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17 September 2008

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Abstract

The author of this article draws special attention to two particular claims of the free bankers concerning the supposed working characteristics of a fractional-reserve free banking system which may strike the reader as questionable. The first of these relates to the alleged absence of a real-balance effect under free banking. The second relates to the free bankers´ reference to Walras´ Law as providing a rationale for the free banking system´s "offsetting" actions when confronted with changes in the public´ s demand to hold bank liabilities. This rationale is defective since it is based on an erroneous interpretation of Walras´ Law. The author´s conclusion does not imply that it is not at all possible, from a rational viewpoint, to make a plausible case for this variant of free banking, only that the argument should be freed from certain questionable tenets.

***Key words*: Free Banking; Monetary Systems; Real-Balance Effects; Walras´ Law**

***JEL Codes*: E0, E32, E42, E5, E51, E52**

1. Introduction

The central issue in macroeconomic theory is the extent to which the economy, or at least its market sectors, may properly be regarded as a self-regulating system. (Leijonhufvud 1981, 104) While the general belief in the superiority of self-regulating, polycentric, market-based economic systems had undoubtedly been intensified since the collapse of the former Soviet Communist system, now two decades ago, in the field of money and banking authoritative economists still adopt a radically different stance, and go on developing proposals for what are essentially new variants of central planning in monetary matters. (see e.g. Woodford 2003)

While it is today seldom contested that we can rely on self-regulating, decentralized, market-based systems as far as the production and allocation of commodities in general - such as automobiles, computers etc. – is concerned, in the field of money and banking the monocentric presupposition still almost universally prevails: in order to function properly the monetary and banking system has to be constantly monitored by a central agency, viz. by the central bank. A number of economists have nevertheless recognized the inconsistency implicit in this special treatment of the monetary and banking sectors as contrasted with economic issues in general, and have developed models of decentralized monetary and banking systems which are supposed to function as polycentric, self-regulating orders. While the general direction of this branch of research can be welcomed with some enthusiasm, the ways in which the « details » of some of the better known proposals for « free banking » have been elaborated until present, remain subject to a certain amount of well-founded criticism. The recent republication by the Ludwig von Mises Institute of Larry Sechrest´s *Free Banking* (Sechrest 1993) offers an opportunity to draw special attention to two particular claims revealed by the argumentation of the free bankers which struck this author as rather questionable.[1] It is not implied that the author agrees will all the other claims and/or analytical conclusions of the free bankers.

Any comparative assessment of alternative monetary and banking arrangements has to be based on a correct understanding of the hypothetical working characteristics of the particular system under consideration. For general characterizations of fractional-reserve free banking reference is made to the canonical expositions of the theory.[2]

2. The real-balance effect under free banking –

One of the more remarkable claims made by certain free bankers refers to the absence of a real-balance effect under free banking. The real-balance effect refers to the idea that, for given aggregate nominal money holdings, as the price level falls, real money balances increase and, as a result, consumer expenditures rise as well. (Sechrest 1993, 26) This definition refers to the so-called Pigou effect which was originally thought of as working through price deflation. Later writers including Patinkin broadened the concept to cover as well a change in the real money supply brought about through a change in the nominal money supply or increase in prices. (Rabin 2004, 126) It was also Patinkin (1956, 1965) who used the label "real-balance effect" to designate the mechanism by which (say) an increase in the quantity of money causes an increase in prices, namely through its initial effect in increasing the real value of money balances held by individuals and consequently increasing their respective demands for goods. (see Patinkin 1987, 99) Among the classical economists John Stuart Mill already understood how monetary disequilibrium would make prices change. (Mill 1844 [2007], 62-4)

It is Wicksell, however, who has been credited for being one of the first classical or neoclassical economists who went to the trouble of explicitly spelling out just how the quantity of money, interacting with the demand to hold it, determines spending and prices. Wicksell pointed out that an excess demand for money shows up as a weakening of demand relative to supply on the individual markets for goods and services, and an excess supply of money shows up as a strengthening of demand relative to supply on these individual markets. (Wicksell 1898 [1936] [1965], 39-41) This process is

therefore called the "Wicksell Process" (not to be confused with "Wicksell´s cumulative process").

According to what can be considered the best developed variant of fractional-reserve free banking, the real-balance effect will be small, if not nonexistent, under free banking. As Larry Sechrest explains:

"In all modern industrial economies, the money supply consists primarily of deposits, not banknotes or coins. There is no reason to think matters would be appreciably different under free banking. Since competition would compel banks to pay interest on deposits, only a fraction of the money supply could constitute net wealth. Furthermore, it is even conceivable, though unlikely, that interest might be paid on banknotes. Therefore, free banking will exhibit a small, or no, real-balance effect." (Sechrest ibid. 26, also 32) [3]

According to this view, what is crucial is whether the money represents net wealth, the underlying idea being that any money which bears interest at a market rate is not net wealth on the margin, and that any money which does not bear such interest is net wealth. (also Laidler 1990, 33) Some authors had suggested that money loses its monetary quality to the extent that it bears interest. (Pesek and Saving 1967, especially 105-11) [4]

Let us now consider the typical scenario which is often discussed by free bankers in their attempts to elucidate the micro-foundations of the theory of free banking, and which is also supposed to illustrate the self-regulating capabilities of this kind of system. This is the scenario of a decline in velocity, or an increase in its reciprocal, the Cambridge cash balance equation´s "k", which reduces banks´ need for reserves. According to the free bankers, this brings about a decline in their preferred (or optimal) reserve ratios, the money multiplier rises, and the money supply increases so as to maintain monetary equilibrium. (Sechrest ibid. 15) In this case, the demand for nominal money balances rises as k rises, but the increase in k also reduces the marginal liquidity costs of the free banks, since less specie is needed to cover adverse interbank clearings, the volume and frequency of transactions having declined. This increases the money multiplier and, thus,

the money supply. In macroterms, the increased demand for money reduces aggregate demand (AD), but aggregate demand rises again as the supply of money increases. The net result is that neither the price level nor income changes. (Sechrest ibid. 28-29) Free banks "passively adjust the supply of inside money to changes in the demand for it. They are credit transferers or intermediaries, not credit creators." (Selgin ibid. 82)

The first point to be stressed is that this scenario is *not* equivalent to the typical Keynesian depression scenario, contrarily to what Sechrest contends. This author indeed writes:

"In other words, in the typical Keynesian scenario of a depression in which a significant "hoarding" of cash balances occurs (k rises), free banks would tend to respond automatically by increasing the money supply so that nominal incomes might be maintained." (ibid. 15)

However, the Keynesian depression scenario is typically accompanied by a decrease of the quantity of money. Historically such contractions have often been quite severe because of the phenomenon of multiple deposit contraction. Such a contraction has been an essential concomitant rather than an accidental circumstance in historical depressions. [5]

In the scenario here contemplated by the free bankers, the concept of an increase of the public´s desired holdings of currency (or deposits) is a *money demand* concept; it refers to cash-balance *holdings*, that is to say to the fact of *not spending* money. It does not involve a contraction of the quantity of money. [6] In fact it is not quite clear why we would expect the scenario of a *general* rise in the public´s desired holdings of currency to arise in the real world and why the free bankers devote so much attention to this hypothetical scenario as well as to the banking system´s supposed reaction to it. In the typical depression scenario it is precisely the multiple contraction effect that explains - at least partly - the *generalized* nature of the phenomenon, but, as I have pointed out, such a contraction would be absent from the scenario envisaged here by the free bankers.

Still the Wicksell Process would be operating. The excess demand for cash balance holdings will be reflected in an excess supply of commodities, exerting a downward pressure upon prices. It does not follow, however, that any offsetting action by the banking system is required or even desirable, typically by expanding its liabilities. Any such offsetting action would, rather than restore monetary equilibrium, become a new source of monetary disequilibrium, setting in motion the Wicksell Process but now in the opposite direction, exerting an upward pressure upon prices. It is not clear what difference payment of interest on demand deposits would make as far as the operation of the Wicksell Process is concerned. (also Rabin ibid. 122) In fact the Wicksell Process will operate in both directions in this case, and although the net effect may well leave the aggregate price level by and large unchanged, both movements will produce their effects. It does of course not follow from the fact that the aggregate effect of these movements upon the price level may leave the latter by and large unchanged that the Wicksell Process has not been operating. In fact the Wicksell Process can *explain* why the aggregate price level may remain by and large unchanged in case of an increase in the public´s desired money holdings which is accommodated by a monetary expansion effectuated by the banking system. Nevertheless the economic consequences of each of the two movements do not cancel each other; they are added. [7]

But it will be noted that in the scenario envisaged here, the deflationary movement does not involve a change in the quantity of money but is merely the effect of an increase in the demand to hold cash balances – that is, of not spending them – whereas the inflationary movement initiated by the banking system results from an increase of the quantity of liabilities issued, which means an increase of the quantity of money. However, even when it would be considered that the conclusion drawn by the free bankers regarding this scenario - namely that the net effect on the general price level will be small or even nonexistent – is factually correct, the theoretical rationale which is provided for this conclusion is less than convincing and in fact not correct.

3. Free banking and Walras´ Law

Several prominent advocates of fractional-reserve free banking use Walras´ Law in their attempts to argue for the superiority of free banking. After reviewing the various subpropositions subsumed under the label "Say´s Law" [8], Sechrest (1993, 49) concludes:

"Walras´ Law cuts to the heart of the matter. If monetary equilibrium (...) holds, then there can be no monetary disturbances that might fuel a business cycle. The only possible disruptive influence will be real shocks that cause temporary disequilibria in specific markets. If monetary equilibrium is maintained more or less continuously, then such real shocks will have neither pervasive nor lasting effects. Effective demand will tend to equal notional demand (micro- and macroeconomic coordination will be maximized) as long as the market for money is in equilibrium. Therefore, properly understood, Say´s Law is not (and never was) an unconditional proposition, but a conditional one. Given monetary equilibrium, the expected value of the difference between effective demand and notional demand equals zero." [9]

Horwitz (2000, 86) agrees:

"Say´s Law finds it most accurate expression when we are in monetary equilibrium (see Sechrest 1993: 49ff.). In monetary equilibrium, production truly is the source of demand. If there is an excess demand for money, production is not the source of demand because some potential productivity is not being translated into effective demand. If there is an excess supply of money, demand comes not only from previous acts of production, but also from being in possession of that excess supply, which may have little to do with productivity."

It is nevertheless doubtful whether a reference to Walras´ Law is necessary or can even have any significance in view of a justification of free

banking – or of certain propositions concerning its alleged working characteristics - in the sense intended by the free bankers. What is the meaning of Walras´ Law? The particular proposition known as Walras´s Law is an identity. Lange (1942) gave the name Walras´s Law to the following proposition, which holds in disequilibrium as well as in equilibrium: the total value of quantities of all goods supplied equals the total value of all quantities demanded. The term "goods" is inclusive here, covering not only commodities but also labor and other services, securitites *and money*. Quantities are valued at the prices, in money or other numéraire, at which transactions are accomplished or attempted as the case may be. If some goods are in excess supply and others in excess demand, the excess supply and excess demand quantities are equal in total value. Counting excess supplies as negative excess demands, the sum of the values of all excess demands is identically zero. (Lange, 1942; Patinkin 1965, 73, 229, 258-62, and *passim*, 1987; also Rabin 2004, 82) The foregoing presents one version of Walras´s Law, which can be labeled the zero-aggregate-excess-demand-value version. It implies another, the equation counting version. It states that if n goods exist and if supply and demand are in balance for n-1 of them, then equilibrium must prevail for the nth good also.[10] To the n goods correspond n equations expressing the equilibrium conditions that market excess demand for each good be zero. Mathematically, only n-1 of these simultaneous equations are independent. Consequently, any set of prices satisfying any n-1 equations must also necessarily satisfy the remaining equation. The Law holds because budget constraints operate and market transactions are two-sided. Anyone trying to acquire something is by that very token offering something in exchange of equal value at the price contemplated. Anyone trying to sell something is demanding something of equal value in return. An attempted but frustrated transaction, like a successful one, involves two goods and not just one. In a monetary economy, one of them is ordinarily money. (Rabin 2004, 83)

For an adequate comprehension of what follows, the following point must emphatically be kept in mind when considering Walras´ Law: the satisfaction of Walras´s Law implies nothing whatever about the satisfaction

of the general equilibrium condition; neither has general equilibrium any bearing on Walras´s Law (Leijonhufvud 1981, 91-92); furthermore Walras´ Law has no bearing whatever on the dynamic adjustment properties of any economic system. (ibid. 99).[11] Thus Walras´ Law has nothing whatsoever to do with equilibrium in the various markets, and holds for *all* price configurations. (Becker and Baumol 1952, 356)

If for reasons of analytical convenience we simplify matters by assuming that there are only three homogeneous groups of goods, viz., commodities, bonds, and money, Walras´ Law may be represented as:

$$(M^d - M^s) = (C^s - C^d) + (B^s - B^d)$$

where C^d, B^d and M^d are the demands for commodities, bonds, and money, respectively, and C^s, B^s and M^s the supplies of these goods, respectively. Since the fractional-reserve free bankers hypothesize a macroeconomic model from which a bond market is missing (Sechrest ibid. 25-6), the previously provided formula in this instance becomes:

$$(M^d - M^s) = (C^s - C^d).$$

According to this formula, if the market for commodities is in equilibrium, so will be the money market, and vice versa. But again such an equilibrium is not required in view of Walras´s Law´s relevance. In particular the applicability of Walras´s Law does not require or depend upon the presence of monetary equilibrium. If a theoretical rationale is required for the demand-elasticity of the supply of inside money under free banking, and in particular for the accommodation of an increase (decrease) of the public´s demand to hold bank liabilities through an "offsetting" expansion (contraction) of the quantity of bank-issued money (liabilities) effectuated by the banking system, then it is unwarranted to suppose or to conclude that this rationale is provided by Walras´s Law, since Walras´s Law implies nothing of the sort. It will be obvious to the attentive reader that Walras´ Law

is consistent with innumerable possible disequilibria including monetary disequilibria. [12]

Nevertheless the free bankers could have attempted a different line of argumentation, one which does involve Walras´ s Law. There is a particular subset of disequilibria that had been perceived as raising complications for Walras´ Law, and some controversy has arisen in the literature as regards the applicability of Walras´ Law in disequilibria of this sort. In a seminal contribution Clower had argued that Walras´s Law fails in the typical Keynesian scenario, and in particular in the depths of a depression. (Clower 1965 [1984]) [13] Since the Keynesian depression scenario is in at least one crucial respect analogous to what will typically occur under free banking in the redemption run scenario, one might then argue along analogous lines that Walras´s Law fails to be applicable under free banking when a redemption run occurs involving a significant monetary contraction.[14]

Summarizing, Clower contrasted the behaviour of the representative household under the assumption that it regards utility maximization as being subject only to the budget constraint – the so-called notional process - to a situation in which labor services are in excess supply and in which labor income is no longer a choice variable which is maximized out, but is instead exogenously given. When labor is in excess supply, the effective demand for commodities is less than the notional demand. After having presented his well-known dual-decision hypothesis, he concluded:

"The point of the example is merely to illustrate that, *when income appears as an independent variable in the market excess-demand functions - more generally, when transactions quantities enter into the definition of these functions - traditional price theory ceases to shed any light on the dynamic stability of a market economy.*" (ibid. 55)

According to Clower the law thus fails in a depression, which can be described as a situation of general deficiency of demand. (also Rabin ibid. 88)[15] Before Clower Patinkin had already analyzed, in the celebrated chapter 13 of his *Money, Interest, and Prices*, the situation in which the effective

demand for labor is smaller than the notional demand when commodities are in excess supply. Patinkin presented a theory in which involuntary unemployment of labor can arise as a consequence of disequilibrium, in particular, excess supply in the market for current output. The essence of this theory is causality running from the level of excess supply in the market for current output to the state of excess supply in the market for labor. With the benefit of hindsight, it is not too difficult to see that the Patinkin and Clower analyses are essential complements. (see also Barro and Grossman 1971)

Although Patinkin had a clear understanding of Clower´s essential conclusion that Walras´s Law fails in a depression, in the end he never seems to have been convinced by Clower´s argument.[16]

In our view an essential clarification in this discussion could have been accomplished if the discussants had been more explicit about certain presuppositions left implicit in the debate. In particular all or most of disequilibrium economics considers as the natural context of the discussion a monetary regime or a monetary-institutional context characterized by an elastic quantity of money, that is, by the possibility for the quantity of money to be subject to considerable variations, contractions as well as expansions. However, since a monetary regime of this kind, that is, one characterized by the elastic nature of the quantity of money, is considered as the obvious and natural context for any discussion of monetary matters, the nature of the monetary regime that allows for such elasticity is not in itself conceived of as part of what constitutes the very problem, that is to say as one of the very determining factors of monetary disequilibria and their often detrimental effects, let alone as the single most important determining causal factor of monetary disequilibria and their harmful effects. A crucial fact is thus hardly given sufficient emphasis.[17]

It should always be reminded that classical authors like Say didn´t contemplate the scenario of, say, the sudden disappearance of a significant part of the quantity of money or of a collapse (or contraction) of the money supply. To the contrary, classical authors seem to have assumed as the natural context of the discussion a competitive banking system that would

never allow an unsatisfied demand for money to turn into a general oversupply of all real goods. (Glasner 1989, 60-63) [18]

This neglect in contemporary disequilibrium economics would of course be less reason for concern if it were possible to consider the actually existing monetary institutions as the outcome of a natural development, for which no theoretical alternatives are rationally conceivable. In the present writer´ s view it is doubtful whether fractional-reserve free banking constitutes a satisfactory alternative in view of the rather unsatisfactory state of the free bankers´ argumentation concerning the ways in which the system would cope with possible redemption runs and monetary contractions. [19]

4. Conclusion

Special attention has been drawn to two particular claims of the free bankers concerning the supposed working characteristics of a fractional-reserve free banking system which may strike the reader as questionable. The first of these relates to the alleged absence of a real-balance effect under free banking. The second relates to the free bankers´ reference to Walras´ Law as providing a rationale for the free banking system´s "offsetting" actions when confronted with changes in the public´ s demand to hold bank liabilities. This rationale is defective since it is based on an erroneous interpretation of Walras´ Law. My conclusion does not imply that it is not at all possible, from a rational viewpoint, to make a plausible case for this variant of free banking, only that the argument should be freed from certain questionable tenets.

Notes

[1] I am thus following up on my (2006) and my (2008).

[2] See, besides Sechrest (1993), Horwitz (2000), White (1984 [1995]), (1989), and (1999, Chapter 3), and, of course, Selgin (1988).

[3] It will be noted, however, that Selgin (1988, 101-2) recognizes the existence of a real-balance effect but only in the hypothesis of a general increase in productive efficiency. This author summarizes the workings of a free banking system as follows: "Free banks maintain constant the supply of inside money multiplied by its income velocity of circulation. They are credit intermediaries only, and cause no true inflation, deflation, or forced savings." (ibid. 102) The sequence of adjustment in this hypothesis should thus be: increased output, reduced prices, real-balance effect, and contraction of the nominal money supply. (ibid. 101)

[4] At first it had been thought that if there were no outside money in circulation, then there would be no real-balance effect. (Patinkin 1965, 297) Later this view was abandoned and it was assumed that the inside-outside contrast was not the determining factor.

[5] As is well known, these issues have been given adequate attention more emphatically in monetarist writings. With respect to the 1929-33 contraction Friedman and Schwartz clearly recognized the fact that "(...) it is hardly conceivable that money income could have declined by over one-half and prices by over one-third in the course of four years if there had been no decline in the stock of money." (1993, 301; see also 684-5) Reference must in this context also be made to the writings of Clark Warburton. See Warburton (1966) especially Chapters 5-7.

[6] This scenario must be contrasted with the kind of scenario that occurred when Americans fled from bank deposits into currency in 1929-33, and were thus acting to shift into what they considered a safer form of money. The unintended consequence was that the money supply fell as banks lost reserves. A redemption run under free banking, however, would of course lead to a smaller nominal inside money supply, that is to say, to a contraction of the quantity of money in circulation. (Sechrest ibid. 35) It is important, however, not to confuse the latter scenario with the scenario envisaged in the main text. See also Horwitz (2000, 217) who writes: "Of course, should customers in a free banking system choose to hold more of the reserve commodity, then this would have the same effect as increased currency holdings under central banking."

[7] As Ludwig von Mises wrote with respect to an analogous scenario: "Every change in the money relation alters (...) the conditions of the individual members of society. Some become richer, some poorer. It may happen that the effects of a change in the demand for and supply of money encounter the effects of opposite changes occurring by and large at the same time and to the same extent; it may happen that the resultant of the two opposite movements is such that no conspicuous changes in the price structure emerge. But even then the effects on the conditions of the various individuals are not absent. Each change in the money relation takes its own course and produces its own particular effects. If an inflationary movement and a deflationary one occur at the same time or if an inflation is temporally followed by a deflation in such a way that prices finally are not very much changed, the social consequences of each of the two movements do not cancel each other. To the social consequences of an inflation those of a deflation are added. There is no reason to assume that all or even most of those favored by one movement will be hurt by the second one, or vice versa." (1949 [1963], 417-8)

[8] For the various forms of Say´s Law – Say´s Identity, Walras´ Law, and Say´s Equality – see also Sowell (1972, 34-6).

[9] The necessary – *but not sufficient* – condition in order to avoid business cycles is monetary equilibrium. Monetary equilibrium occurs when the supply of money equals the demand for money, given the underlying state of general productivity and the concomitant price level. Aggregate nominal money balances would remain constant in the face of either a change in the composition of money demand or a change in productivity. Money balances would vary inversely with changes in money´s income velocity, however. (ibid. 46)

[10] Lange notes that this is the version of the Law proved by Walras himself. See Lange (1942, 51n).

[11] For reasons that are not entirely clear, Leijonhufvud and Clower propose a terminological innovation and designate Walras´ Law as Say´s Principle. See Leijonhufvud (1981, Chapter 5, 79-101); Clower (1986, Chapter 12, 145-65).

[12] **Suppose that with respect to the planning period concerned market participants plan to reduce their spending on commodities by** ΔC and that **they plan to increase their holdings of cash balances by an amount of** ΔM. **Then we have:**

$$([M^d + \Delta M] - M^s) = (C^s - [C^d - \Delta C])$$

Consequently as long as $\Delta C = \Delta M$ the equality still holds and it is not clear in **what sense complications are raised for Walras´s Law in this instance. While I agree with Yeager and Rabin (1997) and Rabin (2004) that transactions-flow equilibrium and disequilibrium are what are fundamental to Walras´s law, I do not intend here to enter into any discussion of the "stock-flow problem".**

[13] **Clower was quite clear about his intentions as he wrote:**
"(…) either Walras´ law is incompatible with Keynesian economics, or Keynes had nothing fundamentally new to add to orthodox economic theory." (ibid. 41) Building upon the pioneering efforts of Clower and Patinkin (see further), the general disequilibrium approach to macro-analysis was developed by Barro and Grossman (1971, 1976). There can be no doubt that the disequilibrium economics, developed in particular by Barro and Grossman (1971, 1976) following the pioneering work of Patinkin (1956, 1965) and Clower (1965), has in unprecedented ways improved our understanding of the nature and the consequences of monetary disequilibrium under prevailing monetary arrangements.

[14] **See also footnote 6. However, and depending upon how one conceives of the working characteristics of free banking, this line of argumentation would expose a weakness in the argument in favour of fractional-reserve free banking, which may perhaps explain partly why it was not actually taken by the free bankers. The redemption run scenario is *not* the sequence of events which the free bankers have in mind when they praise the demand-elasticity of the supply of inside money as one of the main virtues of fractional-reserve free banking, illustrating the self-regulating capabilities of their preferred system. With respect to this latter scenario, the free bankers have presented**

an elaborate argument involving a model in which the first-order conditions for profit maximization by the issuing bank are formally derived using the Lagrangean method. (see e.g. White 1999, Chapter 3) This argument is intended to convince the reader of the self-regulating, self-corrective and self-stabilizing qualities of a fractional-reserve free banking system. As if by an invisible hand, the banks are collectively driven to ensure monetary equilibrium, while all the time maximizing profits from the standpoint of each individual bank. In particular since under free banking there is no central bank which can intervene as a lender of last resort, one would expect the free bankers to present an equally elaborate argument establishing the self-regulating capabilities of the free banking system for the – quite different - scenario of a redemption run which, from the perspective adopted here, is the really relevant case. However, with respect to the deflationary scenario of a possible redemption run, the argumentation of the free bankers regarding the self-stabilizing nature of free banking is somewhat less convincing. In fact any formal argument is missing. The free bankers have mostly merely pointed out that this scenario is simply very unlikely to happen under free banking. As Sechrest typically writes (ibid. 43):

"Since free banks would have a profit incentive to maintain redeemability and to nurture consumer confidence in that redeemability, it seems unlikely that redemption runs would occur with any frequency in a free banking regime." One the other hand one could argue that since credit expansion would tend to remain limited under free banking, the scope for monetary contraction following massive redemption demands would be limited too. Everything depends upon how one conceives of the functioning characteristics of free banking in this respect.

[15] This point seems to be contested by Rabin (ibid. 89) who writes: "Such a dismissal of Walras´ Law would overlook the requirement that only demands and supplies and imbalances having the same degree of *effectiveness* be evaluated and compared." According to Rabin "(...) constrained or effective quantities are what are relevant to the Law." (ibid. 98) Walras´s Law as conceived by Clower, however, refers only to purchase and sale intentions; it asserts absolutely nothing about the possibility of their realization. (see also

Leijonhufvud, ibid. 89) In other words, Walras´ Law refers to *notional* supply and demand. Therefore Clower´s conclusion was that although Walras´s Law may be true *ex ante*, it will not be true *ex post* in any situation where "*contrary to the findings of traditional theory, excess demand may fail to appear anywhere in the economy under conditions of less than full employment.*" (ibid. 53)

[16] See Patinkin (1987, 867). On the controversy between Clower and Patinkin see also Rubin (2005).

[17] In fact, it can be shown that in a fractional-reserve banking system recurring deflationary tendencies can be expected to be generated endogenously. See Huerta de Soto (2006) and van den Hauwe (2009, 198 ff.).

[18] See in particular Say (1836 [2001], 134) and Glasner (1989 [2005], 62).

[19] Two other proposals which may seem more satisfactory concern a 100% reserve commodity standard (e.g. Huerta de Soto 2006) and the system proposed by Prof. Yeager. (see e.g. Greenfield and Yeager 1983) A discussion of these proposals falls outside the scope of this paper.

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