

## BENEFITS, COSTS, AND DESIGN CONSIDERATIONS OF A CENTRAL BANK DIGITAL CURRENCY

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Discussion Paper: Money and Payments: The U.S. Dollar in the Age of Digital Transformation  
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We appreciate this opportunity to respond to the Federal Reserve's (Fed's) January 20, 2022, discussion paper *Money and Payments: The U.S. Dollar in the Age of Digital Transformation*. The discussion paper identifies benefits and risks that might accompany the introduction of a central bank digital currency (CBDC) in US dollars and requests responses to 22 questions as it explores the possible introduction of a CBDC into the US payments system.

The Mercatus Center at George Mason University is dedicated to bridging the gap between academic ideas and real-world problems and to advancing knowledge about the effects of regulation on society. This comment, therefore, does not represent the views of any party or special interest group. Rather, it is designed to help the Fed as it considers its role within the US payments system.

The Fed defines a CBDC as a digital liability of a central bank that is widely available to the public. In this respect, it is analogous to a digital form of paper money. The Fed's discussion of the use of CBDCs seems timely, given the rapid advancement in payments technology and innovations, which, over time, may affect both how payments are made and the very structure of the payments industry. However, the Fed is highly speculative in identifying the benefits that might flow from a CBDC and the risk it would introduce into the financial system. Our comments, therefore, address the Fed's discussion of these potential benefits and risks and make the case that the introduction of a dollar-denominated CBDC is, at best, premature. The United States has long benefited from its decentralized, highly innovative market system, and progress within the payments system is best

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continued relying principally on that system rather than on that of a single, centralized provider. Following these broad comments, we address the 22 questions for which the Fed seeks input.

With its discussion document, the Fed is attempting to anticipate the evolution of digital payments and money and what role the Fed should play in that evolution, focusing here on whether it should develop its own digital currency. In framing our comments, it seems most useful first to discuss the relative importance and implications of the benefits and risks outlined in the paper and whether they justify Fed intervention in what otherwise would be a market-led evolution of a digital payments system. Government intervention should generally occur only when there is a market failure or when an overarching, significant public good is unlikely to be served through private action. Thus, when weighing the benefits and risks of government intervention, the failure to argue that such circumstances exist is itself a strong case against such intervention.

## **BENEFITS**

The Fed suggests that a major benefit of offering the public broad access to a CBDC is that doing so would introduce into the system digital money that is free of credit and liquidity risk. All other forms of digital money, including stablecoins, carry such risk. The paper goes on to suggest that such a major benefit would level the competitive playing field, facilitate innovations among private firms, lower costs, and ultimately speed up the payments process. The Fed further notes that a CBDC has the potential to streamline cross-border payments by using new technologies, introducing simplified distribution channels, and creating additional opportunities for cross-jurisdictional collaboration and interoperability.

Although such benefits are impressive, they do not depend on the Fed offering a CBDC to the public. Much of the growth in digital currencies has been accomplished within the private sector without the Fed leading any such effort. Faster and more easily executed payments have come from the private sector. Venmo, Square, and Stripe are examples of innovative providers that have disrupted current legacy systems and greatly improved the payments system without government support. The private sector also has contributed to meaningful improvements in speed and convenience, affecting cross-border payments.

Also, although it is true that a CBDC would be free of credit and liquidity risks, this benefit is overstated. First, it is unclear whether the actual difference in credit and liquidity risk between a CBDC and private options, such as private coins backed by safe assets or commercial bank money with FDIC insurance, is sufficiently compelling to justify a CBDC. Second, there are policy options that can reduce liquidity and credit risks for payments that do not involve issuing a CBDC. For example, such risks can also be avoided by providing 100 percent FDIC insurance on bank deposits. Finally, the ability of a CBDC to reduce overall credit and liquidity risk is not guaranteed. With the introduction of a CBDC, banks would need to shift to other sources to meet their traditional funding requirements, and these new sources would continue to carry both credit and liquidity risks. Thus, the effect of a CBDC would be to shift risks rather than to eliminate them.

The paper suggests that the introduction of a dollar-denominated CBDC would strengthen or better assure the United States' role as the issuer of the world's reserve currency. This view has become more prominent with China's launch of its own national CBDC, which is seen as a move to make its currency an international means of exchange and settlement. However, having a CBDC is neither necessary nor sufficient for any currency to be a reserve currency. A durable reserve

currency requires an economic system that is not only well developed but operates under a clear rule of law and allows for the free flow of capital. The US financial system has these attributes and is among the most reliable means for international settlements, which are also transacted in digital form. Introducing a CBDC would have little effect on these attributes. What has become more critical to the United States' national and international role in payments is the need to settle in real time, which it is developing through its FedNow initiative.

A possible additional benefit of a CBDC is providing unbanked individuals access to the payment system. As noted in the paper, according to the 2019 FDIC Survey of Household Use of Banking and Financial Services, 5.4 percent of US households (approximately 7.1 million households) do not have a checking or savings account and are thus considered unbanked. Unbanked individuals are often reluctant to use banks over their concerns about high fees and over their general distrust of banks.<sup>1</sup> Thus, the idea of a safe central bank digital account, in the form of a CBDC, with modest or no fees and ease of access, is appealing to those who wish to eliminate any vestiges of an unbanked group.

Making a CBDC available to the public and businesses would certainly also make it available to unbanked individuals.<sup>2</sup> However, the logistics of offering a CBDC directly, through banks, or as some suggest, through the local post office, would be a significant challenge to all parties involved. Providing a subsidy to assure free access to a CBDC and related banking services to the 7.1 million unbanked households—as distinct from the broader banking public—would be difficult to accomplish and would likely be controversial. Doing so would also raise the question of whether a large enough portion of the unbanked public would join such a system to make the system worth the cost. In addition to distrusting banks, many unbanked individuals similarly distrust the Fed and the federal government. Thus, although serving unbanked individuals is a worthy goal, it carries a heavy cost, given the benefit for unbanked households that might be reluctant to use it.

Though not included in the discussion draft, one theoretical potential benefit that a CBDC may provide is a means of payment that can be used for all legal transactions without interference by banks and other private payment providers. Congress could require the Fed to process all payments for legal activities in the authorizing legislation and, to the extent applicable, the Constitution would also likely prohibit the Fed from denying service if such denial were to have the intent or effect of chilling legal speech or commerce in constitutionally protected items.<sup>3</sup> Such a payment method could serve as a useful hedge against efforts to restrict the access of legal but controversial industries, organizations, and individuals to payments services.<sup>4</sup>

Although the benefits identified by the Fed could certainly be valuable, there is no evidence that a CBDC is the only or even the best way to achieve these goals. Alternatives exist. For example, broader access to central bank settlement services could increase competition, drive

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1. MICHAEL S. BARR ET AL., CTR. ON L. & ECON. AT U. OF MICH., RESEARCH PAPER NO. 20-038, BUILDING THE PAYMENT SYSTEM OF THE FUTURE: HOW CENTRAL BANKS CAN IMPROVE PAYMENTS TO ENHANCE FINANCIAL INCLUSION (2020).

2. JESSE LEIGH MANIFF, FED. RESRV. BANK OF KAN. CITY, INCLUSION BY DESIGN: CRAFTING A CENTRAL BANK DIGITAL CURRENCY TO REACH ALL AMERICANS (2020).

3. It is unclear whether, in this context, the Fed banks, as opposed to the board of governors, would be considered government agencies and therefore subject to constitutional limitations on discretion. *Compare* Scott v. Fed. Reserve Bank of Kansas City, 406 F.3d 532 (8th Cir. 2005), *with* Fed. Reserve Bank of St. Louis v. Metrocentre Imp. Dist., 657 F.2d 183, 186 (8th Cir. 1981).

4. See generally Brian R. Knight & Trace Mitchell, *Private Policies and Public Power: When Banks Act as Regulators within a Regime of Privilege*, 13 N.Y.U. J. L. & LIBERTY 66 (2019).

down prices, and give consumers more power, which in turn could force service providers to offer a higher-quality, more available product. Such broader access also would help reduce the percentage of unbanked Americans. Regardless of the problem the Fed is trying to address, it is not yet clear that a CBDC is the answer. Therefore, the Fed, in conjunction with Congress, other regulators, and the private sector, should investigate those alternatives before any decision is made to introduce a CBDC.

## RISKS

Many of the risks identified in the discussion paper should be considered carefully. One that is especially salient is the potential disruptive effect a CBDC would have on the banking industry's structure and on financial stability. The Fed's issuance of CBDC accounts would substantially disrupt the commercial banking industry's role as an intermediary within the US economic system. The introduction of a CBDC would invite a shift of money out of bank deposits into direct central bank deposits, reducing bank deposits as a source of funds for the industry and likely affecting the relative cost of credit across the economy.

Also, during periods of increased economic strain and uncertainty, a CBDC would be the account and currency of choice, and the flow of deposits and other sources of funds from banks and fintech payment providers into the CBDC could be massive, further disrupting markets and credit flows, complicating both monetary and financial stability goals. During periods of severe economic stress, it is the national currency that the public most often embraces, whereas the privately issued currency fails.<sup>5</sup>

Also, if the Fed were to become the central depository of private-sector deposits through its CBDC, public pressure would almost certainly build for its mandate being expanded to providing credit to the public, corporations, and consumers. Credit allocation would become increasingly centrally controlled and politicized, and outcomes would become highly uncertain.<sup>6</sup> It would involve a massive expansion of central bank operations and power, undermining private institutions' role as intermediaries between depositors and borrowers that follows from their related role in payments. These are not hypothetical events but reflect trends in the Fed's growing role as liquidity and credit provider to corporations and consumers alike following the two most recent financial crises. Therefore, the unknown and potential unintended consequences of expanding the Fed's role in payments should give policymakers pause because there is a real risk that the cure would be more harmful than the perceived illness.

## THE RIGHT TO PRIVACY IN PAYMENTS

Fed CBDC accounts could provide the government with unprecedented access to individual financial transaction data, a risk that introduces significant privacy issues into the discussion. This will be a key national policy issue with the introduction of a CBDC as the government seeks to balance an individual's right to privacy against its need to contain illegal financial transactions. Currently, the Privacy Act of 1974 sets standards regarding government access to personal data. As

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5. See Markus K. Brunnermeier et al., *The Digitalization of Money* (Nat'l Bureau of Econ. Rsch., Working Paper No. 26300, 2019).

6. GREG BAER, BANK POL'Y INST., CENTRAL BANK DIGITAL CURRENCIES: COSTS, BENEFITS AND MAJOR IMPLICATIONS FOR THE U.S. ECONOMIC SYSTEM (2021).

one might expect, however, these statutes were designed in a different era of payments technology, and they need to be updated for the changing circumstances.

Technological innovations may provide a means to balance these conflicting priorities. However, technology is not sufficient to prevent abuse of these data should the government insist on its “need to know.” The issue of privacy versus need to know is long standing, and like the advent of CBDCs and digital currencies more broadly, solutions have yet to be developed to assure the public that the balance is right.<sup>7</sup>

Even if privacy-enhancing technology were introduced, there remains the political question of the rules a CBDC would operate under. The Fed assumes that any CBDC would need to comply with existing anti-money-laundering or counterterrorism financing rules, but this is not necessarily true. These rules are grounded in statute, and Congress could remove or modify those obligations if it authorizes the Fed to issue a CBDC. To be sure, Congress is unlikely to do so, but before the Fed embarks on issuing a CBDC that inherently presents significant privacy concerns, there should be a more robust discussion of how privacy in financial services can and should be maintained at a legal level, rather than just putting faith in technology.

## MONETARY POLICY

The Fed’s discussion paper acknowledges that the introduction of a CBDC might affect the efficacy of monetary policy. Its introduction would affect the role of bank reserves and how interest rates are set. Though of critical importance, these matters concern the mechanics of monetary policy and, with careful preparation, can be satisfactorily addressed before any form of CBDC is introduced. Such preparation seems achievable, given the degree of change in those mechanics since the Great Recession. For example, the Fed has changed its monetary operations, relying on a floor system for the federal funds rate rather than its traditional corridor system. It is not the mechanics of monetary policy that is critical in determining outcomes of monetary policy, but the policy paths chosen by those conducting it.

## SUMMARY

The Fed’s adoption of a CBDC would be a fundamental change for the US payments system. Its discussion paper acknowledges this and attempts to set out issues and identify benefits and costs following from CBDC introduction. A CBDC would fundamentally change the private sector’s role as an intermediary in the creation and distribution of credit and would place more responsibility within the central bank. Although a CBDC could reduce some sources of financial instability, it would fundamentally alter the structure of the banking system and create new risks. Finally, the Fed has not clearly articulated any market failure that a CBDC would solve or any essential objective that it alone would achieve. New innovations, improved efficiency, and new services come most frequently from the private sector. Although under the current system the Fed has a role in assuring reliable settlement and liquidity backstops for the payments system, there is little justification for it becoming a primary means for transacting payments across the economy.

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7. Katrin Tinn & Christophe Dubach, Central Bank Digital Currency with Asymmetric Privacy (Mar. 10, 2021) (unpublished manuscript), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3787088](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3787088); Nadia Pocher & Andreas Veneris, *Privacy and Transparency in CBDCs: A Regulation-by-Design AML/CFT Scheme*, IEEE TRANSACTIONS ON NETWORK AND SERV. MGMT. (forthcoming 2022).

## RESPONSE TO QUESTIONS POSED BY THE FEDERAL RESERVE

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

The paper does a good job identifying possible benefits and risks. Other possible benefits and risks are noted in our comments earlier.

### **Question 2: Could some or all of the potential benefits of a CBDC be better achieved in a different way?**

As identified in our comments earlier, issues of credit and liquidity risk can be addressed without the introduction of a CBDC if demand deposits are insured at 100 percent or if capital standards are strengthened to provide for greater financial stability within the payments system.

### **Question 3: Could a CBDC affect financial inclusion? Would the net effect be positive or negative for inclusion?**

Although financial inclusion is a worthy goal, it is not clear that introducing a CBDC would necessarily achieve that goal. In addition to not trusting banks, unbanked individuals may not trust the government either and would continue to rely on alternative nonbank payments services. Much more research is needed on whether enough unbanked individuals would adopt a CBDC to justify the subsidies and cost required to make it available.

### **Question 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?**

It is not clear what effect the CBDC would have on monetary policy. However, experience shows that the mechanics of monetary policy can be adjusted as needed by means of quantitative easing or other means of adjusting interest rates or bank reserves. Still, the continuing ability of the Fed to meet its mandate after the introduction of the CBDC warrants neither adoption nor rejection of such a reform.

### **Question 5: How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?**

The effect of a CBDC on financial stability is unknowable. However, given the disruption its introduction would have on the banking and finance industries, a great deal more research and analysis is required before it is introduced into a financial system as complex and integrated as that of the United States.

### **Question 6: Could a CBDC adversely affect the financial sector? How might a CBDC affect the financial sector differently from stablecoins or other nonbank money?**

Yes, as noted in the discussion paper and in our comments earlier, a CBDC would be highly disruptive and destabilizing to the financial sector. Private money such as stablecoins, should they become a significant part of the money supply within the economy, could potentially raise issues of systemic risk. However, unless the introduction of a CBDC is meant to drive private money from the market, a CBDC would not reduce the related risk. Also, to the extent that a CBDC does drive

demand deposits out of the banking industry, it introduces transitional and substitution adjustment and related risks as banks are forced to look for other forms of funding. This in turn could pose risks to economic growth and stability to the extent that credit access is reduced.

**Question 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?**

Given how disruptive a CBDC would be to the banking and finance industries, it is nearly impossible to know what would mitigate its effects. Over time the flow of deposits from the banking industry into the CBDC could be significant, and there are any number of other unintended consequences that might follow the CBDC's introduction. Would it enhance payments innovation, or would it slow it as the private sector finds itself having a smaller role in payments? Would it undermine the role of smaller community and regional banks in both payments and lending? These are just some of the questions that require attention before proceeding with a dollar-denominated CBDC.

**Question 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?**

Any CBDC should be a near-perfect substitute for cash and easily usable for small transactions. Also, physical cash should continue to be issued and supported as a means of payment to support customer preference, hedge against risk of disruption, and protect privacy.

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

The technology is available for digital cross-border payments. Stablecoin technology and other forms of private money make this possible. The Fed could play a role through the development of FedNow while also working with the banking industry on cross-border payments and settlement technologies.

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

The United States should study other large-economy nations that issue CBDCs to understand better the benefits, costs, and unintended consequences that come with their use. It should also determine what public good or market failure a CBDC addresses in each case. However, the United States should remain mindful that its constitutional system of government and the civil rights and liberties it is meant to preserve differ from other countries, sometimes in significant ways. Therefore, the United States must be cautious not to envy or emulate the "achievements" of authoritarian states and must avoid supporting anything, including a CBDC, that poses a meaningful risk to citizen privacy and security.

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

There are no obvious additional ways. Further study might identify opportunities for how best to manage any introduction of a CBDC into the economy.

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

It is highly unlikely that a CBDC could provide complete anonymity to consumers without also providing it to those intending to use the CBDC illicitly. However, this is not necessarily argument against anonymity. Since the founding of the United States, it has been understood that there are tradeoffs between liberty and security, with the balance usually tipping toward liberty. This is appropriate. Given the sensitivity and importance of financial privacy and the ability to transact legitimately without the intrusion of government, the United States should be willing to accept some risk of illicit use of a CBDC in exchange for privacy.

It should be noted that the traditional American conception of privacy is not pure anonymity but rather due process. The Framers of the Constitution could have prohibited the government from accessing personal records entirely, but they did not. Rather, they required the government to obtain particularized warrants based on probable cause from neutral magistrates. The rights of Americans in the financial sphere have been improperly eroded over time, and those rights could and should be restored. In this context, such restoration means that, to the extent that Congress is unwilling to allow complete anonymity, it becomes critical that a CBDC has extremely robust legal protections for user privacy built in. Such protections would include but not be limited to requiring a warrant before law enforcement can obtain or use records as part of an investigation or prosecution; severe penalties for unauthorized access or misuse of data; waivers of any claim of sovereign immunity or privilege in the event of misuse; and substantial liquidated damages for users whose data are inappropriately accessed, used, or compromised. Precautions should also include regular audits of government access to private transactions and, if necessary, investigations by an independent body charged explicitly and exclusively with protecting user privacy, and this body should be empowered to effectively conduct those audits and investigations.

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

Cyber risks are unavoidable. Operational backup systems, advanced cryptology, and a process of systemic upgrade will be of singular importance, just as they are today. Furthermore, maintaining alternative systems, such as physical cash, as hedges against cyber risk can help reduce the overall risk profile of the payments system.

**Question 14: Should a CBDC be legal tender?**

Yes, if it is to be considered money.

**Question 15: Should a CBDC pay interest? If so, why and how? If not, why not?**

Whether a CBDC should pay interest depends on its intended purpose. If it is to be a substitute for currency, then there would be no need, and it would be less disruptive to the banking industry because it would be less attractive as a substitute for other banking and finance funding products. If it is to be more of a monetary policy tool, then the Fed might seek legal authority to pay interest on CBDC.

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

No. Such a limit would only invite any number of efforts to avoid such restrictions. Also, large transactions could be monitored, assuming doing so were justified. Also, assuming provisions were made for offline transactions, there would need to be reporting requirements put in place, like those for cash transactions today.

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

Banks and licensed money transfer agents could be intermediaries and be supervised as they are today. These intermediaries would act as subcontractors, allowing the central bank to avoid the infrastructure and operational cost that would be required to hold public accounts and provide services to the public.

**Questions 18 and 19: Should a CBDC have “offline” capabilities? If so, how might that be achieved? Should a CBDC be designed to maximize ease of use and acceptance at the point of sale? If so, how?**

If a CBDC is to be a close substitute for cash, it will need offline capabilities and needs to possess the attributes of a digital Federal Reserve Note. It will be a bearer instrument (the same as cash), meet all the conditions of money, and be transferable without a third-party intermediary. In today’s jargon, it would be a digital token that could be electronically and anonymously transferred among individuals or businesses. The technology to create such a token appears to be available. However, monitoring for illicit activities would be a major challenge for authorities.

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

For a CBDC to be transferable over multiple payment platforms, the Fed, industry, and perhaps Congress would need to establish a common set of technical standards for the multiple platforms to meet. Yes, it is highly likely, given the complexity of the US payments system and the number of platforms in operation, that new, state-of-the-art technology would need to be employed.

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

The speed of change in payments technology will make the design, implementation, and coordination of a CBDC a major challenge, and such innovations will take years to implement.

**Question 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 response.