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Selecting an Alternative National Banking System Against

Fractional Reserve Free Banking:

The Greatest Modern Fraud?

Josiah Bardy

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Andrew Light, Ph.D.
Thesis Chair

Elizabeth Koss, M.B.A.
Committee Member

Donald Love, Ph.D.
Committee Member

Brenda Ayres, Ph.D.
Honors Director

Date

Abstract

This paper serves as a compilation and analysis of different banking systems with an emphasis on fractional reserve free banking. Contemporary academic literature has debated fractional reserve banking with revisited scrutiny since the 2007–2009 financial crisis. The Austrian School, drawing conclusions from the Austrian business cycle theory, blames central banking for boom-bust economics. One proposed solution, fractional reserve free banking, eliminates the central bank's control for a purer form of fractional reserve practice; however, this system may be inherently fraudulent and unethical. After completing an economic analysis of the western world's banking system, this paper then explores an alternative solution.

Keywords: Fractional reserve free banking, Austrian business cycle, banking, fraud, one-hundred percent reserve, deposit, loan

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Introduction

On April 18, 1906, a 7.8 magnitude earthquake shook the city of San Francisco bursting water lines, spewing oil into the streets, igniting fires, and wreaking havoc among its residents. The city's foundation was built upon a fault line. Had the geologists analyzed the foundations at a deeper, more thorough level, perhaps even the Golden Gate Bridge would have been built elsewhere. As it stands to this day, the city remains perched upon a fault, itching to unleash potential disaster. Much in the same way, the foundations of modern banking too have been built upon a system that could cause an economic collapse of earth-shaking proportions. Fractional reserve banking is the foundation of the western financial paradigm, and an elaborate banking structure has been built on top of this fault line. Geologists and economists alike must monitor the condition of the foundations upon which they build. Just as a city needs stable ground for it to prosper and endure, the entire economy depends upon a fair and secure financial system to operate. This paper will compare banking systems and analyze the history, operations, legality, and ethics of the fractional reserve banking system to affirm or deny its fraudulency and to propose an alternative banking system.

The Current Banking System

Money

Since money is one of the core concepts of banking, it must be clearly defined and understood (Bagus & Howden, 2013). Money is defined as “the item commonly used to

pay for goods, services, assets, and outstanding debts” (Gwartney, Stroup, Sobel, & Macpherson, 2013, p. 250). Whatever the medium, it provides three basic functions. First, money acts as a medium of exchange. For example, bakers do not have to pay their employees in bagels, since an employee could not do much with only bagels (McConnell & Brue, 2008). The employee could go to the grocery store to purchase vegetables with his bagels, but eventually the grocery store clerk would get sick of bagels. There are only so many bagels one can obtain before they lose their marginal effectiveness. Second, money stores value over time (McConnell & Brue, 2008). Less durable assets could no longer be used after time elapses, such as bread, which only lasts so long before going bad. Bakers cannot create large amounts of bread and expect to preserve their wealth longer than mold takes to grow. But, should these loaves of bread be converted into money, the value could be stored for the future. Finally, money is used as a unit of account (McConnell & Brue, 2008). Money allows people to track expenditures and revenues and establish prices (McConnell & Brue, 2008). Assume the world accounted for transactions in flavors of muffins. One large blueberry muffin is worth five small blueberry muffins, and one large lemon-poppy seed muffin is equivalent to two large blueberry muffins. A particular item can be purchased with a half-dozen large lemon-poppy seed muffins, the established price for a fair exchange. In this way, baking resembles banking.

Money is not merely modern paper and coin. Historically, commodities, such as cigarettes, have been used as money. Soldiers used tobacco products as money during World War II since it serves as a medium of exchange, a store of value, and a unit of account given the situation (Gwartney et al., 2013). Currency, which is exclusively coin

and paper money, is most often used today. All currency is money, but not all money is currency. While coins have some level of inherent value due to the usable nature of the metal with which they are fabricated, the face value of these coins is often more than the sum of its parts—apart from the U.S. penny since it costs more than one cent to mint (Gwartney, et al., 2013). Thus, all money in circulation today is fiat currency: paper and coins that represent wealth, are labeled by a government as “legal tender,” and possess no intrinsic material value (Gwartney, et al., 2013). Money proper is money backed by commodities, such as gold, silver, and oil, and money substitutes are notes given by banks that represent the depositor’s holding in a liability (Bagus & Howden, 2010). Fiduciary media is currency created through the fractional reserve system (to be explained shortly) that is not tangibly represented by either fiat currency or money proper in a vault (Davidson, 2012). Checks represent money stored in accounts and can be moved from one bank to another, but exist as a common form of fiduciary media (Fisher, 1935). A good is a product or item that satisfies human wants and provides utility (Durlauf & Blume, 2008). Money is a type of good and can also be used to purchase goods. One final distinction concerning money is the fact that money is a fungible good and not a specific one (Bagus & Howden, 2013). Each dollar can be readily replaced by another since it holds the exact same worth: Each dollar is the same quantity and quality as another. As opposed to a specific good, like a vehicle, dollars are interchangeable. This distinction is important for the legal analysis yet to come concerning bank deposits and loans. Money is an incredibly complex and useful tool, but it exists in a limited supply and must be kept safe. Banks exist to provide money services: they maintain available

debt financing and safe, insured storage. This naturally leads to a relationship with money.

Fractional Reserve Banking

Historical origins of fractional reserve banking. The United States' banking system is a fractional reserve system governed by a central bank. Fractional reserve banking finds its origins in the seventeenth century (Gwartney et al., 2013). Gold was used as money in the day, and consumers deposited their gold with goldsmiths for safe-keeping. Goldsmiths gave the consumer a paper certificate upon deposit so they could return the proper amount of gold to their customer. Since these paper certificates were redeemable by the bearer of the note and not the account holder out of convenience, the consumers began to use these paper notes as representations of their holdings, thereby creating paper currency; it was much more convenient to trade notes than to redeem each certificate at the goldsmith every time the bearer wanted to purchase something (Gwartney et al., 2013). As notes grew to be commercially accepted, the amount of gold withdrawn daily from banks began to decrease. These goldsmiths realized that they were not profiting by keeping the gold safe and decided they could earn revenue by loaning some of these deposits out to customers. Since the population trusted its certificates and was not likely to withdraw all the gold, the smiths were free to add money into the system through loans (Gwartney et al., 2013). Should every person with a "golden ticket" seek to redeem his or hers simultaneously, the smith would not be able to provide money for everyone, since the bank held less in deposit than the amount in circulation. Such a scenario, known as a bank run, immediately eliminates the short-term liquidity—the state of being close to cash—of the reserve. Bank runs are often induced by panic and severely

disrupt banking systems. Thus, the actual reserves kept in the vaults did not accurately reflect the total amount deposited by customers. People were still using paper certificates, and the loaned gold was merely added to the circulation. Less gold was kept in the smiths' vaults as more people requested loans, and the supply of loanable funds grew.

The mathematics behind money creation. This economic phenomenon can be illustrated mathematically in a modern-day example. The citizens of a nation deposit all their gold—1,000 ounces—with the banker. The banker issues paper certificates representing these 1,000 ounces. As people begin to trade in paper, the banker decides it is safe to lend out 80% of the gold he has, a total of 800 ounces of gold. This injection of 800 ounces of actual gold has increased the total supply of money in the system. The nation can now trade with 1,800 ounces' worth of money, some in the form of paper and some of actual gold. When citizens deposit this loaned gold into a different bank, they receive certificates for the gold. All 1,800 ounces are now represented as certificates in this system. The new banker decides to lend 80% of his 800 ounces of deposit, a total of 640 ounces. The total money supply in this nation is now 2,440.

Each new deposit yields less money added to the system, and eventually the bankers cannot lend out more money. The money supply peaks. Based on the fraction of reserves held in the bank, economists can mathematically calculate this amount. The inverse of the reserve ratio equals the potential deposit expansion multiplier (Gwartney et al., 2013). Assuming a bank chooses to maintain a reserve ratio of 20% (r), $1/r$ calculates this economic multiplier. Suppose \$1,000 already exist in the system. If \$1,000 are deposited in a fractional reserve bank, the system can create at most \$4,000 more resulting in a total of \$5,000.

$$1 / 20\% = 5 \quad 5 \times \$1,000 = \$5,000$$

When the reserve ratio is not centrally controlled, a banking system could theoretically continue to lend out its money until it stored no cash and caused the money supply to approach infinity. As the denominator in a fraction approaches zero while the numerator remains constant, the resulting number continues to increase. If the required limit was 10%, the factor would be 10, and the money supply could reach \$10,000. If the required ratio was 1%, the factor would be 100, and the money supply could reach \$100,000. This pattern continues. However, this is not practical because as banks lend out more money, they sacrifice liquidity and assume more risk. When banks have less capital on hand, they are more likely to go bankrupt in the event of a bank run because they cannot cover their immediate liabilities. To provide stability and to offer dependable sources of credit, modern fractional reserve systems operate beneath central banks.

Central Banking

The Federal Reserve. Central banks exist as a “non-profit-seeking, government-managed institution to oversee banking stability and regulation” (Paniagua, 2016, p. 2). The United States’ central bank is known as the Federal Reserve System (the Fed). Since the money supply significantly affects macroeconomic conditions, such as inflation and economic growth, it is the responsibility of the Fed to develop and execute successful monetary policy for the nation. The Fed attempts to control the money supply by legislating a fractional reserve ratio, called the required reserve ratio, and by purchasing and selling securities in the open market (Gwartney et al., 2013). As the Fed manipulates the required reserve ratio, the actual amount of money in the system rises or falls. When

the quantity of money is changed, the cost of borrowing money—interest—changes as well.

Thus, with fractional reserve banking, commercial banks can create money but are limited in scope by the central bank. There are variations of banking systems, such as the One-Hundred Percent Reserve System, where banks lend money from explicitly raised capital instead of from consumer deposits while maintaining an equal level of reserves and deposits. Free banking is banking that exists outside of the legislation of a central bank (Federal Reserve Bank of San Francisco, 2017). A variation of free banking is the fractional reserve free system, where the system lacks a central banking authority and commercial banks can lend freely.

The operations of the current banking system. The interaction between banks, both commercial and central, is important as well. Since banks do not hold a bill in the vault for every single dollar in their system, and since money has been added to the system through fractional reserve banking, there is a large sum of money that exists merely on bank balance sheets (Fisher, 1935). When a consumer writes a check, it represents the money stored in his account. Assume a fair transaction occurs. The recipient then delivers the check to his bank, banks work behind the scenes to reconcile the amount of deposits through the central bank. The consumer's bank sends a request to the central bank, which facilitates the transfer of money from his bank to the recipient's bank (McConnell & Brue, 2008). This classification of deposit is axiomatically called a checkable deposit (Fisher, 1935).

Because the fractional reserve ideology has dominated the western banking system, some may say that it has passed the “market test” and is thus the most efficient

and effective structure in the market; however, this conclusion needs much more evidence than a simple “market test” (Hulsmann, 2003). Is fractional reserve banking the most optimal method? There is considerable literature both condemning and defending the practice of fractional reserve banking in its variations; the evidence must be carefully weighed.

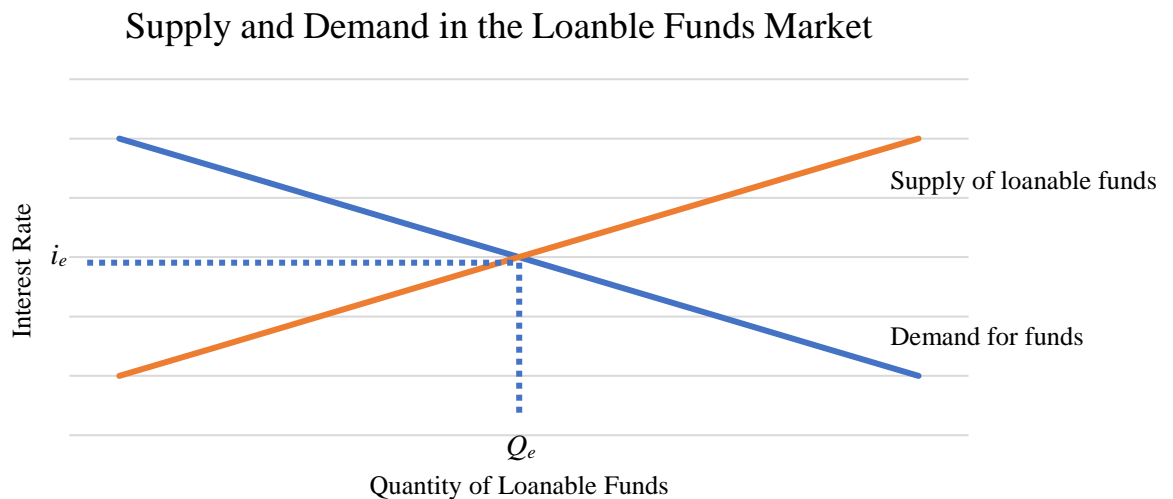
The Austrian School of Thought

A Different Approach

Many scholars involved in this debate consider banking systems from the perspective of the Austrian School of economics. This school was founded and developed by Carl Menger in 1871 in his publication *Principles of Economics* (Foldvary, 2015). One of the core differences between classical economics and Austrian economics is the assumption that interest—the cost of borrowing—is a factor of time instead of just a factor of supply and demand (Foldvary, 2015). Borrowing allows a person to possess and enjoy a good or service sooner and longer than does saving up for a purchase. Most consumers would prefer a product or service now rather than later. Thus, interest is the cost of borrowing relative to time that one pays to accelerate his purchase according to Austrian thought. Classical economics treats interest as the cost of borrowing as determined by market supply and demand; instead, it is regarded in this cohort as the cost of purchasing goods and services earlier (Foldvary, 2015). Austrian economics determines the market rate of borrowing slightly differently than classical economics.

Classical economics teaches that the supply, the sum of savings and money creation, and demand, the quantity of funds borrowers seek, of loanable funds in the market determine the equilibrium rate at their intersection. It also defines savings as the

difference between income and expenditures in a household (Foldvary, 2015). As the interest rate increases, more people place their funds in savings since their money earns a higher return in a long-term account, and as the interest rate decreases, more borrowers obtain funding for investing, since the cost of borrowing is low. This effect can be modeled in the following supply and demand curves.



Austrian thought can be modeled by the same supply and demand curves.

The Austrian Business Cycle

The Austrian business cycle theory was developed by Austrian economists Ludwig von Mises and Friedrich Hayek (Luther & Cohen, 2014). This economic theory assumes that

interference with the natural rate of interest will hamper its economic role, resulting in distortions of spending and of prices. Such skewing results in an inefficient use of resources, and can also possibly set in motion a sequence of events that ends up in a recession and depressed economy. (Foldvary, 2015, p. 282)

This assertion is quintessential. When fiduciary media is increased, the market rate of interest falls too low (Davidson, 2012). Instead of lowering the price of borrowing by shifting supply, the price is reduced more naturally via an increase in savings, which is a consequence of reduced demand for loanable funds in the market instead of increased supply (Bagus, 2010). When fractional reserve banks create money by loaning out deposits, this rate is “artificially” lowered, and entrepreneurs borrow too much funding at too low of a price to produce goods and services that cannot be sustained by an injection of credit. Even though the low interest rates caused a boom, it is inevitably followed by a bust (Bagus, 2010). Booms cannot be sustained when they are caused by imprudent borrowing and investing, especially when this spending arises from interest rates that are not representative of the true market rate. Thus, the Austrian school of thought attributes business cycles to the hands-on monetary policy of the central bank as well as the fractional reserve system since both have the capability to interfere with interest rate stability. This conclusion demands a reconsideration of the current banking system.

A Proposed System

Fractional Reserve Free Banking

However, not all Austrian economists agree that fractional reserve banking is at fault and instead solely blame central banking for interfering with the market interest rate. There is a push within the Austrian school of economics towards fractional reserve free banking. For this to happen in the current U.S. system, legislators would have to dismantle the Federal Reserve. Austrian economists believe that by eliminating central banks, business cycles will also be eliminated. Some Austrian economists are proponents of fractional reserve free banking, while others denounce fractional reserve banking

altogether. Both sides within the Austrian school desire to eliminate the interference purportedly exerted by the central bank upon the money supply, yet they disagree on the substitute banking method. Some believe that a fractional reserve free banking system is a viable way to return economics to the laissez-faire way, while others believe that the fractional reserve method is inherently flawed, regardless of central bank interference, and would yield the same disastrous effects caused by tampering with the interest rate. With the hope of restoring economic stability by eliminating business cycles, fractional reserve free banking theorists have the right motives at heart; nonetheless, a system is not guaranteed to function at maximum effectiveness and efficiency because of the motives of its developers. To better understand why fractional reserve free banking is not the best option, one must explore the reasons why the system seems practical and attractive.

In Defense of Fractional Reserve Free Banking

George Selgin is a vocal proponent of the fractional reserve free banking system. In defense of his position, he addresses three common arguments against fractional reserve banking. Those against fractional reserve banking often say that the practice is inherently fraudulent, that money created by fiduciary institutions no longer represents actual wealth, and that the system is fragile since it is susceptible to bank runs at any given time (Selgin, 2000). Beginning with the case of fraud, Selgin says that the practice cannot be fraudulent, since a one-hundred percent reserve bank could arise at any time, denounce the practices of its competitors as unethical, and steal much of the market share from them (2000). This is supposing that the banking customers are woefully misinformed of the truth that the reserves they have stored in the bank are not fully backed dollar for dollar (Selgin, 2000). Also, during the century-long reign of fractional

reserve free banking in Scotland (ending in 1845), depositors lost very, very little of their net savings even though the banks held on average a mere three percent of deposits in reserve (Selgin, 2000).

Selgin admits that fractional reserve banking is inherently riskier than one-hundred percent reserve banking, yet subjects this increased risk factor to a risk-return analysis, weighing whether the extra risk is worth the potential for greater return. The one-hundred percent reserve system is an absolutely liquid bank, while a fractional reserve system reduces the liquidity by loaning out the cash within. It is more efficient and productive for a bank to reduce part of its liquidity while assuming a healthy amount of risk for the return since “some degree of illiquidity may be worthwhile if there are benefits to be had from it” (2000, p. 98). He draws an analogy: just because a building may not be able to withstand an unexpected earthquake does not mean the entire building must be condemned (Selgin, 2000). While it is risky, to be economically viable the system must generate sufficient return to cover this risk. Fractional reserve banking’s ability to create money allows for the expansion of a small-scale economy, and this ability allows a nation to industrialize in the presence of scarcity. Even Adam Smith attributed fractional reserves to the expansion of smaller economies because it can convert a very limited supply of gold-backed funds to a large supply of paper notes backed by bank loans (Selgin, 2000).

Not only does Selgin believe the system is potentially viable, he also seeks to clarify the ethical practice behind fractional reserve banking. His opponents often claim that charging interest on another person’s money for one’s own profit is fraudulent and dishonest. The source of this practice is traced to the aforementioned London goldsmiths,

where they are often portrayed as dishonest and greedy, coming to the realization that they can earn profit on their stored gold (Selgin, 2012). Should these smiths have loaned out the deposits intended for safekeeping to customers surreptitiously seeking loans, then their practice would have been unethical, since they would have been charging two people to use a banking service involving the same dollar, also known as double-dipping (Selgin, 2012). But, the goldsmiths switched from a fee-based business model to an interest revenue-based model and began to pay interest on the deposits placed in their vaults. Thus, they paid people to keep money with them and began to make money by different, ethical means (Selgin, 2012). Changing business models can be a healthy practice. If the banks charged fees *and* loaned these deposits to increase revenue, then they would have been guilty of embezzling and double-dipping. One would pay for its safe-keeping, while another would pay for its use. Instead, these goldsmiths had made it clear that they were accepting a debt obligation to repay the sum deposited upon demand, and “a banker’s obligation to pay money ‘at sight’ is, in any case, not an obligation to have that money on hand at all times” (Selgin, 2012, p. 277). Perhaps these smiths merely created a new business model for banking. One of the ethical qualms of fractional reserve banking appears trivial.

A Continued Perspective

Lawrence White, a contemporary ally of George Selgin, argues alongside his colleague for fractional reserve free banking. Modern banking, as fragile as it is, could need serious design modifications to make it robust. But even then, it would certainly not yet be antifragile—a term created by Nassim Taleb (as cited in White, 2013). An antifragile system is more than a system lacking fragility; this is merely a robust system

(White, 2013). An antifragile system is one that not only withstands stress, but grows from it. White claims that central banking is the problem of modern banking and proposes that, in order to change the banking system from robust to antifragile, governments must fix the actual problem by eliminating banking regulation and central control (2013). Contemporary fractional reserve banking, he argues, is not inherently fragile since it has existed for so long, but that the addition of the central bank's limitations on banking has negatively influenced the antifragility inherent to market operations (White, 2013). If fractional reserve banking were deeply flawed, then it would have collapsed naturally due to its fragility, and a stronger, more effective method of banking would have arisen some time ago (White, 2013).

White also argues that a free banking system could be just the antifragile system economists seek, and cites the 1772 collapse of the Scottish bank Douglas, Heron & Company—otherwise known as the Ayr Bank—as a historical empirical example. When the bank requested emergency financing from the Bank of England (not a central bank at this time but a private institution), it was denied and shortly thereafter had to file for bankruptcy. Even though the economy suffered a short recession, much of the system was not negatively impacted by the failure of a bank the size of the late Lehman Brothers (White, 2013). A system free of the meddling actions of a central bank recovered quickly and became stronger even when one of the most influential banks failed, unlike the recent events in the United States' financial system.

The 2007–2009 financial crisis was a disaster, and it shows that “legal restrictions and privileges have made the current U.S. banking system [a] failure” (White, 2013, p. 474). Since American banks trusted that a central bank bailout would protect them, they

felt free to adopt excessive risk; this governmental safety net is one of the systemic dangers associated with central banking. Some of the largest American financial institutions were believed to be ‘too big to fail’ and invested heavily in mortgage-backed securities riddled with subprime loans (White, 2013). When the government bailed Bear Stearns, Lehman assumed it was safe, hoping to receive the same treatment.

Unfortunately, the population expected them to receive bail as well. Against all expectations, Lehman was allowed to fail. If the expectations of the populace had accurately reflected the central bank’s initiative to allow Lehman to fail, then the panic in 2008 may not have occurred at all (White, 2013). The government chose not to post bail for a handful of insolvent companies, permitting them to fail with the hope that other, stronger companies would rise to take their place while hypocritically bailing out other failed institutions.

White proposes a diverse banking system akin to the historical free banking system of the U.S. To achieve antifragility in banking, the system needs smaller banks that use a variety of business models (White, 2013). By removing the restrictions and legislations that regulate banking activity, new methodologies of banking would arise in place of the old system. Essentially, to create antifragility, one must “let a thousand flowers bloom, but...not artificially preserve even one of them” (White, 2013, p. 478). White would also logically conclude that competing currencies within a nation could be a good practice, since it would eventually lead to the survival of the strongest currency. This Darwinian approach to banking appears strong in theory, promising to deliver newer, stronger banking than that of the past. As technology advances, electronic currencies and monies

will continue to develop, perhaps fulfilling the dream of competitive currencies among the monetary monopoly that is the U.S. government.

Fractional reserve free banking would allow the banks to create their own funds to match the demand from the consumer since there would be a tighter feedback relationship between supplier and demander (White, 2013). This is part of the monetary disequilibrium theory. This theory states that when supply and demand are out of equilibrium, Austrian business cycles occur (Davidson, 2012). The theory also suggests that a closer relationship between the suppliers of funds and the consumers of funds would produce monetary equilibrium (Davidson, 2012). Central banks can fail to adequately match the demand for money with supply because monetary policy is used to hit economic targets using a clenched fist instead of letting the invisible hand of the market determine the availability of money. Also, if banks were not limited in their loaning capacity, they could use the money multiplier to appropriately increase the quantity of money relative to the market (White, 2013). When the required reserve ratio legislated by the central bank interferes with the quantity of money demanded by the market, it binds the supply and demand, forcing the market to behave inefficiently (White, 2013). Thus, the ability to leverage the quantity of money could be good for an economy so it could meet demand with supply, but to do so would require the dissolution of the central bank's required reserve limits, effectively dismantling one of the major national monetary policy tools.

A Few Final Thoughts

Nair argues against the claim that fractional reserve banking is legally fraudulent (2015). However, as Nair notes, for this activity to be considered explicitly fraudulent,

there must be a clear victim, aggressor, and intent to misrepresent (2015). Assuming depositors are aware that banks lend their deposited money to clients, there would be no clearly defined victim of fraud (2015). On the other hand, should the clientele be unaware that banks lend the deposited funds, then there is a clear victim of fraud. The problem with proving fraud is the apparent client collaboration involved in the current banking scenario (Nair, 2015). If the depositor loans money to the bank with the full understanding that the bank will proceed to loan out the funds with a pledge to produce money on demand, then the two parties agree, preventing a victim and eliminating the possibility of fraud (Nair, 2015). To eliminate any discrepancy, banks can simply require their clients to sign a disclosure, which would ensure both parties are on the same page legally.

Monetary Disequilibrium Theory

Fractional reserve free banking stands strongly upon the assumptions defined within the monetary disequilibrium theory (Davidson, 2012). Monetary equilibrium exists when the supply for funds and the demand for the same are equal, and disequilibrium results when either of these factors shift out of balance (Davidson, 2012). When an economy suffers changes in supply or demand, it enters discoordination and begins an inevitable cycle of boom and bust (Davidson, 2012). Proponents of fractional reserve free banking claim that it is the best system to precisely affect the quantity of money to perpetually balance the equilibrium interest rate by delivering or restricting the proper amount of fiduciary media in quick response to the market. When the supplier and the demander of funds can communicate and fulfill one another's expectations without

excessive regulation, the supply of loanable funds will perpetually match the demand for loanable funds, at least in theory.

Against This System

Not all Austrian economists are gung-ho about fractional reserve free banking as the solution to the Austrian business cycle. Bagus and Howden, for example, assert that a fractional reserve free system would leave credit expansion without limit, that increases in money do not reflect increases in real savings, and that a fractional reserve free system tends to create a central bank as the lender of last resort (Bagus & Howden, 2010). Unlimited credit expansion is a potential problem that arises with Selgin's free banking model (Bagus & Howden, 2010). Selgin believes two limits arise naturally: No bank loses reserves since every bank is expanding at the same rate simultaneously, and precautionary reserves will increase as credit expands, since the variance of clearing balances increases (as cited in Bagus & Howden, 2010). However, precautionary reserves may not be the most practical way to negate an unlimited credit expansion. If a bank has a positive clearing balance and another a negative one, the one with the negative clearing balance can borrow funds from the other at a specified rate of interest. These interbank loan agreements "would make precautionary reserves essentially obsolete" (Bagus & Howden, 2010, p. 35). With this, banks could create an unlimited expansion of credit for the market if the cash demand existed (Bagus & Howden, 2011). Thus, in the pursuit of profitability, banks under a fractional reserve free banking system would likely manipulate the system to create unlimited loans, and thus, unlimited profit.

A second criticism that Bagus and Howden bring against the methodology is that it rests upon an atypical concept of money. Money proper and money substitutes are not

considered to be separate entities by Selgin in his defense of the free banking variant (Bagus & Howden, 2010). Substitutionary notes are only valuable because of the actual value contained in money proper (Bagus & Howden, 2010). Selgin wrongfully assumes that the demand for money proper would remain constant, when its demand often is the inverse of the demand for fiduciary media (Bagus & Howden, 2010). As the demand for the bank note falls, the demand for commodity-backed currency rises. In this typical recessionary scenario, the demand for money proper is not constant. The fractional reserve free banking system cannot enter recession, otherwise the quantity of commodity money demanded would fluctuate and undermine Selgin's assumptions about money (Bagus & Howden, 2010). This assumption is nonetheless an impossibility.

Third, Bagus and Howden argue against Nair and claim that there is an unethical nature concerning recent banking practices. Individuals can execute two general actions with their money; they can put money into savings or put it into consumption (Bagus & Howden, 2013). Should the individual choose to save, then he or she can place the money into a bank to mitigate uncertainty regarding the future (Bagus & Howden, 2013). Savers demand a certain amount of money before they feel they have securely alleviated their risk, and they entrust this amount to the depository institution believing it will be kept safe (Bagus & Howden, 2013). While it is perfectly legal in modern Western practice to issue fractional reserves, "not everything that is legal is necessarily ethical" (Bagus & Howden, 2013, p. 239). When a bank accepts as a loan what was intended as a deposit, it blurs the lines of legal business practice by not providing clarity to its customers, creating a situation that violates ethical standards because there are distinct differences between deposit and loan contracts in modern law. The parties engaged in business must abide by

the determined purposes, durations, and obligations of these two agreements (Bagus & Howden, 2013). Primarily, their purposes differ. When a good is loaned, the lender fully gives the right of availability and use to the borrower, but when a good is deposited, neither of these attributes are transferred (Bagus & Howden, 2013). Thus, depending upon which type of contract is issued, the legal claim for a good differs (Bagus & Howden, 2013). Also, in a loan agreement, if a duration is not specified, then the loan is essentially considered a deposit, since the loan could be called upon at any time (Bagus & Howden, 2013). Most, if not all, bank accounts are of an indefinite time frame, thus rendering them a deposit instead of a loan.

Finally, the type of good loaned creates specific contractual obligations.

Fractional reserve banks do not exist for the sole purpose of protecting the consumer's savings accounts; they take the deposits, and after gathering enough reserves to safely loan money without experiencing a bank run, they loan the funds to vetted applicants. This practice effectively breaks the institution's legal obligation to keep the deposit guarded (Bagus & Howden, 2013). Recall the difference between fungible and specific goods. When a deposit is made, regardless of the type of instrument (fungible or specific), the original good is given with the intent that the same good will be returned. In a loan, there are two types of returns. Lenders give a specific good with the intention to receive the same specific good in return, like a piece of artwork between galleries (Bagus & Howden, 2013). Borrowers accept fungible goods with the intent of returning a *tantundem*, or a predetermined quantity and quality of the same good due upon maturity (Bagus & Howden, 2013). Since money is a fungible good, when it is given as a loan, it may be returned to the lender as a *tantundem*. However, this is only in a loan scenario.

When a bank accepts money as a deposit, it is legally required to be guarded as-is and not redistributed. Regardless of its fungible state, the bank is not acting as a borrower but as a depositor and cannot violate the contract, which is that the bank upon call will return to the depositor the original money exactly as entrusted, not the same quality and quantity of money from an alternative source (Bagus & Howden, 2013). Fractional reserve banking often blurs this distinction in contract law by failing to adequately differentiate the types of accounts when it accepts an investment and loans out part of the sum when the sum is truly intended as a deposit.

History Repeats Itself

Credit is not inherently a bad thing, but the creation of it leads to misdirected production and the long-term destruction of wealth manifest as reduced relative purchasing power per the Austrian business cycle theory (Cochran, 2012). Economic cycles existed prior to the central bank involvement in the United States economy. Before the Fed, the U.S. banking system was operating as a fractional reserve free system, and these cycles often resulted in painful bank runs that shut down entire branches of banks. In the pursuit of financial stability, the Fed was born in 1913 (Federal Reserve Bank of San Francisco, 2017). Before the Federal Reserve, the United States banking system was a train wreck. If this system was the ideal system, then the central bank never would have been instituted. The Federal Reserve was designed to stabilize a failing system; however, when it was introduced, it failed to fulfill its promises (Rothbard, 2002). The problem may then be with fractional reserve banking, since this is the common denominator between these systems. A meddling central bank may interfere with market equilibrium,

but that does not excuse the fact that the free banking period was a historical failure as well.

Monetary Disequilibrium Revisited

Monetary disequilibrium theory—one of the most foundational underlying assumption of fractional reserve free banking—is flawed (Davidson, 2012). This theory argues that “any deviation from ‘monetary equilibrium’ produces economic discoordination” (Davidson, 2012, p. 196). The traditional Austrian business cycle theory argues that changes in the supply of loanable funds yields economic discoordination, while the monetary disequilibrium theory goes a step further to argue that changes in demand also shift the economy into upheaval (Davidson, 2012). There are multiple incorrect assumptions within the disequilibrium theory. Monetary disequilibrium theorists fail to consider both types of monetary demand—the demand caused by those who want to make money and the demand caused by those who want to hold money, in their argumentation (Davidson, 2012). Also, when society demands more money, equilibrium is not violated because the demand for other goods is a factor of price, and their respective graphs move in response to one another (Davidson, 2012). Theorists also neglect the fact that the economic discoordination found in the Austrian business cycle theory and the economic discoordination of monetary disequilibrium are not the same, since business cycles last months to years while periods of monetary disequilibrium tend to be significantly shorter (Davidson, 2012). Finally, monetary disequilibrium permits the issuance of fiduciary media, which interferes with the entrepreneur’s ability to make the proper financial decisions concerning the needs and future conditions of a market (Bagus

& Howden, 2012). Since monetary disequilibrium theory fails to rightfully acknowledge these critical assumptions, it is “fatally flawed” (Davidson, 2012, p. 216).

An Alternative to Fractional Reserve Banking

Fractional reserve free banking has not worked in the past, and it will not work as an alternative solution. However, fractional reserve banking does not appear to be a panacea either. Yet, there is another potential banking system. This alternative is the One-Hundred Percent Reserve System, where each item deposited into a bank is held strictly as a deposit (Currie, 2004). This could be economically beneficial. In a historical paper, Lauchlin Currie offers the post-Depression era a different banking solution. Instead of a fractional reserve unit banking system, where individual banks are disjointed from one another and cannot mitigate risk amongst themselves, and instead of a single national bank, Currie proposes that banks hold one-hundred percent of their deposits as cash in their vaults, or on deposit with the central bank (2004). While not against central banking himself, this systemic shift could support itself outside the grasp of a federal banking institution. All banks would be required to maintain cash equivalents equal to their deposits and would obtain funding for generating loans by issuing equity, certificates of deposit, bonds, and other financial tools. Customers would be able keep their money safe as a deposit in the bank while capitalizing on modern conveniences like debit cards, credit cards, and online banking.

Loans would still be available in a One-Hundred Percent Reserve System. Instead of riskily increasing the monetary supply through fractional reserve practice, loans would also be issued by successful merchants (Rothbard, 1995). Historical evidence agrees. During the Renaissance, the Italian Medicis and the German Fuggers arose as massively

successful merchant families (Rothbard, 1995). After earning large reservoirs of cash, these business moguls began to shift the focus of their model from mercantile activity to financial services. Since they had been profitable in the past, they could loan out their own money to fellow businesspeople who were seeking credit (Rothbard, 1995). This contrasts with the fractional reserve banking of today, where the financial agent loans money held in deposit.

When a customer establishes a demand deposit at a bank, he or she expects to receive the deposit any time he or she calls upon the bank to deliver. Under this alternative system, banks would be required to clearly distinguish the practice of loaning and depositing. The population would be informed, and all would certainly understand the distinction between a deposit and a loan. This would serve to clarify any potential confusion surrounding contract law and hold every member of society accountable.

Both the theoretical application of a one-hundred percent reserve system and the practical transition from system to system are feasible. There is one obstacle, however. There is an entrenched banking system currently in place. Since the fractional reserve system is more profitable than a leaner, simpler, fee- and loan-based business model, it would be difficult to change; nonetheless, this does not mean an implementation strategy ought not to be considered. Irving Fisher's (1935) one-hundred percent money solution could be implemented to convert checkable deposits into cash-backed reserves. If the central bank, with its authority to create fiat currency, printed money to liquidate each bank's remaining assets, there would be no net change in the amount of cash held in the system (Fisher, 1935). This method is very pragmatic, since the other optimal time to switch systems would be after a complete and total financial collapse.

If the market bottomed-out and the financial system teetered on collapse as it did in the 2007-2009 financial crisis, then there would be no better time for the Federal Reserve to liquidate its balance sheet, for the government to print money to back all deposits, and to legislate a required reserve ratio of 100%. Consumer confidence would be at an all-time low should the government lack the ability to weather another economic earthquake, and this plan could be a way to boost morale by encouraging the populace that it will be a better, more sustainable solution to banking.

Conclusion

The following chart summarizes some of the key advantages and disadvantages about each of the banking systems contained in the previous discussion:

	Fractional Reserve Banking with Central Bank	Fractional Reserve Free Banking	100% Reserve Banking with Central Bank
Advantages	<ul style="list-style-type: none"> • Government controls fractional reserve limits • Highly profitable • Is currently in place and is hard to remove 	<ul style="list-style-type: none"> • Highly profitable • Not limited by regulation • Multiple currencies battle for strongest 	<ul style="list-style-type: none"> • Simple monetary policy • Clearly communicated difference between deposit and loan contracts • Eliminates business cycles
Disadvantages	<ul style="list-style-type: none"> • Unclear distinction between deposit and loan contracts • Government interference may lead to Austrian business cycles • Complex • Built upon fiat currency 	<ul style="list-style-type: none"> • System does not solve monetary disequilibrium • Unclear distinction between deposit and loan contracts • Historically unsuccessful • Poor concept of money 	<ul style="list-style-type: none"> • Best implemented in the event of a financial collapse • Banks provide fewer services • Less profitable than alternatives • Smaller money supply

Fractional reserve banking, both under a central bank and free from regulation, contain flaws just as the One-Hundred Percent Reserve System does. However, the

proposed alternative does potentially effectively mitigate the business cycle fluctuations described by the Austrian business cycle theory. The ethics surrounding fractional reserve banking are somewhat questionable. While the practice is currently legal, it pushes the boundaries of fraud and ethical behavior through the utilization of implied communication. Contract law is specific enough to demonstrate the nuances between deposits and loans, and while the textbook differences are small, the practical applications differ immensely. To profit off another person's money is lawful if and only if that person has given the sum as a loan, and the distinction is hazy for those not well-versed in modern banking. Of greater concern are the economic implications of fractional reserve banking. Since these problems are associated with fractional reserve banking as a whole, they are not remedied, and perhaps even exasperated by, a fractional reserve free system. The fractional reserve free system is even more fraudulent since banks can collude to create unlimited credit expansion.

While the One-Hundred Percent Reserve System is practical, society may never change its mind about banking. It is important for economists and banking theorists to continue to consider the utilitarian ramifications associated with the practical implementation of different theories. The foundation upon which the modern banking system rests has recently sustained an Austrian business cycle shock, and perhaps the next tremor will affect more than the financial well-being of the nation, spreading its cracks all throughout the foundation of contemporary society.

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