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Volume Author/Editor: Anne O. Krueger

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Chapter Author: Anne O. Krueger

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Chapter 7

Macroeconomic Policies in Phase III Episodes

The fact that exchange control and QRs significantly affect the impact of devaluation and its consequences does not imply that the more conventional macroeconomic aspects are less important than in instances of devaluation under a liberalized regime. All models of exchange rate adjustment are based on the notion that it is the real exchange rate, not the nominal rate, that affects economic behavior. It therefore follows that, if devaluation leads to a new set of fixed nominal and effective exchange rates, domestic inflation at a rate in excess of the world rate will sooner or later result in a return to the former real situation.[1] If a Phase III package is to have a significant probability of leading to reduced bias and sustained liberalization, the macroeconomic policies that accompany devaluation are of great importance.

There are a number of *a priori* reasons to expect the impact of devaluation on the domestic price level and on the level of economic activity to be different when it occurs under exchange control from what it would be when the primary purpose is to eliminate a previous trade and payments deficit. In the first place it is only the net devaluation that should affect any aspects of aggregate demand; except for possible effects on expectations, there is no reason why the replacement component of the devaluation should affect economic behavior. Second, insofar as the devaluation serves to absorb license premiums, there should be no effect on the domestic price level; the absorption of purchasing power should be deflationary. Third, if imports are increased following devaluation—as often happens when foreign lenders play a role in the devaluation decision—the increased import flow is itself deflationary and might even result in a decline in the domestic price of importables. Fourth, some automatic shifts in the government budget may result. If tariffs are ad valorem, for example, tariff revenues will increase as long as the foreign value

of imports does not decline proportionately more than the increase in the import EER. The government budget may also benefit if, following devaluation, export subsidies are removed and export duties are imposed as is sometimes the practice for traditional exports. Finally, there is the possibility that improved resource allocation and removal of the deadweight costs of the trade and payments regime may increase real income.

The monetary and fiscal policies as well as the import policies that accompany devaluation have an important impact on the level of aggregate demand relative to aggregate supply; thus they are crucial to the ultimate outcome of the devaluation itself. This chapter reviews the types of monetary and fiscal policies that accompanied the Phase III episodes treated in the country studies; it also examines the behavior of imports in the immediate postdevaluation period. In Chapter 8 the short-run responses of economic activity, price behavior, and the balance of payments are evaluated.

Underlying all this are the basic questions about the nature of the optimal devaluation package: Which monetary and fiscal policy will enable the reallocation of resources and permit sustained liberalization without incurring unnecessary costs in the form of domestic recession? Is it advisable to increase imports in the immediate postdevaluation period? What sort of devaluation package is most likely to induce a sustained change in export performance and the trade and payments regime? This, and the next several chapters, provide evidence about these questions, but the questions themselves will not be directly considered until Chapter 10.

I. OBJECTIVES OF MACRO POLICIES

Trade Regime Changes and Domestic Goals

All three Brazilian devaluations, Chile's three, Columbia's five, Ghana's 1966/67 episode, South Korea's 1964 devaluation, the Philippines' 1970 episode, and the Turkish devaluation of 1958 were characterized by their governments as "stabilization programs." As the name implies, a stabilization program is aimed partially, or largely, toward controlling aggregate demand and reducing the domestic rate of inflation. Altering the trade and payments regime is only one aspect of the package and is not necessarily the primary objective.[2]

In addition to those formally designated stabilization programs, two other devaluations were accompanied by restrictive shifts in monetary and fiscal policy that were aimed at controlling domestic inflation. One was Israel's 1952-1955 New Economic Policy, which shifted from quantitative controls (over both domestic and international transactions) to reliance upon pricing for guiding economic activity; the shift required the absorption of excess

demand which had been contained by quantitative measures in earlier years. India's 1966 devaluation was principally directed toward the trade and payments regime, but it was accompanied by a shift toward more restrictive monetary and fiscal policy.

Few devaluations were devoid of some significant, conscious attempt to shift monetary and fiscal policy. The main exceptions were Israel's 1962 episode. South Korea's 1961 devaluation, the Philippines' in 1960, and Turkey's in 1970. All of these can be regarded as having been aimed exclusively at altering the trade and payments regime.[3]

Altogether there were seventeen devaluations that can be regarded as having been aimed at changing both domestic aggregate demand determinants and the trade and payments regime. Such a link is logical: if rapid inflation has taken place at a fixed exchange rate, QRs must have been imposed (as the only alternative to exchange rate adjustments) unless fortuitous circumstances arose or there was initially a large trade and payments surplus. If the QR regime was compelled by domestic inflation, it makes sense to attempt to eliminate QRs simultaneously with the effort to control inflation.

Tying together the objectives of stabilizing the domestic price level and liberalizing the trade and payments regime under a fixed exchange rate implies that failure to attain the first objective will necessarily result in failure to achieve the second.[4] It will be argued in Chapter 10 that a major factor in preventing the transition to Phase IV regimes has been the dependence of the liberalization effort on the outcome of the anti-inflationary program and that use of instruments such as a crawling peg or floating exchange rate can permit successful liberalization even in cases where inflation rates do not dip to the world rate.

While both objectives were important in each of the seventeen episodes, the relative weights attached to each differed from country to country and from episode to episode. In some instances the major motive for the entire policy package was the desire to control domestic inflation; alteration of the payments regime and the exchange rate were undertaken simply as part of the package. In other cases a critical foreign-exchange situation prompted resort to international lending agencies, and they had the leverage necessary to induce pledges to change monetary and fiscal behavior.

A clear-cut example of exchange rate realignment undertaken as part of the *domestic* anti-inflationary package is provided by Behrman:

> In all three cases liberalization of the foreign sector was *not* the dominant goal in itself. Instead it was but one component of an overall stabilization program. The primary motives were to reduce inflation and to increase capacity utilization. . . . Foreign repayment obligations, speculation against the currency, capital flight, and donor- and creditor-country pressures have all been significant, but less important than internal concerns. Foreign-sector policy generally has been much

> more an appendage of domestic policy, albeit an important appendage, rather than vice versa.[5]

At the opposite end of the spectrum, Bhagwati and Srinivasan made no mention of domestic factors as motivating the Indian devaluation:

> The major motivating factors underlying the decision to devalue were two-fold: (1) the adjustment of the parity in a situation of overvaluation seemed to fit in rather well with the government's earlier, slow attempts aimed rather at reducing the ill-effects of the overvaluation of the parity by offsetting measures such as export subsidization; and (2) more important, the AID-India Consortium had virtually made a major devaluation a precondition for the resumption of aid, leaving the government little maneuverability because of the acute shortage of foreign exchange.[6]

In general, need for foreign exchange seems to have resulted in reluctant acquiescence to changes in domestic policy more often than domestic objectives have led to alteration of the trade and payments regime. In Ghana, despite debt rescheduling and substantial increases in aid, projected shortfalls of foreign exchange were the dominant motive for exchange rate changes; restrictive domestic policy (which in any event was not carried out for very long) was undertaken simply to buttress the devaluation.[7] In Colombia, the 1957, 1962, and 1965 devaluations were all undertaken only reluctantly and in direct response to problems in the foreign-exchange market; domestic considerations had little to do with the decisions. Likewise, in 1958 the Turks accepted monetary and fiscal restraint only after long delays and because it became apparent that foreign credits would not be available without such restrictions.[8] The Philippines' 1970 devaluation was also motivated by their foreign exchange position; foreign debt obligations were the major factor leading to exchange rate alterations, and monetary and fiscal changes were made in pursuit of that goal.[9]

Unfortunately, for purposes of research, records of the commitments made by credit-receiving countries are generally not made public. The International Monetary Fund's famous "consultation papers" are widely discussed in press reports, but no copies are available for research purposes. It is apparent that the IMF has sometimes negotiated ceilings on the amount of bank credit, money supply, and other variables thought to be responsible for domestic inflation and excess demand pressures. Certainly devaluing countries must have made such arrangements in a number of the stabilization programs studied in the NBER project where foreign credits were forthcoming at the time of devaluation. However, despite frequent references to belt-tightening, stringent monetary and fiscal policy, and other aspects of domestic stabilization, only in the case of Turkey's 1958 devaluation was the imposition of formal ceilings on

central bank credits and the money supply (as well as government expenditures) openly reported.[10]

Role of Foreigners

Stabilization programs differ from each other, not only in the emphasis placed on foreign, relative to domestic, objectives, but also in the extent to which foreign pressures contributed to the decision to adopt the program. With the exception of the Israeli 1952 devaluation, the IMF or some other foreign government or agency was involved in the formulation of the policy package. Foreigners have played a role in a variety of ways. In some cases foreign participation was behind the scenes and entailed little more than meeting commitments that had been made earlier to provide supporting credits if devaluation were undertaken. That happened in Turkey in 1970; the TL had been visibly overvalued for several years, and the consortium of international lenders had repeatedly discussed altering the exchange rate. There was little or no negotiating activity involved in the devaluation decision itself, although some foreign credits were immediately forthcoming. For Ghana, foreign involvement was also relatively inconspicuous. As explained by Leith:

> In late 1966 the NLC government obtained substantial rescheduling of the debts falling due through 1968 . . . and in early 1967 the IMF convened a meeting of Ghana's ten major western donor countries, with the result of increased aid offers. Yet neither of these forms of relief could be regarded as anything more than a short-term palliative. If external assistance were to continue for long, Ghana would have to put its balance of payments in order. . . . On July 8, 1967, the then Commissioner of Finance and NLC member, Brigadier A.A. Afrifa, announced the devaluation. . . . In summing up, he put forward devaluation as a necessary and logical decision taken in Ghana's own interest. No foreign pressure was either officially acknowledged or blamed, although in a post-devaluation press release, E.N. Omaboe, Commissioner of Economic Affairs, is quoted as saying that "donor countries are no doubt going to be impressed by the boldness with which we have approached these economic problems."[11]

Other devaluations, like those of Chile in 1956 and India in 1966, were very different. In the Chilean case a Washington consulting firm—Klein-Saks—was hired to prepare a stabilization program for the government, and its recommendations were largely implemented. As Behrman reported:

> It should be pointed out . . . that the identification of the 1956-58 attempt in particular with foreign interests discredited this program in the eyes of many Chileans. In part the identification was with official agencies, especially the IMF. Much more of this identification, however, was associated with Klein-Saks. . . .[12]

In Chile's other liberalization attempts, foreign pressures also played a considerable role.[13]

Foreign intervention became a political issue in many other instances. Indeed, controversy over "IMF policies" marked a great many liberalization episodes and may have done much to obscure important underlying issues. Usually the leverage foreigners had was the urgent need on the part of the country to finance basic import requirements. The best-documented case of foreign pressures, and their political implications, is provided by Díaz. Things came to such a pass between the Colombian government and donor agencies in late 1966 that the President went on national television to announce that he would *not* yield to such pressures.[14]

In a sense the presence of foreign agencies makes it very difficult to evaluate the causes of "failure" of some of the stabilization programs. Some governments, such as Egypt, were never committed to stabilization in the first place and simply agreed to the conditions laid down for receipt of foreign credits. It is difficult to diagnose the stabilization program as "unsuccessful" if the stated objectives of the programs did not coincide with the true objectives of the governments concerned. The difficult issues raised by the participation of foreign donors in devaluation decisions will be discussed further in Chapter 10.

II. BEHAVIOR OF MONETARY VARIABLES

Experience with attempts to reduce the rate of growth of the money supply has varied widely. In some cases restraint was short-lived because the government was politically unable or unwilling to continue its policies. In some of those cases and in others, the monetary authority did not offset the impact of net increases in foreign exchange receipts resulting from the devaluation on central bank credit. In other instances monetary restraint continued for a considerable period of time. Some devaluation packages were accompanied by significant reforms of the monetary system.

Cases where restraint was either short-lived or nonexistent include the first two Brazilian Phase IIIs, Chile's three episodes, Egypt's devaluation, Israel's 1962 devaluation, South Korea's 1961 devaluation, and Turkey's 1970 effort. The 1961 Brazilian experience is representative of some of the problems involved with attempting to restrain the money supply after a prolonged period of inflation. As recounted by Fishlow,

> A classic devaluation cum stabilization increasingly became inevitable to check the divergent tendency of the model. It came with Instruction 204 in March, 1961, shortly after the new President, Janio Quadros, took office. The reform definitive

abolished the auction of exchange. . . . An immediate devaluation of 40 percent was imposed.

. . . Domestically, a formal plan to reduce federal government expenditures was prepared and decreed in June. Monetary restraint, despite larger fiscal deficits than the previous year, had successfully limited expansion to 12 per cent in the first half of the year . . . but the key to continuing monetary policy was control over governmental expenditures and borrowing.

For the first time in the post-war period, Brazil had thus responded to persistent disequilibrium by orthodox policies. It had undertaken genuine liberalization. There was a gratifying immediate improvement in the balance of payments. . . .

Inflation, however, did not abate. The large devaluation inevitably provoked increased domestic prices: for the first half of the year wholesale prices rose 15.5 per cent compared to 9 per cent in a comparable period the year before. Monetary restraint remained in effect despite mounting complaints concerning lack of availability of credit. Yet it was still not so severe that output growth had been curbed. There was still no stabilization crisis, and the corrective, or once-for-all, relative price increases required to restore balance had been accomplished.

The experiment thus hung in the balance through August. Quadros' dramatic resignation on August 25 signaled its effective end. The aftermath of a presidential succession crisis is not a propitious environment in which to pursue monetary restraint. . . . In the last quarter of 1961, there was a massive governmental deficit and an increase in the money supply of 21 per cent that signaled the end of the policy of restraint. . . .[15]

The Brazilian experience—as well as many others, both successful and unsuccessful—illustrates the basic proposition that enforcing monetary restraint is extremely difficult, especially after a prolonged period of inflation. When the government is not very secure, such restraint is still more difficult and, if it is nonetheless carried out, can even lead to the downfall of the government. In addition to the political difficulties likely to be encountered in maintaining a restrictive monetary policy, the success of the devaluation itself can result in payments surpluses that have expansionary effects. In some countries the central bank did not offset the impact of those surpluses on the money supply.

If a country with a convertible currency devalues and thereby shifts its payments balance from deficit to surplus, it is highly likely that the money supply of the country will be significantly increased. The central bank will be purchasing more foreign exchange than it is selling, and the consequent increase in its credits will affect the money supply unless offsetting sterilizing action is taken. Recent empirical work on a number of countries, including Germany, Australia, and Canada, has demonstrated that reserve changes are a very important determinant of the money supply.[16] The notion, which used to be widely accepted, that the money supply could be regarded as a control variable

easily determined by policy decisions has been substantially modified in light of recent evidence.

For countries whose devaluation is aimed at reducing bias and liberalizing the trade and payments regime, the impact of successful devaluation on the country's excess of receipts over payments is considerably smaller than when the major purpose of devaluation is the elimination of an open deficit. Nonetheless, in a few instances covered by the NBER project, increases in reserves following devaluation have resulted in important inflationary increases in the money supply. Perhaps the most notable case was the Turkish devaluation of 1970. Turkish reserves rose from a low of $218 million at the end of June 1970 to $443 million in June 1971 and then to $955 million in June 1972. The large change was attributable in major part to the responses of Turkish workers abroad (and others holding European currencies before devaluation), who substantially increased their remittances. The central bank was required to exchange TL deposits for European currencies but did not have the tools to take explicit neutralizing action. It was impossible to check the growth of the money supply sufficiently, and inflationary pressures resulted.

Israel has also had problems in controlling the money supply after devaluation. As Michaely explained:

> The accompanying of devaluation by restrictive monetary policies has gradually become a more difficult task due to the increasing role of foreign assets and their automatic monetary impact. The devaluation of 1952-54 was aided by the fact that foreign-exchange reserves were nil and automatic forces were absent. At the time of the devaluations of 1962 and of 1971, foreign assets were substantial and rising. The devaluation, by increasing the local-currency value of both the stock and the current accumulation of such assets, thus had a strong automatic expansionary impact on money and liquidity in the economy. . . . In the Israeli experience . . . the government has normally been unable to conduct . . . - neutralizing policy. . . .[17]

Behrman reports much the same phenomenon in Chile. Generalizing the results of his econometric estimates, he concluded:

> . . . Changes in foreign-exchange reserves due to variations in the balance-of-payments surplus have had substantial effects on the monetary base. The Central Bank usually has not been able to neutralize more than a limited part of these changes because of the limited effectiveness of its policy instruments. As a result, both devaluation and increased quantitative restrictions have caused additional indirect inflationary pressure through their impact on foreign-exchange reserves and on the monetary base.[18]

Of course, this increase in the money supply would not occur if devaluation were not successful—at least in the short run—in generating a surplus in

the balance of payments. In a sense, therefore, the response of the money supply to increases in foreign reserves is one of the dampening factors that makes long-run improvements in the balance of payments more difficult to sustain once initial improvements have been achieved.[19] It is not one of the factors that can prevent any short-run improvement in the balance of payments.

Both the Israeli and the Turkish experience strongly suggest that the relationship between the devaluation, payments improvement, reserve increases, and the money supply is more likely to produce inflation the greater are the foreign currency assets held by the country's nationals prior to devaluation.[20] For countries with severe exchange control and balance-of-payments difficulties, the money supply may be no more difficult to control after devaluation than before and may even be easier if the devaluation package includes reduction in the government budget deficit. As liberalization progresses, however, it can become increasingly difficult to contain expansionist forces, and the problem is thus deserving of careful attention in countries whose devaluation is likely to induce significant repatriation of funds, short-term capital inflows, or other shifts resulting in sizable payments surpluses.

There are many cases of notable and sustained monetary restraint following devaluation. Two that illustrate the range of experience are the Columbian 1957 episode and the Turkish experience of 1958-1960.[21] Colombia's 1957 Stabilization Program was undertaken in the context of "growing payments arrears, capital flight, tightening import restrictions, increasing use of bank credit to finance public deficits, as well as generally expansive credit policy, growing inflationary pressures, a rising black-market peso rate, stagnant real output, and, last but not least, a falling dollar coffee price."[22] Difficulties in controlling the money supply led the authorities to impose guarantee deposit requirements on imports and to rely on them as a means of controlling the money supply as well as import demand.[23] The Columbian authorities succeeded in slowing the growth of the money supply to 11 percent in the year following devaluation, compared with 21 percent in the year prior to devaluation.[24]

The Turkish situation was even more extreme. Turkey's money supply had been increasing rapidly during the three years preceding the 1958 devaluation. For the next three years the average annual rate of increase fell to less than 10 percent. In the Turkish case, central bank credits had been used to finance the deficits of the State Economic Enterprises, whose sales had been subject to price controls (in an effort to stem inflation). Removal of these controls and a sharp reduction in the deficits of the State Economic Enterprises greatly slowed the rates of increase in central bank credits and the money supply, which at the time of devaluation had become subject to ceilings set in consultation with the IMF.

Finally, there are the cases where shifts in monetary policy were accompanied by significant reforms of the financial sector. The South Korean case is perhaps the most notable.[25] The South Korean devaluation of 1964 was ac-

companied by the imposition of ceilings on the growth of the money supply, and interest rate reforms followed shortly. There were

> ceilings on the annual and quarterly increases in the four major sources of "high-powered money," namely, central bank finance of government deficits, bank reserves, fertilizer loans, and foreign sector deposits. . . . In September 1965, the government announced an interest rate reform that substantially raised interest rates on both bank time deposits and loans. As a result, bank time and savings deposits increased very rapidly, thus enlarging the supply of loanable funds. . . .[26]

There is no ideal way to contrast and measure the behavior of the money supply in the periods before and after each of the twenty-two Phase III episodes because: (1) there is more than one aggregate measure of the money supply, and different measures are relevant for different purposes and different countries; (2) use of annual data obscures a great deal, but quarterly data are subject to the influence of seasonal fluctuations;[27] and (3) financial behavior may be significantly influenced by factors other than the money supply, such as changes in guarantee deposit requirements. Nonetheless, if these caveats are borne in mind, it is worth examining the reported money supply in the quarters and years surrounding the twenty-two devaluations.

Table 7-1 indicates the percentage change in the money supply for one, two, four, and eight quarters before and after devaluation. The Roman numerals after the year indicate the quarter in which devaluation occurred. Comparisons are then made of the percent increase in the money supply for periods prior to devaluation with like numbers for the following period. For example, the Brazilian money supply rose 23.5 percent from the third quarter of 1964 to the fourth, and 7.6 percent from the fourth quarter of that year to the first quarter of 1965.

Some of the cases cited above show up clearly: the restrictionist Israeli policies following the start of Phase III in 1952 and the failure to adopt them in 1962; the Chilean inability to restrict growth of the money supply; Ghana's restrictive policy prior to devaluation; and Turkey's successful reduction in the growth of the money supply in 1958 and her inability to neutralize workers' remittances and other inflows following the 1970 devaluation. Others are less clear-cut and illustrate the difficulty of attempting to infer too much from inspection of the numbers without some knowledge of the background. Cases in point include the behavior of the Brazilian money supply in 1961, where reversal of policy in the middle of the third quarter is hidden in quarterly data; and Colombia's 1957 episode, where the data do not take into account the shift toward reliance on prior import deposits because the money supply could not be sufficiently controlled.

Table 7-1. Percent Change in Money Supply over Specified Periods before and after Devaluation, Ten Countries

Country	Year and Quarter Devaluation	1 Quarter		2 Quarters		4 Quarters		8 Quarters	
		Before	After	Before	After	Before	After	Before	After
Brazil	1957 III	7.3	14.5	12.0	19.9	17.7	39.0	30.7	80.2
	1961 II	4.2	10.5	11.1	33.7	29.4	53.0	49.7	141.9
	1964 IV	23.5	7.6	43.4	28.0	85.9	75.3	204.9	104.0
Chile	1956 III	2.9	8.5	13.3	18.6	15.1	26.9	51.1	66.1
	1959 I	7.6	9.0	17.5	12.1	27.6	22.0	41.1	44.2
	1965 II	10.0	11.7	23.2	27.0	35.1	52.3	53.4	96.1
Colombia	1951 I	−4.9	4.6	11.7	5.3	2.5	21.2	n.a.	85.6
	1957 II	7.2	−1.8	9.4	2.8	21.4	11.1	32.1	33.5
	1962 IV	15.5	−7.4	18.0	1.5	17.4	11.5	39.5	34.2
	1965 II	6.6	6.7	8.2	8.7	13.5	13.5	41.6	31.3
	1967 I	3.2	0.0	9.6	1.9	13.4	20.3	26.5	40.5
Egypt	1962 II	3.4	4.7	4.7	1.7	8.9	3.7	9.6	25.3
Ghana	1967 III	−13.2	29.4	−24.8	22.6	−6.8	10.6	−8.9	23.5
India	1966 II	1.8	3.3	6.8	1.5	9.5	7.6	17.2	18.7
Israel	1952 I	2.1	−.1	5.8	.4	28.0	9.7	72.8	19.8
	1962 I	6.9	9.5	3.1	16.7	8.2	33.4	33.3	60.8
South Korea	1961 I	3.5	15.7	6.3	34.1	3.1	50.8	32.4	65.6
	1964 II	3.5	7.6	5.3	9.3	9.8	22.6	20.5	52.8
Philippines	1960 II	5.5	5.5	2.3	9.0	5.5	1.8	9.0	7.2
	1970 I	−5.8	3.5	6.5	3.7	19.3	16.5	23.9	30.4
Turkey	1958 III	1.2	1.5	3.9	2.9	13.9	4.2	32.8	22.2
	1970 III	11.6	13.1	11.8	8.1	12.9	34.2	22.2	70.5

n.a. = not available.

Note: Data are *not* seasonally adjusted. The Roman numeral after the year indicates the quarter in which devaluation took place and does not necessarily coincide with the start of Phase III, as, for example, in Ghana, where restrictionist policy preceded devaluation. The percent change is computed on the basis of the prior quarter; thus, for x quarters before devaluation, the money supply in the quarter of devaluation was divided by the money supply x quarters before.

Source: IMF, *International Financial Statistics*, various issues, Line 34.

Inspection of the data in Table 7-1 suggests that, despite frequent references to belt-tightening, stringent monetary policy, and stabilization programs, increases in the rate of expansion of the money supply following devaluation have exceeded reductions. A number of countries experienced increased rates of inflation following devaluation, and an inability to check the growth of the money supply was an important factor in some of these instances.

III. FISCAL POLICY

Just as the money supply following devaluation can be influenced both by the consequent payments surplus and by policy changes, the net shift in fiscal policy is the result of automatic changes produced by the devaluation itself and of deliberate policy changes introduced as part of the Phase III reform. The good intentions that accompanied devaluation did not always result in sustained shifts in fiscal policy; in many cases governments were unable to initiate, or to maintain, restrictive measures. The resulting budgetary deficits were frequently a major factor in the government's inability to control the money supply.

Impact of Devaluation on the Government Budget

The money supply increases automatically in response to devaluation only if the devaluation results in a payments surplus. This impetus is likely to be of greater importance the more liberal the predevaluation regime, but even then it is usually of minor significance and takes some time to be realized. In contrast, money supply increases in many developing countries result directly from government deficits. Increases in government revenues and decreases in expenditures very often automatically result from devaluation, and a budget shift usually occurs immediately following devaluation.

As indicated repeatedly, among the characteristics of Phase II exchange control regimes are the proliferation of detailed, partial, ad hoc regulations and incentives and the emergence of premiums on import licenses. Phase III episodes generally entail the removal of such partial price measures, which is the difference between net and gross devaluation, and the partial or total absorption of the premium on import licenses. Imports themselves may increase or decrease, depending on the nature of the devaluation package (see Table 7-3).

Most of these phenomena have automatic fiscal effects, which result from changes in export subsidies and taxes and from altered revenue from imports. Removal of export subsidies reduces the drain on the government budget. Government revenues are decreased to the extent that surcharges on imports are removed at the time of devaluation, but tariff revenue received per unit of imports increases to the extent that customs duties are levied ad valorem. Whether overall tariff revenue increases or decreases depends on what happens to the quantity of imports, the extent to which import surcharges are removed, and whether tariffs are specific or ad valorem.

The combined influence of these factors has varied considerably among the countries covered by the project. In Turkey the 1958 devaluation was accompanied by a massive increase in the flow of imports, and taxes were impos-

ed on a number of traditional exports. The result was a sizable increase in government revenues: taxes from foreign trade rose from TL 873 million in 1958 to TL 1,565 million in 1959. That increment alone was equal to 1.6 percent of Turkish national income in 1959, and it had a significant deflationary impact.[28]

Behrman found that the real value of tax revenues in Chile was affected by three factors: (1) an increase in exports and production giving rise to increased tax revenues; (2) curtailment of imports so that tariff revenue tended to fall; and (3) inflationary expectations aroused by devaluation, which led to reduced real government revenue and more rapid increases in prices than would otherwise have been the case. Behrman concluded that the net effect on real government revenues was positive.[29] The South Korean experience appears to have differed. Tariff revenues fell after devaluation because the decline in import volume exceeded the increase in the import EERs.[30]

On the government expenditure side the picture is somewhat more uniform, but the automatic effects are likely to be smaller. The removal of export subsidies tends to reduce government expenditures, but only in South Korea were export subsidies large enough for their removal to be significant. While export incentive schemes were abolished in other instances, they had applied to a sufficiently small class of commodities so as not to have had a significant overall impact.[31]

The other category of government expenditures affected by devaluation is the local currency cost of government foreign currency debt. When the price of foreign currency is increased, the amount of local currency the government must raise in order to meet interest and repayment obligations in foreign currency increases. Unlike additional government expenditures, however, that increase is not inflationary on balance, in that the funds so raised are turned over to the central bank in payment for foreign exchange.

In general a net reduction in the government deficit is more likely to result *automatically* from devaluation: (1) the greater is the increase (or the smaller the decrease) in the flow of imports following devaluation; (2) the more export subsidies are eliminated following devaluation; and (3) the more export taxes (usually imposed on traditional exports) are imposed as part of the devaluation package. Of the cases covered by this project, however, only the Turkish devaluation of 1958 produced changes that significantly and automatically increased government revenues. In most other countries the automatic revenue and expenditure effects were relatively weak.

Restrictive Policy during Phase III Episodes

Among the seventeen Phase III episodes that were accompanied by efforts to restrict monetary and fiscal policy, there were varying degrees, of success in

altering the fiscal impact of the government budget. Turkey in 1958, Ghana in 1967, and South Korea in 1964 were among the countries that successfully carried out a restrictive fiscal policy. In South Korea, deficits in the budget were entirely eliminated by 1964, and Frank, Kim, and Westphal believe that this was a necessary condition for slower growth of the money supply.[32] Ghana's experience is representative (except that it started a year prior to devaluation):

> . . . Apparently the authorities expected the impact of the devaluation to be inflationary. . . . The compensating policies that were introduced centered on the government deficit. The measure that most usefully sums up the overall situation is the net increase in the financial claims on the government—i.e., net government borrowing. . . . From the austerity budget of 1966-1967, the deficit was cut further in the twelve months following the July 1967 devaluation by about NC 16.5 million (from NC 61.1 million to NC 44.6 million). Without a more complete macro model, it is difficult to say whether this move was absolutely deflationary or simply less inflationary. . . .[33]

Indian fiscal policy turned highly restrictionist after the devaluation of 1966. Government expenditures fell from 25.7 percent of national income in 1965/66 to 20.3 percent in 1967/68, and the government deficit was reduced even in nominal terms. Since the price level was rising over the period, the decline in the real size of the deficit was substantial. Moreover, inspection of Table 7-1 indicates that Indian monetary policy was hardly overly expansionary; the rate of growth of the money supply was at an average annual rate of 9 percent for the two years following devaluation. Other instances of highly restrictive fiscal policies surrounding Phase III episodes include Israel in 1952, South Korea in 1964, and the Philippines in 1970. Brazilian restrictive policies occurred after 1964—a sort of delayed-reaction shift in policy.

There were also a number of failures to implement effective fiscal restraint. Colombia's 1962 experience is notable:

> During both 1961 and 1962 government expenditures rose relative to GNP; the sum of all current expenditure of the general government plus public fixed capital formation rose from 10.4 percent of GNP during 1960 to 11.7 percent in 1961 and to 12.3 percent during 1962. Current revenues . . . , which in 1960 were 95 percent of expenditures, fell to 77 percent of expenditures in 1961 and to 72 percent in 1962. . . . In the context of weak monetary policy tools . . . such fiscal policy was a key factor in the expansion of 42 percent registered in money and quasi money between the last quarter of 1960 and the last quarter of 1962.[34]

The net effect, in the Colombian case, was that the real exchange rate was scarcely 4 percent above its 1962 level by the second quarter of 1963. The failure of that devaluation loomed large in the reluctance of Colombian officials to consider a further devaluation in the next several years.

Chile's efforts to make the government sector less expansionary met with initial success but were not sustained, as Behrman explained:

> In all three stabilization programs the government announced its intention to reduce the size of the government deficit. . . . In the first year of the Ibanez-Klein-Saks program a cut of 15 percent in real terms was achieved. In the next two years and continuing through the Alessandri program, however, the size of the real government deficit increased steadily, with annual increases of 53, 14, 26, 29, and 1 percent. These governments were able neither to reduce expenditures signficantly nor to reform the tax system to make it more effective.
>
> . . . Except for the first year of the 1956-58 phase and the last two years of the Frei program [1968/69], thus, fiscal policy was fairly expansionary. . . . The maintenance of expansionary policies in the midst of anti-inflationary programs was due to difficulties in obtaining and implementing fiscal reforms on the one hand and to the desire to limit recessions on the other. . . .[35]

Some crude indicators of the fiscal policy shifts accompanying the Phase III episodes are given in Table 7-2. The data are even less instructive than the monetary data because expenditure and revenue figures are available only on a fiscal-year basis. Moreover, data stated in terms of percentages of GNP are only imperfect indicators of the fiscal impact of the government budget because GNP itself varied. In addition, the same expenditure/deficit pattern may have different effects depending on the circumstances surrounding it. For instance, the Israeli deficits were sizable but financed by foreign loans. They undoubtedly had a smaller inflationary impact than the Turkish deficits after the 1970 devaluation even though the latter were smaller relative to GNP.

Subject to these reservations, the data in Table 7-2 on government expenditures and deficits relative to GNP provide some indication of the overall direction of fiscal policy. The general impression is that, in many instances, countries were unwilling or unable to carry out the restrictionist fiscal policies implied by their announced programs. The results of monetary and fiscal policies are examined further in Chapters 8 and 10.

IV. IMPORT LIBERALIZATION

In addition to the changes in monetary and fiscal policy that result from conscious policy shifts and from the exchange rate change and related measures, there is one other important determinant of the level of economic activity in the period immediately following devaluation: the extent of import liberalization and the way in which it is achieved. Liberalization of imports means greater reliance on prices and less on QRs. This may be accomplished through any number of combinations of: (1) raising import prices to absorb premiums, leaving the quantity unchanged; (2) increasing the flow of imports; and

Table 7-2. Government Expenditures and Deficits for Years Surrounding Devaluations, Ten Countries (percent of gross national product)

Country	Devaluation Year	Government Expenditures			Government Deficits		
		Before	*During*	*After*	*Before*	*During*	*After*
Brazil	1957	21.0	21.7	22.9	1.6	2.1	0.2
	1961	23.3	23.7	23.8	0	2.9	4.8
	1964	23.6	23.2	23.7	3.8	4.4	3.5
Chile	1956	15.5	15.1	15.4	2.0	1.7	2.4
	1959	15.0	16.7	18.2	2.6	3.3	3.9
	1965	16.9	19.2	19.0	3.5	3.8	2.6
Colombia	1951/52	8.3	9.1	9.2	+.8	+.2	.2
	1957/58	10.1	10.2	10.1	1.9	1.8	.1
	1962	11.7	12.3	12.1	.7	2.2	.2
	1965	11.0	11.2	12.8	.3	.2	.9
	1967/68	14.0	15.1	15.5	+.1	0	.2
Egypt	1962	19.1	20.7	23.7	1.7	2.8	6.7
Ghana	1967	15.3	18.2	19.7	4.3	5.0	5.1
India	1966	25.7	23.4	20.3	1.6	.9	.9
Israel	1952	n.a.	n.a.	n.a.	11.0	7.0	11.0
	1962	19.6	25.0	25.0	3.0	7.0	5.0
South Korea	1961	17.3	18.5	19.9	+2.3	+1.2	+1.7
	1964	15.5	13.3	14.0	+1.7	+1.2	+2.2
Philippines	1960/62	11.9	13.9	15.1	1.3	.6	1.9
	1970	12.3	11.0	10.9	2.7	+.4	.2
Turkey	1958/59	14.9	14.5	15.7	+.4	+.2	+.2
	1970	21.9	21.5	19.3	3.3	2.0	2.2

Note: A plus sign denotes a surplus.

Sources:

Egypt–Expenditures and deficits are taken from the so-called services budget; data were provided by Bent Hansen.

India–Government expenditures are the sum of public consumption, public investment, and net defense expenditures as given in Bhagwati and Srinivasan, Table 1 of Chapter 8; data are expressed as a fraction of national income.

Israel–Public expenditures on goods and services from Michaely, p. 202.

South Korea–General government expenditures and surplus; data are from Bank of Korea, *Economic Statistics Yearbook*.

Philippines–Data provided by Robert Baldwin; deficits were divided by gross domestic product to obtain the percentage.

(3) reducing aggregate demand (presumably through domestic recession), thus lowering the demand for imports. The particular combination of policies followed in pursuit of import liberalization can make a significant difference to the macroeconomic impact of the devaluation package.

A sizable number of devaluation packages were accompanied by debt

rescheduling and the extension of fresh credits to permit increased flows of imports in the postdevaluation period. Important questions for later chapters concern the role of foreign donors in devaluation decisions, the productivity of increased import flows following devaluation, and the benefits of that choice compared with raising EERs for imports or other means of liberalizing the import regime. At this juncture the discussion is confined to evaluating the sorts of initial shifts in the import regime that accompanied devaluations. First, the extent of foreign borrowing is reviewed, and then the manner in which imports were liberalized in the various countries is examined.

Foreign Debt and Loans

Accumulated foreign debt, debt-service obligations, and new borrowing have played a prominent role in many of the devaluation episodes covered by the country studies. The "typical" transition from Phase II to Phase III seems to be the following. Pressures mount in Phase II and bring about a progressive discrepancy between the EER for imports and their social value, with the country resorting to a variety of means to augment "scarce" foreign exchange resources. These means include recourse to suppliers' credits, use of commercial credit markets, borrowing from international agencies, and solicitation of various types of foreign aid and bilateral payments arrangements. Interest charges and debt-service obligations mount, and export earnings fail to rise enough even to keep the premiums on import licenses constant. Imports are cut back, or at least do not increase sufficiently to permit a satisfactory rate of economic growth. At some point the country is faced with a peak debt-service obligation, which, if met, would entail further significant cutbacks in imports; the alternative would be default. The government then appeals to the aid donors and international organizations for debt rescheduling and additional credits in the hope of avoiding a cut in imports and consequent reduction in the growth rate. The lending organizations then impose certain conditions upon the country in return for debt rescheduling and fresh lines of credit. One of those conditions is a formal devaluation of the currency.

In one basic sense, debt rescheduling is as important as the receipt of new credits. Postponement of $1 of debt servicing is as valuable as $1 of new loans (at the same interest rate and payment terms) because it permits an additional $1 of imports in the current time period. Indeed, it can even be argued that debt rescheduling is more valuable, in that the foreign exchange thereby freed is untied, whereas fresh credits may not be.[36] In practice the difference is that, in general, debt rescheduling may prevent further *cuts* in the flow of imports, while fresh credits may be used to increase the flow of imports. If one knew in fact what would have happened to imports in the absence of debt rescheduling, then a comparison of that situation with one in which there was rescheduling would be perfectly valid. Such information is not, however, available, so the

distinction between debt rescheduling and receipt of fresh credits is meaningful empirically.

Colombia in 1957 and Chile in 1965 illustrate cases where arrears on commercial debt had mounted and imports were already severely restricted; the alternative to debt rescheduling would have been further draconian cuts in imports. In the Philippines the Marcos government followed a highly expansionary monetary and fiscal policy in the years 1967 to 1969. One consequence of that policy was a heavy demand for imports by the government and private sectors of the economy, and those imports were financed by foreign borrowing. By the end of 1969 the Philippines' external debt was put at $1.6 billion, with $450 million of that due in 1970 (compared with export earnings of $854 million in 1969) and two-thirds of the total debt due within four years. The maturing of such a large fraction of the debt was what precipitated the Philippines' 1970 devaluation.

The fact that a country is borrowing does not prove its currency is overvalued. South Korea, for example, has borrowed heavily on the international capital market since 1966, but during most of that time, according to Frank, Kim, and Westphal, the won has been valued at something very close to the optimal exchange rate. However, when short-term borrowing is used to finance import flows resulting from domestic excess demand arising out of expansionary policies (or ambitious development programs), the willingness of foreigners to extend additional credit diminishes as the volume of outstanding debt increases.

In contrast to the cases where imports have been excessive and have been financed by foreign credits, there have been instances where a country is under a severe burden of debt but has already substantially curtailed its imports. In those situations, import liberalization accompanying devaluation has required not only debt rescheduling but also additional borrowing. The Turkish devaluation of 1958 provides an excellent example. Turkey had suffered drastic reductions in imports (from $468 million in 1953 to $315 million in 1958) and had accumulated large arrears in commercial indebtedness. One part of the Turkish devaluation package was debt consolidation and rescheduling. In addition, $359 million of fresh credits were extended to enable Turkey to resume importing spare parts, intermediate goods, and capital goods. The increased flow of imports was important in eliminating the premiums on import licenses and also in absorbing inflationary pressures within the domestic economy.

Import Flows

When the import EER increases, the domestic currency cost of a unit of imports rises, and the premiums previously accruing to the recipients of import

licenses are transferred in part or entirely to the central bank. That absorption of purchasing power is deflationary because it is quite possible for the domestic value (paid to the central bank) of imports to increase even though the foreign currency value declines; it is also possible for the trade balance to show a negative shift in terms of domestic currencies but a positive shift in terms of foreign currency.[37]

Consider the case in which devaluation is just sufficient to absorb the premium earlier received by import license recipients. Assume that the premium was uniform across commodities and, further, that the increase in the export EER is proportionately the same as that for imports.[38] Insofar as imports exceeded exports prior to devaluation—and continue to do so—there is a net increase in the absorption of purchasing power by the central bank.

In addition to the effect of premium absorption on purchasing power, the behavior of the flow of imports itself has important macroeconomic implications. In countries where fresh credits permit import flows to increase following devaluation, that increase will be deflationary. Import liberalization, therefore, whether it results from absorption of the premium (and thus a transfer of purchasing power from the private sector to the central bank) or from an increased flow of imports, will be deflationary. When devaluation is accompanied by sharp cutbacks in imports, inflationary pressures result.

It is therefore necessary to examine the flow of imports in terms of both foreign and domestic currencies. The data in Table 7-3 provide a rough idea of the change in import flows in each of the twenty-two Phase III episodes. The first three columns give the dollar value of imports in the three years surrounding the devaluation. The next three columns give the change in the local currency value of imports. The seventh column gives the GNP in the year of devaluation. The final two columns then give the percent that the increment in the domestic value of imports represents of GNP—the second-to-last column expresses the net change in the domestic value of imports for the year following devaluation from the year preceding it as a percentage of GNP; the final column provides the same measure for the change in imports from the year of devaluation to the year afterward.

As with other measures, there are problems with these. The exact timing of the devaluation significantly affects the value of imports; annual data for two countries pursuing the identical proportionate liberalization of imports would look quite different if one had devalued in February and the other in November. However, the problems of seasonality in imports and errors in recording the data make the use of monthly or quarterly data even more problematic (and GNP figures are in any event unavailable). A second difficulty with the data is that the domestic currency value of imports is given in c.i.f. terms. What is really relevant is the amount paid to the government and central bank for imports before and after the devaluation; to the extent that net devaluation was smaller than gross for imports, the use of the domestic curren-

Table 7-3. Import Flows for Years Surrounding Devaluation, Ten Countries

		Imports								
		(Millions of Dollars)			*(Local Currency)*[a]			*GNP*	*Rise in Imports as % of GNP*[b]	
Country	*Year of Devaluation*	*Year before Devaluation*	*Year of Devaluation*	*Year after Devaluation*	*Year before Devaluation*	*Year of Devaluation*	*Year after Devaluation*	*(Local Currency)*[a] *Year of Devaluation*	*2 Years*	*1 Year*
Brazil	1957	1,234	1,488	1,353	72	86	103	1,050	2.9	1.6
	1961	1,462	1,460	1,475	201	299	512	3,475	8.9	6.1
	1964	1,487	1,263	1,096	782	1,243	1,930	18,726	6.1	3.6
Chile	1956	376	353	441	61	119	231	1,633	10.4	6.8
	1959	415	413	500	290	391	525	4,077	5.8	3.3
	1965	607	604	755	1,414	1,927	2,940	20,825	7.3	4.7
Colombia	1951	365	419	415	711	989	1,038	8,840	3.7	.6
	1957	669	657	483	1,673	1,643	2,105	14,710	2.9	3.1
	1962	557	540	506	3,733	3,684	4,554	33,000	2.5	2.6
	1965	586	453	674	5,277	4,450	8,739	57,670	6.0	7.4
	1967	674	497	643	8,739	6,986	10,350	81,610	1.9	4.1

Egypt	1962	700	754	916	244	301	398	1,685	9.1	5.8
Ghana	1967	321	265	271	251	261	314	1,757	3.5	3.0
India	1966	2,925	2,827	2,807	14	17	21	242	2.9	1.6
Israel	1952	380	321	281	136	n.a.	251	1,064	10.8	n.a.
	1962	592	634	672	1,065	1,841	2,016	6,669	14.3	2.6
South Korea	1961	344	316	422	23	36	52	297	9.7	5.3
	1964	560	404	463	67	81	104	697	5.3	6.2
Philippines	1960	577	663	678	1,154	1,483	1,963	12,100	6.7	4.3
	1970	1,254	1,210	1,326	4,933	7,299	8,593	41,200	8.9	5.8
Turkey	1958	397	315	470	4	9	15	290	3.1	1.7
	1970	801	948	1,171	70	100	160	1,470	6.6	3.9

Sources: Except as noted, all data are from IMF, *International Financial Statistics.* For Egypt, Ghana, and India, the dollar value of imports was taken from the country studies. For Turkey, the TL value of imports is from State Institute of Statistics, *Statistical Yearbook*, various issues.

[a]Local currency units are the same for imports and for GNP–either millions or billions–but may differ between episodes.

[b]The two-year increase in imports was calculated as the difference (in local currency) between imports one year after devaluation and imports one year before. The one-year increase is imports the year after devaluation less imports in the year of devaluation.

cy value of imports c.i.f. overstates the change in domestic expenditures on imports. Finally, for the rapid-inflation countries, the domestic currency values of imports are difficult to interpret as proportions of GNP, since the year-to-year increase in nominal GNP is itself so large. The data in Table 7-3 nonetheless provide some evidence as to the behavior of import flows and their relative magnitudes following devaluations. Turning first to the volume of imports, as reflected by dollar values, it is apparent that the macroeconomic impact must have varied widely. On one hand, there is a group of countries that either did not attempt to reduce import flows or deliberately increased them. Many of those increases—most notably those in Chile in 1965, Colombia in 1967, the Philippines in 1960, and Turkey in 1958 and in 1970—resulted in a substantial liberalization of the import regimes. On the other hand, there were also devaluations that were accompanied by sharp cutbacks in the level of imports. In some cases, such as India in 1966 and Brazil following 1964, the domestic demand for imports fell as a result of recession, and imports were consequently liberalized despite the decline in volume. In other cases, such as Israel's 1952 devaluation and South Korea's 1964 Phase III, the increase in import EERs was sufficient to absorb a great deal of the premium on imports despite the cutback, so that liberalization nonetheless occurred. In yet other cases, most notably Colombia's 1957 devaluation, a major purpose was to cut back the level of imports, and liberalization was limited.

The next three columns of Table 7-3 provide examples in which the domestic currency value of imports increased while the dollar value fell. An extreme case is the Colombian 1957 devaluation, when a drop in imports from $657 million to $483 million was accompanied by an increase in their domestic value from 1,643 million pesos to 2,105 million pesos. The order of magnitude of the change in domestic value of imports is indicated by the last two columns of Table 7-3. As already noted, the EER should be used, but is unavailable, and there are the familiar difficulties with timing. Nonetheless, some of the magnitudes are impressive. The increment in the domestic currency value of imports, as a percent of GNP, can be quite large; for example, in the Philippines in 1970 the dollar value of imports fell slightly between 1969 and 1970, while the peso value rose from 4,933 to 7,299 million pesos. This increment represented 5.7 percent of GNP.

The data in Table 7-3 suggest that the increased local currency cost of imports can be highly significant. However, they obscure some important changes. The 1958 Turkish devaluation, for example, occurred in August; imports in the first half of the year were extremely low, so quarterly measurement would show a much larger increase in import values for the last half of the year than the 3.1 percent indicated in the table. It will be seen in Chapter 8 that changes in import flows were one important factor in determining the price level impact of devaluation and also the level of economic activity in the postdevaluation period.

NOTES

1. Of course, insofar as devaluation alters the structure of variance of EERs across different commodity groups, there might still be some real effects. If the average export EER returns to its predevaluation real level, it is improbable that export earnings will significantly increase. That, in turn, implies that liberalization cannot be sustained, which means that premiums on import licenses and the resulting bias of the regime will likely revert to the former level.

2. In some instances, stabilization programs were undertaken at the insistence of international donors and creditors as a necessary condition for debt rescheduling, new credits, or other considerations. In such instances the relative importance attached to reducing the domestic rate of inflation compared to altering the trade and payments regime can differ significantly between the officials of the country and the donor/creditor countries. See Chapter 10 for a discussion of the role of creditors.

3. It is arguable whether the Egyptian devaluation of 1962 ought to be regarded as a stabilization program. The IMF was heavily involved as the Egyptian government badly needed foreign credit. The IMF appears to have laid down conditions, including restraint on monetary and fiscal policy, under which it would extend credit. However, as Hansen and Nashashibi explain, "There is little doubt that the government, despite its commitments to the IMF, had no intention whatever of cutting down domestic demand; at any rate, domestic demand continued to expand vigorously . . ." (Hansen and Nashashibi, p. 90).

4. It should be noted that the converse is not necessaily true. In principle one might succeed in stabilizing the domestic price level and yet for one reason or another fail to be able to maintain liberalization. An adverse shift in the world prices of major exports, failure to devalue sufficiently, or bad weather and resulting crop failures might lead to such a result. Among the countries covered in the project, the Indian devaluation came closest to this outcome: the rate of inflation fell sharply, but bad weather led to poor crops in the postdevaluation period. There is also considerable ground for believing that the devaluation was insufficient to permit sustained liberalization.

5. Behrman, p. 300.

6. Bhagwati and Srinivasan, p. 83.

7. Leith, pp. 109-10.

8. Krueger, pp. 68-71.

9. Baldwin, pp. 75-76.

10. Krueger, pp. 78-79.

11. Leith, p. 110.

12. Behrman, p. 298.

13. See ibid., p. 296.

14. Díaz-Alejandro, p. 205.

15. Fishlow, pp. 30-32.

16. See, for example, Michael G. Porter, "Capital Flows as an Offset to Monetary Policy: The German Experience," *IMF Staff Papers* 19 (July 1972): 395-422; and Pentti J.K. Kouri and Michael G. Porter, "International Capital Flows and Portfolio Equilibrium," *Journal of Political Economy* (May/June 1974): 443-68.

17. Michaely, p. 144.

18. Behrman, pp. 227-28.

19. However, this factor is only operative as long as the balance of payments is in surplus. If inflation, induced by money-supply increases resulting from reserve accumulation, led to reduc-

tions in the surplus, the mechanism would tend to stop when the surplus was eliminated.

20. Control of inflation is also likely to be more difficult the more important are short-term capital flows for the country in question. In the early 1970s South Korea was experiencing considerable difficulty in controlling her money supply because of the importance of the international financial market in influencing capital flows.

21. Perhaps the most massive policy shift was Israel's 1952 New Economic Policy, discussed above.

22. Díaz, p. 19.

23. Ibid., p. 20.

24. See Table 7-1.

25. The Brazilians also had major monetary reforms. They raised their nominal interest rates enough to make the real rate of interest positive and began indexing a variety of transactions in the 1964-1968 Phase III.

26. Frank, Kim, and Westphal, p. 19.

27. Even a uniform method of seasonal adjustment of the basic data would not be adequate, although such numbers are not in any event available. For example, the money supply in Ghana is heavily influenced by the timing of cocoa purchases and exports. In most years the seasonal peak comes in the fourth quarter, but sometimes it is delayed until the first quarter of the following year.

28. For that matter, so did the increased flow of imports, which is discussed below. See Krueger, p. 91, for details about government revenues.

29. Behrman, p. 228.

30. Frank, Kim, and Westphal, Chapter 9.

31. In the 1970 Turkish devaluation, export subsidies were not removed for minor exports. They were expressed in percentage terms and rose dramatically with devaluation. The result was a surge of "minor" exports with, of course, an accompanying increase in government expenditures. Traditional exports, however, did not get the full benefit of the new exchange rate, receiving only TL 12 per U.S. dollar. The revenue increase was greater than the increased payments.

32. Frank, Kim, and Westphal, p. 18.

33. Leith, p. 124.

34. Díaz, pp. 191-93.

35. Behrman, pp. 303-304.

36. Donor countries and international ogranizations have typically computed the amount of gross aid received at the time of devaluation to include the value of debt rescheduling. In general, borrowing countries have calculated the value of net aid received.

37. This phenomenon is analyzed carefully by Richard N. Cooper, "Devaluation and Aggregate Demand in Aid-Receiving Countries," in J. Bhagwati, R. Jones, R. Mundell, and J. Vanek, eds., *Trade, Balance of Payments and Growth* (Amsterdam: North Holland, 1971).

38. The magnitude of the bias of the regime is irrelevant for present purposes.