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In 1998, the Indonesian rupiah plummeted from around 2,300 rupiahs per dollar to nearly 16,000 rupiahs per dollar—about 85%. The currencies of South Korea, Malaysia, and other Southeast Asian countries experienced similar declines in external value.[1] Into this firestorm of collapsing currencies and rising import prices the International Monetary Fund ("IMF") cavalry came riding to the rescue with bailout money and a big package of proposed reforms. Most of the reforms were of the microeconomic variety and ill-suited to remedy the life-threatening currency crises that had engulfed the region. Indeed, these proposed reforms did little more than add fuel to the fire. The IMF's macroeconomic reforms, like raising taxes, were part of "austerity" programs designed to slow economic growth and produce a balance of payment surplus for repaying the IMF's loans and those of the creditor banks it represents.

The crises last year in Southeast Asia, unlike those of past years in Latin America, were not rooted in ballooning government budget deficits. Some of the countries in Southeast Asia, in fact, were actually running substantial fiscal surpluses when the bottom fell out. True, several countries in Southeast Asia are now suffering substantial price inflation, with all the political turmoil inflation brings with it. But their inflations traced not to overactive use of the monetary printing press, but to the collapse of the external value of their currencies. When a country's exchange rate falls by 85%, the prices of imported goods rise proportionately. And, unfortunately, those imported goods with skyrocketing prices are often core consumption goods like rice and cooking oil.

The inappropriateness of the IMF's prescriptions was nowhere more evident than in Indonesia. On January 15, 1998, a letter of intent was personally signed by President Suharto with IMF Managing Director Camdessus glowering in the background. Before the ink had dried, the markets were pounding the rupiah once again. Indeed, the rupiah dropped 10% the day the agreement was signed and continued to plunge during the following week. It was then that Suharto reached the same conclusion as the markets and threw in the towel on the IMF. For a second opinion about how to stabilize the rupiah, Suharto called in one of the authors (Hanke). That is when the idea of a currency board was first broached. That suggestion, however, managed to infuriate both the U.S. government and the IMF, which threatened to withhold the remaining tranches of its bailout package unless Indonesia dropped the idea immediately. Caving to the IMF's threat, Indonesia eventually abandoned the currency board idea in late March 1998.[2]

1. For a discussion of the Asian currency crisis, see Merton H. Miller, "The Current Southeast Asia Financial Crisis," *Pacific-Basin Finance Journal*, Vol. 6, Nos. 3-4 (June 1998), and Merton H. Miller, "The Asian Financial Crisis," *Japan and the World Economy*, Vol. 10, No. 3 (1998).

2. For a discussion of the Indonesian currency board episode, see Steve H. Hanke, "How I Spent My Spring Vacation," *The International Economy*, Vol. 12, No.4 (July/August 1998).

The violent hostility to the Indonesian currency board displayed by the IMF and the U.S. government is representative of the view taken by most of the academic economist community as well (as illustrated in the preceding article by Vijay Singal).[3] Rather than respond to the numerous abstract assertions, conjectures, and conclusions about currency board systems leveled by Singal and others, we concentrate here instead on the specific case of Indonesia. Some particular case is necessary for any meaningful discussion of the merits and demerits of currency boards. Indonesia's political and economic situation makes it the perfect such case, given that virtually every generic criticism of currency boards imaginable was brought to light in the Indonesian episode.

ALTERNATIVE EXCHANGE RATE REGIMES

Before turning to the specifics of the Indonesian currency board, some discussion is appropriate about where currency boards fit into the international monetary landscape.[4] Exchange-rate regimes can be classified as floating, fixed, and managed floating or pegged rates.[5] In a "pure" floating rate regime, the monetary authority—typically a classical "central bank"[6]—has no exchange-rate policy. With the exchange rate on autopilot, the monetary base is the sole concern of the monetary authority.

In a "pure" fixed exchange-rate system, the monetary authority has no autonomous domestic monetary policy. With monetary policy on autopilot, the monetary base is determined exclusively by the balance of payments. If a country's official net foreign reserves increase, the monetary base increases, and vice versa. Because fixed exchange-rate regimes involve no active domestic monetary policy *at all*, such regimes are typically administered by monetary institutions whose role is restricted to the passive redemption of currency at the guaranteed fixed rate. One of those institutions, called a "currency board," issues notes and coins backed with a minimum of 100% of foreign reserve currency. Those notes and coins are fully convertible on demand into the reserve currency at a fixed exchange rate.[7]

Floating and fixed rates are both mechanisms for balancing international payments *without* the intervention of a central bank in the currency markets. In both floating and fixed exchange-rate regimes, conflicts between exchange rate and monetary policies cannot arise and, consequently, balance of payment crises a la Mexico, Thailand, Russia, and Brazil cannot occur. Under both fixed and floating regimes, market forces alone act automatically to rebalance financial flows and to avert classical balance of payments crises.

The third type of exchange-rate regime—a managed float or peg—involves a central bank with a policy goal of keeping the external price of its currency within a certain range. The central bank's exchange rate policy may be formal (*e.g.*, the "crawling pegs" of Russia, Mexico, and Brazil). Or it may be an informal "dirty" or "managed float" in which the central bank intervenes at its discretion to keep currency values in line with what it believes to be the "fundamental value" of the currency (*e.g.*, the United States in the 1980s). As long as the market exchange rate is within the band prescribed by current policy targets, the central bank ostensibly lets the rate float "freely." But when capital inflows become "excessive," the exchange rate may appreciate and seem to hurt exporters. The monetary authority then may attempt to sterilize the ensuing increase in the foreign component of the monetary base by reducing the domestic component of the base. Conversely, when outflows become "excessive" and the currency depreciates, the authority may be tempted to offset the decrease in the foreign component of the base with an increase in the domestic component of the monetary base.

Unlike pure floating and fixed rates, pegged rates and managed floats require a monetary au-

3. Vijay Singal, "Floating Currencies, Capital Controls, or Currency Boards? What's the Best Remedy for the Recent Currency Crises," *Journal of Applied Corporate Finance*, Vol. 11, No. 4 (Winter 1999, this issue).

4. We only address the currency board piece of the IMF-Plus Program that President Suharto embraced in his February 1998 State of the State address. In addition to a currency board, the IMF-Plus Program also contained proposals to restructure foreign debt and the banking system, a large privatization program, and an overhaul of the bankruptcy code.

5. See Steve H. Hanke, "How to Establish Monetary Stability in Asia," *Cato Journal* Vol. 17, No. 3 (Winter 1998).

6. See Charles Goodhart, *The Evolution of Central Banks* (Cambridge, Ma.: The MIT Press, 1988).

7. Currency boards were common in colonial monetary regimes, but most currency boards adopted in the last decade deviate from the historical model in some important way. For a general discussion of currency boards and a more detailed explanation of their main features, see Alan A. Walters and Steve H. Hanke, "Currency Boards," in *The New Palgrave Dictionary of Money and Finance*, Vol. 1 (London: The Macmillan Press Limited, 1992).

Currency boards and currency board-like systems are attractive alternatives because they eliminate the inherent conflict in pegged systems between exchange rate and monetary policies.

thority to manage *both* exchange rate *and* monetary policy. Conflicts between the two are inevitable. When the domestic currency is viewed as "overvalued" and capital begins to flee, balance of payments crises erupt as the monetary authority offsets more and more of the reduction in the foreign component of the monetary base with domestically created base money. It's only a matter of time before currency speculators spot the contradictions between exchange rate and monetary policies and force a devaluation.[8]

In the last decade, many developing countries have begun to consider a truly fixed exchange rate rather managed floats or pegged rates as a solution to their repeated balance of payment and currency crises.[9] Currency boards and currency board-like systems are attractive alternatives because they eliminate the inherent conflict in pegged systems between exchange rate and monetary policies. They also can serve as an important source of discipline on otherwise uncontrolled fiscal and monetary policies.[10] For these reasons, in February 1998 President Suharto and his Economic and Monetary Resilience Council advocated the establishment of a fixed-rate currency board system in which the Indonesian rupiah would be backed by and convertible into U.S. dollars as a reserve currency.[11,12] With so much to recommend it, why, then, were the IMF, the U.S. government, and so many other commentators opposed to the Suharto solution?

POLITICS AND THE FIXED RATE

Some of the objections by the U.S. government and others to an Indonesian currency board were clearly arguments *ad hominem*. President Suharto was seen as just another Ferdinand Marcos, believed to be putting forward the currency board merely as a vehicle for getting his money out of the country at an artificially overvalued exchange rate. Once the fixed rate was in place, so the story went, the Suhartos could have exchanged their rupiah for dollars at the new, favorable fixed rate and sent those dollars to Switzerland.

To argue that an Indonesian currency board would have been Suharto's personal mechanism for capital flight is to confuse real assets with financial assets. The wealth of the Suharto family was mainly in the form of *real* assets like factories, airports, docks, and toll roads. Such assets would still have remained in Indonesia no matter what the Suhartos did. One wag wondered whether the U.S. Treasury thought Suharto might roll up his toll roads like rugs and cart them off to Switzerland. The family could have tried, of course, to convert all those real assets to rupiah (for ultimate conversion to dollars), but that would have meant "fire sale" losses of colossal proportions. And at those depressed prices for Indonesia's "crown jewels," plenty of buyers with dollars would surely have come rushing in.

Even if the Suharto family wealth had not been primarily in the form of real assets, the notion that the fixed currency board rate would be set at a politically advantageous level raises a more fundamental question. Namely, how should the Indonesians, had they gotten that far, have determined the official parity at which the currency board would have guaranteed convertibility from rupiahs into dollars? The simple answer is that *it would not really matter* as long as the fixed rate was established quickly. Speed is of the essence in a situation like Indonesia's to stop the free fall of the currency and demonstrate a long-run commitment by the government to monetary stability. If the rate selected is seen as credible, the actual level of the rate has

8. Perhaps no better example of this can be identified than the Exchange Rate Mechanism of the European Monetary System. See Alan A. Walters, *Sterling in Danger* (London: Fontana/Collins, 1990).

9. Although both pure floating and fixed-rate regimes are equally superior to managed floats in principle, it must be stressed that floating rates, unlike fixed rates, do not perform well in developing countries because these countries usually have weak monetary authorities and histories of monetary instability. Brazil provides the most recent example. This explains why Milton Friedman, who is known for his advocacy of floating exchange rates, has also been a longtime strong advocate of currency board systems and fixed exchange rates for developing countries. See, for example, Milton Friedman, *Money and Economic Development: The Horowitz Lectures of 1972* (New York, NY: Praeger, 1973).

10. See Merton H. Miller, "Some Reflections on Recent Monetary Turmoil in Eastern Europe," *Journal of Applied Corporate Finance*, Vol. 11, No. 3 (Fall 1998).

11. The Indonesian currency board met with so much opposition that the formal IMF-Plus proposal document was never made public. Claims by Singal and others that the Indonesian currency board would have guaranteed convertibility at an inappropriate fixed rate, for example, thus are curious given that no actual document was available for their inspection. See Hanke, "How I Spent My Spring Vacation," cited previously.

12. A reserve currency other than the dollar would have offered essentially the same benefits for Indonesia as the U.S. dollar *once that currency was chosen.* Indeed, the benefit of a currency board system is that, once instituted, the domestic economy simply adjusts to the particular reserve currency and fixed parity chosen. For full protection against the choice of an inappropriate reserve currency, however, the law establishing the currency board should provide that if inflation in the reserve country falls outside a pre-specified range, a new reserve currency can be chosen. The trigger for such a switch, as well as the means by which the transition occurs, should be well-known and subject to no discretion.

minimal macroeconomic consequences—everything else in the economy adjusts to the new exchange rate equilibrium, whatever that may be.[13]

Perhaps the fastest way to set the initial parity is simply to divide the volume of rupiah outstanding into the dollar reserves available, erring on the side of making the rupiah slightly undervalued.[14] That may lead to reserve deficiencies, which is the subject of the next section. Alternatively, if there is time, the appropriate official exchange parity might be based on the "free market" nominal exchange rate.[15] When the country is transitioning from a pegged rate or managed float to a currency board, some period of *unrestricted* floating is required (with no limits on exchange or capital controls and no central bank intervention) to determine what that free market rate actually is. After that period of free floating, the clean market rate can be chosen as the currency board's official parity.[16]

INITIAL RESERVE DEFICITS

Depending on the official parity chosen when a currency board is first set up, current reserves might be inadequate to back the full domestic monetary base at the new rate. In Indonesia, the rupiah-dollar market rate was about 10,500 rupiahs per dollar when Suharto first began considering a currency board system. If the fixed parity had been set at that rate, according to Singal, Indonesia would have needed $40 billion in *addition* to the $20 billion in reserves it already had.[17] This deficiency in initial reserves has led him and others to argue that an Indonesian currency board could not possibly have had adequate dollar reserves to provide a *credible* guarantee of convertibility at the 10,500 rate.

The possibility—if not the likelihood—of an initial reserve deficiency is not an argument against currency boards, however. The problem can in fact be handled in a number of ways. Indeed, some currency boards have been successfully established without *any* cover of their outstanding monetary liabilities. The most notable case was Argentina. When it established a currency board in 1902 linking the peso to gold, 293 million pesos were outstanding, but Argentina had virtually no gold reserves. As a solution, Argentina chose to require no reserve backing for the outstanding fiat issue of pesos. But it required 100% reserve cover for any *new* pesos issued beyond the initial 293 million. Confidence was so enhanced by the currency board system that the demand for pesos grew rapidly; convertibility was never threatened.

For politically unstable and crisis-ridden Indonesia of 1998, the Argentine solution of 1902 was not an option. The other obvious solution would have been for the IMF to make a long-term loan of enough reserve currency to the new currency board, as it did in Bulgaria in 1997. But the bitter opposition of the IMF and the U.S. Treasury to the Indonesian proposal made this alternative impossible for the Suharto regime.

As another alternative, Indonesia could have resolved any initial reserve deficiency by implementing a "parallel currency" approach that was similar in spirit to the 1902 Argentine solution.[18] The existing stock of rupiahs would have remained on the books of the Bank of Indonesia and in the pockets of Indonesians, but no more old rupiah ("OIR") base money would be created. Using available reserves, Indonesia would then have established a currency board that issued a *new* rupiah ("NIR") backed 100% by foreign currency reserves.[19] The NIR would trade at a fixed rate to the dollar and would float freely against the OIR. Over time as reserve assets are built up, the OIR would eventually be replaced by the fully backed NIR.[20]

13. The chosen exchange rate might be significantly different from the rate prevailing when foreign debt was incurred by local Indonesians. To make the new system viable, outstanding foreign currency debt obligations would presumably have to be renegotiated and "stretched" by the creditors to reflect the new exchange rate. Creditors are likely to agree to such renegotiations rather than face the only other alternative—widespread defaults. See Miller, "The Current Southeast Asia Financial Crisis," cited previously.

14. See Miller, "Some Reflections on Recent Monetary Turmoil in Eastern Europe," cited previously.

15. See Steve H. Hanke, Lars Jonung, and Kurt Schuler, *Russian Currency and Finance* (London: Routledge, 1993), pp. 84-85.

16. The temporary period of unrestricted floating was used in 1997 in Bulgaria as the means for determining the official currency board parity.

17. Singal, cited previously.

18. A parallel currency was actually proposed in Indonesia. See Steve H. Hanke, "Reflections on Asian Exchange Rates," presented at the conference Asia: Meeting the Challenge, sponsored by Credit Suisse First Boston (Hong Kong, March 27, 1998), and Alan A. Walters, "Currency Board Could Save Indonesian Economy from Ruin," *The Scotsman* (February 23, 1998).

19. The distinction between this approach and the 1902 Argentine solution lies in the separate currencies. In Argentina, old pesos were unbacked and new pesos were gold-backed, but both were pesos. Here, they are clearly different currencies.

20. Many critics of currency boards complain of the complications of two currencies that are legal tender. Ironically, many of these complaints come from those who embrace Europe's move to a monetary union in which the Europeans are rushing headlong into such a system. Worth noting, moreover, is that parallel currency systems have been common and successful historically. And even though the U.S. dollar is not legal tender, it circulates alongside domestic currency in many countries today, including Indonesia.

The traditional IMF mindset should not apply to currency boards. When a currency board is operating normally and when the public has confidence that the fixed rate *will* be maintained, then only minor adjustments to interest rates are necessary to preserve the equilibrium, as the data amply demonstrates.

CREDIBILITY AND EXCESSIVE NOMINAL INTEREST RATES

Some currency board naysayers maintain that, even with full coverage of the domestic monetary base, the credibility of the system will still be in question. A favorite concern of opponents to currency boards—in addition to the political risk of entrusting reserve assets to someone like Suharto who might have simply walked away with those reserves—is that very high interest rates will be necessary to defend the newly established official parity from speculative attack.

High interest rates have been a tool of choice for the IMF, principally because the IMF *wants* to produce a recession to cut consumer demand for imports. But that traditional IMF mindset should not apply to currency boards. When a currency board is operating normally and when the public has confidence that the fixed rate *will* be maintained, then only minor adjustments to interest rates are necessary to preserve the equilibrium, as the data amply demonstrates. Interest rates might rise to double their normal levels for a day or so, but such volatility will not persist as long as the public has confidence.

But what if the public *does not* have complete confidence that the fixed rate will be maintained? Then pushing interest rates into the stratosphere is more likely to undermine the fixed parity than to support it. Imagine an ordinary bank faced with rumors that it could not pay off its depositors. Suppose further that the bank's directors now suddenly raise their deposit rates to 150% on an annual basis, hoping to attract new cash accounts and to give existing account holders an incentive to stay put. The announcement of the 150% interest rate premium is sure to precipitate a run because it will be interpreted as a sign of desperation. Banking theorists call this the problem of multiple equilibria, and the analysis applies with equal force to fixed exchange rates.[21]

What the IMF really has in mind, however, may not be the deliberate raising of interest rate to protect the parity—remember that under a true fixed-rate regime, there is no central bank *capable* of fixing interest rates—but a spontaneous rise in nominal interest rates due to a contraction in the local money supply. If everyone rushes to convert rupiah to dollars, too few rupiah will be in circulation and the demand for the rupiah remaining will mean that a higher interest rate is needed to clear the market for rupiah. If real interest rates also rise, the economy may get crushed.

But this nightmare scenario of the IMF is only one possible outcome for the overwhelming demand by the public to hold dollars rather than rupiah.[22] The obvious alternative is simply to "dollarize"—*viz*., to make the U.S. dollar legal tender for all debts public and private at the former fixed rate of exchange. As long as business can be conducted in dollars, as it surely can and already was in Indonesia, the economy will certainly not collapse. The rulers of the country may lose considerable face by abandoning their own currency in favor of the U.S. dollar,[23] but *they* are not really abandoning the currency. *Everyone else* already has!

Dollarization, of course, is an extreme solution. Other, less drastic approaches also can be taken before the public's lack of confidence in the maintenance of the fixed rate has gone beyond the tipping point and produced a run. If a currency board is determined to maintain official parity in the face of credibility problems, it can take advantage of modern derivatives and give away what amount to puts on the local currency. Because the market knows that the currency board will suffer losses if it devalues, this signal would be taken seriously. The currency board would be seen as "putting its money where its mouth is." At the same time, the holders of the puts, knowing they are protected against a devaluation, would undertake the arbitrage that would bring the domestic interest rate back down to the reserve currency level of interest rates—which, of course, is precisely what a currency board is intended to do.[24] Five or six billion dollars of the same kind of guarantees in Indonesia, backed by the wealth of the Suhartos, would probably have been enough to have made a currency board entirely credible.

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21. See Miller, "Some Reflections on Recent Monetary Turmoil in Eastern Europe," cited previously.

22. Currency boards have successfully dealt with these sorts of "drains," both from the domestic financial sector to foreign sectors and from the domestic banking sector to the domestic, cash economy. For discussions, see John Greenwood, "The Operation of the New Exchange Rate Mechanism," *Asian Monetary Monitor* (January-February 1984), and John Greenwood, "Further Developments Affecting the Linked Rate System for the Hong Kong Dollar," *Asian Monetary Monitor* (May-June 1989).

23. Although this is probably one reason why Argentina did not dollarize in 1995, the pressure placed on Argentina by the Brazilian devaluation this year has led Argentina to reconsider dollarization.

24. The Philippines recently offered put-like protection to exporters and foreign investors by making promises to compensate them against any further devaluation.

POLITICAL VULNERABILITY

An underlying theme behind many criticisms of currency boards is their susceptibility to political manipulation and interference—as if central banks were not so subject. The degree to which local country politics can influence the successful operation of a currency board, however, depends almost entirely on the degree to which the rule of law securely and unambiguously backs the currency board *as an institution*. The foundation upon which a well-designed currency board system is built thus must be a monetary constitution or currency board law.[25]

Especially in countries for which political corruption or credibility is a concern, the currency board law could contain several specific provisions designed to mitigate the potential for political interference. First, a currency board could have its legal seat and most of its assets in a safe haven country, such as Switzerland. That will limit the possibility of local expropriations of reserve assets.

Second, the monetary authority could have a board of directors comprised of both domestic and foreign members. The majority of these directors should *not* be citizens of the currency board system country and could be appointed by the Bank for International Settlements in Basel. No significant change in the operation of the currency board system (*e.g.*, changing the fixed rate, dissolving the currency board, or transferring reserve assets to a successor organization) would be permitted without unanimous approval of this disinterested board, whose sole responsibility is preserving the integrity of the system.

Third, the currency board should regularly publish detailed financial statements, attested to by the directors and public auditors. The statement would appraise the currency board's holdings of securities at their market value and be as transparent as possible (*i.e.*, no "hidden reserves").

EXTERNAL SHOCKS

Critics of currency boards like Singal are also quick to argue that these systems prevent their host countries from coping flexibly with external shocks and make them vulnerable to surges in inflation triggered by capital inflows.[26] True, a currency board *does* eliminate some flexibility. Monetary policy is completely inflexible in a currency board regime where the exchange-rate fix dictates everything. Fiscal policy, moreover, would also be subject to the constraint that future budget deficits can be financed only by borrowing and not through inflationary finance.

Whether the economies of currency board countries are likely to be shaken to pieces by inability to respond to external shocks is, of course, an empirical question. In this connection, Table 1 summarizes data from 98 developing countries during the period 1950-1993. The data are separated into one of two categories: countries that have pegged exchange rates, and those that have fixed rates. The latter category includes countries with currency boards, monetary institutes, and those that rely solely on foreign currency. Countries with currency boards or board-like systems have had average domestic per capita growth rates that were 54% higher than the growth rates in countries with pegged exchange-rate regimes. Moreover, the variability of those growth rates (as measured by their standard deviations) was virtually identical, indicating that the lack of discretionary monetary policy with fixed exchange rates resulted in no greater incidence or vulnerability to economic shocks.

As for inflation, Table 1 confirms that fixed rates have proved far superior to pegged rates, with average inflation rates being 4.9 times higher in countries with pegged rates and 4.2 times more variable. Even in terms of budget deficits, those countries utilizing pegged rates have had deficits that were on average 65% larger.[27]

LENDER OF LAST RESORT

The World Bank proclaimed that it actually *favored* a currency board for Indonesia, but perhaps in three years or so after Indonesia had repaired and strengthened its currently weak and demoralized banking system. That the World Bank would make such a positive, if highly qualified endorsement of

25. For an example of a complete currency board law, see Hanke, Jonung, and Schuler, cited previously, pp. 160-162.

26. See also "The Great Escape," *The Economist* (May 3, 1997).

27. See also Kurt Schuler, "Should Developing Countries Have Central Banks?" *Research Monograph No. 52*, London: Institute of Economic Affairs and A.R. Ghose, A.M. Gulde, and H. Wolf, "Currency Boards: The Ultimate Fix?" *Working Paper 98/8*, Washington D.C.: International Monetary Fund.

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TABLE 1
PERFORMANCE OF FIXED VS. PEGGED EXCHANGE-RATE REGIMES

VARIABLE	Mean (%)	Median (%)	Std. Dev. (%)	Number of Observations	Min. (%)	Max. (%)
ANNUAL PER CAPITA GDP GROWTH RATE						
Complete Sample	1.85	1.90	6.57	3229	–47.40	45.10
Pegged Rates	1.69	1.90	6.53	2694	–47.40	45.10
Fixed Rates	2.61	2.60	6.73	535	–32.70	31.80
ANNUAL INFLATION RATE						
Complete Sample	29.38	7.71	185.36	3186	–22.06	4770.35
Pegged Rates	33.79	9.10	201.35	2663	–22.06	4770.35
Fixed Rates	6.95	3.29	47.86	523	–14.95	1075.93
BUDGET DEFICIT AS A PERCENT OF GDP						
Complete Sample	3.43	2.50	4.98	2107	–22.62	36.65
Pegged Rates	3.66	2.70	5.18	1769	–22.62	36.65
Fixed Rates	2.22	1.70	3.53	338	–5.81	20.27

Note: The fixed rate category also includes countries that were fully dollarized.
Source: Steve H. Hanke, "Some Thought About Currency Boards," in Mario I. Blejer and Marko Skreb, eds., *Balance of Payments, Exchange Rates and Competitiveness In Transition Economies* (Norwell, Ma.: Kluwer Academic Publishers, 1999).

currency boards represents a major change in the official thinking of the international financial agencies, but not one likely to have immediate consequences. The Bank wanted to see more currency boards, but not right away.

The World Bank's concern with the weak state of Indonesian banking mirrors, in some ways, the main concerns of Singal as well as much of the academic community about currency boards—namely, that the systems lack a "lender of last resort" ("LOLR"). If a massive bank run starts, critics say, countries with currency boards have no way to stop it because they cannot print money on a discretionary basis.[28]

Lack of a central bank-like LOLR facility, however, seems not to have harmed currency board systems historically. Failures by commercial banks have been minor in such systems. Since the inception of the first currency board in 1849, moreover, there have been no known cases in which commercial banks in currency board nations have relied on central banks outside their countries as LOLRs. British overseas commercial banks in colonial currency board systems, for example, never relied on the Bank of England as an LOLR.[29]

One explanation for the resiliency of currency boards to financial panics despite the absence of an LOLR is the depth of the interbank lending markets in currency board countries. In the event of liquidity crises, domestic financial institutions can borrow both from other domestic financial institutions and from foreign banks via Eurocurrency markets. By eliminating exchange rate risk with the reserve currency, moreover, the currency board system encourages the development of branch banking networks by foreign banks, thereby creating an additional source of local market liquidity. Solvent branch banks usually have access to liquidity from their foreign parent banks. But not always, alas.

The Argentine Liquidity Crisis and "Contingent Repo Facility"

Branch bank liquidity was put to the test in the Argentine currency board-like system when the Mexican peso was devalued on December 20, 1994.[30] Significant drains from the banking system occurred, both externally (*i.e.*, out of Argentine pesos) and internally (*i.e.*, out of the banking

28. The record of existing central banks as lenders of last resort is not all that comforting. They often seem either too reluctant to use their powers properly or too prone to pump in funds to rescue existing depositors and stockholders—and, in the case of Indonesia, to crony-owned banks—blowing up the money supply in the process.

29. See Hanke, Jonung, and Schuler, cited previously.

30. In 1992, Argentina adopted a currency board-like system in which the Argentine peso was linked to the U.S. dollar. Argentina's system is not an orthodox currency board (in the sense of Table 1) because only 80% of its reserves must be held in dollar-denominated assets issued by foreign governments. These are called "liquid reserves." Although the remaining reserves must be dollar-denominated, they can be issued by the Republic of Argentina.

system into the informal economy).[31] From December 1994 through February 1995, broad money—*i.e.*, M3, which includes pesos outside banks plus peso and dollar deposits—decreased by 6.5%, bond prices fell sharply, the prime rate on peso-denominated loans increased, and peso-dollar bond yield spreads increased from 480 basis points to 930 basis points.[32]

This liquidity squeeze became a full-blown liquidity crisis on February 27, 1995, when bureaucrats at a large German bank—need we name it?—incited panic by cutting off credit lines to its Argentine branch operations, mechanically citing "country risk" as the rationale. Other international banks followed suit, which sent Argentine foreign branch banks scurrying unprepared into the domestic interbank market. Interbank interest rates rose dramatically from about 20% on peso deposits to over 50% within hours after international credit lines were cut. To make matters worse, the massive entry of Argentine international branch banks into the interbank market was interpreted as a vote of "no confidence" for Argentina's exchange rate link to the dollar.

On March 14, 1995, the Argentine government introduced a package of measures designed to contain the financial crisis. The program accelerated privatizations, reduced planned government spending, increased taxes, and revealed plans to borrow up to US$7 billion—a three-year US$1 billion domestic bond issue from citizens of Argentina, a three-year US$1 billion bond issue from private foreign lenders, and US$5 billion from the IMF, World Bank, and Inter-American Development Bank. The combined package provided a convincing domestic affirmation of the creditworthiness of the Menem-Cavallo administration and soon opened up the system with a fall in interest rates as dramatic as the February-March rise. The crisis was over.[33]

In an effort to avoid a repeat of the 1995 liquidity crisis, the central bank of Argentina adopted in December 1996 a formal "liquidity policy." The key provision of the policy was the establishment of a "Contingent Repurchase Facility."[34] Under this program, the Argentine central bank has the option to sell certain domestic assets for U.S. dollars to a group of banks subject to a repurchase clause. As of October 1998, 14 banks had agreed to the Facility. The assets underlying the repo included US$6.2 billion in Argentine U.S. dollar-denominated bonds and up to US$500 million in dollar-denominated Argentine mortgages. The average maturity of the Facility is three years, with a clause that extends the life of the program by three months and is renewed every three months. The Contingent Repo option can be exercised at any time during the life of the program, and the maturity of the repo may begin on that date and run through the end of the program. The only event that invalidates the agreement is a default by Argentina on any international debt commitment.[35]

Importantly, the Contingent Repo Facility is *not* an LOLR-like arrangement resting on the power to inflate. On the contrary, it is a commercial borrowing facility between the monetary authority and the commercial banking sector. Although the end of the Argentine crisis of 1995 was largely attributable to the $7 billion multilateral bailout, the $6.7 billion Contingent Repo Facility illustrates that the same kind of funding also can be secured *without* an LOLR that has the capacity to print money.

CONCLUDING OBSERVATIONS

The explanation for the failure to adopt a currency board in Indonesia may not have been the fear that it would not have worked but rather that it would have worked *too well—viz.*, saving Indonesia and postponing the end of the Suharto regime. If so, critics are better served by just saying that rather than leveling numerous irrelevant criticisms at currency boards as monetary systems.

The vitriolic condemnations and threats of Suharto's Indonesia by the IMF and the Clinton Administration will surely make other countries

31. The central bank's liquid reserves falling from $15.8 billion before the crisis to $13.3 billion at the end of February.

32. For a full discussion of the Argentine crisis, see Steve H. Hanke, "Some Thought About Currency Boards," in Mario I. Blejer and Marko Skreb, eds., *Balance of Payments, Exchange Rates and Competitiveness In Transition Economies* (Norwell, Ma.: Kluwer Academic Publishers, 1999).

33. Argentina recovered from this crisis by the end of July 1996, by which time Argentine monetary indicators were superior to their pre-Mexican crisis levels with the exchange rate link intact. The perceived exchange rate risk was actually *lower* than the pre-crisis level, with the peso-dollar spread at 304 basis points, 176 basis points lower than the pre-crisis spread. This suggests that if anything, Argentina's currency board-like system was actually toughened and strengthened by the crisis.

34. The liquidity policy also includes a liquidity reserve requirement. For a discussion of the total policy, see Central Bank of the Argentine Republic, *Argentina and the Contingent Repo. Facility* (October 1998).

35. The Contingent Repo Facility also contains several provisions to protect the lending banks. First, the program is overcollateralized. Argentine bonds must be posted with a market value at least 25% greater than the actual funds delivered. Second, if the prices of those bonds decline by more than 5%, additional bonds must be deposited as "margin" to maintain the overcollateralization minimum of 25%.

Argentina's Contingent Repo Facility is *not* an LOLR-like arrangement resting on the power to inflate. On the contrary, it is a commercial borrowing facility between the monetary authority and the commercial banking sector.

considering currency board solutions—like Brazil, now struggling with a currency crisis of its own—think twice. The real tragedy may be the priceless lost opportunity for developing countries to redraw their social contracts. Contending private interests in such countries cannot be expected to give up their chokeholds on government budgets without compensation. A firm commitment to eschew further debasing of the currency has proved to be such a compensatory promise, whose credibility would be ensured by the adoption of a currency board with a firm monetary constitution.

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