

## Economic Brief

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# A Historical Perspective on Digital Currencies

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This article reviews private currencies in U.S. history to shed light on the contemporary issue of digital currencies. This perspective suggests that government interventions have a critical role in creating a well-functioning money and payments system. Particularly, a central bank digital currency (CBDC) can be a useful tool to supplement regulation in addressing long-standing concerns and risks associated with private currencies.

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*This article is the second in a series on central bank digital currencies.*

The emergence of cryptocurrencies has brought to the forefront of policy debates many long-standing questions related to the viability of private currency, the impact of competition on banking and payment, and how governments (and, in particular, central banks) should address associated effects. Importantly, assuming there is significant demand for cryptocurrencies in the current environment, a fundamental question is: Should the U.S. central bank issue its own digital currency? Or should it instead limit itself to regulating private digital currencies and let market mechanisms and entrepreneurial ingenuity do the rest?

Our main focus for this discussion is private currencies, or "tokens" issued by a private entity that, in principle, can act as an alternative medium of exchange to national fiat currencies. Recent examples of private currencies are bitcoin and [Diem](#) (formerly Libra, which was proposed and later withdrawn by Meta [formerly Facebook]), and historical examples include bank notes issued by private banks. Depending on the design, private currencies can be backed by bullion or government debt (which is how bank notes operated in the past and most stablecoins currently operate), or they are backed by nothing at all (which is how bitcoin operates).

Private currency used to be widespread in the U.S. before and around the creation of the Federal Reserve System. The role of private currency has also been debated extensively in the economics literature. The lessons learned from the past can shed light on current issues regarding what the government's role should be with respect to digital currencies.

## Private Currency in U.S. History

In the U.S., private banks issued circulating bank notes prior to the 1930s. The U.S. government also issued currency during much of that period: Gold and silver coins have been produced by the U.S. Mint since 1793, and the Treasury Department issued paper currency called Demand Notes in 1861 and United States Notes starting in 1862.

The years between 1837 and 1863 are known as the free banking era: Money and payments were, to a large extent, in turmoil. There was a large variety of distinct private notes issued by lightly regulated state banks.<sup>1</sup> The multiplicity of different notes facilitated counterfeiting. Furthermore, bank notes were converted into one another at complex and volatile exchange rates, and note holders often faced substantial redemption risks. For currency to function effectively as a means of payment, stability of its value is critical. In this respect, the free banking era was not ideal.

The free banking era ended with the 1863 National Banking Act.<sup>2</sup> National banks were chartered and regulated by the newly created Office of the Comptroller of the Currency, an agency of the U.S. Treasury Department. Under the act, national banks issued bank notes that were unified in design (as dictated by the federal government) and backed by government bonds as collateral. In return, national bank notes were fully insured by the federal government in case the issuing banks failed.

As a result, national bank notes traded at par with one another, forming a uniform currency with minimal counterfeiting and no redemption risk. Initially, many existing state banks continued issuing bank notes, benefiting from the lighter regulation relative to national banks. Eventually, however, the National Banking Act was revised to impose a 10 percent tax on bank notes issued by state banks. This drove state bank notes out of existence and caused many state banks to convert to national banks.

Private currency during the national banking era worked rather successfully. Federal Reserve notes were introduced in 1914 (shortly after the Fed was established), while national bank notes continued to circulate until 1935.

Federal Reserve notes were not a superior means of payment relative to national bank notes during that period. The initial idea behind issuing Federal Reserve notes was that, since the supply of national bank notes was deemed not sufficiently elastic to appropriately accommodate in times of financial distress, issuing its own notes would allow the Fed to

provide an elastic supply of currency and act as a lender of last resort.<sup>3</sup> Eventually, issuance of national bank notes was banned in 1935 based on concerns about the Fed's ability to effectively control the supply of base money to appropriately conduct monetary policy.

In sum, the U.S. historical experience suggests that some government intervention plays an important role in supporting a well-performing payments system with private currencies: one with low transaction cost and minimal counterfeiting and that is conducive to a robust and stable financial infrastructure. Private currencies' desirability depends on how they function in this payments system as well as on how they affect the efficacy of monetary policy implementation.

## **The Economic Debate About Private Currencies: Hayek vs. Friedman**

The roles of private currency and the lessons learned from U.S. history have been debated in the economics literature for a long time. In fact, the intellectual roots of cryptocurrencies such as bitcoin can be traced back to the Austrian school of economics and its criticism of the government monopoly over fiat money.

According to Friedrich Hayek's 1976 book "Denationalisation of Money: The Argument Refined (PDF)," instead of a national government issuing a unique currency and imposing legal tender laws, private businesses should be allowed to issue their own forms of currencies. That is, currency issuance should be open to competition. Currencies able to guarantee a stable purchasing power would eliminate other less stable currencies, which would yield an efficient monetary system.

Hayek's ideas, however, have not been broadly adopted. Rather, in his 1960 book "A Program for Monetary Stability," Milton Friedman pointed out that "monetary arrangements have seldom been left entirely to the market, even in societies following a thoroughly liberal policy in other respects, and there are good reasons why this should have been the case." According to Friedman, those good reasons are:

- The high resource costs of issuing currency
- The difficulty of enforcing contracts and preventing fraud
- The difficulty with limiting the amount issued
- Possible externalities on other parties

In general, these reasons continue to be relevant today when thinking about digital currencies and whether or not to leave them entirely to the market.

### *High Costs*

The resource costs of running a cryptocurrency system can be very high. Bitcoin is a striking example: At its current level, bitcoin consumes electricity exceeding the electricity used annually in, for example, Norway.<sup>4</sup> Other cryptocurrencies may not rely on such huge

energy consumption, but their resource costs for monitoring and maintaining cybersecurity can still be significant.

### *Fraud Possibilities*

The possibility of fraud remains a challenge. Recently, there have been several major cases of scams and financial misconduct involving digital currencies.<sup>5</sup>

### *Currency Overissuance*

Overissuing is another relevant concern. Money is a "network good," meaning that the value increases with the number of users. On one hand, once a centralized issuer gains a dominant market position in the provision of currency, it may exploit the profit from inflation without properly accounting for the losses experienced by users. On the other hand, for decentralized digital currencies based on predetermined algorithms for their supply, overissuance could happen on the extensive margin via excessive entrants given that the cost of creating such a currency is relatively low.

### *Externalities*

Externalities can be pervasive. Because private digital currencies are currently not regulated or insured by any government, the risk of runs is high. The recent crash of stablecoin TerraUSD is a pertinent example. Such crashes could spread to other markets, causing fire sales and disruption in the financial sector and the economy.<sup>6</sup> Furthermore, moral hazard can arise if a private currency becomes deemed "too big to fail."

## **Adding a Central Bank Digital Currency to the Mix**

With respect to issues related to providing digital currencies, the central bank could take the role of regulator rather than direct service provider. However, we can think of various reasons for a central bank to still consider the possibility of issuing a central bank digital currency (CBDC) as a way to complement regulation:

- Issuing private digital currencies, as we discussed before, involves significant resource costs. A widely trusted central bank that can dominate the landscape by issuing a CBDC could produce substantial savings for society.
- A CBDC may help discipline the digital currency space, competing away fragile or fraudulent digital currencies and, in this way, enhancing financial stability.
- A CBDC may improve the central bank's payment services. In the case of the U.S., it may also help strengthen the international reserve currency status of the dollar.

For a central bank seeking to minimize waste of resources from operating multiple private currencies, it is important to realize that issuing a CBDC will not necessarily drive out all private digital currencies. U.S. history instead suggests that private notes were driven out of

circulation (mainly) by taxation or regulation. Short of that, private currencies are likely to survive and differentiate themselves from a CBDC by targeting niches and certain specific users or by employing special pricing strategies.<sup>7</sup>

We read history as telling us that as long as private digital currencies fulfill legitimate economic functions and do not impede the central bank's monetary policy operation, then there would be no need for the central bank to become the monopoly issuer of digital currency. However, the thinking around this topic is evolving, and many important considerations remain to be thoroughly investigated before a definitive conclusion can be reached.<sup>8</sup>

## Closing Thoughts

In the past, the private currencies that circulated in the U.S. were issued by banks that mainly operated locally with well-understood business models. This made those institutions relatively easy to regulate. In contrast, regulating potential issuers of digital currencies could become a more challenging matter. Global firms (or, in some cases, global platforms based on computer algorithms) issuing digital currencies and forming complicated networks in multiple jurisdictions can make tight regulation a tall order.

Absent effective regulation, it seems reasonable to expect complications in payments arrangement, possible abuse of market power and undetected systemic risk. Losing tight control of monetary policy can also be a major concern for a central bank. Issuing a CBDC might be a way to get ahead of these issues and keep a more orderly financial system.

Yet, there are still significant challenges in effectively rolling out a CBDC. For a CBDC to be widely adopted, it would have to provide security, functionality and services to not be dominated by private currencies. This, together with other policy trade-offs, makes the appropriate design and operation of a CBDC and the question of whether to issue a CBDC in the first place a non-trivial matter.<sup>9</sup>

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### Additional Resources

### Follow the Series

- [Are There Compelling Reasons to Consider a Central Bank Digital Currency for the U.S.?](#)
- [A Historical Perspective on Digital Currencies](#)
- [Why Stablecoins Fail: An Economist's Post-Mortem on Terra](#)

- [Central Bank Digital Currencies and Regulatory Alternatives: the Case for Stablecoins](#)

## Related Materials

- *Economic Brief*, March 2021: [Should the Fed Issue Digital Currency?](#)
- *Economic Brief*, May 2021: [Should Central Banks Worry About Facebook's Diem and Alibaba's Alipay?](#)
- *Econ Focus*, Second Quarter 2022: [Fed Eyes Central Bank Digital Currency](#)
- *Econ Focus*, Fourth Quarter 2021: [When Will Firms Issue Digital Currencies?](#)
- *Speaking of the Economy*, April 2022: [The Fed's Role in Payments Innovation](#)

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<sup>1</sup> See the 2014 working paper "[The Efficiency of Private E-Money-Like Systems: The U.S. Experience with State Bank Notes.](#)"

<sup>2</sup> See the 2015 working paper "[The Efficiency of Private E-Money-Like Systems: The U.S. Experience with National Bank Notes.](#)"

<sup>3</sup> See the 2015 working paper "[Government and Private E-Money-Like Systems: Federal Reserve Notes and National Bank Notes.](#)"

<sup>4</sup> According to the 2022 article "[Why Does Bitcoin Use So Much Energy?](#)," it's estimated that bitcoin currently consumes electricity at an annualized rate of about 127 terawatt-hours (TWh).

<sup>5</sup> See the 2021 articles "[SEC Sues BitConnect and Founder, Alleging Massive Cryptocurrency Scam of World-Wide Investors](#)" and "[Tether's Latest Black Eye Is CFTC Fine for Lying About Reserves.](#)"

<sup>6</sup> See the May 2022 articles "[Yellen Renews Call for Stablecoin Regulation After TerraUSD Stumble](#)" and "[Fed's Brainard Sees Need for Regulation Around Crypto Assets.](#)"

<sup>7</sup> See, for example, the 2021 working paper "[The Digitalization of Money](#)" and the 2020 book "[Distributed Ledgers: Design and Regulation of Financial Infrastructure and Payment Systems.](#)"

<sup>8</sup> For a related discussion of the history of private currencies and its implications for the CBDC debate, see the forthcoming paper "[Taming Wildcat Stablecoins.](#)"

<sup>9</sup> For further discussions of the policy trade-offs from issuing a U.S. CBDC, see the 2021 article "[Should the Fed Issue Digital Currency?](#)" and the 2022 article "[Are There Compelling Reasons to Consider a Central Bank Digital Currency for the U.S.?](#)"

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