

MORE THAN QUIBBLES: PROBLEMS WITH THE THEORY AND HISTORY OF FRACTIONAL RESERVE FREE BANKING

ROBERT P. MURPHY*

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ABSTRACT: The extensive debate over fractional reserve free banking (FRFB) has spanned decades and includes volleys from many contributors. Consequently, relative newcomers to the controversy often wish to extend the conversation on several fronts. In this spirit, Bagus and Howden (2010) is a 27-page paper detailing numerous objections to FRFB, which they modestly entitled, “Fractional Reserve Free Banking: Some Quibbles.” The present paper continues in this tradition, elaborating on some of the key critiques of FRFB raised by others earlier in the debate. In particular, I critically explore two key claims of the FRFB camp: that holders of banknotes implicitly lend funds to the issuing bank, and that the historical periods of relatively free banking illustrate the stability of the system.

* Robert P. Murphy (Robert.P.Murphy@ttu.edu) is a Research Assistant Professor with the Free Market Institute (FMI) at Texas Tech University.

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I. INTRODUCTION

The debate over fractional reserve banking predates the Austrian School. David Hume favorably cites the bank of Amsterdam (Hume 1987 [1742], II.III.4), while Adam Smith explains this famous case of 100 percent reserve banking in *The Wealth of Nations*.¹ The early 19th century British Currency School was so influential that it achieved a legislative insistence on 100 percent reserves in the issuance of banknotes (though not demand deposits) in the famous Peel's Act of 1844. (Salerno 2012, p. 98)

Besides some economists in the Austrian tradition, the Chicago School is also known for a streak favoring 100 percent reserves (e.g. Fisher 1935), and in the wake of the financial crisis some prominent Real Business Cycle economists are reconsidering the proposal (Prescott and Wessel 2016). Yet the present paper falls squarely within the Austrian School, critiquing the practice of fractional reserve banking from the perspective of Mises-Hayek business cycle theory. Some representative works in this vein include Mises ([1912] 2009), Hayek ([1925] 1984), Rothbard ([1962] 2001), and Huerta de Soto (2006).

The foil for this paper's perspective is the framework of "fractional reserve free banking" (FRFB) advanced for example in Selgin (1988), Selgin and White (1996), and Horwitz (2001). The free bankers endorse the Mises-Hayek theory of business cycles, but they deny that fractional reserve banking per se is the problem. Instead, the advocates of FRFB blame various types of government interference with money and banking.

As with Bagus and Howden (2010), the present paper joins this long-standing yet vigorous debate, seeking to address several of the

¹ "The bank of Amsterdam professes to lend out no part of what is deposited with it, but, for every guilder for which it gives credit in its books, to keep in its repositories the value of a guilder either in money or bullion. That it keeps in its repositories all the money or bullion for which there are receipts in force, for which it is at all times liable to be called upon, and which, in reality, is continually going from it and returning to it again, cannot well be doubted.... At Amsterdam... no point of faith is better established than that for every guilder, circulated as bank money, there is a correspondent guilder in gold or silver to be found in the treasure of the bank" (Smith [1776] 1904, IV.3.27). In fairness to proponents of fractional reserve free banking, I concede that some later writers have described the bank of Amsterdam as a forerunner of modern central banks.

key controversies. Although Bagus and Howden modestly label their contribution as a collection of “quibbles,” in fact their discussion of money demand and credit expansion highlights a devastating flaw in the FRFB position. In this paper, I elaborate on this problem,² showing that the FRFB claims are demonstrably incompatible with the Misesian approach to money and banking. Beyond that, I show that Selgin’s two highlighted examples of the *best* historical cases of FRFB (namely, Scotland and Canada) are, if anything, poster children for the Rothbardian warnings against fractional reserve banking.

In Section II, this paper establishes that Mises and Hayek both believed that fractional reserve banking per se is instrumental to the business cycle. Section III extends the Bagus-Howden approach to demonstrating the problem with the FRFB claim that fiduciary media need not disrupt the loan market. Section IV critically analyzes the historical examples of FRFB nominated by Selgin. Section V concludes.

II. MISES (AND HAYEK) THOUGHT FRB *PER SE* WAS DISRUPTIVE

Setting aside the potential legal and conceptual problems with fractional reserve banking in order to focus on the economics, one of the key areas of dispute is whether FRB necessarily leads to an unsustainable boom as described first by Mises ([1912] 2009) and elaborated by his disciple Hayek (e.g. [1931] 1967). It is significant that both of these developers of what is sometimes called “the Mises-Hayek theory of the business cycle” thought that FRB was a central element of the story. To be sure, Mises and Hayek may have been *mistaken*, but it is worth documenting their position because in the debate over FRB, one often hears (especially in informal venues) casual claims that only dogmatic Rothbardians could find fault with fractional reserve banking per se.

We find an unambiguous statement of Mises’s position in *Human Action*. Mises defines “fiduciary media” as bank-issued claims to

² Selgin himself responded to Bagus and Howden (Selgin 2012), and then they responded in turn (Bagus and Howden 2011 and 2012). I will note in the text when these subsequent exchanges touched on the issues I want to revisit, but in my opinion their further discussion did not flesh out the points I make in this paper.

money, payable upon demand, that are *not* covered by base money in the vault, and then declares:

The notion of “normal” credit expansion is absurd. **Issuance of additional fiduciary media, no matter what its quantity may be, always sets in motion those changes in the price structure the description of which is the task of the theory of the trade cycle.** Of course, if the additional amount issued is not large, neither are the inevitable effects of the expansion. (Mises [1949] 1998, 439, n. 17; bold added.)

Regarding Hayek, even the FRFB writers admit that his understanding of commercial bank behavior is inconsistent with their claims. For example, Larry White (1999, 761) writes that Hayek ([1925] 1984, 29) “suggested in one of his earliest writings a radical solution to the problem of swings in the volume of commercial bank credit: impose a 100 percent marginal reserve requirement on all bank liabilities....”

Mises too at some points in his career called for an explicit prohibition on additional issuance of fiduciary media,³ though he also wrote (for example in *Human Action*) in favor of “free banking” as *the best practical way to restrain the issuance of fiduciary media*. (Salerno 2012, 96–97) Readers should therefore not misinterpret Mises’s praise for laissez-faire in banking as an endorsement of the modern “free banking” claim that fractional reserve banking, at least under certain conditions, promotes economic stability.

To appreciate the specific problem of fiduciary media in the eyes of Mises, it is very instructive to consider *where* he placed the business cycle discussion in *Human Action*. One might have classified the periodic boom-bust cycles plaguing market economies as a result

³ In the early 1950s Mises wrote an essay (included in later editions of his *The Theory of Money and Credit* [1912] 2009) titled, “The Return to Sound Money.” In the portion pertaining to the United States Mises explicitly says,

No bank must be permitted to expand the total amount of its deposits subject to cheque or the balance of such deposits of any individual customer... otherwise than by receiving cash deposits in legal tender bank-notes from the public or by receiving a cheque payable by another domestic bank subject to the same limitations. This means a rigid 100 per cent reserve for all future deposits, i.e. all deposits not already in existence on the first day of reform. (448)

of political intervention, which would mean placing the discussion (as Rothbard did in *Man, Economy, and State*⁴) in the same section of the book that handled minimum wage laws and taxation. Yet Mises rejects this plausible approach, and his explanation illuminates his broader views on fractional reserve banking:

It is beyond doubt that credit expansion is one of the primary issues of interventionism. Nevertheless the right place for the analysis of the problems involved is not in the theory of interventionism but in that of the pure market economy. **For the problem we have to deal with is essentially the relation between the supply of money and the rate of interest, a problem of which the consequences of credit expansion are only a particular instance.**

Everything that has been asserted with regard to credit expansion is equally valid with regard to the effects of any increase in the supply of money proper as far as this additional supply reaches the loan market at an early stage of its inflow into the market system. If the additional quantity of money increases the quantity of money offered for loans at a time when commodity prices and wage rates have not yet been completely adjusted to the change in the money relation, the effects are no different from those of a credit expansion. In analyzing the problem of credit expansion, catallactics completes the structure of the theory of money and of interest....

What differentiates credit expansion from an increase in the supply of money as it can appear in an economy employing only commodity money and no fiduciary media at all is conditioned by divergences in the quantity of the increase and in the temporal sequence of its effects on the various parts of the market. Even a rapid increase in the production of the precious metals can never have the range which credit expansion can attain. The gold standard was an efficacious check upon credit expansion, as it forced the banks not to exceed certain limits in their expansionist ventures. The gold standard's own inflationary potentialities were kept within limits by the vicissitudes of gold mining. Moreover, **only a part of the additional gold immediately increased the supply offered on the loan market. The greater part acted first upon commodity prices and wage rates and affected the loan market only at a later stage of the inflationary process.** (Mises [1949] 1998, 571–72; bold added.)

⁴ Specifically, in his own treatise Rothbard ([1962] 2009) discusses the business cycle in Chapter 12, which is titled, "The Economics of Violent Intervention in the Market." (The discussion of inflation and the business cycle is contained in section 11 of the chapter, starting on p. 989.)

The above excerpt from Mises is extraordinarily important in understanding what role *he thought* the commercial banks played in a typical boom-bust cycle. Yet to correctly parse it, we should first remind ourselves what Mises means precisely by the phrase “credit expansion” (since he is contrasting it with “an increase in the supply of money proper”). Earlier in the book, Mises does not yet explain the trade cycle but defines the terminology that he will later need. He explains:

The term *credit expansion* has often been misinterpreted. It is important to realize that commodity credit cannot be expanded. The only vehicle of credit expansion is circulation credit. But the granting of circulation credit does not always mean credit expansion. If the amount of fiduciary media previously issued has consummated all its effects upon the market, if prices, wage rates, and interest rates have been adjusted to the total supply of money proper plus fiduciary media (supply of money in the broader sense), granting of circulation credit without a further increase in the quantity of fiduciary media is no longer credit expansion. **Credit expansion is present only if credit is granted by the issue of an additional amount of fiduciary media, not if banks lend anew fiduciary media paid back to them by the old debtors.** (Mises [1949] 1998, 431; italics in original, bold added.)

Putting together all three of the block quotations from *Human Action* that we have provided above, we can summarize Mises’s position as follows: The unsustainable boom occurs when a newly created (or mined) quantity of money enters the loan market and distorts interest rates, before other prices in the economy have had time to adjust. In principle, this process could occur even in the case of commodity money with 100 percent reserve banking.

However, *in practice* Mises believes such a theoretical possibility can be safely neglected, because (a) the quantity of new gold (or other commodity money) entering the economy will likely be relatively small over any short period and (b) *whatever* the stock of new commodity money entering the economy as a whole, typically only a small fraction of it would be channeled into the loan market upfront.

Thus, even though in principle Mises’s theory of the boom-bust cycle is fundamentally about new quantities of money hitting the loan market early on, in practice the explanation revolves around *newly-created fiduciary media* being lent into the market. That is why

Mises described his explanation as the “circulation credit theory of the trade cycle.” When we understand how Mises thought (in principle) newly mined gold could conceivably set in motion the boom-bust cycle, it becomes crystal clear that he thought *any amount* of newly-issued fiduciary media—i.e., a credit expansion—would do the same. (Remember, our earlier quotation shows Mises claiming that “[i]ssuance of additional fiduciary media, **no matter what its quantity may be**, always sets in motion” the processes that cause the unsustainable boom.) Thus there are no caveats or other conditions to consider, on this narrow question. Mises thought fractional reserve banking per se would set in motion the business cycle.

III. EXCHANGING MONEY PROPER FOR A MONEY SUBSTITUTE IS NOT LENDING FUNDS TO THE BANK

In contrast to the view of Mises and Hayek, the modern free bankers deny that FRB per se causes a deviation of market and natural interest rates. In a free market with no central bank or government-provided deposit insurance, profit-maximizing commercial banks will—so the free bankers claim—only issue fiduciary media in the case when the public increases its demand to hold bank money, and this is precisely the scenario in which we should *want* them to do so. The free bankers argue that an insistence on 100 percent bank reserves in the face of a sudden increase in the public’s demand to hold bank-issued money will lead to a period of monetary disequilibrium (in the sense of Yeager 1997).

With this approach, the free bankers apparently turn the 100%-reserve critique on its head. Selgin and White (1996) argue:

We aspire to be consistent Wicksellians, and so regard both price inflation and deflation as regrettable processes *insofar as they are brought about by arbitrary changes in the nominal quantity of money, or by uncompensated changes in its velocity, and not by changes in the real availability of final goods or the cost of production of money*. It is therefore an attractive feature of free banking with fractional reserves that the nominal quantity of bank-issued money tends to adjust so as to offset changes in the velocity of money. Free banking thus works against short-run monetary disequilibrium and its business cycle consequences. (Selgin and White 1996, 101–02; italics in original.)

Selgin (1988) makes the point in greater detail. He first recognizes that the balance between money supply and demand is conceptually distinct from equality between the market and natural rates of interest, but he claims that under a regime of free banking the two will be synchronized:

As used here “monetary equilibrium” will mean the state of affairs that prevails when there is neither an excess demand for money nor an excess supply of it at the existing level of prices. When a change in the (nominal) supply of money is demand accommodating—that is, when it corrects what would otherwise be a short-run excess demand or excess supply—the change will be called “warranted” because it maintains monetary equilibrium.

This view of monetary equilibrium is appropriate so long as matters are considered from the perspective of the market for money balances. But it is also possible to define monetary equilibrium in terms of conditions in the market for bank credit or loanable funds. **Though these two views of monetary equilibrium differ, they do not conflict.** One defines equilibrium in terms of a stock, the other in terms of the flow from which the stock is derived. **When a change in the demand for (inside) money warrants a change in its supply (in order to prevent excess demand or excess supply in the short run), the adjustment must occur by means of a change in the amount of funds lent by the banking system.**

An important question, one particularly controversial among monetary economists in the middle of this century, arises at this point. **Are adjustments in the supply of loanable funds, meant to preserve monetary equilibrium, also consistent with the equality of voluntary savings and investment? The answer is yes, they are.** The aggregate demand to hold balances of inside money is a reflection of the public’s willingness to supply loanable funds through the banks whose liabilities are held. To hold inside money is to engage in voluntary saving.

As George Clayton notes, whoever elects to hold bank liabilities received in exchange for goods or services “is abstaining from the consumption of goods and services to which he is entitled. Such saving by holding money embraces not merely the hoarding of money for fairly long periods by particular individuals but also the collective effect of the holding of money for quite short periods by a succession of individuals.” (Selgin 1988, 54–55, bold added.)

Steve Horwitz echoes these sentiments, arguing that “demanding bank liabilities is an act of savings” (1996, 299, qtd. in Bagus and Howden 2010, 40). Horwitz explicitly combines the bank function of credit intermediary with fractional reserves when he writes:

Savers supply real loanable funds based on their endowments and intertemporal preferences. **Banks serve as intermediaries to redirect savings to investors via money creation.** Depositors give banks custody of their funds, and banks create loans based on these deposits. The creation (supply) of money corresponds to a supply of funds for investment use by firms. (Horwitz 1992, 135, qtd. in Bagus and Howden 2010, 39; bold added.)

More generally, the FRFB writers see nothing special about demand deposits, that would make them qualitatively different from other forms of credit instruments. The FRFB writers can ask rhetorically: If Rothbardians do not object to a man lending \$1,000 to the bank by buying a 12-month CD, then why do they object to a man effectively lending \$1,000 to the bank by keeping it in his checking account for a year? Yes, it is true that if the bank lends out some of the funds and then the man tries to withdraw his money, there could be a problem. But by the same token, there could be a problem if the bank lends out the \$1,000 from the CD sale to fund a project that will not be repaid for (say) two years. According to the FRFB writers, all this shows is that commercial banks need to pay attention to maturity matching. It is not fraudulent and it does not cause the business cycle if banks sell (say) 12-month CDs and lend the funds out for 2-year projects (hoping to roll over the CDs when they mature).⁵ So by the same token, there is nothing especially risky or distortionary if we look at one end of the spectrum, where savers lend their funds to the bank for a loan that matures in “zero” time even though the bank uses those funds to invest in longer maturity projects. According to the FRFB writers, that is one way to appreciate the benignity of demand deposits or checking accounts: consider them as buying CDs that mature instantly and that the saver continuously rolls over.

⁵ In the text above, I am paraphrasing a line of argument from the FRFB camp, which presupposes that the typical Rothbardian does *not* object to maturity mismatching per se. However, some Rothbardians *do* argue that maturity mismatching is the fundamental problem, of which fractional reserve banking on demand deposits is only the most prominent example. See Block and Barnett (2017) for such a claim, and see Bagus, Howden, and de Soto (2018) for a critical response, which contains citations to the volleys of the running debate. Of course, for those in the 100 percent reserve camp who *agree* with Block and Barnett, this particular line of argument from the FRFB would fall flat.

As we have seen, it is essential for the FRFB position that people adding “inside money” (i.e. bank-issued claims to money payable upon demand) to their cash balances are engaged in an act of saving and furthermore are lending their savings to the bank. There is much controversy on this point. Some critics of FRFB (e.g. Hoppe 1994, 72) have denied that the accumulation of cash balances *is* a form of saving. However, I agree with Hülsmann (1996, 34) that the accumulation of cash is a form of (gross) saving. What I deny is that this act of saving, if performed using the vehicle of a banknote or demand deposit, represents an implicit loan to the commercial bank. Thus my position is compatible with Selgin’s (2012) response to Bagus and Howden on money balances and saving (p. 139); savings can take the form of an accumulation of bank notes. But admitting this does *not* mean that accumulating bank notes is the same thing as *lending funds to the bank that issued them*. The following thought experiment will illustrate the distinction.

Imagine a young boy who receives a weekly allowance of \$10 for his household chores. Each week his parents give the boy a crisp \$10 bill, which he promptly stores under his mattress. After eight weeks, the boy buys an \$80 video game. Does anyone want to deny that he “saved up for” the purchase? Both plain language and—I would argue—economic definitions must conclude that the boy consumed less than his income for the eight-week period, and engaged in saving. He invested in the accumulation of a very liquid financial asset, namely fiat money.

Things would not change if the boy (week after week) exchanged his fiat dollars for instantly demandable notes issued by a reputable bank. The accumulation of these banknotes would still represent saving and investment on the part of the boy. But they would *not* constitute a loan to the bank, any more than a man who checks his coat at a restaurant (and receives a claim-ticket) is lending his garment to the establishment. Even though a Martian observer might *think* the man was engaged in a credit transaction, our understanding of the true situation informs us that the coat-checking process is not a loan.

If our hypothetical boy converts actual money (“money in the narrower sense” in Mises’s terminology, or “outside money” in Selgin’s) into a banknote or demand deposit (“money in the broader sense” for Mises or “inside money” for Selgin), he has not altered

his ability to command goods and services immediately in the market. Therefore there is no *additional* credit transaction, besides the accumulation of money per se. The boy's saving translates into the "investment" of an accumulation of dollars in his cash balances. If he converts the fiat currency into banknotes, then his prior acts of saving "correspond to" the banknotes now in his possession. It was not his decision *to convert the fiat dollars into banknotes* that represents saving; *that* decision merely altered the form in which he holds his savings. There is no "excess saving" on the part of the boy that could accommodate the creation of additional banknotes that the commercial bank then lends out, with the boy's \$80 in fiat dollar deposits serving as the reserves.

Our analysis here exactly mirrors that of Mises. In *The Theory of Money and Credit* he begins a section titled "The Granting of Circulation Credit" in this way:

According to the prevailing opinion, a bank which grants a loan in its own notes plays the part of a credit negotiator between the borrowers and those in whose hands the notes happen to be at any time. Thus in the last resort bank credit is not granted by the banks but by the holders of the notes. (Mises [1912] 2009, 271)

Those familiar with Mises's rhetorical style can guess that things do not bode well for the FRFB camp. After some historical references, Mises continues the above train of thought by declaring:

Now this view by no means describes the essence of the matter. **A person who accepts and holds notes, grants no credit**; he exchanges no present good for a future good. The immediately-convertible note of a solvent bank is employable everywhere as a fiduciary medium instead of money in commercial transactions, and nobody draws a distinction between the money and the notes which he holds as cash. The note is a present good just as much as the money. (Mises [1912] 2009, 272, bold added.)

Now to be sure, just because Ludwig von Mises rejected a particular view, does not suffice to demonstrate its error. Yet when it comes to arguments over FRFB within the camp of economists *who all endorse the Mises-Hayek theory of business cycles*, it is crucial to study Mises's own view of fiduciary media and the connection to an unsustainable boom.

Contrary to the FRFB writers, Mises does *not* think that banknotes are simply a credit instrument with zero maturity. On the contrary, they are a form of quasi-money because of their special nature. Indeed a few pages earlier (p. 267) Mises explains that other types of claims are eventually redeemed; you cannot eat a claim on bread. And this is why a “person who has a thousand loaves of bread at his immediate disposal will not dare to issue more than a thousand tickets” entitling the holder to a loaf of bread. But things are different with instantly convertible claims *to money*, because these claims (so long as their redemption is not doubted) perform the services of money proper. That is why issuers of these claims can dare to create more tickets than they can redeem.

Early in *The Theory of Money and Credit* (pp. 50–54), Mises weighs the pros and cons of including fiduciary media in the category of “money” itself. After all, a perfectly secure and instantly redeemable claim to money is itself a commonly accepted medium of exchange. But Mises decides instead to use the term “money-substitute” since he thinks it necessary to distinguish between “money in the narrower sense” and “money in the broader sense” in order to explain his circulation credit theory of the trade cycle.

I have stressed these aspects of *The Theory of Money and Credit*—and earlier in the paper, I dwelled on the exposition in *Human Action*—to show that the thesis of Salerno (2012) has firm roots. It is true that Mises has kind things to say about free banking in *Human Action*, and his section on “The Case Against the Issue of Fiduciary Media” (pp. 322–25) in *TMC* is ambivalent. My modest point in this paper is that the entire Misesian framework of money and banking *denies the alleged ability of fractional reserve banking to enhance equilibration in the loanable funds market*.

Bagus and Howden (2010, 43) proceed along similar lines as the present critique when they imagine an individual who originally holds some gold coins under his mattress, but then—perhaps because of crime—decides to deposit them with a bank in exchange for notes. Bagus and Howden argue that the individual’s newfound willingness to hold banknotes should not be a signal to the bank to issue more loans to the community, because there is no act of net saving here.

However, in fairness Selgin could respond⁶ that in this case, the commercial bank would *not* find it profitable to issue more notes than the ones that would be held by the man (who first deposited his gold coins). It is only when the community wants to increase its *total* money holdings broadly defined (at given prices), Selgin would argue, that the profit-maximizing fractional reserve banks would find it in their interest to issue new loans (or engage in credit expansion, in Mises's terminology).

Yet we can tweak the thought experiment to shore up Bagus and Howden's critique. Suppose we have a gold-using community that is at an initial monetary equilibrium (in Yeager's 1997 sense) and a loanable funds market equilibrium where the market and natural interest rates coincide (in Wicksell's [1898] 1962 sense). Now suppose every single person in the community becomes more fearful for the future, and desires to increase his or her real cash balances by 10 percent. Under 100 percent reserves, the only way this can happen is through additional mining and/or falling prices (quoted in gold). Yet with FRFB, this sluggish adjustment can be neatly sidestepped: Each individual goes to the bank and takes out a loan, in the form of newly printed banknotes (claims on gold), which he or she then adds to cash balances. The community achieves its desired increase in cash holdings without "wasting" real resources digging up more gold, and without the discoordination of disequilibrium sticky prices.

The only odd thing about this scenario is that when asked to explain how this maintenance of "monetary equilibrium" can avoid disrupting the loan market, Selgin et al. would have to say, "Each individual in the community lent himself the extra money he is now holding."

⁶ It is awkward that Selgin had a chance to respond to Bagus and Howden on this point and chose not to; I am therefore reduced to suggesting what he *could* have said (but did not). Also, an anonymous referee disagrees with my attempt to speak on behalf of Selgin; the referee believes Bagus and Howden's example works as is. In any event, my own thought experiment in the text above perhaps makes the point even more forcefully.

IV. THE ALLEGED HISTORICAL SUCCESS OF FRFB

Besides the theoretical arguments, the proponents of FRFB claim that history vindicates their position. For example, Selgin (2000) argues:

Episodes of systemwide bank failures and serious bank over- and under-expansion have been less common than is often supposed. **The episodes that have occurred can generally be shown to have resulted not from any problem inherent in fractional reserve banking but from central bank misconduct or misguided government regulation or both....** Where fractional reserve banks have operated free of both significant legal restrictions and the disturbing influence of central banks, as **in nineteenth-century Scotland, Canada, and Sweden** (to name just a few cases that have been studied), **serious banking and monetary crises have been rare or nonexistent.** (Selgin 2000, 98; bold added.)

In blog posts, Selgin has held up Canada and Scotland as epitomizing the success of his vision of money and banking. For example in a 2018 post Selgin begins:

As all dedicated *Alt-M* readers know, **I am a big fan of the Canadian banking and monetary system** that flourished between Canada's Confederation in 1867 and the outbreak of the First World War. Besides thinking it was a darn good system, **I also regard it as the best example, together with Scottish banking during the first half of the 19th century, of a "free" (that is, largely unregulated) banking system.** (Selgin 2018; bold added.)

In the above quotation, Selgin's phrase "I am a big fan of the Canadian monetary and banking system" is hyperlinked to his earlier 2015 post praising the Canadian system, saying it was "famously sound and famously stable." This claim is in turn linked to an endnote where Selgin informs the reader, "For a very good review of the features and performance of the Canadian system in its heyday, see" R.M. Breckenridge (1895), *The Canadian Banking System: 1817–1890*, which is a nearly 500-page book on the subject.

Thus we have Selgin himself singling out the two apparently best examples of his brand of FRFB in action: Scotland and Canada, during the appropriately defined years. And yet, as we will see, both examples hardly seem exemplary, and if anything *confirm* the warnings of the Austrian critics of fractional reserve banking.

Free to Refuse: Scotland During the Free Banking Period

We can quickly deal with the case of Scotland by quoting from Murray Rothbard's (1988) review of Larry White's (1984) book on free banking in Britain. Rothbard observes:

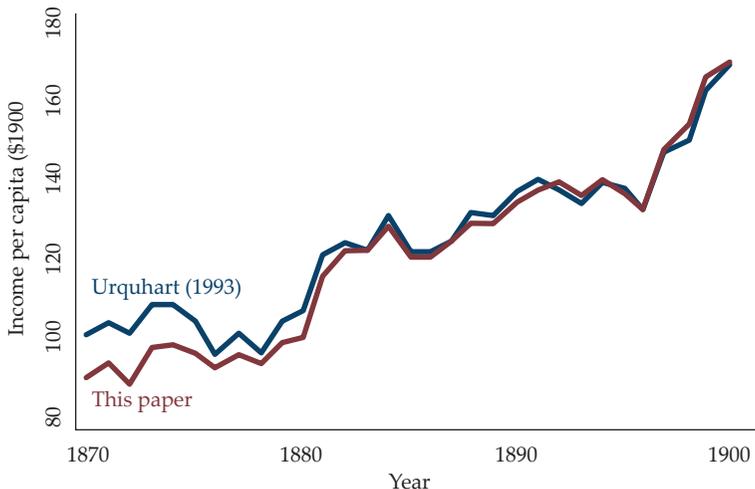
From the beginning, there is one embarrassing and evident fact that Professor White has to cope with: that **"free" Scottish banks suspended specie payment when England did, in 1797, and, like England, maintained that suspension until 1821. Free banks are not supposed to be able to, or want to, suspend specie payment**, thereby violating the property rights of their depositors and noteholders, while they themselves are permitted to continue in business... (Rothbard 1988, 230–31; bold added.)

The fact that the Scottish banks suspended specie redemption *for more than two decades* and were not forced to close their doors, proves that they were clearly not following the textbook exposition of a "free bank," which is allowed to maintain fractional reserves but of course is still subject to standard legal rules concerning contract enforcement. As Rothbard goes on to note, the fact that Scottish specie reserves fell to "a range of less than 1 to 3 percent in the first half of the nineteenth century" hardly clinches the case for fractional reserve banking. It is not surprising that "free banks" in Scotland let their reserves dwindle so low, when they were "free" to turn their customers away who demanded specie redemption.

Don't Blame Canada: Economic Volatility During the "Famously Stable" Era

As we established earlier, besides the celebrated case of Scotland, Selgin also held up Canada during the period 1867–1914 as the best example of FRFB in action, saying its banking system was "famously sound and famously stable." In this subsection I will offer some evidence to the contrary, relying (in part) on Selgin's own cited source.

First we can get a sense of Canadian stability by looking at a recent update (using a new method to calculate the GNP deflator) of estimates of GNP per capita. The following figure is taken from Hinton and Geloso (2018), contrasting the standard series by Urquhart (1993) with their slightly revised version:

Figure 1. GNP per capita using different deflators

Source: Figure 3 from Geloso and Hinton (2018), where “This paper” refers to Geloso and Hinton.

Note that the period covered in the figure (1870–1900) is a subset of the period Selgin identified. And yet, as the figure indicates, the Canadian economy exhibited nothing like smooth steady growth. Depending on which deflator we choose, per capita GNP had a sharp or modest boom-bust cycle from 1872–78, at which point it soared, rising some *30 percent* in a mere four years (1880–84). Then in a single year (from 1884–85), real per capita output fell a little more than 6 percent. (To get some perspective, during the Great Recession—which of course is the worst economic calamity to hit the world since the Great Depression—the biggest year/year drop in U.S. real GDP per capita was 4.9 percent, which occurred in the second quarter of 2009.⁷)

After the trough in 1886, there was another expansion through 1891, followed by another multiyear contraction. Then from 1896–1900 we see the beginnings of yet another massive boom, with real output per capita again rising about 30 percent in four years.

⁷ Data for U.S. real GDP per capita available at: <https://fred.stlouisfed.org/series/A939RX0Q048SBEA#0>.

Now in fairness to Selgin, 19th century economic data are notoriously prone to exaggerate the volatility in real output during business cycles, because of imperfect adjustment of the relevant price deflators. (This is why I used a chart taken from a very recent paper, which itself quibbled with the standard reference in the literature.) Yet even if Selgin and other FRFB advocates want to claim that the wild swings in Canadian output were mostly nominal, *that still contradicts their claim of stability*. Under the classical gold standard, nominal prices rose during booms and crashed during busts, but that was (at least partly) due to fractional reserve banking, where the bankers fed the boom by inflating through credit expansion and then starved the bust by deflating through credit contraction. The figure above—whether we take it at face value or even if we generously suppose it is partially mistaking nominal swings for real ones—is exactly what Murray Rothbard would suppose a FRFB economy would look like. It is *not* how the FRFB writers describe their vision.

Ironically, even if we turn to the very source Selgin cited—namely, R.M. Breckenridge’s (1895) large book on the Canadian economy—we find decent support for the claim that FRFB fosters the standard Mises-Hayek business cycle.

For example, in the Table of Contents, this is how Breckenridge lays out the topics in Chapter VIII:

Figure 2. Excerpt from Table of Contents of Breckenridge (1895)

CHAPTER VIII.—BANKING UNDER THE CONFEDERATION, 1867-89	
§43.—The Expansion between 1867 and 1873.....	264
§44.—Depression, 1874-1879	272
§45.—Bank Failures and Losses, 1874-1879.....	279
§46.—The Bank Act Revision of 1880.....	288
§47.—Dominion Note Legislation, 1872-1880.....	295
§48.—1880-1889.....	297
§49.—Bank Failures, 1883-1889 ..	305

Notice that the material in Chapter VIII covers the Canadian banking system for the first 22 years after Confederation—all of this falls under the period that Selgin singled out as epitomizing a sound, stable, fractional reserve free banking system in operation.

Now surely one does not have to be a fuddy duddy Rothbardian to say that the subject headings for Chapter VIII are inauspicious at best for the FRFB camp. We see a six-year “expansion” followed by a five-year “depression,” and a section devoted to the bank losses during the depression. The 100 percent reservists can now add Selgin’s recommended text as further evidence that FRFB fosters the Mises-Hayek boom-bust cycle.

Now to be fair to Selgin, Breckenridge *is* a fan of the Canadian banking system that he is describing. For example, here is how Breckenridge concludes his discussion of bank failures through 1889:

Here ends, for the present, the account of bank failures in Canada. If any conclusion may be drawn from the study, it is that **the disasters have been due to faults of practice, rather than defects in the system.** It is clear that legislation, scientifically framed, has not prevented poor management, bad management, or fraud. No one, probably, ever expected it would. It is clear also that it has not saved shareholders from loss. A careful estimate shows that, by reductions of capital, liquidations, failures, and contributions on the double liability, shareholders have sunk at least \$23,000,000 in Canadian banking since the first of July, 1867. **This sum, more than 37 per cent. of the present paid-up banking capital, is independent of the losses provided for out of profits,** or met by reduction of rests [sic]. **The security of a group of banks, however, must be judged, not by the losses of their proprietors, but by those of their creditors.** We may see now how well the Canadian system has minimized the creditors’ risks. **Out of 56 chartered banks, some time in operation in Canada since the first of July, 1867, just 38 survive.** Ten of those gone before have failed. But the **total loss of principal inflicted during twenty-seven years on noteholder, depositor, government, or creditor whomsoever, has not exceeded \$2,000,000, or less than one per cent.** of the total liabilities of Canadian banks on the 30th day of last June. (Breckenridge 1895, 314; bold added.)

And so we can see the sense in which Selgin could think the Canadian free banking system was vindicated. After all, the restaurants on a busy downtown strip (say) might be characterized by a high turnover, yet so long as entrepreneurs enter the field with eyes wide open, this could be a healthy example of cutthroat competition and Schumpeterian innovation. A high percentage of restaurant failures in a certain area would not necessarily prove that the market was failing consumers.

However, there are serious problems with such an attempt to rehabilitate the Canadian experience. First of all, in our hypothetical

restaurant analogy, we surely would not say, "The disasters have been the fault of the restaurants' management, not the system." When you have to use the word "disaster"—as Selgin's own preferred authority on the Canadian experience did—it is hard to maintain the claimed badges of stability and soundness.

Furthermore, Selgin is moving the goalposts if he thinks loss of customer deposits is the criterion for a desirable banking system. The claim—from Mises and Hayek through Rothbard up to writers such as Salerno in the present day—has always been that credit expansion sets in motion an unsustainable boom. Breckenridge's historical account confirms that claim beautifully. To put the matter another way: By Selgin's criterion, we could just as well "prove" that the *United States* banking system from 2000–10 was perfectly stable and sound. After all, no bank customers lost *any* deposits in standard checking accounts, and there were no banking panics of the kind witnessed during the 1930s.

As a final note, Breckenridge's figure of a mere \$2,000,000 in creditor losses is misleading. As Breckenridge explains earlier in the book, troubled banks had suspended note redemption, and in the consolidation process some depositors had to sell their notes at a loss, even though those notes would *eventually* be redeemed at par. This affected the public's mood—imagine that!—when the bank charters came up for renewal:

The expiry of all bank charters had been set for the 1st of July, 1881. In accord with the policy adopted a decade before, Ministry and Parliament took up... the question of what changes to make in the system at the time of the first decennial renewal of charters.

They were anticipated both by the public and the banks. **Among the people, much dissatisfaction had been caused by the bank suspensions of the preceding year. The notes of only one of the failed banks were finally redeemed at less than their nominal value, but at that time liquidation in several cases was still incomplete. To change the notes of failed banks into convertible paper, the holder had to submit to a discount, and the brokers who took the risk exacted ample pay for it. Many of those holding notes at the times of suspension had only the option between this loss and physical want.** They were forced to realize at the time when the credit of their debtors was at the lowest ebb. They could not even wait until the fears of the first week were quieted, much less till the day of final payment....

The bankers understood the popular discontent with the security of the currency. They saw their own interest, and the country's interest, no doubt, in calming it. For them, their privilege of circulation provided an easy, convenient, and useful means of profit; to the country, it gave an elastic currency, increased sources of discount, and through the system of branches promoted by it, widespread and accessible banking facilities. (Breckenridge 1895, 289–90; bold added.)

Whatever one might say about the block quotation above, it hardly sounds like a description of a smoothly operating free market, bereft of political favoritism, and where customer satisfaction is Job #1. On the contrary, it sounds exactly like the negative picture painted by a Rothbardian critic of fractional reserve banking.

Our brief sketches of Scotland and Canada have shown that the two examples held up by Selgin were plagued by decades-long specie suspension on the one hand, and depression coupled with bank failures on the other. It leads the critic of FRFB to doubt the accuracy of Selgin's assurances that all major problems with banking in history were the fault of anything *but* fiduciary media.

V. CONCLUSION

The intra-Austrian debate over fractional reserve banking is long and contentious. In the present paper, I have focused on the specific issue of whether fiduciary media per se set in motion the boom-bust cycle. I have shown that even the very definitions Mises chose in his monetary theory underscore this elemental fact. Furthermore, the FRFB attempts to reconcile credit expansion with loan market equilibrium fall apart when subjected to simple thought experiments. Finally, I have shown that Selgin's two favorite examples of the alleged stability of FRFB—Scotland and Canada—are in fact textbook illustrations of the dangers of fractional reserve banking.

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