

CEPAL

REVIEW

NUMBER 51
DECEMBER 1993
SANTIAGO, CHILE

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Director of the Review

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UNITED NATIONS

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Capital flows *and their effect* on the monetary base

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The large capital inflows into some Latin American countries since 1990 are a mixed blessing, for they widen the trade-off between disinflation at home and competitiveness abroad. A large part of the flows seems to be temporary rather than permanent. Permanent flows should be accommodated by an upward float of the currency, temporary flows by sterilized intervention on the foreign exchange market. Recent evidence suggests that sterilized intervention is more effective and carries lower fiscal costs than is often maintained. Asian policy practice suggests ways of sterilized intervention even with underdeveloped securities markets.

I

The policy setting

Much of Latin America has enjoyed a substantial revival of foreign capital inflows since 1990. While the region received about US\$8 billion per annum on average in the late 1980s, capital inflows rose to US\$24 billion in 1990, US\$40 billion in 1991, and US\$57 billion in 1992. To be sure, after a decade of foreign capital shortage it is nice to be rediscovered as a viable investment location for funds available on world financial markets, especially when foreign investors are prepared to pay higher prices for a country's domestic assets, and it is even nicer if the underlying capital inflows can be sustained.

An optimistic interpretation of the origins and permanence of the current investment flows to Latin America would exclude any major role for policy intervention. Such an interpretation would hold the revival of flows as home-made: balanced budgets, lower inflation, privatization and deregulation, trade liberalization and the restructuring of the external debt would all be seen as having contributed to the re-entry of Latin America into the list of viable

investment locations, and little reason would be seen to expect an early reversal of the capital flows which Latin America is now enjoying.

Yet the present episode of substantial capital inflows is not the first this century. The most recent such inflow before the early 1990s occurred during the period from 1978 to 1982 and led to the Latin American debt crisis (Calvo, Leiderman and Reinhart, 1993, pp. 108-151). Another important episode of capital flows was noted in the 1920s. Both periods were dominated by inflows from the United States, and in both periods the capital inflows were eventually reversed, leading to major crises. Such a reversal cannot be excluded this time, either, since many of the current inflows seem to be chasing the high interest differentials which exist between the United States and Latin America. Temporary flows may give rise to policy intervention, as their sudden reversal can trigger a domestic financial crisis and such "hot money" may cause undesired appreciation of the real exchange rate and misallocation of resources.

II

The 1990s inflows: "cool" or "hot" money?

A reversal of fortune (and flows) is less likely this time than it was in the past, according to many observers. Some hold that the flows are not hot money at all, but only lukewarm to cool—money that comes to stay, such as foreign direct investment (FDI)—and that the proportion of cool money will go on rising. Nunnenkamp (1993), for example, argues that the structure of capital flows to Latin America closely resembles those to East Asia, and that the reversibility of capital inflows is linked primarily to country-specific policy performance. According to

this view, capital flows are unlikely to be reversed as long as economic reform is maintained. In fact, however, the precarious database on capital flows makes it difficult to judge the real "temperature" of the money Latin America is now receiving.

For industrialized countries, Turner (1991) recently examined the volatility of different capital-account items in order to arrive at a distinction between permanent versus temporary and autonomous versus accommodating flows. For the period 1975-1989, the capital flows that were most closely correlated with financing requirements were classified as the most accommodating, and the most accommodating types of capital flows closely corresponded to

□ Part of this article was originally published in Reisen (1993), pp. 21-23.

the most temporary flows, proxied by their standardized variability (coefficient of variation) over the period 1975-1988. Finally, Turner made a ranking of four capital-account items, ranging from the most autonomous and permanent to the most accommodating and temporary (i.e., volatile) flows: i) long-term bank lending; ii) foreign direct investment; iii) portfolio investment, and iv) short-term bank flows.

There should be no cause for concern or for policy intervention when net inflows mainly consist of long-term bank lending and foreign direct investment. Ever since the debt crisis, however, long-term bank lending has been only an unimportant source of foreign finance for Latin America. Foreign direct investment, for its part –the second component of “cool” capital inflows– has actually declined as a proportion of net capital inflows, going down from 40% in 1990 to 30% in 1991 and 27% in 1992 (Jaspersen and Ginarte, 1993).

Private portfolio investment flows are on the rise, and tending to become the most important source of foreign finance in advanced developing countries. According to *AMEX Bank Review* estimates, between 1989 and June 1992 Latin America received the bulk of private portfolio flows (US\$31.6 billion), while Asia received only US\$13.3 billion over the same period. Latin American countries are more open (with the exception of Chile) than the Asian markets and therefore predominate as recipients of portfolio flows, accounting for over half of the investable index of the International Finance Corporation (IFC), compared with only a third of the global IFC index.

The breakdown of portfolio flows reported by the OECD does not permit any judgement on their reversibility (table 1). For this, more data (consistent across sources) would be needed, especially data

about the sources of investment (Gooptu, 1993). Institutional investors (such as pension funds and life insurance companies) may be taken as a more risk-averse group interested in making long-term, high-yield investments. Euro-bond houses, for their part, will be driven by portfolio diversification motives: exploiting higher mean returns and the low correlation of returns between emerging and established financial markets. While this group of investors is likely to become more important for Latin America in the future, they did not seem to provide the bulk of portfolio investment in the early 1990s. Most of the portfolio investment has come from more speculative sources in the expectation of short-term returns: notably from domestic residents with overseas holdings, private foreign investors, and managed funds (country funds and mutual funds).

There are several reasons for considering the current rate of capital inflows as temporary rather than permanent. First, a large part of the inflows has been in response to privatization processes, which in countries such as Chile and Mexico are now by and large completed (Oks and van Wijnbergen, 1993). Second, part of the increased capital inflows consisted of the return of previous flight capital, which can only be repatriated once. Third, the sharp drop in United States interest rates has been an important stimulus to relocate assets from that country to Latin America (Calvo, Leiderman and Reinhart, 1993, pp. 108-151). This drop reduced external debt service on floating-rate debt, thus improving the solvency of Latin American debtors, and it provided increased incentives not only for the repatriation of funds held in the United States but also for increased borrowing on United States capital markets by Latin America. The corollary, of course, is that a future cyclical swing in the United States back to higher activity levels and returns on assets will be associated with decreased or reversed capital flows to Latin America. Fourth, some countries –notably Mexico, Argentina and Peru– are heavily dependent on short-term capital inflows vulnerable to quick reversal in the event of a change in investor sentiment. It should be noted that the structure and maturity of capital inflows depend on the exchange rate regime (Schweickert, 1993). As long as a peg to, say, the US dollar is credible it allows investors to exploit nominal domestic-foreign differentials in short-term interest rates: the peg is apt to raise the “hot money” share in capital inflows. The recent surge in capital flows to

TABLE 1
OECD: Portfolio investment flows to Latin America
(Billions of dollars)

	1990	1991	1992
New bond issues	1.0	4.6	8.2
Equities	-	4.4	4.5
Borrowing facilities ^a	-	4.7	6.4
	1.0	13.7	19.1

Source: Organisation for Economic Co-operation and Development (OECD), 1993.

^a Includes note issuance facilities, multiple-component facilities, and other facilities underwritten by banks (for Mexico only), as well as Euro-commercial paper programmes and other non-underwritten syndicated borrowing.

Latin America can thus be interpreted as the result of both cyclical and portfolio stock-adjustment phenomena, which are unlikely to be sustained. Last but not least, the sustainability of capital flows to Latin America will greatly depend on future export perfor-

mance. Since the Latin American debt crisis, exports have become an important indicator of creditworthiness, and ratios of debt stocks and debt service to exports are now routinely used in quantifying country risk.

III

The case for sterilized intervention

The rediscovery of Latin America for global asset portfolios amounts, after years of credit constraint, to the effective financial opening of the region. The resulting capital inflows cause the domestic currency to appreciate in real terms, however, unless there is sterilized intervention on the foreign exchange market. The nominal exchange rate appreciates when it is flexible, while domestic price levels rise when the nominal rate is pegged. With either fully floating or pegged exchange rates, the real appreciation of the exchange rate reflects the failure of the monetary authorities to supply the mix of assets which domestic and foreign investors are now demanding. In the case of floating rates, the authorities do nothing, while when rates are pegged they issue money in exchange for foreign assets. Instead of this, they should issue bonds, thereby engaging in sterilized intervention (Kenen, 1993, pp. 237-262). To the extent that reform and stabilization cause investors to increase their demand for both domestic money and domestic bonds, the optimal response will be a higher money supply and fractional sterilization (Frankel, 1993). Many economists tend to dismiss sterilized intervention, however, for various reasons.

First, while there is agreement among economists that non-sterilized intervention (like any other monetary policy) can affect nominal exchange rates, the effectiveness of sterilized intervention is much more controversial. Changing the composition of Central Bank assets without changing their aggregate size, it is often argued, cannot be an effective policy for influencing the relative price of two currencies.

Such agnosticism ignores two channels through which sterilized intervention can influence exchange rates:

i) The information channel: Kenen (1987, pp. 194-199) suggests that intervention signals may effectively "change the market's confidence in its own projections ... when expectations are heteroge-

neous and especially when a bubble appears to be building" (p. 198). Here, it is assumed that the monetary authority has more information about relevant fundamentals and is able to convey that information. However, if the information revealed involves their own future policy intentions, then sterilized intervention should not be considered an independent tool for Central Banks.

ii) The portfolio-balance channel: in the case of capital inflows, the corresponding rise in the Central Bank's net foreign assets will be sterilized by the rising supply of domestic-currency bonds. If domestic and foreign bonds are imperfect substitutes (due to currency or sovereign risk), investors will require a higher expected return on domestic bonds in order to be willing to hold their larger outstanding stock, and the currency will tend to depreciate. Casual observation (Cumby and Obstfeld, 1983, pp. 245-269 on Mexico; Edwards and Khan, 1985, pp. 377-403 on Colombia) suggests that the portfolio-balance channel can be exploited by Latin America's monetary authorities: uncovered interest parity is not observed, and there is a stable relationship between domestic government debt and the domestic-foreign interest differential.

For OECD countries, recent empirical evidence shows that sterilized intervention operations do indeed affect exchange rates. While the Jurgensen report (1983) found only small and transitory effects for the period 1973-1981, studies of intervention policies in the 1980s suggest that more recent operations have been more effective (Domínguez and Frankel, 1990). A recent study, using daily data on official intervention operations of 16 Central Banks participating in the procedure, shows that coordinated interventions since the Plaza Agreement¹

¹ Signed in New York by the Group of Seven countries in 1985.

proved in practice to be both effective and repeatedly strong enough to reverse the market direction of exchange rates (Catté, Galli and Rebecchini, 1992, pp. 17-21). This improved empirical support for the efficacy of sterilized intervention may be explained by the fact that the United States, Japanese and German authorities avoided intervening at cross-purposes in the 1980s, in contrast with the previous decade. Efficacy also requires a certain degree of exchange rate flexibility in order to create sufficient investor awareness that the exchange rate really is variable (Frankel, 1993).

A second objection to sterilized intervention, raised especially in the Latin American context (Calvo, Leiderman and Reinhart, 1993, pp. 108-151), stems from the alleged fiscal costs and is based on two arguments. First, in order to dampen the appreciation, the Central Bank typically has to swap low-yield foreign exchange for high-yield domestic bonds, and the accumulated interest differential can become a substantial fiscal (or quasi-fiscal) burden. Second, sterilized intervention deprives the government of the benefit of a reduced debt service burden by preventing the decline in the domestic interest rate that normally accompanies a capital inflow.

Both these arguments are unlikely to hold good in present value terms if the capital inflow and exchange rate appreciation are correctly assessed as temporary, however.

With risk premiums on domestic rates sufficiently small, the short-term fiscal losses derived from swapping low-yield foreign exchange for high-yield domestic bonds should be partly offset by a subsequent capital gain derived from the appreciation of foreign exchange reserves. The Central Bank, like Friedman's (1953, pp. 157-203) "stabilizing speculator", should make money by buying dollars when they are cheap (in peso terms) and selling them when they are dear. Moreover, the evidence for developing countries has shown that the domestic-foreign return differentials are not sufficient to offset depreciation losses (Frankel, 1989). This would imply that the authorities derive a net fiscal gain from engaging in sterilized intervention of temporary capital inflows. It should be noted, however, that sterilized intervention may raise interest rates when the disturbance is not external (as assumed here) but is due to higher domestic money demand or an improvement in the trade balance, which require monetary or fiscal expansion (Frankel, 1993).

While it is true that sterilized intervention prevents the decline in real interest rates that normally accompanies a capital inflow, it does not follow that alternative exchange rate regimes would compare favourably in the longer run. Sterilized intervention aims at dampening real exchange rate overshooting. This implies less real appreciation of the exchange rate first, and less real depreciation back to the equilibrium rate later. Interest parity requires a corresponding move in real interest rates, whereas with sterilized intervention the lower real appreciation entails a comparatively higher level of real interest rates which is then offset by a comparatively lower interest rate level when the currency depreciates. But what really matters for public debt dynamics in the long run is the real GDP growth relative to real interest rates (Reisen, 1989). The Asian example suggests that sterilized intervention can succeed in keeping monetary aggregates on target, hence keeping inflationary expectations down, that it simultaneously dampens real exchange rate variability, hence keeping foreign exchange risk in check, and that low inflation and reliable exchange rates are good for long-run growth.

Third, developing countries may experience practical problems with sterilized intervention due to underdeveloped domestic securities markets (Fischer and Reisen, 1992). Lack of government debt paper (which is often the case in Asian countries) forces Central Banks to issue obligations of their own, thereby swelling their liabilities relative to the monetary base. By putting pressure on the refinancing schedule of Central Bank liabilities, sterilized intervention can endanger future control of the monetary base. Such pressure can be attenuated to some extent by carrying intervention in the foreign exchange market from the spot to the forward market, however. Finally, with shallow domestic securities markets, sterilized intervention in developing countries can exert a contractionary supply effect which is felt much quicker than in the typical OECD country: the sectoral distribution of the domestic credit squeeze is sharper; working capital costs for non-preferred borrowers in the informal credit markets rise faster; and the sale of government bonds tends to crowd out the shallow corporate bond market. But these are second-order objections to a first-best policy response. Some Asian examples will demonstrate that there are always ways to solve these practical problems.

IV

Generalized forms of sterilized intervention: some Asian examples

Asian sterilization practice holds lessons for open economies with underdeveloped securities markets. In fact, the monetary authorities in Singapore, Malaysia, Indonesia and Taiwan have dealt with massive capital flows without losing price stability and external competitiveness. Moreover, they have not been helped by capital controls in their efforts to simultaneously target money supply and exchange rates. But they do not shy away from (sometimes mandated) transactions designed to manipulate the flow of liquidity into the banking system in response to external capital flows. They often swap government excess savings (originating, say, in social security funds or public enterprises) held with banks into (and also out of) government bonds. This practice can be considered as a generalized form of sterilized intervention. It should be noted that this approach relies on the existence of public-sector savings and hence on "fiscal complicity". Moreover, Frankel (1993) suggests that Asia retained the ability to sterilize with open capital markets because domestic financial liberalization has been delayed.

Singapore and its neighbours Malaysia and Indonesia have been largely (though not continuously) successful in reconciling exchange rate stability at competitive levels and a fair amount of monetary independence with an open capital account. In Singapore, any remaining capital controls had been abolished by June 1978 because of its aspiration to strengthen its role as an international financial centre. Moreover, Singapore's financial centre has traditionally been to Indonesia and Malaysia what the informal kerbside market is to so many developing countries. Hence, capital controls could not have been effective. The Indonesian and Malaysian authorities simply had to cope with open capital accounts. All three countries have nevertheless managed to shelter their monetary base from increases in foreign exchange reserves and to slow down incipient appreciation of their currencies.

Singapore has been extremely successful in reconciling financial openness with stable money supply growth, very low inflation, and remarkably stable

real effective exchange rates. Its authorities did not only have to cope with the usual constraints imposed on stabilization policies by financial openness: by choosing the U.S. dollar (in addition to the Singapore dollar) as a vehicle for the development of an international financial centre, they also had to cope with the risk of currency substitution in favour of the U.S. dollar (or, alternatively, the "internationalization" of the Singapore dollar).

The division of Singapore's banking system into a domestic sector operating in Singapore dollars and an offshore sector transacting in U.S. dollars has provided the monetary authorities with a separation fence against speculative capital movements. Since the establishment of full convertibility in 1978, however, the height of this fence has been reduced, notably with residents' access to loans and deposits on the U.S. dollar market. The main explanation for Singapore's achievements in targeting the money supply and exchange rates therefore does not seem to lie in the insulation of its domestic financial sector, but rather in its exchange rate management and sterilization policies (Claassen, 1992, pp. 136-167).

Since 1975, Singapore has chosen a multi-currency peg for stabilizing the effective (trade-weighted) exchange rate. Official foreign exchange reserves were four times higher than the monetary base in 1990, pointing to considerable sterilization activity in the past. As a result of heavy sterilized intervention, strong net capital inflows in 1984/85 and 1989/90 resulted neither in an increase in the monetary base nor in a rise in the real effective exchange rate.

Central to the understanding of Singapore's sterilized intervention policies is the combined effect on the management of domestic liquidity exerted by a public-sector budget surplus and the portfolio allocations of the Central Provident Fund, a mighty social pension fund. Until recently, employers and employees each had to contribute 25% of wages to the Fund: a very high proportion which goes a long way towards explaining the high level of Singapore's domestic saving. Currently, the combined rate

stands at 40% (17.5% for employers, 22.5% for employees). For prudential reasons, the Central Provident Fund's portfolio consists mainly of government bonds. With the government budget mostly in surplus and with a high level of forced private saving, private sector liquidity is always tight. Consequently, while sterilized intervention is usually characterized by, say, the Central Bank's purchase of foreign exchange in return for Central Bank liabilities (i.e., a rise in the monetary base), with subsequent contraction of Central Bank credit to the domestic sector, the order is exactly reversed in Singapore, where intervention in the money and foreign exchange markets regulates the money supply instead of reacting to changes in the latter (Moreno, 1989, pp. 21-42).

Figure 1 illustrates the specific monetary-fiscal policy mix on which sterilized intervention has been based in Singapore: virtually permanent budget surpluses, together with government deposits and other Central Bank liabilities (mostly to the Central Provident Fund) have consistently tended to contract the money supply. Non-sterilized intervention on the foreign exchange market has offset the liquidity drain, while fine-tuned exchange market intervention has served to adjust the money supply to satisfy the government's exchange rate target.

Malaysia shares with Singapore a common monetary history (and an excellent track record of low inflation and Central Bank credibility), due to the Currency Board established in 1897 and ended in 1967. Government revenue is still quite dependent on oil and other raw materials, and thus tends to rise and fall with the movements in the foreign exchange reserves. Since Malaysia has registered permanent budget deficits over the past two decades (in contrast with Singapore), higher raw material prices raise government revenues and lower Central Bank credit to the government, thus tending to stabilize the monetary base.

The Malaysian *ringgit*, pegged since 1983 to a basket of currencies, is increasingly determined by asset markets, but the Central Bank intervenes actively on the foreign exchange and monetary markets. For foreign exchange management, the public oil company (which brings in up to one-fifth of the country's foreign exchange earnings) has been an important instrument, while for the management of domestic liquidity the Employee Provident Fund has played an important role, although less so than in the

case of Singapore. The Fund is the country's biggest saver and holds 20% of total domestic financial assets. Intervention is usually carried out directly on the foreign exchange market, and often the sterilization is only effected subsequently. The well-developed swap market was used extensively in the past. Meanwhile, open market operations have become increasingly important, thanks to an active policy of fostering direct securities markets (credit rating for private debt paper, broad supply of government securities, regulation of share issue prices for the stock market).

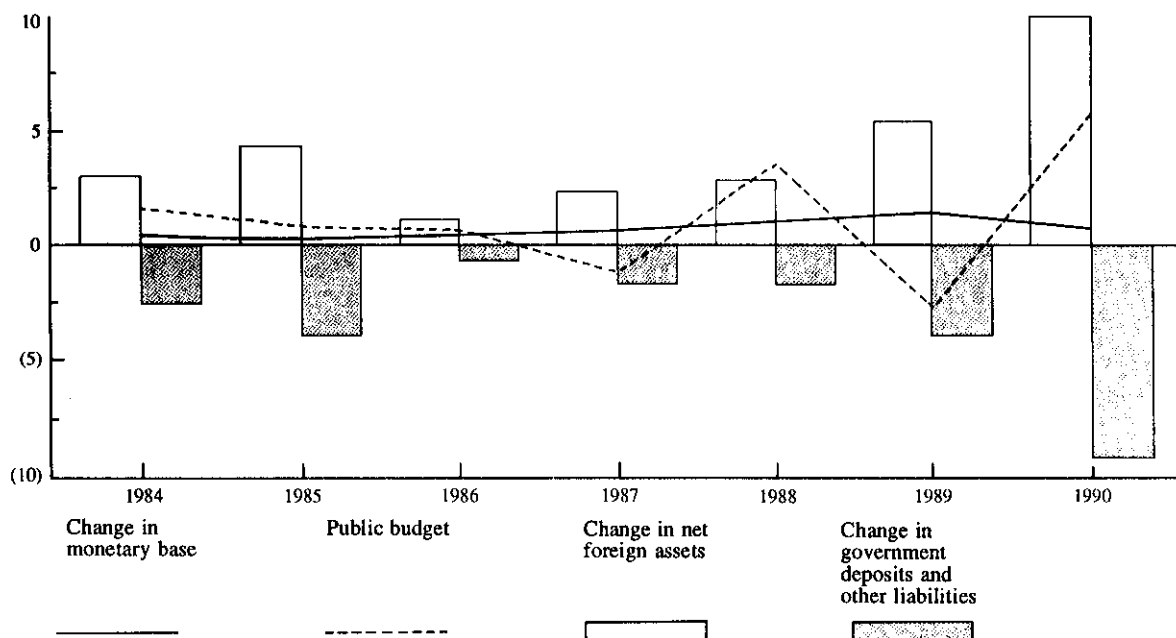
From 1989 on, however, the policy of targeting interest and exchange rates simultaneously became increasingly unsustainable. Strong domestic credit demand, growing foreign direct investment and short-term capital inflows which were incompletely sterilized produced an inflationary rise in the monetary base. Rescue measures were implemented without much hesitation. Thus, the legal reserve ratio of the banking system was significantly raised to dampen the rise in the volume of currency outside the banking system. In order to drain off excess liquidity before it entered the banking system, the monetary authorities resorted to quantity-oriented measures in 1990, especially the central management of government deposits, which were withdrawn from the banking system and transferred to a special account in the Central Bank.

Indonesia has quite successfully defied all orthodox prescriptions on the sequencing of reform laid down in the development literature. Thus, the capital account was opened first (1971), trade was gradually liberalized in the early 1980s, interest rates were freed in 1983, and institutional aspects of the financial system were deregulated in 1988. Indonesia—a resource-rich but low-income country—did not encounter the usual difficulties in targeting money and exchange rates until quite recently. The government controlled a large share of foreign exchange earnings from oil and gas exports, which could be used to counteract movements in the country's private capital account. On the other hand, the Indonesian private sector lacked creditworthiness on offshore markets.

Indonesia's real effective exchange rate has been remarkably stable since the end of 1986. According to textbook economics, the peg of the Indonesian rupiah (even though it is not a nominal peg to a single currency but a peg to a trade-weighted basket of currencies) should in theory deprive the monetary

FIGURE 1

Singapore: Sources of monetary base, 1984-1990
(Billions of Singapore dollars)



Source: International Monetary Fund (IMF), *International Financial Statistics* (various issues), Washington, D.C.

authorities of all power to influence domestic economic conditions with open capital markets, since monetary tools could only be assigned the task of preserving external balance (keeping the foreign exchange reserves stable, for example), while internal balance (with absolutely flexible labour markets, this could only consist of keeping inflation low) would be the responsibility of fiscal policy. In practice, however, the Indonesian Central Bank has retained considerable power of monetary control, in joint action with the government.

Monetary independence in spite of an open capital account stems largely from two different sources: i) the risk premium (or credit rationing) of private Indonesian offshore debt, and ii) the use of public enterprises' deposits in commercial banks for monetary management. Indonesia's capital account is still dominated by concessional long-term capital flows, while the foreign exchange reserves are dependent on the trade balance. This reflects the fact that until recently the Indonesian private sector had almost no access to commercial foreign lending. Now, however, things have started to change, with short-term flows gaining importance in the capital account. Indonesian companies have tried to escape monetary

tightening at home by borrowing offshore to avoid rising domestic interest rates.

The internationalization of the big Indonesian companies and falling liquidity constraints in the wake of the 1988 deregulation of the banking system have strengthened the potential for "hot money" movements. The two abrupt devaluations of the rupiah in 1983 and 1986 (each around 30% against the U.S. dollar) underline the potential return to speculation in foreign exchange. Meanwhile, the Central Bank is only trying to build up its reputation to defend the stability of the currency. Unlike most Central Banks in OECD countries, however, it cannot spread the costs of external shocks and financial crises over time. The country's fragile international credit standing inhibits the smoothing of consumption on the basis of commercial foreign borrowing, while domestic securities markets are too small to absorb shocks through variations in domestic liquidity. Therefore, instead of using indirect money tools, the monetary authorities resorted twice recently to direct credit rationing by way of mandated transactions.

Early in 1991, rumours of an imminent devaluation started to spread because of falling oil prices

in the wake of the Persian Gulf War, and official exchange reserves started to decline slightly. At the end of February 1991, State enterprises were instructed to convert their bank deposits into holdings of Bank of Indonesia certificates (SBIs); actual conversions totalled 42% of the outstanding money supply (M_1), equivalent to about 7.5% of GNP. At the same time, in order to ease the immediate liquidity impact of this move, the Central Bank acquired an equivalent amount in money market instruments (SBPUS), resulting in a net withdrawal of liquidity. These mandated transactions were similar to those effected in mid-1987, when State-owned enterprises were ordered to withdraw rupiahs from government banks for the purchase of SBIs equivalent to about 5% of the 1987 money supply (M_1). In both cases, the relocation of government-owned deposits served to defend the currency and to contain inflationary pressures. Strong interest rate hikes had to be accepted, but they were short-lived and thus failed to cause a recession. The pragmatic use of credit-rationing measures also helped to strengthen SBIs and SBPUS as instruments of monetary control. Banks that lost their deposits were in turn partially compensated through the sale of SBPUS to the Central Bank. Since the latter instruments are of shorter maturity than the 12-month SBIs, the Central Bank has gained better control of the domestic component of base money through the timing of SBPU repurchases.

Taiwan's foreign exchange reserves grew from a level of around US\$10 billion in 1981 to more than US\$80 billion ten years later. Most of that rise occurred during 1985 and 1987. To smooth out the inevitable appreciation of the New Taiwan Dollar (which rose by almost 40% against the U.S. dollar over that period), the Central Bank engaged in frequent sterilization policies. An amount equivalent to 65% of the increase in the Central Bank's net foreign assets was sterilized by forcing commercial

banks to buy Treasury Bills and Certificates of Deposit issued by the Central Bank. The remainder was sterilized by using Taiwan's Post Office Savings System. Part of the Post Office savings is redeposited with the Central Bank, and part with the domestic banking system. In order to contract the net domestic assets component of base money, it sufficed to order a rise in the share redeposited with the Central Bank. It has been quite an achievement on the part of Taiwan's monetary authorities to sterilize the country's excess savings (running up to 20% of GDP a year) and to keep the monetary aggregates, inflation and exchange rate appreciation in check.

The Asian evidence clearly shows that sterilized intervention is an effective instrument for targeting money and exchange rates, even in the absence of capital controls. Many economists tend to explain the effectiveness of sterilized intervention solely in terms of foreign exchange risk and the expectations thereof. Such explanations not only ignore the dualism between the formal and informal sectors and the informational imperfections which give rise to kerbside markets whose assets have a low degree of international tradeability, but also ignore the art of central banking in South-East Asia, which consists in the pragmatic use of public institutions such as social security funds, State banks and public enterprises as monetary instruments. The use of public-sector savings or of mandatory private savings is necessary in order to make up for the lack of developed domestic money markets on which open-market operations are effected in most industrial countries. Such a policy requires public-sector savings and hence fiscal discipline, however. In those countries of Latin America where tax ratios have been raised and government budgets have been balanced, the fundamental requirement for repeating the Asian example of sterilized intervention has now been fulfilled.

(Original: English)

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