THE CASE AGAINST CURRENCY BOARDS

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> The first aim of monetary policy must be to prevent government from embarking upon inflation and from creating conditions which encourage credit expansion on the part of banks.
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> —Ludwig von Mises, *Human Action*, 1998

Currency boards[1] have enjoyed a resurgence of interest recently. They were first established and adopted in economies in transition: Argentina (1991), Estonia (1992), Lithuania (1994), and Bulgaria (1997). The plethora of practical questions that policy-makers had to face stimulated scientific efforts to give a favorable assessment of this institution.[2] Unfortunately, the accomplishments in this field have not been equal to the endeavors. Currency boards (CB) are still considered and advocated as an appealing alternative to modern central banking. Hanke and Schuler who initiated and have dominated the debate have been proposing the establishment of a CB as a universal panacea virtually wherever a monetary crisis has

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[1]Since our analysis of currency boards deviates substantially from the commonly accepted view, the following passage borrowed from Hanke and Schuler will provide the reader with the necessary background:

> A currency board is an institution that issues notes and coins convertible into a foreign "reserve" currency at a fixed rate and on demand. It does not accept deposits. As reserves, a currency board holds high-quality, interest-bearing securities denominated in the reserve currency. A currency board's reserves are equal to 100 percent or slightly more of its notes and coins in circulation, as set by law. The board generates profits (seigniorage) from the difference between the interest earned on the securities that it holds and the expense of maintaining its note and coin in circulation. It remits to its owner (historically, the government) all profits beyond what it needs to cover its expenses and to maintain its reserves at the level set by law. The currency board has no discretion in monetary policy; market forces alone determine the money supply. (Hanke and Schuler 1991, p. 5)

[2]See Schuler (2002) for an exhaustive currency board bibliography.

erupted. In addition to their role in implementing the aforementioned CBs, they recommended such a system for Russia in 1993, Jamaica in 1995, and Indonesia in 1998. The objective of their proposal is nicely summarized in the introduction to one of their numerous monographs: "It describes the difference between how money is supplied in a currency board system and in a central bank system. It demonstrates why the currency board system is superior to a central bank system" (Hanke and Schuler 1991, p. 4).[3]

Hanke and Schuler base their demonstration of this unqualified superiority upon four major arguments. First, CBs establish perfect convertibility between domestic money and foreign currencies, a task in which central banks, often forced to devalue, seldom succeed. This foreign convertibility, deemed inherently impossible under a central bank, is viewed as the basis for a stable economic context which is apt to enhance decentralized planning and give access to the international division of labor. In their words: "A currency board system is by nature a fixed exchange rate monetary system, while a central bank is not" (Hanke and Schuler 1991, p. 16).

> The currency board system offers a degree of convertibility and predictability that central banking has difficulty matching. Consequently, the currency board system is more likely than central banking to encourage investment, especially foreign investment, and to result in sustained economic growth. (Hanke and Schuler 1991, p. 36)

Second, the board's rule of holding 100-percent reserves in assets denominated in the foreign currency is tantamount to preventing the monetization of the government deficit and hence precludes any opportunity for active monetary policy. This constraint forces the government to practice financial prudence, eliminating inflation once and for all. As Hanke and Schuler write:

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[3]Other literature does not fundamentally challenge this view. Rather, all authors concentrated their research on the discovery of the precise conditions under which a CB turns out to be preferable to central banking or to dollarization (euroization). Optimal currency area arguments (Zloch-Christy 2000), price flexibility (Williamson 1995), soundness of the banking sector (Santiprabhob 1997), and the ability to prevent currency crisis (Ho 1999) are some recurrent topics in the evaluation of the gains and costs relative to the institution of a CB. The cost-benefit analysis in these studies falls into the trap of holism since costs and benefits for different economic agents are compared and even summed up.

De Haan et al. (2000) even concluded that the policy-maker should choose between a CB and an independent central bank depending on the ability of each institution to reduce inflation in a particular context. This suggests that a CB is worth implementing only during the finite period that its superiority is effective.

CBs rapidly became considered the ultimate irremovable peg contrasting with the other extremity of conceivable monetary regimes, flexible exchange rates (Frankel 1999). They have also been integrated into and modeled in terms of the rules-versus-discretion debate (Irwin 2001).

A recent authoritative and very positive evaluation of this institution has been provided by Dornbusch (2001).

All of these studies differ in regard to the particular CB's characteristic that they intend to examine. They also differ in their results due to methodological divergences and differences in the data sets used for empirical work. From this point of view the comparison between Schuler (1992) and Schwartz (1993) is striking. Nevertheless, they all share a fundamental common point inherited from the influential writings of Hanke and Schuler, that a CB is different from, indeed even opposed to, a central bank. Thus, CBs have been theoretically studied as an alternative to central banking and practically established with this belief.

> Under the currency board system, East European governments would have to finance themselves exclusively by taxation and borrowing, not by inflation, because a currency board cannot be an agent of government finance. (Schuler and Hanke 1991, p. 3)

Third, a CB works very simply, according to an automatic mechanism equilibrating the balance of payments. It is similar to the price-specie-outflow mechanism first described by David Hume (1987, pp. 308–26). "By design, a currency board has no discretionary powers. Its monetary policy is completely automatic, consisting only in exchanging its notes and coins for the foreign reserve currency at a fixed rate" (p. 6). In the same vein:

> As under a gold standard, or gold exchange standard, in a currency board system the amount of credit that banks can create (and hence the total money supply) is limited by their ability to acquire and keep reserves sufficient to support that amount of credit. (p. 7)

Last, but not least, Hanke and Schuler emphasize the CBs' excellent historical record as final proof of their superiority. In the conclusion to his doctoral dissertation Schuler says, "The currency board system had on the whole an excellent record" (Schuler 1992). The continual reference to successful past results of CBs is best conveyed by Hanke: "In consequence, the burgeoning literature on Currency Board Systems often suffers from a reckless disregard for reality" (Hanke 2000, p. 49).

Besides these four stylized arguments, Hanke and Schuler employ an additional stratagem. They systematically present the CB as the monetary regime most suitable for and compatible with market economies, nascent ones in particular. "The currency board system relies entirely on market forces to determine the amount of notes and coins that the board supplies" (Hanke and Schuler 1991, p. 7). The same message appears on page 21: "In short, then, a currency board is an almost foolproof institution because it cannot act as an independent disturbing element in the economy. Market forces call the currency board's tune."[4] Consequently, under Hanke and Schuler's influence, economists of the last decade supported the view that a CB is a viable alternative to central banking, and expressed the hope that a trend toward free banking would occur.

This scientific position is erroneous and misrepresents what kind of institutions a real market economy, one consistent with individuals' property rights, could bring into existence. The primary goal of the present study is to correct this error, whatever the reasons for its occurrence.[5] The fundamental distinction between money and money substitutes in the tradition founded by Jean-Baptiste Say will be the starting point. After disclosing the true nature of CBs, we will be in a better position to assess each of the four pro-CB arguments.

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[4]Thus, to discourage any probable opposition to CBs, Hanke and Schuler used an rhetorical subterfuge, pretending in fact that a potential opponent to the CB system is indeed opposed to the free market!

[5]Indeed, a decade after their first publication on CBs, Hanke and Schuler have become the leading advocates of dollarization (euroization), claiming that this institutional setting surpasses the CB on the grounds of enhanced credibility, since a corrupted government can still abolish, by political means, the CB. This complete *volte-face* raises the interesting question whether present-day CBs have not been intentionally implemented as an intermediate stage toward full dollarization (euroization). The answer to this question lies outside of the scope of this study.

Money and Money Substitutes

Money is the general medium of exchange. It is neither a consumers' nor a producers' good, but a commodity which has been selected by market participants for its particular physical characteristics and high degree of marketability (Menger 1892; Mises 1980, pp. 42–46). The marketplace is the origin of money and free-market production is the natural way of increasing its quantity.[6]

The discovery of indirect exchange, and eventually of money, enhances social cooperation since individuals are then enabled to engage in transactions using monetary prices. Economic calculation becomes possible and the decision process is considerably improved. Money allows people to become informed about profitable exchange opportunities and to seize them at the most appropriate moment. Individuals can assess their decisions through calculation in monetary terms, discover errors, and correct them for improved future action.

With the extension of indirect exchange, the costs implied by transportation, loss, wear and tear of money increase, and the circulation of money becomes expensive, so to speak, for its users. A qualitative improvement of the monetary economy then consists in the immobilization of the money and its replacement in daily exchanges by something which is less costly to circulate. That is how logically, from a cost-reduction perspective, the category of money substitutes is brought into existence. The particular form of these money substitutes is merely a practical question. Notes, deposits, and electronic portfolios are different forms which have appeared at different stages of society's technological advancement. The economically relevant issues are to understand whether money substitutes differ from money and whether the category of money substitutes is homogeneous.

J.B. Say clearly answers the first of these questions:

> But a bank-note, payable on demand, is the representative, the sign, of the silver or specie, which may be had whenever it is wanted, on presenting the note. The money or specie, which the bank gives for it is not the representative, but the thing represented. (Say 1971, chap. 21, §6)

A money substitute is then a warehouse receipt, which simply attests to the ownership of a given quantity of money held in the bank vault. The holder of the money substitute, not the bank, is the legitimate owner of the stored money, says Say. Convenience alone prompts people to substitute these receipts, authentic claims on money, for the commodity money, which is now immobilized in a particular warehouse for money called a giro bank.[7] It is important to emphasize that even if the whole stock of money, whatever the reason for this situation, is deposited in the warehouse, so that only the warehouse tickets keep on circulating, in no case do the latter become money. They remain money substitutes which have been brought into being in substitution for money.

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[6]This emphasis is important. Although it is difficult today to find a proponent of Knapp's theory for the creation of money by the state, the prevalent view among economists is to consider money as a kind of social contract, the warranty for which, not surprisingly, is the state (Samuelson 1958; Hicks 1989, p. 45; Tobin 1996, chap. 5). Samuelson's seminal article gave birth to the overlapping-generation models whose paradoxical conclusion is that money is useless!

[7]A giro bank is an association whose members deposit sums on which they draw drafts for their creditors, thus avoiding the cumbersome transport of the money involved. This is also called a deposit bank, and the first one was created in Venice in 1171.

Within the category of money substitutes, Mises introduces the fundamental subcategories of monetary certificates and fiduciary media. Monetary certificates are issued as substitutes corresponding to the exact amount of money which is withdrawn from circulation. As a result, all banks are 100-percent reserve banks and their activity does not alter the relationship between the supply of and the demand for money.[8] Fiduciary media comprise those money substitutes that have been issued without a prior equivalent deposit of money. They are the product of fractional reserve banks and, being physically indistinguishable from monetary certificates, are accepted by individuals as identical to the latter.[9] Thus, the praxeologically relevant quantity of media of exchange—all money substitutes, which are perceived by individuals to provide the same services as money does, and money outside of the bank vaults—becomes a multiple of the money stored in banks. Mises (1980, p. 155) describes this quantity as "money in the broader sense."

The impact of money substitute production on the organization of the banking sector is of particular interest. As far as the production of monetary certificates is concerned, banks have an incentive to organize a clearinghouse, since mutual compensation between the certificates they issue will result in smaller genuine money transportation costs. Similarly, the bankers may also decide to put together, in one or more institutions, the deposits they hold in order to reduce protection costs. The bankers' ingenuity may give birth to various institutional settings, but under 100-percent reserve banking, none of them can influence the total stock of money in the economy and thus modify the price relations.

The outcome is utterly different when banks are involved in the production of fiduciary media. To be sure, they are still prompted to organize a common clearinghouse, but an additional element, relative to the limitations on the issuance of fiduciary media, tends to result in new functions of this clearinghouse. Although these limitations do exist and have been largely documented in the literature (Mises 1998, pp. 431–45; Rothbard 1983, pp. 111–24), the fundamental condition for the perpetuation of the fractional reserve system is individuals' abstention from redeeming more money substitutes than the amount of the commodity money available in the banks. To the extent that individuals do not intend to redeem a substantial part of their claims on money in money, bankers can go on increasing the supply of fiduciary media by the profitable operation of providing circulation credit.

The ultimate limit on the production of fiduciary media is provided through recurrent bank runs, which are nothing else but the correction of error in the perception of reality; the bank's clients realize that, contrary to their expectations, the whole stock of money substitutes cannot be redeemed, and that some claims will not be honored. In their attempt to be among the first who require the redemption of their claims, the clients create a contagion effect which surprises the bank with a demand for money it cannot satisfy. Therefore, it has no other alternative than to declare its bankruptcy. In short, fractional reserve banks are menaced by the very essence of their nature and this creates a natural tendency toward self-insurance

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[8]We think that the term "100-percent reserve banking" was particularly badly chosen. One is under the impression that these reserves are held by the bank just to back the money and guarantee its soundness. In fact, the reserves are the money.

[9]We will not deal here with the difficult question of why and how fractional reserve banking became possible. Mises states that it appeared on the free market as a solution to the alleged impossibility of profitably issuing money certificates: "Issuing money-substitutes is a ruinous business if not connected with issuing fiduciary media" (Mises 1998, p. 432). Rothbard gives another explanation, pointing out the merely criminal yet lucrative character of fractional reserve banking: "It should also be clear that 'fractional-reserve warehousing' is only an euphemism for fraud and embezzlement" (Rothbard 1984, p. 37).

against failure. Thus, commercial banks engage in a process of complete homogenization of the money substitutes they issue. They also pool the money remaining in their vaults[10] within a central bank, vesting it with the function of lender of last resort. Consequently, the clearinghouse becomes the bankers' bank and the monetary system acquires its two-tier shape that we see today. Salerno (1991, p. 371) calls this evolutionist explanation the "progression theorem," which is further elaborated in the works of Huerta de Soto (1995) and Hülsmann (1997), and is incontestably recognized by the free banking school (White 1999, pp. 70–77).

The logical repercussions of the fractional reserve banking system are the appearance of this one-reserve system and the possibility for massive bail-outs of imprudent bankers.[11] The central bank is merely the depository of bank reserves, the remaining commodity money. The protection that banks obtain is however rather imperfect, since a generalized bank run cannot be prevented by the bankers' bank whose reserves are also only a fraction of its total liabilities. Historically, the remaining risk was eliminated by the transformation of the bankers' bank into a money producer. The latter denied note bearers the redeemability of their claim in commodity money, thereby encroaching on individuals' property. This transformation implied an economy-wide abrogation of monetary contracts, which required banks to redeem fiduciary media on demand. Such infringement of property rights was possible only because of the state's local monopoly of coercion. Trying to render fractional reserve banking a lasting institution, the state seized the commodity money and replaced it by a fiat money, coersively imposed upon the economy.[12]

Therefore, modern central banks play a twofold role, serving as a banker for banks as well as producing the money to bail them out.[13] Modern centralized banking systems are characterized by an implicit agreement between a central money producer and subordinate, yet private, commercial banks which open accounts and grant circulation credit.[14] The former obtains a new income source—the inflation tax—and engages in the protection of the latter which are grateful for the privilege of creating loanable funds out of thin air and collecting interest payments (Hoppe 1990).

However, this implicit agreement is a rather defective solution to the inherently bankrupt fractional-reserve banking system. Ultimately bank runs are not eliminated,

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[10]As mentioned in the previous paragraph, it is not excluded that 100-percent reserve banks decide to pool the money they hold in an institution which economists would call also the "bankers' bank." However, in this case the sole function of this "bankers' bank" would be to better secure the safekeeping of the money, not to finance a banker in difficulty.

[11]Bagehot ascribes the origin of the one-reserve system in England to the legal privileges enjoyed by the Bank of England: "Thus our one-reserve system of banking was not deliberately founded upon definite reasons, it was the gradual consequence of many singular events, and of an accumulation of legal privileges on a single bank" (Bagehot 1931, p. 97). This point of view is equally endorsed by Smith (1990, pp. 4–5). Let us simply point out that the original, most important, legal privilege is that of the production of fiduciary media granted to the whole banking system.

[12]On the impossibility of coexistence between a commodity money and a fiat money without compulsion, see Hoppe (1994) and Hülsmann (1996).

[13]Unfortunately, neither Smith's *magnum opus* (1935) nor Goodhart's (1988) famous monograph make the distinction between those two logically separate functions of modern central banks. This omission is all the more unsatisfactory, since Peel's Act, which has a great place in those studies, split the Bank of England into a banking department (bankers' bank) and an issue department (central fiduciary media producer destined to become a fiat money producer).

[14]Nothing limits the extension of the central bank's monopoly to the dimension of the state. This is shown in Hülsmann (1997).

but they become rare. The existence of a discretionary central money producer prompts the banks to adopt less prudent behavior, thereby creating the need for bailing them out. This moral hazard problem, already anticipated by Bagehot,[15] is the major reason for the occurrence of financial crises.[16] The latter are the outcome of a loss of confidence in the national money[17] and inevitably result in a decrease in its purchasing power. The continuous rise in money prices is a great concern for the whole banking system, since the eventual rejection of the money by market participants seriously cuts the expected revenues for both the central money producer and the commercial banks. Independent from the measures undertaken by the private banking sector to discourage deposit withdrawals, the central money producer seeks a means to regain its position on the top of the credit pyramid, moved by the goal of restoring its ability to collect the inflation tax.

We will now show that the so-called currency board provides the state with such a tool. CBs are deliberately devised by a failed central money producer who intends to restart its tax collection activity at a later time.

The Nature of a Currency Board

The production of fiat money, i.e., inflation, results in a continuously diminishing purchasing power of money. If individuals believe that this process will not come to a halt soon, they will select another asset that is more suitable in which to store wealth, and will thereby trigger a hyperinflationary spiral (Mises 1980, pp. 256-61; 1978, pp. 10–12). Under present conditions, we observe that the dollar or German mark (now euro) bank notes usually replace the useless national paper money in every country experiencing hyperinflation.

The kind of money is altered, but its nature remains the same as the new money is also a paper currency. Typically, the country becomes dollarized or euroized spontaneously, that is, without any political or collective agreement between the residents of the hyperinflationary territory and the foreign fiat money producer. Such a collective agreement is not necessary, since each individual draws an obvious benefit; the foreign money producer enlarges the territory upon which he levies his inflation tax; the participants of the economy in hyperinflation are more than happy to pay this new lower tax. This is a concise and adequate explanation of how good money drives out bad money if individuals are left free to choose between them. However, this outcome seriously decreases the revenue of the previous money producer who is ousted from business as a punishment for hyperinflation. What he can do in response is to interpose himself between the foreign money producer and the inhabitants of the country where he is located by virtue of a CB, claiming that he is still in the money production business. Let us first state some economically important aspects of the CB.

A CB is an institution which issues domestic bank notes in exchange for a specific foreign currency (in almost all cases this is the foreign currency people have

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[15]Cf. Bagehot (1931, p. 108): "but indisputably one of their effects [the suspensions of Peel's Act] is to make people think that Government will always help the Bank if the Bank is in extremity. And this is the sort of anticipation which tends to justify itself, and to cause what it expects."

[16]On how the moral hazard problem eventually leads to the breakdown of the fiat money system, cf. Hülsmann (1998).

[17]We prefer to reserve the term "national money" for the case where a national, in fact state-owned, money producer is present. The term "domestic money" signifies the money used *in* the country, but *not necessarily produced* by the local state.

freely chosen by rejecting the national inflationary money), and promises to continually maintain this conversion at a constant rate. The CB merely reacts to the individuals' desire to surrender the foreign currency units they possess or to take them back; the CB cannot purposefully influence the quantity of bank notes issued, neither can it increase the stock of cash within its territory, for such an increase can only happen when goods and services are exchanged against foreign currency units. The new money can only be purchased from abroad.[18]

The crucial point is that a CB is not a money producer; it is not even a money changer. It is a mere warehouse which issues receipts for the deposit of a specified foreign fiat paper money, which is the genuine money in the CB country. Now we can logically distinguish between a CB that keeps the total sum of the deposited foreign currency units in its vaults, and a CB that invests *even* one part of the deposits in foreign assets. We may call the former a "100-percent reserve currency board" and the latter a "fractional-reserve currency board." As a matter of historical fact, only fractional-reserve CBs have existed and the term "currency board" has always meant, and will designate in this article, "fractional-reserve CB." The receipts issued by a "100-percent reserve CB" are monetary certificates, which represent a genuine claim on a specific amount of money in which they can always be redeemed. A "fractional-reserve CB" is also deprived of the right to issue receipts without the previous deposit of foreign currency units, but since it keeps only a portion of the deposit in its vault, the receipts are fiduciary media. Thus, a CB obtains a substantial revenue, called seigniorage, from its investments in assets denominated in the foreign currency, at the expense of the obvious impossibility of instantaneously redeeming the whole stock of receipts issued. Thus, a CB acts like a fractional reserve bank receiving deposits of money and issuing money substitutes.[19] The fractional-reserve aspect implies that all property titles cannot be redeemed at the same time. One of the goals here is to examine whether this is the *only* violation of property rights that goes hand in hand with the establishment of a CB.

It is also important to identify the two different ways of introducing a CB. A CB can start by issuing new bank notes, completely distinct from those issued by the failed money producer. Even though a market exchange rate between the two may emerge, the latter, which have already been rejected, will surely be driven out so that at some point the currency-board bank notes will be the only ones circulating. The second alternative is to transform the old fiat money back into money substitutes, continuing their issuance only when foreign currency units are deposited with the CB. Before it starts operating, the CB must, in this case, be in possession of foreign currency equal in value to the already existing stock of bank notes at the prevailing rate of exchange. It can receive these foreign currency units, which it does not initially

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[18]These fundamental and invariable features are accompanied by other characteristics according to which Schuler (1992) distinguishes between an orthodox (first-generation prior to 1913) and an unorthodox (second-generation) CB. A first-generation CB precludes all lender-of-last-resort functions as well as the requirement for commercial banks to hold reserves with the CB. A second-generation (present-day) CB does not completely remove these features inherited from the previous money production monopoly enjoyed by the dismissed central bank. Other alterations to this generally simple structure of a CB have also been proposed, but we will not address them here, since they do not substantially change its nature. For further details, cf. Le Maux (1999) and Oppers (2000).

[19]As a portion of the deposited foreign units serves to purchase foreign assets, the drain of dollars or euros out of their producer's country is limited while an additional market for debt instruments issued there is created. There are no other differences between a CB system and a dollarization (euroization).

possess, only through transfers or loans, in which local private individuals and institutions may have little interest, since they need the foreign currency for their monetary transactions. Even though the second method of introduction, preferred in all recent CB implementations, actually reveals a connection between the CB and the failed money producer, as well as foreign institutions that are needed to finance the CBs start-up, the more general question whether a CB can be privately managed or not still remains.

Can A Currency Board Emerge On An Unhampered Market?

A CB, as it is theoretically conceived, can be a profit-earning warehouse. This would suggest that the economic conditions for the emergence on the private market of a free supply of the services a CB offers are fulfilled. However, is the profit from CB operations a sufficient condition for its private occurrence and, if so, can we expect this profit to vanish through competition as suggested by Hanke and Schuler (1998, pp. 418-19)?

A CB is a warehouse for money. For such a warehouse to be privately organized, individuals must value positively its services and express a lasting demand for them through their readiness to pay a positive price. When analyzing this issue, one cannot help thinking of the giro banks, the historical example of warehouses for money. They appeared because offering a safe-keeping service for a commodity money liable to theft, transportation costs, insurance costs, and wear and tear was profitable. In the case of a commodity money, money substitutes were sometimes deemed superior in respect to their physical qualities. For example, a paper ticket is much more transportable, particularly in the case of large amounts of money. In addition, depositors benefit from the accounting service. Their superior convenience for money users is the sole reason justifying the existence of a free-market demand for money substitutes.

This rationale cannot be applied to the case of CBs. Although a CB is a warehouse, the physical qualities of the good stored—paper currency—do not differ from those of the receipt certifying the safe-keeping contract. For individuals to demand the production of domestic paper money substitutes as a replacement for the foreign paper money they have been holding since their loss of confidence in the national money, the obvious transformation cost must be offset by important benefits. Such possible gains can be the printing of bank notes in the domestic language and their production in denominations better suited for domestic preferences. Even if these benefits cannot be denied, nothing guarantees that they will compensate for the transformation cost to such an extent that individuals will willingly surrender their foreign exchange units to a CB, privately instituted for this particular purpose and devoid of a reputation record. After all, the largest part of the U.S. Federal Reserve dollars are used outside of the U.S., without their transformation by a CB into domestic money substitutes. And why should they be if their direct use in exchanges is in no way riskier or more costly than the use of some other paper bank notes which represent them?

To summarize, the nature of the good stored, namely paper fiat money, renders the emergence of a CB as a market phenomenon highly improbable.[20] Although

[20]We agree that fiat money itself is not a market phenomenon. However, this fiat element is absent in the CB country whose inhabitants select a foreign fiat money for domestic currency, as they select other goods on the free market. Thus the question whether a CB is a free-market institution or not is still relevant.

technically a CB yields revenues for its owner,[21] the services of a private CB are unlikely to be demanded. *A fortiori*, the competition between currency boards Hanke and Schuler imagine is impossible. If a CB cannot be privately managed but we nevertheless observe its existence, the *only* explanation is that a CB is a creation of the state. The government simply implements it and declares the money substitutes it issues as legal tender.[22]

An apparent alternative to the establishment of a CB for a state whose national money is rejected would be to start issuing a new money.[23] Establishing a CB is the predominant choice, for the use of a foreign currency enables the state to borrow on foreign financial markets (Dornbusch 2001). This would be impossible with a new national money.

Moreover, recent introductions of CBs have been financially aided by the International Monetary Fund (IMF). The so-called "currency-board arrangements" turned out to benefit the IMF's own institutional interests. At a time of severe criticism regarding its continued usefulness, the IMF found in the implementation of CBs a wonderful tool ensuring its survival. By discussing the applicability of a CB in several countries it recovered some of its prestige and power.[24] Some authors recently have even claimed that the Bulgarian CB was deliberately introduced by the IMF to serve its own interests (Nenovsky and Rizopoulos 2002). At any rate, whomever initiates the introduction of a CB, it cannot emerge on the unhampered market and it serves the interests of both the failed money producer and the IMF.

It seems that we need to refine our definition of a CB: a CB is necessarily a state-owned fractional reserve bank for foreign fiat paper currency, imposing the usage of its receipts as domestic currency through legal-tender laws. We are now better prepared to grasp the misconceptions involved in the debate about CBs.

Some Fallacies Unveiled

Assume that the country where you live experiences hyperinflation and your fellows, like you, turn toward the use of euros. The state decides to introduce a CB in the second way presented above, by transforming the inflationary bank notes it has been issuing back into money substitutes. The legal-tender privilege conferred upon the bank notes is essentially intended to prevent individuals from understanding the transformation in the nature of the bank notes. People do not perceive the new essence of the bank notes, which merely represents a claim on a foreign currency;

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[21]On the nature of this revenue, see footnote 26.

[22]Let us emphasize that the legal-tender privilege in no way transforms the CB notes into money, provided that the former remain simple claims redeemable in the foreign currency. Furthermore, even though these money substitutes may be quoted on some foreign exchange markets, it is extremely doubtful that investors and speculators will include them in their portfolios. First, for the same rate of return, the foreign currency surpasses the money substitutes because of its higher liquidity outside of the CB country. Second, it is impossible to calculate investment strategies including both the foreign currency and the money substitutes because of the necessary singularity of the variance-covariance matrix of returns. In conclusion, only individuals willing to buy and sell goods and services in the CB country express a demand for the money substitutes, and this solely by virtue of the legal-tender privilege.

[23]This kind of monetary reform was applied twice in Germany: in 1923, when the Rentenbank started issuing the new Rentenmark, and in 1948 when the latter was replaced by the Deutsche Mark. For a comprehensive overview of these two monetary reforms, cf. Sennholz (1979, pp. 79–108).

[24]Consequently, a considerable part of the research on CBs was undertaken by the IMF, as evidenced by our bibliography.

they are misled into the false belief that the once nationally produced money continues to exist.

Once people regain their confidence in what they are led to consider as national money, the CB's owner (the state) is now able to transform itself into a genuine national money producer. It can recover the money production function by simply starting to issue notes without first receiving foreign currency units. This would lead to the abandonment of the "100-percent rule." It would not be difficult for the state to convince people that this "rigid rule" is no longer necessary, since the people have always believed that the domestic money was actually produced by the CB.

This scheme can technically succeed because the CB's receipts are embodied in the same bank notes once produced by the former central bank. The confusion originates from the total absence of product differentiation, although denominations may change because hyperinflation made them cumbersome, like in Bulgaria. The CB's money substitutes even bear the same name as the national money once did. Thus, the labels "lev" and "kroon" are still printed on the bank notes in circulation in Bulgaria and Estonia, preventing users, and even some economists, from understanding that they are plain definitions of a particular *quantity* of euros, not the name of a specific money.

Ideologically, the misconception is maintained by several theoretical fallacies. First, the domestic currency is said to be backed by foreign reserves,[25] an assertion which prompts one to think that the domestic money exists *per se* and the reserves are there solely to inspire confidence by its users. The causal relation is exactly the opposite. What is meant by "backing reserves" is in fact the money and it is the property of individuals, not of the board, despite the fact that the latter enjoys the usufruct of the deposited foreign currency units (seigniorage).[26] What is falsely considered as domestic currency is in reality a bank receipt, a title representative of a certain quantity of money deposited with the board.

Second, the attention paid to the fixed exchange rate problem has been completely misguided. By definition, the "rate of exchange" between money and money substitutes is fixed at par and is nothing but a rate of conversion. The idea of a price between one entity and its representative sign makes no sense (Rothbard 1997, p. 353). The rate of exchange between two monies is the price at which market participants can exchange the quantities of monies they wish. There cannot be a rate of exchange between the CB's bank notes and the foreign money since the bank notes in question are not money. Moreover, there cannot be any possibility for devaluation unless the bank's owner, the state in the case of a CB, seeks means for the expropriation of the

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[25]We can read:

> For example, an Independent currency authority might issue domestic currency that is convertible into a specified foreign currency at a fixed exchange rate and back up this commitment by holding a foreign reserve cover equal to 100 percent of the currency issue. (Osband and Villanueva 1993)

> A currency board is credible only if a country's central bank holds sufficient official foreign exchange reserves to cover at least its entire monetary liabilities, thereby assuring financial markets and the public at large that every domestic-currency bill is backed by an equivalent amount of foreign currency in the official coffers. (Gulde 1999)

[26]In fact, since the CB's services are not freely demanded and the genuine money is the individuals' property, this usufruct is pure theft! It belongs to the holders of bank notes, not to the state. One possible means for its legitimate restitution could be to deduct it from the payment of annual taxes, despite the difficulties for the evaluation of every individual's bank note holdings.

depositors by giving them back less than the amount they deposited. The real issue is not finding the competitive exchange rate,[27] but whether individual property rights are protected or not. How was it possible at all to introduce such a misplaced debate about the "exchange rate"? This confusion arose because the essential difference between the old national money and the new CB's money substitutes had been overlooked. If there is an exchange rate to be determined, it is between these two entities, and only in the case where the two are physically distinguishable, in short when the first way of introducing a CB is chosen.

An additional technical element helps the state to prevent individuals from seeing reality in general and the rate of conversion, in particular. All modern CBs collect a small fee (up to 0.5 percent in Bulgaria, for instance) when "exchanging" the "reserve currency" for the "domestic currency." This token fee is integrated directly into the "exchange rate" so the conversion is never exactly equal to the declared parity. The illusion of a slightly moving "exchange rate," within limited bounds, determined by arbitrage, economists say, is then created. Arbitrage between what entities, money and money substitutes? It is evident that this fee is the remuneration for the conversion service of money into money substitutes, and it should be the CB's only revenue.

Let us emphasize that although the old bank notes keep on circulating, under a CB their nature has been fundamentally changed; they are no longer paper money but paper money substitutes. Under a CB system the money is the foreign exchange currency deposited with the board and owned by the individuals. For instance, the real money in Bulgaria, Estonia, and Lithuania is the euro, and the Singaporean dollar plays the same role in Brunei. Thus, one is inclined to think that the property of money is incontestably restored to its ultimate users—the market participants—but a deeper analysis of the monetary policy channels under CB will reveal this viewpoint as incorrect.

Is Monetary Policy Impossible under a Currency Board?

It is also traditionally accepted that active monetary policy is impossible in the presence of a CB. This claim rests on the ground that the quantity of money is freed from political interference. But one should recognize that only local political discretion is precluded by the CB. The money used is not a commodity money whose production is entirely governed by market incentives; it is the fiduciary product of a foreign central bank. Therefore, the stock of money in a CB country is necessarily influenced by the policy followed by the foreign money producer. This fact has two main implications.

First, channels through which the new CB monetary units are diffused differ from those one could observe under an independent money producer. The newly created units of money are first received, normally but not necessarily, by the foreigners who inhabit the country of the foreign money producer. They start spending this money according to their preferences, and hence bid up the prices of all the commodities they purchase. The moment arrives when a part of the new money is spent on goods produced by the country that has adopted a CB. Here exporters are the first to receive all new monetary units and their preferences determine the domestic price changes, inevitably triggered by an increase in the stock of money.[28] Therefore, an inflationary

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[27]This supposedly important question was addressed during the last five years of the Argentina's CB. It shows the great difficulties the IMF officials experience in understanding what a CB is, despite their significant production of theoretical and empirical research in this field.

[28]This concerns exporters of goods or securities, since a portion of the new money can be received in the CB country in the form of additional loans.

monetary policy pursued by the foreign money producer is tantamount to an expansionary monetary policy that a domestic money producer would have followed by first buying goods from the export sectors of the economy. It means that all export sectors are particularly privileged by a CB and we should expect them to lobby in favor of its introduction.

Consequently, the failure of a domestic money producer is not the sole condition for a CB implementation. The latter can also result from a mere political decision, its goal being to favor one or several foreign-markets-oriented sectors of the economy at the expense of all other individuals who, being employed by the domestic-oriented sectors, are affected by a negative transfer of wealth. This explains why sometimes a government selects as genuine money a foreign currency different from the one individuals had selected on a free-choice basis, or why it establishes a CB without the previous money producer ever being discredited.[29] The government merely imposes that money which satisfies best the lobby's preferences. A case in point seems to be the shift from the dollar to the euro implemented by the Lithuanian CB in February of 2002. It is a victory for the Lithuanian exporters in the European market over other local special interest groups.[30]

In respect to the above-mentioned transfer of wealth, it necessarily occurs even if foreign prices have not already risen before the CB country's inhabitants touch the new money. Since exporters are those who first receive the new money, all other citizens will see domestic prices rise before they would be able to spend the new money. Thus, their real wealth and income is negatively affected in the case of an inflationist policy introduced by the foreign money producer. The awareness of these wealth transfers, once a CB is instituted, makes the export sectors most attractive because of their newly privileged position. A reallocation of productive resources ensues, which prompts local producers to satisfy the preferences of foreign buyers rather than those of the domestic consumers. The CB develops a kind of Dutch disease.

Eventually, the CB transforms the country where it operates into a subordinate part of a bigger credit pyramid controlled by a central money producer located abroad. This is also a result of the CB's impact on another social group. An independent national money producer would have supported all industries which would have developed under the patronage of the state. One could be tempted to say that the CB eliminates the local state-dependent industries and thus helps improve the allocation of resources in accordance with individuals' preferences. This is, however, not true, since only local-state dependency is eliminated to the great benefit of the state sponsoring the money producer abroad.

Second, the resulting increase in foreign-state dependency clearly contradicts another allegedly positive feature of a CB. By removing or strictly limiting the lender-of-last-resort function, a CB is presumed to substantially reduce the moral hazard problem and to prevent the bailing-out of shaky commercial banks (Fischer in Perry 1997, p. 20). This is true unless the banking sector has or gradually obtains easy access to the foreign money market. It does not preclude that the reallocation of

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[29]Prices of durable goods in Bulgaria continue to be quoted in dollars, five years after the establishment of a CB receiving deposits now in euros. It is obvious that individuals' preferences tended toward the dollarization rather than euroization of the economy. As far as Lithuania is concerned, where the growth rate of the money supply was already sharply reduced in the second half of 1993, the traditional hyperinflationist explanation for the introduction of a CB is highly contestable.

[30]Elena Leontjeva, Founder of the Lithuanian Free Market Institute, expressed this lobby's will quite well in an article entitled "Farewell to the Currency Board" which appeared in the October 1998 issue of *Baltic Times*: "The selected anchor currency, the U.S. dollar, may be a nuisance and is already viewed as such by some business people active in the European market."

resources in response to foreign consumers' preferences enhances the link with the foreign financial market, especially if foreign banks operate domestically either directly or indirectly (Schwartz 1993). Furthermore, the foreign money producer will not refrain from bailing-out the CB country's banks because this will simply increase the sphere of its influence and the extent of its inflation tax (Hülsmann 1997). As a result, there is no reason that we should expect banks to eventually adopt, for prudent purposes, reserve ratios higher than those observed in the foreign country.

In addition to the above described channels, a more thorough investigation shows that even without producing money, the CB is enabled to influence the stock of media of exchange. The collection of seigniorage regularly increases the assets of the CB, thereby allowing it to issue a supplementary quantity of money substitutes corresponding to this increase in assets, without breaking the "100-percent rule." The state can transform the collected seigniorage into CB bank notes and therefore implement a "money substitutes policy." The possibility for putting the "k percent" Friedmanian rule into practice becomes evident,[31] since the CB is entitled to adjust its investment strategy until it has obtained the desired quantity of seigniorage, and consequently of new money substitutes. This opportunity springs directly from the fractional-reserve aspect of the CB and the illegitimate appropriation of the subsequent revenues by the state. How then is a CB any different from a modern central bank? If Hanke and Schuler really wanted to prevent the CB from influencing the quantity of media of exchange, why then did they not propose the establishment of "100-percent reserve" CBs?

In short, a CB does not remove the possibility for monetary policy, it simply alters its traditional impact, remodeling the industrial orientation of the country. This makes the CB vulnerable to internal political conflicts which stem primarily from its nature. Let us now examine its repercussions, if any, on the banking industry.

The Banking Sector

Are commercial banks, under a CB, limited to the production of monetary certificates only, or instead can they also produce fiduciary media of exchange? Obviously, a CB cannot, and is not designed to, prevent banks from granting circulation credit, thus increasing the false claims on real resources deposited with them. Fractional reserve banking is perfectly compatible with a CB's functioning. Therefore, banking crises and business cycles generated by additional quantities of circulation credit are not removed by a CB. The banks keep their fraudulent power to increase money substitutes "out of thin air" (Rothbard 1983, p. 98). The institution of a CB does not eliminate the credit pyramid; it merely makes it dependent on the foreign money producer.[32] In the case of a loose monetary policy, the exporters receive a part of the additional money and if they do not alter their preferences to hold cash balances, the increment is eventually deposited in the banks, either directly or after transformation of the money into money substitutes issued by the CB. Since the banks hold their reserves either in money or in money substitutes, if they do not increase their prevailing fractional-reserve ratio it necessarily implies that the supply of media of exchange will increase by a multiple of the augmented banks' reserves. A CB does not prevent inflation, because the fractional reserve banking system is inherently inflationary, contrary to the opinion traditionally advanced, which is also professed by Hanke and Schuler (1991, 1998).[33] No

[31]For a brilliant comparative analysis of Keynesian, Monetarist, and Austrian monetary theories, cf. Sennholz (1979, pp. 28–54).

[32]From this point of view, the CB is another example of what government intervention is capable of doing; it does not cure the problem, but only changes the nature of it.

[33]A CB by conception does remove hyperinflation, but there is no theoretical reason for the disappearance of the steady inflation typical of fractional reserve banking.

empirical studies take account of this evidence, partly because inflation is generally improperly defined as an increase in prices.[34]

The corollary of fractional reserve banking is the distribution of false property titles. Besides the fact that this process results in endemic crises revealing the misallocation of capital, it also means that a CB does not protect individual rights better than a central bank.[35] In this respect, economies in transition, which definitely need an enhanced protection of property rights, can hardly draw a sustainable real advantage from a CB. Increasing formation of capital is what helps individuals to increase their revenues. This is stimulated by generally accepted rules, unbiased enforcement of impartial laws, low taxation (if any), and some other factors, none of which is better provided in the context of a CB.

It must now be emphasized, however, that a national money producer no longer exists. This new situation brings about a twofold consequence. First, the CB evolves into a banker's bank. Since we showed that banks naturally tend to pool their reserves together within the framework of fractional reserve banking, it is not surprising if in this context the CB also becomes the central depository, possibly acting as a lender of last resort. Once the theory of fractional reserve banking is integrated into the analysis, there is no reason to distinguish between an orthodox and an unorthodox CB as Schuler (1992) suggests. The particular features of the bankers' bank are a matter of historical accident; the essential point is that a CB is nothing more than a bank for paper money which can, and does, play the role of a bankers' bank.[36]

Second, being deprived of a money production function, the CB is unable to engage in unlimited operations of lender of last resort. The ultimate protection of the domestic banks can then be provided only by the foreign money producer. Aware of this reality, the domestic banks will search for means to get closer to the foreign money producer with a view to more easily obtaining its aid in a time of crisis. One option for them is to enhance their links with foreign correspondents and to permit their capital assets to be purchased by foreign investors who are more likely to be favored by the money producer.[37] Banks can also attempt tightening the links with the ultimate lender of liquidities through joining their efforts and acting together. The concentration of the banking sector then rises considerably, thereby triggering an increased concentration in all industries which depend on banks for their financing.[38] The industrial consolidation facilitates the connections with the politicians, thereby leading to rent seeking and distribution of privileges. All these elements exacerbate the moral hazard problem, which is definitely not removed by the introduction of a CB.

To sum up, under a CB, individuals do enjoy the advantages associated with the utilization of a money of better quality, which however embodies all of the drawbacks inherent in modern fiat monies. Moreover, these advantages are not the merit of the

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[34]Among the influential empirical studies are Ghosh et al. (1998) and Nenovsky et al. (2001).

[35]The contrary opinion can be found in Hetzel (1993), undoubtedly because the effects of the fractional reserve banking are not considered there.

[36]This explains why in the economies of Eastern Europe, CBs physically operate as a new department within the former central bank which is no longer a money producer, but still a bankers' bank.

[37]The empirical evidence on this point is highly illustrative. The share of foreign investors in the capital of commercial banks in Estonia, Lithuania, and Bulgaria has been constantly rising after the introduction of the CBs, soaring to 83.6 percent in Estonia in 2000; 81.1 percent in Lithuania in 2001; and 74 percent in Bulgaria in 2000. Cf. Eesti Pank (2001), Bank of Lithuania (2002), and Yonkonva (2000).

[38]The studies quoted in the previous note show a doubtlessly enhanced concentration in the banking sectors, in Estonia particularly.

CB; the latter is an artificial screen between the foreign money producer and the local users of its money. In addition, no real incentives for the emergence of free banking are present, contrary to the hope expressed by Hanke and Schuler (1998, p. 419). On these grounds, we should finally assert that a CB is not a genuine alternative to modern central banking.

CB Superiority Reconsidered

In light of our analysis of CBs, we now reexamine the four traditional arguments first mentioned in the introduction to see if there is anything valid at all.

1. A CB cannot establish the convertibility of the domestic money, because the domestic money is the foreign money. If the foreign money is convertible, then so is the money used by the CB country's inhabitants. But it is erroneous to claim that the introduction of a CB makes a money convertible. This statement results from a confusion, deliberately introduced and maintained by the state, between the previous domestic money and the new money substitutes issued by the board.

2. A CB does not preclude active monetary policy, even though the local state is deprived (or deprives itself) of its command. Given the existence of the inflation tax transfer from the CB country to the foreign money producer, financial transfers in return are not excluded. Their size depends on the ability of the state in the CB country to negotiate its share of the seigniorage revenue. Thus, government profligacy is not necessarily eliminated, especially if we consider the open access to foreign financial markets allowing for large indebtedness.

3. Although a CB system does have some similarity to the gold exchange standard, the analogy of an automatic balance of payments mechanism is irrelevant. The gold exchange standard is anchored in a commodity money; in the case of a CB the money is a fiat paper currency. The latter's extremely low cost of production enables the foreign money producer to supply the CB with purposefully printed foreign currency units, thus increasing the stock of money in the CB country. Such political interferences, underestimated,[39] thwart the operation of the aforementioned automatic mechanism. We can go even further with criticism of this third argument. Stated as it is, it gives the impression that the CB country is completely independent of the foreign country, with its own money and balance of payments. But what is the rationale for considering its balance of payments independently from that of the foreign country, provided that the same money is used in the two territories? The mistake has been to consider two geographically distinct territories as two economically different areas. Our analysis insisted on the tight links between the two countries, prompting us to say that the CB country is literally annexed to the foreign country. This monetary annexation represses the development of local capitalist institutions, financial markets in particular, because it allows the CB country's inhabitants to benefit from the already existing institutions in the country of the foreign money producer The identification between capitalism and a CB introduction is then completely fallacious.

4. As far as the historical evidence is concerned, the fact that all past CBs have been owned by governments validates our conclusion that the identification between the CB system and the free market is flawed. Hanke and Schuler fail to integrate this datum into their empirical work. We can therefore reject the latter on account of its biased incompleteness.

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[39]These are not the only manipulations a CB can realize. It can apply a different rate of conversion for foreign currency units deposited by the government, which received the latter as a credit from the IMF or from a foreign government. This creation of indistinguishable false money substitutes may of course be carried out at the advantage of another special interest group.

CONCLUSION

We have argued that a CB is a creation of the state, aiming at granting particular political favors, and purposefully designed to secure the reappearance of an independent domestic money producer.[40] A CB establishes a foreign fiat money standard enforced by legal tender laws for its bank notes, which are mere money substitutes in the context of fractional-reserve commercial banking. This insight helps us to understand why CBs have always degenerated into national central banks of the modern type: they were intentionally created to do so. This surely will also be the fate of present-day CBs. Although technically the transition from a CB to a commodity money (gold or other commodity standard) is facilitated by the warehouse aspect of the currency board, this institution does not present any incentive for the policy-makers to subject the production of money to the regulation of the free market.

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[40]It means the traditional claim "A currency board depoliticizes money" is another myth.

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