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Three Initial Takeaways From the Federal Reserve's CBDC Discussion Paper

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Key developments in the United States over the past several months have kicked the digital currency transformation discussion into high gear. After the President's Working Group on Financial Markets' November 2021 Report on Stablecoins, two separate congressional hearings addressing stablecoins in December,[1] two nomination hearings in mid-January, and the Federal Reserve's issuance of its central bank digital currency (CBDC) Discussion Paper for comment[2] (CBDC Paper) on January 20, 2022, the pace of the U.S. government's response to crypto issues is unprecedented, and is expected to continue at a steady clip.[3]

On January 7, 2022, we authored a Stablecoin paper that tracked late 2021 U.S. developments. We explored various policy concerns associated with stablecoins and discussed ways innovation could continue within a clear and consistent prudential regulatory framework. Our idea remains premised on a special purpose federal banking charter/flexible insured depository institution model that would allow policymakers the ability to thoughtfully integrate stablecoins into the financial system, addressing risks while supporting innovation.

Our paper did not address whether a CBDC[4] could ultimately displace payment stablecoins[5] as a medium of exchange or a store of value. Instead, we continue to assume that the answer to this question will develop over time, and in parallel with the continued proliferation of payment stablecoins.

Our observations below focus on key aspects of the CBDC Paper, building on an idea from our Stablecoin paper: a future where federally regulated stablecoins and a CBDC co-exist, and multiple forms of money grow. Our initial takeaways are:

- CBDC and stablecoin uses may overlap, and each may serve distinct purposes. In the short term, stablecoin innovation could strengthen a U.S. CBDC.
- The safety of a U.S. CBDC should be understood within the broader context of operational risk.
- An intermediated CBDC design would appropriately leverage the private sector's innovation and frameworks, while promoting an open market for CBDC services.

Here we assume—unlike in the CBDC Paper—that as central banks around the world develop their own CBDCs, a U.S. CBDC appears inevitable, but will take several years to develop.[6] We also assume—consistent with the CBDC Paper—that developing a U.S. CBDC can only occur following "clear support from the executive branch and from Congress."[7]

1. CBDC and Stablecoin Uses May Overlap, and Each May Serve Distinct Purposes. In the Short Term, Stablecoin Innovation Could Strengthen a U.S. CBDC

Retail and Cross-Border Payments

Through the Bank for International Settlements (BIS), the Federal Reserve and other central banks have explored what a retail CBDC might look like. This work is occurring in parallel with potential development of a global stablecoin and the private sector's efforts to address challenges associated with payments. These challenges include that payments "remain slow, expensive and opaque, especially for retail payments such as remittances."[8] In the CBDC Paper, the Federal Reserve acknowledges 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."[9]

In the meantime, widespread adoption of stablecoins as a means of retail payment is expected to occur rapidly, and in parallel with global efforts to develop broader frameworks for crypto regulation. Consumers are using stablecoins as a form of remittance, facilitating the "near-real-time" cross-border settlement of funds.

While CBDC and stablecoins share these uses, the stablecoin industry—which today has a market capitalization of approximately $156 billion—has a significant head start in working through the challenges associated with streamlining cross-border payments. From the October 2019 BIS G7 Working Group on Stablecoins report "Investigating the impact of global stablecoins," these challenges include:

- Addressing correspondent banking fees, foreign exchange costs, telecommunication costs, scheme fees and interchange fees;
- A perception of significantly higher legal, regulatory, and compliance costs compared to domestic retail payments;
- Significant AML/CFT and sanctions compliance costs, especially where there are differences in rules or requirements across the jurisdictions involved and if preventive measures (customer due diligence, sanctions screening, etc.) are completed multiple times at different steps in the transaction chain;
- The need for greater harmonization of these detailed requirements and improved international cooperation and information-sharing;

- Payment service providers' struggle to interoperate due to a lack of standardization;

- International standards that are can be interpreted and implemented differently across jurisdictions;

- Different time zones and diverging opening hours for payment systems around the world; and

- Differing legal frameworks across jurisdictions and the uncertainty about the enforceability of contractual obligations resulting from participation in interlinked or shared payment platforms operating across borders.[10]

Given the disconnect between stablecoins as a form of digital currency today, and the future development of a U.S. CBDC, we expect the stablecoin industry to continue evolving and addressing the above challenges, in parallel with global standard-setting bodies and the development of a U.S. prudential regulatory framework. If meaningful progress is made in addressing these obstacles and reducing friction in international payments over the next several years, this will strengthen the likelihood of widespread U.S. CBDC adoption, and increase competition, providing consumers with greater choice.

Financial Inclusion

While the CBDC Report does not take a position on the prospects for a CBDC to increase financial inclusion, it acknowledges that further study would be helpful, including an assessment of cases targeted to underserved and lower-income households. To this end, the CBDC Paper notes an initiative at the Federal Reserve Bank of Cleveland that will "identify CBDC design features and delivery approaches focused on expanding access to individuals who do not currently use traditional financial services."[11] Further, through the CBDC Paper, the Federal Reserve seeks comment on whether a CBDC could "affect financial inclusion," and whether "the net effect [would] be positive or negative for inclusion."[12]

There is healthy debate whether stablecoins advance financial inclusion.[13] Skeptics maintain that stablecoins saddle investors with high fees, and that stablecoins subject consumers to the same barriers many face when accessing their bank or mobile money accounts. On the other hand, the speed and potential for frictionless cross-border remittances associated with stablecoins could provide underserved and lower-income households with cheaper and faster remittance options.

At least one stablecoin issuer has considered how stablecoins could improve financial inclusion. These initiatives include:

- Allocating a share of stablecoin reserves (cash and short-term Treasuries) to Minority Depository Institutions and community banks through public/private partnerships and in collaboration with banks and regulators;

- Spearheading digital financial literacy initiatives, in partnership with Historically Black Colleges and Universities, to ensure broader accessibility; and

- Establishing a rapid response team designed to collaborate with aid, development, and humanitarian interventions worldwide, as well as spur public/private partnerships for mobilizing faster payments.

Whether stablecoins further financial inclusion remains to be seen. At a minimum, the open and interoperable blockchain system associated with stablecoins could lower the cost of providing remittance services, which should ultimately result in savings to consumers.

As the stablecoin industry seeks to prove its case to regulators and the public in real time, parallel initiatives sponsored by the Federal Reserve will continue exploring financial inclusion use cases in the CBDC context. One challenge CBDCs will need to overcome involves interoperability—i.e., the "significant international coordination needed to address issues such as common standards and infrastructure, the types of intermediaries that would be able to access any new infrastructure, legal frameworks, preventing illicit transactions, and the cost and timing of implementation."[14] Ongoing initiatives between the Federal Reserve Bank of Boston and the Massachusetts Institute of Technology's Digital Currency Initiative to explore a CBDC design that would leverage newer technologies, such as blockchain,[15] could aid in addressing the CBDC interoperability challenge.

Given regulatory and congressional interest in the prospect of digital currencies and financial inclusion, we expect stablecoin issuers to remain focused on these issues, potentially laying the foundation for public/private partnerships that could improve digital financial literacy in the short term, and expand CBDC adoption in the long term.

Other Uses

CBDC and stablecoin uses may not align in all cases. For example, the CBDC Paper envisions "governments . . . us[ing] a CBDC to collect taxes or make benefit payments directly to citizens."[16] This use of a CBDC helps address the concerns of those who believe that if distributed ledger technology had been used in distributing $2.2 trillion of stimulus funds under the Coronavirus Relief Act, recipients would have received funds faster and more securely (compared to alternative payment methods). In addition, the U.S. government may have been able to better ensure stimulus applicants and recipients adhered to the government's program rules and eligibility requirements.

In the future, stablecoin issuers and payment services processors may also play an important role as conduits between state and federal governments and the general public. For now, we expect stablecoins will remain the digital currency choice for digital asset trading within a distributed ledger environment.

Going forward, a central question for the Federal Reserve is whether varied uses of a CBDC "provide benefits to households, businesses, and the overall economy that exceed

any costs and risks, and whether they yield such benefits more effectively than alternative methods."[17]

2. The Safety of a U.S. CBDC Should Be Understood Within the Broader Context of Operational Risk

One theme throughout the CBDC Paper (and the broader CBDC discussion) is that central bank money is the most trusted and safest form of money because the Federal Reserve, as a central bank issuer, presents no credit risk and no liquidity risk.[18] Therefore, "a CBDC would be the safest digital asset available to the general public . . ."[19]

However, the CBDC Paper also notes that "threats to existing payment services—including operational disruptions and cybersecurity risks—would apply to a CBDC as well," and that "any dedicated infrastructure for a CBDC would need to be extremely resilient to such threats."[20] Moreover, "[d]esigning appropriate defenses for CBDC could be particularly difficult because a CBDC network could potentially have more entry points than existing payment services."[21]

Generally, "operational risk" is the risk that "efficiencies in information systems or internal processes, human errors, management failures, or disruptions from external events will result in the reduction, deterioration, or breakdown of services." Operational risk was one of the key risks cited in the Report on Stablecoins related to "cybersecurity and the collecting, storing, and safeguarding of data."[22] As noted in the Report on Stablecoins:

> [O]perational issues in a payment system can disrupt the ability of users to make payments, which can in turn disrupt economic activity. If an operational problem results in a payment error or enables fraudulent payments, users could lose their money. Stablecoin arrangements face many of the same types of operational risks as existing payment systems but could have the potential to be more operationally resilient in some respects. However, they can also face novel operational risks related to the validation and confirmation of stablecoin transactions and the management and integrity of the distributed ledger. [. . .] Operational risks may also be more difficult to manage or supervise in a stablecoin arrangement, especially when the supporting infrastructure is beyond the control of any one organization (including the entities involved in the stablecoin arrangement) and there is no clear entity to regulate.[23]

If we assume that operational risk is endemic to both a CBDC and stablecoins, is a CBDC any safer than a full-reserve narrow bank stablecoin model where issuances are backed by a 100 percent reserve of cash or cash equivalents? Having experienced its own "operational error" for several hours in 2020 with the Fed ACH system, Check 21, FedCash, and Fedwire, the Federal Reserve is well aware that system-wide outages can have wide-ranging impacts, including on direct deposits of payroll, Social Security and

income tax refunds, as well as auto payments for mortgages and utility bills. So, too, are stablecoin issuers vulnerable to significant impact from outages as they, on a relatively smaller scale, have experienced software bugs and wallet provider cyberattacks, the recurrence of which could meaningfully impact investors' ability to redeem their stablecoins.

If stablecoin issuers are required to be insured depository institutions,[24] issuers' efforts to strengthen their operational resilience and cybersecurity protocols would be subject to appropriate supervision and regulation. The open-source technology upon which stablecoins are based promotes transparency and interoperability, and, as with any blockchain, the security of that chain depends on the strength of its decentralization.

In a CBDC model, however, it is not clear to what extent the Federal Reserve's framework for "[d]esigning appropriate defenses for CBDC" would be made transparent to the general public, or to what extent it would be blockchain based. Nor is it clear to what extent the Federal Reserve would be required to report failures, and the relevant threshold for reporting.[25]

Well-developed public transparency frameworks governing: (i) stablecoin issuers and wallet providers; (ii) the Federal Reserve; and (iii) intermediaries within the private sector that would provide accounts or digital wallets to facilitate the management of CBDC holdings and payments would be an important way to ensure accountability, support safety and soundness, and promote widespread adoption of both stablecoins and CBDC.

3. An Intermediated CBDC Design Would Appropriately Leverage the Private Sector's Innovation and Frameworks, While Promoting an Open Market for CBDC Services

A potential U.S. CBDC would "best serve the needs of the United States by being privacy-protected, intermediated, widely transferable, and identify-verified."[26] Because the Federal Reserve Act does not authorize direct Federal Reserve accounts for individuals, under an intermediated model, the private sector would offer accounts or digital wallets to facilitate the management of CBDC holdings and payments. The potential intermediaries could include "commercial banks and regulated nonbank financial service providers, and would operate in an open market for CBDC services."[27]

Financial institutions and regulated fintechs are best positioned to use their expertise and creativity to integrate payment services with consumer platforms and other financial products. This view is supported by the Bank for International Settlements (BIS), an international standard setter that views CBDCs as an opportunity for the monetary system. From the BIS 2021 Annual BIS Economic Report:

> The benefits of such an "intermediated" CBDC architecture would be a diminished need for centralised data collection and perhaps better data security due to the decentralised nature of record-keeping – aspects that have been discussed in several advanced economies. By reducing the

> concentration of data, such designs could also enhance privacy . . . . The downside is that additional safeguards and prudential standards would be necessary, as [payment service providers] would need to be supervised to ensure at all times that the wholesale holdings they communicate to the central bank accurately reflect the retail holdings of their clients.[28]

We think the following principles could help guide the regulatory framework relevant to CBDC intermediaries:

- Leveraging, to the maximum extent, intermediaries' existing compliance frameworks, including for Bank Secrecy Act and anti-money laundering regulations, as well as consumer protection;

- Requiring transparency governing operational resilience and cybersecurity protocols;

- Ensuring an equal playing field for all intermediaries, including banks, regulated fintechs, and payment service providers, to compete;

- Supporting regulation that promotes global interoperability with non-U.S. CBDCs, thus avoiding market fragmentation; and

- Developing a comprehensive CBDC-specific examination training program through FFIEC as a means of educating federal bank supervisors on the safety and soundness and consumer protection risks associated with CBDCs.

As the digital currency transformation discussion continues, it is important to remember how early we are in understanding the various questions associated with CBDCs and stablecoins, including how they will co-exist, their inherent risks, and consumer privacy, data identity, and interoperability issues. Our initial observations here and in our Stablecoin paper have focused on a discrete subset of these questions.

We look forward to tracking this dialogue domestically and globally, and in the future offering our thoughts on how to address consumer privacy and safety concerns, how best to foster optionality and innovation, and broader means of modernizing and improving our payments system.

Endnotes

[1] *See* Digital Assets and the Future of Finance: Understanding the Challenges and Benefits of Financial Innovation in the United States and Stablecoins: How Do They Work, How Are They Used, and What Are Their Risks?

[2] Comments are due by May 20, 2022.

[3] *See* Rep. Patrick Henry's (R-NC 10) letter to Rep. Maxine Waters (D-CA 43); Biden Administration to Release Executive Order on Crypto as Early as February: Report; and Waters Announces February Committee Schedule.

[4] For purposes of this paper, we adopt the Federal Reserve's definition of a CBDC, which is "a digital liability of a central bank that is widely available to the general public." This definition appears to include a narrower-purpose CBDC, such as one designed primarily for large-value institutional payments not widely available to the public (e.g., a wholesale CBDC), but this narrower definition is not the focus of the CBDC Paper. CBDC Paper at 13 n.19.

[5] Payment stablecoins are distinct from a smaller subset of stablecoin arrangements that use other means to attempt to stabilize the price of the instrument (sometimes referred to as "synthetic" or "algorithmic" stablecoins). This paper (and the Report on Stablecoins) focuses on payment stablecoins given their more widespread adoption. We will hereinafter refer to payment stablecoins simply as "stablecoins" except where distinguished from other types of stablecoins.

[6] The CBDC Paper notes that any U.S. CBDC should, among other things: (i) provide benefits to households, businesses, and the overall economy that exceed any costs and risks; (ii) yield such benefits more effectively than alternative methods; (iii) complement, rather than replace, current forms of money and methods for providing financial services; (iv) protect consumer privacy; (v) protect against criminal activity; and (vi) have broad support from key stakeholders. CBDC Paper at 1-2.

[7] CBDC Paper at 3.

[8] https://www.bis.org/cpmi/publ/d187.pdf at ii.

[9] CBDC Paper at 15.

[10] *See* https://www.bis.org/cpmi/publ/d187.pdf at 4.

[11] CBDC Report at 16 n. 21.

[12] CBDC Report at 21.

[13] *See*, e.g., Blockchain Association, How Digital Dollar Stablecoins Can Help Bring More Consumers Into the Financial System, https://theblockchainassociation.org/how-digital-dollar-stablecoins-can-help-bringmore-consumers-into-the-financial-system/#:~:text=Stablecoins%20not%20only%20provide%20help,interact%20with%20the%20financial%20system. ("The speed, low cost, and low barriers to entry that stablecoins offer give current bank users more options of how to interact with the financial system."), but see What is the Value Proposition of Stablecoins for Financial Inclusion?, World Economic Forum (Nov. 2021), https://www3.weforum.org/docs/WEF_Value_Proposition_of_Stablecoins_for_Financial_Inclusion_2021.pdf at 8 ("The principal finding of this white paper is that stablecoins are subject to many of the same barriers that constrain citizens from accessing other financial products and services, such as bank accounts, mobile money accounts or fully digital remittance providers. Where stablecoins are accessible, they generally address financial inclusion barriers to a similar degree as other digital financial services. They may also introduce new risks, which vary depending on the specific system.").

[14] CBDC Report at 15.

[15] CBDC Report at 23.

[16] CBDC Report at 14.

[17] CBDC Paper at 1-2.

[18] CBDC Paper at 25.

[19] *Id.* at 13.

[20] *Id.* at 20.

[21] *Id.*

[22] Report on Stablecoins at 12.

[23] *Id.* at 13.

[24] Report on Stablecoins at 2.

[25] Cf., the federal banking agencies' computer-security incident notification rule at https://www.federalregister.gov/documents/2021/11/23/2021-25510/computer-security-incident-notification-requirements-for-banking-organizations-and-their-bank (requiring a banking organization to notify its primary federal regulator of any "computer-security incident" that rises to the level of a "notification incident," as soon as possible and no later than 36 hours after the banking organization determines that a notification incident has occurred).

[26] CBDC Paper at 13.

[27] *Id.* at 13.

[28] https://www.bis.org/publ/arpdf/ar2021e3.pdf (internal citation omitted).