

1-16-2022

## The Curse of Central Bank Digital Cash

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### Recommended Citation

Ulrich, Fernando and Zelmanovitz, Leonidas (2022) "The Curse of Central Bank Digital Cash," *Journal of New Finance*: Vol. 2: No. 4, Article 2.

DOI: 10.46671/2521-2486.1025

Available at: <https://jnf.ufm.edu/journal/vol2/iss4/2>

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# The Curse of Central Bank Digital Cash

## Abstract

This paper surveys the consequences of Central Bank Digital Currencies (CBDC) on personal liberty and privacy. The Central Banks' response to the advent of Bitcoin and other cryptocurrencies has profound implications for financial intermediation, monetary and fiscal policies, financial repression, and surveillance. More than allowing for meddling with money, a CBDC may enable meddling with human free will, posing grave threats to the preservation of freedom.

## Keywords

Central Bank, Digital Currency, Cash, Bitcoin, Cryptocurrency, Fiscal policy, Financial Repression.

## JEL Code

E42, E58, E61, O33.

## Acknowledgements

Based on a paper presented by Fernando Ulrich at the Mont Pelerin Society 2021 Special Meeting in Guatemala City, Guatemala, from November 14-18, 2021

## Submission Date

11-20-2021

## Approval Date

11-28-2021

## Publication Date

1-16-2022

## 1. INTRODUCTION

The advent of Bitcoin, in 2009, and of other cryptocurrencies which immediately followed, has largely been dismissed by monetary authorities around the globe as the emergence of a merely niche technology, allegedly used mainly by speculators and cyber criminals. Despite the increasing adoption and market value of these digital assets, central bankers worldwide for years rejected the notion that they could eventually displace reserve fiat currencies to any significant degree.

In June 2019, however, the announcement of Libra<sup>1</sup> changed that view. Headed by Facebook's subsidiary Calibra, the consortium behind Libra would issue a new cryptocurrency, backed by a basket of national fiat currencies to maintain price stability (mimicking the IMF's Special Drawing Rights). In addition to its semi-centralized nature, the fundamental difference from previous cryptocurrencies was the fact that Libra would be issued within an existing network of over 2.5 billion users. This meant potentially instant adoption by a significant portion of the world's population. This also meant Libra could become a *de facto* parallel currency at inception.

Libra was feared with varying intensity by monopoly issuers of money around the globe. Issuers of emerging market currencies, such as the Brazilian real, soon realized their monetary policy could be affected when citizens suddenly had a seemingly superior alternative for cash balances. This arrangement could challenge the supremacy of the local currency and ultimately undermine the nation's monetary sovereignty. That alone sounded the alarm for central banks and prompted a commensurate and resolute response.

Politicians and regulators in the United States reacted swiftly and warned Libra and its backers the project would have a hard time moving forward in its current form. In other countries issuing reserve currencies, Libra received effectively the same treatment. The Switzerland-based consortium was forced to curtail its ambitions. In December 2020, Libra was rebranded as Diem, and instead of a

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<sup>1</sup> Introducing Libra, The Libra Association. (Accessed: November 03, 2021). <https://www.diem.com/enus/updates/introducing-libra/>

cryptocurrency backed by a basket of reserve currencies, the project would issue stablecoins; that is, tokens backed 1 for 1 in the local currency. In January 2022, it was announced that the Diem Association was shutting down, as the Meta Platform, (the new denomination of Facebook) had sold its assets.<sup>2</sup>

For observers of monetary affairs, Libra's fate was all but predictable.<sup>3</sup> No monopoly issuer would ever allow a parallel currency, issued by private entities, to circulate side-by-side with its national money. The creation of money substitutes by commercial banks has been a traditional feature of modern finances. Nowadays, private non-banking, and even non-financial institutions, such as managers of money market mutual funds, have been allowed to create money substitutes. However, they have been allowed to do so for more than three centuries now, operating as agents of sovereign governments in the exercise of their monetary prerogatives, in order to foster the political goals of those sovereigns, not as competitors. Central banks, as the primary agencies in charge of the exercise of monetary prerogatives in most modern societies, are as jealous of their prerogative as the old mints.

Preventing the project from getting off the ground was the first step by central banks, although they may have had little active role in this process. The second, and by far the most decisive and far-reaching response, was accelerating the digital version of their paper currencies, the so-called Central Bank Digital Currency or "CBDC" (Bank of England 2020).

An electronic version of cash is a natural evolution in the current internet age. Its digital appearance, nonetheless, is the least important aspect. In fact, a CBDC represents the most radical transformation to the workings of state money, which may alter not only financial intermediation and stability, but also monetary and fiscal policy, allowing for an unprecedented level of discretion and control.

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<sup>2</sup> For example, see: <https://www.coindesk.com/business/2022/01/31/silvergate-bank-confirms-diem-tech-acquisition/#:~:text=The%20Diem%20Association%20is%20shutting,as%20Libra%20in%20June%202021.>

<sup>3</sup> For example, see: [https://lawliberty.org/what-would-the-treasury-view-of-libra-be/.](https://lawliberty.org/what-would-the-treasury-view-of-libra-be/)

Additionally, it may enable an Orwellian financial system, conferring the state apparatus with a surveillance power never before seen in the history of money.

## **2. HOW A CBDC WORKS**

Under the current fiat money standard, a Central Bank issues its liabilities to the public in two main forms: physical notes and coins and bank reserves. The latter comprise digital Central Bank money (or settlement accounts), available to banks and selected financial institutions and are used to settle ultimate liabilities in an economy; this implies final settlement in the system. It could be argued this is a *wholesale* CBDC. Notes and coins are the metallic money and paper currency, or simply “cash”, used by the public at large for daily transactions. Cash payments also imply final settlement.

Bank customer deposits are not physical, but they’re not money either in the legal sense, as a deposit is a promise to pay in specie whenever the customer demands it (redemption in kind). Thus, payments in commercial bank money (i.e., customer initiated wire transfers) are not final settlement, but merely a liability transfer between banks pending clearing, either by compensation of credits and debts between banks, or by the transference of reserves, that is, central bank issued money.

Proposals for creating digital currencies by central banks have taken the form either of “electronic tokens” or “accounts.” Tokens are designed to mimic paper money. They are similar to pre-paid debit cards but in digital format.

Account-based CBDCs would be universal central bank accounts. They are designed to give retail customers access to bank accounts directly with the Fed. Like electronic tokens, these accounts are liabilities of the central bank. They would be reserve balances held at the central bank, except that they would be available to everyone, and not only to designated financial institutions.

Whether as a token or a bank account, a CBDC would be a form of money created by the US Federal Government through its monetary authority. This form of money will be as “sovereign” as you can get.

It follows that proposals to create CBDCs should be considered in practice what they are in theory: an attempt to crowd out privately created money – and, therefore, an invitation for a greater degree of government-directed credit, money creation, and financial repression than we already have today.<sup>4</sup>

A retail CBDC would constitute a new form of Central Bank liability, a digital cash (retail CBDC). In this new arrangement, a depositor may wish to redeem either in physical specie (notes, paper-money) or digital specie (CBDC, electronic cash) through a digital wallet. Once the digital currency is in wide circulation, users may transact via their digital wallet, making and receiving payments without having to use a financial institution. All payments are settled within the Central Bank Digital Currency system. Therefore, a hypothetical retail CBDC would be held by the user via its digital wallet and transferred electronically within the very same system.

From the user standpoint, the only counterparty would be the Central Bank itself, which would be in charge of issuing digital currency units and operating the network. The digital currency should work like physical cash, being a bearer asset with no financial intermediary, allowing for instant and final settlement between parties.

From the commercial bank standpoint, bank deposit withdrawals result in loss of bank reserves, either by handing over physical cash to customers or by crediting the customers' CBDC wallet. In a CBDC withdrawal, a commercial bank's balance sheet would see a decrease in its bank reserves account (credit bank's assets) and a decrease in customer deposits (debit bank's liabilities), whereas the Central Bank's balance sheet would record a decrease in bank reserves (debit CB's liabilities) and an increase in CBDC in circulation (credit CB's liabilities). In other words, this would amount to banking disintermediation.

Note that from the Central Bank perspective, no new money has been created; monetary media has merely been shifted from bank reserves to CBDC. However, for the commercial bank, this does entail a loss of reserves, which has consequences for liquidity management. Moreover, it also entails the destruction of bank money, since

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<sup>4</sup> For more details about this, see Zelmanovitz and Salama, 2020: - <https://justmoney.org/1-zelmanovitz-and-b-meyerhof-salama-central-bank-digital-currency-the-hidden-agenda/>

a demand deposit was just written off (such bank liabilities fall under the monetary aggregate M1).

It is essential to comprehend the balance sheet repercussions of CBDCs because these have profound implications for financial intermediation and stability, while affecting the creation and circulation of outside money (cash, either physical or digital) and inside money (bank money, bank deposits).

### **3. FINANCIAL INTERMEDIATION AND STABILITY**

The introduction of a CBDC could very well displace the use of physical cash, making up most of Central Bank money in circulation over time. However, in contrast to physical cash, users have fewer incentives to return this outside money to the banking system. Since a CBDC, in any of its conceivable forms, enables electronic payments over any distance and in any amount, in most if not all of the proposals, users would have a much lower propensity to deposit a CBDC at a bank to convert it into a demand deposit. Relatively higher than cash payment convenience would cease to be a feature of commercial bank accounts.

This may mean permanent lower reserves for commercial banks to manage liquidity. Thus, to encourage customers to deposit funds, financial institutions may have to offer higher rates of interest on deposits, which reduces banks' profitability. The combination of higher funding costs with lower bank reserves may diminish credit expansion, reducing the overall level of financial intermediation in an economy.

To mitigate this risk, CBs may limit the nominal amount of retail CBDC for final users, much as physical cash transactions are limited in many jurisdictions. However, such a constraint will certainly reduce the appeal of a CBDC to the public.

Government finances may also boost the adoption of a CBDC and intensify the impacts over financial intermediation. Government outlays may be carried out through widespread use of CBDC, just as taxes may be paid in CBDC, keeping a significant portion of an economy's financial activity away from the banking system.

In times of funding stress, commercial banks will be much more prone to *digital* bank runs. If one may withdraw money through a mobile app, there's no need to

physically redeem money at your local bank branch. A CBDC may bring about higher risks of financial instability (Group of Thirty 2020).

#### **4. MONETARY POLICY**

The monetary policies after the onset of the Great Financial Crisis were nothing short of extraordinary and unparalleled, in scope and in volume. These ranged from large-scale asset purchases, from government bonds to stocks, to doubling of the monetary base in very short timeframes, to zero and negative interest rates. The new coronavirus pandemic of 2020 exacerbated such policies to an unimaginable extent.

Yet, to many Central Bankers and economists, the existence of physical cash puts a limit on the efficacy of some policy tools, since cash, after printing and issuance into circulation, resides outside the perimeter of monetary authorities. In other words, central Banks cannot charge negative rates on cash. For that very reason, there is a growing trend among economists to ban the use of cash, especially large-denomination bills, because it “constrains monetary policy” (Rogoff 2016).

By abolishing cash and implementing a CBDC, monetary instruments would have nowhere to hide, paving the way for negative interest rates across the whole economy and for all agents. Central Banks could even enforce “deeply negative rates” when the economic situation so warranted (Rogoff 2020). Obviously, the economic arguments for such a drastic policy enjoy no consensus among economists.

For the purpose of this paper, however, this debate misses the point. What matters is that the technological capability for carrying out this harsh policy would be available once a CBDC is fully operational. Moreover, if the power exists, eventually it will be used, and abused.

The digital nature of CBDC would allow for much more radical experiments of monetary policy, negative rates being just the “low-hanging fruit”. Other experiments could include issuing money with an expiration date, helicopter money, stimulus checks, universal basic income and subsidized credit to special groups, among many other policies which we can only imagine.



## 5. FINANCIAL REPRESSION

Assuming this happens, the traditional boundaries between monetary and fiscal policy will be blurred if not totally erased. Until now, it is understood in most modern liberal democratic economies that the Central Bank is allowed to purchase short-term treasury bonds in order to fulfill its primary mission of keeping the price level stable. Such an allowance is required, since the stabilization of the price level in the economy is obtained by the manipulation of interest rates in general, and the manipulation of the interest rate over short-term public debt in particular.

The purchase by the central bank of long-term treasury bonds is already perceived as an action of monetary policy. This is also true for the purchase of private bonds, which amounts to a concession of a line of credit to certain groups or sectors in the economy, regardless of the scale of credit subsidies that may or may not be part of those transactions.

Specific economic activities could be favored or discouraged; for instance, companies operating in the green sector are exempted from negative rates, whereas cannabis companies will have an additional tariff. The creative mind of man by decree is limitless, even for social engineers in the monetary sphere.

Depending on the specifics of each country's CBDC implementation, we may have monetary authorities extending loans to households and companies, entering the business of credit and financial intermediation. Therefore, a CBDC arrangement in conjunction with the abolition of cash will confer on Central Banks a level of control over base money and the money supply never before seen in history, and with that, of control over the allocation of credit in the economy, by the reduction if not elimination of inside money.

If this took place, allocation of credit could be directed to those projects that are decided to be more worthy of receiving funding for political reasons, even beyond the extent that this is done today. This is called financial repression or the allocation of credit for political purposes. CBDC is a variant of previous attacks on inside money, such as proposals for "narrow banking," this time, by the introduction of a new technology. At its core, it is one more proposal to the effect that the liquid funds of the community should be politically allocated.

Under current arrangements, government issuance of paper money comprises only a fraction of the total stock of money. Under current arrangements, credit creation by the private banks serves to allocate resources to productive endeavors. By introducing a CBDC through a mechanism like an “account,” under which all bank deposits are transferred in real time to the central bank, the government would force private banks to allocate resources to a single asset – bank reserves with the central bank – that is, public debt. In other words, funding would be given for ends decided politically, not by the market.

## **6. FINANCIAL SURVEILLANCE**

The design choices in a CBDC implementation will almost certainly jeopardize user privacy. The more closed the source code of a CBDC system, the less citizens will be able to verify the level of personal information being collected and used by Central Banks for all purposes.

In countries where the rule of law still holds, governments tend to be more careful when dealing with user data. Privacy tends to be more highly regarded in these jurisdictions. Nevertheless, if the source code isn't open and available for public review, there is no technological guarantee that a CBDC system won't lend itself to all kinds of privacy infringements.

The possibility that a CBDC network may turn into a state financial surveillance apparatus is not negligible. The technology could be used to provide the state with an Orwellian monetary system, where government agencies, not only the Central Bank, have absolute monitoring capabilities, with powers to restrict, censor, and exclude users from the financial system. Online or offline behaviors could be punished, be it an ill-worded social media comment, or a commercial transaction with a merchant with a high carbon footprint.

One should not underestimate the ever more present danger of censorship. In China, the rumored social credit score system would certainly be connected to a CBDC network, rewarding or penalizing citizens for their behavior. Enough user data could be gathered over time to create a financial digital dossier of every citizen, rendering the privacy of the entire population vulnerable to the whims of the state.

## 7. CONCLUSION

There remain technological and political challenges to the definitive version of a CBDC, especially in countries where the rule of law still prevails. For example, how will cross-border payments work in a CBDC network? Would Central Banks cooperate to enable cross-border transactions? What would the exchange rate be? What about capital controls? To qualify for a CBDC wallet, should one be a citizen or may foreigners hold CBDCs as well, independently of their tax status? To date, no monetary authority has answered these questions satisfactorily.

In terms of the public relationship, how would Central Banks handle a retail CBDC? It is one thing dealing with dozens of primary dealers and financial institutions, but it is quite different having to cater for tens of millions of users. Central Banks have no retail expertise.<sup>5</sup> Some economists have aired the idea of a hybrid CBDC, where the CB issues the digital currencies, but commercial banks retain the relationship with the public. To the user, a hybrid CBDC makes little practical difference. But even if this model is adopted, the consequences for financial intermediation, monetary and fiscal policies described in this paper are still valid.

The most intricate challenge lies in the relationship between the Central Banks and the banking system. A CBDC implies a pivotal transformation to bank money creation and credit expansion. How it will impact overall economic activity, inflation, and monetary policy is highly uncertain. But it is safe to assume a CBDC will mark a decisive shift to the workings of modern money creation. In this scenario, the state's footprint in the financial system can only grow. And when government intervention increases, personal liberty and privacy are threatened.

Ironically, cash constitutes the last refuge of true monetary freedom. But when cash is made illegal, individuals will look for alternatives. In an era of CBDC, the only real remaining choice will be Bitcoin and other cryptocurrencies.

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<sup>5</sup> The recent introduction in Brazil of a platform (called PIX) to allow for the clearing of wire-transfers between accounts in different banks, meritorious as it is due to the reduction in transaction costs and the elimination of “walled gardens” by different institutions, was fraught with complications typical of retail operation, such as concerns with the personal security of customers against kidnappings and the like. See: <https://business.ebanx.com/en/resources/payments-explained/pix-instant-payment-system>.

CBDCs represent absolute control over money, not only in terms of managing its creation and value over time, but also in terms of who is allowed to spend and receive, when, where and with whom. This is monetary absolutism.

Almost half a century ago, Friedrich August von Hayek decried the perils of endless inflation and the grave “threats to social peace and continued prosperity inherent in existing monetary institutions” (Hayek 1976b). According to Hayek, the solution was allowing competition in the provision of money:

I have come to the conclusion that the best the state can do with respect to money is to provide a framework of legal rules within which the people can develop the monetary institutions that best suit them. It seems to me that if we could prevent governments from meddling with money, we would do more good than any government has ever done in this regard. (Hayek 1976a).

Hayek further argued not for the construction of a new system, but the “prompt removal of all the legal obstacles” which have prevented humanity from evolving and innovating with money for two thousand years.

Fast forward to the present and state monetary institutions are pushing for a revamped system, capable of revolutionizing the management of currency and entrusting governments with unprecedented control over the financial system. Above and beyond permitting meddling with money, CBDCs will give governments the power to meddle with human free will.

Paraphrasing the Mont Pelerin Society’s Statement of Aims, it is difficult to imagine a society in which freedom is effectively preserved, if a Central Bank Digital Currency is imposed upon mankind.

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