Pros, Cons, and Other Bank Considerations for a US Central Bank Digital Currency

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This summer, several U.S. officials in Congress, at the Federal Reserve Bank, and the Office of Financial Research made public statements advocating for a U.S. central bank digital currency (CBDC). Once almost universally waved aside as at best unnecessary and at worst potentially damaging to the financial system, the tide may now be turning in favor of a digital dollar.

Extreme volatility in the stablecoin market is one contributor to this growing momentum. Peer pressure is another. To date, a CBDC has been implemented by 10 non-G20 countries, and is being evaluated by 19 of the G20 countries. Sixteen of those are in a development or pilot phase.[1]

The Federal Reserve has made it clear that it will not move forward in implementing a CBDC without "…clear support from the executive branch and from Congress, ideally in the form of a specific authorizing law."[2] On March 9, the White House issued Executive Order 14067, calling for the exploration and evaluation of a CBDC, with the input and engagement from all the relevant agencies.

As debate intensifies, it is important to understand the potential benefits and risks associated with a U.S. CBDC. While these are relatively easy to identify, it remains unclear whether creating a CBDC would be in the best interest of the U.S. financial system. To help you formulate your own opinion, this piece will explain how a U.S. CBDC would work and how it fits into the broader context of currencies and payments, as well as explore its potential implications.

What Is a Digital Currency?

"Digital currency" has become a widely used term, but it's important to be clear on what it means. Digital currency should not be confused with currencies that can be exchanged electronically, as is the case with all fiat (government-issued and centrally

controlled) currencies. That may feel "digital," but in this context "digital" has a specific meaning unique to cryptocurrencies.[3] Once traditional fiat currencies are issued, they exist because they are recorded in a ledger with a financial institution that requires documented ownership. Funds are issued by a central bank (in this case the Federal Reserve) but are managed through intermediaries (financial institutions). The only time that people or companies can "bank" with the central bank directly is when exchanging electronic funds for cash: reserve notes that represent an obligation of the central bank. Once converted to cash, those funds become bearer instruments, with no documented ownership. That being the case, cash transactions have prompted the creation of a significant infrastructure to combat against illicit activity such as money laundering. The one mitigating aspect of cash is that, despite its anonymity, there is only so much of it that can be moved around without being noticed, which keeps a practical upper limit on its usage.

Digital currency, on the other hand, exists not because it is recorded in a ledger, but because of an electronic encryption "key" that is uniquely assigned to that block of currency. In practical terms, a string of characters represents an encrypted (coded) value, which denotes a unit of value and can be interpreted by whatever platform that currency trades on (such as blockchain). In this way, the currency itself is a bearer instrument. Whoever has the key controls the value, just like cash. Unlike cash, because there is no physical form, any amount of funds can be transmitted almost instantaneously at very low cost.

This becomes both the blessing and the curse of digital currencies. They can be transacted quickly, immutably, and at very low cost (very attractive propositions) but currently without a record of the sender or receiver. In theory, if a comparable mechanism can be created that retains all the benefits of cryptocurrencies while solving for the opaqueness, then we may have something of remarkable value as an alternative to our traditional payment systems.

Enter Blockchain

This was fundamentally the impetus behind the creation of blockchain and its associated currency, Bitcoin. Blockchain (both the original instance built to support Bitcoin and subsequent versions such as the Ethereum blockchain) is a transaction platform that allows for the exchange of value between two parties. The chain (or ledger) itself is public—visible by anyone, because, unlike with traditional payment systems, the value itself is encrypted instead of the ledger. Technically speaking, anyone can post to a blockchain, but due to the technical requirements involved, it isn't realistic that just anyone can. The native cryptography and near impossibility of "hacking" the chain makes transactions incredibly safe, and the distributed nature makes it extremely resilient.

Since the introduction of Bitcoin and the original blockchain, we have seen the creation of a variety of other blockchains, most notably Ethereum, which was created for the express purpose of allowing developers to create applications for various use cases. We have also seen the creation of thousands of new "coins"[4]—cryptocurrencies of various types. The vast majority are for novelty and will come and go. Several have seen movement towards a potentially viable method for exchange of value (even if never considered a store of value), including Bitcoin and Ethereum. While we are a long, long way from broad commercial adoption (if ever), the operating model of cryptocurrencies run on a blockchain has several notable benefits compared to traditional payment systems, fueling interest and innovation. They include:

- Speed of execution, effectively real-time.
- Significantly lower transaction costs.
- Immutable transactions, which minimizes fraud risk.
- System security and resiliency.

At the same time, cryptocurrencies by nature come with unique risks, including:

- No underlying asset or guarantee to insulate against price volatility.
- Opaque transactions.
- No recoverability/reversibility of transactions.
- No central controlling authority.

When thinking about the long-term value proposition of the cryptocurrency ecosystem, we have to separate the unit (the coin) from the platform (blockchain). Except for stablecoins, which are theoretically tethered to the U.S. dollar or other fiat currency, all other coins suffer from offering no underlying asset or guarantee: Their value will always be subject to price instability. Therefore, they may never be considered a true store of value, and many see them as nothing more than a speculative intrigue and medium for dark money exchange. However, if the transaction medium (blockchain or equivalent) proves to be effective, then coins may simply exist as a medium of exchange, and everything we see today is a crude prototype for a future state of payments.

This, in part, leads to the Federal Reserve's development and planned implementation of FedNow, a real-time payment system that gives opt-in member banks the option of either a traditional payment method or a real-time method. However, FedNow is primarily a messaging system, not unlike Swift for international payments. It provides messaging between member banks in support of real-time payments, but is still subject to posting by both sides in their account servicing systems. Unlike blockchain, FedNow

is not a transaction ledger. It is simply an enhanced processing method to facilitate real-time payments. To the account holder's perspective, the payment is real-time, but is still subject to a settlement and reconciliation process at each institution.

Implementing FedNow will bring an important innovation and process capability to the industry, and will allow integration with a variety of fintech solutions to support additional functionality. However, to support either existing cryptocurrencies or a possible central bank currency, the U.S. will need to either agree to use an existing blockchain platform or develop comparable functionality that is centrally managed. While not without potential issues, the latter may ultimately be a far superior approach than trying to legitimize and regulate one of the blockchains or other payment systems, particularly given the lack of clear ownership. If nothing else, it seeks to realize the benefit of the platform while ensuring transparency on both sides of the transaction, a critical and required aspect for any Fed-based system. But, to reiterate, FedNow is principally a messaging system designed to augment and improve the existing payment system. Support for true digital currencies would require a blockchain-like platform, entirely separate from anything that exists today in our current banking system. For the remainder of this article, I will be referring to this potential platform, and the possibility of support for digital currencies.

Such a platform could not only serve as a medium of exchange, but, like blockchain, be used for the tokenization and recording of other transaction types and documents. This, in and of itself, could be foundational to the continued value proposition of the country's financial institutions in a world of increasing fintech competition. Commodity products (checking, savings, loans) can now be attained from any number of entities, putting the long-term role of traditional institutions in question. But a financial institution's greatest asset is not great service, or the ability to source a financial product. It is the perception of trust. If financial institutions can leverage these emerging technologies to offer tech-enabled services well beyond traditional banking products, they will continue to be able to monetize that trust while yielding a portion of the product side to a field of non-bank competition.

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Should the Fed elect to move to adopt or develop a blockchain, or blockchain-like, platform, implementing it will require infrastructure to support system resiliency at remarkable scale as well as sufficient security layers to ensure data protection and privacy. Much of the technical complexity will depend on the system's ultimate scope of functionality. But with reduced transaction time and the potential for multi-currency exchange, the security and infrastructure demands will be formidable. Nevertheless, once implemented, the platform should support the next generation of payments capabilities, having been engineered to support future innovation and the future of high-speed commerce.

This brings us to the currency aspect. In implementing a real-time, digital platform, the Fed generally has three choices:

- Authorize transacting in one or more cryptocurrencies (i.e., Bitcoin or Ethereum);
- Enable the U.S. dollar to function either as a stablecoin or as a digital currency; or
- Create a central bank-issued and -managed currency (a CBDC).

The first option is not realistic, given what would be required to solve for transaction opaqueness. The second is a possibility which we will come back to later. It is the third that concerns us here.

Key Benefits, Costs, and Risks of a Potential CBDC[5]

The intent of a CBDC would be to leverage the best aspects of a cryptocurrency while mitigating the aspects that make it problematic to controlled commerce. Characteristics of such a currency (or "coin") would include:

- Transactions on a future-state Fed platform, but it could conceivably transact on other platforms as well.
- Real-time clearing on an immutable blockchain-like ledger.
- It would likely be tethered to the U.S. dollar (or stablecoin), but conceptually could be market driven.
- If it is tied to the dollar or other stabilizing asset or guarantee, it may be considered a store of value (versus simply a medium of exchange).
- Unlike the U.S. dollar, it would have no physical form.
- Finally, and most importantly, it would allow for the first time (outside of paper currency) con-

sumer and commercial banking and transacting directly with the central bank—in effect bypassing all financial institutions.

As described in the Fed's and similar white papers, the benefits of a CBDC would include:

- Addressing the market demand for a central bank-issued, real-time digital currency, with all the characteristics of other cryptocurrencies, but with the needed control measures in place.
- Being central bank-issued—this would represent a currency free from credit and liquidity risk.
- As with the intention of the Ethereum blockchain, it would promote private-sector innovation in creating applications that take advantage of the payment system and associated currency.
- It could lead to new payment capabilities to meet ever-evolving speed and efficiency requirements.
- Reducing fractional reserve banking requirements for financial institutions (although potentially at the cost of the loss of the actual deposits).
- It could simplify cross-border payments at increased speed and reduced cost.
- It may support the preservation of the U.S. dollar as the world reserve currency.
- Promoting "financial inclusion" by making payment solutions available to the underbanked.
- Extending public access to the central bank, both commercial and consumer.
- Reducing transaction costs, although this is more attributable to the payment system than the currency.
- Reducing fraud risk versus transactions processed through traditional payment systems. Although, again, this is more attributable to the platform.

On the whole, the intent of this proposal appears to seek a solution to realize the benefits of a digital currency while avoiding having to legitimize and regulate other cryptocurrencies. In theory, such a currency brings the opportunity for all the benefits but in a way that can be controlled and regulated.

Unfortunately, we have to consider the downsides of such a solution. The risks to the financial system are formidable, largely centered around the implications of shifting from banking with financial institutions to banking directly with the central bank. Risks would include substantial reduction of deposits held with institutions if individuals and businesses prefer to move funds to the central bank, which would be devoid of credit and liquidity risk. Further, reduced access to deposits by institutions would lead directly to increased funding costs, reduced credit availability, and increased credit costs. And a CBDC effectively puts capital to sleep by taking money that would otherwise be available for lending and freezing it while held as central bank deposits.

Compounding this, a stressed economic scenario that prompts a sudden, large-scale movement of funds to the central bank could lead to substantial, if not catastrophic, system instability and a potential liquidity crisis. This risk could possibly be offset by an intermediary model, where digital funds are still held by member banks rather than the central bank, or through balance or transaction limitations.

Meanwhile, implementation would require significant changes to Fed monetary policies by altering the supply of reserves, requiring the central bank to materially increase the size of its balance sheet. Potential foreign demand for central bank deposits may further complicate monetary policy implications.

Despite the transparency of transactions, the platform and currency will still require significant anti-money laundering (AML) protections. Will the Federal Reserve be able to implement an AML program capable of managing billions if not trillions of dollars in daily transactions? Alternatively, Bank Secrecy Act and anti-money laundering oversight responsibilities could be left to individual institutions. However, this would only work if the institutions retained credit for the associated deposits. Otherwise, there is no economically viable scenario for banks to own the risk without the value from the deposits.

Beyond BSA/AML issues, would the Fed be prepared to manage all the other consumer compliance risks associated with bank deposits, which would require a program and staffing of almost unimaginable proportions? Again, this could be left to individual institutions, but only if they held the funds. Otherwise, institutions would have zero incentive or benefit from managing compliance oversight.

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Finally, questions have been raised, in part based on observations with countries that have elected to adopt a CBDC, about whether this would give the central bank (and the government in general) too much control to enable or restrict the ability of individuals or businesses to transact. However, this may only be significant if a CBDC was proposed as a replacement for fiat currency as opposed to an alternative.

Clearly, one of the most critical considerations would be the custody of funds. The model as proposed suggests that CBDC funds are held by the central bank, which could have significant unintended consequences and require the central bank to implement an unprecedented level of financial infrastructure for support. An alternate model would involve using existing financial institutions as intermediaries, which solves one problem but introduces several others. If funds are credited to individual institutions to deploy, then this is no longer a central bank currency but simply a national digital currency. That model opens up other benefits and risks beyond the scope of this piece, but may in the end be the only viable model for a fiat digital currency. Again, whether the real value proposition lies in the proposed currency or simply the payment platform must be considered.

In addition, a number of questions need to be answered, including:

- Is the depositor a customer of the financial institution or the central bank? Or both?
- If held by (or rather, credited to) institutions, would digital funds be able to carry comparable FDIC insurance? This becomes irrelevant if held by the central bank.
- Is there a scenario for a hybrid digital currency, one that transacts in real-time but is not portable? In other words, it cannot be removed from the ledger?
- Can the system be built to provide sufficient system resiliency and security? Will the system be truly "hack proof" and effectively always available?
- If funds are allowed to transact across a digital platform and the traditional payment system, could vulnerabilities be exploited or arbitraged between the two systems?
- Would a CBDC be considered a currency subject to market fluctuation, or a stablecoin tied to the U.S. dollar?
- Despite the more efficient payment mechanism, will the required regulatory oversight still add too much cost and burden?
- Finally, if the creation of a CBDC represents too many risks, operational impediments, or even viability, could the U.S. dollar be allowed to exist in an encrypted form and be able to transact on both a digital ledger and the traditional payment system? If so, would that eliminate the need for a new currency—and what additional risks might that introduce?

Final Thoughts

The U.S. financial system consists of a delicate equilibrium between the central bank and commercial banks. The CBDC model as proposed could effectively put the Federal Reserve in competition with banks and other financial institutions for payments transactions, effectively disintermediating the entire industry. The "hybrid" models, where institutions continue to act as intermediaries, begin to diminish the overall business benefit due to the increased costs and operational complexities. However, this could solve for the potential for system instability, liquidity risks, and impact to lending.

As presented, the benefits described appear to be subordinate to the associated risks, since a shift that destabilizes the entire financial system would obviously be of no benefit to anyone. However, it also appears that a great deal of what has been described as desired benefits could arguably be attributed more to the payment platform than the currency itself. While the prospect of trying to control and regulate existing cryptocurrencies is unrealistic, this might suggest that the first consideration should be in facilitating the provision for the U.S. dollar to serve as both a fiat currency and a digital currency, able to seamlessly transact on either platform, while leaving credit for the deposits with the originating institutions. While no longer a central bank currency, this may ultimately yield the intended benefits, without introducing the potential for system instability. However, even this scenario would have significant technical requirements and potential unintended consequences.

Hopefully all these points will be carefully considered in the years to come, leading to a solution that leverages the best of digital capabilities while avoiding excess levels of risk.

Notes

1. www.atlanticcouncil.org/cbdctracker
2. In January 2022, the Federal Reserve Bank released a white paper outlining the potential benefits and risks of creating a central bank digital currency ("Money and Payments: The U.S. Dollar in the Age of Digital Transformation").
3. Alternatively, "virtual currency," "cybercurrency," etc., but for this article will be collectively, and most accurately, referred to as "cryptocurrency" since all are based on an encrypted unit of value.
4. While cryptocurrency values are commonly referred to as "coins," this is only a colloquial term representing a unit of measure. Cryptocurrencies only exist in electronic form.
5. Many of these points are also addressed in the related Federal Reserve white paper.

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