In Defense of Fiduciary Media—or, We are *Not* Devo(lutionists), We are Misesians![1]

George Selgin and Lawrence H. White

The Murray Rothbard both of us knew was committed to a frank and vigorous contest of ideas. He understood that an expression of disagreement was not an expression of disrespect—quite the contrary. Here we wish to honor Rothbard's memory by addressing a set of issues surrounding fractional-reserve banking, issues on which we disagree with some of Rothbard's conclusions despite beginning (we believe) from many of the same premises. Our main concern is to defend the freedoms to issue and use fiduciary media of exchange. The vehicle for our defense is a response to criticisms of our views by Hans-Herman Hoppe in his article "How is Fiat Money Possible?—or, The Devolution of Money and Credit" (1994). Subsequent to Hoppe's article, Jesús Huerta de Soto (1995) and Jörg Guido Hülsmann (1996) have also offered criticisms of our position in lengthy articles in this journal. We address at a few points in the text below what we take to be de Soto's main arguments. Hülsmann's article has appeared too recently for us to address it directly here, but its arguments closely parallel Hoppe's. In particular, Hülsmann, like Hoppe, fails to appreciate Mises's (fairly standard) explanation of why fractional-reserve banking is feasible. We therefore believe that our rebuttal to Hoppe serves to rebut Hülsmann's main arguments as well.

The Origins of Fiat Money

It should be understood at the outset that fiduciary media, i.e., demandable bank claims that are not 100 percent backed by bank

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[1]With apologies to Devo, the '80s rock band who used the slogan "Are We Not Men? We Are Devo!"

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reserves of basic money, are *not* a type of fiat money. We do not intend to defend fiat money here, and have not defended it in our previous writings. Professor Hoppe unfortunately suggests otherwise. In the course of arguing that "no fiat money can ever arise 'innocently,'" i.e., purely from free-market forces rather than from government intervention, Hoppe (1994, p. 49) criticizes at length what he calls "various prominent counterarguments." He names us as authors of one supposed counterargument, as though we had argued for the possibility of an innocent fiat money. In fact we have explicitly argued the opposite. In discussing the institutional evolution of free markets in money and banking we concluded (Selgin and White 1987, pp. 453–4) that "commodity-based money would persist in the absence of intervention, for the reason that the supreme salability of the particular money good is self-reinforcing," and that there is thus "no basis for the spontaneous emergence of a multi-commodity standard or of any pure fiat standard."[2]

How then do we think fiat money came to be? Our writings on the question have been plain enough. White (1989, pp. 59–61) has answered that "government has suppressed commodity money in favor of fiat money" and added: "I do not know of a single historical case of fiat money supplanting commodity money through competition rather than compulsion.... Historically, the introduction of fiat money . . . has come about by the permanent suspension of redeemability of the central bank's liabilities, enriching only the government." Selgin (1994c, p. 811) has addressed the question at length,[3] affirming the conclusion reached by Mises (and by Rothbard) that "States have never established fiat monies through 'social compacts,'... but rather have had to create them at first by taking convertible commodity-based monies that were already in circulation and 'depriving them of their essential characteristic of permanent convertibility.'" (The first internal quotation is from Rothbard, the second from Mises.)

The factual origins of fiat money are thus not, in our view, to be found in the free market. But is fiat money nevertheless a desirable innovation? We have not said so, and we do not think so. We regard the dismantling of commodity standards by governments as a great tragedy, something accomplished by highly objectionable means and having economically destructive consequences. The central banks' devaluation and finally repudiation of their contractual obligations to redeem their notes and deposits in gold involved massive confiscations of private wealth, and paved the way for ruinous episodes of inflation and depression the likes of which would not have been experienced under an unmanaged commodity standard.

[2]This essay is reprinted in White (1989), a book Hoppe cites.

[3]Selgin's paper was available at the time Hoppe wrote, having been presented at a Mises Institute conference which he attended in 1992.

"Fiat" Redefined by Fiat

Hoppe's grouping us with defenders of fiat money is therefore puzzling, especially given that he recognizes (pp. 69–70) that our monetary ideal "is a universal commodity money such as an international gold standard." So how are we supposed to favor both fiat and commodity money? The answer lies in a verbal sleight-of-hand. Although beginning his article with what seems to be the conventional definition of fiat money ("a medium of exchange which is neither a commercial commodity, a consumer, or a producer good, nor title to any such commodity; i.e., irredeemable paper money"), Hoppe tacitly redefines the category of fiat money to include banknotes and deposits that are redeemable-on-demand claims to commodity money, so long as they are not backed 100 percent by reserves of commodity money.[4] It *is* true that we have offered both ethical and economic arguments in defense of the contractual practice of fractional-reserve banking.

Any author is free to redefine terms as he pleases, but it is misleading for him to depart from an established usage without announcing plainly that he is doing so. Hoppe's expanded usage of "fiat money" is unorthodox, to say the least, even from an Austrian point of view. Mises (1966, p. 429, emphasis added), for one, defined fiat money as "money consisting of mere tokens which can neither be employed for any industrial purpose *nor convey a claim against anybody*." He carefully distinguished the category of base money or "money in the narrower sense," which includes gold coins (in a gold standard regime) and true fiat currency (in a fiat money regime), from the category of "money substitutes," which includes fractionally-backed checking deposits and banknotes (which of course *do* convey a claim against banks). Finally, Mises (1966, p. 433; 1980, appendix B) referred to that portion of redeemable money substitutes backed by assets other than base money as "fiduciary media," not as any kind of fiat money. Rothbard (1970a, p. 703) follows Mises's terminology in every particular. According to the Misesian terminology, then, a fractionally-backed banknote that is *de facto* redeemable, and is recognized by the public to be redeemable, is not an example of fiat money. Contrary to Hoppe's (pp. 49, 73) innovative phraseology, it is neither a "fractional" fiat money nor a "partial" fiat money.[5] It is instead a fractionally or partially fiduciary medium.

[4]Perhaps his view is that, even when in practice a fractional-reserve bank for years fulfills every redemption request that actually comes to it, nonetheless its notes should *really* be considered *ir*redeemable because the bank *would* default *if* all its notes and demand deposits were presented for redemption simultaneously. And for the same reason Hoppe may view the title conveyed by a banknote's contractual pledge that the bank "will pay to the bearer on demand" as not *genuinely* a title at all.

[5]Redeemable bank liabilities are not fiat money even if the (fractional) bank reserves

Labels aside, Hoppe's lumping together of fiduciary media with fiat money is substantively misleading, because it blurs important theoretical differences between the two. The determinants of the quantity of fiduciary media in a fractional-reserve banking system are quite distinct from the determinants of the quantity of fiat money. Economic factors strictly limit the quantity of fiduciary media a banking system can issue, given its reserves of base money. The quantity of fiat money, by contrast, is not subject to any natural economic limit.[6] We have argued (Selgin and White 1994, pp. 1734–5) that a natural limit to the quantity of fiat-type (i.e., irredeemable, non-commodity) money would be lacking even if such money were issued by competing firms. Thus Hayek's (1978) proposal for private fiat-type money unfortunately fails to secure the quantity and value of money. A "free banking" regime with competing issuers of redeemable notes and deposits is quite distinct from a Hayekian regime of "competing fiat monies."

Normative and Positive Questions

Given the difference between fiduciary media and fiat money, as those terms are used by Mises and Rothbard, the questions arise whether it is ethically or economically defensible to allow *fiduciary media* to be issued. We side with Mises, and part company from Rothbard and Hoppe, by acknowledging the legitimacy and practical advantages of fiduciary media and fractional-reserve banking. We base the legitimacy argument on Rothbardian normative analysis, and the practical-advantages argument on Misesian economic analysis.

Rebutting the Charge of Fraud

Rothbard (1962, 1983b, 1990, 1995) long argued that fractional-reserve banking is inherently fraudulent, and Hoppe follows Rothbard down this unfortunate blind alley. We find the inherent-fraud position impossible to reconcile with Rothbard's (1983a, pp. 133–48) own title-transfer theory of contract, which we accept, and which Rothbard otherwise uses to defend the freedom of mutually consenting individuals to engage in capitalist acts with their (justly owned) property. Rothbard (1983a, p. 142) defines fraud as "failure to fulfill a voluntarily-agreed

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themselves consist of fiat money. In Misesian terms, a bank-issued medium of exchange is a "money substitute," i.e., a substitute for money proper (either for fiat or for commodity money).

[6]To be precise, we mean the quantity measured in units of account, holding the definition of the unit of account constant.

upon transfer of property."[7] Fractional-reserve banking arrangements cannot then be *inherently* or *inescapably* fraudulent. Whether a particular bank is committing a fraud by holding fractional reserves must depend on the terms of the title-transfer agreements between the bank and its customers.

Rothbard (1983a, p. 142) in *The Ethics of Liberty* gives two examples of fraud, both involving blatant misrepresentations (in one, "A sells B a package which A says contains a radio, and it contains only a pile of scrap metal"). He concludes that "if the entity is not as the seller describes, then fraud and hence implicit theft has taken place." The consistent application of this view to banking would find that it is fraudulent for a bank to hold fractional reserves if and only if the bank misrepresents itself as holding 100 percent reserves, or if the contract expressly calls for the holding of 100 percent reserves.[8] If a bank does not represent or expressly oblige itself to hold 100 percent reserves, then fractional reserves do not violate the contractual agreement between the bank and its customer (White 1989, pp. 156–57). (Failure in practice to satisfy a redemption request that the bank is contractually obligated to satisfy *does* of course constitute a breach of contract.) Outlawing voluntary contractual arrangements that permit fractional reserve-holding is thus an intervention into the market, a restriction on the freedom of contract which is an essential aspect of private property rights .

Hoppe declares our defense of the freedom to make fractional-reserve-compatible contracts to be "silly" because, he asserts, "few if any" depositors have ever realized that some of their deposits are being loaned out, even though (as he acknowledges) the payment of interest on deposits would otherwise be impossible. We doubt that most depositors are as naive as Hoppe believes. As Rothbard (1990, p. 47) has correctly observed, "It is well-known that banks have rarely stayed on a '100 percent' basis very long." We thus find it hard to believe that most people who patronize fractional-reserve banks do so under the delusion that 100 percent of the money they deposit remains in the

[7]A more standard definition of fraud confines it to a *willful* or *deliberate* deception for purposes of gain. Thus an unintended failure to meet the terms of an agreed transfer due to unexpected circumstances beyond the party's control, would constitute a breach of contract, but not a fraud. Nothing herein turns on this distinction, though.

[8]Whether it is fraudulent to hold fractional reserves against a bank liability does not depend *per se* on whether it is a demand or time liability, but only on whether the bank has misrepresented itself as holding 100 percent reserves. The demandability of a particular claim issued by a bank, i.e., the holder's contractual option to redeem it at any time, is not *per se* a representation that the bank is holding 100 percent reserves against the total of its demandable claims. Rothbard (1990, pp. 49–50) argues otherwise, based on the view that a bank's demand deposits and notes are necessarily "warehouse receipts" and not debts. We do not see why bank and customer cannot contractually agree to make them debts and not warehouse receipts, and we believe that historically they have so agreed.

bank's vault until the moment they ask for it back. (We return to this issue below.)

But whether the informed would-be customers of fractional-reserve banks be a majority or a minority, their freedom of contract is at stake. If *any* person knowingly prefers to put money into an (interest-bearing) fractional-reserve account, rather than into a (storage-fee-charging) 100 percent reserve account, then a blanket prohibition on fractional-reserve banking by force of law is a binding legal restriction on freedom of contract in the market for banking services.

Walter Block (1988, pp. 28–30), though he (following Rothbard) judges fractional-reserve banking "as presently constituted" to be "a fraud and a sham," acknowledges that fractional-reserve banking *could be* non-deceptive and voluntary. To make it so, Block argues, the bank needs to affix an adequate disclaimer to banknotes and deposit contracts regarding the bank's fractional-reserve-holding and redemption policies. Hoppe (1994, p. 71), citing Block, similarly allows that fractional-reserve practices would be non-fraudulent if the bank explicitly informed depositors that it reserved the right to "suspend or defer redemption" at any time.

If the proponents of the "fraud" objection to fractional-reserve banking thus concede that the objection vanishes when banks apply the equivalent of a "warning sticker," then they concede that fractional-reserve banking is not inherently fraudulent. Fraud occurs only if a bank's customers are misled about its practices. The remaining normative debate boils down to the question of whether a warning sticker really is needed to avoid misleading customers (which in our view depends on whether the reasonable default assumption, absent a sticker, is really that 100 percent reserves *are* being held), and, if so, to the question of how explicit the sticker must be. There is also the positive question of whether fractional-reserve banknotes and deposits really could circulate among an informed public.

Our view is that a mandatory "warning sticker" is certainly less objectionable than an outright ban on fractional-reserve banking, and would not impede the practice of fractional-reserve banking, but that it is not really needed to avoid misrepresentation, because a "deposit" is *not* commonly understood to be a 100-percent-reserve bailment unless otherwise specified. As Rothbard (1970b, p. 34) once described the libertarian approach to preventing product adulteration, "if a man simply sells what he calls 'bread,' it must meet the *common definition* of bread held by consumers, and not some arbitrary specification. However, if he *specifies* the composition on the loaf [Rothbard does not suggest that this should be mandatory], he is liable for prosecution if he is lying." We maintain that the common definition or default meaning of a "bank deposit" is, as

courts have recognized (Rothbard 1983b, pp. 93–94), that of a debt claim against the bank and not of a warehouse receipt.

Block and Hoppe propose slightly different warnings as adequate to avoid fraud. It is not clear whether they are merely offering examples, or instead believe these to be the only sorts of adequate warnings. Block's warning would detail the bank's reserve ratio and its policy for meeting redemptions when they exceed its reserves (e.g., first-come first-served). His example seems to assume that the bank would hold a *fixed* reserve ratio (because it specifies the precise ratio on its notes). The bank and its customers might well both prefer, however, to allow the bank discretion to vary the ratio as prudence dictates. Under varying conditions, a varying ratio is necessary to maintain a constant default risk. Hoppe's warning would inform claim-holders that the bank reserves the right to suspend or defer redemption at any time.[9] But some banks and their customers might prefer a demandable debt contract that does not give the bank any such right to suspend. What then?

Hoppe likens his warning to the "option clauses" historically placed on banknotes, but it should be noted that such clauses only allowed for the deferral, or temporary suspension, and never for the indefinite suspension of redemption (who, after all, would freely choose to take a *permanently* suspendable note?). The Scottish banks that issued option-clause notes explicitly reserved the right to defer redemption for a specified period, in which case the note would be repaid with a specified (and high) interest bonus.[10] In practice the banks went decades without invoking the option, and the clause-laden notes circulated easily at par, because the banks were not expected to invoke the option. Hoppe's prediction that option-clause notes "would be uniquely *un*suited to serve as a medium of exchange" is false, to judge by the Scottish evidence.

Equally without historical support is Block's (1988, pp. 30–31) suggestion that, because the holder of a note issued by a bank with a 20

[9]Hoppe would also have the bank inform its borrowers that their loans can be recalled at any time. On this odd suggestion see footnote 13 below.

[10]Checkland (1975, p. 67) provides a specimen of an optional note issued by the Royal Bank of Scotland. The face of the note reads, in fairly large print (occupying practically the entire face), "The Royal Bank of Scotland . . . is hereby obliged to pay to [name] Or the Bearer, One Pound Sterling on demand Or, in the Option of the Directors, One pound Six pence Sterling at the End of Six Months after the day of the demand & for ascertaining the demand & Option of the Directors, the Accomptant & One of the Tellers of the Bank are hereby ordered to Mark & Sign this Note on the back of the same." The Bank of Scotland, also known as "the Old Bank," introduced the option clause in 1730. Checkland (1975, p. 68) comments that "The adoption of the clause does not seem to have impaired the Old Bank's note issue." The public presumably realized that the bank would try to avoid having to invoke the option to defer redemption, both for reputational reasons and because the bank would then, under the terms of the clause, have to pay interest on its notes. The bank did not in fact invoke the option until 1762. Option clauses were outlawed in 1765.

percent reserve has only a 20 percent chance of redeeming it in the event of a bank run, a note issued by a bank known to hold fractional reserves is indistinguishable from a lottery ticket, and would be valued below par if the public were to "fully digest" the implications of its issuer's fractional reserves. It is true that a particular bank's notes would be valued below par if market participants worried that they might not be able to redeem the notes ahead of an imminent run on that bank. But such notes, on which default was considered a non-negligible risk, would not continue circulating, even at a discount. They would immediately be presented for redemption, and thus removed from circulation. The surviving brands of notes would be only those for which all redemption demands made in practice were expected to be met (see Mises 1966, p. 445). Fractional-reserve notes issued by respected banks—and such banks were not historically rare—were in fact able to circulate widely *at face value* because other banks and the public rightly recognized that the practical likelihood of experiencing any difficulty in redeeming the notes was negligibly small.

The notion that a fractionally-backed banknote is akin to a lottery ticket seems to rest on a failure to appreciate the simple fact that fractional-reserve banking *is feasible*, that is, that a fractional-reserve bank can in practice continually fulfill its contractual obligation to redeem on demand. A fractionally-backed claim to basic money, a banknote or checking deposit balance, can itself serve as a medium of exchange. Because it is thus useful even without being redeemed for basic money, there is no reason to expect all the claims issued by a bank (unlike claims to bread, or winning claims against a lottery) to be redeemed in a given period. As Mises (1980, pp. 299–300) put it, a banker "is therefore in a position to undertake greater obligations than he would ever be able to fulfill; it is enough if he takes sufficient precaution to ensure his ability to satisfy promptly that proportion of claims that is actually enforced against him."

A demand deposit is the limiting case of a short-term deposit. Hoppe's view that it is infeasible for a bank to hold a fractional reserve against its demand liabilities would seem to imply that it is generally infeasible for a bank to borrow short and lend long, or to practice anything less than perfect maturity matching of liabilities with assets. Rothbard (1983, p. 99) argues explicitly that any bank that practices maturity-mismatching, i.e., has time deposits coming due before loan payoffs arrive, is violating "a crucial rule of sound financial management." The practice is feasible (does not inevitably doom a bank), however, if the bank can count on rolling over or replacing at least some of its time deposits as they come due. Maturity-mismatching clearly does involve risks: not only liquidity risk, but also interest-rate risk. But surely the

rules of sound financial management do not say that risk should never, ever be taken. Rather, they call for risk to be balanced against the return for risk-taking. A risk can be worth taking if the risk is small enough relative to the reward for taking it. When long-term market interest rates are higher than short-term rates, banks do earn a reward for assuming the risks involved in intermediating short-term deposits (including demand deposits) into longer-term loans. The view that fractional-reserve banking and maturity mismatching in general are "inherently unsound" practices seems to suggest that no bank should ever knowingly engage in any risk-return tradeoff with regard to the maturity structure of its balance sheet.

Jesús Huerta de Soto (1995, p. 30) rejects "the trite argument that the 'law of large numbers' allows the banks to act safely with a fractional reserve," on the grounds that "the degree of probability of an untypical withdrawal of deposits is not, in view of its own nature, an insurable risk." It is true that the atypical withdrawals known as bank runs are not random events. But it does not follow that a bank cannot survive with fractional reserves, because solvent banks are not inherently run-prone. Even in countries (e.g., Scotland, Sweden, Canada) where the legal system vigorously enforced the banks' contractual obligation to pay on demand (and even where legislatures outlawed the contractual escape hatch from runs provided by an option clause), well-known banks with fractional reserves did not experience runs and continually met all their redemption demands for decades (Dowd 1992; Selgin 1994a).

If runs *were* a problem even with solvent banks—that is, if depositors ran simply out of fear that others would run, thereby forcing any less-than-perfectly-liquid bank to default—an option clause would be an available contractual remedy.[11] An option clause in note and demand deposit contracts gives the bank the option to suspend payments in the event of a run, for a period long enough to allow the bank to liquidate its non-reserve assets in orderly fashion. To make the clause acceptable to customers, judging by the historical example of the Scottish optional notes, the bank would have to specify the period of suspension (or at least its maximum length), and obligate itself to make a compensatory interest payment (in addition to returning the note's face value in base money) at the end of any suspension period. This

[11]It is in this connection, and not in connection with the "fraud" issue, contrary to Hoppe's account of our argument (1994, p. 71), that we consider the option clause important. But we can see that from Hoppe's viewpoint the clause also eliminates the charge of fraud, since the bank is no longer promising *unconditionally* to redeem its claims on demand, and therefore the total of its *unconditionally* demandable claims no longer exceeds its reserves.

payment would not only compensate the customer for the inconvenience and delay, but would also give the bank a visible incentive not to invoke the option except when necessary (in technical jargon, it would make the contract "incentive-compatible"; it avoids a potential moral hazard problem by penalizing a bank that skimps on reserves and thereby runs too great a risk of suspension). Historically, as discussed in the text, some banks did write such option-clause contracts, where their legislatures did not forbid them to do so.

But how do we know that not everyone who accepted a fractional-reserve note at face value was in the dark about its fractional backing? At the very least we know that competing *banks* participated in clearing arrangements in which they agreed to accept one another's notes at par. Certainly the bankers were not in the dark. They did not expect—or find—defaults at the clearinghouse to be more than extremely rare.

Third-Party Effects

Apart from the fraud and feasibility questions, Hoppe (pp. 70–71) offers another ("and more decisive") set of reasons why fractional-reserve banking contracts should be banned: they have spill-over effects on others. His argument bears quoting:

> Whenever a bank loans its "excess" reserves to a borrower, such a bilateral contract affects the property of third parties in a threefold way. First, by thereby increasing the money supply, the purchasing power of all other money owners is reduced; second, all depositors are harmed because the likelihood of their successfully recovering their own possessions is lowered; and third, all other borrowers—borrowers of commodity credit—are harmed because the injection of fiduciary credit impairs the safety of the entire credit structure and increases the risk of a business failure for every investor of commodity credit.

Let us consider these three third-party effects in turn.

(1) The first effect, the reduction in the purchasing power of money, provides no justification for legally barring the bank's action. To think that it does is to commit the elementary mistake of confusing spill-overs from others' actions to the *value* of C's property, which are an inescapable free-market phenomenon and not a violation of C's property rights, with *physical invasions* of C's property, which are of course inconsistent with the protection of C's property rights.[12] It should be obvious that if A and

[12]Economists conventionally distinguish a "pecuniary externality," an effect on someone's wealth transmitted via the price system, from a "technological externality," a physical or otherwise direct interference with someone's consumption or production.

B are to be barred from any transaction that merely affects the *market value* of C's possessions, without any physical aggression or threat against C or C's rightful property, then the principles of private property, freedom of contract, and free-market competition are completely obliterated. Is B to be barred from offering to sell compact disc recordings to A, merely because doing so reduces the market value of C's inventory of vinyl records?

To further illustrate the point, consider another non-banking example. Suppose that A, who owns but seldom uses a Florida condominium, contracts with B to time-share B's condominium. A then sells his own condominium, causing the value of neighbor C's condominium to fall. Does this mean that the contract between A and B should not be allowed? Has A robbed C? Not according to the Rothbardian view of property rights. If Rothbard's view of property rights is accepted, Hoppe's first effect is invalid as a ground for thinking that the principle of freedom of contract excludes fractional-reserve contracts.

(2) Hoppe's second supposed effect is that all depositors are "harmed" by the bank lending out any of its reserves, because the likelihood of their successfully redeeming their own deposits is lowered. But if those depositors have freely and knowingly agreed to fractional-reserve contracts, rather than choosing to store their money in a 100-percent-reserve institution, they have agreed to take the risk. Presumably they have agreed in order to get the deposit interest payments (or unpriced bank services) that the revenue from bank lending makes possible, and which competition for depositors compels the bank to provide to its customers. By the principle of demonstrated preference (Rothbard 1957) depositors must be presumed to benefit from the package they have agreed to accept, risk and all.

(3) Finally, Hoppe's claim that "fiduciary credit impairs the safety of the entire credit structure" is difficult to evaluate, because Hoppe does not explain how this effect is supposed to work.[13] We imagine that Hoppe

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The first is an interdependence through the market; the second is an interaction outside the market.

De Soto (1995, p. 33) fails to grasp this distinction when he mischaracterizes the pecuniary externality from fiduciary media as a "tragedy of the commons," a term that properly applies only to a particular sort of technological externality.

[13]In one passage Hoppe (p. 70) remarks that fractional-reserve banks did not "inform that some or all of the credit granted to them had been created out of thin air and was subject to being recalled at any time," and he proposes that a non-fraudulent fractional-reserve bank would have to warn borrowers "that their loans may be instantly recalled." Perhaps Hoppe believes that fractional-reserve banks typically have a secret right to recall their loans at any time, and perhaps this underlies his belief that their loans make the credit structure riskier. But we are baffled as to where he might have gotten such an unfounded idea. Fractional-reserve banks do not have the option to call in loans except where the option is explicitly specified in the loan contract.

has in mind something like the notion Adam Smith (1981, p. 321) expressed by saying that "The commerce and industry of the country . . . though they may be somewhat augmented [because less of the country's capital stock is being tied up in gold and silver], cannot be altogether so secure, when they are thus, as it were, suspended upon the Daedalian wings of [bank-issued] paper money, as when they travel about upon the solid ground of gold and silver." If so, we grant the point that a risk to a bank and its customers is involved in the bank's funding loans by issuing banknotes and demand deposits, rather than relying entirely on time deposits. There may even be spill-over effects upon the risks faced by third parties. Nonetheless we side with Smith in thinking that the risks are small in comparison with the benefits. Benefits accrue to bank depositors and noteholders, who receive interest and services paid for by the extra bank revenue generated from lending out a portion of its liabilities. Benefits accrue to bank borrowers who enjoy a more ample supply of intermediated credit, and to everyone who works with the economy's consequently larger stock of capital equipment. And benefits must accrue to bank shareholders, who could choose to have the bank not issue demand liabilities if they found the risks not worth bearing.

We consider below the resource cost savings and "inherent instability" of a fractional-reserve system. With both factors considered, a higher standard of living is made possible by allowing those members of the public who so prefer to substitute fiduciary media for the holding of gold and silver coin (White 1992, pp. 520–21). As Mises (1980, p. 359) put it: "Fiduciary media tap a lucrative source of revenue for their issuer; they enrich both the person that issues them and the community that employs them."

The entire credit structure can be made radically unsafe by central banking and other government intervention (Selgin 1989; Salsman 1990), but the effects of those measures should not be charged to fractional-reserve banking as such. As we discuss in more detail below, an unhampered fractional-reserve banking system is not inherently unstable or prone to cyclical over-expansion.

When a loan is callable the call provision is thus no secret to the borrower. Historically, call loans have been a very small share of all bank loans.

We also reject the notion, expressed in the passage quoted above, that *competitive* banks issuing redeemable liabilities can create credit "out of thin air." By the nature of the balance sheet, all bank loans must be funded by liabilities or equity. Neither source of funds can be conjured out of thin air. No one is forced to hold a competitive bank's redeemable liabilities or to buy its shares; anyone can hold claims on other banks instead, or on no bank. A competitive bank must therefore *expend real resources to attract a clientele* by the provision of interest and services. The notion that a bank can extend credit costlessly or gratuitously is valid only with respect to the inframarginal credits of a monopoly bank, or to an issuer of a forced tender; it does not apply to a bank in a competitive system (see Mises 1980, pp. 346–7).

The Popularity of Fractional-Reserve Banking

Let us return to the question of how large or small is the pool of voluntary fractional-reserve depositors. The group whose freedom of contract we are concerned with here is not a small eccentric bunch, but is the great mass of people who have demonstrated that they do prefer banks that operate on fractional reserves. To quote Rothbard (1990, p. 47) again, with emphasis added, "It is *well-known* that banks have rarely stayed on a '100 percent' basis very long."[14] Yet depositors continue to patronize these banks, demonstrating their preference for them.

There are several reasons why fractional-reserve practices are and have been well-known.

First, as Hoppe (p. 70) acknowledges, from the fact that banks pay interest on demand deposits "it *should* have been clear that the bank *must* loan out deposits."[15] A bank that offers interest on its demand deposits, and does not charge warehousing fees, gives its depositors clear notice that some fraction of their funds will be put to work and not warehoused.

Second, if the vast majority of people thought that their banks held 100 percent reserves, bank runs would have occurred only when there was a suspicion that the banker was about to abscond with the reserves.[16] The history of banking before deposit insurance indicates that when bank runs have occurred, this has typically been for other reasons (Gorton 1988). Depositors' behavior has generally been consistent with their realizing all along that their banks held fractional reserves, and that they would pay them out on a first-come first-served basis. Generally depositors remained confident that the reserves were sufficient to meet all actual demands for cash. But occasionally, and more frequently in

[14]Likewise de Soto (1995, p. 31), who regards the 100 percent reserve custodial deposit as a form consecrated by the Roman Law tradition, and who would (it seems) deny transactors the freedom to make alternative (non-traditional) demand deposit contracts, does at least recognize that modern banks have been "open" about holding fractional reserves.

[15]Given his recognition that competitive fractional-reserve banks pass loan revenues on to depositors in the form of interest on demand deposits, we are baffled as to how Hoppe (p. 66) can—in the immediately preceding sentence, no less—claim that fractional-reserve banking "leads to a unilateral income redistribution in the bank's favor."

[16]It is true that a bank that mixes a time deposit business with its (100 percent reserve) demand-liability business might become insolvent, and might therefore be runnable even without any absconding. But depositors who really want 100 percent-reserve bailment contracts receive no apparent advantage from such a mixture, and they should learn over time to avoid riskier mixed institutions in favor of pure warehouse banks. If such depositors were common the market would enforce the "strict functional separation of loan and deposit banking" that Hoppe (p. 74) wishes to see. With such a separation, the mere fact that a bank offers loans is a clear tip-off that it is not a 100-percent-reserve institution.

some systems than in others, they lost their confidence, and staged runs. Runs were typically triggered by reasonable doubts about a bank's solvency. Heavier government intervention was a background condition explaining why some countries (like the United States) but not others (like Canada) had chronically weak or insolvency-prone banks (Selgin 1994a).

Early in the history of banking there may have been a case of a run being triggered by depositors' sudden realization that their bank held only fractional reserves.[17] But if such a realization had been the typical cause of runs in the nineteenth and twentieth centuries, it would be difficult to explain why runs usually affected only one particular bank or an associated set of banks, and not every single fractional-reserve bank simultaneously. Running depositors who successfully withdrew their money often transferred it to other fractional-reserve banks, thought to be safer, rather than hoarding cash as they would have done if they feared fractional-reserve banks generally (Kaufman 1994). It would be farfetched to account for such behavior by insisting that the depositors had run because they had learned to their horror that their own banks had been holding fractional reserves, but were so naive as to put their money into another set of banks without suspecting them of similar practices.

Third, banks and banking legislation were widely debated in the popular press during the nineteenth century. All discussions we are aware of took it as common knowledge that banks operate on fractional reserves. It would be impossible to think that banks were holding 100 percent reserves after reading in the newspaper about such measures as, for example, the New York State Safety Fund (a deposit insurance scheme), or the so-called "free banking" acts that compelled state-chartered banks to hold specific sorts of interest-bearing assets as collateral against banknote liabilities.[18]

[17]Some writings suggest that this occurred with the Bank of Amsterdam (Hildreth 1968, p. 12, is a bit vague). But the details behind this story, as presented in Van Dillen (1934), are rather more complicated. First of all, the Bank of Amsterdam was not expressly forbidden to make loans until 1802, and, although it kept close to 100 percent reserves throughout much of its existence, there were long periods (e.g., 1723–1761) when its reserves fell substantially below its deposit balances, the difference consisting of loans made to the East India Company and to the Amsterdam Treasury. The decline in the Bank's reputation in the mid-1780s appeared to reflect not a sudden realization that it held less than 100 percent reserves, but an understandable concern that some exceptionally large loans it had made in the course of the fourth war between the Dutch Republic and England (1780–1784) had gone sour.

[18]The notes of New York State "free banks" even announced on their faces that they were "secured by the pledge of public stocks," a clear indication that the notes were backed by something *other* than 100 percent reserves. This inscription was, however, required by law (Hildreth 1968, p. 202).

Fourth, fractional-reserve banking has never been compulsory. Depositors have always been free to insist on 100 percent reserves. They can do so even now, by hiring safety-deposit boxes and stuffing them with cash. (Some do, but mainly to hide their wealth rather than to secure it against bank failure.) Few people have taken the 100-percent-reserve option because—as Rothbard (1990, p. 47) forthrightly acknowledges—it means foregoing interest and paying warehousing fees instead. Most depositors would rather receive interest on their deposits, and consider it more than adequate compensation for the risk involved in fractional-reserve banking. (Here again, we are drawing on evidence from banking systems with relatively unhampered banks and no government deposit guarantees.)

We infer, in accordance with the Rothbardian notion of "demonstrated preference" (Rothbard 1957), that the vast majority of consumers have preferred fractional-reserve banking. Against this Hoppe offers his *a priori* conviction that most depositors could not, would not, and did not ever knowingly engage in such a risk-return tradeoff. For Hoppe the offer of interest on fractionally backed demand deposits is just a swindler's come-on, which millions of depositors have unwittingly fallen for, wholly innocent of the fact that banks can generate the revenues that go to pay the interest only by lending out some fraction of their deposits.

The fact that banks compete for depositors poses a problem for Hoppe's position that cannot be so casually brushed aside. Rivalrous competition by fractional-reserve banks seeking depositors' funds will bid up deposit interest rates (and increase the level of services provided) to the point where banks have to pay such high interest (and provide so many services) to attract deposits that entry is no longer attractive. Thus competition will beat down the returns to capital invested in fractional-reserve banking until the marginal bank is earning only the normal rate of return. In this situation, were it really true that most depositors are willing to forego the interest they are receiving (and instead pay storage fees) in order to have the security of a 100-percent-reserve bank—but simply don't realize that their banks aren't holding 100 percent reserves—then any banker (who *does* know what the banks are up to, after all), possessing even an ounce of entrepreneurial insight, would see an easy way to grasp pure profit. All the banker has to do is to offer credible 100-percent-reserve accounts, while alerting the public to the other bankers' practices, and depositors will come flocking in.[19] If

[19]Picture a television spot showing a gleaming vault filled with cash. An authoritative voice-over announces: "Here at the Solid Gold Warehouse Bank, your deposit is

100-percent-reserve banks are legal and really would be preferred by the majority of informed depositors, and the only reason depositors continue to patronize existing banks is ignorance of their fractional practices, then there would be a huge profit to be had by being the first to inform depositors and to offer them the alternative practice.

There have been historical banking systems where explicit 100-percent-reserve banks could have entered the market and where deposit insurance did not exist to slant the playing field in favor of fractional-reserve banks. Yet very few (if any) banks, after the earliest days of banking, have ever tried to attract depositors on that basis. Even if there were one or two such banks in the early days, clearly their approach never spread to dominate the banking market the way it would have if most depositors were truly ready to pay the fees necessary for 100-percent-reserve banking. Maybe entrepreneurship doesn't tend to sniff out profits as well as the Austrian theory of the market process usually suggests. We think it more likely that 100-percent-reserve banking is just not very widely demanded, because of its foregone-interest cost.[20]

The Resource Cost Savings From Fiduciary Media

Hoppe (pp. 56–58) considers but rejects a standard economic argument we accept concerning fractional-reserve banking: that it reduces the resource costs associated with indirect exchange, by partially substituting bank-issued exchange media for commodity money, thereby reducing (inframarginally) the resource costs of producing money. The resource-cost-saving view is expounded not only by Adam Smith but also by Ludwig von Mises. In *The Theory of Money and Credit*, Mises (1980, p. 333) observes that, thanks to the development of fiduciary media and clearing systems among their issuers, a "tremendous increase in the exchange value of money, which otherwise would have occurred . . . has been avoided, together with its undesirable consequences." The "undesirable consequences" are the diversion of capital and labor "from other branches of production to the production of the monetary metal." Had it not been for the development of fiduciary media, Mises points out, "the welfare of the community would have suffered" because "a smaller quantity of economic goods would have been available for the direct satisfaction of human wants."[21]

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backed with genuine 100 percent reserves. *All* your money stays here waiting for you *all the time*. We're not like those *other* banks [camera pulls back to show an adjacent vault which is empty, with moths flying about inside] that try to get by on (gasp!) *fractional reserves*."

[20]It might be said that most people would rather "put their money where the moths are."

[21]For an extended secondary account of Mises's defenses of fractional-reserve banking, see White (1992).

We are puzzled that Rothbard (1990, pp. 33–34), while emphasizing the point that once an economy is fully monetized there is no benefit to money-users from producing more units of money, does not follow Mises in recognizing the consequent value of economizing on the resources used to produce more money.[22]

Although many mainstream economists believe that a fiat base money is less costly than a commodity base money, we do not share that view. Fiat money is different because its introduction is involuntary, so that it does not pass a demonstrated preference test, and because its quantity is subject to arbitrary expansion by its issuer, making a fiat system potentially very costly for the economy even if the monetary demand for gold and thus the costs of gold mining were reduced.[23] Our position is rather that, *given* a commodity standard, informed money-users benefit when those who want to are allowed to hold fractionally backed notes and demand deposits. Potential gains from voluntary trade are lost when the public is restricted to full-bodied coins and 100-percent-reserve deposits.

Hoppe (p. 58) denies that redeemable bank monies can save resources. The savings are illusory, he thinks, because "the overwhelming bulk of the population would employ money proper for most of their purchase or sales." In a footnote (p. 58 n. 11) he adds, without citing a source of evidence: "Indeed, historically this has been the case: Traditionally, notes have always been widely distrusted, and their acceptability—as compared to that of genuine money such as gold or silver coins—was severely limited."

The facts are otherwise. Throughout the silver and gold standard eras, consumers given a choice ordinarily demonstrated a marked preference for banknotes over full-bodied coins as a more convenient medium of exchange for all but the smallest transactions. The demonstration of preference was especially clear where banking was relatively unhampered by legal restrictions. In Scotland during the free banking era (1716–1844), according to Checkland (1975, p. 382), the first object of any recipient of a gold sovereign was "to get quit of it in exchange for a bank note." Virtually all sizable payments were made with banknotes.

[22]Rothbard (1990, p. 34) argues that gold mining is not socially wasteful, even though an increased supply of gold does not confer any monetary benefit, because gold is a useful commodity for making jewelry, filling teeth, and so on. But the question of social waste from imposing a binding 100-percent-gold-reserve requirement on banks does not concern the cost of mining gold for *non*-monetary uses. It concerns the cost of mining that *portion* of the gold supply destined for bank vaults, over and above the amount of gold banks would acquire if free to choose their own reserve ratios.

[23]In practice, the relative price of gold has risen since the scuttling of the gold standard, because few central banks have sold off their gold reserves and because the public has understandably accumulated gold as an inflation hedge. See Garrison (1985).

Similar practices prevailed in Canada (National Monetary Commision 1910, p. 53).

Inherent Instability

Apart from the "fraud" issue and third-party wealth effects, Hoppe believes that fractional-reserve banking is a bad thing because it supposedly produces a monetary instability that contributes to credit cycles and banking crises. We share the view that monetary instability contributes to cycles and crises, but we attribute monetary instability to central banking and other government intervention in the monetary system, not to fractional reserves *per se* or to the practices of competing fractional-reserve commercial banks.[24]

Hoppe views fractional-reserve banking as something that a proper legal code would ban, and instability as a problem inherent in fractional-reserve banking, and therefore does not distinguish the effects of free banking from the effects of government intervention. Nor does he offer any historical evidence that might test his view against our view. He does take issue with our theoretical argument that free banking tends to permit expansion of the stock of fiduciary media only to an extent consistent with the preservation of monetary equilibrium and the avoidance of the credit-expansion-induced business cycle.

In discussing the requirements for preserving "monetary equilibrium" (that is, equality between the nominal quantities supplied and demanded of money balances, or equivalently between the real stock and real quantity demanded) it is important to distinguish between short-run and long-run implications of changes in the demand schedule for money or in the stock of money. In the long run, nominal prices will adjust to equate supply and demand for money balances, whatever the nominal quantity of money.[25] It does not follow, however, that each and every *change* in the supply of or demand for money will lead *at once* to a new long-run equilibrium, because the required price adjustments

[24]Our writings on cycles and crises include Selgin (1989; 1992; 1993) and White (1984, pp. 18–19, 44–9, 53, 103–12; 1993). Hoppe's claim that White "nowhere even mentions the problem of business cycles" is easily shown to be false. Even a cursory glance at the index of the only work of White's that Hoppe cites reveals several mentions of the problem of business cycles (White 1989, pp. 6, 77, 81–4, 142, 159). White (1992, esp. pp. 524–26 and 532, n. 29) directly addresses Mises's view of banking and the business cycle, including the "Austrian–Misesian claim that *any* injection of fiduciary credit must result in a boom-bust cycle" that is the jumping-off point for Hoppe's economic critique of free banking. It should be noted that Mises did *not* share Hayek's view (see White 1995) that fractional-reserve commercial banks, unprompted by central bank policy, can be expected to over-expand and thereby to generate business cycles repeatedly.

[25]Hoppe (p. 65 n. 19) appropriately refers to this as an "old—Humean—insight."

take time. They take time because not all agents are instantly and perfectly aware of changes in the money stock or money demand, and because some prices are costly to adjust and therefore "sticky." It follows that, in the short run (empirically, think "for a number of months"), less than fully anticipated changes to the supply of or demand for money can give rise to monetary disequilibrium. The quantity of money supplied may exceed the quantity demanded, in which case prices need generally to rise; or the quantity of money demand may exceed the quantity supplied, in which case prices need to fall (Yeager 1986).

Such states of monetary disequilibrium, although temporary, may involve serious misallocations of resources. In addition to involving prices that are *generally* "too low" or "too high" (for equilibrium in money holding), they also typically involve distortions of *relative* prices, most importantly (we learn from the Austrian business cycle theory) the rate of interest. Following Wicksell, the Austrian theory holds that an unanticipated injection of money (or rise in the "velocity" of money) can drive the interest rate in the short run below its equilibrium ("natural") level, and thereby encourage unwarranted investments. Correspondingly, an unanticipated destruction of money (or drop in "velocity") can drive the interest rate in the short run above its natural level, and thereby artificially curtail warranted investments.

Some economists deny the importance or even the conceptual coherence of short-run monetary disequilibrium as sketched above. New-Classical theorists do so, with a certain internal consistency, because they subscribe to a Walrasian model implying instantaneous and complete price adjustment. Some Austrians do so, with a regrettable *in*consistency, when they recognize the destructive consequences of price inflation driven by monetary expansion, but nonetheless try to argue that price *deflation* is always okay, in any amount. It is inconsistent to apply short-run, Wicksellian, disequilibrium analysis when talking about increases in the stock of money and price inflation, and then switch exclusively to a long-run, Humean, equilibrium-always analysis when talking about increases in money demand and deflation.

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* (Selgin 1990, 1995; White 1990). 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 (Selgin and White 1994, p. 1725). Free banking thus works

against short-run monetary disequilibrium and its business cycle consequences.

The argument for the equilibrating properties of free banking rests in part on recognizing that an increased demand to hold claims on intermediaries, including claims in the form of banknotes and demand deposits, at the expense of holding additional consumer goods, is equivalent to an increase in desired saving. Hoppe (p. 72) disagrees, labeling this analysis a "confusion." He declares that

> it is plainly false to say that the holding of money, i.e., the act of not spending it, is equivalent to saving. One might as well say—and this would be equally wrong—that the not-spending of money is equivalent to *not*-saving. In fact, saving is not-consuming, and the demand for money has nothing to do with saving *or* not-saving.

We submit that the confusion is Hoppe's, not ours. The above-quoted passage identifies saving as not-consuming, which taken literally means that saving is any disposition of wealth other than for present consumption. Elsewhere (p. 50) Hoppe correctly observes that money "is demanded as a medium of exchange—rather than for consumption or production purposes," that is, that money-holding is a form of not-consuming. Together these statements contradict his claim that holding money is not a form of saving.

Hoppe's position is that saving is an expression of time preference, but money-holding is not. Thus to save is to *defer* consumption, and because the holding of money does not signal a definite decision to defer consumption (unlike the purchase of a bond or a capital good), it is not a form of saving.[26] We agree that time preference and money demand are distinct, and that a change in one does not imply a change in the other. Nonetheless, to hold money *is* to hold it for *later* spending, even though *how much later* is not signalled (and typically has not yet been decided by the money-holder). Holding money for later spending, rather than spending it on consumption *now*, does defer consumption to the future. As Hoppe (pp. 72–3) himself points out, the demand for cash stems from the convenience it allows one in purchasing "consumer or producer goods at uncertain *future* dates" (emphasis added). So perhaps our disagreement here is merely over words.

The substantive question Hoppe raises is whether, as he asserts, "*any* injection of fiduciary credit must result in a boom-bust cycle." We deny that an increase in fiduciary media *matched by an increased demand to hold fiduciary media* is disequilibrating or sets in motion the

[26]Thus Hoppe (p. 72) emphasizes that to hold money "is to purchase neither consumer goods *nor* investment goods."

Austrian business cycle. The act of holding fractional-reserve *bank-issued* money not only (like holding base money) defers consumption for a longer or shorter period, but also *temporarily lends funds* to the bank of issue in so doing. The period of the loan is unspecified—a demand deposit or banknote can be redeemed at any time, though only a fraction are in fact redeemed on any day—but if the bank can estimate with a fair degree of accuracy the lengths of time for which its demand claims will remain in circulation (the statistical distribution of their times to actual redemption), it can safely make investments of corresponding length.[27] As Mises (1980, p. 362) wrote with respect to the related problem of estimating the volume of demand for a bank's fiduciary media, the banker here "has to rely upon an uncertain empirical procedure which may easily lead to mistakes. Nevertheless, prudent and experienced bank directors—and most bank directors are prudent and experienced—usually manage pretty well with it."

De Soto (1995, p. 32) asserts that fractional-reserve free banking "must inexorably, sooner or later, lead to uncontrolled expansion in the monetary supply," and claims Mises's authority for this view. Mises (1966, p. 443) actually, and we believe quite correctly, held a very different view:

> Free banking is the only method for the prevention of the dangers inherent in credit expansion. It would, it is true, not hinder a slow credit expansion, kept within very narrow limits, on the part of cautious banks which provide the public with all the information required about their financial status. But under free banking it would have been impossible for credit expansion with all its inevitable consequences to have developed into a regular—one is tempted to say normal—feature of the economic system. Only free banking would have rendered the market economy secure against crises and depressions.

Hoppe misunderstands Selgin's argument when he characterizes it as jumping from the view that the holding of money represents savings to the conclusion that "an increased demand for money [is] the same thing as increased saving." That holding money is one form of saving does not imply that an increase in the demand for money is identically an increase in total saving. An increased demand for money may accompany a reduced demand for holding other assets, and not a reduction in consumption; hence it may be part of a change in the manner of saving with no change in total savings. If, for example, the public's demand for bank deposits increases at the expense of the public's demand for bonds, holding

[27]Thus interest-bearing demand deposits are not inconsistent with sound banking.

constant the rate of time preference (or, alternatively put, holding constant the planned and expected time-profile of consumption),[28] there will be no change in "the" natural rate of interest, viewed as a composite of interest rates on all financial assets. Expansion of the volume of deposits is nonetheless warranted in this case. Assuming rising marginal costs of intermediation, the equilibrium rate of interest on bank deposits will have fallen, while the rate on bonds will have increased. The increased demand for intermediation raises the "price of intermediation" represented by the spread between the deposit and bond rates. Banks are warranted in expanding their balance sheets to meet the increased demand for deposits, until the actual deposit rate falls to the new equilibrium deposit rate. (Meanwhile, the market value of existing bonds falls *pari passu* with the increase in the bond interest rate.)

An increase in *savings* is neither necessary nor sufficient to warrant an increase in fiduciary media. An increased demand for "cash" (Hoppe, p. 73) does not warrant an increase in fiduciary media or inside money, assuming that "cash" is used to mean *high-powered* or *outside* money such as gold coins (as opposed to low-powered, competitively-issued banknotes). It is specifically an increased demand to hold "balances of inside money" (Selgin's words, quoted by Hoppe) that warrants an increase in the quantity of inside (bank-issued) money. A banking system that accommodates an increased real demand to hold its demand liabilities by expanding their quantity does nothing to drive market interest rates away from their natural values, spur excessive investment, or set in motion a boom-bust cycle.

We can put this point another way. Consider the case in which the public increases its desire to save, due to a drop in time preference, and people elect to forego some current consumption spending out of their income in order to build up their holdings of *time* deposits issued by banks. We imagine that no Austrian will object that it is dangerous to allow the banking system to accommodate this shift. The natural rate of interest has fallen. The public correspondingly bids down the interest rate on time deposits, and by lending their extra deposits banks bid down the interest rate on loans, so the market rates correctly track the natural rates.

Now consider the case where the public increases its desire to save, due to a drop in time preference, and people elect to forego some current consumption spending out of their income in order to build up

[28]It may be that this *ceteris paribus* condition is seldom met in practice. It may be that a shift from bonds to money is usually joined to a change in time preference, i.e., is usually accompanied by a shift toward the present (or toward the future) in the planned time-profile of consumption. Nonetheless these shifts are conceptually distinct. The *ceteris paribus* assumption allows us to analyze their effects separately.

their holdings of interest-bearing *demand* deposits issued by banks. We submit that it is no more dangerous, or disequilibrating, or cycle-inducing, to allow the banking system to accommodate *this* shift.[29] It would, instead, be disequilibrating and unfortunate if the banking system were *not* to respond. The velocity of bank-issued money (the ratio of dollars spent per year to dollars held) has fallen. If the banking system fails to increase the quantity of bank-issued money and the price level does not promptly drop, an excess demand for money arises (assuming also that the quantity of base money does not immediately increase). A corresponding excess supply of goods arises: unsold consumer goods pile up on sellers' shelves (this is of course what proximately puts downward pressure on prices, until at last goods prices have fallen sufficiently). Business is depressed until the purchasing power of money gets back to equilibrium. By failing to increase the quantity of deposits, the banking system also fails to bid down the interest rate on deposits and loans. The natural rate of interest has fallen, but market interest rates temporarily stay put. Investment does not increase to match the increased desire to save, and the structure of production does not adapt as it should to match the drop in time preference.

Conclusion

Fiduciary media are not fiat money. A monetary system with a commodity standard, competitive banking, and the freedom to use fiduciary media among consenting transactors is consistent with justice, efficiency, and economic stability. It is preferable on these scores both to a system (like today's) where the law has forced money-users to give up gold and gold-redeemable fiduciary media in favor of fiat money, and to a system (like those proposed by 100-percent-reserve advocates) where the law restricts money-users from holding any or some types of fiduciary media.

[29]But how can the banks manage to expand their demand deposits, if total bank reserves have not changed? The increased demand to *hold* demand deposits, relative to income, means that fewer checks are written per year per dollar of account balances. The marginal deposit dollar poses less of a threat to a bank's reserves. Thus a bank can safely increase its ratio of deposits to reserves, increasing the volume of its deposits to the point where the rising liquidity cost plus interest and other costs of the last dollar of deposits again equals the marginal revenue from a dollar of assets (Selgin 1994b).

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