The Quest for Sound Money: Currency Boards to the Rescue?

Norman S. Fieleke

Vice President and Economist, Federal Reserve Bank of Boston. *Kenneth S. Neuhauser provided research assistance.*

In many countries the residents do not give a second thought to what they should use for money. One currency is widely accepted as a satisfactory medium of exchange, store of value, and unit of account—the traditional roles performed by money. In many other countries, however, the native currency has been a very poor store of value, destroying confidence in it and undermining its usefulness as a unit of account and medium of exchange. This problem has long plagued various less developed countries and has also arisen in the former Soviet Union and in Eastern Europe. One proposal, which has gained much attention recently, is to establish a sound currency in such countries through a device known as a currency board. This article examines this proposal and briefly compares it with alternative basic currency systems. One of these alternative systems is simply to use the currency of another country, and consideration of this alternative will provide a foundation for further analysis.

Why Not Use Another Country's Currency?

Rather than nurture their own native sound currencies, some countries have adopted the sound currency of another country, relying on foreign instead of domestic monetary management. In Panama this system is formally enshrined in law. In other countries the system has developed informally and incompletely, as the residents have come to use growing amounts of foreign currency in place of their increasingly worthless or suspect domestic currencies.

Panama adopted the U.S. dollar as its paper currency through legislation enacted in 1904 (Johnson 1973, p. 223). In so doing, it secured for its residents the same general degree of price stability (at least in terms of tradable goods) that has been enjoyed by residents of the United States, and it averted the severe inflation that has afflicted many other Latin American countries where native monies have been issued to excess. Another advantage for Panama from its use of the dollar has been to facilitate commerce with the United States, its leading trading partner by a wide margin. And in view of the importance of the United States and the dollar in the world economy, Panama's use of the currency has no doubt encouraged inward foreign investment and tourism, as well as the country's development into an international banking center.

Panamanians are not alone in using a foreign currency as their domestic currency. On the African continent, Botswana, Lesotho, and Swaziland all employed the South African rand as their legal tender for a number of years after gaining their independence in the late 1960s. These countries' economies were closely linked to that of South Africa, just as Panama's is to that of the United States. And as in the case of Panama, they were freed from the need to decide and carry out monetary policy. Their monetary dependence on South Africa did not lead to shortages of liquidity. On the contrary, they tended on balance to be net lenders rather than borrowers of banking funds, although their banks were able to borrow readily from affiliated South African banking offices when experiencing a demand for loans that exceeded locally available funds at the going interest rates (Collings and others 1978).

In other countries a foreign currency has been adopted informally rather than by law, as a partial replacement for a native currency in which the residents have lost confidence. In recent times this "currency substitution" has been prominent in some Latin American countries, although not limited to them. For example, Mexicans have exchanged substantial holdings of pesos for U.S. dollars, in the form of both currency and deposits, at times when expectations of peso devaluation against the dollar have become strong.[1] This "dollarization" has also been observed in Argentina, Bolivia, Peru, and Uruguay (Ramirez-Rojas 1985; Melvin and Afcha de la Parra 1989; Guidotti and Rodriguez 1991). In Bolivia, Peru, and Uruguay, dollar and other foreign-currency deposits grew to account for more than half of the deposits included in the money supply (that is, in M2) during some years of the 1980s (Guidotti and Rodriguez 1991, pp. 4–6).

By using a currency issued by a foreign government, a country grants an interest-free loan to that government.

In such cases the underlying expectation that the native currency will be substantially devalued has usually been stoked by marked rises in inflation within the country relative to inflation abroad. In consequence, the "good" foreign money drives out the "bad" domestic money. Typically, foreign money replaces the domestic first as a store of value and unit of account, and subsequently as a medium of exchange as well (Calvo and Végh 1992, pp. 1–2).

If a foreign currency performs well as a unit of account, store of value, and medium of exchange within a country, why should not the country formally adopt that currency as its own, as Panama has done? Not only would the country secure for itself a sound currency, but it would do so without the expense of printing a native currency and operating its own monetary authority.

But the axiom, "There is no free lunch," applies to this scheme. By using a currency issued by a foreign government, a country grants an interest-free loan to that government. To acquire the foreign currency, the country must give up goods and services, or securities that pay a return; until the country returns the foreign currency in exchange for goods, services, or securities, it obtains nothing in return from the foreign government. And foreign currency that gets lost or destroyed becomes an outright grant.

In the case of Panama, U.S. currency within the country may be on the order of \$400 million to \$500 million.[2] If this money were invested in medium-term U.S. Treasury securities, currently yielding about 5¾ percent, Panama would be earning \$23 million to \$29 million this year from the investment. This forgone income or "seignorage loss," from using the U.S. currency instead of its own-issue currency, amounted to about one-half of 1 percent of Panama's 1991 gross domestic product. Using a different approach, another analysis for various regions of the world has estimated that their use of the U.S. dollar as their currency from roughly 1960 to 1978 would have

[1] See Gruben and Lawler (1983) and the references cited therein.

[2] This estimate is based on conversation with Eudoro Joén Escavel, Executive Director, National Banking Commission, Republic of Panama, and on Fernández (1986, pp. 50–51).

resulted in their giving up to the United States seignorage of between 0.3 and 1.8 percent of their GNP per year (Fischer 1982).

This cost of using another country's currency has not escaped the notice of officials in the using countries. In at least one case, the users were compensated. The Rand Monetary Agreement of 1974 specified that South Africa would pay to Lesotho and to Swaziland a sum equivalent to the interest that each would have earned if the volume of South African rand circulating within their borders had instead been invested in an appropriate mix of interest-earning securities. Botswana, which also had been using the rand as its currency, did not enter into the Agreement but established its own central bank and currency (Collings and others 1978, pp. 103–109).

Currency Independence: The Preferred Alternative

The great majority of countries, like Botswana, have for many years issued their own currencies. Moreover, they have sometimes altered, or allowed market forces to alter, the rates at which their currencies have exchanged for other currencies, including the currencies of key trading partners. Thus, not only have they avoided making interest-free loans of the sort just discussed, but they have also avoided forging rigid links with, and dependence on, the currency or monetary policies of other countries.

Whether a country should opt for such "currency independence" depends on the circumstances. One question to be considered is whether the country's borders embrace a "currency area" more suitable for it on economic grounds than a wider area including at least one other nation.

In one case the answer seems to be clearly negative. This is the case where the country's residents engage in far more transactions with foreigners than with each other, so that having their own currency would require them to spend a lot of time exchanging it for foreign currencies. Very small countries intensively involved in international commerce fall into this category. Accordingly, if they do not use the currency of a leading trading partner as their legal tender, as Panama does, they may use it informally, and they commonly fix the value of their own currency in terms of such a partner's currency, seldom changing that value. Although fixing the exchange rate in this fashion does not avoid the transactions costs of exchanging currencies, it does keep the costs below what would be incurred if the exchange rate were allowed to vary significantly with market forces over short periods, because such variation obliges transactors to spend more time in monitoring rate movements, in hedging against adverse movements, and perhaps in speculating about the best timing for executing future foreign exchange transactions.

In addition to economizing on transactions costs, a country with a high percentage of its economic activity in the form of international trade has another incentive to establish a fixed foreign exchange rate. Other things equal, a change in the price of the country's goods will be more effective in correcting any disequilibrium in the country's international trade balance than would be the case if the country had little involvement in international commerce. Thus, the country would typically have less need to rely on changes in the exchange rate for its currency to help remedy such a disequilibrium.

Much attention has also been given to a situation in which labor market considerations suggest that a country should opt for currency independence, rather than join another nation in a currency area. Suppose that labor is highly mobile within each of two countries, readily shifting in response to internal differentials in wages and employment opportunities, but is much less mobile between the two countries. Also suppose that labor is generally unwilling to accept reductions in wage rates, one means of maintaining full employment. In this case different monetary policies would sometimes be appropriate in the two countries to promote full employment without high inflation, but such differing policies—perhaps entailing a change in the exchange rate between the two currencies—would not be possible with currency union.

Focusing more specifically on the matter of macroeconomic policy, one can readily envision other circumstances in which it would be in a country's interest to carry out a monetary policy different from the policy or policies of its leading trading partners, making it difficult if not impossible to maintain fixed rates of exchange between its currency and those partners' currencies. For example, virtually no country would want its monetary policy and currency linked to those of another country whose authorities were promoting either hyperinflation or depression.

In still other macroeconomic circumstances, however, fixity of the country's exchange rate against another key currency or currencies would benefit the country. For instance, if the country's monetary authorities had rapidly expanded the money supply, threatening a sharp acceleration of inflation, they could mitigate the inflation by standing ready to sell foreign currency from their reserve holdings at a fixed exchange rate. Fixing the price of foreign currency would forestall appreciable increases in the domestic prices of imported goods—which would occur if the domestic currency price of foreign currency were to rise sharply—and would encourage the country's residents to buy such goods rather than driving up the prices of domestic goods. The sale by the authorities of foreign currency in exchange for domestic currency would also tend to decrease the domestic money supply, further alleviating the domestic inflationary pressure. (While this policy would be advantageous for the country pursuing it, it would "export" some of the inflationary pressure to the country's trading partners, who might object if they also were struggling to counter inflation.) Such effects are, of course, stronger for a country heavily involved in international trade than for one that is not.

It is hard, if not impossible, to identify a currency or exchange-rate system that is appropriate "for all seasons."

The conclusion must be that it is hard, if not impossible, to identify a currency or exchange-rate system that is appropriate "for all seasons." What is appropriate typically varies not only with the country, but with changes in the country's circumstances. This fact is reflected in the prevailing diversity and flexibility of exchange-rate arrangements, which collectively have been characterized as a "nonsystem" by critics, or as a "composite system" by the more sympathetic (Fieleke 1988, pp. 189–90).

To label the current state of affairs a nonsystem is misleading, because the label suggests a free-for-all, without rules of the game, without norms of conduct that aim to promote the general welfare of the international community. In fact such a code of conduct is embodied in the International Monetary Fund's Articles of Agreement, to which 168 member nations currently subscribe. The code calls upon each member to cooperate to assure "orderly" exchange arrangements, especially by promoting orderly underlying economic and financial conditions and by refraining from exchange-rate manipulation designed either to prevent balance-of-payments adjustment or to gain unfair competitive advantage in international trade. Adherence to these and other principles of the code is monitored by the IMF, which has promulgated a set of guidelines to assist in evaluating compliance. Consultations are held with a member suspected of violating the code, and a serious offender not only could be denied the right to borrow from the IMF but could eventually be expelled from the organization. Thus, the current composite system is not without formal rules, and is not the chaos that the label, "nonsystem," implies. One of its greatest strengths lies in its recognition that countries should have considerable freedom to tailor their exchange-rate practices to their own economic structures and philosophies. Not surprisingly, then, currency independence rules the waves.

A Third Approach: Currency Dependence at Minimal Cost

The foregoing discussion has centered about the economic aspects of currency and exchange-rate policy and has largely ignored political considerations. In particular, it has ignored the fact that in more than a few countries the government has prevailed upon the central bank essentially to print so much money to finance government spending as to generate severe inflation, thereby debasing the currency and undermining confidence in it. This experience raises the question whether such countries would be better off without a central bank empowered to issue currency and credit and, if so, what alternative they should adopt.

That an economy can operate without a central bank is well established. Indeed, central banks are a relatively recent development, proliferating only in the twentieth century. And the issuance of currency was not one of their original responsibilities.

The first central banking function to be assumed by the Bank of England—which evolved into the first central bank—was, from about 1700 onwards, to act as fiscal agent for the government. Then the Bank came to serve not only as fiscal agent and banker for the government, but also as banker for other banks, and to hold not only their deposits, but substantial gold reserves that they might withdraw against their deposits. It was not until 1912 that the Bank attained exclusive power in England to issue bank notes, or currency, and by that time the Bank had also assumed considerable responsibility for regulating the volume of credit (Horsefield 1965, pp. 159–60).

Today, in expanded form, these same functions characterize the full-fledged central bank. It serves as banker and fiscal agent to the national government, accepting deposits from the government, lending to it, and assisting in the original sale and redemption of government securities. It also acts as banker to domestic banks, accepting deposits they hold as reserves and lending to them, and perhaps also providing central clearance for interbank transactions. It regulates domestic banks to promote sound practices. It issues a national currency, buys and sells that currency in exchange for foreign currencies in order to influence foreign exchange rates for its currency, and manages the national reserves of foreign currency assets held to sustain the national currency's foreign exchange value. Finally, it intervenes in financial markets to influence money stocks, interest rates, and sometimes the distribution of credit, in an effort to achieve overall economic goals such as a certain minimum of economic growth or a certain reduction in inflation.

In view of the poor performance of many central banks with respect to inflation, it is ironic that the International Financial Conference convened by the League of Nations took the position in 1920 that every country should set up such a bank largely to serve as a counterinflationary force. Underlying this position, among other things, was the idea that the central bank should and would have the independence needed to control inflation, acting to offset excessive spending and borrowing by the government. Not foreseen was the change in this doctrine, inspired partly by the Great Depression, which resulted in subordinating the typical central bank to the very government whose presumed extravagance the Conference had seen fit to check. By the mid 1930s the predominant view was that the central bank should yield to and accommodate a government that insisted upon an expansionary policy, even though the bank might prefer a different course (Horsefield 1965, pp. 160–62, 165–66). Recent years have witnessed stronger mandates for central banks to combat inflation, but the macroeconomic policies of the banks generally remain under the control of their national governments.

One alternative to an inflation-prone central bank, as we have already noted, is to use a sound foreign currency and to deny the native central bank the power to create credit. But the cost of using another country's currency, as in Panama, is not insignificant, and the country supplying the currency might not be willing to pay compensation as South Africa agreed to do in 1974. In the absence of such direct compensation, is any means available to share in the stability of another country's currency without making an interest-free loan to that country?

Through a device known as a currency board, it is possible for a country to enjoy the stability of another nation's currency without incurring the burden of an interest-free loan. Like a central bank, a currency board issues a domestic currency, so that the country escapes using (and the cost of using) the admired foreign currency as a store of value and medium of exchange. But unlike the typical central bank, the traditional currency board holds assets denominated in the foreign currency that are at least equal in value—at a fixed rate of exchange—to the total domestic currency issued, and the preponderance of these assets yield interest that, of course, cannot be obtained on the foreign currency itself. The board issues domestic currency only in return for the foreign currency, and redeems domestic currency presented to it with that foreign currency, all at the specified fixed rate of exchange. Interest-bearing foreign-currency assets are converted into foreign currency as necessary to meet the demand. The board accepts no deposits and has no credit-creation powers. Thus the country places itself under the monetary policy of the sound-currency country, with a currency of its own that assumes the same soundness, without the sacrifice of extending a significant interest-free loan.

The currency board is one alternative to an inflation-prone central bank.

The currency board's expenses may run on the order of 1 percent of its asset holdings per annum, while interest earnings on those assets are substantially higher (Hanke and Schuler 1991, pp. 5–6). The resulting profits that are not needed to maintain the foreign-currency reserve assets at the required level are remitted to the government.

At least in principle, the currency board is an appealing alternative to a profligate central bank. But what is the historical experience? Have currency boards lived up to their promise?

Currency Boards Past and Present

The heyday of the currency board was during the British colonial regimes in Africa, Asia, the Caribbean, and the Middle East, where more than 70 such boards once operated. Currency matters in the colonies were the responsibility of the British Secretary of State for the Colonies, who issued regulations governing the operations of the currency boards and appointed their members. As the sun has set on the British empire, it has set on the currency board as well (Walters and Hanke 1992, p. 2). Only a handful still exist, and some of them play roles different from that of the traditional board.

Instructive histories are readily available for several African currency boards, including the West African Board established in 1912, the East African Board (1919), and the Southern Rhodesian Board (1938).[3] To illustrate the workings of such boards, we can briefly summarize the operations of the West African Currency Board, which was archetypal except for being headquartered in London rather than in the territory it served. The Board pursued three primary goals. First, it initiated a local currency, the West African pound, to replace the British currency that had been circulating, which was repatriated to London as it was presented in exchange for the new currency. Second, it insured the convertibility of the pounds it issued by standing ready to convert them into British pounds sterling at a published and fixed rate of exchange. Third, it allowed the local colonial governments to share in the profits, or seignorage, generated by the issuance of the new currency in exchange for pounds sterling.

To meet the demand for more local currency as time passed, the Board issued its new currency in exchange for pounds sterling. The Board had a small total staff and only a few currency centers in the territory it served, as it relied largely on the Bank of British West Africa and local government officials who acted as currency officers to sell or redeem its currency. For these sales and redemptions the Board collected a commission, not to exceed three-quarters of 1 percent of the value of the transaction.

The Board was authorized to invest its net sterling accumulations in sterling securities, or as the Secretary of State approved. At least through 1950, only sterling securities were acquired, and after 1926 these and liquid sterling holdings exceeded the Board's total currency liabilities, typically by about 10 percent. Interest on its sterling assets provided nearly all of the Board's income, supplemented by much smaller receipts from commissions charged on currency issues and redemptions. With this income the Board met its relatively small expenses, added to its sterling asset reserves, and distributed the balance to its constituent governments in Nigeria, Gold Coast, Sierra Leone, and Gambia. These distributions amounted to between 32 and 79 percent of the Board's net annual income over the period 1945–50, years for which data are readily available.

Thus the West African pound was really the pound sterling under another name. And its issuer, the Currency Board, was little more than a moneychanger and accountant, with no banking functions. It exercised no control over the volume of currency it issued, even refraining from investing in the securities of its constituent governments—in payment for which it could, of course, have issued additional currency.

Although the East African and Southern Rhodesian currency boards functioned in much the same way as the West African Board, the three organizations inherited differing currency configurations in the areas they served, and the way they reacted may contain lessons for the design of modern currency-board schemes. While the West African Board had merely to replace a British currency that had been circulating with its new West African pound, and was able to redeem the British currency at face value in London, the other two boards encountered more complicated situations. In each case, however, the currencies issued by the boards supplanted the currencies that had been in use.

In the domain of the Southern Rhodesian Board—South Rhodesia, Northern Rhodesia, and Nyasaland—three currencies were being used when the Board began operations, all of them legal tender: United Kingdom coin, South Rhodesian coin, and notes issued by the two commercial banks then operating in the three territories. The law and agreements establishing and governing the Board provided for it to assume the liability for the outstanding South Rhodesian currency and commercial bank notes, which were to be turned in to the Board in exchange for its new currency. In return for assuming this liability, the Board received the sterling assets that had been held as backing for the South Rhodesian currency, and compensation in sterling from the commercial banks, which were estopped from issu-

[3] The summary presented here is distilled from Newlyn and Rowan (1954), and Kratz (1966, pp. 229–53).

ing currency. U.K. coin was demonetized in South Rhodesia and gradually withdrawn from the other two territories. Within 10 to 12 years after the Board had begun operations, its currency had been substituted for nearly all of the other three in circulation.

In East Africa the initial conditions were even more challenging. To be replaced were the Indian silver rupee and other coins of Indian standards, all deemed unsatisfactory because their value fluctuated with the price of silver and also against the pound sterling. The East African Currency Board converted these coins into its newly issued East African pound at their face value, but was obliged to sell the retired coins for sterling at their bullion value. By 1925 the conversions had been virtually completed, but the losses involved were substantial enough to prevent the Board from providing 100 percent sterling backing for its own currency for many years. During the Great Depression the reserve fund backing for the currency dipped to only 10 percent, moving the authorities in Kenya, Uganda, and Tanganyika to provide their own sterling guarantee in the form of a promise to borrow in London to meet any demands for conversion of the currency into sterling. In the event, no such borrowing proved necessary, and by 1950 the reserve fund had grown to exceed the value of currency outstanding.

As the sun has set on the British empire, it has set on the currency board as well.

Another aspect of the East African Currency Board's operations that has contemporary relevance was its eventual assumption of various central banking functions. In 1956, with the approval of the Secretary of State, the Board began to invest in the securities of the governments of its constituent territories, that is, to engage in fiduciary issues of its currency. Then in 1960, in anticipation of the independence of the territories, the Board's role was expanded to include, among other things, the provision of banking and lender-of-last-resort facilities to the commercial banks. To become a full-fledged central bank was not the Board's destiny, however; instead, three separate national banks were eventually established.

Although they encountered somewhat different circumstances, all three of these African currency boards succeeded in providing sound local currencies and captured for the territories they served at least some of the seignorage generated by the issuance of those currencies. To be sure, the resident commercial banks could not turn to the boards for loans in the event of liquidity shortages, but in general they had ready access to their head offices overseas for funds. Also, the currency boards might perhaps have earned higher returns for their territories if they had invested more heavily in local securities rather than the sterling securities held as backing for their currencies; but without very strong foreign-currency reserves or guarantees behind their local currencies, they would have become quasi-central banks rather than currency boards, and their currencies something other than quasi-reserve currencies.

The consensus is that the currency boards in the British colonies generally attained their goals. Not only did they reap the gains of seignorage, they achieved and maintained convertibility of the local currency into the British pound at a fixed exchange rate. In so doing, they avoided rapid inflation and encouraged foreign commerce, including investment flows from abroad. And performance on these scores generally deteriorated within the former colonies as they gained independence and replaced their currency-board systems with central banks (Osband and Villanueva 1992, p. 16; Walters and Hanke 1992, p. 7).

Today very few currency boards remain in operation. Most frequently mentioned are the systems in Hong Kong and Singapore, although Brunei, Bermuda, and the Cayman Islands also have currency boards. Of these jurisdictions, only Singapore and Brunei are independent countries; and Singapore has not merely a currency board but virtually a full-fledged central banking operation, an operation into which nearby Brunei's board is integrated. (The Brunei and Singapore dollars are interchangeable.) Also, even though the Singapore dollar must be backed 100 percent by external assets, the exchange rate for it is not fixed in terms of any foreign currency, but is allowed to float against a basket of currencies within a broad band. All in all, Singapore's system is a far cry from the classic currency-board operation.[4]

Because Hong Kong and Singapore are often invoked as shining examples of the monetary stability

[4] On Singapore's system, see Monetary Authority of Singapore (1989, pp. 10–15). With respect to Brunei, see Skully (1984, pp. 6–10); and Brunei Currency Board (1989, pp. 27, 40–41).

attainable through currency boards, it should be noted that central-bank-style credit creation is an option not only in Singapore, but, to a lesser degree, in Hong Kong as well. The Hong Kong Exchange Fund can act—and has acted—as a lender of last resort; and in recent years a debate has been joined among analysts in the colony over whether the Exchange Fund has been enhancing its credit-creating powers, virtually if not nominally metamorphosing into a typical central bank.[5] In brief, twilight for the British empire has become twilight for the currency board as well. The question now being raised is whether nightfall for the "Evil Empire" should offer a new dawn for the currency board.

Table 1
Involvement in Foreign Commerce of Selected Countries with Currency Boards, 1985 to 1989

Country	Trade in Goods and Services[a] as Percent of Gross Domestic Product	Merchandise Trade with United States as Percent of Total Trade
Bermuda	58.9	47.0
Brunei	47.7[b]	6.1
Cayman Islands	68.2	n.a.
Hong Kong	121.2	17.9
Singapore	154.4	19.1

n.a. = not available.

[a] One-half the sum of exports and imports of goods and services, but of goods alone for Brunei and Singapore.

[b] Data are for the years 1984 to 1988.

Source: United Nations, *National Accounts Statistics: Main Aggregates and Detailed Tables*, 1989; and International Monetary Fund, *Direction of Trade Statistics* and *International Financial Statistics* through U.S. Department of Commerce, Compro data retrieval system.

Currency Boards to the Rescue?

As they struggle not merely to reform, but to transform, their economic and political systems, the once communist countries of Eastern Europe and the former Soviet Union are experiencing, among other difficulties, disconcertingly high rates of inflation, black or "parallel" markets in foreign currency, and assorted related maladies. Thus, one of their chief concerns has been how to organize and manage their monetary systems. The recommendation of some Western analysts has been to do without a central bank, or at least to place stringent limits on its credit-creating powers. This skepticism about central banks is shared by some central bankers themselves; Paul Volcker, former Chairman of the Federal Reserve Board, recently warned various monetary authorities of Eastern Europe and the Soviet Union that "a central bank can become an engine of inflation. . . ."[6] Given the circumstances, should these countries convert their central banks into currency boards?

The case for the currency board, as well as its generally satisfactory performance, have already been set forth in this paper. It is questionable, however, whether the conditions that have fostered that commendable performance are present in the countries of Eastern Europe and the former Soviet Union. If conditions are not suitable, introduction of the currency-board approach would be about as helpful as a transfusion of the wrong blood type.

To begin with one of the lesser problems, the formerly communist countries, unlike the British colonies, generally lack resident banks that can borrow readily from sound-currency countries. Therefore, in order to accommodate temporary increases in demand for currency and credit such as those associated with seasonal surges in business activity, the banks would have to hold monetary reserves in excess of their needs during much of the year. If they failed to do so, their clientele would likely be exposed to periodic "credit crunches."

A second and more fundamental issue is whether fixed exchange rates are generally appropriate for these countries. The economies of currency-board countries have often been fairly highly integrated with the world economy, and have traded heavily with the economies against whose currencies their exchange rates were fixed. As can be seen from Tables 1 and 2, the involvement in foreign commerce of East European countries has been much less intense than for countries now employing currency boards. To be sure, that involvement might grow, but great growth beyond the levels reported in the tables is rather doubtful (Fieleke 1990, p. 20). Moreover, labor mobility between the formerly communist countries and the sound-currency countries is gener-

[5] Jao (1991, pp. 30–37). Another interesting aspect of the Hong Kong system is that two commercial banks, rather than the Exchange Fund, issue the Hong Kong currency, although they may do so only insofar as they supply to the Exchange Fund an equivalent amount of U.S. dollars, valued at the fixed rate of exchange. On this matter, see Jao (1990, p. 79).

[6] Volcker (1990, p. 4). In the same volume Alan Meltzer advises replacing the central banks in these countries with what amount to currency boards (1990, pp. 108, 111).

ally restricted by immigration laws, and may become more rather than less restricted as adjustment costs and social tensions in sound-currency countries mount with the number of immigrants. For reasons explained earlier, these factors weaken the case for fixed exchange rates for the formerly communist countries. Also, selection of an appropriate exchange rate at which to fix the domestic currency is a formidable analytical task for a country whose currency is rapidly depreciating against sounder currencies.

But if a fixed exchange rate and currency board did seem desirable for such a country, the currency board would have to be endowed with a stock of foreign currency roughly equivalent in value, at the fixed rate selected, to the outstanding stock of domestic currency. The alternative would be for the board (and, implicitly, its government) virtually to repudiate the outstanding currency, providing foreign exchange backing and convertibility solely for a newly issued currency. Such repudiation, or quasi-repudiation, not only would erode confidence still further in the outstanding currency but might well undermine confidence in the board's new currency as well, since a currency board is not, after all, a sovereign body immune from interference by its government. Recall that the colonial currency boards discussed in this article took pains to compensate the holders of currencies being replaced.

Table 2
Involvement in Foreign Commerce of Selected East European Countries, 1985 to 1989

Country	Trade in Goods and Services[a] as Percent of Gross Domestic Product
Bulgaria	9.5[b]
Czechoslovakia	30.1
Hungary	37.7
Poland	18.0
Romania	19.3

[a]One-half the sum of exports and imports of goods and services for Hungary and Poland, but of goods alone for Bulgaria, Czechoslovakia and Romania.

[b]Data are for the years 1985 to 1988.

Source: United Nations, *National Accounts Statistics: Main Aggregates and Detailed Tables*, 1989; and International Monetary Fund, *Direction of Trade Statistics* and *International Financial Statistics* through U.S. Department of Commerce, Compro data retrieval system.

But it may well be the case that a country would not have foreign exchange reserves equivalent to the domestic currency outstanding at the exchange rate to be set. To meet the shortfall, the government might be able to sell some of its assets to acquire foreign currency, or might be able to borrow the currency. Such measures would increase the cost of launching the currency board and would raise the question whether the country's foreign exchange reserves, if so limited, might better be put to other purposes, such as repayment of any high-cost foreign debt.

Perhaps most troublesome, however, is the paradox underlying the currency-board proposal. The proposal to replace money-creating central banks with currency boards in the formerly communist countries presumes that the governments currently relying on those central banks to help fund their activities will henceforth substitute one or some combination of the following courses of action: (1) curtail their activities; (2) raise taxes or fees; (3) borrow more in commercial markets. But it is precisely because the governments have been generally unwilling to deal with their large deficits through these courses of action that they have turned to the money-printing presses of their central banks. Paradoxically, the currency-board proposal presumes that governments unwilling to take these actions will establish currency-board systems that would entail those very actions. In fact, with a true conversion among officialdom, currency boards would not be necessary to restore the soundness of the depreciating domestic currencies.

The organization of the monetary system in Singapore nicely illustrates this point. As we have noted, Singapore's economic record is commonly cited by currency-board advocates as an example of the monetary stability and the prosperity that are allegedly promoted by the currency-board system. In fact, Singapore not only has a full-fledged central banking operation, rather than a traditional currency-board system, but its central bank (the Monetary Authority of Singapore, or MAS) is chaired by the Minister of Finance, rather than by someone presumably insulated from any government demands for financing. On the rationale for this organization, Dr. Goh Keng Swee, Deputy Chairman of the MAS and former Deputy Prime Minister, has offered the following explanation (1992, pp. 34–35):

> . . . when the Monetary Authority of Singapore (MAS) was set up, the Chairman was by law the Finance Minister. World Bank experts advised us against

> this. . . . The World Bank believed that putting the Finance Minister in charge would be like asking a cat to look after fish. But Singapore has always worked on the principle that government expenditure . . . must be paid for out of government revenues. . . . Successive Finance Ministers have been doing just this. They do not need an independent Central Bank Governor to persuade them not to run budget deficits. But if the electorate . . . persists in wanting the good life without working for it, constitutional safeguards cannot stop foolish behavior.

This is not to say that institutional arrangements do not matter. It is conceivable that officials who had got fiscal and monetary religion might help to convince the public of that fact, and thereby increase confidence in the domestic currency, by establishing a currency board; and the officials themselves might be helped by an independent currency board to practice, not merely to profess, a sound money doctrine. But dramatic results should not be expected from the inauguration of a currency board in the absence of other financial reforms. A public that has suffered the debasement of its currency may be excused for suspecting that the government will somehow abuse a new currency board or plunder its assets.[7] More fundamentally, the government may feel driven to precisely such behavior if its constituents are loath to endure the painful adjustments that commonly accompany fiscal and monetary retrenchments.

Conclusion

The currency board has been recommended as an institution that could quickly check inflation where it has been surging in various countries of Eastern Europe and the former Soviet Union. Unlike the more drastic remedy of allowing the depreciating domestic currency simply to be replaced by a sounder foreign currency, the introduction of currency boards would capture for these countries the seignorage gains that accrue from the issuance of a domestic currency while simultaneously fixing the value of that currency in terms of a sound foreign currency. Aside from inflation control, linking the domestic currency to another country's currency is more likely to enhance domestic welfare if the two countries' economies are highly integrated, including a high degree of labor mobility across their common border.

Currency boards generally performed well in the British colonies where they proliferated, but as the colonies gained independence they replaced or sup-

It is not clear why a government inclined to inflate would agree to a currency board, or why it would require so drastic a remedy if it truly decided to reform.

plemented the boards with central banks endowed with broader powers, so that only a few relatively traditional currency-board operations can be found today. Because central banks in a number of countries have become engines of inflation through their money-creating powers, some analysts now propose to reverse the pattern of the past and replace offending central banks with currency boards, which cannot issue fiat money.

Whether currency boards would be desirable for the countries of Eastern Europe and the former Soviet Union is highly questionable on several grounds. For example, other things equal, their economies may not be so closely integrated with the economy of a sound-currency country as to warrant fixing their currency values against such a currency. More fundamentally, it is not clear why a government that is inclined to inflate would agree to a currency board, or why it would require so drastic a remedy if it truly decided to reform.

[7] In this connection, a recent study finds that in developing countries the degree of *legal* independence of the central bank bears no significant relationship to the rate of inflation. See Cuikerman, Webb, and Neyapti (1992, pp. 375–76 and 383).

References

Board of Commissioners of Currency, Singapore. 1992. *Prudence at the Helm*. Singapore: Board of Commissioners of Currency.

Brunei Currency Board. *1989 Annual Report*.

Calvo, Guillermo A. and Carlos A. Végh. 1992. "Currency Substitution in Developing Countries: An Introduction." International Monetary Fund Working Paper 92/40 (May).

Collings, Frances d'A., George Donley, Arne Petersen, Charpen Puckahtikom, and Peter Wickham. 1978. "The Rand and the Monetary Systems of Botswana, Lesotho, and Swaziland." *Journal of Modern African Studies*, vol. 16, no. 1, pp. 97–121.

Cuikerman, Alex, Steven B. Webb, and Bilin Neyapti. 1992. "Measuring the Independence of Central Banks and Its Effects on Policy Outcomes." *The World Bank Economic Review*, vol. 6 (September), pp. 353–98.

Fernández, Marco. 1986. "El Sistema Monetario Panameño: Estudio de Sus Caracteristicas y Analisis de las Opciones que Enfrenta." (Enero.) Unpublished manuscript.

Fieleke, Norman S. 1988. *The International Economy Under Stress*. Cambridge, MA: Harper & Row.

———. 1990. "Commerce with the Newly Liberalizing Countries: Promised Land, Quicksand, or What?" *New England Economic Review* (May/June), pp. 19–33.

Fischer, Stanley. 1982. "Seigniorage and the Case for a National Money." *Journal of Political Economy*, vol. 90 (April), pp. 295–313.

Goh, Keng Swee. 1992. "Why a Currency Board?" In Maggie Tan Pin Neo, ed., *Prudence at the Helm*. Singapore: Board of Commissioners of Currency.

Gruben, William C. and Patrick J. Lawler. 1983. "Currency Substitution: The Use of Dollar Coin and Currency in the Texas Border Area of Mexico." Federal Reserve Bank of Dallas *Economic Review* (July), pp. 10–20.

Guidotti, Pablo E. and Carlos A. Rodriguez. 1991. "Dollarization in Latin America: Gresham's Law in Reverse?" International Monetary Fund Working Paper 91/117 (December).

Hanke, Steve H. and Kurt Schuler. 1991. "Currency Boards for Eastern Europe." *The Heritage Lectures*, no. 355. Washington, D.C.: The Heritage Foundation.

Horsefield, J. Keith. 1965. "Why a Central Bank?" *Finance and Development*, vol. 2 (September), pp. 159–66.

Jao, Y.C. 1990. "From Sterling Exchange Standard to Dollar Exchange Standard: The Evolution of Hong Kong's Contemporary Monetary System, 1967–1989." In Y.C. Jao and Frank H.H. King, eds., *Money in Hong Kong: Historical Perspective and Contemporary Analysis*, pp. 51–196. Hong Kong: University of Hong Kong.

———. 1991. "On Central Banking in Hong Kong." In Y.C. Jao, ed., *Monetary Management in Hong Kong: The Changing Role of the Exchange Fund*, pp. 26–52. Hong Kong: The Chartered Institute of Bankers–Hong Kong Centre.

Johnson, Harry G. 1973. *Further Essays in Monetary Economics*. Cambridge, MA: Harvard University Press.

Kratz, Joachim W. 1966. "East African Currency Board." *International Monetary Fund Staff Papers*, vol. 13 (July), pp. 229–55.

Meltzer, Alan. 1990. "Commentary: Monetary Policy and the Control of Inflation." In Federal Reserve Bank of Kansas City, *Central Banking Issues in Emerging Market-Oriented Economies*, pp. 105–111. Kansas City, MO: Federal Reserve Bank of Kansas City.

Melvin, M. and Gonzalo Afcha de la Parra. 1989. "Dollar Currency in Latin America: A Bolivian Application." *Economic Letters*, vol. 31 (December), pp. 392–97.

Monetary Authority of Singapore. 1989. *The Financial Structure of Singapore*. Singapore: Monetary Authority of Singapore.

Newlyn, W.T. and D.C. Rowan. 1954. *Money and Banking in British Colonial Africa*. Oxford Studies in African Affairs. London: Oxford University Press.

Osband, Kent and Delano Villanueva. 1992. "Independent Currency Authorities: An Analytic Primer." International Monetary Fund Working Paper 92/50 (July).

Ramirez-Rojas, C.L. 1985. "Currency Substitution in Argentina, Mexico, and Uruguay." *International Monetary Fund Staff Papers*, vol. 32 (December), pp. 629–67.

Skully, Michael T. 1984. "Financial Institutions and Markets in Brunei." In Skully, M.T., ed., *Financial Institutions and Markets in Southeast Asia: A Study of Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand*, pp. 1–48. New York: St. Martin's Press.

Volcker, Paul A. 1990. "The Role of Central Banks." In Federal Reserve Bank of Kansas City, *Central Banking Issues in Emerging Market-Oriented Economies*, pp. 1–8. Kansas City, MO: Federal Reserve Bank of Kansas City.

Walters, Alan and Steve H. Hanke. 1992. "Currency Boards." Johns Hopkins University, *Working Papers in Economics*, no. 281 (April).