Are Central Bank Digital Currencies The New Global Money?

For as much excitement as cryptocurrencies have generated over the years, their use as money has been limited for one simple reason: volatility. Any form of money is expected to meet three basic criteria: it must be a unit of account, medium of exchange and store of value. Bitcoin meets the first two with flying colors, but it has not proven to be a stable store of value. Stablecoins directly address this shortcoming, which, as their name dictates, are designed to maintain a constant price peg. As a result, they have seen tremendous growth in recent years, achieving a market capitalization of more than $15 billion, demonstrating demand for such an asset.

However, some see stablecoins as a temporary solution to our need for a digitally native currency for the 21st century economy, and now governments are stepping in with plans to explore and develop central bank digital currencies (CBDCs). After all, why not cut out the middleman? That said, CBDCs are extremely ambitious propositions, with the ability to impact governments, financial institutions and investors in the short and long term. Therefore, it is important to take some time to understand their history, value proposition, and future trajectory.

What Are CBDCs?

CBDCs are digitally native fiat currencies that are directly issued and backed by central banks. They aim to extend the utility of physically settled monies to the digital world by removing extra steps and intermediaries from digitized banking and payment infrastructure. In so doing, CBDCs are intended to make transactions more efficient, manageable and financially inclusive.

It is easiest to think of CBDCs as bearer instruments—like physical dollars or bank notes, which are native to the internet and can be traded on a peer-to-peer basis. Importantly, like physical dollars in the real world or bitcoin on the internet, you cannot double-spend CBDCs.

With the backing of central banks, CBDCs present the opportunity to streamline the entire lifecycle of money creation, exchange and settlement with very little need for reconciliation. They can bridge the gap by restructuring the design and use of money for a digitally native world.

Why Do CBDCs Matter?

CBDCs are being designed today because the mechanics of trade have changed. Currently, central banks issue fiat currency as debt, which is then credited to commercial banks. They subsequently loan currency across a network of regional banks to businesses and consumers. For every intermediary in this network there is an associated fee and time added to delivery.

The types of fiat currency we're familiar with, such as pennies, dimes and dollar bills, were originally designed for a world where payment for goods and services are settled in-person via physical exchange. For example, before credit cards and the internet, I could pay a pizzeria $1 for a slice of pizza and enjoy my hot New York slice on the go. With the simple exchange of physical cash for pizza, our transaction would be settled and final. It was so efficient that I could burn the roof of my mouth before the pizzeria even closed its cash register.

Times have changed. Digitizing physical payments has created a lot of backend complexity. Since the advent of credit cards and online payments, extra steps, intermediaries and transaction fees have been added to settle digitized payments. Now I can conveniently order pizza online and have it delivered to my door, but these additional steps cost both the business and the consumer money, while intermediaries profit. CBDCs offer a new way to think about money, which can benefit the bottom lines of both businesses and consumers, as well as governments.

Double-Entry Accounting Doesn't Scale Efficiently

To execute simple transactions at scale, complex systems were invented to keep track of what is owed to whom, and when. This clever way of extending the transactions over time and place is called double-entry accounting. Since the 1400s, double-entry accounting has revolutionized trade, extending the possibilities of commerce by enabling banks as trusted intermediaries, to facilitate transactions at a global scale. Double-entry accounting also limits double-spends because merchants use ledgers to keep track of and reconcile irregular trades. If the amount of money-in and money-out doesn't equal zero, then money may have been spent twice.

Searching For Middle Ground

Today, we can see successful examples of maximally scaled double-entry accounting in familiar payment apps like Venmo or Square's Cash App. To the end user, these apps are simple and easy to use. On the backend, complex transactions are balanced across multiple banks, credit cards and cross-border payment rails, which are hidden from users for a fee.

However, even with slick user interfaces and contactless payments, we are approaching the limits of double-entry accounting. Margins are getting tighter with little room to eke out financial gain for businesses or savings for customers. This lack of wiggle room extends beyond commerce to governments worldwide.

Additionally, because we're using digital tools to track both physical and digitized cash, it's difficult to account for all the money on and off the books. The Chicago Fed recently estimated that more than 60% of all U.S. bills are overseas. How can we effectively plan monetary policy without accurately accounting for cash off the books?The promise of CBDCs is that they can enable programmatic monetary and fiscal policy coordination,financial inclusivity, and make payments more efficient while improving accountability. For example, given a sudden need for stimulus payments, people in crisis could be helped in minutes, not months. CBDCs offer a streamlined way of issuing, delivering and keeping track of digitally native fiat currency.

From Double To Triple-Entry Accounting

If double-entry accounting won't keep us on even footing, what will? Bitcoin ushered in digitally native peer-to-peer payments that use its blockchain for triple-entry accounting to ensure all transactions are verifiable and complete by design. Triple-entry accounting guarantees transactional consensus, eliminating the need for reconciliation. Instead of balancing two or more books of business—essentially, multiple sources of truth—triple-entry accounting enables participants to opt-in to a system where there is a single source of truth, which is verified by all, all the time.

Bitcoin is a revolutionary crypto asset that gets us halfway there from Finance 1.0 to Finance 2.0. Finance 1.0 digitizes physical assets to fit into an online world, whereas Finance 2.0 redesigns money to be digitally native from the start, so frictions that crop up around intermediaries, charge-backs and fraud fade away.

> "CBDCs are intended to make transactions more manageable, efficient & financially inclusive. Think bearer instruments that are native to the internet and can be traded P2P

Bitcoin's triple-entry accounting is the bridge between digitized and digitally native currency. Now, the missing ingredients are price stability and scalability.

Stablecoin Wars? The Digital Dollar Vs. The Digital Yuan

At this point in the discussion, it is important to make one point clear. There is a race taking place between central banks across the world to determine who is going to launch the first CBDC at scale. Trust me when I say that many countries see the digital revolution and CBDC movement as an opportunity to unseat the U.S. dollar from its perch as the world's reserve currency.

Most believe that China is going to be the first to market, as the country's central bank has made substantial progress over the years. If China's CBDC launches, it could then deploy the digital yuan across a growing network of "belt and road" (an infrastructure initiative stretching from East Asia to Europe) trade partners, immediately locking these nations into their socio-economic orbit and sidestepping the U.S. dollar.

The opportunity is massive for China. Today the yuan accounts for just about 2% of global trade, whereas USD accounts for more than 80%. This means that trades involving most commodities, equities, real estate, etc., all settle using the U.S. dollar no matter where they take place.

Not to be outdone, the U.S. government is starting to gather momentum towards its own CBDC. In May, the Digital Dollar Project released its inaugural white paper with Accenture, highlighting what a central bank digital currency might look like in the U.S. Building on the

shoulders of existing monetary policy and lessons from stablecoins like libra, the paper laid out dozens of use cases, risks and rewards to consider for piloting a digital dollar.

Against the backdrop of encroaching competition, the Senate Banking Committee also convened a leading group of experts in June to examine the utility of digital dollars. As principal of the Digital Dollar Project and former CFTC Chairman, J. Christopher Giancarlo recognized that monetary hegemony was on the line but advised the patient design of a digital dollar.

Despite Competitive Pressures, Focus On The Long Game Is Key

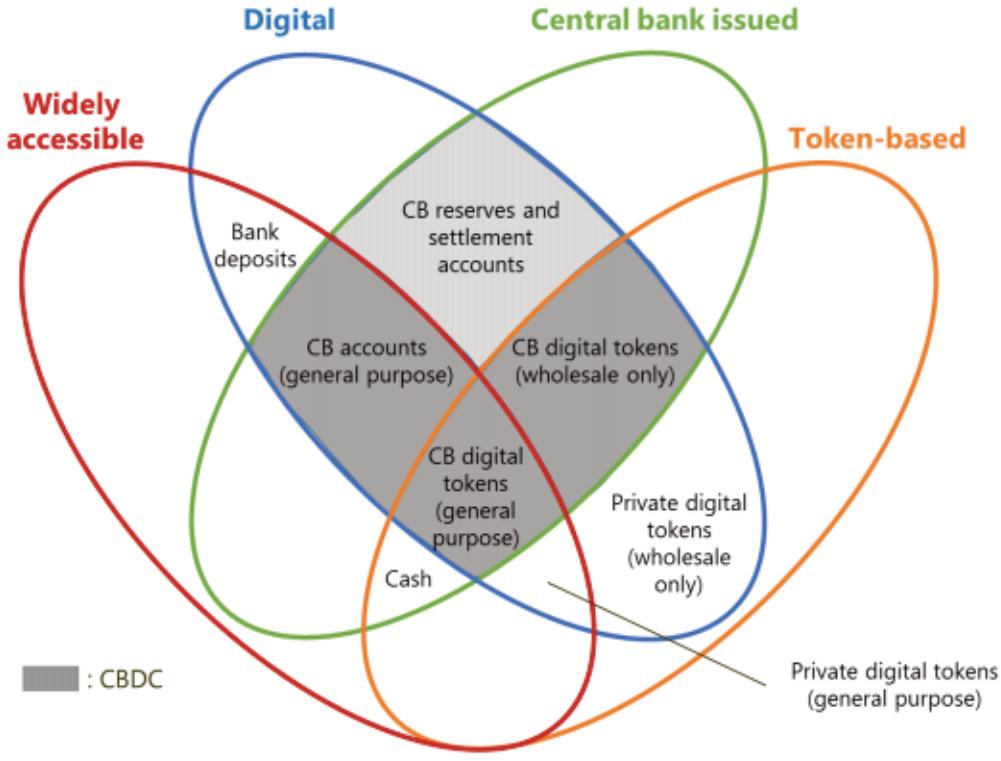
Given the dollar's dominance, a cautious approach toward building a new, digital dollar is warranted. After all, there are countless design aspects to consider. Will the new digital dollar be account-based like our current system or tokenized like bitcoin? Will CBDCs bear interest? Will I still be able pay for pizza if the internet cuts out? Will CBDCs still preserve an element of user privacy?

Adding additional complexity is the need for CBDC issuers to agree on a single platform or find a way to make them interoperable. After all, global currencies cannot be siloed, at least the leading ones. Fortunately, these issues are being closely examined by central banks and intergovernmental organizations around the world. To date, the Fed, Bank of England, Bank of Canada, European Central Bank, Bank of Japan, People's Bank of China, International Monetary Fund, World Economic Forum and the Bank of International Settlements have all weighed in. New networks and trade partnerships are being developed as the world adjusts to Covid-19 and shifting supply chains.

It remains to be seen how the CBDC race will play out, and who launches first may not win the race. However, it is clear that we are on the precipice of having a new and dynamic relationship with our money, and that future is digital.

Special thanks to Alex Broudy for his insights and contributions to this article. Broudy is a Blockchain Certified Business Analyst and Certified Scrum Master with a background in market research and analysis, omnichannel commerce and emerging technology.

The Money Flower: A Taxonomy Of Money



Notes: The Venn-diagram illustrates the four key properties of money: *issuer* (central bank or not); *form* (digital or physical); *accessibility* (widely or restricted) and *technology* (account-based or token-based). *CB* = central bank, *CBDC* = central bank digital currency (excluding digital central bank money already available to monetary counterparties and some non-monetary counterparties). *Private digital tokens (general purpose)* include crypto-assets and currencies, such as bitcoin and ethereum. *Bank deposits* are not widely accessible in all jurisdictions. For examples of how other forms of money may fit in the diagram, please refer to the source.

Source: Based on Bech and Garratt (2017).

Source: Taxonomy of Money