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Protecting the Sovereign's Money Monopoly

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Protecting the Sovereign's Money Monopoly

Gary B. Gorton & Jeffery Y. Zhang*

July 14, 2022

Abstract

Sovereign states have had a monopoly over the production of circulating currencies for well over a century. Governments, not private entities, issue circulating currencies. Indeed, in 1986, Milton Friedman and Anna Schwartz declared that “[t]he question of government monopoly of hand-to-hand currency is likely to remain a largely dead issue.” The advent of stablecoins—privately issued digital money that are pegged to fiat currencies like the U.S. dollar or the Euro—raises the question of the money monopoly from the grave.

Why did sovereign money monopolies come into existence in the 19th and 20th centuries? Should circulating private money coexist once again with sovereign money in the 21st century? This essay explores these fundamental questions of legal and financial architecture by revisiting the original legislative debates that led to the sovereign's money monopoly in England, the United States, Canada, and Sweden. In every case, privately issued monies first circulated because of a limited money supply—a shortage of specie (*i.e.*, metallic coins)—and then were ultimately banned to improve financial stability, gain greater control over monetary policy, or strengthen the sovereign's fiscal position.

Today, lawmakers and regulators *assume* that coexistence between privately issued (digital) money and sovereign (digital) money is the optimal path forward and are crafting legal guardrails under that assumption. It is a very strong assumption—one that should be challenged since the upside is unclear and the costs remain similar. We argue that, if anything, the sovereign's monopoly on circulating currencies should be protected.

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Table of Contents

| | |
|--|----|
| Introduction | 3 |
| Part I. What's Special About Money? | 9 |
| A. Theory of Money | 9 |
| B. Economic Efficiency..... | 10 |
| Part II. The Circulation of Privately Issued Money | 12 |
| A. Information-Sensitive Monies Circulating with Unlimited Liability | 12 |
| B. Information-Sensitive Monies Circulating with Limited Liability | 16 |
| Part III. The Emergence of the Sovereign's Money Monopoly | 20 |
| A. England | 20 |
| B. United States | 22 |
| C. Canada..... | 24 |
| D. Sweden | 28 |
| E. Insights for Coexistence v. Monopoly..... | 30 |
| Part IV. The State of Play..... | 32 |
| A. Runs and Contagion | 32 |
| B. Legislative and Regulatory Proposals..... | 33 |
| C. Circulating Money and Insurance..... | 36 |
| Conclusion..... | 38 |

Introduction

During the 19th and 20th centuries, every country decided that the production of circulating money would be a monopoly given to the sovereign, particularly to the country's central bank. Some examples are shown in Table 1 below.¹ Milton Friedman and Anna Schwartz thereby concluded in 1986 that “[t]he question of government monopoly of hand-to-hand currency is likely to remain a largely dead issue.”² But the issue has come alive today.

Table 1: Central Banks and Money Monopolies

| Country | Central Bank Founded | Decision on Monopoly |
|----------------|----------------------|----------------------|
| Austria | 1816 | 1816 |
| Norway | 1816 | 1818 |
| Denmark | 1818 | 1818 |
| United Kingdom | 1694 | 1844 |
| France | 1800 | 1848 |
| Belgium | 1850 | 1850 |
| Netherlands | 1814 | 1863 |
| Spain | 1874 | 1874 |
| Germany | 1876 | 1876 |
| Japan | 1882 | 1883 |
| Finland | 1811 | 1886 |
| Portugal | 1846 | 1888 |
| Sweden | 1668 | 1897 |
| United States | 1913 | 1913 |
| Italy | 1893 | 1926 |

Indeed, it was considered a settled issue until the recent advent of stablecoins, a subset of cryptocurrencies that seek to become circulating money. Stablecoins like Tether or USD Coin are digital tokens that reside on blockchains. The issuers of most stablecoins claim that their coins are backed by cash and safe assets, are pegged to a fiat currency like the U.S. dollar and are redeemable on demand.

From the perspective of economic theory, stablecoin issuers are functionally equivalent to unregulated banks.³ They suffer from run risk and can generate systemic dangers in the

¹ Forrest Capie, Stanley Fischer, Charles Goodhart & Norbert Schnadt, *THE FUTURE OF CENTRAL BANKING* (1994).

² Milton Friedman and Anna Schwartz, *Has Government any Role in Money?*, 17 *JOURNAL OF MONETARY ECONOMICS* 37, 52 (1986).

³ See Gary B. Gorton & Jeffery Y. Zhang, *Taming Wildcat Stablecoins*, 90 *UNIVERSITY OF CHICAGO LAW REVIEW* (forthcoming) (arguing that privately produced monies like stablecoins are not information-insensitive and therefore suffer from run risk when not properly regulated).

financial system.⁴ Of note, the President’s Working Group on Financial Markets agreed with this characterization in their *Report on Stablecoins*.⁵ But the *Report* and the related academic commentary do not mention the issue of the sovereign’s monopoly over money, which directly ties into the question of whether privately produced money should coexist with the sovereign’s money in the first place.⁶ Our essay addresses this question.

* * *

From the outset, we wish to be clear about one particular concept: circulation. There is account-based money and token-based money. Account-based money refers to money in a specific bank account. Person X writing a check to Person Y, for example, links the payment to X’s bank account. That money will be deposited in Y’s bank account when the check clears (*i.e.*, when the money is drawn from X’s account and put into Y’s account). Account-based money does not circulate. It does not pass hand-to-hand in a chain of transactions that are separate from the check-clearing process, because the identity of the check writer matters. Consequently, endorsing a check that was written to you and using the endorsed check to buy groceries does not happen because the grocery store does not know the identity of the check writer.⁷

Token-based money, on the other hand, is not history dependent. Token-based money is not identity-linked. It is fungible like cash: A ten-dollar bill is a ten-dollar bill. It does not matter who held the ten-dollar bill 100 transactions ago because it is not linked to an individual’s identity. “Circulating money” therefore refers to money like cash that is not linked by identity.

⁴ See, e.g., Arthur E. Wilmarth, Jr., *It’s Time to Regulate Stablecoins as Deposits and Require Their Issuers to Be FDIC-Insured Banks*, 41 BANKING & FINANCIAL SERVICES POLICY REPORT 1 (2022); Howell E. Jackson & Morgan Ricks, *Locating Stablecoins within the Regulatory Perimeter*, HARVARD LAW SCHOOL FORUM ON CORPORATE GOVERNANCE (2021); Timothy G. Massad, *Regulating Stablecoins Isn’t Just About Avoiding Systemic Risk*, BROOKINGS REPORT (2021); Dan Awrey, *Bad Money*, 106 CORNELL LAW REVIEW 1 (2020). See also Alexandros Vardoulakis et al., *Lessons from the History of the U.S. Regulatory Perimeter*, FEDS NOTES (2021) (noting that the growth of stablecoins presents a challenge to today’s bank regulatory perimeter).

⁵ See President’s Working Group on Financial Markets, *Report on Stablecoins* at 2 (2021) (“To address risks to stablecoin users and guard against stablecoin runs, legislation should require stablecoin issuers to be insured depository institutions...”). The *Report* was the result of a collaborative effort by the Department of the Treasury, the Board of Governors of the Federal Reserve System, the Securities and Exchange Commission (“SEC”), the Commodity Futures Trading Commission (“CFTC”), the Federal Deposit Insurance Corporation (“FDIC”), and the Office of the Comptroller of the Currency (“OCC”).

⁶ Technically speaking, there are two important questions with respect to coexistence. One, should central banks issue sovereign digital money, otherwise known as a CBDC? And two, should there be coexistence between privately issued digital monies (*i.e.*, stablecoins) and sovereign digital monies (*i.e.*, CBDCs)? We tackle the second question. For a high-level discussion of the first question, see Gary B. Gorton & Jeffery Y. Zhang, *The Orkney Slew and Central Bank Digital Currencies*, HARVARD NATIONAL SECURITY JOURNAL (forthcoming). Dozens of countries are now conducting research and development involving CBDCs.

⁷ Some may point out that bank deposits do circulate via platforms like PayPal, Venmo, or Zelle. While these platforms certainly allow for increased transactions, they do not deviate from the account-based model described here. Money transferred through these services still go from one account to another. This is simply another form of check writing, account-based money.

In this essay, we are concerned with circulating money. When we refer to the “coexistence” of (private) stablecoins and (sovereign) cash, we are referring to the coexistence of two forms of token-based money. What should be clear is that other forms of money, like checks, do not circulate hand-to-hand. Further, as discussed in Parts II and III below, it will become clear that account-based money and token-based money are not perfect substitutes.

* * *

Today, members of Congress and senior policymakers are of the view that coexistence is possible and desirable. For example, Senator Pat Toomey is seeking to create a regulatory framework for stablecoins that “will allow this crypto-innovation to continue flourishing while protecting consumers and minimizing potential risks from stablecoins to the financial system.”⁸ Federal Reserve Chair Jerome Powell took this view during his confirmation hearings, saying that private stablecoins could compete with sovereign digital money (otherwise known as a central bank digital currency, or a “CBDC” for short).⁹ Federal Reserve Vice Chair Lael Brainard, in a speech at the 2022 Monetary Policy Forum in New York, stated that “the coexistence of CBDC alongside stablecoins and commercial bank money could prove complementary, by providing a safe central bank liability in the digital financial ecosystem, much like cash currently coexists with commercial bank money.”¹⁰

As argued in more detail below, we do not believe that the coexistence of sovereign digital currency and private digital currencies would be analogous to today’s coexistence of cash and commercial bank money. First, commercial bank money (*i.e.*, demand deposits) is not designed to circulate, whereas stablecoins are designed to circulate.¹¹ Second, demand deposits are insured by the FDIC, which essentially transforms them from private money into government money.¹² These differences have wide-ranging implications for financial stability, monetary policy, and even fiscal policy.

⁸ Press Release, *Toomey Announces Legislation to Create Responsible Regulatory Framework for Stablecoins* (Apr. 6, 2022), <https://www.banking.senate.gov/newsroom/minority/toomey-announces-legislation-to-create-responsible-regulatory-framework-for-stablecoins>.

⁹ See Allyson Versprille & Jesse Hamilton, *Powell Says Private Coins Could Compete With Fed Digital Dollar*, BLOOMBERG (Jan. 11, 2022), <https://www.bloomberg.com/news/articles/2022-01-11/powell-says-private-coins-could-compete-with-fed-digital-dollar>.

¹⁰ Lael Brainard, *Preparing for the Financial System of the Future*, Speech at the 2022 U.S. Monetary Policy Forum (Feb. 18, 2022), <https://www.federalreserve.gov/newsevents/speech/brainard20220218a.htm>. See also Andrew Ackerman, *Digital Dollar Could Coexist With Stablecoins, Fed Vice Chairwoman Says*, Wall Street Journal (May 26, 2022), <https://www.wsj.com/articles/feds-brainard-to-tell-panel-digital-dollar-could-coexist-with-stablecoins-11653570037>.

¹¹ In short, one can think of the distinction in this way: Demand deposits are account-based. They are linked to a specific person’s account at a specific bank. People with such accounts can write checks to people with similar accounts. Transactions are therefore linked to specific accounts. Circulation of cash or stablecoins, on the other hand, are based on notes or tokens. Transactions do not have to take place just between account holders.

¹² See Gorton & Zhang, *supra* note 3, at 5. In theory, stablecoins could essentially become government money if stablecoins were given government-backed insurance (akin to FDIC deposit insurance) or if stablecoins were

The notion of coexistence is also widespread among the research community. For instance, economists at the central bank of the Netherlands write: “In our view, public and private money should coexist to get the best of both worlds: trust and innovation.”¹³ Who can argue with getting the best of both worlds? Well, this idea of the coexistence between private and sovereign circulating monies has been tried in the past and was rejected—and for good reasons. Table 2 summarizes the trade-offs between allowing for coexistence versus maintaining the sovereign’s monopoly on circulating money.

Table 2: Coexistence v. Monopoly

| Considerations | Coexistence | Monopoly |
|---------------------|------------------|-------------------------|
| Financial Stability | Risks stability | Maintains stability |
| Monetary Policy | Reduces efficacy | Maintains effectiveness |
| Seigniorage | Dilutes gains | Maintains gains |

Historically, the most compelling reason for sovereign states to possess a monopoly over circulating currency was *financial stability*. Privately produced money was vulnerable to runs; credible government money alleviated this risk. The same vulnerability exists today with respect to privately produced stablecoins. We care about bank runs because they can lead to full-blown financial crises, which are very costly.¹⁴ One need only remember the 2008 global financial crisis.

What about *monetary policy*? Paul Tucker, then deputy governor of the Bank of England, offered the most succinct statement of the dominant approach to monetary operations: “We are able to implement monetary policy because the economy has a demand for central bank money and, *as monopoly suppliers*, we can set the terms on which we provide it.”¹⁵ This power would be diluted if a privately produced money coexisted with the government money.

Finally, the government would lose *seigniorage*. The seigniorage of new money is equal to the value of the money minus the cost required to produce it. The cost of producing the money

backed one-for-one by short-term U.S. Treasury debt or reserves at the central bank. For the purposes of this essay, we assume that stablecoins will not become government money in those ways and so will remain “private money.” This is not a strong assumption.

¹³ Wilko Bolt, Vera Lubbersen & Peter Wierdsma, *Getting the Balance Right: Crypto, Stablecoin, and CBDC*, DNB Working Paper No. 736 (Jan. 2022), https://www.dnb.nl/media/jo3h1dlu/working_paper_no-736.pdf.

¹⁴ See, e.g., Christina D. Romer & David H. Romer, *New Evidence on the Aftermath of Financial Crises in Advanced Countries*, 107 AMERICAN ECONOMIC REVIEW 3072 (2017); Davide Furceri & Annabelle Mourougane, *The Effect of Financial Crises on Potential Output: New Empirical Evidence from OECD Countries*, 34 JOURNAL OF MACROECONOMICS 822 (2012); Mathijis A. van Dijk, *The Social Costs of Financial Crises*, SSRN Working Paper (2013), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2278526.

¹⁵ Paul Tucker, *The Central Bank’s Balance Sheet: Where Monetary Policy Meets Financial Stability*, Speech to mark the Fifteenth Anniversary of Lombard Street Research (2014) (emphasis added), <https://www.bankofengland.co.uk/speech/2004/managing-the-central-banks-balance-sheet>.

is negligible while the value of producing the money for a developed country could be up to two percent of GDP.¹⁶ Indeed, when the central bank provides currency, it trades cash for Treasuries and then profits from the interest paid on the Treasuries and the zero interest on the cash. These profits are seigniorage. To the extent that the demand for government cash is reduced, so too will their seigniorage.¹⁷

* * *

Our essay proceeds as follows: Part I explains what is special about money. In short, money is special because its price is designed to remain fixed at par or nominal value, so that no one has an incentive to produce private information about the money's backing to take advantage of the less informed. In other words, money is supposed to be *information-insensitive*.

Part II revisits historical instances of when privately produced money circulated. The key takeaway is that privately produced money circulated when there were no better alternatives—specifically, when there was a shortage of metallic coins issued by the sovereign.¹⁸ Part II also presents cases of information-sensitive money where the money producers had *unlimited* liability (e.g., in Scotland during the 18th century). These monies were information-sensitive because the identities of the backers with unlimited liability mattered. Such systems were workable within a limited geographical area where the identities of the backers were known. Part II then describes a case of privately issued money with *limited* liability: U.S. private bank notes before the Civil War. These bank notes traded at discounts from par when used at some distance from the issuing bank. This system was economically inefficient.

Part III turns to historical case studies of the transition from privately issued money to the sovereign's monopoly over money. Specifically, Part III dives into the experiences of England, the United States, Canada, and Sweden. Each country had its own path to a sovereign monopoly over money production—a path that was typically long, winding, and rocky. In all instances, privately produced monies arose because the prior regime resulted in a limited, inelastic money supply. Alternatives were demanded and supplied by private entities. But then why were the privately produced alternatives banished? The answer is, unsurprisingly, based in an array of factors. The legislative debates show that each country was primarily focused on improving financial stability by reducing the frequency of banking panics caused by the proliferation of privately issued monies. In addition, countries were concerned about the monetary policy implications, as the proliferation of privately issued monies made it more

¹⁶ See Reid W. Click, *Seigniorage in a Cross-Section of Countries*, 30 JOURNAL OF MONEY, CREDIT & BANKING 154 (1998); Stanley Fischer, *Seigniorage and the Case for a National Money*, 90 JOURNAL OF POLITICAL ECONOMY 295 (1982) (Table A1); Kenneth Rogoff & Jessica Scazzero, *Covid Cash*, 41 CATO JOURNAL 571 (2021) (Table 5).

¹⁷ See Charles M. Kahn, Manmohan Singh & Jihad Alwazir, *Digital Money and Central Bank Operations*, IMF Working Papers (2022), <https://www.imf.org/en/Publications/WP/Issues/2022/05/06/Digital-Money-and-Central-Bank-Operations-517534>.

¹⁸ In the cryptocurrency world, there are presently no better alternatives to stablecoins. Stablecoins are the currencies used to facilitate cryptocurrency transactions of various types.

difficult to control booms and busts in the economy.¹⁹ Third, certain countries observed that having a sovereign monopoly over money would improve their public finances.

With these lessons in mind, Part IV surveys the current landscape. In recent months, the world has witnessed the spectacular collapse of two stablecoins.²⁰ The financial stability concerns are unfolding in real time. While lawmakers and financial regulators are aware of the risks to financial stability, their proposed solutions *assume* that coexistence is a given. That is, well-regulated private money should circulate alongside sovereign money.

We challenge that assumption. If governments now decide to turn back the clock and allow for the coexistence of privately issued circulating money and sovereign circulating money, they would inadvertently relitigate many of the same stability, monetary, and fiscal concerns that were widespread during the 19th and 20th centuries. The issue of coexistence should be debated, not assumed.

¹⁹ In fancier terminology, the government wanted greater control over conducting countercyclical monetary policy—to contract the money supply to prevent overheating of the economy and to expand the money supply to prevent a recession.

²⁰ See Hilary Allen, *We're Asking the Wrong Questions about Stablecoins*, FINANCIAL TIMES (May 25, 2022), <https://www.ft.com/content/baba1a78-300a-4b3b-8481-71566ad98f59>; Steve H. Hanke & Matt Sekerke, *Time to Stop Coddling Crypto*, WALL STREET JOURNAL (May 25, 2022), <https://www.wsj.com/articles/time-to-stop-coddling-crypto-cryptocurrency-stablecoin-financial-regulation-senator-toomey-money-11653494847>.

Part I. What's Special About Money?

A. Theory of Money

In congressional hearings in 1894, Charles C. Homer, the President of the Second National Bank, identified the desirable properties of money: “I believe in having a good [bank] note; a note that will pass from hand to hand *without the least question or doubt* as to it bringing the amount for which it was issued.”²¹ In 1890, the Supreme Court of Indiana noted the same intuition in *Hancock v. Yaden*:

It is not simply the government, as a government, that is interested in the power to establish and maintain a standard of value; for every citizen engaged in any business of life it is of vital importance that there should be a fixed and unchanging standard. Without it, business, except of the most meagre kind, would be at an end, and commerce would be practically annihilated.²²

Indeed, the court was asserting that it would be *economically efficient* to have a “fixed and unchanging standard” of value.

These observations are essentially saying that money should circulate at par with no questions asked (“NQA”). The price should be constant at par—a dollar is a dollar—so the less-informed cannot be taken advantage of in transactions. In this case, the money is produced such that no one finds it profitable to produce (private) information about the backing for such money, and everyone knows that this is the case.

Put differently, money is supposed to be *information-insensitive*; money is special *because its price is not supposed to change*. The price adjustments that occur because of changes in supply and demand—like the price adjustments for bananas—do not apply to money. A one-dollar bill is to always transact for one dollar without question. This is the NQA principle. However, if the price does not change, then the laws of supply and demand require that the quantity must change. These adjustments occur most dramatically during a bank run when the outstanding quantity of the privately produced money is severely reduced.

These ideas were formalized by the economics literature.²³ For instance, Dang, Gorton, and Holmström show that the optimal way to produce information-insensitive money is by designing the money to be debt and backed by debt—hence, debt-on-debt. Examples include

²¹ Charles C. Homer, *Hearings before the Committee on Banking and Currency, Fifty-third Congress, Third Session* (1894-1895) at 118 (emphasis added).

²² 121 Ind. 366 (1890).

²³ See Gary Gorton & George Pennacchi, Financial Intermediaries and Liquidity Creation, 45 JOURNAL OF FINANCE 49 (1990); Bengt Holmström, *Understanding the Role of Debt in the Financial System*, BANK FOR INTERNATIONAL SETTLEMENTS WORKING PAPER No. 479 (Jan. 14, 2015), <https://www.bis.org/publ/work479.htm>; Tri Vi Dang, Gary Gorton & Bengt Holmström, *The Information View of Financial Crises*, 12 ANNUAL REVIEW OF FINANCIAL ECONOMICS 39 (2020).

free bank notes backed by state bonds, demand deposits backed by portfolios of loans, and sale and repurchase agreements (“repos”) backed by debt collateral. Debt-on-debt maximizes information-insensitivity. We take this as a theory of money and use information-insensitivity as the benchmark.

B. Economic Efficiency

In 1863, the U.S. National Bank Act was passed. This Act created national banks and national bank notes, where those bank notes had to be backed by U.S. Treasury securities. Prior to this Act, hundreds of privately produced bank notes (discussed further below) traded at time-varying discounts from par, so the country had a system of multiple currencies with floating exchange rates, that is these notes were information-sensitive.

The National Bank Act created a common currency. After the Act was passed, 729 new banks were established between 1863 and 1866, and these new banks concentrated in what would become the nation’s manufacturing belt. There was capital deepening in the manufacturing sector.²⁴ Further, counties with access to the new national banks experienced significant manufacturing growth.²⁵ Multiple studies lend evidence to support the idea that having a fixed an unchanging standard of value was beneficial for the macroeconomy. Other evidence comes from studying optimal currency areas.²⁶

The impact of a uniform currency on economic efficiency was well understood. With respect to the National Bank Act of 1863, John Million wrote in 1894:

The advantages of uniformity were not hidden from the states—men of that day who had been taught in the bitter school of experience what were the disadvantages of a mongrel currency. The great advantage to the business of the community of a uniform currency would lie in economy of exchange. This point was clearly made by [U.S. Treasury] Secretary Chase in his Report of 1861, when he recommended the system for the first time, and it was reiterated in his Report of 1862. Western people especially stood in need of a sound

²⁴ See Matthew Jaremski, *National Banking’s Role in U.S. Industrialization, 1850–1900*, 74 JOURNAL OF ECONOMIC HISTORY 109 (2014).

²⁵ See Chenzi Xu & He Yang, *Monetizing the Economy: National Banks and Local Economic Development*, Stanford GSB Working Paper (Feb. 2021), https://chenzi-xu.com/docs/nationalbanks_xu_yang.pdf.

²⁶ An “optimal currency area” is a geopolitical area where economic efficiency dictates that factors of production be easy to move, such as labor mobility. The literature on optimal currency areas began with Robert Mundell, *A Theory of Optimum Currency Areas*, 51 AMERICAN ECONOMIC REVIEW 657 (1961); Ronald McKinnon, *Optimum Currency Areas*, 53 *American Economic Review* 717 (1963); Peter Kenen, *The Theory of Optimum Currency Areas: An Eclectic View*, in Mundell R. and Swoboda A. (eds.) MONETARY PROBLEMS IN THE INTERNATIONAL ECONOMY (1969). See also Andrew Rose, *One Money, One Market: The Effect of Common Currencies on Trade*, 15 ECONOMIC POLICY 7, 9 (2000) (“I use a large cross-country panel data set to show that two countries with the same currency trade more than comparable countries with their own currencies. Much more, perhaps over three times as much. While lower exchange rate volatility also increases trade, the effect of a common currency appears to be an order of magnitude larger than that of eliminating exchange rate volatility but retaining separate currencies.”).

currency, both for use among themselves and in their transactions with eastern banks.²⁷

* * *

To sum up, a money with a fixed price satisfies the NQA principle and is economically efficient.

As discussed in the next Part, privately produced monies came into existence when there were no alternatives. Historically, this meant there was a shortage of gold and silver—that is, there were not enough metallic coins in circulation. The privately produced monies that were created to fill the gap were information-*sensitive*, meaning that parties using them in a transaction needed to produce information. In some cases, production of that information was not prohibitively costly because those privately produced monies were limited to a very narrow geographical area.

Notably, as discussed below, privately produced money that does not satisfy NQA is vulnerable to bank runs. In other words, the private sector cannot produce riskless money, so the government steps in to insure demand deposits and produce a circulating currency.

²⁷ John Million, *The Debate on the National Bank Act of 1863*, 2 JOURNAL OF POLITICAL ECONOMY 251 (1894).

Part II. The Circulation of Privately Issued Money

Privately produced money generally does not have a fixed and unchanging standard of value because it does not satisfy the NQA principle.²⁸ It is information-*sensitive*. There is typically an incentive for private parties to produce more information about the money, thereby demanding discounts from par. So, why did such money exist in the first place? Because there were no credible alternatives.

Through the 18th century, this meant that there was no credible government money and there was a shortage of specie. Indeed, there were around 60 instances in which a country used privately produced bank notes as money. These banking systems were generally referred to as “free banking” because there was, more or less, free entry into the business of banking. These systems, however, were very heterogeneous and subject to a variety of regulations.²⁹

Were there cases in which privately produced money did not satisfy the NQA condition but were still successful in circulation? Yes, such cases existed, but only in a *limited geographical area*. The leading examples are (1) Scottish free bank notes and (2) English inland bills of exchange. These forms of private money circulated in the 18th century and early 19th century. We discuss each in turn.

A. Information-Sensitive Monies Circulating with Unlimited Liability

Scottish bank notes and English inland bills of exchange—both existing in the 18th and early 19th centuries—were examples of privately produced money where the issuers had *unlimited liability*. These money forms were backed by the wealth of the partners in Scottish banks and the signatories to the inland bills, respectively. In other words, these private monies were information-sensitive. Identities mattered.

1. Scottish Free Banking

From 1716 to 1844, Scottish banking was characterized by free entry and unlimited note issuance. The banks issued their own distinctive monies. Three banks had limited liability and the rest had unlimited liability. Unlimited liability meant that the identities of the bank partners were critical to the monies circulating as a hand-to-hand currency.³⁰

Who were these bank partners? They appear to have been the well-known and well-to-do. For example, the Dundee Banking Company, which began in Glasgow in 1763, had 36 partners,

²⁸ See Gorton & Zhang, *supra* note 3.

²⁹ See Kurt Schuler, *THE WORLD HISTORY OF FREE BANKING: AN OVERVIEW* (1992).

³⁰ See Charles Munn, *THE SCOTTISH PROVINCIAL BANKING COMPANIES, 1747-1864* (1981) at 5 (“[M]any bankers pointed this [unlimited liability] out to their potential customers in the hope that public faith in their banks would be enhanced by the knowledge that the whole property of the partners could be attached in cases of failure. This knowledge encouraged people to hold banknotes especially if the partners were men of substance.”).

including merchants and landed gentlemen of the region. The goal was to “involve a major part of the town’s business community in the bank. It was to be a town’s affair in the most complete sense.”³¹ As another example, the Banking Company of Aberdeen, formed in 1767, had 297 partners. By having such a large number of wealthy partners sign up for unlimited liability, “the Banking Company of Aberdeen flattered itself that ‘their Security will be allowed nothing inferior to any Bank or Company in Europe.’”³² The partners of Ship Bank also fit the mold. According to Boase:

The town mansions of these gentlemen are worth noticing. That of Provost Colin Dunlop, the leading partner of the banking firm, and great-grand-father of the present James Dunlop, Esq., of Tollcross, . . . Dunlop Street was named after him, and carried through his garden behind the mansion. The residence of Mr Houston was a little further west. . . Mr Macdowal’s was the princely edifice so well known in Glasgow story. . . popularly known as “The Shawfield Mansion.”³³

Some of these banks with unlimited liability had hundreds of partners. For instance, the Commercial Banking Company had 508 partners and the National Bank of Scotland had 1,238 partners.³⁴

Scottish bank notes were successful in a limited geographical area because the identities of the bank partners, who faced unlimited liability, were typically well-known rich individuals. Users of the notes knew who the bank partners were. But there was a problem: The notes could not circulate very far away because, at a distant location, people would not know the identities of the bank partners.³⁵

During this period, Scottish banks did experience bank runs and failures. According to Munn, “war with revolutionary France in 1793 caused a run on the banks. In the rush for liquidity two Glasgow banks failed.”³⁶ In 1797, there was another bank run, following rumors of a French invasion of England and banks had to suspend payments.³⁷ Furthermore, Checkland

³¹ S. G. Checkland (1975), *SCOTTISH BANKING, A HISTORY, 1695-1973* (1975) at 115.

³² *Id.*

³³ C. W. Boase, *A CENTURY OF BANKING IN DUNDEE* (1867) at 16. *See also* Friedman & Schwartz, *supra* note 2, at 50 (“Scotland was an old, established community, with a relatively stable population, so that stockholders consisted in the main of persons who were well-known, had considerable private wealth and valued their own reputations for probity highly enough to honor their obligations”).

³⁴ Sir John Clapham, *THE BANK OF ENGLAND, A HISTORY* (1970) at 91.

³⁵ *See* Munn, *supra* note 30, at 22 (noting that “most provincial bank notes had a purely local circulation in and around their place of issue”).

³⁶ *Id.* at 49.

³⁷ *Id.* at 54.

notes that there were banking panics in 1810-11, 1818-19, 1825-26, 1836-37, 1839, and 1845-47.³⁸

The Scottish free banking example has been trumpeted by some as a demonstration that free banking worked well.³⁹ And compared to, say, English banking at the same time, it seems that Scottish free banking did work well. Our point is that the circulation of privately produced monies in Scotland was accompanied by very special conditions. Those information-sensitive monies were supported by unlimited liability against the wealthiest individuals in Scottish society and circulated only within a narrow geographic area.

2. English Inland Bills of Exchange

The same problem of individual identities (*i.e.*, information sensitivity) arose with English inland bills of exchange.⁴⁰ Inland bills of exchange, where all parties to the bill were in England, were a unique form of private money that circulated predominantly as a hand-to-hand currency in the industrial north of England in the latter half of the 18th and first half of the 19th centuries.

Inland bills of exchange arose in the industrial north of England as a hand-to-hand currency due to a constrained supply of specie. Workers were paid with coins, which were scarce. Society needed an alternative form of money. But English banks were weak. During the 17th and most of the 18th century, English banks were limited to no more than six partners—unlike Scottish banks, which had dozens or hundreds of backing partners. Though the English bank partners faced unlimited liability, the limited number of backing partners resulted in banks that often failed. While inland bills of exchange were debt, such bills were not produced by banks and differed from bank debt, such as bank notes or deposits, in fundamental ways.⁴¹

Bills of exchange circulated via indorsement,⁴² putting each indorsers' wealth at risk if the borrower failed. This was the key feature: *All* parties indorsing the bill were liable. According to Tournay:

³⁸ Checkland, *supra* note 31, at 403.

³⁹ Munn's comment on this debate is instructive: "I feel that the debate tends to force history into a strait-jacket of economic theory which, like all strait-jackets, is very uncomfortable." Charles Munn, *Comment on Chapter 2*, in *UNREGULATED BANKING: CHAOS OR ORDER?* edited by Forrest Cappie and Geoffrey Wood (1991) at 68.

⁴⁰ See Gary B. Gorton, *Private Money Production Without Banks*, NBER Working Paper No. 26663 (2020), <https://www.nber.org/papers/w26663>.

⁴¹ Henry Thornton, *AN ENQUIRY INTO THE NATURE AND EFFECTS OF THE PAPER CURRENCY ON GREAT BRITAIN* (1802) at 44-45 (noting that "Liverpool and Manchester effect the whole of their larger mercantile payments not by country bank notes, of which none are issued by the banks, but by bills at one or two months due").

⁴² It also helped that, in the industrial north, the population was denser than in agricultural areas, and more literate.

The indorsee or holder of a bill transferable by indorsement, is entitled to look to the acceptor for payment, and in case of non-payment by him when presented, then to the drawer and the last and all intermediate indorsers, or parties whose names are on the bill; the last indorser or any intermediate indorser, after payment as holder, is entitled to look to the acceptor and drawer, and all his preceding indorsers, to refund him; the drawer being entitled to look to the acceptor for payment. In the case of a note, the maker stands, as has been already observed, in the position of the acceptor.⁴³

The joint liability rule meant that the receiver of a bill in payment needed to know the identities of at least one of the parties indorsing the bill and to also believe that this person was substantive. And knowledge of the identities of those other indorsers in the chain would make the bill even more credible.⁴⁴ The front and back of a typical bill is shown below.



⁴³ Stewart Tournay, *A PRACTICAL GUIDE TO THE LAW OF BILLS OF EXCHANGE* (1851) at 40-41.

⁴⁴ T. S. Ashton, *The Bill of Exchange and Private Banks in Lancashire, 1790-1830*, 15 *ECONOMIC HISTORY REVIEW* 25, 26 (1945) (observing that “since each successive holder indorsed it, the more it circulated the greater the number of guarantors of its ultimate payment into cash”). See also Knut Wicksell, *INTEREST AND PRICES* (1936) at 63 (“While every expansion of simple credit is necessarily bound up with increasing risk, the security of a bill as a commercial instrument increases with the number of indorsements it carries and consequently with the number of money payments that it has provided the means of obviating”).

In sum, both Scottish bank notes and English inland bills of exchange tell a similar story. Users had to know the identity and creditworthiness of the counterparty. The monies were information-*sensitive*. Consequently, bills only circulated in a narrow geographical region. As described by Burgess:

In the manufacturing districts of Yorkshire and Lancashire, no man, generally speaking, thinks of paying for any commodity above the value of ten pounds, otherwise than in a bill after date. This practice is now very general throughout the northern and midland counties, and is increasing in other parts. . . . A bill for £100 payable after date, which to-day is paid at Folkingham for wool, tomorrow at Melton for horned cattle, the next at Leicester for sheep, and the succeeding day at Oundle for bark, is as much a part of the circulating medium, representing the transfer of commodities from hand to hand, as a bank-note for £100.⁴⁵

According to Google Maps, Folkingham to Melton is 46 km (28.6 miles), Melton to Leicester is 27 km (16.8 miles), and Leicester to Oundle is 57 km (35.4 miles). The total distance is 130 km (80.8 miles).

B. Information-Sensitive Monies Circulating with Limited Liability

We next turn to an example of information-*sensitive* money that circulated with *limited* liability. Prior to the U.S. Civil War, banks issued their own private bank notes. Banks could open by obtaining a charter granted by a state legislature or, in free banking states, they could deposit the requisite bonds with the state treasurer and issue the corresponding amount of notes. During the Free Banking Era of 1836-1863, eighteen states adopted a version of free banking and fifteen retained the chartered banking system.

At that time, the government did not print money, and there was a shortage of specie.⁴⁶ Private bank notes were used widely as an alternative.⁴⁷ The notes could be redeemed at par on demand at the issuing bank. Indeed, within a nearby vicinity of the issuing bank, the notes circulated at par. However, these private bank notes circulated at discounts away from the issuing banks. For example, a bank's notes might trade at a 10 percent discount 100 miles away from the issuing bank (*i.e.*, a one-dollar note was only worth 90 cents at the distant

⁴⁵ Henry Burgess, *A letter to the Right Hon. George Canning: to explain in what manner the industries of the people and the productions of the country are connected with and influenced by internal bills of exchange*, BRISTOL SELECTED PAMPHLETS (1826) at 19-20, <http://www.jstor.org/stable/60248126>.

⁴⁶ As the reader can probably tell by now, a shortage of specie was a common theme motivating the proliferation of privately produced money.

⁴⁷ See William M. Gouge, *A SHORT HISTORY OF PAPER MONEY IN THE UNITED STATES* (1833) at 57 (observing that “of large payments, 999 in a 1,000 are made with paper. Of small payments, 99 in a 100. The currency of the country is . . . essentially a paper currency”).

location). At a distance, the note discounts reflected risk factors of the issuing bank.⁴⁸ Roughly 1,500 bank notes of different banks circulated, depending on the year. Consequently, there was a well-developed market for bank notes with fluctuating discounts.

Newspapers that published the discounts on notes covered bank notes from many distant banks. Van Court's Bank Note Reporter, published in Philadelphia, covered a total of 3,089 banks in 35 states, territories, and provinces of Canada. Van Court's coverage is shown in Table 3 below.⁴⁹

Table 3: Coverage of Van Court's Bank Note Reporter

| States with Complete Coverage | | States with Incomplete Coverage ⁵⁰ | | States Listed as "Uncertain" or Not Listed |
|-------------------------------|----------------------|---|---------------|--|
| United States | Canada | United States | Canada | |
| Alabama | Canada ⁵¹ | Arkansas | New Brunswick | Iowa territory |
| Connecticut | Nova Scotia | Florida | | Minnesota |
| Delaware | | Illinois | | Missouri |
| Washington, DC | | Indiana | | Texas |
| Georgia | | Michigan | | |
| Kentucky | | Mississippi | | |
| Louisiana | | Nebraska | | |
| Maine | | New Hampshire | | |
| Maryland | | Virginia | | |
| Massachusetts | | Wisconsin | | |
| Montana | | | | |
| Pennsylvania | | | | |
| New Jersey | | | | |
| New York | | | | |
| North Carolina | | | | |
| Ohio | | | | |
| Rhode Island | | | | |
| South Carolina | | | | |
| Tennessee | | | | |
| Vermont | | | | |

Notably, bank note reporters were published in many cities. Larger cities had more than one bank note reporter, as shown in Table 4 below.⁵² Thus, unlike Scottish bank notes or English inland bills of exchange, U.S. private bank notes were more extensively used across various geographic regions.

⁴⁸ See Gary B. Gorton, *Reputation Formation in Early Bank Note Markets*, 104 JOURNAL OF POLITICAL ECONOMY, 346 (1996).

⁴⁹ This table is from Gary B. Gorton, *Pricing Free Bank Notes*, 44 JOURNAL OF MONETARY ECONOMICS 33 (1999).

⁵⁰ Incomplete coverage means that the Van Court Bank Note Reporter did not quote a price for banks in that state than month. The state may have been listed, though, and the notes of banks in that state described as "all uncertain." Date in parentheses indicate periods for which the data was missing.

⁵¹ Canada includes banks located in provinces other than Nova Scotia or New Brunswick.

⁵² This table is from William Dillistin, *BANK NOTE REPORTERS AND COUNTERFEIT DETECTORS, 1826-1866* (1943).

Table 4: Number of Bank Note Reporters at Different Business Centers

| Location | Number of Reporters |
|------------------|---------------------|
| New York City | 22 |
| Boston | 3 |
| Buffalo | 2 |
| Chicago | 4 |
| Cincinnati | 12 |
| Detroit | 2 |
| Hartford | 1 |
| Montreal | 1 |
| Philadelphia | 7 |
| Pittsburgh | 4 |
| St. Louis | 4 |
| Zanesville, Ohio | 1 |

Where did the discounts come from? They came from secondary markets where note brokers would trade the notes of distant banks and, if deemed profitable, take them back to the issuing bank for redemption (*i.e.*, arbitrage). Bank note reporters published the discounts from these markets.⁵³ Clearly, the system was cumbersome and inefficient, but there was no credible alternative. An example of a critique of the system was given by Whitney:

The businessman of to-day knows little by the experience and inconvenience and loss suffered by the merchant of sixty years ago arising from the currency in which debts were paid. Receiving payment in bank notes, he assorted them into two parcels, current and uncurrent. In the first he placed notes issued by solvent banks of his own city; in the other the bills of all other banks. Upon these latter there was a discount varying in amount according to the location and credit of the bank issuing them. How great the discount he could learn only by consulting his "Bank Note Reporter," or by inquiring at the nearest exchange office. He could neither deposit them nor use them in payment of his notes at a bank. The discount on them varies from one percent upwards, according to the distance the bills had to be sent for redemption and the financial standing of the bank by which they were issued.⁵⁴

The system of private bank notes ended when the National Bank Act was passed in 1863 and a prohibitively high tax on bank notes was adopted, effectively ending their existence.

⁵³ See William O. Scroggs, *A CENTURY OF BANKING PROGRESS* (1924) at 160 (describing how the reporters were used).

⁵⁴ See John J. Knox, *HISTORY OF BANKING IN THE UNITED STATES* (1903) at 365 (quoting D. R. Whitney, who was the president of the Suffolk Bank in Massachusetts and published a book on the bank in 1878).

* * *

We can tease out a few useful insights from the cases of Scottish free banking, English inland bills of exchange, and U.S. bank notes prior to the Civil War. First, parties using these monies had an incentive to produce information. In Scotland, holders of bank notes needed to know the identity of the (very wealthy) partners who supported the bank because those partners were subject to *unlimited* liability. In England, holders of the indorsed bills needed to know the identity of those who indorsed. The wealthier, the better. In the United States, those who used private bank notes had to know the health of the underlying bank and depended on third-party reporters for that information. Information mattered, and parties had an incentive to obtain that information.

Second, these monies either circulated successfully within a narrow geographic region or circulated at a discount in a broader geographic region. In Scotland and England, privately issued monies circulated in concentrated geographic areas, largely where the identities of the partners and guarantors were more well-known. In the United States, private bank notes circulated much more broadly but did so at a discount that depended on distance from the issuing bank. Such a system proved to be highly inefficient.

Finally, because the private monies were information-*sensitive*, they were not always safe. In both the Scottish and American examples, bank runs and bank failures occurred. This theme of financial fragility plays a significant role in the path from coexistence to sovereign monopoly, which we explore in the next Part.

Part III. The Emergence of the Sovereign's Money Monopoly

Our view is that the best way to evaluate proposed changes to the legal and financial architecture is by looking to history. Market economies have an inherent structure, and circulating money is part of that structure. History shows that there were, and are, good reasons for a government monopoly on the production of a circulating currency.

Specifically, in this Part, we review the historical legislative and policy debates surrounding the creation and operation of sovereign money in England, the United States, Canada, and Sweden. England was the first to create a national currency in the first half of the nineteenth century. The United States, Canada, and Sweden started with hybrid systems in which government money—or bonds in the case of the United States—backed the privately produced monies. In short, the case studies show that sovereign money emerged for reasons grounded in both politics and economics. Politically, there was a desire for increased national unity or greater sovereignty generally. Economically, which is our focus, there were perennial debates on financial stability (*e.g.*, banking panics), the money supply (*e.g.*, its inelasticity or cyclicity), and fiscal affairs (*e.g.*, funding the national treasury). Table 5 below highlights the economic factors underlying the monopolies in each of our four case studies.

Table 5: Economic Reasons for the Sovereign's Money Monopoly

| | Financial Stability Considerations | Money Supply Considerations | Fiscal Considerations |
|---------------|---------------------------------------|--------------------------------|--------------------------|
| England | X | X | X |
| United States | X | X | X |
| Canada | X | X | |
| Sweden | X | X | X |

A. England

In England, the sovereign's money monopoly came about primarily in response to repeated financial crises, most immediately the crises in 1835-36 and in 1839.⁵⁵ England had an impressively long history of financial crises. During the 18th century, there were financial crises in 1701, 1710, 1715, 1726, 1745, 1761, 1763, 1772, 1778, 1793, and 1797.⁵⁶ Banks failed frequently—at least 343 bank failures between 1750 and 1830.⁵⁷ Indeed, according to Joplin's observations on the English banking system in 1822:

When the slightest apprehension is entertained respecting [the banks] solvency, however groundless it may sometimes prove, a run upon the immediately takes place. That is, hundreds of people immediately crowd the

⁵⁵ See J. K. Horsefield, *The Origins of the Bank Charter Act, 1844*, 11 *ECONOMICA* 180, 180 (1944) ("Public opinion was also shocked that help had had to be sought from France in order to maintain the convertibility of Bank Notes.").

⁵⁶ See T.S. Ashton, *ECONOMIC FLUCTUATIONS IN ENGLAND, 1700-1800* at 136 (1959).

⁵⁷ See L. S. Presnell, *COUNTRY BANKING IN THE INDUSTRIAL REVOLUTION* at 443 (1956).

doors of the Banks, to demand payment of the Notes they held, or to withdraw that money out of their hands, which they have deposited with them . . . Great however as the inconveniences are which discredit of Banks and consequent runs upon them occasion, and great as are the calamities by which their failures are uniformly attended, they are, both in this country and Ireland, of very common occurrence.⁵⁸

As a result of frequent financial trauma, the Bank Charter Act of 1844—commonly known as Peel’s Act⁵⁹—granted the Bank of England a monopoly over note issuance, with a carve-out for private banks issuing notes as of May 6, 1844.⁶⁰

Peel’s Act was momentous for several reasons. First, it came during a period when free trade principles dominated. This was no doubt the influence of Adam Smith.⁶¹ Second, it was a wholistic approach to the issue of bank notes, motivated by the idea that banking should be separated from the control of the currency.⁶² Third, the Act is generally viewed as being the foundation for the Bank of England to become the central bank because of the monopoly over note issuance, which was the source of much controversy.⁶³

The passage of Peel’s Act was also influenced by debates surrounding the money supply. The logic of the Act came from the “Currency School,” with the view that the quantity of money and of coin should never be allowed to differ.⁶⁴ From this, it was argued that fluctuations in the value of the standard unit would be constant and that booms and panics would be

⁵⁸ T. Joplin, *An Essay on the General Principles and Present Practice of Banking in England and Scotland* (1822). See also John A. James, *Panics, Payments Disruptions and the Bank of England before 1826*, 19 FINANCIAL HISTORY REVIEW 289 (2012); Julian Hoppit, *Financial Crises in Eighteenth-Century England*, 39 ECONOMIC HISTORY REVIEW 39 (1986).

⁵⁹ Sir Robert Peel was the Prime Minister at that time. The real name of the Act is “An Act to regulate the Issue of Bank Notes, and for Giving to the Governor and Company of the Bank of England certain Privileges for a Limited Period.” The Act had three other subjects, in addition to the control of bank notes: the separation of the departments of the Bank into the issuing department and the traditional banking department; the establishment of fiduciary issue; and the publication of accounts.

⁶⁰ These banks were allowed to issue in the future but could not exceed their average in early 1844.

⁶¹ See Arie Arnon, *Banking between the Invisible and Visible Hands: A Reinterpretation of Ricardo’s Place within the Classical School*, 39 OXFORD ECONOMIC PAPERS 268 (1987).

⁶² See P. Barrett Whale, *A Retrospective View of the Bank Charter Act of 1844*, 11 ECONOMICA 109 (1944).

⁶³ See A DIGEST OF THE EVIDENCE ON THE BANK CHARTER, TAKEN BEFORE THE COMMITTEE OF 1832 (1833) at 187 (“The 1832 Committee. . . regarded the monopoly question as the most important issue of the day, and made persistent enquiries into the desirability of some limitation of the country banks’ issues. Its witnesses were nearly equally divided for and against.”). Walter Bagehot later wrote that “the issue of money is a fit case for a Government monopoly, because the object aimed at, is not to reduce the cost price, but to render it fixed.” *The Currency Monopoly*, PROSPECTIVE REVIEW (1848).

⁶⁴ Opposed to the Currency School was the “Banking School,” a group centered on the idea that the issuance of bank notes would be naturally regulated by holders wanting to redeem their notes. See J.K. Horsefield, *The Origins of the Bank Charter Act, 1844*, 11 ECONOMICA 180 (1944). See also Charles Goodhart & Meinhard Jensen, *Currency School versus Banking School: An Ongoing Confrontation*, 4 ECONOMIC THOUGHT 20 (2015).

eliminated. “Over issuance” of notes by country banks would thus be avoided.⁶⁵ Of note, those objecting to the Bank being rechartered argued, among other points, that this created an inelasticity which would hinder the Bank’s ability to respond to panics by increasing the money supply, leading to panic.⁶⁶

In addition to financial stability and the money supply, the debate also raised the issue of who should profit from the Bank’s monopoly. Among those in favor of the monopoly were voices that wanted to the profits to accrue to the government. Not everyone agreed. George Grote, a London banker, said that he “would have the Bank of England compelled to pay over to the public all profit from their circulation, savings so much as might be fair remuneration for the trouble and risk of administering the details of it.”⁶⁷

In the end, the debates and testimony in the Committee of 1832 led to the recharting of the Bank of England and established the Bank’s notes as legal tender. According to Orzechowski, the Act “fatally dashed the hopes of free bankers seeking to limit the powers of the Bank of England. The 1833 Act set in motion the eventual elimination of private bank notes so that by 1844 the government was able to stop the issuance of all new private bank notes in England and Wales, thus giving the Bank of England a pure monopoly.”⁶⁸

B. United States

In the United States, the road to the sovereign’s monopoly over money began during the Civil War. In the 1860s, the government taxed state bank notes out of existence in order to support the growth of national bank notes, which were backed by debt issued by the Treasury. In the subsequent decades, policymakers noted significant problems associated with the inelasticity of the money supply and the frequency of banking panics.

On February 20, 1896, Theodore Gilman, a New York City banker, appeared before the U.S. House Committee on Banking and Currency and introduced a bill that would give private bank clearinghouses the ability to issue money backed by their members’ assets. Section 9 of the proposed legislation stated:

That a clearing house of issue shall be authorized and empowered to receive from its bank members, or any clearing house within the State or district in which it is located, commercial assets, promissory notes, bills of exchange,

⁶⁵ See, e.g., *Letter to Charles Wood, Esq., M.P., Chairman of the Committee of the House of Commons on Banks of Issue* (1841).

⁶⁶ The critics who focused on the inelasticity of the Bank’s ability to respond to a crisis came true in the Panic of 1847, which saw a suspension of that restriction. See Rudiger Dornbusch & Jacob Frenkel, *The Gold Standard Crisis of 1847*, 16 JOURNAL OF INTERNATIONAL ECONOMICS 1 (1984) (“The removal of the restriction on fiat money issue dispensed with the concern for the internal convertibility of deposits into notes.”).

⁶⁷ *Testimony of George Grote, A DIGEST OF THE EVIDENCE ON THE BANK CHARTER, TAKEN BEFORE THE COMMITTEE OF 1832* (1833) at 97.

⁶⁸ Paul E. Orzechowski, *George Scrope, Free Bankers, and the Bank Charter Act of 1833*, ESSAYS IN ECONOMIC & BUSINESS HISTORY (2019) at 182.

convertible bonds and stocks, and other securities and evidence of debt as collateral security for the circulating notes of the said association to be issued.⁶⁹

The collateral was to have a 25 percent haircut and the notes issued would be guaranteed by all the clearinghouse members jointly.

The Hearings were motivated by the perceived weaknesses of the National Banking System that had been created during the Civil War. The main complaints alleged against the existing banking system were the inelasticity of the money supply and the frequency of banking panics. The inelasticity was due to the structure of system. The United States had adopted a hybrid system of money in 1863 with the National Bank Act. The Act created banks called national banks, which could issue their own “national bank notes,” but required that these notes be backed by U.S. Treasury bonds. The purpose of requiring that national bank notes be backed by Treasuries was intended to create a demand for Treasury securities which could be issued to finance the North during the Civil War. By linking the bank notes to U.S. Treasuries, the money supply could not be changed easily. This inelasticity of the money supply was widely noted.⁷⁰

Moreover, the National Bank Act of 1863 was expected to end panics since the national bank notes would be backed by U.S. Treasuries. But the National Bank Act did not end banking panics. There were seven major banking panics during the National Banking Era. In those panics, depositors wanted to withdraw their “deposits” in “cash” (*i.e.*, in national bank notes).⁷¹ Deposits had started outstripping bank notes prior to the Civil War.

Thus, the basis for Gilman’s proposal was that private bank clearinghouses were the institutions responding to banking panics. In a banking panic, clearinghouses opened a discount window where members could post collateral and receive “clearinghouse loan certificates,” which were the joint liability of the member banks.⁷² Alas, the clearinghouse system could not prevent panics even if it could mitigate some of the bad effects of panics. Six years after the devastating panic of 1907, Congress established the Federal Reserve, the so-called central bank, “to furnish an elastic currency. . . and to establish a more effective supervision of banking in the United States.”⁷³ The Federal Reserve was also to provide financial stability. Both goals, an elastic money supply and financial stability, were to be

⁶⁹ *Banking and Currency Reform Hearings before the Subcommittee of the Committee on Banking and Currency* (1913) at 90.

⁷⁰ See Edwin Kemmerer, *Seasonal Variations in the Relative Demand for Money and Capital in the United States*, NATIONAL MONETARY COMMISSION (1910) at 13 (“The most common criticism of our American currency system is its alleged inelasticity or irresponsiveness to trade demands, this inelasticity is sometimes considered with particular reference to panic periods which occur at more or less irregular and widely separated times, and sometimes with particular reference to regularly recurring seasonal fluctuations in the demand for money and loanable capital.”).

⁷¹ See Gary Gorton, *Banking Panics and Business Cycles*, 40 OXFORD ECONOMIC PAPERS 751 (1988).

⁷² See Gary Gorton & Ellis Tallman, *FIGHTING FINANCIAL CRISES* (2018).

⁷³ See Federal Reserve Act, ch. 6, 38 Stat. 251 (1913).

accomplished by setting up a permanent discount window. Further, the national currency would have to be de-linked from U.S. Treasuries. For all these reasons, the United States migrated to a single uniform sovereign currency.

C. Canada

In Canada, the sovereign's monopoly over money coincided with the establishment of its central bank. Coming out of the Great Depression in the early 20th century, Canada's political leadership recognized the need for greater control of its money supply as well as greater financial stability.

In October 1929, the U.S. stock market collapsed, and economic depression ensued in North America and around the world. Canada was hit especially hard. The country's GDP-to-Capital ratio declined by 35 percent from the peak of 1928 to the trough of 1933, compared to a 30 percent decline in the United States.⁷⁴ As in the United States, Canadian farmers were among the hardest hit during the Depression. They were paying 7 percent on mortgages that had been signed in the 1920s but their products were selling for less than one half of their 1926 values.⁷⁵

Canada had no central bank at the time. Farmers were in favor of having a central bank; bankers were opposed. Finally, in 1933, during the fourth year of the Depression, the Royal Commission on Banking and Currency was established to review the banking system and the Canadian government's involvement in monetary policy.⁷⁶ The commission was chaired by Hugh Macmillan. The commission held hearings throughout Canada and delivered a report. After surveying the Canadian banking and financial system, the Report states:

If we survey the cardinal monetary problems which face the Canadian people in common with all other peoples today, we are immediately confronted with a multitude of difficult and intricate questions. To what extent and through what organizations should the volume of credit and of currency be regulated? On what body should lie the primary responsibility for maintaining the external stability of the country's currency? To what institution may the Government of the day suitably turn for informed and impartial advice on matters of financial policy? . . . In the great, and an increasing, majority of countries the answer to these questions had been found in the *existence of or the creation of a central bank*.

⁷⁴ Joe Martin, THE CREATION OF THE BANK OF CANADA (2005).

⁷⁵ *Id.*

⁷⁶ REPORT OF THE ROYAL COMMISSION ON BANKING AND CURRENCY IN CANADA (1933) (emphasis added).

The Bank of Canada was thereby chartered in 1934 when the Bank of Canada Act was passed, and the bank became operational in March 1935.⁷⁷ The Preamble of the Act states:⁷⁸

Whereas it is desirable to establish a central bank in Canada to regulate credit and currency in the best interests of the economic life of the nation, to control and protect the external value of the national monetary unit and to mitigate by its influence fluctuations in the general level of production, trade, prices and employment, so far as may be possible within the scope of monetary action, and generally to promote the economic and financial welfare of the dominion.

Section 24 of the Act gave the bank the sole right to issue notes payable to the bearer on demand and issue notes in any amount. Thus, in the case of Canada, like many other countries, the establishment of a monopoly over the production of money coincided with the founding of the central bank. The reasoning was that the central bank needed monopoly control over money production to fulfill its role as an overseer of the macroeconomy.⁷⁹

Another motivating factor was the elasticity of the money supply, particularly whether it was elastic enough to address seasonality associated with crops being planted and harvested. According to Kianieff,

Pressure was brought to bear on the money supply mechanism during the crop-moving season, when demand for credit would reach its peak. . . . The year 1907 proved to be a bad one for both the wheat and banking industries, as a low-quality wheat crop had to be moved to market quickly to avoid deterioration. At the time, however, demand for notes was greater than their supply, and the banks could not provide them fast enough to facilitate movement of the crop. The crisis was symptomatic of the larger issue of the inelasticity of the money supply.⁸⁰

To be sure, political issues played a role as well.⁸¹ In the west of Canada there was anti-bank sentiment due to high interest rates and a perceived lack of sufficient credit. And more generally, the public was concerned with the concentration of bank ownership and the banks'

⁷⁷ Bank of Canada Act, https://www.bankofcanada.ca/wp-content/uploads/2010/07/act_loi_boc_bdc.pdf.

⁷⁸ *Id.*

⁷⁹ See Muharem Kianieff, *Private Banknotes in Canada from 1867 (and before) to 1950*, 30 QUEEN'S LAW JOURNAL 400 (2004) ("The financial system's failure to respond adequately to the challenges of the Depression led to the establishment of the Bank of Canada in 1935, over the objections of many private bankers. The legislation that set up the Bank of Canada provided for a gradual phasing out of private banknotes and their replacement of notes issued by the Bank of Canada.").

⁸⁰ *Id.* at 425.

⁸¹ See Michael D. Bordo & Angela Redish, *Why Did the Bank of Canada Emerge in 1935?*, 47 JOURNAL OF ECONOMIC HISTORY 405.

influence over the economy through interlocking directorships. The period from 1901 to 1914 was one of bank failures, liquidations, and mergers.

* * *

Similar to the U.S. experience described previously, the Canadian experience also included a circulation of government notes prior to the establishment of a central bank. Specifically, the Canadian government issued “Dominion notes” from 1867 to 1934.

Before the various provinces of Canada were united into what we now know as Canada, provinces issued their own notes. Confederation occurred in 1868 and, with confederation, the Dominion government acquired the right of issuing notes, taking over this function from the provinces.⁸² The Dominion Notes Act of 1868 allowed the government to issue its own notes backed by gold. The Act restricted private bank notes to a minimum denomination of \$4, leaving a monopoly to the government to issue notes of \$4 or less. In today’s terms, \$4 would be \$97.87 Canadian dollars in 2022 (or \$78.54 U.S. dollars). Thus, Dominion notes were used to carry out most day-to-day transactions.

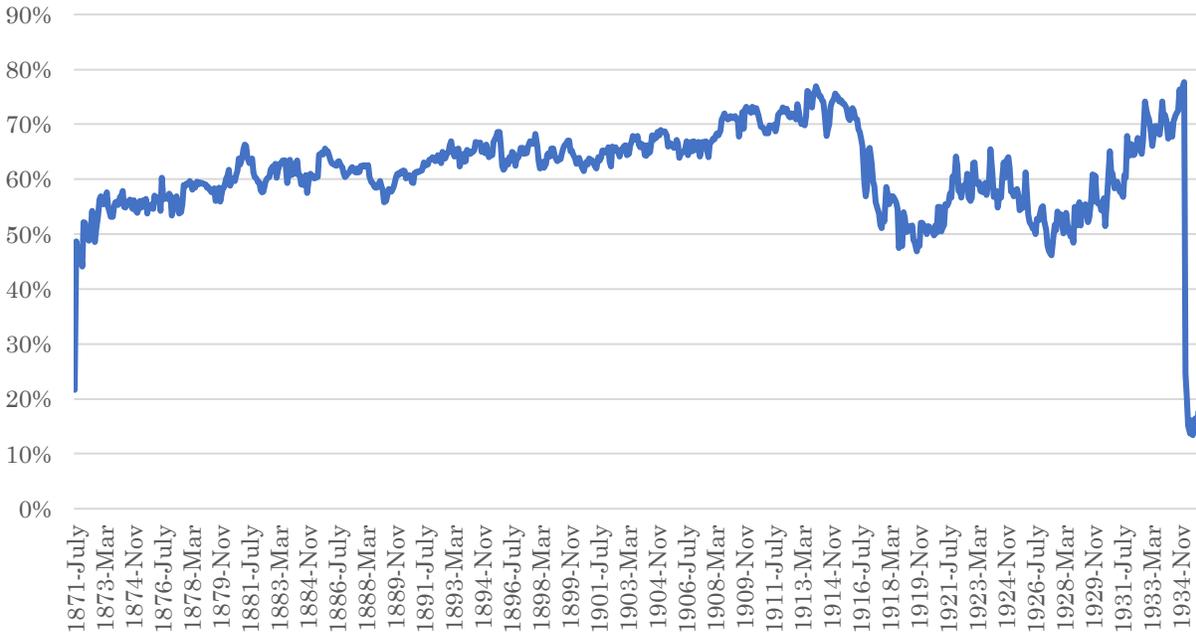
Moreover, Dominion notes were used as reserves by the commercial banks.⁸³ This suggests that Dominion notes were the practical hand-to-hand currency. Canadian banks were never required to satisfy a specific level of reserves. But banks were always required to hold at least 40 percent of whatever cash reserves the banks held. Figure 1 below shows the percentage of bank reserves that were Dominion notes.⁸⁴

⁸² “Confederation” refers to New Brunswick and Nova Scotia official joining the Province of Canada. The Province of Canada then split into Ontario and Quebec.

⁸³ These calculations are based on *Historical Statistics of Canada*, Table K33-43, General Wholesale Price Index, 1867-1975. The Historical Statistics only goes through 1975. For 1975 until 2022 we used <https://www.in2013dollars.com/canada/inflation/1975?amount=21.45>.

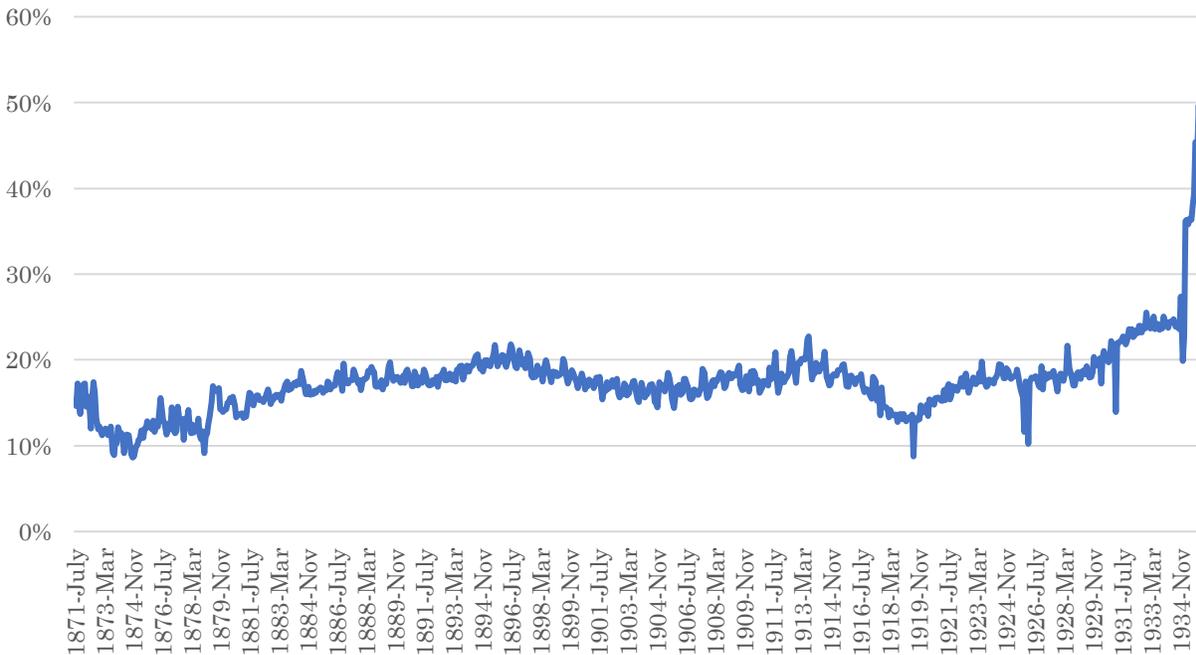
⁸⁴ The data are from C. A. Curtis, STATISTICAL CONTRIBUTIONS TO CANADIAN ECONOMIC HISTORY, VOL 1, STATISTICS OF BANKING (1931).

Figure 1: Ratio of Dominion Notes to Total Reserves



Even though Dominion notes made Canadian currency relatively sound, still, they were relatively small compared to private bank notes, as shown in Figure 2 below.

Figure 2: Ratio of Dominion Notes to Chartered Bank Notes



As in the U.S. experience, private bank notes circulated in Canada because of a lack of specie, and circulated at discounts. That these information-sensitive Canadian bank notes did not circulate at par in all parts of the country was a common complaint.⁸⁵

Various laws were enacted in attempts to eliminate these discounts: The Bank Act of 1871 imposed double liability on bank shareholders. The Bank Act of 1880 gave note holders first lien on bank assets. And the Bank Act of 1890 established the Bank Circulation Fund to redeem the notes of insolvent bank and for note holders to be paid interest as well. Banks were required to pay 5 percent of their previous 12 months' circulation to the Minister of Finance to form this Fund.⁸⁶

* * *

The Canadian system, like the pre-Civil War system in the U.S. and like other countries, began with private bank notes that traded at discounts. The system evolved into a hybrid system where Dominion notes were used as reserves for the banks. The sovereign's monopoly over money coincided with the establishment of its central bank. Coming out of the Great Depression in the early 20th century, Canada's political leadership recognized the need for greater control of its money supply as well as greater financial stability.

D. Sweden

Sweden's debate over the sovereign's money monopoly revolved around financial stability, first and foremost, but also the desire to capture the gains of seigniorage for fiscal policy and concerns regarding the ability to control its money supply.

Private banks in Sweden—known as Enskilda banks—issued their own bank notes from 1831 to 1904. Interestingly, Sweden already had public money at the time, so why did Swedish private currency circulate when there was already a public currency in circulation? The Riksbank was constrained by how much money it could issue. Of note, Sweden re-established the silver standard in 1834, which the country had abandoned in 1809.⁸⁷ Thus, from 1834 until the onset of World War I, the main objective of the Riksbank was to maintain the silver

⁸⁵ Roeliff Breckenridge, *The History of Banking in Canada*, NATIONAL MONETARY COMMISSION (1910) at 112 (“Being a frequent annoyance, the discount for geographical reasons constituted no inconsiderable grievance.”).

⁸⁶ See Ben Fung, Scott Hendry & Warren Weber, *Canadian Bank Notes and Dominion Notes: Lessons for Digital Currencies*, Bank of Canada Working Paper 2017-5 (“[B]ank notes were only relatively safe and not a uniform currency before 1890. They were relatively safe because only 3 of the 55 banks in existence between 1866 and 1890 failed with losses to note holders. They were not a uniform currency because notes of banks in one geographic location often traded at a discount in another location and notes of suspended banks traded at a discount until the bank's affairs were settled. The Bank Act of 1890 made bank notes perfectly safe and a uniform currency.”).

⁸⁷ See Anders Ögren, *Free or Central Banking? Liquidity and Financial Deepening in Sweden, 1834-1913*, 43 EXPLORATIONS IN ECONOMIC HISTORY 64 (2006).

standard. As a result, there was a shortage of money in Sweden during the 19th century.⁸⁸ According to Ögren:

The initial extent of Swedish poverty during this period is well illustrated by the very limited and stagnant circulation of metallic coins, as well as a supply of specie metal insufficient to provide the country with an adequate supply of generally accepted means of payments. Instead, the Swedish economy relied heavily on personal credits, IOUs, and other types of informal means of payments, accepted only on a personal or regional basis, thus hindering more widespread economic integration.⁸⁹

Enskilda banks therefore contributed to economic expansion and integration by providing a money supply beyond what would have been possible for the Riksbank.⁹⁰ In fact, by 1859, the volume of private bank notes in circulation exceeded that of Riksbank notes in circulation.⁹¹ Private bank notes were sent all over the country, not just to certain (rural) areas.⁹² Following the proliferation of this new money supply, economic growth increased dramatically in the subsequent decades.⁹³

* * *

Of note, the system of Enskilda banks was not entirely private for a couple of reasons. First, Enskilda banks' note issuance was backed by, and redeemed for, money issued by the Riksbank. This was a form of “bottom-up” central banking because the Enskilda banks voluntarily relied on Riksbank notes rather than specie for reserves. Indeed, the holdings of Riksbank notes by Enskilda banks were between 30 percent and 50 percent through the 1860s. Before Sweden passed the 1874 law—a law that required Enskilda banks to back their note issuance with gold—Enskilda banks held almost zero specie as reserves.⁹⁴

⁸⁸ Moreover, the Riksbank initially issued denominations that were more useful for wholesale payments than retail payments. Enskilda banks were able to fill the initial vacuum by issuing notes of lower denominations. See Lars Jonung, *Private Bank Notes in Sweden 1831–1902*, Mimeo, Stockholm School of Economics (2007).

⁸⁹ See Ögren, *supra* note 87.

⁹⁰ See Gabriel Söderberg, *Why Did the Riksbank Get a Monopoly on Banknotes?*, SVERIGES RIKSBANK ECONOMIC REVIEW (2018) (noting that Enskilda banks were allowed by the Swedish Riksdag in 1824 as a conscious strategy to promote the growth of a banking system in Sweden).

⁹¹ See Anders Ögren, *Empirical Studies in Money, Credit and Banking: The Swedish Credit Market in Transition under the Silver and the Gold Standards, 1834–1913*, EHF – Stockholm School of Economics, Studies in Economic History No. 2 (2003).

⁹² See Torbjörn Engdahl and Anders Ögren, *Multiple Paper Monies in Sweden 1789–1903: Substitution or Complementarity?*, 15 FINANCIAL HISTORY REVIEW 73 (2008).

⁹³ See Anders Ögren, *Financial Revolution and Economic Modernization in Sweden*, 16 FINANCIAL HISTORY REVIEW 47 (2009).

⁹⁴ See Ögren, *supra* note 87. See also Söderberg, *supra* note 90.

Second, according to Fung, Hendry, and Weber, the Riksbank acted as a lender of last resort for the Enskilda banks on at least two occasions—first during the crisis of 1856-1857 and second during the crisis of 1878-1879.⁹⁵

This instability concern was not lost upon the government when it made its final decision to ban private bank notes and give the monopoly to the central bank. Indeed, following that second crisis in 1878-79, public opinion turned against the Enskilda banks. A newly formed special committee on banking recommended that the Riksbank be granted a monopoly on the issuance of notes.⁹⁶

That final decision arrived in 1897 when the Riksbank was given a monopoly on note issuance, and the Enskilda bank notes went out of circulation shortly thereafter. In its decision to ban private bank notes, the Swedish government cited banking panics (*i.e.*, financial stability),⁹⁷ the credit cycle (*i.e.*, controlling the money supply),⁹⁸ and seigniorage (*i.e.*, public finance).⁹⁹

E. Insights for Coexistence v. Monopoly

The present assumption is that privately issued money should circulate alongside sovereign money. Members of Congress have expressed these views, as have senior officials at the Federal Reserve. Should we maintain the sovereign's money monopoly? Or should we turn back the clock? The historical case studies suggest that turning back the clock would mean having to relitigate many of the financial stability, money supply, and fiscal concerns.

Financial stability considerations played a significant role in bringing about the sovereign's monopoly over money. In every one of the case studies analyzed in this Part—England, the United States, Canada, and Sweden—financial stability concerns were front and center. In England, banks failed frequently—at least 343 bank failures between 1750 and 1830. During the U.S. National Banking Era, bank runs on deposits occurred frequently. In Canada, the

⁹⁵ See Ben Fung, Scott Hendry & Warren E. Weber, *Swedish Riksbank Notes and Enskilda Bank Notes: Lessons for Digital Currencies*, Bank of Canada Staff Working Paper 2018-27 (2018), <https://www.bankofcanada.ca/2018/06/staff-working-paper-2018-27/>.

⁹⁶ See Ögren, *supra* note 87.

⁹⁷ See Söderberg, *supra* note 90, at 12 (citing Bankkomitén (1883), *Bankkomiténs underdåniga förslag till förändrad organisation af bankanstalterna* [Special Committee on Banking—proposed changes in bank organization]) (“It was emphasized that, even if the private banknotes were relatively secure, their security would be even higher if they were issued by a single institution.”)

⁹⁸ See *id.* (noting the concern that “that banknote issuance will be too extensive in good times and too restricted in bad times”).

In addition, there was seasonality in the private money supply. The notes issued by Enskilda banks followed a seasonal pattern, which corresponded with the seasonal demand for liquidity of the agricultural cycle. Specifically, there were two peaks per year—one from February to April and the second from October to November. See Engdahl & Ögren, *supra* note 92.

⁹⁹ See Söderberg, *supra* note 90, at 12 (“Seigniorage is necessary to fund a central bank's social function so that it does not need to act according to a profit motive.”).

monopoly coincided with the founding of the central bank, during a financial crisis. In Sweden, the Riksbank had to stand ready to intervene and there were still banking panics. This is not surprising. Consistent with economic theory, privately produced monies are information-sensitive and therefore prone to destabilizing bank runs. The same is true of privately produced digital money like stablecoins. Indeed, we have recently seen stablecoins lose their pegs as market volatility increased.

Control over the money supply also factored into the monopoly debates. Countries were naturally concerned with the money supply because it was a shortage of specie that led to the proliferation of privately produced monies in their economies. In the United States, for example, lawmakers were concerned with the inelasticity of the money supply because national bank notes had to be backed by U.S. Treasury bonds. In Canada, the central bank was given monopoly control over money production to fulfill its role as an overseer of the macroeconomy. Giving the sovereign a monopoly over money explicitly allows the central bank to conduct countercyclical monetary policy.

Finally, fiscal affairs were considered in the granting of the monopoly. In the debates surrounding Peel's Act in England, some favored giving the Bank of England a monopoly because its monopoly profits would accrue to the government. During the U.S. Civil War, the government taxed state bank notes out of existence to support the growth of national bank notes, which were backed by debt issued by the Treasury. In Sweden, certain legislators had argued that seigniorage should not accrue to the private Enskilda banks.

* * *

Privately issued money began to circulate because of a shortage of sovereign money. During the U.S. Free Banking Era, for instance, the government did not print money and there was a shortage of coins, so private bank notes were used pervasively. Similarly, in Sweden, there was a very limited and stagnant circulation of metallic coins as well as a limited supply of specie metal insufficient to provide the country with an adequate supply of generally accepted means of payments. There simply weren't enough metallic coins to go around, and that shortage was holding back economic development. Private institutions filled the gap by issuing their own money, and the sovereigns permitted coexistence (for a time). There were no better alternatives.

Stablecoins provide liquidity and collateral on cryptocurrency exchanges. There were no better alternatives in terms of a circulating digital currency. But now, there is a better alternative to stablecoins: a central bank digital currency. Reintroducing coexistence between private (digital) money and sovereign (digital) money would bring about similar costs to financial stability, monetary policy, and fiscal policy for an unclear upside.

Part IV. The State of Play

A. Runs and Contagion

Stablecoins are vulnerable to runs. An “algorithmic stablecoin”¹⁰⁰ has already crashed and burned.¹⁰¹ In May 2022, the decline in the price of Bitcoin and the death spiral of the algorithmic stablecoin, TerraUSD, were enough to knock some stablecoins off their pegs. For instance, Tether, the largest stablecoin at over \$75 billion in market capitalization, dipped below \$0.97, as shown in Figure 3. Tether holders withdrew \$7 billion from Tether during the panic.¹⁰²

Figure 3: Tether’s Peg in May 2022



¹⁰⁰ Algorithmic stablecoins work something like this: There are two coins, say, \$1Coin and another coin, OCoin. \$1Coin is supposed to be pegged to \$1, while the price of OCoin can be anything. The idea is that if \$1Coin trades at \$0.99 then there is a process by which more OCoins are printed and used to buy \$1Coins until the price is \$1 again. If \$1Coin trades at \$1.01, then the process allows some more \$1Coins to be printed and used to buy OCoins until the price is back to \$1. Of course, neither \$1Coin or OCoin are worth anything, so this is just a fancy kind of fiat cryptocurrency. In our discussions of stablecoins, we are concerned with those that are backed by cash and safe assets, are pegged to a fiat currency like the U.S. dollar, and are redeemable on demand. Our analysis is not focused on algorithmic stablecoins.

¹⁰¹ Those runs were on the stablecoins IRON Titanium and TerraUSD. For details on IRON, see Kanis Saengchote, *A DeFi Bank Run: Iron Finance, IRON Stablecoin. And the Fall of TITAN*, SSRN Working Paper (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3888089; Kevin Reynolds, *In Token Crash Postmortem, Iron Finance Says It Suffered Crypto’s First Large-Scale Bank Run*, COINDESK (Jun. 17, 2021), <https://www.coindesk.com/markets/2021/06/17/in-token-crash-postmortem-iron-finance-says-it-suffered-cryptos-first-large-scale-bank-run/>. For more details on TerraUSD, see Amit Chaudhary & Ganesh Viswanath-Natraj, *Algorithmic Stablecoins and Devaluation Risk*, VoxEU (May 13, 2022), <https://voxeu.org/article/algorithmic-stablecoins-and-devaluation-risk>.

¹⁰² Scott Chipolina, *Investors Pull \$7bn from Tether As Stablecoin Jitters Intensify*, FINANCIAL TIMES (May 17, 2022), <https://www.ft.com/content/db9c3f32-cd91-4149-9788-95b2046bea10>.

The run on Tether was a preview of the future. This should not be surprising given what we know from economic theory and what we have witnessed over the past few centuries. As noted in the historical analysis in Part III, financial stability considerations were prominent in bringing about the sovereign's monopoly over money in England, the United States, Canada, and Sweden. In England, there were hundreds of bank failures during the 18th and 19th centuries. In the United States, bank runs occurred frequently in the 19th century, before the establishment of the Federal Reserve and deposit insurance. In Canada, the central bank gained its monopoly because of a financial crisis. In Sweden, bank failures similarly led to the sovereign's monopoly.

Consistent with economic theory, privately produced money is information-sensitive and therefore prone to destabilizing bank runs. The same is true of privately produced digital money like stablecoins. Indeed, when collateral backing privately produced money is not regulated—or simply do not exist—the fixed price of that money will not hold in times of stress. In that case, the quantities adjust to zero in a bank run. Yet the underlying assumption for the path forward is one of private money circulating alongside sovereign money.

Notably, this is just the case for a sovereign's monopoly based on financial stability. The efficacy of monetary policy also matters. As countries in our case studies discovered, giving the sovereign a monopoly over money explicitly allows the central bank to conduct countercyclical monetary policy. Otherwise, the production of private money would be sub-optimally high during economic booms and be sub-optimally depressed during economic downturns.

B. Legislative and Regulatory Proposals

Despite the potential concerns associated with financial stability, monetary policy, and even fiscal policy, every approach presently espoused by legislators and regulators is one of well-regulated coexistence. We discuss a few examples below.

Senator Pat Toomey proposed a bill titled “Stablecoin Transparency of Reserves and Uniform Safe Transactions Act of 2022” or the “Stablecoin TRUST Act of 2022.”¹⁰³ Importantly, the Act would require the stablecoin issuer to back its coins with assets that satisfy the following conditions:

- (f) **STABLECOIN RESERVES.**—Payment stablecoins issued by a national limited payment stablecoin issuer shall be backed with assets—
 - (1) with a market value equal to not less than 100 percent of the par value of the payment stablecoins outstanding; and

¹⁰³ See Stablecoin Transparency of Reserves and Uniform Safe Transactions Act, S.____, 117th Cong. (2022), https://www.banking.senate.gov/imo/media/doc/the_stablecoin_trust_act.pdf.

(2) that are cash and cash equivalents or level 1 high-quality liquid assets denominated in United States dollars.¹⁰⁴

In addition, the stablecoin issuer would have to disclose its backing on a regular basis:

(a) IN GENERAL.—Any person described in section 3(b) that issues a payment stablecoin shall—

(1) publicly disclose the assets backing the payment stablecoin on a monthly basis;

(2) adopt and publicly disclose policies for redeeming the payment stablecoin, including whether redemption requests will be met on demand or with a time lag;

(3) undergo quarterly attestations by a registered public accounting firm and publicly disclose the results; and

(4) attest that the assets backing the payment stablecoin do not materially diverge from those disclosed.¹⁰⁵

As another example, Senators Kirsten Gillibrand and Cynthia Lummis proposed the “Responsible Financial Innovation Act” in June 2022.¹⁰⁶ Similar to Senator Toomey’s proposal, the Gillibrand-Lummis proposal also requires the full backing of stablecoins and monthly disclosures:

(b) Required Payment Stablecoin Assets.—A depository institution shall maintain high-quality liquid assets under this section equal to not less than 100 percent of the face amount of the liabilities of the institution on payment stablecoins issued by the institution. ...

(c) Disclosures.—Not later than 10 business days after the end of each month, a depository institution shall disclose, in a publicly accessible manner, a summary description of the assets backing the payment stablecoin, the value of the assets, and the number of outstanding payment stablecoins, as of the last day of the month.¹⁰⁷

Senator Bill Hagerty and Representative Trey Hollingsworth proposed their “Stablecoin Transparency Act,”¹⁰⁸ which covers the same set of regulatory issues:

¹⁰⁴ *Id.* at §6.

¹⁰⁵ *Id.* at §4.

¹⁰⁶ Responsible Financial Innovation Act, S.4356, 117th Cong. (2022).

¹⁰⁷ *Id.* at §601.

¹⁰⁸ Stablecoin Transparency Act, S.3970, 117th Cong. (2022).

(b) Reserves.—Each stablecoin issuer shall hold all reserves associated with each fiat currency-backed stablecoin issued by such stablecoin issuer in—

- (1) government securities that have maturities of not longer than 12 months;
- (2) fully collateralized security repurchase agreements; or
- (3) United States dollars or any other nondigital currency.

(c) Reserve Reports.—Not later than 30 days after the date of enactment of this Act and every 30 days thereafter, each stablecoin issuer shall publish on the website of the stablecoin issuer a report on the reserves held by the stablecoin issuer that has been audited by a third-party auditor.¹⁰⁹

To the best of our knowledge, there is no legislative proposal that questions coexistence.¹¹⁰ If members of Congress are not engaging in debates about coexistence and are accepting the premise—or desiring the outcome—that private money will coexist with sovereign money, then that assumption will most likely be reflected in the approaches by financial regulators on the ground.

Indeed, financial regulators are currently operating within the coexistence framework. For instance, the President’s Working Group stated: “To address risks to stablecoin users and guard against stablecoin runs, legislation should require stablecoin issuers to be insured depository institutions, which are subject to appropriate supervision and regulation, at the depository institution and the holding company level.”¹¹¹ The Office of the Comptroller of the Currency has also taken preliminary steps to address the financial stability risks inherent in stablecoins,¹¹² but within the framework of coexistence.¹¹³

* * *

Of note, it has been reported that the European Commission is considering a hard cap on stablecoin issuance. In particular, regulators could order the issuers of any stablecoin

¹⁰⁹ *Id.* at §2.

¹¹⁰ See Davis Polk, *Comparison of Digital Asset Legislative Proposals* (Jun. 23, 2022), <https://www.davispolk.com/sites/default/files/2022-06/crypto-bills-comparison-client-update.pdf>.

¹¹¹ *Report, supra* note 5, at 2.

¹¹² See News Release, *OCC Clarifies Bank Authority to Engage in Certain Cryptocurrency Activities and Authority of OCC to Charter National Trust Banks* (Nov. 23, 2021), <https://www.occ.gov/news-issuances/news-releases/2021/nr-occ-2021-121.html> (“The Office of the Comptroller of the Currency (OCC) today published a letter confirming that national banks and federal savings associations must demonstrate that they have adequate controls in place before they can engage in certain cryptocurrency, distributed ledger, and stablecoin activities.”).

¹¹³ Michael J. Hsu, *Thoughts on the Architecture of Stablecoins*, Remarks Before the Institute of International Economic Law at Georgetown University Law Center (Apr. 8, 2022), <https://occ.gov/news-issuances/speeches/2022/pub-speech-2022-37.pdf>.

exceeding 200 million euros and 1 million transactions daily to cease issuances until these figures come back below the threshold. This effectively allows coexistence “up to a point” and no further.¹¹⁴ Other than this report, however, most regulatory options—particularly in the United States—have established coexistence as the baseline.

C. Circulating Money and Insurance

As discussed by Gorton and Zhang in *Taming Wildcat Stablecoins*, there are multiple ways to address the run risk concern associated with private money like stablecoins.¹¹⁵ One approach is to transform stablecoin issuers into “narrow banks,” requiring each stablecoin to be backed by short-term U.S. Treasuries or central bank reserves. (Many of the legislative proposals lean in this direction.) But doing so may lead to unintended macroeconomic consequences.¹¹⁶ In particular, uninsured holders of deposits at commercial banks might *run to the narrow stablecoin banks* in times of economic uncertainty.

Another way to solve the financial stability problem posed by unregulated stablecoins is to insure them in the same way that the FDIC currently insures deposits. Indeed, as discussed previously, deposit insurance effectively transformed privately produced demand deposits into sovereign money—satisfying the NQA principle and eliminating run risk.¹¹⁷ But is that even possible in the current setting? Thinking about this insurance approach brings us to the fundamental difference between stablecoins and demand deposits noted in the introduction: Demand deposits are not designed to circulate, but stablecoins can circulate. Trying to insure circulating stablecoins may not be feasible.

To see this argument, one first has to observe that demand deposits are account-based. They are linked to a specific person’s account at a specific bank. In order to use deposits, Person A can write a check to Person B. The check then must clear—that is, Person A’s account is debited and Person B’s account is credited. Circulation of cash (or stablecoins), on the other hand, refers to notes (or tokens) that can be exchanged from Person A to Person B to Person C to Person D to Person E—irrespective of whether they have bank accounts. The current deposit insurance regime applies to accounts, not to tokens.

Deposit insurance, as it is designed today, insures money in accounts. It would only insure the amount of stablecoins in the holder’s account and not the amount of stablecoins that are circulating outside of the account. To see this distinction more clearly, suppose your account at the bank has \$100 in it—\$50 in private stablecoins and \$50 in sovereign cash. You

¹¹⁴ See Jack Schickler, *EU Commission Favors Ban on Large-Scale Stablecoins, Document Shows*, COINDESK (May 11, 2022), <https://www.coindesk.com/policy/2022/05/11/eu-commission-favors-ban-on-large-scale-stablecoins-document-shows/>.

¹¹⁵ See Gorton & Zhang, *supra* note 3.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

withdraw \$10 in stablecoins and spend these coins buying groceries. Those \$10 of stablecoins are now circulating in the economy and are no longer connected to you or your account. The current deposit insurance framework safeguards the \$40 of stablecoins and \$50 of cash remaining in your account at the bank. But the \$10 of circulating stablecoins are not covered. In addition, consider the fact that the bank could theoretically give stablecoins to individual and businesses that borrow from the bank. Those stablecoins are also not insured unless the borrowers store those stablecoins in bank accounts. In all these scenarios, the stablecoins are still liabilities of the bank. This means the bank is required to honor the redemption of those coins if holders come back to the bank and demand cash in return.

In order for stablecoins to be fully insured, the deposit insurance framework would likely have to change. Specifically, the coins themselves would have to be insured. Moreover, the amount of insurance cannot be limited as it is now—set at \$250,000 per account. A single party could hold \$1,000,000 of coins, but only \$250,000 would be insured even if these coins are not deposited in the bank. The amount of federal insurance would potentially be huge. Therefore, it seems that government insurance for all coins would not be feasible.

Conclusion

While the technology has changed tremendously, the underlying economic principles have not. Credible sovereign money is information-insensitive, trades at par, and supports trillions of economic transactions. Importantly, it is not subject to bank runs. Economic theory and history teach us that the government can provide such information-insensitive money. The question before us is whether the government should be the *only* entity to provide such money. This is the matter of “coexistence.”

This matter is not an academic hypothetical. Stablecoins are gaining a greater foothold inside and outside of the cryptocurrency ecosystem. For example, the recently launched USDF Consortium (“USDF”) consists of a group of U.S. banks and FinTech firms that issue and use stablecoins for payment transfers and other digital assets. USDF includes members like New York Community Bank, FirstBank, Sterling National Bank, and Synovus Bank.¹¹⁸

At the same time, countries around the world are actively pushing ahead with the research and development of CBDCs, the digital version of sovereign money. According to a survey of central banks conducted by the Bank for International Settlements, 86 percent of central banks are actively researching the potential for CBDCs, 60 percent were experimenting with the technology, and 14 percent were deploying pilot projects.¹¹⁹ Should private stablecoins, even well-regulated ones, circulate alongside sovereign CBDCs in the coming decades?

We approach the coexistence debate by reviewing historical case studies through the lens of economic theory. The only times when privately issued monies have circulated successfully occurred (a) in *limited* geographical areas and (b) were backed by *unlimited* liability. In other words, if Jeff Bezos, Elon Musk, Bill Gates, Mark Zuckerberg, and Warren Buffet—with a combined net worth of \$762 billion¹²⁰—decided to issue a private currency that (a) only circulated in northern California and (b) were backed by unlimited liability against their personal assets, that privately issued currency would probably succeed. Without those conditions, however, economic theory and history demonstrate that only the government can credibly establish money for mass circulation.

The reasons for the sovereign’s money monopoly are grounded firmly in preserving financial stability, specifically in warding off banking panics caused by the proliferation of privately issued money. But the reasons also extend to monetary and fiscal policy. Should the government have greater control over the money supply, and thereby have a greater ability to conduct monetary policy? Should the profits of issuing money accrue to the private sector

¹¹⁸ *Introducing the USDF Consortium*, <https://www.usdfconsortium.com/>.

¹¹⁹ Bank for International Settlements, *BIS Innovation Hub Work on Central Bank Digital Currency (CBDC)*, <https://www.bis.org/about/bisih/topics/cbdc.htm>.

¹²⁰ See FORBES RANKING OF RICHEST AMERICANS IN 2021, <https://www.forbes.com/forbes-400/>.

or to the government? As discussed in Part III, these questions were debated over a century ago, and the legal and financial architecture was changed to give a monopoly to the sovereign. The economics have not changed.

These lessons, and the corresponding economics, appear have been forgotten in recent years. In the United States, lawmakers across the political spectrum and financial regulators are preparing for a world of private money circulating alongside sovereign money. Debates on what is the best regulatory path forward take coexistence as a given: Should the SEC regulate certain stablecoins as securities? Should the CFTC regulate stablecoins as commodities? Under what circumstances will the OCC let banks operate in the stablecoins ecosystem? These questions all assume coexistence.

It is imperative to take a step back and challenge the underlying assumption. We should be careful to not relearn the lessons of the 19th and 20th centuries.