**The Digital Dollar Project**
**Response to The Department of Commerce**
**Developing a Framework on Competitiveness of Digital Asset Technologies**[1]

## Introduction

The Digital Dollar Project (DDP) is a non-profit organization with a mission to encourage research and public discussion on the potential advantages of a digital dollar, convene private sector thought leaders and actors, and help inform national policy.

## Competitiveness

(1) What are the features of U.S.-based digital asset businesses (*e.g.,* administrators, operators, validators, and other key stakeholder roles in the function of digital assets as well as the exchanges, brokers, and custodians used to trade and store them) that currently underpin their competitiveness in a global market? Will these features support future competitiveness?

The healthy regulatory frameworks across U.S. industries have inspired responsible innovation and allowed participants to innovate and successfully deploy leading technologies. Over the past few years, the U.S. private sector has led digital asset market innovation and has primarily denominated markets in U.S. dollars. The U.S. private sector currently has a lead position in these markets and should be encouraged to continue this success. When exploring a U.S CBDC, the U.S. should champion this model of technological innovation paired with clear regulation. Just as the U.S. has done throughout the evolution of the internet and space exploration, the U.S. should allow its private sector to lead in developing global standards, technologies, and principles. The global digital asset landscape will reflect the vision of pioneers who embed their principles into the development of this technology. The future of digital assets and central bank digital currency will impact many of the stakeholders in today's environment but will likely change their roles and responsibilities. Similar to the distribution of physical cash, which involves multiple stakeholders, the Digital Dollar Project (DDP) believes that a U.S. CBDC should be distributed through a two-tiered architecture of commercial banks and regulated money transmitters. The DDP urges the U.S. government to strive for the convening of the private sector innovation and competition in exploring a secure U.S. CBDC to remain competitive and create a foundation and confidence to compete in the rapidly evolving global industry.

(2) What obstacles do U.S. digital asset businesses face when competing globally? How have these obstacles changed over the past five years and are any anticipated to disappear? Are there clearly foreseeable new obstacles that they will face in the future? What steps could the U.S. government take to remove, minimize, or forestall any obstacles?

As the U.S. explores a CBDC, it will be faced with the design and policy choices of foreign countries that have already started developing and deploying CBDCs. Advancing regulations and standards in these countries have the potential to render an effective tokenized dollar unviable and inconsistent with regulatory treatment and enforcement of tokenized monies across jurisdictions. As CBDCs are digitally native to internet protocols and do not have geographic borders, global regulation will be increasingly crucial for the U.S. to play a proactive role and take a cooperative approach. The U.S. has lagged in CBDC innovation partly due to the regulatory uncertainty in the U.S. broader digital asset sector. This current

[1] Department of Commerce, "Developing a Framework on Competitiveness of Digital Asset Technologies," https://www.federalregister.gov/d/2022-10731

uncertainty should impel the U.S. to refocus on the core infrastructure and benefits realized by digital asset innovation today. The U.S. can learn from global explorations on the benefits of tokenized money into the design and potential deployment of a U.S. CBDC.

Additionally, to strengthen U.S. competitiveness in CBDC initiatives and research, the U.S. can work to further regulatory frameworks. According to digital assets economist Ganesh Viswanath-Natraj of Warwick Business School, there are four critical and imminent needs for regulation[2]. These risks are similar to any collective investment scheme (e.g., with mutual funds, there are regulations in place to mitigate these risks) and can be applied to the necessary broader framework needed for the possible deployment of a U.S. CBDC:

- There should be capital requirements and audits to ensure full collateralization
- There is a need for public or private insurance through a deposit guarantee scheme, akin to FDIC insurance that banks have
- There is a need for the U.S. to provide liquidity to the banks and interoperability between currencies to prevent run risk
- There is a need for macroprudential regulation to prevent any subjection to systematic risks in the banking sector, households, and firms

Additionally, the U.S. can look to remove barriers preventing a U.S. CBDC from becoming politicized and encourage public discussion and research to make the most informed and collective decisions. The Digital Dollar Project will continue to engage public and private sector participants to promote discovery and advance CBDC priorities but calls on the Department of Commerce and the broader government to invest in a cohesive policy approach and testing of a U.S. CBDC.

(3) How does the current U.S. regulatory landscape affect U.S. digital asset businesses' global competitiveness? Are there future regulatory shifts that could support greater global competitiveness of U.S. digital asset businesses? How does the U.S. regulatory landscape for digital assets compare to that in finance or other comparable sectors?

The U.S. regulatory landscape for digital assets is immature compared to the clear regulation and consumer protection measures in traditional finance sectors. Opaque and ambiguous regulatory frameworks have left the U.S. in an abstruse environment for digital asset conversations and the general populace's understanding of the differences between cryptocurrency, stablecoins, and CBDCs. To have meaningful discussions around exploring the benefits of a U.S. CBDC, especially financial inclusion, the U.S. should develop a classification framework/taxonomy to provide a common ontology/vocabulary to differentiate between the different digital currency types and how they interact. The Digital Dollar Project believes that there is a valuable interplay between CBDCs and existing digital currencies, but it can only be realized if there is clarity across the landscape. Creating a framework/taxonomy will be vital on the global stage to ensure interoperability and, therefore, the broader competitiveness of the U.S. dollar.

Additionally, as learned in the digital asset sector today, the U.S. must take a systematic approach to close the gap between the speed of innovation and the development of policies and regulations. The

[2] Warwick Business School, "Are Digital Currencies the Future?," https://ganeshvnatraj.netlify.app/files/Westminster_Ganesh.pdf

Department of Commerce can drive private and public sector collaboration to coordinate efforts to achieve a safe regulatory framework that fosters competition and innovation.

(4) What are the primary challenges to U.S. technological leadership in the digital assets sector?

Globally, diverse agents will challenge the development of U.S. leadership in digital assets over the coming years. As noted in the recent publication of the Atlantic Council's CBDC Tracker, over 80 countries representing approximately 90 percent of global GDP are investigating CBDCs. The U.S. is one in three in the G20 not actively developing a CBDC[3]. On a worldwide stage, the U.S. will be challenged by foreign markets striving to establish their interests through providing regulatory frameworks that invite global innovation or impose restrictions on foreign actors. The Digital Dollar Project believes that proactive investigation of the risks and benefits of a U.S. CBDC is vital to future-proofing the dollar. The DDP applauds the Boston Fed's Project Hamilton report and other research initiatives for their work on testing CBDC capabilities and believes these efforts should be supported, reinforced, and expanded.

Domestically, U.S. technology leaders are facing legal and regulatory challenges due to opaque or outdated laws and frameworks. Malicious or negligent market participants have created market turmoil for all participants and have soured consumer perceptions. As financial institutions and fintechs will remain a part of the success of a potential CBDC, it will be necessary for the U.S. government to provide a solid vision for experimenting with CBDC giving technology leaders the confidence to pave the way for innovative intermediary solutions both domestically and internationally.

(5) What impact, if any, does the global nature of the digital assets sector have on U.S. digital asset businesses' ability to attract and retain talent and maintain leadership in development and operation of digital asset technologies within the United States?

As in most industries, the U.S. competes with global markets to attract and retain quality digital asset technologists and innovators. Digital assets, enabled by distributed ledger and blockchain technology, redefine traditional markets and introduce new markets and opportunities. Top innovators and technologists from around the globe are exploring the potential of this new technology and will gravitate towards economies that have the potential for growth and advancing innovation. By developing a clear roadmap and common language for the exploration of a U.S. CBDC, the U.S. will be able to provide tangible and real opportunities for quality talent. Central Bank Digital Currency will radically change the way that digital business is operated, and global entrepreneurs will gravitate towards economies that adopt this technology. Additionally, the U.S. should strive to maintain an open and honest discussion to depoliticize CBDC conversations, enabling a stable and mission-driven work environment.

(6) What, if any, is the future role of digital assets mining [2] in the U.S. digital assets sector? Can digital assets be compatible with a low-carbon economy that emphasizes renewable energy? If so, how? In what ways can the U.S. government and U.S. companies drive competitive, *sustainable* (for the environment and energy consumption) development of digital assets?

Cryptocurrencies with distributed protocols use different models of consensus mechanisms to validate transactions and mine new tokens. Consensus mechanisms ensure the accuracy of activity on the network and secure the network from malicious actors. Proof of Work (PoW) or Proof of Stake (PoS) consensus models incentivizes network users to spend computing energy to validate transactions by

[3] Atlantic Council, "Central Bank Digital Currency Tracker," https://www.atlanticcouncil.org/cbdctracker/

rewarding them with additional network tokens. These incentive-based models use significant computing power, which can have a considerable carbon footprint. Although distributed consensus models are necessary to validate networks with no central authority, most institutional-grade DLT applications and private networks do not use PoW or PoS models. Digital asset networks with designated authorities usually assign responsible entities to validate and record transactions while ensuring that specific information remains private. It should be assumed that a CBDC would not use distributed consensus mechanisms and would assign trusted financial or government entities to validate transactions. These networks use much less energy than distributed consensus model networks and equal or less energy than traditional payment technologies. A CBDC would not have a higher carbon footprint than existing digital payment mechanisms or even physical cash economies. Depending on CBDC configurations, research has shown that CBDCs can be more energy-efficient than much of the current payment landscape, including credit and debit cards which account for approximately three-quarters of cashless transactions today.[4]

(7) What impact, if any, will global deployment of central bank digital currencies (CBDC) have on the U.S. digital assets sector? To what extent would the design of a U.S. CBDC (*e.g.,* disintermediated or intermediated, interoperable with other countries' CBDCs and other domestic and international financial services, etc.) impact the sector?

The decision of other large economy nations to issue CBDCs will have a meaningful impact on global finance and America's economy. Preserving the dollar's central role in the global economy is an appropriate and correct objective of U.S. policy. Foreign countries are developing CBDC capabilities to replace traditional payment rails and provide CBDC as a service to global financial participants. The global leaders of CBDC exploration will dictate the technology and standards in CBDC development. The Digital Dollar Project is focused on supporting the U.S. in taking a leadership role in exploring and designing a CBDC that upholds our democratic values of freedom, economic stability, and personal privacy. In a CBDC future, the U.S. should be active and lead discussions regarding governance, interoperability, security, privacy, and scalability standards, rather than reacting to foreign CBDC decisions.

While technology is but one factor underpinning global currency use and adoption, it is critical – the U.S. must future-proof the dollar's role in an increasingly digital world. In early 2021, the Hoover Institute convened a working group of distinguished experts in national security, finance, economics, central banking, technology policy, and computer science to study the global implications of the digital yuan, or e-CNY, China's central bank digital currency. During the study period, over 250 million Chinese people opted for the e-CNY. In March 2022, the working group issued its analysis[5], which detailed the degree to which China has established a first-mover advantage in not only the deployment but the technical underpinnings of CBDC. The study notes that e-CNY will be a digital substitute for paper money, grant more Chinese people access to the banking system, and provide Beijing with greater oversight and control of businesses and individual financial transactions. It warns that the e-CNY enhances Beijing's ability to exercise political control over Chinese society and provides a significant opportunity for China to cement its international leadership of payment technology innovation and adoption, set economic

[4] BIS, "Analysis of the 2020 Red Book Statistics," bis.org/statistics/payment_stats.htm
[5] Hoover Institution, "Digital Currencies: The US, China, And The World At A Crossroads, edited by Darrell Duffie & Elizabeth Economy," https://www.hoover.org/sites/default/files/research/docs/duffie-economy_digitalcurrencies_web_revised.pdf

norms and technical standards that align with its authoritarian governance system and increase its ability to undercut the traditional dominance of the U.S. dollar as a source of geo-economic and strategic influence. The Hoover study warns that the spread of the e-CNY might diminish the dollar's role as the world's reserve currency and undermine the ability of the U.S. to deploy financial sanctions against rogue international actors.

While this future may be far out, as more recent movement has shown that China's privacy concerns have led to a lack of meaningful adoption, the Hoover Institute calls on the U.S. to respond to a spectrum of crucial policy concerns raised by the e-CNY. The U.S. must take the international stage affirmatively committed to democratic norms of privacy, accountability, transparency, and security in shaping the global rules surrounding CBDCs.

The Hoover study offers three broad recommendations for the U.S.:

- The U.S. should launch a well-resourced CBDC research and development effort drawing on the talent of U.S. government, private sector, and university actors to ensure privacy, prevent illegal payments, and provide for a competitive and innovative payment landscape.
- The U.S. should establish a strategic plan for payment systems in the U.S. digital economy that provides for the development of data privacy standards and the integration of CBDCs, fast-payment systems, and private payment arrangements, such as stablecoins.
- The U.S. should lead the development of an international regulatory framework around digital currencies, including CBDCs, that prioritizes consumer protection, privacy, financial anti-crime compliance, financial stability, and the protection of monetary sovereignty.

To achieve the above objectives, the Digital Dollar Project believes that the U.S. should anchor its work in the core characteristics in our champion model below:

- **Tokenization**: A digital dollar will be a tokenized form of the U.S. dollar
- **Third format of currency:** A digital dollar will operate alongside existing fiat currency and commercial bank money. It will mirror many properties of physical money, including its ability to work alongside existing account-based systems
- **Maintenance of the two-tiered banking system:** A digital dollar will be distributed through the existing two-tiered architecture of commercial banks and regulated intermediaries
- **Privacy:** The digital dollar will support a balance between individual privacy rights and necessary compliance and regulatory processes, decided upon by policymakers and ultimately reflecting the jurisprudence around the Fourth Amendment
- **Monetary policy-neutral:** A digital dollar will not impact the Federal Reserve's ability to affect monetary policy and control inflation. A digital dollar could act as a new policy tool
- **Technology decisions and design choices driven by functional needs:** The policy and economic requirements of a digital dollar will inform both the underlying technology and ultimate design choices
- **Future-proofing the architecture through flexibility:** The chosen technological architecture will offer the flexibility to adapt configurability based on policy and economic considerations
- **Continued private sector innovation:** A digital dollar will act as a catalyst for innovation and will not be antithetical to the development of private sector initiatives

Lastly, introducing a U.S. CBDC may catalyze increased adoption of other digital asset variations. With digitized money backed by the U.S. government, the adoption of digital wallets may increase, which will

invite consumers to access digital assets of all kinds, furthering the digital asset ecosystem to work in tandem. This trend is already seen with traditional finance players, like PayPal and Venmo, offering decentralized finance services and products.

(8) Should digital assets be given specific consideration in trade agreements? If so, to what extent? What types of provisions would be beneficial to the U.S. digital assets sector in the United States? Are there provisions that would be beneficial to U.S. businesses and consumers?

As foreign countries are exploring CBDCs, it is essential to consider the transformation of the global trade landscape as CBDCs become operating systems for wholesale financial transactions. If financial markets continue to adopt DLT technology, CBDC would serve as a native digital currency that is interoperable with tokenized markets. For example, CBDC could be used for commodity transactions such as lending, collateral, and settlement. It has been projected that CBDC could make cross-border payments more efficient and alleviate the $1.7 trillion global trade financing gap.[6]

The decisions that foreign governments will make when designing and issuing CBDCs will have a significant impact on global markets. Foreign governments are currently developing CBDCs intending to require CBDC payments in international trade. Israel, Russia, Sadia Arabia, and Iran have begun accepting Yuan for oil, which could one day be the Digital Yuan. The discussion of digital assets in trade agreements is growing, as seen during China and Iran's trade agreement meeting in 2021. Foreign nations are also looking to develop their payment networks as a way to avoid sanctions like those currently imposed on Russia. The Digital Dollar Project urges the U.S. to lead the global discussion on CBDCs and use convening power to harmonize much-needed standards on data and international payment protocols.

(9) What other factors related to economic competitiveness should Commerce consider in the development of the framework?

Fair markets that facilitate innovation and digital asset network development standards are critical to economic competitiveness. Similar to the internet using standards such as HTML, pdf, or jpg, or how the internet of things uses Bluetooth or NFC (near-field communication), a future of digital networks will require standards for network development and interoperability. Foreign regulators are working to advance DLT standards within their jurisdictions and globally. Developing clear and accessible standards will enable greater industry collaboration and competitiveness. The Department of Commerce can work with the industry to establish standards that ensure U.S. values on a global stage. To understand and mitigate any potential adverse impact(s), the Digital Dollar Project (DDP) encourages the public sector to work with private institutions and participants to understand how they would use a CBDC. Regulators can learn more about the implications of a CBDC issuance by performing gaming simulations, pilot programs, and research studies with broad stakeholder involvement. To this end, the DDP intends to facilitate exploratory pilot programs with industry participants further to inform stakeholders of the implications of a U.S. CBDC.

(10) Beyond enhanced economic competitiveness, how can the U.S. digital assets sector advance the other objectives outlined in the Executive Order? These other objectives include protection of consumers, investors, and business in the United States; protection of United States and global financial

[6] WEF, "3 ways digital currencies could change global trade," https://www.weforum.org/agenda/2022/01/digital-currencies-international-trade/

stability and the mitigation of systemic risk; and mitigation of illicit finance and national security risks posed by misuse of digital assets.

The Digital Dollar Project believes that CBDCs can provide benefits across various U.S. markets and advance the objectives outlined in the Executive Order. Across retail, wholesale, and international payments, a tokenized digital dollar would provide a new payments infrastructure that complements and sits alongside existing infrastructures, offering optionality, reduced risk, increased efficiency, and, if desired, broader access to central bank money.

Among the multitude of highly effective payment options in the U.S. (e.g., cash payment, credit, debit, etc.), a digital dollar would offer a new choice for digital transactions, instantaneous peer-to-peer payments, and in-person transactions. It could also potentially lower costs and further diversify payment rails. A digital dollar could be distributed to the end-user through commercial banks and trusted payment intermediaries while facilitating financial inclusion by broadening access to digital wallets. In particular, a digital dollar could expand the ability of un-underbanked populations to access digital financial services and transact on e-commerce platforms that do not deal in physical cash. Bank notes are often used to make small payments in the physical world, although, on average, physical cash usage is in decline compared to other payment methods. This dynamic is likely to progress in a post-COVID 19 world, making it increasingly important for digital financial options to extend more broadly.

Today, wholesale payments rest on national payment systems, typically conducted through interbank clearing using central bank money to settle securities and other large-value payments in real-time gross settlement (RTGS) systems like Fedwire. Current wholesale large-value transactions are account-based and predominantly executed by banking and payment providers who have accounts with the Federal Reserve. Due to the nature of the prevailing account-based system, only organizations with accounts can transact in central bank money. Like a physical dollar, a tokenized digital dollar would provide alternative access to central bank money outside of accounts. Accordingly, it could facilitate broader, more diverse access for institutions to large-value payments and support the emergence of digital financial market infrastructures. Furthermore, from a settlement perspective, a tokenized digital dollar could provide atomic delivery, either Delivery versus Payment (DvP) or Payment versus Payment (PvP). These potential approaches could serve as a way to reduce fraud and counterparty risk. However, the decision for settlement time duration will be a business and/or policy design choice to determine the optimal settlement window for transactions.

International payments currently cannot be conducted digitally in U.S. central bank money. A digital dollar could allow more direct monetary relations to be established, reduce risks, address time delays caused by today's correspondent banking model, enhance competition in international payments, and advance financial market integration. Using a digital dollar in cross-border and offshore transactions would allow digital payments in central bank money to be made for remittances and large value payments, including the possibility of conducting offshore securities settlements.

(11) By what metrics should we measure the competitiveness of the U.S. digital assets sector in the global market? Are there existing measurements or data against these metrics?

The competitiveness and success of CBDCs should be measured by how users across industries adopt the payment network. Central Bank money is a tool issued by the federal government, but its success will depend on how the network design considers the private sector's preferences. The Digital Dollar Project will explore the implications of CBDC across various use cases to determine the network's

potential adoption, efficacy compared to alternative payment methods, environmental impacts, and risk alleviation.

**Comparisons to `Traditional' Financial Services and Financial Inclusion Considerations**

(12) What factors and conditions, if any, that have driven and sustained the global leadership of U.S.-based legacy financial institutions will foster the same leadership for U.S. digital asset businesses? If there are no common factors, what factors and conditions will differentiate global competitiveness for U.S. digital asset businesses?

Since the Bretton Woods Agreement in 1944, the U.S. dollar has served as the world reserve currency stemming from U.S. market and government stability, the rule of law, and overall confidence as an effective medium of exchange and store of value. The U.S. dollar has deep and liquid financial and hedging markets and sophisticated channels for payments, capital and risk exchanges, clearing, and settlement.

The dollar's global utility has afforded the U.S. certain privileges and will be vital to U.S. global leadership in the future. To maintain this position, the dollar cannot remain an analog instrument and unit of account for assets increasingly denominated as digital tokens. Private organizations and foreign countries are developing CBDC or stablecoin payment capabilities to replace traditional payment rails. If foreign CBDCs are widely adopted, they may begin to replace existing financial infrastructures.

CBDC usage for wholesale transactions will be critically important to facilitate the continued role of the dollar as an international trade settlement currency. Recent work internationally has shown the utility of a wholesale CBDC. The Banque de France demonstrated the ability to settle in a foreign currency outside the issuing nation while still providing transaction data to the issuing central bank[7]. The Bank of International Settlements Innovation Hub has been exploring the requirements to link wholesale infrastructure to CBDC networks[8]. This work portrays an essential ability for global nations to use central bank money.

The Digital Dollar Project encourages the U.S. to proactively engage and lead discussions regarding governance, interoperability, security, privacy, and scalability standards. Tokenizing the U.S. dollar should be an opportunity to enhance our currency's technological infrastructure to future-proof its role in the global economy.

(13) Can digital assets improve international payments (including trade and remittances), and improve on access to trade finance? If so, how? How do digital assets compare to other initiatives in payments such as the Federal Reserve's FedNow?

Over the past decade, digital asset exploration has provided innovation to traditional financial infrastructure today. Although initiatives such as FedNow increase the availability of a central bank digital payment mechanism, CBDCs provide a flexible settlement mechanism that supports distributed data access, enables greater interoperability potential, provides smart contract technology, and is a token-based medium of account. Programmable tokenized money is a powerful tool that will continue to offer automation benefits from smart contracts, such as reoccurring and fractional payments across

[7] Banque de France "Banque de France, Bank for International Settlements and Swiss National Bank conclude successful cross-border wholesale CBDC experiment," www.banque-france.fr/en/communique-de-presse/banque-de-france-bank-international-settlements-and-swiss-national-bank-conclude-successful-cross

[8] BIS, "BIS Innovation Hub work on central bank digital currency (CBDC)," https://www.bis.org/about/bisih/topics/cbdc.htm

open economic systems. Although stablecoin solutions have been growing and evolving rapidly, they would benefit from clear and coherent regulatory frameworks. Additionally, stablecoins are predominately underpinned by the U.S. dollar, and they still require the movement of account-based dollars at the end of the transaction. A CBDC could make stablecoin transactions more efficient by connecting stablecoin networks to CBDC networks.

Remittance payments from individuals play a massive role in the U.S. financial ecosystem. Officially recorded remittance flows to low- and middle-income countries (LMICs) are expected to increase by 4.2 percent this year to reach $630 billion[9]. Remittances can be sent via a money transfer service (e.g., Western Union) or an electronic payment system (e.g., wiring through a bank). Remittances are commonly transmitted by foreign-born non-citizens and foreign-born citizens, of which 47.2% and 28.1% respectively are un- or underbanked.[10] This population of immigrants is typically excluded from participating in traditional financial services and thus rely on alternative financial services with high fees. The flow and usage of U.S. dollars into foreign countries often coincide with periods of economic unrest, including periods of high inflation, where countries turn to a dollar-denominated informal market instead of using their local currencies.[11] A potential design choice could allow end users receiving remittances to transact outside the U.S. for everyday shopping needs. Simultaneously, another design choice could allow the digital dollars to be held or stored as needed. Depending on the CBDC architecture, the system could enable individuals to transfer funds abroad without needing an intermediary. In cases where an intermediary is required, reconciliation and manual intervention could still be reduced, decreasing the cost to transfer funds. This improves safety, efficiency, and cost for individuals moving and using dollars worldwide. Improving the ease of access to dollars abroad strengthens the use of the dollar internationally and benefits countries who use the U.S. dollar as their currency or peg their currency to the dollar.[12] Unlocking faster remittance payments could help disaster relief efforts, raise the living standard abroad, and address global poverty. By lowering the costs and time of remittance transfers, a CBDC can widen bank access to the unbanked population while keeping transaction costs low and simultaneously profitable for banks. As the world has become more globalized, cross-border and multicurrency, (CBMC) payment systems have developed to support international commerce, primarily for B2B uses. Cross-border payments are where the payer and payee are in different jurisdictions and are debited and credited in other currencies. Cross-border payments have historically been slower, more complex, less transparent, and more expensive than domestic payments, usually executed through chains of correspondent banks[13] or a dedicated cross-border or multicurrency payment system.[14] CBMC payment systems have developed to provide more efficient and timelier cross-border transactions in specific, high-volume payment channels.

[9] The World Bank, "Remittances to Reach $630 billion in 2022 with Record Flows into Ukraine," https://www.worldbank.org/en/news/press-release/2022/05/11/remittances-to-reach-630-billion-in-2022-with-record-flows-into-ukraine

[10] FDIC, "FDIC FDIC National Survey of Unbanked and Underbanked Households," https://www.fdic.gov/householdsurvey/2017/2017appendix.pdf

[11] Winton, "Shining a Light on Currency Black Markets," https://www.winton.com/longer-view/currency-black-market-exchange-rates

[12] We recognize that increased international dollarization could present unique policy and economic challenges that require further exploration.

[13] SWIFT, "SWIFT GPI," https://www.swift.com/our-solutions/swift-gpi

[14] BIS, "Payments without borders," bis.org/publ/qtrpdf/r_qt2003h.pdf

CBMCs have gone through significant advancements and expansions over the past 20 years. There are plans to introduce new CBMCs in the next few years as manufacturers expand their supply chains internationally. The dollar remains the most commonly used invoice currency, with many commodities priced in USD. Internationally, digitizing the dollar as a CBDC would significantly reduce complexity and improve cross-border trade. A digital dollar would provide many of the capabilities that are sought after with current CBMC initiatives, including automatic settlement, trade oversight transparency, risk management, and interoperability. These added benefits to international trade improve cross-border payments' efficiency, enable front-end modular innovation and enhance the user experience in niche trade corridors. With a digital dollar, parties in the same international jurisdiction could settle in USD without needing a settlement agent with access to the U.S. payment system to net positions. A digital dollar would serve as a platform for innovative private-sector systems to manage cross-border single and multicurrency transactions that involve the U.S. dollar.[15]

International payments currently cannot be conducted digitally in U.S. central bank money. A U.S. CBDC could allow more direct monetary relations to be established, reduce risks, address time delays caused by today's correspondent banking model, enhance competition in international payments, and advance financial market integration. Using a digital dollar in cross-border and offshore transactions would allow digital payments in central bank money to be made for remittances and large-value payments, including the possibility of conducting offshore securities settlements. Additionally, the ability to transfer funds without needing an intermediary reduces costs to transfer funds and increases the speed and efficiency of remittance payment processing.

However, it is essential to highlight that technology alone is not a silver bullet for solving existing barriers to the speed, efficiency, transparency, and accessibility of payments. A range of issues, including fragmented regulatory requirements, unharmonized messaging standards, and barriers to the cross-border flow of data, would need to be resolved alongside the deployment of new technologies such as CBDC to deliver transformational improvement in the cost/speed of remittances and/or cross-border B2B flows. Continued U.S. engagement in internationally coordinated efforts such as the G20 roadmap on cross-border payments is therefore crucial.

As tokenized economies emerge, a natively tokenized U.S. central bank currency could complement the account-based Fedwire and FedNow systems and provide a modernized payment system. CBDC settlement for clearing and settlements could reduce counterparty risk and trapped liquidity, increase capital efficiencies, provide a more efficient, automated workflow, guarantee that cash and securities are delivered, and provide added transparency to regulators. While these benefits have been proven in other pilots globally, the DDP is pleased to explore further and quantify the benefits of CBDC settlement to support the U.S. post-trade infrastructure

(14) According to the FDIC's 2019 "How America Banks" survey, approximately 94.6 percent (124 million) of U.S. households had at least one bank or credit union account in 2019, while 5.4 percent (7.1 million) of households did not. Can digital assets play a role in increasing these and other underserved Americans' access to safe, affordable, and reliable financial services, and if so, how? What role can the Federal government and the digital assets sector play to ensure that underserved Americans can benefit from the increased commercial availability of digital assets?

Depending on design choices, CBDC could provide financial institutions and financial technology companies – in partnership with community outreach efforts – with the underlying CBDC technology

[15] BIS, “Cross-border retail payments,” https://www.bis.org/cpmi/publ/d173.pdf

upon which to build inclusive payment and banking services. Regulated institutions can develop digital wallets that provide unique services and cater to distinct user bases. The DDP believes that lower operational, technology, and regulatory costs related to offering digital wallet solutions for the custody of tokenized digital dollars may hold advantages over traditional bank accounts in expanding access to underserved populations. For example, if designed with assured privacy and manageable onboarding, CBDC could provide a more accessible and less expensive option for traditionally underbanked communities who pay high fees to access the digital payment ecosystem. Financial inclusion benefits will also depend on design considerations such as maintaining a cash-like model that provides offline payment abilities, privacy, potentially tiered identity verification requirements, and distribution through the two-tier banking system, inclusive of regulated fintech companies. The BIS has recently posited that although not a panacea, central banks could use CBDC as a tool to promote financial inclusion in "promoting innovation in the two-tiered payment system, offering a robust and low-cost public sector technological basis and novel interfaces, facilitating enrolment and education on CBDC, and fostering interoperability among multiple dimensions.[16] Privacy will be critical to realizing the potential inclusion benefits of CBDC. Some unbanked communities prefer not to place their money in banks due to privacy concerns, and these people seem unlikely to transact heavily in a CBDC unless they are confident that privacy is assured. While it is vital to ensure robust KYC and other financial crime protections akin to what banks and other money services businesses do, it will be critical to ensure these processes do not come at the cost of preventing CBDC access.

**Technological Development**

(15) To what extent do new standards for digital assets and their underlying technologies need to be maintained or developed, for instance those related to custody, identity, security, privacy, and interoperability? What existing standards are already relevant? How might existing standardization efforts be harmonized to support the responsible development of digital assets?

The nature of digital assets is fundamentally different from existing financial infrastructure offerings. Rather than designated intermediaries facilitating and managing ownership records, distributed ledger networks innately facilitate transactions and maintain records by the participants. Regulators must facilitate the development of regulations and standards that target the network protocols, developing/issuing parties, and network participation. Because the industry is unfolding so rapidly, regulators should work alongside industry participants to develop regulation that is flexible and aware of emerging technology and standards. Establishing regulation only in response to market shocks will continue to lag behind cutting-edge technologies. To demonstrate the extent of change required across this space, consider that the existing anti-money laundering framework in the United States originated in the 1970s when rotary phones were new technology.

Thoughout history, disparate initiatives around digital identity and digital currency has highlighted the need for a uniformity of standards. How the U.S. responds to custody, identity, security, privacy, and interoperability standards will be paramount to achieving widespread adoption, improving financial inclusion, and protecting its users.

The Digital Dollar Project believes that fighting financial crime is extraordinarily important, but it is imperative to do so while preserving privacy. Current policies may not uphold this balance between

[16] BIS, “Central bank digital currencies: a new tool in the financial inclusion toolkit?” https://www.bis.org/fsi/publ/insights41.htm

privacy and security. The Digital Dollar Project's Privacy Principles[17] provides an in-depth look at security and privacy assurance suggestions. Additionally, while emending standards, the U.S. has an opportunity to solve digital identity and payment transactions simultaneously. As with many of these factors, the U.S. should drive policy first and technology second. A U.S. CBDC can provide privacy to consumers by maintaining a two-tiered banking system where financial institutions and fintechs conduct identity verifications just as they do in today's model. Identity verifications can be a risk-based "tiered approach" and specific to customers' activity. Identity management can leverage zero-knowledge-proofs and verifiable credentials to maintain consumer data privacy. Policymakers and key private sector players should consider convening standards for identification and KYC/ALM to increase interoperability across the ecosystem and provide clarity to intermediaries.

The DDP is currently bringing together a standards-based working group to build a roadmap and associated milestones, including an initial taxonomy and FAQs, and to look at the standards landscape as a whole to consider which stakeholders need to be involved in the emerging ecosystem.

(16) What new security concerns does increased adoption of digital assets raise? How can the U.S. government collaborate with U.S. digital asset businesses to protect consumers' access to their assets, personal information, and other sensitive data?

To achieve digital portability and protect consumer privacy, a U.S. CBDC should emulate the qualities of cash by existing only in a single location and being the custodian's responsibility. Digital custody will inevitably increase security concerns as the responsibility shifts from centralized authority managing account records to managing digital cash asset tokens on behalf of individuals. Security measures need to bridge the security and depository requirements of managing cash as well as the account-keeping requirements of digital money. Significant exploration into ease of use, technology standards, and participant guidelines can minimize the risk of negligence in the industry. Public education on the standards of digital assets and CBDCs can also protect users from bad actors.

Additionally, a U.S. CBDC could inherently encompass qualities such as instantaneous verification to reduce counterfeit efforts and potential fraud. The U.S. should look for ways to protect consumers while collecting and storing the least amount of data and personally identifiable information (PII). Through programmability and design choices, the U.S. can create a CBDC that protects users' privacy and gives users control of how and with whom they share their data by anonymizing aspects of transactions. Security and privacy standards should be pursued in tandem with the private sector to safeguard assets and data. The U.S. should actively explore and define security requirements to uncover challenges and tradeoffs to provide a competitive space for U.S. businesses to innovate.

(17) To what extent will interoperability between different digital asset networks be important in the future? What risks does a lack of interoperability pose? And what steps, if any, should be taken to encourage interoperability?

Interoperability is vital when designing a CBDC that integrates the U.S. dollar with global payment options. CBDC Interoperability can prevent market fragmentation, increase payment provider competition, achieve broad adoption, and secure the dollar's international position. While many countries are developing CBDCs and stablecoins in silos, the U.S. should consider the dollar's global

[17] Digital Dollar Project, "Privacy Principles," https://digitaldollarproject.org/wp-content/uploads/2021/10/DDP-Privacy-Principles-10.25.21_Final.pdf

utility when designing a CBDC to achieve global economic efficiencies. The dollar is a payment mechanism that underpins and provides liquidity across global markets. A CBDC could enable a translation layer between multiple CBDC networks and technology platforms creating a shared language domestically and globally. Transferability across traditional and DLT-based networks would streamline transaction data sharing across many use cases. To achieve interoperability, CBDC development should consider emerging token standards, such as SWIFT's intended use of ISO-200229, as viable future token networks that aim to connect with future CBDC networks. The U.S. can collaborate with corporations, regulators, government agencies, and academics globally to advance technology standards and other layered facets such as identity frameworks and consumer protections. By taking a leading role in interoperability, the U.S. will be able to set global standards in the internationalization of CBDCs and protect against countries that do not serve U.S. interests.

**About The Digital Dollar Project (DDP)**

A non-profit organization, The Digital Dollar Project, was created to encourage research and public discussion on the potential advantages and challenges of a U.S. CBDC — or a "digital dollar." DDP will identify options for a CBDC solution to help enhance monetary policy effectiveness and financial stability; provide needed scalability, security, and individual privacy in retail, wholesale and international payments; and integrate with existing financial infrastructures, including U.S. Federal Reserve-related projects. Read the DDP Privacy Principles and "Digital Dollar Paper: Exploring a Digital Dollar.
Visit http://digitaldollarproject.org.