sector alternatives such as blockchain-based deposit products by IDIs represents a more practical path of achieving access to digital forms of money. Certain products could be expanded to reach consumers like our current offering of JPM Coin. JPM Coin utilizes a permissioned ledger and payment rail for USD commercial deposit accounts at JPMC, which serves as means of payment and settlement on digital rails for corporate clients today. Banks could further research the possibility of moving blockchain-based deposit products to public blockchains and how to achieve interoperability amongst different solutions. The FRB could consider working with other agencies like the FDIC to incorporate the benefits of FDIC insurance that currently applies to U.S. retail accounts to digital accounts.

In addition, greater regulation and further clarity on the utilization of fiat-backed stablecoins could also provide another practical path to achieve greater access to digital forms of money with appropriate protection. JPMC agrees with the FRB that regulation of stablecoins is necessary to protect consumers and with the views put forth by the President's Working Group

on Financial Markets in its November 2021 paper, indicating that stablecoins used for payments should be issued by IDIs in order to control for the risks associated with that asset.[19]

JPMC believes that key to these alternative solutions serving this purpose (similar to CBDC) is full interoperability. As with CBDC, attention should be given to technology differences from payment systems and financial institutions across the globe. Interoperability can be fostered by the definition of common standards which can be used by interoperating banks. Either of these options may potentially allow the U.S. dollar payments ecosystem to deliver the benefits that CBDC could offer without requiring the FRB itself to take on a significantly expanded operational role. JPMC would, however, suggest that the FRB work with the industry to ensure that these alternative solutions are accomplishing the goals outlined by the FRB and to develop standards for such deposit products to help ensure interoperability given that multiple banks will be offering those.

CBDC Additional Considerations

CBDC Design

In considering the implications of a CBDC, design choices are critical. Further detail on CBDC design will be useful and important as stakeholders work to understand a CBDC's impact on the financial system. JPMC encourages the FRB to carefully consider the interplay between design choices and their effect on accomplishing specific policy goals. For example, setting minimal limits on the amount of CBDC a consumer could hold would, if consistently enforced, limit bank disintermediation but could also keep the CBDC from being useful for cross-border payments or support of the U.S. dollar as the reserve currency.

CBDC Intermediaries and Their Regulation

The FRB contemplates that banks and regulated non-banks would act as distributors for any U.S. dollar CBDC. We believe that it is critical that these entities should be supervised and regulated specifically by the FRB. This is particularly important as we believe that these entities are likely to be granted access to the FRB's discount window.

To provide a meaningful experience to consumers, at a minimum these entities should be responsible for conducting a range of activities including:

- Conducting the necessary KYC/AML requirements,
- Establishing wallets for retail clients,
- Distributing CBDC to retail account holders,

[19] The President's Working Group on Financial Markets, FDIC, and OCC, "Report on Stablecoins," November 2021, https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf.

- Providing for the conversion of CBDC to fiat currency,
- Converting retail CBDC received by merchants to fiat cash to avoid the cross-contagion risk of retail CBDC becoming a wholesale CBDC,
- Having strong cyber controls to protect against the enhanced risk of cybercrime, and
- Performing continual oversight and due diligence in line with FRB regulation and any other applicable federal regulations.

The breadth of necessary services required to provide consumers even the most basic functions of a CBDC again raises the question of how banks and regulated non-banks will be incentivized to distribute CBDC and maintain the infrastructure required to assume these responsibilities, which is something that must be addressed.

Point of Sale Acceptance of a CBDC

In order to maximize its ease of use for consumers, it is logical that a retail CBDC would need to be available at the point of sale to achieve widespread adoption. Benefits of CBDCs, including speed, interoperability, and security, would likely make CBDCs the default spending account for consumers.

Intermediaries can increase the ease of use through integration of CBDC accounts into existing user interface experiences, payment rails, and maintaining access to CBDC balances through existing mobile apps and desktop channels consumers already use to manage their finances. Retail banks have multiple channels to communicate with customers that would be helpful as CBDCs are rolled out (e.g., email, phone, and in-app messaging). The FRB should consider in its CBDC design how or whether consumers would maintain balances between a CBDC and commercial bank deposits, especially if there were quantity limits in place on CBDC accounts. This account management may prove difficult to consumers who manage their day-to-day transactions with a single checking account unless the FRB creates standardized processes to manage multiple accounts.

Transferability Across Payment Platforms

To ensure transferability of CBDC across multiple payment platforms a solid legal and technological foundation is necessary. This will need to cover the full lifecycle of CBDC from its issuance, distribution, and transfer to its redemption. A common clearing and settlement system will need to underpin the CBDC platforms with defined service-level agreements to support user experience expected by end-users.

In addition, irrespective of the model chosen for clearing and settlement, application of the ISO20022 messaging standard across all platform interfaces will aid in a uniform interaction model.

Technological Innovations Impacting a CBDC

The rapid pace of innovation in technology will constantly challenge the CBDC platform design to deliver new user experiences. This will also require a rethink in policy choices as new technologies may operate at the boundaries of the policy. Hence, it is vital that policies and design requirements are agnostic to any technology. Building a new system from the ground up provides an opportunity to reimagine the design and usage capabilities.

New technologies will provide new models of trust, security, and privacy, thereby increasing the landscape for design choices, but they can also change the threat landscape so it is vital that the FRB adopt technical design modules and conducts regular policy reviews to support this constant change.

CBDC and Privacy

As stated above, we agree with the paper's statement that any U.S. CBDC should be identity-verified and believe any CBDC should be subject to the same level of regulatory requirements related to KYC/AML as fiat currency today. CBDC does, however, potentially eliminate any anonymity experienced today by users of cash. The technological features of CBDC could provide a completely transparent set of data to the government and distributors of CBDC about how individuals choose to spend their CBDC and thereby maximize the ability to enforce KYC/AML obligations. On the other hand, such extreme transparency challenges expectations among the U.S. public for privacy in its commercial transactions. In order for CBDC to gain acceptance and become widely used, a new balance will need to be achieved between the need for KYC and AML enforcement on one hand, and privacy rights and concerns on the other hand.

Features like transparent records on a ledger, depending on how they were implemented, could increase the traceability of illicit financing. A single, specific dollar could be traced on its path through the economy. The FRB would need to consider whether to use a public blockchain to increase traceability or to maintain greater consumer privacy with a private blockchain. If a public blockchain is contemplated, effective mechanisms for appropriate anonymization must be determined (and validated) to assure consumers that (previously private) public information on their spending activities could not be traced back to them.

In order to execute payments in CBDC, the sender, receiver and any intermediary would necessarily receive information about the transaction. Beyond these parties, it is important to consider whether other parties should have access to this information and precisely what information must go to each party. For example, it would be important to determine if an intermediary would need to know the exact size of a transaction or merely the order of magnitude to be able to perform their appropriate intermediary duties. While this data could be helpful for consumers, it would also presents significant privacy concerns given its

granularity. The FRB will need to balance the utility of solutions with consumer protection across the ecosystem.

The FRB could also use a CBDC for things like stimulus. Providing access to CBDC data to federal agencies could help achieve public policy goals like law enforcement and tax collection, but could also curb the willingness of consumers to incorporate a CBDC into their daily transactions. Given distrust is among the reasons Americans cite for not having a bank account,[20] the idea that the federal government or private entity has access to information about a consumer's spending habits could foster the same feelings of distrust.

If complete anonymization of consumer spending activity is not implemented, consumers could potentially benefit if they could use data to evidence a history of on-time payments for accounts or "trade lines" that are generally not furnished to the credit bureaus like rent or utility payments, to serve as the basis of alternative credit worthiness assessments similar to experiments conducted under the OCC's Project REACh. However, if consumer activity is improperly anonymized, CBDC consumers' transaction data could be accessible to unscrupulous parties for use to a consumer's detriment. For example, data from CBDC transactions could lead to highly targeted marketing inclusion or exclusions that could limit competition and customer choice.

JPMC suggests that the FRB, if it pursues a U.S. dollar CBDC, outlines how it would intend to implement existing privacy standards or define how standards would differ for consumers and any participating distributors. A CBDC raises a number of questions, for example, who would have access to CBDC ownership and transaction data? What information is available to those who have access? What is permissible data use for those individuals and entities?

One other consideration is how the economic effects of distributing CBDC will affect privacy. For example, if regulated banks decide not to distribute CBDC as the economics are not attractive relative to the risks, would non-banks have interest in distributing the CBDC to have access to the data it would provide? The FRB should consider the implications of this type of arrangement and subject all distributors of the CBDC to strict privacy rules for the data CBDC generates.

Programmability could be Beneficial but also Carries Certain Risks

Many have cited the potential benefits that programmability (e.g., smart contracts) could introduce with the adoption of CBDC. As the FRB is aware, confidence in the stability of the value is critical to the value of the dollar, both as a trusted medium of exchange and as a reserve currency. Treasury Reserve Automated Debt Entry System (TRADES) regulations have been developed to ensure this stability of value under the concept of account entitlements for

[20] Federal Deposit Insurance Corporation, "How America Banks: Household Use of Banking and Financial Services," 2019 survey, https://www.fdic.gov/analysis/household-survey/2019report.pdf, p.3.

securities issued through the platform. While JPMC agrees that CBDC is not a security, we note that the introduction of smart contracts has the risk of eroding consumer confidence in the stability of value for CBDC. If consumers are concerned about the ability of the U.S. government to change the value of their holding (e.g., by introduction of an expiration date or limitation on use cases), this could make consumer interest in CBDC decline and may also make it challenging for CBDC to be used in payments. As the FRB considers design choices, programmability is an issue that warrants further analysis.

CBDC Design for Operational and Cyber Resiliency

CBDCs pose unique security challenges, as well as security considerations consistent with those in conventional payment systems, online banking, and other financial activities. The FRB acknowledges that its paper does not contemplate the technological choices that would be needed for CBDC issuance. JPMC would be happy to work with the FRB to collaborate on industry standards given our work with other central banks across the globe on these issues. JPMC believes the lessons learned about the operational and cyber resiliency of traditional systems should be built into the design of CBDC, however, there are also unique CBDC security concerns and controls that warrant more research and thorough testing before being incorporated into any design. FRB would need defined policies and procedures for these issues, which will become critical for banks to be able to quantify their risks versus costs and determine compliance.

CBDC design must have security, resiliency and risk-management as top priorities. To build a secure and viable CBDC, JPMC agrees with the FEDS Note on Security Considerations for a CBDC, that the design must focus on: 1) supporting a resilient payment system, 2) building trust in a payment instrument, 3) protecting end-user asset and sensitive personal information, and 4) preventing reputational harm to the central bank.[21]

Some risks from cash and conventional electronic payment systems are applicable to a CBDC, including the prevention of counterfeiting, fraud, and double spending. Threats and attack methods are also similar, like phishing, malware, malicious insiders, and nation-state espionage. Additionally, much like for traditional systems, an attack or disruption of a CBDC may pose broader risks to financial markets, economies, and currency-issuing institutions.

Building resiliency into a CBDC may be difficult to achieve given the presumed scale and volume. Existing mechanisms for managing volume (i.e., increasing transaction costs) in public blockchain implementations may be more difficult to implement in the context of a CBDC.

[21]FEDS Notes, Hansen, T. and Delak, K., February 3, 2022, "Security Considerations for a Central Bank Digital Currency,' https://www.federalreserve.gov/econres/notes/feds-notes/security-considerations-for-a-central-bank-digital-currency-20220203.htm.

Alternate mechanisms to manage overall CBDC volume should be investigated. Latency management also relates directly to perceived resiliency and should be considered as part of any solution. In addition, latency expectations should be firmly defined and have appropriate redress options defined.

There are specific security concerns related to how entities interact with a CBDC (i.e., the endpoints) that should be taken into consideration during the design and implementation of any CBDC. Of primary concern will be the validation of participants and the authentication of their credentials. To this end, the FRB may want to support federal digital identity solutions to facilitate secure participant validation. The FRB may also consider developing public standards for wallets and private key management to store CBDC.

The FRB should also consider creating requirements for effective cyber risk management at entities that conduct or facilitate CBDC-related business. Adoption of risk management frameworks such as the NIST Cybersecurity Framework and ISO/IEC 27000 Series, as well sector-specific profiles like the Financial Sector Profile or the CPMI-IOSCO Principles for Financial Market Infrastructures (PFMI) can help enterprises reduce the risk of cyber-enabled crime or fraud. Underlying NIST reference documents describe how to enhance the security of key functions, such as SP 800-63-3 and multi-factor authentication. Additionally, extending cyber risk management standards and frameworks to support the unique needs of CBDC operations (such as key management) should be considered.

As quantum technology continues to be developed and quantum supremacy poses risks to the security of data protected using current encryption algorithms, the FRB will need to consider the adoption of quantum resistant encryption for the sake of future-proofing any CBDC implementation, including supporting quantum-resistant algorithms for private key signing processes. NIST's post-quantum encryption project is currently supporting the development of such cryptographic algorithms.

Conclusion

JPMC thanks the FRB for the opportunity to provide specific comments on its CBDC paper. As the paper acknowledges, CBDC issuance would significantly impact the U.S. financial sector. JPMC remains concerned about these risks especially when weighed against existing evidence of the benefits a CBDC would provide. We are excited by private sector developments to address financial inclusion and the speed and efficiency of cross-border payments. We would welcome the FRB's increased engagement on cross-border payments to work through jurisdictional requirements and system issues that impede more efficient KYC-AML processes today.

We look forward to an ongoing dialogue with the FRB as it considers the policy issues a CBDC raises and would welcome the opportunity to work with the FRB.

Sincerely,

/S/

Stacey Friedman
General Counsel
JPMorgan Chase & Co.

QUAD CITY BANK & TRUST

May 19, 2022

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

Dear Ms. Misback:

Quad City Bank and Trust appreciates the opportunity to respond to the Federal Reserve System's discussion paper on digital assets. We acknowledge that there are now several different forms of digital assets and that the Federal Reserve is exploring issuing a U.S. central bank digital currency (CBDC). We have concerns which we urge the Federal Reserve to consider in its analysis, potential approval, and design of a U.S. CBDC.

If the Federal Reserve were to directly distribute a CBDC, particularly if it is held in accounts at the Fed, and more so if these accounts were to pay interest, the Federal Reserve would then be in direct competition for deposits with community banks like ours. The close bond that community banks have with their customers would be broken and replaced by a customer financial relationship with the government. This disintermediation would be an exestential threat to community banks, an inappropriate function of our government, and the harm it would cause would devastate consumers, small businesses, the financial system, the banking industry, and our economy.

The only central bank digital currency that should be under consideration by the Federal Reserve is one in which our country's community banks are the "intermediary" between the Fed and the consumer.

Also, the payments system will be greatly enhanced by the upcoming inplementation of the FedNow Service. This modernization will provide for an instant and guaranteed payment method and may invalidate the need for a CBDC. A careful study of the adoption and use of the FedNow Service is warranted. We understand the urgency of policymakers in addressing issues regarding digital assets, including CBDC, but a thoughtful approach is needed and getting it right is much more important than doing it quickly.

Thank you for considering our position on this important issue.

Kristin King,
Vice President, Correspondent Banking

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

The Honorable Jerome Powell
Chairman, Board of Governors
Federal Reserve System
20 Constitution Avenue, NW
Washington, D.C. 20551

Dear Mr. Powell,

The Mitsubishi UFJ Financial Group (MUFG) welcomes the opportunity to respond to the discussion paper by the Federal Reserve System Board of Governor (Fed) on central bank digital currency (CBDC), "*Money and Payments: The U.S. Dollar in the Age of Digital Transformation.*"

The Fed has sought feedback from a broad range of stakeholders after presenting a multifaceted set of issues, including the benefits and risks of CBDCs, policy perspectives, and design, in this paper. We, at MUFG, highly appreciate the Fed's willingness to be open with the discussions on these critically important issues.

At present, CBDCs are being considered globally at central banks, and similar conversations are occurring between relevant authorities and the engaged private sector. MUFG is mainly involved in these discussions in Japan, which is our mother market. However, as a responsible global bank, we have a great interest in the development of a U.S. CBDC from the following perspective:

- The U.S. dollar is used in international settlement for the trade of goods and services and has long maintained the role of the reserve currency. The introduction of a U.S. CBDC has the potential of transforming cross-border transactions and facilitating real-time payments.
- MUFG's Japanese corporate clients are large users of the U.S. dollar, through trade in goods and services and direct investment within the U.S., which has historically been the largest consumer market in the world.
- MUFG operates as one of the largest foreign banks in the United States. In addition to providing financial services in the United States, MUFG engages in cross-border credit and settlement services in U.S. dollars. Japanese banks, including MUFG, have significantly increased overseas exposures since the global financial crisis. The primary credit and settlement currency continue to be US dollars.
- We are assuming that the CBDC will be designed in consideration of the conditions of the financial system in each country, and the detailed design will differ from country to country. However, given the potential of future cross-border use, interoperability among major currencies are crucial elements to take into consideration.
- Depending on how the CBDC is designed, CBDCs may lead to disintermediation, which could have a great impact on financial stability. The design should take into consideration the impact on incumbent financial institutions currently supporting the financial system.

MUFG believes that the CBDC should be designed to mitigate potential systemic risk and inspire confidence in its use. The CBDC should also embrace the many public and

private sector initiatives in place that could be utilized to resolve any domestic and cross border payment system issues. Lastly, it is critical that a U.S. CBDC take into consideration the needs and views of foreign stakeholders, including governmental authorities and private financial institutions.

MUFG has been an active participant in CBDC formation discussions with several key industry associations and intends to continue such efforts, but the comments of MUFG expressed in this letter do not represent any organization or group, but its own.

We hope that our comments to this discussion paper will be of use in upcoming CBDC discussions at the Fed and further conversations.

Should you have any follow-up questions or need our assistance in any way, please feel free to contact Tomohiro Ishikawa[tomohiro_3_ishikawa@mufg.jp].

Yours truly,

Yutaka Miyashita
Mitsubishi UFJ Financial Group
Group CSO

NEACH
Your Trusted Resource i yments

May 20, 2022

Via Electronic Submission

Ann E. Misback
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, N.W.
Washington, D.C. 20551
Digital-innovations@frb.gov

Dear Ms. Misback:

NEACH welcomes the opportunity to submit this comment letter to the Board of Governors of the Federal Reserve System (the "Fed") in response to the discussion paper *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*. NEACH views the effort to improve the U.S. payment system as a public-private partnership and appreciates the Fed's efforts to date to coordinate discussion among industry participants. In addition to our own comments, we would like to support the comments provided by Nacha in their May 11, 2022 submission.

NEACH & Nacha

The New England Automated Clearing House (NEACH) is a non-profit association that helps members originate and receive ACH transactions, and provides products, services, education, and marketing to increase the acceptance, use and quality of electronic transactions. For more information, visit neach.org.

Nacha governs the thriving ACH Network, the payment system that drives safe, smart, and fast Direct Deposits and Direct Payments with the capability to reach all U.S. bank and credit union accounts. Just over 29 billion ACH Network payments were made in 2021, valued at $72.6 trillion. The ACH Network is governed by the Nacha Operating Rules ("Nacha Rules"), which are developed and maintained by Nacha. In our role as the standards organization for payments through the ACH Network and author of the Nacha Rules, Nacha represents over 10,000 participating financial institutions of all sizes and types throughout the United States, both directly and through 10 Payments Associations. Nacha's rules development process includes input and participation from all types of organizations, including both business and consumer end-user organizations, as well as the Fed and the Federal Reserve Banks.

NEACH Participation in the Journey to Faster Payments

NEACH has actively participated in the creation process of many of the latest payment system innovations. Our membership in Nacha has allowed us to be directly involved in Nacha Rule changes and industry education around Same Day ACH. NEACH also actively participated in the work of the Federal Reserve's Faster Payments Task Force and is a founding member of the U.S. Faster Payments Council.

35 Corporate Drive, Suite 190
Burlington, MA 01803-4244
www.neach.org

info@neach.org
phone 781-321-1011
fax 781-338-9627

Exploring a U.S. Central Bank Digital Currency

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

NEACH would like to compliment the Federal Reserve on the development of this paper. It presents an incredible amount of content touching on numerous areas of consideration. With so many central banks exploring the area of Central Bank Digital Currencies (CBDC), it is certainly time for the Federal Reserve to engage the industry in investigating a U.S. CDBC. Below are the areas of consideration NEACH would especially highlight for the Federal Reserve to address as this important work continues.

Background

As referenced above, NEACH is a regional payments association. We have been extremely involved in payment system developments for nearly 50 years. For many of those years, NEACH was specifically focused on the Automated Clearing House (ACH) Network, but over the past decade, we have been deeply engaged with the entirety of the U.S. payment system, especially as relates to faster payments initiatives.

Current Landscape

In recent history, the industry has seen the modernization of existing payments systems and the introduction of new payment systems like The Clearinghouse's Real Time Payments® (RTP®) and the upcoming Federal Reserve FedNow℠ system.

Over the past few years, the industry has experienced a greater adoption of digital payments due to Covid. We have observed this growth in digital payment adoption in financial institutions and third-party service providers of all sizes. In tandem, we have witnessed the growth of "cryptocurrencies" and related technologies. These new payment modalities continue to evolve, and in turn, NEACH members are asking, "What role to banks and credit unions play in crypto?"

Education

One of NEACH's primary roles is in information sharing and education. We believe that NEACH members have expert knowledge of traditional payments systems and are striving to learn what awaits as a result of new digital and faster payment systems, including developments with varying forms of cryptocurrency. In fact, NEACH staff themselves have become fast students of CBDC and cryptocurrencies. The topics addressed in the *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* paper introduced numerous new topics, ideas, and examples that the industry will need to learn and understand to actively contribute to the discussion of a CBDC.

As an example, clarity around definitions will be necessary for a fruitful dialogue around CBDC. The technologies behind CBDC are commonly referred to as "cryptocurrencies," when as the paper points out, these items are not used as currency, but as digital assets and would be impractical to be used as "digital dollars." In fact, we could present that most of the 18,465 cryptocurrencies today would act more like a stock than a currency. Those nuances shift the conversation, pointing out that using cryptocurrencies in their current form for CBDC could be likened to using stock to pay for a slice of pizza. This detailed conversation will be necessary to ensure industry clarity around the nuances between any U.S. CBDC and today's available cryptocurrencies.

35 Corporate Drive, Suite 190
Burlington, MA 01803-4244
www.neach.org

info@neach.org
phone 781-321-1011
fax 781-338-9627

Inclusivity and Intent

Our research and reading also have unveiled numerous approaches to CBDC that could be explored with varying effects on the industry and monetary policy. For example, the effect would be different depending on whether the CBDC paid interest or adopted specific one-tier or two-tier models.

Overall NEACH would support a model that allows participation for financial institutions of all sizes without adversely affecting smaller institutions simply because of the size of their balance sheet.

In regard to financial inclusion, NEACH staff question how extensively a CBDC would better address the underbanked than any of the existing mobile app solutions. We struggle to identify how CBDC would make a more positive impact on consumers living paycheck-to-paycheck and regularly utilizing short-term loans to pay the bills. We fail to see what CBDC would offer that would substantially strengthen their standing, but we are open to continued discussion.

Also, Money *and Payments: The U.S. Dollar in the Age of Digital Transformation* identifies a U.S. CBDC as helpful in international payments. The Bank for International Settlements in BIS Working Papers No 976 presents two different approaches on how a CBDC could work for international payments. The first shares a mostly microeconomic method, not resulting in a large amount of CBDC being transferred internationally. The second approach includes a macroeconomic model where there would be a large balance of U.S. CBDC transferred out of the nation. We were unable to identify which model *Money and Payments: The U.S. Dollar in the Age of Digital Transformation* was presenting.

Drivers for Change

In conclusion, NEACH supports the Federal Reserve in exploring the introduction of a U.S. CBDC that would be utilized by financial institutions of all sizes. We also support an approach that allows the industry and associations like ours to partner with the Federal Reserve in broad education around the topics addressed in the paper.

Sincerely,

Joseph S. Casali
Executive Vice President

35 Corporate Drive, Suite 190
Burlington, MA 01803-4244
www.neach.org

info@neach.org
phone 781-321-1011
fax 781-338-9627

Sumitomo Mitsui Financial Group
1-2, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-0005, Japan

May 19, 2022

The Honorable Jerome Powell
Chairman
Board of Governors of the Federal Reserve System
Washington, D.C.

Re: Opinion on the Discussion Paper on a U.S. central bank digital currency

Dear Mr. Powell,

Sumitomo Mitsui Financial Group (SMFG) welcomes the opportunity to respond to the discussion paper by the Federal Reserve System Board of Governors (Fed) on central bank digital currency (CBDC), "*Money and Payments: The U.S. Dollar in the Age of Digital Transformation*."

We hope that our comments to this discussion paper will be of use in future central bank digital currency discussions at the Fed.

The Fed has sought feedback from a broad range of stakeholders after presenting a multifaceted set of issues, including the benefits and risks of CBDCs, policy perspectives, and design, in this paper. SMFG highly appreciates the Fed's willingness to be open with the discussions on these critically important issues.

At present, active discussions on CBDCs are being held globally at central banks and relevant authorities with private sector participation. SMFG is mainly involved in the discussions on this topic in Japan, which is our home market, but as a responsible global bank, we have a great interest in the consideration of a U.S. CBDC from the following perspectives and we are keeping a close eye on the direction of such discussions.

- The U.S. dollar is used in international settlement for trade of goods and services, and has long been maintaining the main role of the reserve currency in many countries. The introduction of a U.S. CBDC has the potential of having widespread effects on cross-border goods/services settlement.
- SMFG's Japanese corporate clients are large users of the U.S. dollar, through trade in goods and services and direct investment in the U.S., which has historically been the largest consumer market.
- SMFG group companies operate in the U.S., and the primary currency for credit and settlement provided there is U.S. dollars.

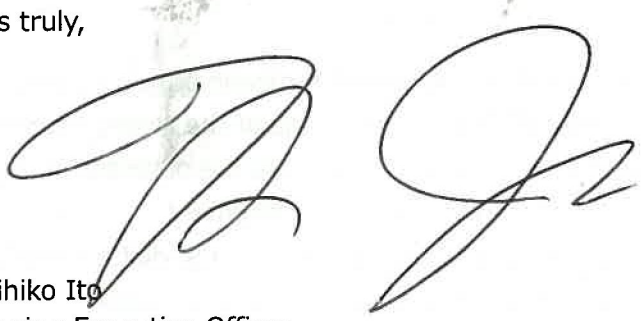
- We are assuming that CBDCs will be designed based upon the characteristics of the financial system in each country, and the detailed design will differ from country to country. However, given the potential of cross-border use of CBDC, interoperability with major currencies is a crucial element to be taken into consideration.
- Depending on how CBDCs are designed, CBDCs may lead to disintermediation, which could have a great impact on financial stability. The design should take into consideration the impact on incumbent financial institutions currently supporting the stability of financial markets and economic activities through their credit creation function.

SMFG believes that any CBDC, including any mitigant to mitigate potential systemic risk and other risk posed by CBDC, should be considered on a fully informed basis. Therefore, it is critical that a U.S. CBDC be considered with the views of foreign stakeholders, including authorities and private financial institutions. We have a high level of interest in a U.S. CBDC and we would like to contribute to in-depth discussions in the future through, for example, participation in the outreach events planned by the Fed or other U.S. agencies.

SMFG also contributed to the discussions on CBDC in other industry associations and intends to continue such efforts, but the comments of SMFG in this letter do not represent any organization or group. The comments represent SMFG's specific thought.

Should you have any follow-up question or need our assistance in any way, please feel free to contact Mr. Junichi Sato(Sato_Junichi@vb.smbc.co.jp), Mr. Ken Hiratani(Hiratani_Ken@dn.smbc.co.jp) or Mr. Nozomu Toyama(Toyama_Nozomu@dn.smbc.co.jp) .

Yours truly,



Fumihiko Ito
Managing Executive Officer
Sumitomo Mitsui Financial Group

Mizuho Financial Group, Inc.
1-5-5 Otemachi, Chiyoda-ku, Tokyo 100-8176, Japan

May 20, 2022

Attn: Mr. Jerome Powell, Chairman
Board of Governors of the Federal Reserve System
Washington, D.C.

Re: Opinion on U.S. central bank digital currency discussion paper

Dear Mr. Powell,

Mizuho Financial Group (MHFG) welcomes the opportunity to respond to the Board of Governors of the Federal Reserve System's discussion paper on a U.S. central bank digital currency (CBDC), *Money and Payments: The U.S. Dollar in the Age of Digital Transformation.*

Currently, central banks in various countries, together with financial institutions and other private sector organizations, are holding active discussions on the topic of CBDCs. MHFG has been involved in such discussions with the Bank of Japan. As a global financial group, we are very interested in the direction of a U.S. CBDC from the following perspectives:

- As a risk-free store of value, a CBDC could potentially be used as a substitute for bank deposits and thus affect the financial intermediary functions of financial institutions. Therefore, we hope any CBDC will be designed with consideration of its potential impact on the private sector.

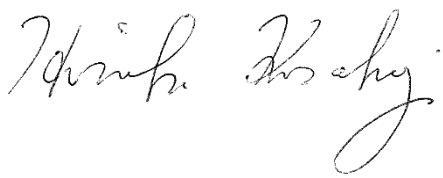
- The U.S. dollar is the key global currency, and it plays an important role in cross-border payment systems. MHFG's clients are significant users of U.S. dollars, through both trade in goods and services, and direct investment in the United States.

- Taking into account future cross-border use, we would appreciate further collaboration with other central banks to ensure interoperability between a U.S. CBDC and those of other major countries, including Japan.

MHFG would welcome the continued timely global disclosure of discussions on a U.S. CBDC. As a foreign stakeholder, we would be glad to contribute to further discussions.

Should you have any questions or need our assistance, please feel free to contact Mr. Masaki Kitoku (masaki.kitoku@mizuhofg.co.jp) or Mr. Yasutada Shiozaki (yasutada.shiozaki@mizuhofg.co.jp).

Yours sincerely,



Hiroki Kurakagi
General Manager, Strategic Planning Department
Mizuho Financial Group, Inc.

To: The Board of Governors of the Federal Reserve System

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

RFC Response

Christian Kameir (chris@sustany.co)
5-19-2022

A. Executive Summary

For a nation's economy to function effectively, its citizens must have strong, and enforceable property rights, as these are the foundation of economic prosperity. In the United States these rights are guaranteed by the Fifth and Fourteenth Amendment of the Constitution. The executive agency responsible for promoting economic prosperity and ensuring the financial security of its citizens is the Treasury Department, while the country's central bank is currently responsible for managing the people's primary system for property exchange - its currency.

This RFC response (Response) is the third step in an ongoing public discussion between stakeholders about a U.S. central bank digital currency (CBDC).* For practical purposes this Response will use the CBDC definition of the discussed paper, as a digital liability of the central bank that is widely available to the general public, and analogous to a digital form of paper money. This Response has been designed to foster a broad and transparent public dialogue about CBDCs in general, and about the potential benefits and risks of a U.S. CBDC in particular. This Response is not intended to advance any specific policy outcome, but will address both the observable externalities of the management of the existing U.S. currency mechanisms, as well as outline the dangers of action and inaction of the Federal Reserve in respect to the issuance of a CBDC.

*An early draft of this response was published for peer review online on March 13th, 2022, and the authors consequently conducted two open forums on the topic on March 29th, 2022, and May 12th, 2022 (recordings can be found online). The early drafts, and discussions have since been viewed and reviewed by several thousand people, including many of the world's most accomplished economists, technologists and financial experts. This public debate is ongoing, with updated drafts published at the following link, as well as other platforms: https://hackernoon.com/cbdc-a-mandate-for-digital-property

B. Background

Payment technologies offered by the Federal Reserve have not evolved in step with today's network technologies. As of now, the central bank provides currency to the public only in the form of Federal Reserve Notes (Cash) printed on cotton and linen-blend fabric, available in seven denominations: $1, $2, $5, $10, $50, and $100. While legally classified as IOUs, these bills – and smaller denominations in coinage – provide citizens and non-citizens strong protection akin to property rights, enabling the bearer to settle transactions without a third-party by transferring the note.

However, as the precipitous drop in velocity of physical Cash reported by the Federal Reserve Bank of St. Louis shows, Federal Reserve Notes ("Cash") are on average used less than five times a year to purchase domestically- produced goods and services. As such cash is almost entirely unsuitable to the functions of an effective economy, forcing citizens to use commercial banks', and nonbank currencies which are burdened with an ever-growing number of frictions, including censorship, time delays and fees. The latter amounts to more than 1.9% of all currency transferred - in other words:

---

after moving any amount of currency fifty-times, nearly 100% of the transferred value has been absorbed by middlemen.

Putting these numbers into a wider context: The global financial services market grew from $20.5 trillion in 2020 to $22.5 trillion in 2021 at a compound annual growth rate (CAGR) of 9.9%.[1] This number must be contemplated in conjunction with the International Monetary Fund reported global gross domestic product of at $94.9 trillion.

The contributors to this response have studied global CBDC efforts, as well as private market currency solutions for several years – and in some instances for decades. Our views are guided by an understanding that any U.S. CBDC must, among other things

- secure the property rights of citizens better than the legacy currency systems,

[1] Financial Services Global Market Report 2021 (https://www.researchandmarkets.com/reports/5240250/financial-services-global-market-report-2021)

- provide benefits to households, businesses, and the overall economy that significantly reduces the costs and risks associated with the legacy currency systems;
- protect consumers rights of freedom of expression, self-determination and privacy;
- protect consumers and businesses from criminal activity;
- have broad support from citizens holding or using U.S. currency today.

C. Responses

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

The Paper defines a CBDC as a digital liability of a central bank that is widely available to the general public, and analogous to a digital form of paper money. The following response will make use of that definition while differentiating between the function of current "paper money", and its uses cases - i.e., as a form of payment, with the understanding that currencies are technologies that systematize agreements over money. The latter – money - is legally a contract between parties choosing a unit of account and a medium of exchange for their transaction.

To illustrate this differentiation, one might imagine a pedestrian picking up a $100 Federal Reserve Note of a New York City sidewalk, consequently using the note as money to pay for his dinner at a restaurant. A tribesman finding the same $100 bill in the sand of the Kalahari Desert might not consider it, and use it to kindle his fire at night.

With that premise, we will answer these three questions posed in order below.

1.a. Potential Benefits of a CBDC

We see a large number of potential benefits of a CBDC digital bearer instruments, for future applications, while also addressing the externalities of the legacy currency systems.

Ending Warrantless Financial Surveillance of U.S. Citizens

To date, with few exceptions financial transactions involving fiat currencies in digital form involve the disclosure of personal identifiable data of the sender and recipient to middlemen which regularly share this information with several other intermediaries which retain digital copies - often for undisclosed purposes. This wholesale surveillance of financial transactions is at the core an externality of legacy technology - in particular database solutions, which do not easily allow for a more nuanced approach to data sharing.

Additionally, regulation purportedly aimed at bad actors wanting to use the financial system for the purpose of money laundering or other nefarious activities mandate the default surveillance of citizens' legitimate transactions by financial intermediaries. The burden of deputization of private companies has led to overhead frequently accounting for more than 20% of a financial services company's overhead, and are ultimately borne by the consumer in form of transaction fees.

As extensively documented and widely reported AML measures implemented in this way result in over 95% of false positive flags, multiplying the inefficiencies of the legacy banking system, while also failing to mitigate illicit financial activity in a meaningful way. Adding insult to injury, intermediaries are exposing sensitive information to a wide variety of data brokers, and their often-outdated networks and systems are susceptible to criminals gaining access to slews of poorly secured databases. Consequently, nearly half of all U.S. citizens experienced financial identity theft in 2020 alone.

Lastly, it must be stressed that AML regulations are an exemption from the prohibition of warrantless surveillance, and an externality of legacy technology (account-based systems, and databases). With the latter being addressed by technology, the former exception can no longer be used. Digital privacy - including financial privacy - is readily available via encrypted communication, and peer-to-peer value transfer solutions using a digital bearer instrument CBDC.

As several State are currently in the process of implementing digital native credentials (i.e., Arizona's Arizona, Connecticut, Georgia, Iowa, Kentucky, Maryland, Oklahoma, and Utah are in the process of implementing digital drivers' licenses), these instruments must be considered in the design of new payment system (while not delaying the issuance of a U.S. digital bearer CBDC). It is easy to see, how future value transfer will use these technologies to only attach "green checkmarks" to any given transaction, and as such mitigate against the perils associated with data breaches. The Federal Bureau of Investigation's 2021 Internet Crime Report, reports losses in conjunction with cybercrime in the U.S. of over $18.7 billion. And, it is estimated that damages caused by cybercrime worldwide exceeded more than six trillion dollars in 2021. At current trajectory damages from cybercrime globally will approach the totality of current U.S. GDP by 2025. As past data breaches show, these costs can in large part be attributed to data silos under control of middleman, using outdated database solutions.

Mitigating against Loss of Purchasing Power

As of March 2020, citizens maintain demand deposit accounts holding $18.55 trillion in demand deposit accounts earning no interest, with another $21.92 trillion held in "savings" accounts, earning on average

yearly interest below two percent. However, current levels of inflation are eroding the purchasing power of this funds at greater than eight percent, and by some accounts real inflation exceeds twenty percent when accounting for housing and other costs not considered by the consumer price index.

While the Fed discontinued its official reporting on net interest income for commercial banks in Q4 of 2002, commercials banks earned consistently netted more than two percent interest on deposits ($362 billion in the last reported quarter). Moreover, effective for the reserve maintenance period beginning March 26, 2020 the Fed reduced the ten percent required reserve ratio against net transaction deposits for commercial banks above the low reserve tranche level to zero percent, and the three percent required reserve ratio against net transaction deposits in the low reserve tranche was also reduced to zero percent, increasing the ability of commercial banks to generate yields from deposits. Commercial bank currency – ostensibly "consumer deposits" – are as such in a constant state of lending.

However, as of today consumers do not participate in the yield generating from their account holdings in the same way commercial banks do. – A digital bearer CBDC can enable citizens to seamlessly move funds from their own yield-earning states to another consumer yield-earning account, while further participating in the growing peer-to-peer lending markets with yields outperforming those of money-market accounts, and certificate of deposits. These measures can – potentially significantly – reduce the current loss of purchasing power experienced by U.S. citizens.

Financial Inclusion

While the Paper stresses the importance of inclusion of the 'unbanked' to the financial system, it fails to address the primary reasons why citizens do not maintain bank accounts. Despite the fact that legal tender laws point to the public nature of fiat currencies, governments regularly deputize commercial entities to administrate and intermediate the use of national financial systems.

The fact that financial institutions are empowered to impose their own conditions on the use of the banking system has led to a systemic discrimination against consumers that are deemed to be unprofitable, and in some cases do not conform with the moral framework of banking executives.

The largest group of unbanked however, is comprised of individuals unable or unwilling to pass stringent anti-money laundering procedures often charitably labelled as 'know-you-customer' requirements. Tellingly, that term even appears in quotations within the secretly extended legal requirements for - what must otherwise be considered - an invasion of financial privacy.

In order to include citizens in the digital financial system, a CBDC can be made available via the conversion of physical cash into a digital bearer form of CBDC without the requirement of a government-issued credential.

Promotion of US Values

As of 2021 nearly one trillion Dollars' worth of Federal Reserve Notes are in circulation globally. Citizens living under authoritarian governments turn to Dollar bills to combat government overreach, escape hyper-inflation, and store value to 'join the American Dream'. The images of George Washington, Thomas Jefferson, Abraham Lincoln, Andrew Jackson, Ulysses S. Grant, and Benjamin Franklin represent the values of the United States. "We the people" is a slogan seen by millions around the world, exchanging $10 for goods and services. Enabling a CBDC as digital bearer instrument available to citizens globally carries the option of multiplying the exposure of American values – freedom and independence – by several orders of magnitude.

Faster, More Efficient Financial Disaster Response

During the recent crisis responses, the inadequacy of current payment system to address the needs of citizens in duress has become painfully obvious. During the crisis response in 2020 more than seventy million Americans waited for weeks for paper checks to arrive in the mail, at an average cost of $3 per mail. Every year billions of tax payer money are wasted on intermediaries using legacy technology to serve U.S. citizens relying on government programs. A U.S. digital bearer CBDC could save substantial amounts of public funds, while enabling the government to better serve citizens in need.

Securing the Global Dominance of U.S. Dollar

As of today, the U.S. Dollar is the world's reserve currency, awarding enormous privileges to the issuer of the currency. However, several countries have ambitions to subvert the Dollars positions in the global economy. These nations have long done away with checks, provide e-money solutions to their citizens, and enabled large parts of their merchants to utilize ubiquitous mobile payments solutions using QR codes with sub one percent or no fees at all. As some of these applications already have more users than the United States has citizens, it is easy to see how these solutions might be adopted by a growing global population, should a U.S. digital bearer instrument not be available in the near future.

1.a. Policy Considerations

As of today, the goals of U.S. central banks monetary policy are to promote maximum employment, stable prices, and moderate long-term interest rates.

For the nation's economy to function effectively, human capital must be allocated efficiently. However, legacy technologies frequently lead to misallocation of human capital. In particular obsolete network technologies – such as systems of money (currencies), using data siloes, require human intervention akin to dispatchers in legacy phone networks. Keeping citizens occupied with non-productive labor, prevents these individuals from acquiring skills in demand by the free market.

Internet technologies have proven to be the largest contributor to employment opportunities over the past twenty years. Decentralized software solutions – such as blockchains – are now extending the capabilities of this global network over pure information distribution to a new network layer of value distribution. The latter already enables a myriad of employment options. However, a climate of "regulation by enforcement" has driven much of the development of this promising new economy out of the United States. A U.S. CBDC designed as digital bearer instrument, allowing for "programmable money" solutions can reverse the trend, and ensure viable employment options in the space within the United States.

When prices are stable, long-term interest rates remain at moderate levels, so the goals of price stability and moderate long-term interest rates go together.

2. Could some or all of the potential benefits of a CBDC be better achieved in a different way?

To answer the question of "potential benefits of a CBDC" requires to first establish the negative externalities of current implementations of 'digital currencies', further necessitating an understanding of the terminology, as well as current technologies. Currencies are systems of money. Setting legal tender laws aside, money is an agreement between two or more individuals or entities (anything can be money). From a technological perspective, the unit of account for the latter is merely a user interface function, since the medium of exchange has de facto defaulted to bytes. Legacy technologies, such as database-maintained digital ledgers, carry an inherent principal-agent risk, and are not censorship resistant. As such, potential benefits from a digital currency can only be achieved by a CBCD that is a true digital bearer instrument, which is optionally custodied by a central or commercial bank on behalf of the actual owner of this digital property, without the ability of the institution to revoke control over these assets without due process. The implementation of a CBDC must therefore enable financial service providers (FSPs) - including commercial banks and credit unions - to offer 'CBDC Cash Accounts' (CBDCCA). In a departure

from the current demand-deposit account system paradigm, CBDCCAs would take on the form of 'digital lock boxes', fulfilling the proposed requirement of a CBDC analogous to a digital form of paper money. FSPs would offer 'blind custody' solutions, curtailing the principal-agent problem inherent in traditional account-based systems. A robust ecosystem of these custody solutions has developed over the past five years, and is readily available to serve the legacy banking system with appropriate technologies.

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

3.1. Could a CBDC affect financial inclusion?

As of today, the unbanked as a percentage of the population is greater in the United States than in all other G7 countries and far more concentrated among those at the lower end of the income distribution. Today people are most-often excluded from the financial system due to their socio-economic status and/or because they cannot meet the requirements imposed on the commercial banking sector. According to a 2019 survey conducted by the Federal Deposit Insurance Corporation an estimated 5.4% of U.S. households were unbanked" in 2019, which means that in 7.1 million US households not one person had a checking or savings account at a bank or credit union. Of these 29 percent cited that they "don't have enough money to meet minimum balance requirements", another 16.1 percent of unbanked households cited that they "do not trust banks". Lastly, 20% of unbanked do not have the necessary personal identification documents to establish a bank account.

As before, the net effect of a CBDC on financial inclusion will largely depend on the specific implementation. If the CBDC design will indeed be analogous to a digital form of paper money - and in particular not require government-issued credentials - a relevant portion of the unbanked will be able to participate in the financial system, using a digital bearer instrument, potentially providing a net positive effect to that cohort.

3.2. Would the net effect be positive or negative for inclusion?

If implemented as a digital bearer instrument available without the need for government-issued credentials, a U.S. CDBC will provide an overwhelmingly positive the net effect, decreasing the suffering of not only millions of Americans, but potentially hundreds of millions of people around the world who currently use Federal Reserve Notes as their only safe-haven from government overreach, and hyperinflation. This requires that a U.S. digital bearer CBDC can be stored in any available un-hosted (non-custodial wallet), and specifications for these are made available open source.

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

The legacy financial system disproportionally disadvantages citizens having to use cash as their only means of compensation. With the ascendants of the 'gig economy' recent job opportunities have opened up to induvial that are able to receive payments in digital form. However, citizens without bank accounts are excluded from these positions.

Furthermore, a CBDC implemented as "programmable money" can enable entire new industries, enabling employment opportunities for U.S. citizens in particular if fostered in the United States, rather than leaving these to other nations.

Programmable money can also provide granular, real-time price information across a wide area of consumer products, offering better insights into price stability, and looming inflation.

5. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

In as much as the Fed's discussion paper raises the concern that new payment services "could pose financial stability, payment system integrity, and other risk, if the growth of nonbank payment services were to cause a large-scale shift of money from commercial banks to nonbanks", it should be noted that the five largest electronic payment processing companies by market share (PayPal, Stripe, Amazon Payments, Braintree, and Block (now Square)) are already indeed not commercial banks. In as much as these entities are subject to quarterly assessments, and general scrutiny by investors, and a collapse of one or more of these private entities is unlikely to pose a risk to financial stability.

Financial instability in the U.S economy was in the past primarily caused by market distortions, such as the creation of fiat currency supply for non-productive activities. These distortions were frequently compounded by commercial bank money systems and products build upon those. The opacity of legacy system masked the buildup of systemic risks, and was largely responsible for the near collapse of the economy in 2008, causing nine million Americans to lose their jobs, ten million to lose their homes, and destroying nearly one-third of GDP.

As such, a CBDC – made available to commercial banks as digital bearer instrument and (ultimately) "programmable money" must first and foremost transparently report on – and surface - structural problems, and have the technical capability to provide real-time reporting functions to all market participants. – The 'net effect' is bound to be overwhelmingly positive.

6. Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?

As with Federal Reserve Notes, a CBDC implemented as a digital liability of the central bank that is widely available to the general public, and analogous to a digital form of paper money would not adversely affect the financial sector. To the contrary, a U.S. Dollar denominated digital bearer instrument would enable the financial sector to provide competitive solutions to end users – i.e., "programable money" - with the underlying security layer of a central bank.

If the American people ever allow private banks to control the issue of their currency, first by inflation, then by deflation, the banks and corporations that will grow up around [the banks] will deprive the people of all property until their children wake-up homeless on the continent their fathers conquered.

Thomas Jefferson

It must further be noted that the "financial sector" does not exist as an end to itself but is a conduit to facilitate real economic activities. And, in as much as a CBDC introduces efficiencies to the primary use cases of currency (lending, store of value, spending/payment), it will encourage commercial banks to adopt equal or better technologies.

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?

7.1. What tools could be considered to mitigate any adverse impact of CBDC on the financial sector?

This distribution of a U.S. digital bearer CBDC should be implemented analogous to the way physical Cash is being distributed today.

Commercial banks must be allowed to create hosted "branded wallets" which can hold CBDCs from any central bank, as well as any privately issued digital assets. The ability to create branded CDBC wallets should be provided as software development kits and must be available to both custodial (hosted), and non-custodial wallet providers. The latter ensures the "cash-like" quality of a CBDC, while fostering financial inclusion for individuals currently excluded from the legacy financial system.

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?

Yes (assuming the question refer to paper money). Technological complex implementations will always encounter periods of unavailability - i.e., 'network outages' caused by natural disasters, wars, or simply human errors. Paper money must be widely available to address these situations.

9. How might domestic and cross-border digital payments evolve in the absence of a U.S. CBDC?

"Payment" is too vague of a term to be discussed in any meaningful way. However, in as much as digital bearer instruments of any unit of account can settle with finality in near real time, and provide "programmable money" optionality, these are already technical reality which cannot be ignored without suffering the consequences of technological debt. The latter can already readily be observed in the decline of USD denominated transactions of global economic activity. According to the International Monetary Fund the US Dollar's share in global exchange reserves has fallen to its lowest level in twenty years.

10. How should decisions by other large economy nations to issue CBDCs influence the decision whether the United States should do so?

CBDC's implemented as true digital bearer instrument with ability to create "programmable money" provide an instant competitive advantage to the economies of any nation implementing it. This technology exists today, and its adoption is actively being pursued by other large economies. The United States must urgently increase its efforts to catch up to these developments, to avoid putting its own economy at a distinct disadvantage.

11. Are there additional ways to manage potential risks associated with CBDC that were not raised in this paper?

From a technological perspective the medium of exchange has observably defaulted to bytes. The unit of account of any currency is as such a mere user interface function. Which is to say, discussing the latter amounts to arguing about the color of bytes

Currencies are network technologies which exist in the wider context of the internet. Engagement with the latter is largely a matter of **client technologies** - i.e., digital wallets. The ability to freely use the latter, while supplementing it with nation-state enforcement mechanisms that protect human agency outweighs the importance of a discussion of 'currencies', including CBDCs.

12. How could a CBDC provide privacy to consumers without providing complete anonymity and facilitating illicit financial activity?

The question entails a false choice, assuming the intellectual integrity in reference to a CBDC's analogy to physical cash. The latter medium of exchange currently provides complete anonymity, enabling a cottage industry comprised of licensed financial service providers who profit from illicit activities. However, as with previous questions, the answer is largely dependent on the technical implementation of a CBDC. Assuming the latter will indeed take on the form of a digital bearer instrument, any measures directed at curtailing 'illicit activities' cannot to be implemented at the level of a digital bearer instrument, but can readily be addressed using big data analytics.

13. How could a CBDC be designed to foster operational and cyber resiliency? What operational or cyber risks might be unavoidable?

Cyber resiliency is primarily achieved by the decentralization of individual data controllers. These suffer from an inherent principal-agent problem ("admin access"), exponentially increased by legacy technology, in particular database solutions. Unavoidable cyber risks are those inherent to the human condition, as most cyber security breaches are not a result of technical intrusion but hacking by the means of social engineering.

14. Should a CBDC be legal tender?

Yes, however only in respect to its acceptance by government agencies. With the exception of federally chartered banks, organizations and private persons should not be legally required to accept a CDBC.

15. Should a CBDC pay interest? If so, why and how? If not, why not?

No. Central Banks must be provably market neutral. The Fed was established to provide price stability and prevent periodic banking crises. It has accomplished neither but instead caused price instability and massive banking failures, by distorting market forces. The Fed's near- zero interest policy has set the economy on an unsustainable course: With inflation at record highs and interest on various types of savings accounts at less than one percent, those who thought to have been acting financially responsible and saved are de facto being penalized for trusting the central bank, and forced to accept what is, in effect, a negative rate of interest. Credit is no longer being allocated by the market but to classes of borrowers as determined by political interest.

16. Should the amount of CBDC held by a single end-user be subject to quantity limits?

No. Also: what qualifies as an "end-user". Would the largest corporations be "end-users"?

17. What types of firms should serve as intermediaries for CBDCs? What should be the role and regulatory structure for these intermediaries?

In order to fulfill the requirements of a CBDC analogous to a digital form of paper money, the role of intermediaries should be limited to "blind custody", similar to the functions physical lock box vendors - including commercial banks - provide today.

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

Yes. Several solutions exist today which work on the principle of unspent transaction outputs (UTXOs), and/or prepaid credit or calling cards.

19. Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?

Yes. - QR codes and Near Field Communication (NFC) have long been used for payment functions, and most point-of-sale systems support their implementation already.

20. How could a CBDC be designed to achieve transferability across multiple payment platforms? Would new technology or technical standards be needed?

To achieve transferability across multiple payment platforms, a CBDC design should be compatible with the Ethereum Virtual Machine (EVM). While originally developed for the open-source Ethereum blockchain, EVM has emerged as the de facto standard globally. The paradigm provides standalone implementations across the most used programming languages (Python, C++, JavaScript, Go, and Haskell), and a majority of existing decentralized network systems (i.e., blockchains and directed acyclic graphs) opted for EVM compatibility. Already more than one hundred client applications ("wallets") utilize the standard, with an estimated 2.7 billion users as of March 2022.

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

Predictions for how future technological innovations can affect design and policy choices for a central bank issued digital bearer instrument can be deduced from past technological innovations such as the introduction of the voice-over-internet protocol (VoIP). While some governments penalized their own citizens, making it "illegal" to use VoIP client software (presumably to protect state-owned

telecommunications carriers), other nations embraced the technology, and allowed new industries to be build atop of the protocol. This greatly benefitted the citizens of these countries, which were heretofore metered by the Minute for every phone call. Telecommunications companies adopted the protocol for their backbones, and phased out obsolete infrastructure.

Digital bearer instruments build atop decentralized software solutions such as blockchains, have been successfully tested for more than a decade, and reliably move tens of billions worth of currency daily. According to the 2021 McKinsey Global Payments Report, revenue from global payments exceeded $1.9 trillion in 2020. In the light of that year's global gross-domestic product of $84.7 trillion, it could be said that each product or service incurred an extra 2.2% tax. - Not enabling the US Dollar to operate as a frictionless digital bearer instrument, is not akin to keeping the rotary phone alive in the age of smart phones, it is comparable to forcing internet users to affix stamps on their emails. Less messages are being sent, fewer commercial transactions are taking place, innovation is stifled.

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

The difference between the various categories of "money" is mostly rooted in the complexity of the agreement, or what might be referred to as meta-data associated with the value shown as contract value or account balance. The higher complexity paired with – in the legacy system - often unstructured meta-data frequently requires manual intervention, batching, and other procedures performed by the financial service providers maintaining these contracts via legacy database solutions. The costs of these inefficiencies are currently borne by the account holder in form of fees that include margins for the financial service providers which control these outdated systems.

Decentralized software systems - such as blockchains and directed acyclic graphs, using cryptographic primitives, can address these frictions via standardization of metadata into digital bearer instruments ("tokens") and automated transfer mechanisms via smart contract systems.

The latter requires a multidimensional implementation consisting of horizontal, and vertical metrics. The former references the different contract categories ("money"), while the latter will generally reference the velocity within the category. Horizontally these functions are already being implemented in digital wallets with hundreds of projects either live or in development. Vertically it can be observed that several projects are already taking market share within categories such as mortgages, municipal bonds, and payments

Ostensibly, fiat currencies address challenges arising from the desired value exchange between two or more parties through funds that are readily accessible for spending. The latter are grouped under the label M1 by the Federal Reserve and, aside from physical cash, include funds recorded in demand deposit accounts, commonly referred to as "checking accounts".

While many merchants prefer cash over digital payments, this is largely a result of costs and time delays inherent to current electronic payment systems and their purveyors, such as debit and credit card companies. Ultimately, these payment options overwhelmingly make use of the aforementioned money classified by central banks as M1.

Assuming a U.S. digital bearer CBDC addresses these problems for sellers, it is a reasonable thesis that merchants would be motivated to adopt the new solution while encouraging counterparties to use it. Thus, the product-market fit could generally be achieved. However, because consumers frequently have myriad other digital payment solutions at their disposal, we will next examine these options.

Competition may also arise from digital currencies issued by other nation-states. While foreign exchange markets are generally not designed to cater to the payment needs of consumers, digital currencies issued by central banks may remove friction introduced by intermediaries in the form of time delays and fees.

Depending on interoperability and design choices, citizens exposed to fiat currencies with rapidly decreasing purchasing power could opt to store value in a currency of their choosing and only convert to the local fiat when necessary for payment functions. This can only be observed for physical cash today.

Setting further classifications into consumer, commercial, and more granular segmentations aside, investors may be tempted to consider the final cumulative value for 2020 as the total addressable market.

A U.S. digital bearer CBDCs follow protocols, and consequently, form new standards across these categories. Aside from providing transparency in this way, this design provides future utility as the desired "programmable money", as divided into four main sections: creation, moving, storing, governance – each section with their own subsections of entity, use case and function (who/why/how).

U.S. CBDC design must consider the creation process of all money across a number of categories which in step one could greatly improve the overall transparency, and manageability of the movement of money, and related values – i.e., seigniorage and demurrage. These categories might include mortgages, certificates of deposits, corporate debt, student loans, auto loans, credit card debt, checking accounts, and HELOC.

While CBDC design papers largely omit discussions around the instantiation of fiat currency. It is necessary to examine the current creation process of fiat currencies which are largely brought into existence by the process of the collateralized lending activities by commercial banks (e.g., mortgages), a business model not readily available to competing private currencies.

It can readily be observed that a small but flourishing lending market is evolving in the decentralized finance space. Although these solutions are today largely limited to digitally native assets.

Central bank digital currencies might open access to these solutions to a broader audience, should they be interoperable with these innovative solutions. However, residual frictions, and - most importantly: continued debasement of fiat currency - will mean that fiat currencies may be relegated to their unit of account function, while interest-bearing digital assets will be the new status quo.

As the Paper defines a CBDC as a digital liability of a central bank that is widely available to the general public, and analogous to a digital form of paper money, any friction not inherent to Cash must therefore be considered a trade-off. And, in as much as these trade-offs manifest in friction to the exchange of a digital bearer instrument, client technologies (i.e., "wallets") will either mitigate it (best case), or avoid using a U.S. CDBC designed in this way altogether (worst case) – similar to communication protocols implementing "least-cost routing" around more expensive network participants.

The privilege of creating and issuing money is not only the supreme prerogative of Government, but it is the Government's greatest creative opportunity. By the adoption of these principles, the long-felt want for a uniform medium will be satisfied. The taxpayers will be saved immense sums of interest, discounts and exchanges. The financing of all public enterprises, the maintenance of stable government and ordered progress, and the conduct of the Treasury will become matters of practical administration. The people can and will be furnished with a currency as safe as their own government. Money will cease to be the master and become the servant of humanity.

Abraham Lincoln

CNB BANK & TRUST, N.A.
Helping to Open Doors • Since 1854

May 19, 2022

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

Dear Ms. Misback:

CNB Bank & Trust appreciates the opportunity to respond to the Federal Reserve System's discussion paper on digital assets. We acknowledge that there are now several different forms of digital assets and that the Federal Reserve is exploring issuing a U.S. central bank digital currency (CBDC). We have concerns which we urge the Federal Reserve to consider in its analysis, potential approval, and design of a U.S. digital currency.

If the Federal Reserve were to directly distribute a CBDC, particularly if it is held in accounts at the Fed, and more so if these accounts were to pay interest, the Federal Reserve would then be in direct competition for deposits with community banks like ours. The close bond that community banks have with their customers would be broken and replaced by a customer financial relationship with the government. This disintermediation would be a direct threat to community banks, an inappropriate function of our government, and the harm it would cause would devastate consumers, small businesses, the financial system, the banking industry, and our economy.

The only central bank digital currency that should be under consideration by the Federal Reserve is one in which our country's community banks are the "intermediary" between the Fed and the consumer.

Also, the payments system will be greatly enhanced by the upcoming inplementation of the FedNow Service. This modernization will provide for an instant and guaranteed payment method and may invalidate the need for a CBDC. A careful study of the adoption and use of the FedNow Service is warranted. We understand the urgency of policymakers in addressing issues regarding digital assets, including CBDC, but a thoughtful approach is needed and getting it right is much more important than doing it quickly.

Thank you for considering our position on this important issue.

Shawn L. Davis
President & CEO