Still Unanswered Quibbles with Fractional Reserve Free Banking

Bagus, Philipp and Howden, David

2012

This article can be cited as: Bagus, Philipp, and David Howden. 2012. "Still Unanswered Quibbles with Fractional Reserve Free Banking." *Review of Austrian Economics* 25(2): 159-71

It can be found at: http://www.springerlink.com/content/c22u287982q6g2gg/

Still Unanswered Quibbles with Fractional Reserve Free Banking

Philipp Bagus
Rey Juan Carlos University
Department of Applied Economics I
Paseo Artilleros s/n
Madrid, 28032, Spain
philipp.bagus@urjc.es

David Howden
St. Louis University – Madrid Campus
Department of Business and Economics
Avenida del Valle, 34
Madrid, 28003, Spain
dhowden@slu.edu

Abstract: Anthony Evans and Steven Horwitz readily admit that their own understanding of monetary theory is imperfect, and do not even "attempt a rebuttal of [our] claims." George Selgin accepts that some of the arguments we put forward in Bagus and Howden (2010) make for "interesting theory". He fails to rebuff our claim that precautionary reserves are unable to constrain credit creation in a fractional reserve free banking system. While calling for us to provide historical evidence to validate the quibbles we put forward, Selgin himself overstates the evidence. He also claims that we have distorted what he has written, and that we use incorrect monetary theory. These allegations are false.

Introduction

One would normally be alarmed when faced with wild allegations of academic dishonesty and economic ignorance from not just one opponent, but three. Fortunately in our own case, George Selgin (forthcoming) and Anthony Evans and Steven Horwitz (forthcoming) have enough differences between them that it is uncertain if they can reach agreement among themselves on the issues at stake even without our intervention. After all, the particular flavor of "free banking" that we found quibbles with should be identified before moving on. Selgin is bewildered that we would consider any literature other than his own; Evans and Horwitz cannot believe that we have not consulted the more fringe free banking material, in an appeal that we should have included everything ever written on the topic (while failing to do so themselves).

Evans and Horwitz charge that we "impose" our own definitions to bolster our case, and wish to refrain from engaging debate over what definitions other economists use. They eventually recant, and fall back on the use of definitions (especially those used by others) throughout their paper (see especially their section 3: Agreeing on terms). They also think that our article does not warrant "serious academic attention", while taking the time to write a response to it for a peer-reviewed academic journal and while knowing that there is already a response forthcoming from George Selgin.

While Evans and Horwitz deem everyone to have found common ground (at the least) on what the proper definition of savings is, it is clear that they cannot even find agreement with Selgin on the matter. Selgin quite clearly regards saving as the act of holding cash, Evans and Horwitz claim that saving,[1] properly understood, implies non-consumption. The definitional difference is slight but essential. For one can consume a larger portion of his real income when

[1] We should note that Evans and Horwitz actually refer to this as their definition of "savings", which we take them to mean as "saving".

he disinvests while simultaneously holding constant or even increasing his cash balance; cash balances do not have to mirror consumption patterns. (Our own definition of saving, incidentally, agrees with that of Evans and Horwitz.)

Besides the quibbles that Selgin, Evans and Horwitz have between them that are largely of no concern to us, both papers in question take us to task for some of the things that we say. We address these points in Bagus and Howden (2011). This paper will largely focus on the things that these authors *did not say* – not said in the sense that they were the points of our original paper that have been avoided or evaded.

In-Concert Expansion: Take 2

Selgin (1988) outlines the limits to credit expansion in a fractional reserve free banking (FRFB) system. The main brake is through precautionary reserves – the need of which increases as banks expand credit, regardless of whether this is done in-concert or alone. We (2010: 34-36) provided three reasons why precautionary reserves may prove insufficient at halting an in-concert expansion. To briefly recap, banks can: 1) use an interbank loan market to cover non-zero clearing balances, 2) lengthen the clearing period so as to reduce non-zero clearing balances (as they tend to zero in the long run), and 3) use credit expansion to increase the negotiability of reserves, thus reducing the risks of illiquidity during credit expansion. Any one of these methods renders precautionary reserves insufficient at constraining inflation.

Selgin briefly dismisses the first two methods, while misinterpreting the final method (consequently defending himself against the wrong claim). Let us give this all another try.

Can banks make use of an interbank loan market to minimize the amount of precautionary reserves needed? This is the question we posed, and the one that Selgin seems to

cautiously affirm. While claiming that we confuse "possible" actions with ones that are in a bank's best interest, Selgin dismisses the option on grounds that holding on to rival banks' notes costs a bank foregone interest. He takes a much stronger stance on the issue than he has in the past, whereby he (1988: 117) has only tentatively dismissed interbank lending, as banks "may or may not" choose to lend their excess reserves. Yet, as long-run excess reserves net to zero, there is no interest foregone from interbank lending. Interest that one could earn by remitting their excess reserves cancels out with the interest implicitly gained by not having their notes returned. If we start from an assumption that banks strive to maximize profits, and that they are concerned with not just short-term profits, we see that it is entirely possible that a bank would *not* redeem its rivals' notes, and could instead use them to issue fiduciary media. Foregone interest payments may not necessarily concern the bank in question, especially if it focuses on the long run when these interest payments will sum to zero.

In response to our claim that banks have an incentive to lengthen the clearing period for reserve balances, Selgin claims that both theory and history agree that no such incentive exists. As we will show, the theory is ambiguous on this (but does not preclude that the incentive exists), while there is historical precedent for just such a strategy.

The clearing period used for interbank settlements is concerned with two dueling costs. On the one hand, a higher frequency of clearing reduces the risk of default. On the other hand, higher frequencies increase the costs to clear balances. This increased cost comes as the clearing process itself is costly, and also because clearing balances will be higher the shorter the clearing period. At one extreme of the spectrum, we have a clearing system that never redeems notes (unlikely as it is), and at the other we have a real-time settlements system. Only in a scenario with zero default risk will a real-time settlements system unambiguously dominate a deferred

settlement system (Lester 2005). The preferred clearing period depends on the particulars of the economy of interest – in particular, the trust banks have in one another, and the stability of the relevant financial institutions.

If default risk remains constant, banks may opt for longer clearing periods to decrease precautionary reserves with no fear that this longer period will increase the costs of default. Alternatively, if it is undesirable to increase clearing periods, the clearing system can achieve much the same result (the reduction in precautionary reserves) by the provision of less costly credit. Hence, banks with negative clearing balances can seek external funding provided through the clearing system to cover their balances in the short run, instead of relying on these balances internally (and which tend to zero in the long run).

Does the evidence suggest that banks *never* pursued this option, as Selgin suggests? Like much historical interpretation, this question is only ambiguously answered. While historical cases of absolute lengthening of the clearing period may be difficult to come by (Norman *et al.* 2006: 11), this does not imply that clearing periods were not lengthened relative to what they would have been lacking alternative measures. For example, there is a natural tendency for the banking system to shorten the clearing period as it matures. As a banking system develops, notes are accepted over both a broader geographic areas as well as by an increasing number of banks and clients. While the clearing system develops to mitigate the costs of such note exchanges, there is a natural tendency for the clearing period to shorten in response to the wider usage of notes. With an increasing number of banks spread over a wider area exchanging notes, there is an increase in default risk that can be reduced through shorter periods. Thus, even though banks are absolutely shortening their clearing period in response to the growth of their presence, they could be simultaneously relatively lengthening the clearing period in an attempt to reduce the amount

of precautionary reserves needed to clear their balances. The appearance of a shortened clearing period for some banking processes is not evidence that banks are not also (paradoxically or not) lengthening the clearing period for other processes.[2]

Alternatively, the costs of default can be reduced through a clearing system ready to accommodate liquidity to the necessary individual banks. Incidentally, this is one long-standing theory for the banking system's own preference for a central bank (Goodhart 1988: chap. 3). If it is undesirable to increase the clearing period of the settlement system (i.e., because default risk also increases with the clearing length), one alternative is for the primary or most liquid clearinghouse to gain the facility to act as the lender of last resort – i.e., become a central bank, by at least some definitions. Incidentally, the expected reserve ratio is also reduced as the cost of intraday credit is reduced, thus allowing for increased amounts of credit to be issued. A central bank coordinating the provision of clearing liquidity reduces the cost of such lending, and increases bank profitability through the facilitation of increased credit channels.[3] The effect of a lengthened clearing period can be emulated by "appointing" a central bank (or quasi-central bank) to provide liquidity at a lower cost than the bank could obtain under normal circumstances.

Finally, we noted that credit expansion itself can set off a boom that increases the negotiability of reserve assets. As negotiability increases, the cost of liquidating such assets is

---

[2] Selgin cites Norman *et al*. (2007) as "proof" that interbank settlement systems strove for reduced clearing periods. Yet the theory and evidence provided in the citation in question is not as strong as Selgin believes. He brings attention to one important sentence – namely, that clearing periods occurred "typically more frequently than before" (*ibid*.: 11) – the operative word being "typically". We have never argued that banks would never *not lengthen* clearing periods, unlike Selgin who must rely on this fact to prove a free banking system stable. If the citation Selgin provides demonstrates anything, it is that the possibility for lengthened settlement periods remains open, and that historical cases do, contrary to his claims, exist.

[3] While reducing the cost of clearing liquidity diminishes or minimizes the costs of holding reserves for "unproductive uses" (Evans and Horwitz forthcoming: 8), there are good reasons why intraday credit should be costly. Rochet and Tirole (1996) and Mills (2006) argue that a positive intraday interest rate compensates the clearinghouse (or central bank) for monitoring and enforcement costs. Kahn and Roberds (1998) show that costs of default are reduced as banks chose less risky portfolios with costly intraday credit. That the costs of this default may not even be borne by the insolvent bank (i.e., in Lester 2005) further supports the case for costly liquidity, and hence, for banks to hold greater amounts of idle and liquid reserves.

reduced. Consequently, banks find themselves in a position to reduce reserve balances as the ease at which these assets can be used to clear settlements increases. In this case the banking system can endogenously inflate past its existing precautionary reserve brake as doing so can result in a decreased need for the same reserves.[4]

At the same time, a banking system pursuing an inflationary credit policy increases its instability, and hence, the riskiness that clearing balances in any given period may not be covered (i.e., default risk increases). This exact point brings us back to the force acting against the desire for banks to lengthen the clearing period. There is no way to disentangle the two effects determining the length of the clearing period. On the one hand, as the banking system develops, and if credit expansion entices instability, clearing periods are reduced to decrease default risk. At the same time, there is the incentive for the banking sector to demand lengthier clearing balances to facilitate credit expansion. Even if clearing periods continually fell over a given time period, it does not necessarily follow that the second effect is absent. It can equally well be explained by the former effect (shortened clearing periods to reduce default risk) outweighing the latter (lengthened clearing periods to allow for credit expansion).

We make a much weaker claim concerning the limits that precautionary reserves pose to the credit supply than what a fractional reserve free banker must defend against. For our claim to be true, any *one* of these three methods is a sufficient though not necessary occurrence for credit expansion to occur. To prove a fractional reserve free banking system's credit facilities constrained by precautionary reserves, proving *all* three of these methods to be impossible is a

[4] Selgin mistakenly attributes to us the claim that credit expansion increases asset values, and that this is useful in collateralizing credit expansion. We actually noted that credit expansion increases the negotiability of some assets, thus reducing the costs of liquidating them, thusly aiding credit expansion. If anyone questions whether negotiability matters for credit expansion, he needs to look no further than the liquidity crisis of 2008. The Fed swapped the illiquid assets of Bear Stearns for highly liquid (and negotiable) assets, primarily Treasury debt. During the boom this was never a problem, as the negotiability of the investment bank's assets allowed it to inflate in excess of what could otherwise be possible with illiquid assets.

necessary *and* sufficient condition. Until sufficient proof can be proffered to this end, it remains unproven that a free banking system can constrain its credit facilities absent 100 percent reserves.

The Origin of the Central Bank

Why do central banks emerge? This question continues to plague economists, and we originally offered two different avenues through which this emergence arises. First, central banks emerge as a response to the fractional reserve banking system's desire to have a coordinating agency to facilitate credit expansion. Second, central banks emerge as a response to financial instability bred through the credit expansion of a fractional reserve banking system.

Important differences arise with these two reasons. Note that the banking system advocates the first avenue to aid cartelization and secure profitability. The second avenue sees its impetus through both the banking system (to save itself when financial instability ensues), and through deposit holders, who push for an agency to secure the value of their now-endangered deposits. Note also that a central bank acting as a coordinator of the banking sector is a fundamentally different role than that which emerges to combat banking-sector instability. Under this second avenue – the push for a stabilizing institution in an unstable fractional reserve banking system – the central bank serves in the capacity as a lender of last resort. The lender of last resort can entail either having control of the money supply, or the ability to suspend the conversion of inside for outside money.

Selgin thinks that our story of central bank emergence is "an interesting theory."[5] But he

---

[5] Selgin does note that our theory of central bank emergence is similar to that provided by Charles Goodhart (1988). In a subsequent footnote (fn13), he goes on to criticize the theory, as it does not explain why not every industry faces the same incentives, nor is cartelized in the same result. This point seems curiously contested among our opponents,

quickly dismisses it due to the lack of evidence we provide in our theory-based article. He points instead to some historical cases where central bank emergence has been in response to the fiscal needs of government. This too is an interesting theory, and one that has a long line of support in the literature (some of which Selgin cites in fn14). What we have provided is a potential theory for why central banks emerge. We never tried to rule out alternative hypotheses for this emergence, which in some cases the facts demonstrate reasonably well. In fact, on this matter we can find agreement with Selgin – some hypotheses can only be sustained by an appeal to facts. So let us see how the facts stack up.

The historical evolution to central banking is not one that has occurred overnight, nor is it one where one system suddenly morphed into another. Instead we have a continuum which we might for clarity label as "fractional reserve free banking" (or nearly so) on one end, and "central banking" on the other. Institutions that have some elements of either system define the middle. The evolution of central banking has been one that sees an increasing number of central banking elements creeping into the (largely free) monetary system. The payments system is generally the common link between fractional reserve free banking eras and today's central banking regime. In varying degrees and at different times, payments systems – particularly clearinghouses – have embodied elements of that we would today define as being central to central banking. While differing in important respects (throughout the years, not all clearinghouses were regulators, or had a monopoly on the supply of notes), the evolution of the payments system sheds historical light on our theory and explains how banks can evade otherwise binding precautionary reserve requirements.

One long-standing theory has the Fed as the nationalization of a private clearinghouse

---

as Evans and Horwitz advise us to look into Goodhart (1988), in an attempt to see how central banks emerge naturally. The crux of our original argument is that central banks do emerge naturally in response to some very well

system (Gorton 1985). Indeed, many of the clearinghouse's original functions served as the origins of some of the Fed's facilities, while others have only entered later. The biggest similarity is, perhaps, the Fed's current use of the discount window. The discount window finds its origins in the issuance of clearinghouse loan certificates (Gorton and Huang 2003: 188-89). These certificates were used initially in the Panic of 1857, and continued during every subsequent panic through 1907.[6] Member banks found themselves in need of currency to satisfy depositors' demand for currency during times of panic. Through the clearinghouse's Loan Committee, banks could submit part of their assets as collateral to pledge against certificates that could then be used in place of currency in the clearing process. Currency was thus economized on, and a risk-sharing arrangement was instituted whereby all member banks effectively insured one another. If any one bank failed, and the posted collateral for a certificate made worthless, the remaining member banks shared the loss in proportion to each bank's remaining capital relative to the total of all members (Gorton 1985: 280-81).

When clearinghouse certificates proved unable to meet the liquidity demands set upon banks, alternative measures were offered. The first was an extension of the clearinghouse certificates directly to members of the public. This development occurred later during the Panics of 1893 and 1907, whereby smaller denomination certificates were issued to the public in lieu of currency. To varying degrees, these certificates represented currency substitutes, the majority of which was illegal at the time (Timberlake 1984). This feature, to its credit, had a beneficial side effect – the risk of legal penalties enticed banks to only issue certificates to the public in severe circumstances (Horwitz 1990: 647).

The issuance of clearinghouse certificates to the public notably *did not* occur during the

---

defined motives. As for why these motives are distinct from other industries, we address that point below.

[6] This period only partially encompasses the period commonly defined as free banking in the United States, 1837-

period of free banking in the U.S. The precedent for this practice was established, however, during the free banking period, specifically, during the Panic of 1857 (Timberlake 1984: 4). During this panic, banks were met with an internal currency drain after the failure of a prominent bank. In response, individual banks pursued the usual path of curtailing their loans to shore-up their precautionary reserves. The clearinghouse pushed forward an alternative (and completely opposite) solution to the problem – that each bank would *increase* its loan portfolio proportionately, thus cancelling out the clearinghouse balances and, hence, further economize on the need for currency (Myers 1931: 97). This type of collusion is the exact type of "cooperative" actions that we noted in our original article would transpire under a free banking regime, and set the dangerous precedent for ever-increasing types of collusion. Notably, these types of collusion that historically occurred are strangely absent from what free bankers assume their system will actually look like.

Though the clearinghouse system was an endogenous development, and member banks voluntarily abrogated certain rights to it during banking panics, there are peculiarities that must be brought to attention. Pooling reserves to back the loan certificates, although voluntary, was not uniformly desired among the banking establishment. As would be expected, conservatively managed banks with stronger reserve positions strongly objected to the practice as "inequitable", and bemoaned that pooling "denied them the rewards for their caution" (Timberlake 1984: 4). Strong banks subsidized the continued existence of weak banks during periods of constrained credit. Indeed, the clearinghouse's Loan Committee had the ability to equalize its member banks' reserves by its own assessment, effectively treating the reserve base as a "common fund to be used for mutual aid and protection" (Myers 1931: 100). This pooling feature, as Myers (*ibid*.) notes, allowed for a greater degree of centralization then even a "strong central bank" could hope

for. The use of loan certificates allowed the clearinghouse to be "converted, to all intents and purposes, into a central bank, which, although without power to issue notes, was in other respects more powerful than a European central bank, because it included virtually all the banking power of the city" (Sprague 1910: 50-63, as quoted in Timberlake 1984: 5). Shenfield (1984: 74) goes one step further, viewing the Suffolk bank as "a successful central banking system." Selgin must realize that clearinghouses were grand forces of collusion, more so than even their own creators were aware of, as he (1988: 28) quotes Cannon (1908: 97) to this effect: "[Clearinghouses became] instruments for united action among the banks in ways that did not exist even in the imagination of those who were instrumental in [their] inception." By design or not, clearinghouses began to encompass roles akin to those of central banks soon after their appearance.

Clearinghouse issuances became associated with either the restriction on, or suspension of, cash payments. In the public's mind the correlation was enough to welcome (or even call for) a systematic method to halt these cash suspensions (Timberlake 1984: 14). The suspension of payments frustrating deposit holders was not unique to the American free banking experience. Checkland (1975: 185) observes that "[t]he Scottish system was one of continuous partial suspension of payments." Implementing an institution with a monopoly of note issuance not only provided a service that banking clients preferred (i.e., the full availability of their deposits), it also solved an important legal issue. In the 19th century American free banking period the suspension of the convertibility of deposits, "amounted to default on the deposit contract, and was in violation of banking law" (Gorton and Mullineaux 1993: 326).

One way to mitigate a liquidity constraint is to halt redemptions from taking place. By halting the conversion of inside to outside money, a banking system would be able to economize

on its reserves, and stave off insolvency during a temporary liquidity crisis. Hence, the clearinghouses's decision to halt conversions in America, or the use of the option clause for the same result in Scotland, were both essential in providing an additional dose of liquidity to the fractional reserve free banking system when necessary.[7]

One alternative method to mitigate liquidity constraints is to implement of lender of last resort – in this case, embodied as a central bank with a monopoly on note issuance and the unilateral ability to expand the monetary base at will. Indeed, this is what our original article suggested one root of central banking could be: instability bred by the fractional reserve system produces problems in supplying commodity money on demand, hence the demand by the banking system or its clients to rectify the problem. The banking system tried to solve the problem internally, through redemption suspensions and loan certificates. When these methods proved insufficient, customers weary of not accessing their funds in a timely manner accepted the political response of implementing a lender of last resort through the central bank to solve the problem.

Customers could solve the problem of converting inside for outside money proactively by monitoring banks accordingly, and only doing business with those reckoned to be appropriately able to deliver. Under a fractional reserve banking system, one way that a depositor can monitor how readily his bank can convert a deposit liability into currency is by making a withdrawal. While this works on any individual bank, if it occurs on a wide scale the banking system faces liquidation. In response, banks have an incentive to form "coalitions" that convert illiquid loan

[7] Selgin does not understand why we find his assumption that inside money is not converted for outside money in a fractional reserve free banking system to be problematic . Indeed, if one wants to build a theory of unregulated banking on some key assumptions, those assumptions should be, as Selgin (1988: 16) notes, "realistic" and "based on actual experience." The failure of all free banking regimes to continually convert inside to outside money casts doubt on the realism or historical accuracy of this assumption. For those who doubt how germane the assumption that demand for money signifies only the demand for inside money is to Selgin's arguments, we refer the reader to Selgin (1988: 37, 60fn18, and *passim*).

portfolios into liquid claims (Gorton and Huang 2003: 182). In this way, banks can convince depositors that as a group the banking system is solvent, even if any individual member is not. Note that this cartelized role is only incentived under a fractional reserve system – in a one-hundred percent reserve system, there is no doubt of the member banks' liquidity, and no resultant need to cartelize them to ensure so. Yet even if a coalition disciplines banks, in a fractional reserve system banking panics can still disrupt the use of bank liabilities as a medium of exchange. While one solution may be for a centralized agency to act as a lender of last resort, or even to offer deposit insurance, the centralized agency that eliminates or mitigates the original panic must also subsequently take on a role to fill the regulatory void (Gorton and Huang 2003). The Fed became the centralized monitor of the banking system when it took away the monitoring role from deposit holders through its lender of last resort function.[8] The lender of last resort function explains why the Fed went beyond the regulatory role performed by the clearinghouses, which were limited mostly to mitigating credit risks between members (Gorton 1985: 279fn7). This argument does not imply that the central bank is a better monitor than depositors, but only that when it takes the role away from one group, it must fulfill it in another way.

Included in most modern central banks' roles as monitors of their respective banking systems is the ex ante role as regulator. Yet even some of the more dubious aspects of this role today were foreshadowed by the private clearinghouses. Just as the Fed has recently came under fire for keeping its own bailout recipients a secret lest a run occur on those institutions, private clearinghouses of the past operated in a similar manner. Loan certificates were kept secret to avoid exposing weak banks (Gorton and Huang 2003: 188-89).[9]

---

[8] Another plausible source of this regulatory role being centralized is the appearance of deposit insurance. In America's case, however, deposit insurance did not make its appearance until 1933, 20 years after the Federal Reserve.

[9] In this respect, then, the private clearinghouse went one step further than the current Fed. As the loan certificates

By the time the Federal Reserve was established its advocates saw it as "an evolutionary development of the clearinghouse associations" (Timberlake 1984: 14). Indeed, the Senate sponsor of the Federal Reserve bill, Robert Owen, noted that "[t]his bill, for the most part, is merely putting into legal shape that which hitherto has been illegally done" (U. S. Congress 1913: 904). The key departure apparent in Senator Owen's "for the most part" was the addition of a monopoly of note issuance.

Although the use of loan certificates brought with it similar (though reduced) effects as a monopoly of note issuance, this final change is one that is essential in explaining the full shift from the vestiges of free banking to today's centralized system. As Selgin makes clear, no other industry clamors to be monopolized. So why did this result in the banking sector?

For the support for the note-issuance monopoly, one does not need to look only at the owners of banks, or other interested parties internal to the system. Instead attention on other stakeholders – account holders – yields fruitful results. In other words, the banking industry has been more successful in monopolizing through a central bank than most other industries because a powerful coalition formed in its favor. Depositors (the majority of voters) feared redemption suspensions during crises and saw, rightly or not, a central bank as a solution. Powerful bankers, traditionally facilitating the government's expenditures to a large extent, also saw an advantage in the establishment of a central bank to act as a coordinator for their increasingly cartelized behavior. A government interested in the stability of its financier and voting population was only all too happy to give in to these desires.

There is thus a strong body of historical evidence aligned with what the theory outlined in our former article suggests could occur. In particular, we have seen some historical cases where

---

were the predecessor of today's discount window, we see one key difference. Any observer can identify which modern bank makes use of the Fed's discount window while the private clearinghouse of the past kept this

the private banking industry gradually transformed itself into, by all appearances, a central bank (which legislators then formalized into law). Of course, the banking system also centralized in an effort to cartelize itself. When large number of firms coalesces to discipline another's risk taking, one way to achieve the goal is by assuring that all members are as profitable as possible. In the case of banking, the commonality of interests – sharing private information, setting interbank fees, etc. – all point to the potential for a type of price-fixing and other "cartel-like behavior" (Boyd 2003: 221). While cartels are inherently unstable, this does not rule out their possibility. It instead points to the likelihood of an industry-wide "merger", effectively eliminating the cartel by supplanting it with a monopolist (Rothbard 1962: 561-63).

Not as Easy as ABC(T)

Selgin claims that supporters of Austrian Business Cycle Theory (ABCT) cannot maintain that prices are insufficiently flexible to allow monetary expansion to set in motion business cycles, while at the same time maintaining that prices are sufficiently flexible to restore monetary equilibrium in the face of sharp declines in money's velocity. There are four key differences between ABCT and monetary disequilibrium theory that must be elucidated, foreshadowing the key similarities and points of departure between our own understanding of monetary theory, and that of Selgin.

First, monetary disequilibrium theory is concerned with the *general* price level. Adherents find that as the general price level P changes only imperfectly to changes to money's velocity V, thus nominal changes in the money supply M are necessary to maintain output Y. To put it in terms of the now infamous quantity theory of exchange, stabilizing the left-hand side of the equation, MV, will keep nominal output, PY, constant. Yet ABCT says nothing of the general

---

information wholly private.

price level. It is instead concerned with *relative* price adjustments. It is never a question of all prices being too high entering a boom, or of all prices being too inflexible to adjust during a bust. Instead it questions the ability of money to remain neutral to changes in its quantity. As money affects different price constellations differently, changes in its quantity set in motion the maladjustments characterizing the boom-bust cycle.

Second, the demand for money in a free market is more-or-less stable, ignoring shocks such as wars, famines, natural disasters, or the like. The same holds true for the demand for money in a fractional reserve free banking system, with one notable addition. The appearance of boom-bust cycles, able to occur for reasons we have outlined both here and in Bagus and Howden (2010), create banking crises that can drastically alter the demand for cash as a safety hedge. This additional factor affecting the demand to hold money that arises under fractional reserve banking complicates the entrepreneurial price-forecasting process, a factor that (incidentally) not only 100-percent reserve bankers recognize (Bagus 2008; Howden 2010: 175), but some fractional reserve bankers as well (at least implicitly, see, for example, Horwitz 2000: 119; Koppl 2002: 120).[10]

Third, the price maladjustments that credit expansion sets in motion are largely illusory in an Austrian Business Cycle. Divergences between the natural and market rates of interest give the appearance of higher profits in higher-order industries, thus enticing greater amounts of investment. In monetary disequilibrium theory, price stickiness is reckoned to be a real phenomenon – prices actually *are* sticky due to the price level's piecemeal adjustment process

[10] The latter two sources refer to fractional reserve central banking regimes. When speaking of entrepreneurial forecasting, it is difficult to see how having a myriad of free banks altering the money supply is any easier to plan around then having one centralized agency doing so (and making the figures publically available soon thereafter) (Bagus and Howden forthcoming : section 3).

whereby it is the end result of the changes in valuation of all other goods.[11]

Finally, even if entrepreneurs did have perfect knowledge of the effects of credit expansion, they are still in a situation to make use of the newly created money (Huerta de Soto 1998: 667; Howden 2010). ABCT does not rely on an inflexibility of the general price level, as Selgin maintains, but rather on the knowledge and incentive problem entrepreneurs face. Specifically, how does the credit expansion affect the individual prices that comprise the general price level, and how could one abstain from using this credit even with knowledge of its negative consequences.[12]

Selgin claims that we have a deficient grasp of monetary theory. This is troubling in that our understanding of monetary theory has more in common with Selgin than we disagree on. The one area of disagreement is what the proper scale of focus should be. We base our analysis on individualism and the marginal utility of money. Selgin relies on, as do other monetary disequlibrium theorists, macro-aggregates such as the general price level. We are concerned not with what the general price level of the economy is doing at any one time, but on what are the specific prices of the goods an individual abstains from buying to increase his cash balance, or purchases in order to draw down his cash balance. We maintain that it is only through this micro-focus that one can see the true problems involved with changing the credit supply in response to changes in the reserve levels of banks.

Concluding Remarks

[11] Yeager (1997) remains the best defense of the rational of price stickiness, as well as providing a foundation for much monetary disequilibrium theory. We address whether sticky prices really warrant nominal adjustments to the money supply to combat their ill effects in Bagus and Howden (forthcoming).

[12] A similar issue arises whereby Selgin requests that we provide the historical evidence theory we provide in Bagus and Howden (2010). Instead of answering (which we have in this paper) why banks allow themselves to succumb to being monopolized one could just as easily pose a similar question back to Selgin: Why would free banks not freely elect to not make use of a central bank's credit facilities or discount window, instead of allowing themselves to

Selgin, and Evans and Horwitz have brought up several issues that demonstrate deficiencies in our original exposition. We are thankful for their reactions, as they have given us the ability to further illustrate, clarify and augment our original arguments. In particular, we have drawn attention to three areas.

First, the use of precautionary reserves limiting credit expansion is not as clear as might be supposed. The three methods we gave to evade this limit – namely: 1) the use an interbank loan market to cover non-zero clearing balances, 2) lengthening the clearing period so as to reduce non-zero clearing balances, and 3) the use of credit expansion to increase the negotiability of reserves, thus reducing the risks of illiquidity during credit expansion – have all been further elaborated herein. Elaboration on these points is especially important as they are most substantial theoretical contribution of our original article, and the ones that received the least attention (both in our original exposition, as well as in our critics' lack of attention in their own responses).

Second, this strengthened theoretical core has been illustrated by way of historical examples. The history of free banking has been unclear at the best of times (see, for example, Rothbard 1988 and Sechrest 1993: chap. 5). We have demonstrated the gradual transformation of a smoothly running banking industry, to a well-organized and efficient clearinghouse association, and finally into ever-greater semblances of the modern central banking industry. The feature that has been the most ambiguous until now – why the private banking industry allowed itself to be monopolized by a centralized note-issuer (i.e., a central bank), becomes clear in light of the theory provided. Financial instability caused by the fractional reserve free banking system led to withdrawal suspensions and restrictions, thus incentivizing two groups to favor the provision of a lender of last resort: banks themselves to ensure their prolonged existence, and depositors to ensure their deposits were not subject to withdrawal restrictions.

---

become subordinate to them?

Lastly, we have brought light similarities and differences between our approach, and that of fractional reserve free bankers. We both base our analyses on the demand to hold real cash balances, but we stress the importance of the specific price levels relevant to depositors, while free bankers stress manipulating the general price level to maintain nominal output. We have also shown the monetary disequilibrium approach to be incompatible with Austrian Business Cycle Theory.

Note that our paper has not proven a free banking system to be inherently unstable. It does bring to light deficiencies (or what we refer to as "quibbles") with the ability of a free banking system to offer stability while operating with fractional reserves.

References

Bagus, P. 2008. Monetary policy as bad medicine: The Volatile Relationship Between Business Cycles and Asset Prices. *The Review of Austrian Economics* 21(4): 283-300.

Bagus, P., and D. Howden. 2010. Fractional Reserve Free Banking: Some Quibbles. *Quarterly Journal of Austrian Economics* 13(4): 29-55.

Bagus, P., and D. Howden. 2011. Unanswered Quibbles with Fractional Reserve Free Banking. *Libertarian Papers*.

Bagus, P., and D. Howden. forthcoming. Monetary Equilibrium and Price Stickiness: Causes, Consequences and Remedies. *Review of Austrian Economics*.

Boyd, J. H. 2003. "Commentary", in (*eds*.) D. R. Altig and B. D. Smith, *Evolution and Procedures in Central Banking*. Cambridge: Cambridge University Press. Pp. 220-222.

Checkland, S. G. 1975. *Scottish Banking: A History, 1695-1973*. Glasgow: Collins.

Cannon, J. G. 1908. "Clearing Houses and the Currency", in E. R. A. Seligman (*ed*.), *The Currency Problem and the Present Financial Situation*. New York: Columbia University Press.

Evans, A. J., and S. Horwitz. 2011. An Appeal for Better Scholarly Discourse: How Bagus and Howden Have it Wrong on Free Banking. *Review of Austrian Economics*.

Goodhart, C. A.E. 1988. *The Evolution of Central Banks*. Cambridge, MA: The MIT Press.

Gorton, G.. 1985. Clearinghouses and the origin of central banking in the United States. *The Journal of Economic History* 45(2): 277-83.

Gorton, G., and L. Huang. 2003. "Banking Panics and the Origin of Central Banking", in (*eds*.) D. R. Altig and B. D. Smith, *Evolution and Procedures in Central Banking*. Cambridge: Cambridge University Press. Pp. 181-219.

Gorton, G. and D. J. Mullineaux. 1987 [1993]. The Joint Production Confidence: Endogenous Regulation and Nineteenth Century Commercial-Bank Clearinghouses. Reprinted in (*ed*.) L. H. White, *Free Banking, Volume II: History*, pp. 318-29. Aldershot, UK: Edward Elgar.

Horwitz, S. 1990. Competitive Currencies, Legal Restrictions,, and the Origins of the Fed: Some Evidence from the Panic of 1907. *Southern Economic Journal* 56(3): 639-49.

Horowitz, S. 2000. *Microfoundations and Macroeconomics. An Austrian Perspective*. New York: Routledge.

Howden, D. 2010. Knowledge Shifts and the Business Cycle: When Boom Turns to Bust. *Review of Austrian Economics* 23(2): 165-82.

Huerta de Soto, J. [1998] 2006. *Money, Bank Credit, and Economic Cycles*, trans. Melinda A. Stroup. Auburn, AL: Ludwig von Mises Institute.

Kahn, C. M., and W. Roberds. 1998. Payment System Settlement and Bank Incentives. *Review of Financial Studies* 11: 845-70.

Koppl, R. 2002. *Big Players and the Economic Theory of Expectations*. New York: Palgrave Macmillan.

Lester, B. 2005. A Model of Interbank Settlement. University of Pennsylvania, working paper.

Mills, D. 2006. Alternative Central Bank Credit Policies for Liquidity Provision in a Model of Payments. *Journal of Monetary Economics* 53(7): 1593-1611.

Myers, M. 1931. *The New York Money Market: Origins and Development, Vol. 1*. New York: Columbia University Press.

Norman, B., R. J. Shaw, and G. Speight. 2006. The history of interbank settlement arrangements: Exploring central banks' role in the payments system. Paper presented at the Bank of England's Past, Present, and Policy conference, "The Evolution of Central Banks: Lessons for the Future", Nov. 23-24.

Rochet, J. C., and J. Tirole. 1996. Controlling Risk in Payments Systems. *Journal of Money, Credit and Banking* 28(4): 832-62.

Rothbard, M. N. [1962] 2009. *Man, Economy, and State*. Auburn, Ala.: Ludwig von Mises

Institute.

Rothbard, M. N. 1988. The Myth of Free Banking in Scotland. *Review of Austrian Economics* 2: 229-245.

Sechrest, L. J. 1993 [2008] *Free Banking: Theory, History, and a Laissez-Faire Model*. Auburn, AL: Ludwig von Mises Institute.

Selgin, G. 1988. *The Theory of Free Banking: Money Supply under Competitive Note Issue*. New Jersey: Rowman and Littlefeld.

Selgin, G. 2011. *Mere* Quibbles: Bagus and Howden's Critique of *The Theory of Free Banking*. *Review of Austrian Economics*.

Shenfield, A. 1984. "The Scottish banking system in the eigthteenth and nineteenth century", in P. Salin (*ed.*), *Currency Competition and Monetary Union*. The Hague: Martinus Nijhoff Publishers.

Sprague, O. M. W. 1910. "History of Crises Under the National Banking System", Senate Document Number 538. 61st Congress, 2nd Session, National Monetary Commission.

Timberlake, R. H., Jr. 1984. The Central Banking Role of Clearinghouse Associations. *Journal of Money, Credit and Banking* 16(1): 1-15.

United States Congress. 1913. Congressional Records of the 63rd Congress, 2nd session.

Yeager, L. B. 1997. *The Fluttering Veil: Essays on Monetary Disequilibrium*. Indianapolis, IN: Liberty Fund.