In a series of articles, we discuss recent efforts by regulators and other governmental bodies to set expectations and standards, or pursue governmental initiatives, with respect to cryptocurrencies and other virtual assets and the impact of these efforts on businesses engaged in virtual asset activities.

This article covers continuing deliberations by the Federal Reserve about the risks, benefits and feasibility of a U.S. central bank digital currency.

The Federal Reserve Weighs Risks and Benefits of a US Central Bank Digital Currency

On January 20, 2022, the Board of Governors of the Federal Reserve System published a much-anticipated discussion paper on the possible benefits and risks of creating a U.S. central bank digital currency (CBDC, sometimes called a “digital dollar” or “Fedcoin”). In keeping with the Federal Reserve’s cautious approach to this issue, “Money and Payments: The U.S. Dollar in the Age of Digital Transformation” is intended to be the first step in a public dialog between the Federal Reserve and various stakeholders regarding the prospect of a Federal Reserve-issued CBDC. While the paper avoids making specific policy recommendations, the Federal Reserve’s concerns and observations provide insight into the possible contours of a U.S. CBDC. More recently, a collaboration between the Federal Reserve Bank of Boston and the Massachusetts Institute of Technology has provided further evidence of the technical feasibility of a CBDC.

Key Takeaways

- Like cash, a CBDC would be a direct liability of the Federal Reserve and would allow households and businesses to access digital money in a manner that is generally free of credit and liquidity risk.

- A CBDC could potentially provide for safer, faster and cheaper payments (including cross-border payments), spur innovation and expand financial inclusion, but could pose certain risks to the financial sector and to the larger economy.

- A recent Federal Reserve Bank of Boston and Massachusetts Institute of Technology white paper shows that a CBDC can be designed to settle an extremely high volume of
transactions in a very short amount of time, providing further evidence that a CBDC at scale is technically feasible.

- The Federal Reserve’s analysis suggests that a CBDC that is widely transferable, privacy-protected, identity-verified and intermediated (that is, held by the public at accounts at regulated financial institutions rather than directly with the Federal Reserve) would best serve the public interest.

- The paper cautions that an interest-bearing CBDC could disincentive banks, threaten the stability of the financial system, and complicate the implementation of monetary policy.

- The paper indicates that the Federal Reserve will not issue a CBDC unless the potential benefits outweigh the risks, a CBDC is a better alternative to other payment technologies, and it has clear support from the White House and Congress, ideally in the form of an authorizing law.

- The paper solicits further feedback from the public by May 20, 2022, on the benefits, risks, design and policy considerations of a CBDC.

- Given the Federal Reserve’s cautious stance and the uncertainty of legislative action by Congress, we do not expect significant progress toward development of a U.S. CBDC this year.

**Background**

The advent of distributed ledger technology has resulted in the widespread adoption and use of privately issued digital currencies such as bitcoin and ether. This phenomenon has prompted central banks around the world to explore offering — and in some cases have already introduced — CBDCs to the public. According to a CBDC tracker maintained by the Atlantic Council, nine countries (the Bahamas, Nigeria, and seven member countries of the Eastern Caribbean Central Bank) have launched retail CBDCs (that is, CBDCs available to the public) that are in active use.2 Fourteen additional countries, including China, Saudi Arabia, Singapore, South Africa and Sweden are piloting CBDC projects. Of these, China’s CBDC, the “e-CNY,” has garnered the most attention. China has conducted trials through handouts of the e-CNY in select cities, however a nation-wide rollout has not been set.3

In the United States, the Federal Reserve has been studying the prospects of a CBDC for several years. It has collaborated on a series of articles published by the Bank for International Settlements exploring foundational principles and core features, systems design and interoperability, user needs and adoption, and financial stability implications of CBDCs.4 In February 2021, it published a “FEDS Note” describing high-level “environmental preconditions” needed to support the adoption of a U.S. CBDC.5 These preconditions include the need for clear policy objectives, wide stakeholder support, the proper legal framework, robust technology and market readiness.

The Federal Reserve is also studying technical aspects of a CBDC. The ability to settle an extremely high volume of transactions in a short amount of time will be critical to the success a CBDC in a large financial system such as the United States. The Federal Reserve Board’s Technology Lab is assessing the feasibility of issuing a CBDC that would leverage existing technologies, and the Federal Reserve Bank of Boston is collaborating with the Massachusetts Institute of Technology to explore the development of alternative platforms upon which a CBDC could be built. In their February 3, 2022, white paper cited above, they reported that they have produced a technical architecture that can process as many as 1.7 million transactions per second with 99% of all transactions completing in under a second. This is further evidence of the technical feasibility of a U.S. CBDC.

Recently, the White House signaled that an Executive Order on cryptocurrency is forthcoming.6 To the extent that this executive order addresses a potential CBDC, we anticipate that it will direct various executive branch agencies, including the Department of the Treasury and the Department of Commerce, to analyze the potential benefits and impacts of CBDCs in coordination with other governmental agencies, including the Federal Reserve.

On the legislative front, multiple proposals directed at identifying the policy issues associated with creating a CBDC have been introduced in Congress, but to date none have advanced. The Congressional committees with jurisdiction have conducted multiple oversight hearings this Congress on matters associated with cryptocurrencies, including CBDCs, but consensus around whether and how to implement a CBDC has not emerged. Absent

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2 Atlantic Council, *Central Bank Digital Currency Tracker*. Certain countries, such as Ecuador and Senegal, have had launched CBDCs only to cancel the project. Other efforts are not true CBDCs. For example, the Venezuelan “Petro” digital currency introduced in 2018, purportedly backed by government oil reserves, is not freely convertible with the bolivar and thus is not a true CBDC.

3 See, e.g., Kharpal, Arjun, “China to hand out $6.2 million in digital currency to Beijing residents as part of trial,” *CNBC.com* (June 2, 2021); Kharpal, Arjun, “China is pushing for broader use of its digital currency,” *CNBC.com* (January 19, 2022).


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a legislative proposal from the Treasury or active support from the Federal Reserve, we anticipate that Congress will likely continue to explore the issue in order to identify areas of consensus that a future Congress may use as a basis for legislation.

The January 2022 Discussion Paper
In publishing the paper the Federal Reserve continues its deliberative approach to CBDC. It emphasizes that the benefits of a CBDC to households, businesses and the larger economy must not exceed the risks, and a CBDC should deliver benefits better than alternative technologies. Moreover, a CBDC should complement, not replace, current forms of money and financial services, protect consumer privacy, protect against criminal activity and have broad support from various stakeholders.

Forms of Money in the United States
The paper situates a prospective CBDC in the context of the existing forms of money in the United States. The paper explains that in the United States, there are three main forms of money:

- Central bank money is a liability of the central bank and takes the form of either physical currency or digital balances held by commercial banks at the Federal Reserve.
- Commercial bank money is digital money held on the accounts of commercial banks, such as a consumer savings or checking account.
- Nonbank money is digital money held on the books at nonbank financial service providers, such as money transmitters.

The paper observes that each of these types of money carries different amounts of risk. It describes commercial bank money as being quite safe, and nonbank money as less so, lacking the full suite of protections applicable to banks, such as bank supervision and deposit insurance. Central bank money is the safest form of money, carrying no credit or liquidity risk. However, only commercial banks can hold digital balances at the Federal Reserve. Households and business have direct access to central bank money only in the form of physical currency.

Challenges in the Payment System
The paper notes that today a host of bank and nonbank payment services are available to consumers and businesses. New payment systems are being developed, such as the FedNow system, which will allow commercial banks to provide instant payment services to consumers and businesses, 24 hours a day, 365 days a year. However, while the current payment system works well for many Americans, many U.S. households remain unbanked or lack access to digital banking or payment services. Cross-border payments remain slow and costly.

In recent years, private cryptocurrencies such as bitcoin and ether have been proposed as a possible alternative to traditional payments. Yet, while cryptocurrencies have gained popularity, they have failed to gain traction as a means of payment for goods and services, due in part to their price volatility, difficulty of use, transaction costs and limitations in terms of transaction throughput (capacity to process transactions in a given time frame). Moreover, cryptocurrency transactions are seen as more susceptible to loss, theft or fraud than fiat currency and — depending on the consensus mechanism used to validate transactions — can be energy intensive.

To address the price volatility issue, some private ventures have developed so-called “stablecoins,” whose value is pegged to one or more currencies or assets, or are algorithmically stabilized, and which promise to provide a faster, cheaper and more stable alternative to cryptocurrencies with floating exchange rates. However, U.S. regulators have expressed concerns for the risk posed to the U.S. financial system by these privately issued stablecoins and have recommended that they be subject to comprehensive regulation.7

Potential Benefits of a CBDC
The paper notes that a CBDC could offer benefits not available from other payments technologies, including stablecoins. As a liability of the Federal Reserve, a CBDC would be the safest type of digital money available to the public. It would have no credit or liquidity risk and would not, for instance, require deposit insurance to maintain confidence or backing by asset pool to maintain value. Users, including consumers, businesses and governments, could make payments for goods and services. The government could use CBDCs to collect taxes or make benefit payments.

The paper highlights the following additional benefits:

Spurring innovation. A CBDC could level the playing field for payment systems innovations and provide a foundation for private sector solutions to meet current and future demands for payment services. Today, the costs of creating a safe and robust form of private money are prohibitive. A CBDC could allow smaller players to create new services and distribution models built around the CBDC. A CBDC could also do things that current digital money cannot do. For example, it could be programmable — for example, payments could be made on a predetermined schedule or upon certain conditions being met — and it could provide a cost-efficient way to make high-volume micro payments.

7 For additional details, see our November 16, 2021, client alert “Federal Regulators Move to Regulate Stablecoins Through Banking Laws Plus New Legislation.”
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Cross-border payments. CBDCs could help improve the cross-border payment system, which today is slow and expensive. That said, the paper cautions that achieving this would require significant international cooperation to ensure common standards and infrastructure, a legal framework to prevent illicit transactions and agreement about allowable participants, costs and implementation.

Support the international role of the US dollar. A U.S. CBDC could help maintain the leading role of the U.S. dollar in the world financial system. As foreign monetary unions and countries like China introduce their own CBDCs, demand for U.S. dollars abroad may fall. This has the potential to increase transaction and borrowing costs for U.S. consumers, businesses and the government, and reduce the ability of the United States to influence standards for the global monetary system.

Financial inclusion. A CBDC could reduce barriers to financial inclusion and reduce transaction costs, which would be beneficial to low-income households. The paper notes that further study is required to understand how well CBDCs could support such financial inclusion.

Extend public access to safe central bank money. While physical currency (cash) is still an important means of payment in the United States, its use is on the decline. A CBDC would provide consumers and business with a digital alternative to cash that is free of credit and liquidity risk, unlike bank and nonbank money currently available.

Potential Risks of a CBDC

The paper notes that, while offering many potential benefits, a CBDC could pose significant risks.

Changes to financial-sector market structure. A CBDC, particularly an interest-bearing CBDC, could fundamentally change the structure of the U.S. financial system. Of particular concern is the possibility that, as household and business use of a CBDC increases, they would decrease their use of commercial banks. That disintermediation could reduce the total volume of bank deposits, a stable funding source on which banks rely to extend loans, which could in turn increase costs to borrowers and decrease the availability of credit. Similarly, interest-bearing CBDCs could shift business away from other forms of low-risk assets such as money market mutual funds, Treasury bills and other short-term instruments, reducing the availability of credit and increasing the costs for businesses and governments. These risks could be mitigated, the paper notes, by making the CBDC non-interest-bearing, which would be less attractive as a substitute for commercial bank deposits, or by capping the amount of CBDC that a user could hold.

Safety and stability of the financial system. A CBDC could be a safe-haven asset in times of financial distress, and the ability to quickly convert bank and nonbank money to a CBDC could increase the frequency and severity of runs on the financial market. The paper observes that the risk of runs could be mitigated by design choices, including making the CBDC non-interest bearing or setting limits on the amount of CBDCs a user could hold.

Efficacy of money policy implementation. The design of a CBDC could have implications for monetary policy. The paper notes that the Federal Reserve currently manages the level of the federal funds rate and other short-term interest rates primarily through the setting of the Federal Reserve’s administrative rates while maintaining an ample supply of federal reserves. An interest-bearing CBDC in particular could complicate monetary policy by dramatically altering the demand for reserves. For instance, if the interest rate of a CBDC were at or near the rates of other safe assets, such as bank deposits and money market mutual funds, the volatility of public demand for the CBDC could be substantial and the Federal Reserve could experience significant outflows of reserves.

Significant foreign demand for a U.S. CBDC could also complicate the Federal Reserve’s implementation of its monetary policy, requiring the Federal Reserve to expand its holdings of securities, for example, to maintain an ample supply of reserves. The paper notes that an expanding body of literature is assessing the potential impact of a CBDC on monetary policy, bank deposits and lending, and the economic decisions of households.2 This research will no doubt influence the future thinking of the Federal Reserve about a CBDC.

Privacy and the prevention of financial crimes. A CBDC would generate information about users’ transactions. Such information would have to be protected. A CBDC would need to be designed to facilitate compliance with anti-money laundering (AML) and countering the financing of terrorism (CFT) laws and regulations.

Operational resiliency and cybersecurity. The paper cautions that the technical infrastructure of a prospective CBDC system would need to be extremely resilient to operational disruptions and cyber risks. Such risks would be amplified by the obvious interest of bad actors to exploit or degrade the system. Designing defenses could be particularly challenging given that a CBDC could potentially have many more points of entry than the existing payment system. The paper notes that operational resilience could


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be enhanced by having an offline capability, and central banks are currently researching the feasibility of such off-line systems.

The Federal Reserve’s Initial Analysis as to the Structure of a Prospective CBDC

Considering the benefits and risks described above, the Federal Reserve’s initial analysis, as described in the paper, suggests that a CBDC would best serve the public interest if it had certain key attributes. It would need to be readily transferable between consumers and various intermediaries. A CBDC would have to be privacy-protected, striking the proper balance between safeguarding users’ privacy while providing needed transparency to deter criminal activity. The use of CBDCs would need to be identity-verified in order to comply with AML/CFT laws and regulations.

Most significantly, the paper indicates that a CBDC would need to be intermediated. The Federal Reserve does not have the legal authority under the Federal Reserve Act to hold accounts for individuals and nonbank businesses. Moreover, the paper cautions that, even if such authority existed, maintaining retail accounts would dramatically expand the Federal Reserve’s role in the U.S. financial system and economy.

An intermediated model would comply with existing law and avoid the technical, operational and policy challenges of the Federal Reserve operating retail accounts. Households and businesses would be required to access CBDCs through accounts or wallets held at a regulated financial institution. The CBDCs would remain a liability of the Federal Reserve, but an intermediated system would leverage banks’ and payment processors’ existing privacy and AML/CFT controls, spur private sector innovation and pose the least risk of disruptions to the financial system.

Next Steps and Outlook for a US CBDC

The paper concludes by requesting further comments from stakeholders on the benefits, risks, design and policy considerations of a U.S. CBDC. It lists 22 specific questions to which the public may provide responses by May 20, 2022.

In light of the Federal Reserve’s continued deliberative approach, and the ongoing consideration of four nominees to the seven-member Federal Reserve Board by the U.S. Senate, we do not expect significant near-term movement toward a CBDC. In the first half of 2022, the Federal Reserve will likely be focused on receiving and digesting responses to its questions posed in the paper. In the second half of the year, the Federal Reserve’s deliberations may begin to coalesce into specific policy positions, based on the responses it receives and its continued dialog with other stakeholders, including the White House and key executive agencies. It is worth noting that mid-term elections this year may produce a new Congress in 2023 with a different perspective and legislative focus on digital currency matters that could impact deliberations by the Federal Reserve.

Notwithstanding these uncertainties, considering the paper’s focus on the advantages of intermediation and the risks of an interest-bearing CBDC, we think it is likely that the future conversation will crystallize into a clear policy preference for an intermediated, non-interest bearing CBDC.