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Chapter 6

QR—Related Aspects of Phase III

The complexities of Phase II QR regimes lead to the need for the distinction between nominal and effective exchange rates and for careful estimation of those rates. If there were no QRs, however, one would simply obtain estimates of EER changes, and then proceed in the same manner as in the case where devaluation occurred from an initial situation characterized by full convertibility on current account and a unified exchange rate. Analysis would be relatively unaffected.

In fact the prior existence of QRs significantly affects the way in which devaluation itself affects economic behavior. Moreover, many devaluation packages have included measures to alter the QR regime directly. It is the purpose of this chapter to examine the ways in which the prior existence of QRs and alterations in the QR regime affect the impact of the Phase III policy package.

A first task is to explore the interaction of devaluation and the QR regime. Thereafter, the experience of the ten countries in the twenty-two Phase III episodes can be reviewed. For this purpose it is convenient to use the categorization of regime attributes outlined in Chapter 4. The extent of the Phase III liberalization, changes in bias, rationalization, and reduced variance in incentives is discussed for each of the twenty-two episodes.

I. INTERACTION OF DEVALUATION AND THE QR REGIME: A FRAMEWORK FOR ANALYSIS

The traditional analysis of devaluation proceeds in terms of defining the conditions under which devaluation will reduce an open deficit that is excessive or

increase a surplus that is too small. It is thus built around the important insight that the excess of domestic expenditure over income must be reduced if the reduction in an open deficit is to be achieved by an expenditure-switching policy such as devaluation. Part of a net devaluation may be aimed at offsetting an existing or anticipated deficit; that portion may be analyzed in the same way as the devaluation of any convertible currency. Virtually all the factors relevant to consideration of devaluation of a convertible currency apply as well when a country employing exchange control undergoes a real devaluation to reduce the size of its ex-ante deficit. Those factors are considered in Chapter 7.

Here, focus is on the ways exchange rate changes interact with the QR regime. Initially the relationship between deficit reduction, bias, liberalization, and devaluation can be dealt with in the context of a two-commodity model. Variance reduction and rationalization are, by their nature, phenomena that assume importance only with additional commodities (or differential treatment of the same commodity according to size of firm, location, or other attributes).

Definitions

Some definitions pertaining to QR-related aspects of Phase III are in order.[1] Liberalization and bias reduction can be defined using the terms introduced in Chapter 5. It will be recalled that the domestic price of a commodity (net of domestic handling charges) would be equal to its EER times the foreign price in the absence of QRs. With QRs, the difference between the two is the premium accruing to the recipient of a license to import one unit of the commodity. It is convenient, however, to compute premiums accruing per unit of the foreign currency value of the import license rather than per unit of the commodity (although one can always choose units of each commodity that cost one dollar).

Thus, the premium on an import license for the ith commodity at time t, $PR_{m_{it}}$, can be expressed as:

$$PR_{m_{it}} = \frac{P_{it}}{q_{it}E_t} - \frac{\text{EER}_{it}}{E_t} \tag{6.1}$$

where p_{it} is the domestic price of commodity i at time q; q_{it} is the foreign price of i at time t; E_t is the current nominal exchange rate; and EER_{it} is the effective exchange rate for i at time t. If there is no quantitative restriction on importation of i, the ratio of the domestic price to the foreign price (in domestic currency at the nominal exchange rate) equals the ratio of the EER to the nominal exchange rate, and the premium is zero. If, for example, a tariff

(t) were the only protective device, then $p_{it} = (1 + t_{it})q_{it}E_t$ and $EER_{it} = (1 + t_{it})E_t$. In this case, $PR_{m_{it}}$ would be zero.

A QR regime is said to be more *restrictive* the higher is the value of premiums as a percentage of the value of trade. Conversely, a regime is more *liberalized* the smaller is the value of premiums as a percentage of the value of trade.[2] It should be noted that there is no particular reason why premiums should accrue only to imports; it is perfectly possible for a trade and payments regime to permit only limited quantities of exports. In such cases, export licenses would be valuable for their holders because the foreign price of exportables would be higher than the domestic price by more than the EER differential.[3] In practice, premiums have been quantitatively much more significant for import licenses than for exports.

From the definition given in Equation (6.1), it is immediately apparent that liberalization can take place: (1) if more imports are allowed at the prevailing EERs; (2) if the EER is raised with a given number of licenses issued; (3) if domestic demand decreases (with an implied fall in the domestic price with a given foreign price and EER); and (4) if the foreign price of the commodity increases autonomously. The foreign price might change, but it is *not* a policy instrument that can be undertaken by the government of a developing country. The first three mechanisms can be used to liberalize the regime by deliberate policy. Combinations of the three alternatives are also possible and, indeed, much of the discussion of alternative policy packages for shifting from reliance on QRs to reliance on pricing will entail consideration of the extent to which each of the three means should be employed.

Another effect of devaluation and QR alteration can be a change in bias. The bias (B) of the regime, at time t, may be defined as:

$$B_t = (1 + t_t + n_t + PR_{mt})/(1 + r_t + s_t) \tag{6.2}$$

where (from Chapter 5) n_t = the value of import surcharges; r_t = the value of export encouragement schemes, and s_t = the subsidy (or tax) per dollar of exports.[4] All other terms are as defined in (6.1). The measure B_t indicates the ratio of import substitution prices to export prices domestically relative to the same ratio internationally.[5] A higher B_t implies a greater incentive for domestic production of import substitutes. Ideal resource allocation occurs—assuming the absence of monopoly power in trade and of domestic distortions—when $B = 1$.[6] Bias can be in either direction: when B is less than unity, a trade and payments regime is said to be biased toward export promotion; when B exceeds unity, it is biased toward import substitution.[7]

Relationship between Bias and Liberalization

Inspection of the definitions of bias and liberalization shows that there is no necessary reason, at least in theory, for a connection between the two. A regime could be fully liberalized and yet employ exceedingly high tariffs in order to encourage import substitution. The regime would then be liberalized and highly biased. Alternatively, a QR regime could subject both exports and imports to severe licensing but carry the same premium rate on the two activities. In that case the regime would be highly restrictive, but not biased.[8]

Turning the argument around, there are obviously trade-offs between alternative ways of altering bias as well as of liberalizing. One could maintain a constant degree of bias, while liberalizing, if QRs were replaced with their tariff equivalents; conversely, the degree of bias could be increased, while maintaining a constant degree of liberalization, by raising tariffs or reducing export subsidies and incentives.

The Effects of Devaluation under QRs

An alteration in the exchange rate affects every aspect of QRs and their impact on economic activity. Although the altered variance and rationalization that may result from an exchange rate change must be analyzed in a multicommodity context, most other effects can be understood readily in a two-commodity model.

Figure 6-1 is designed to show the relationship between devaluation, deficit reduction, liberalization, and bias. Panel A shows how the exchange rate alteration is partitioned into the replacement component and net devaluation. In Panel B the net devaluation is divided into the portion which corrects an open deficit and that which affects the bias and restrictiveness of QRs. The relationship between liberalization and bias reduction resulting from that portion of the net devaluation which does not correct the deficit can be seen in Panel C. Because the geometry is useful only on the two-commodity case, the relationship of devaluation and QRs to rationalization and reduced variance of the regime cannot be illustrated.[9]

Panel A portrays the initial situation and the exchange rate change. The line *DD* represents the quantity of foreign exchange that would be purchased (to buy imports) at each price of foreign exchange. The diagram is partial equilibrium in that the behavior of the domestic money supply, of aggregate expenditure, and of related variables is not specified. If world prices are assumed given to the country, the line *DD* can be interpreted as the volume of importables that would be purchased from abroad. It therefore represents the

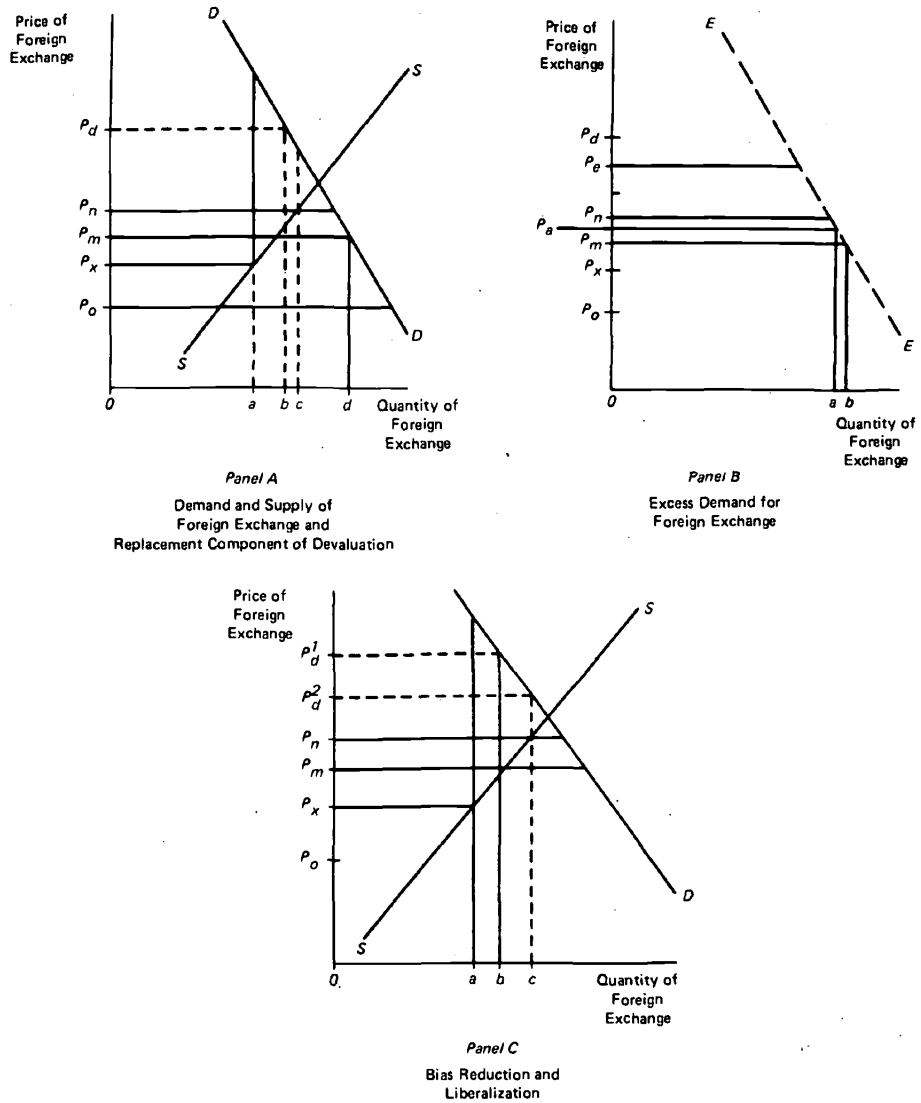

Figure 6-1. Components of Devaluation

outcome of both production and consumption decisions—as the domestic price of importables rises, individuals presumably reduce their consumption of those commodities, while domestic production increases.[10]

The *SS* line has a comparable interpretation: it represents the quantity of foreign-exchange earnings (from exports) that would occur at each price of

foreign exchange. As with demand decisions the quantity of exports (at given international prices) reflects changes in both domestic production and consumption that would occur as the domestic price varied (relative to some aggregate of "other" commodities, usually thought of as home goods).

Suppose, now, that in the initial situation the price of foreign exchange is p_o, but that there is an export subsidy in the amount $p_x p_x$ (making p_x the EER for exports), and a tariff on imports in the amount $p_m p_o$ (making p_m the EER for imports). If individuals were free to undertake all the transactions they wished at those prices, imports would be *od* in value (and in volume, given the constant foreign price assumption), while exports would be *oa*; the deficit would be equal to the difference, *ad*. Suppose, however, that such a deficit is unacceptable, so that imports are limited, by quantitative restrictions, to the level *ob,* with a resulting small deficit of *ab*. The domestic price of imports is then p_d, and the premium on import licenses is $p_m p_d$. The bias of the regime is p_d/p_x, reflecting the difference between the domestic incentive to produce import substitutes and exports relative to the international marginal rate of transformation.[11]

Assume now that there is a devaluation from p_o to p_n, and that the export subsidy and import duty are simultaneously removed. The net devaluation is thus $p_m p_n$ for imports, and $p_x p_n$ for exports (a composite EER change could be derived by weighting the two separate EER changes). Suppose, further, that it is intended that there be no deficit after devaluation. In that case Panel B can be used to determine the amount of net devaluation necessary for removing the deficit. The *EE* curve in Panel B is derived from Panel A: it represents the excess demand for foreign exchange that would arise at various prices of foreign exchange in the absence of tariffs and export subsidies. The horizontal axis now measures the deficit that would occur at each price of foreign exchange in the absence of surcharges and quotas. If p_a is taken as the weighted predevaluation EER, then the distance *ba* on the horizontal axis, traced to the vertical axis, may be used to calculate the change in the price of foreign exchange that would result in a reduction in the deficit in the amount of *ab*. If net devaluation were equal in amount only to $p_a - p_x$ (and ignoring the complications that arise because of differential changes in import and export EERs), then the restrictiveness of the QR system would be unaltered because exports would increase or imports fall by enough to wipe out the deficit.[12]

The effect of the exchange rate alteration on bias and liberalization can be easily seen from Panel C. Exports, at the new export EER, would be *oc* and—under the assumption that the deficit is eliminated—imports would be of the same value. The domestic price of imports would fall from p_d^1 to p_d^2, and the premium on import licenses would decline from $p_d^1 p_m$ to $p_d^2 p_n$. That decline represents a decrease in the restrictiveness of the regime; that is, it constitutes liberalization. It, and the increase in the export EER, both contribute to reduction in bias, which falls from p_d^1/p_x to p_d^2/p_n. It should be noted that liberaliza-

tion could occur even without exchange rate alteration by increasing the import duty from $p_d p_m$ to any higher level; bias in the regime could be unaltered, but the regime completely liberalized, if the import duty were increased to $p_d p_d'$. Conversely, bias could be eliminated at the old exchange rate and the restrictiveness of the regime unaltered, if exports were subsidized in the amount $p_d' p_o$ (although there would be a large trade surplus), while imports were held to their original level.

The partial-equilibrium defects of Figure 6-1 should be apparent from the discussion. The figure nonetheless helps to show that liberalization and bias reduction can both come about as a result of net devaluation and even from deficit reduction, depending on the nature of the difference between net and gross devaluation. One could, in principle, have a liberalizing devaluation with bias unchanged, or a bias/reducing devaluation with the extent of liberalization unaltered. The latter, however, is hardly likely, except in the case where the major portion of the devaluation results in deficit elimination.

In general, reduction in the premium on import licenses is likely to affect both the degree of restrictiveness of the regime and the bias of the regime. Likewise, increasing the export EER will directly reduce the bias of the regime, and—to the extent that export earnings increase and permit an increased flow of imports—the import premium will likely fall. Devaluation, therefore, is likely to affect both bias and restrictiveness. Bias is likely to decline, both because the premium on import licenses is likely to fall and even more importantly because the export EER is likely to increase by proportionately more than the domestic price of importables. Liberalization is likely to occur as the premium on import (or export) licenses is replaced by pricing measures. It is therefore important to recognize, not only the distinction between net and gross devaluation, but also the impact of devaluation on bias and on the restrictiveness of the regime.

It is well known that economic analysis is straightforward whenever there is a single relative price, as in the two-commodity case, and that it becomes extremely complex whenever there are many commodities. That is true of the analysis of tariffs, as is evidenced by the great difficulty of analyzing the welfare implications of lowering a particular tariff in a tariff-ridden world. It is equally true of the various complications that are introduced by the fact that QR regimes normally discriminate in a variety of ways among commodity categories so that the divergence between domestic and international marginal rates of transformation varies widely among different classes of transactions.

An important hypothesis that is frequently encountered is that QR regimes inevitably generate greater variance of this type than their tariff-equivalent counterparts and that this variance may be a major cost of using QRs rather than tariffs. Unlike the relationship between devaluation and bias reduction and liberalization, there is no theoretical reason why QR regimes

should be subject to greater variance than tariff-ridden liberalized regimes. However, as the following discussion indicates, the country studies provide considerable empirical evidence in support of this hypothesis.

II. LIBERALIZATION DURING PHASE III EPISODES

Liberalization results from devaluation itself because the premium on import (and export) licenses is partially or totally absorbed by the exchange rate change. In addition, other policies can be adopted to liberalize the regime. These include imposing tariffs to replace QRs, permitting increased quantities of imports, and also depressing the level of economic activity in order to reduce the demand for imports.[13]

In the twenty-two Phase III episodes, varying degrees of emphasis were placed on liberalization, and the means of achieving it differed from case to case. Brazil (1957), Ghana (1966/67), India (1966), Israel (1952 and 1962), the Philippines (1960), South Korea (1964) and Turkey (1958) are all instances where liberalization was an important component of the devaluation packages. A short description of the salient features of each will demonstrate the wide variety and diversity of ways by which devaluation and changes in QR regimes can interact to bring about liberalization.

Brazil

For Brazil the 1957 Phase III was accompanied by the introduction of a tariff system that replaced an earlier auction system. Under the new system a set quantity of imports in a particular category was permitted, and the licenses were auctioned off. Fishlow, in his summary, saw the 1957 Phase III as but one step in a progression "from a crude system of direct licenses in 1957 to a highly sophisticated commercial policy seeking to stimulate exports and regulate import demand in a progressively more open economy."[14] Later Brazilian Phase IIIs were to complete the transition. The 1961 episode seems to have had its greatest impact in reducing the variance in differentials among commodity categories. The 1964 Phase III, which really had two stages, centered on bias reduction.

In the first stage, from 1964 to 1967, imports were liberalized by a variety of means, which also cut bias toward import substitutes. In the second stage, 1967/68, bias was shifted markedly toward exports, a trend that continued over the next several years.[15] Both the 1961 and 1964 devaluations were followed by increased reliance upon tariffs and pricing interventions. Quantitative restrictions had vanished by the late 1960s.

Ghana, 1966/67

In Ghana the QR system in effect prior to the 1967 devaluation relied heavily on specific licensing, under which each import license application was individually considered.[16] An open General Import License (OGL) was available only for books and periodicals and nonmerchandise articles in 1961.[17] Thereafter, until the devaluation, specific licensing remained the rule, although commodities were sporadically added to, or deleted from, the eligible OGL list. With the devaluation in 1967, there was a shift toward more liberal licensing policies. As reported by Leith:

> Import liberalization began almost immediately after the devaluation and continued an uneven but uninterrupted expansion through the next four and one-half years. The attempt was cautious. Expansion of the OGL list was spread over several years. . . . As licenses were removed from substantial portions of the import bill, surcharges on delicensed imports were introduced. Initially then the import liberalization appeared to be designed to substitute price for quantitative restriction of imports. . . . In the latter stages of the liberalization, however, it became apparent that the objective was to increase the level of imports—an objective far more difficult to sustain in the absence of continued export growth. . . .[18]

Even in the initial devaluation announcement, emphasis was placed on the objective of moving toward open general licensing and away from specific licensing of all imports.[19] Leith stresses that the initial intent—to dismantle the QR system and replace it with pricing measures—was frustrated only when the shift to pricing measures was accompanied by an endeavor to increase the level of imports. At that stage, balance-of-payments pressures again emerged. The reasons why liberalization could not be sustained, which are analyzed in detail by Leith, concern primarily the macroeconomic policy conducted by the government of Ghana during the liberalization effort.

For present purposes, what is worth noting is that Ghana did achieve considerable liberalization: whereas OGL imports constituted only 3 percent of Ghanaian imports in 1967, they rose to 59 percent of imports in the latter half of 1970. By that time all the various techniques indicated above had been used to liberalize the regime. The government had adopted deflationary monetary and fiscal policies a year prior to the devaluation, thereby reducing the demand for imports. The devaluation itself absorbed some of the preexisting premiums on import licenses, and the special charges on imports mentioned by Leith also helped absorb premiums. Finally, in the later part of the liberalization effort the government permitted a sizable current account deficit in order to maintain the flow of imports.

India, 1966

Some liberalization had already started in India prior to the 1966 devaluation. It had taken the form of removing or relaxing industrial licensing requirements which, as Bhagwati and Srinivasan show, had interacted with import licensing in a number of ways to intensify the restrictive effect of each. Bhagwati and Srinivasan see the 1966 Phase III episode as a continuation of the momentum that resulted from the earlier halting moves toward industrial delicensing. One of the components of the devaluation package, as originally announced, was "an official declaration and implementation of a policy of liberalized import licensing."[20] This policy was implemented by the introduction of 59 "priority industries," whose import licensing requests were to be treated on a far simpler basis than had earlier been the case. Import licenses for intermediate goods and raw material inputs not domestically produced were to be issued automatically for six-month periods, in an amount not exceeding that used in the preceding six months.

While this "liberalization" fell far short of a liberalized trade and payments regime, it represented a significant relaxation of the stringent conditions that had surrounced any import license request prior to the devaluation. In the months following devaluation, premiums fell significantly. For drugs and medicines, for example, premium rates ranged from 185 to 245 percent in January to April 1966 and ranged from 38 to 62 percent in the July to December period. A simple average of the premium rates for January and February was 226 percent, compared with a comparable average of 81 percent for September and October, after the devaluation.[21]

In the Indian case, the foreign exchange shortage was so severe at the time of devaluation that the alteration in the exchange rate alone did not begin to absorb the premium on import licenses—the import EER increased only 40 percent from 1965 to 1966. The additional imports for priority industries could not have been permitted had not measures been taken to supplement the devaluation. The major means of increasing the flow of imports was borrowing from abroad at the time of devaluation, chiefly through credits from a consortium of aid donors. In addition, a recession contributed to reduced import demand.[22]

Israel, 1952 and 1962

The Israeli devaluations of 1952 and 1962 were both aimed at reducing reliance upon QRs. Israel had used QRs almost exclusively for regulating the balance of payments during the 1949-1951 period. The 1952 devaluation was aimed at controlling the balance of payments. Much of the system of administrative control over imports—especially of raw materials and intermediate

goods—was simply eliminated, and remaining QRs were intended to protect domestic industry.

Whereas the 1952 devaluation was accompanied by the abandonment of QRs for purposes of controlling the balance of payments, the 1962 devaluation was aimed at shifting from QRs to tariffs for protective purposes. As explained by Michaely:

> Removal of the QRs proved to be easy, and was performed quite rapidly, for imports of raw materials and semimanufactured intermediate goods [in the 1952-1955 Phase III episode]. Since these were not produced in Israel, and could not potentially be produced within a relevant price range, liberalization of such imports did not effectively reduce protection to any local industrial branch. . . . In fact, total protection of import substitutes by QRs remained in force some seven or eight years after the restoration of balance-of-payments equilibrium. Only with the second New Economic Policy, in 1962, did the progressive relaxation of these restrictions start. Even then, for some seven years the change was primarily in the *form* of protection: quantitative restrictions were replaced by the price mechanism, that is, by appropriate tariffs designed to grant each industry roughly the same protection it had enjoyed under the QR regime. . . .[23]

For the liberalization that started in 1962, the Israeli government established a commission that received evidence and recommended tariff levels and the removal of quantitative restrictions. Liberalization was a gradual process, which took several years to effect. This delay occurred despite the fact that "by the early 1960's most policymakers were convinced that the protection system led to a substantial misallocation of the country's resources and would have to undergo a radical transformation."[24]

The liberalization was, however, successful, in that QRs were eventually completely removed. The two Israeli devaluations point up an interesting contrast. The first, which resulted in the freeing of raw materials and intermediate goods imports, in fact *increased* the effective protection given by QRs to domestic industry and was easily accomplished. The second, which tended to lower effective protection, was by far the more difficult and required a great deal more time to accomplish. The resistance to shifting from QRs to tariffs encountered in Israel is one of a number of pieces of evidence suggesting that QRs may have a significantly greater protective effect than policymakers intend.

The Philippines, 1960-1962

The purpose of the 1960 Philippine devaluation was to eliminate reliance on QRs for balance-of-payments purposes and to shift from QRs to tariffs for

protective purposes. Thus, it was hoped that this devaluation would accomplish what it took both Israeli devaluations to achieve. At the outset of the Phase III episode, multiple exchange rates were introduced. From that time until January 1962 the particular exchange rate categories at which individual commodities could be traded were periodically shifted so that gradually more commodities were traded at higher EERs, and the lowest EERs were abandoned. Concurrently the exchange control regulations which had previously applied to all transactions were gradually relaxed, and some categories of transactions were exempted. Finally, in January 1962, full exchange decontrol was decreed. However, there was a replacement of those controls with pricing measures.

The Philippine case thus represents an instance where liberalization was effected primarily by substituting price measures for QRs. It is interesting in that the intent was to liberalize without affecting the bias of the regime. Nonetheless, the devaluation did alter this bias to some extent.

South Korea, 1964

In the 1961 devaluation in South Korea, there was an attempt to liberalize the regime: import controls were revised and grouped into four classes, ranging from commodities for which requests for licenses would be automatically granted (automatic approvals) to prohibited commodities. However, with the reemergence of balance-of-payments pressures in 1963, the trend was reversed, and commodities were shifted away from the automatic approval (AA) list. The AA list was expanded again after the Phase III reforms of late 1964. This shifting of commodities among exchange control categories is apparent in the data provided in Table 6-1.

In the South Korean case the exchange-rate adjustment was the major means by which liberalization was accomplished. That adjustment was accompanied by a very rapid growth of exports,[25] and liberalization could thus be sustained and increased without resort to additional surcharges on imports or deflation in the domestic economy.

Turkey, 1958

The Turkish 1958 Phase III started from a situation in which foreign exchange was so scarce that import licensing had virtually halted. Import license applications were accepted or rejected on a specific basis, and the rejection rate was high. The situation was so chaotic that on many occasions the receipt of an import license did not assure that the would-be importer would be able to purchase foreign exchange. Moreover, export licensing was used extensively prior

Table 6-1. Number of Importable Items in South Korean Semiannual Trade Programs, 1961-1967

Period	Import List				
	Automatic Approval	*Restricted*	*Semi-Restricted*	*Total Importable*	*Prohibited*
First half 1961	1,546[a]	35[b]	–	1,581	305
Second half 1961	1,015	17	–	1,132	355
First half 1962	1,195	119	–	1,314	366
Second half 1962	1,377	121	–	1,498	433
First half 1963	776	713	–	1,489	442
Second half 1963	109	924	–	1,033	414
First half 1964	n.a.	n.a.	n.a.	1,124	617
Second half 1964	n.a.	n.a.	n.a.	496	631
First half 1965	1,447	92	19	1,558	624
Second half 1965	1,495	12	4	1,623	620
First half 1966	2,104	125	11	2,240	583
Second half 1966	2,307	127	12	2,446	386
First half 1967	2,950	132	–	3,082	362

n.a. = not available.

Source: Frank, Kim, and Westphal, p. 45.

[a]Includes 309 special items that could be imported only when financed by export earnings.

[b]Indicates import items linked to specific exports.

to develuation partly to keep domestic prices low by regulating exports and partly to try to insure that export earnings would flow through official channels.

A major part of the devaluation package consisted of dismantling the export controls and liberalizing imports. An import regime was introduced under which three lists of commodities would be announced every six months. These lists were liberalized imports, for which import licenses would presumably be automatically granted; quota imports, for which a given total amount of foreign exchange was made available, subject to strict procedures for allocation among applicants; and bilateral imports, which could originate from countries having bilateral trading agreements with Turkey. Any commodity not listed could not be imported.

The Turkish government had to borrow extensively in order to increase imports under the new regime. Imports rose from $247 million in 1958 to $354 million in 1959. The increased flow of imports, combined with an increaase in the import EER in excess of 100 percent, virtually eliminated the premium on import licenses. Although monetary and fiscal policies were restrictive, real GNP rose about 5 percent in the year following devaluation. The 1958 Turkish

devaluation, therefore, represents an instance of liberalization that resulted both from a sizable increase in the volume of imports and from a hefty increase in EERs.[26]

Other Liberalizations

In all the cases cited above, liberalization was achieved to a significant extent, at least in the immediate postdevaluation period. To be sure, it was seldom complete, and occasionally—as in India—the regime was probably more restrictionist after devaluation than many others—such as South Korea—were prior to devaluation.

The other Phase III episodes, by and large, were accompanied by some liberalization. In general, however, liberalization was less prominent as a part of the devaluation package than in the cases cited above. The Chilean devaluations, for example, all entailed some liberalization through the exchange rate changes and also through increased import flows. However, all three Chilean episodes were marked by erosion of the exchange rate change by the domestic rate of inflation, and such liberalization as there was was short-lived. In Chile, as to a lesser extent in Colombia, the liberalization component of the devaluation was reduced because devaluation was generally undertaken in the midst of a severe balance-of-payments crisis. As such, much of the exchange rate change was preventive: to keep the exchange control regime from becoming more restrictionist.

The lesson that emerges from all the episodes is that devaluation—at least net devaluation—absorbs part of the premium on import licenses and thus generally provides some liberalization of the regime even in the absence of other measures. In the short run there are numerous policy instruments that can increase the extent of liberalization. They range all the way from replacing QRs with tariffs—as in Israel and the Philippines—to domestic deflation to reduce import demand and to borrowing abroad to finance an increased import volume. In the long run, of course, liberalization can be continued only if the pricing measures enable individuals to carry out their desired transactions, and generally that requires a sustained increase in foreign exchange earnings. The distinction between the policies that permit continued liberalization in the long run will be considered in subsequent chapters.

III. THE EXTENT OF BIAS REDUCTION

There are two *a priori* reasons why one would expect a devaluation to reduce the bias of the trade and payments regime. First, to the extent that the devaluation absorbs premiums on import licenses, the domestic price of import-

competing commodities will not increase. The increased price of foreign exchange will therefore be more fully reflected in the domestic price of exportables than in the domestic price of import-competing goods. That effect, by definition, reduces bias. Second, devaluations are usually accompanied by the removal of surcharges on imports and of subsidies on nontraditional exports. Because the preexisting export subsidies are usually smaller than the surcharges on imports, the effect is to make the net devaluation proportionately larger for exports than for import-competing commodities.

There can, of course, be offsets: if QRs are simply replaced with tariffs, as in some of the episodes reviewed above, the bias of the regime might be unchanged. But even then the authorities deciding upon tariff levels would need to take into account the higher postdevaluation domestic price of exportables; in practice, that seldom happens. This section attempts to quantify the extent of bias reduction in the twenty-two Phase III episodes covered by the country studies and to generalize on the basis of that experience about the relationship between devaluation and bias reduction.

The bias of a regime relates to the extent to which domestic incentives for production of import-competing goods and of exports differ from the ideal pattern—one in which the international marginal rate of transformation equals the domestic marginal rate of transformation among all pairs of commodities. In a two-commodity world, bias could be measured by estimating the tariff and the tariff-equivalent of other charges (including the protective equivalent of import prohibitions) on import goods that competed with domestic production, and by adding that to the tariff-equivalent of the premium on import licenses. The resulting estimate could then be contrasted with a comparable estimate of subsidies, implicit and explicit, on exports.[27]

In practice there is usually considerable variation among the premium-inclusive protective equivalents given to various categories of import-competing commodities and also among export categories. The concept of "bias," therefore, must be regarded as some sort of aggregate notion, subject to the usual difficulties that arise when attempting to discuss aggregates: the test is whether it is a meaningful aggregation. Much of the argument of the remainder of this volume, and especially of Part III, will center on differences between export-oriented and import-substitution development strategies and trade regimes, that is, on the degree of bias. The test of usefulness is therefore met for this purpose, although the reader is warned that systems with identical bias in the aggregate may have significantly different effects. Not only might that bias be achieved in one case with QRs and in another via tariffs and subsidies, but also there might be different levels of protection granted to different categories of commodities.

The fact that the notion of bias is an aggregate one creates analytical problems, in that results which hold for the two-commodity case cannot necessarily be generalized for n commodities. There is an even more serious empirical

difficulty: obtaining estimates of the height of premiums is extremely difficult. Yet, whatever the analytical shortcomings, it is easily shown that failure to use a premium-inclusive estimate of bias will yield meaningless results.[28]

Ideally one would like time-series data on the domestic and international prices of exportables and comparable data for importables plus an estimate of tariffs and other charges on imports. The ratios of domestic to international prices would yield EERs for the various commodity categories. The ratio of the import EER to the export EER would then provide a measure of the bias in the trade and payments regime and its behavior over time. The domestic price of importables, less the landed cost of importables (including tariffs and other charges), would provide a measure of the premium on import licenses and its behavior over time.

It is, however, the nature of QR regimes that virtually precludes the gathering of such a set of data. Obtaining estimates of export and import EERs is itself a time-consuming process, especially when it is recognized that some tariffs are redundant.[29] Estimating premiums on import licenses is even more difficult, and only in five of the studies did country authors succeed in providing more than a point-in-time estimate of the domestic prices evoked by the exchange control regime.

This analysis will use two approaches to measuring bias: the available time-series data will be examined and contrasted with potential proxy variables that imperfectly reflect bias, and the experience of a few countries during the periods surrounding their Phase III episodes will be examined.

Time Series Variables for Bias

Estimates of Bias from the Country Studies

Table 6-2 provides estimates from the country studies on the magnitude of bias and changes in it surrounding devaluation episodes. Data are available for only five countries; of those, the South Korean estimates do not include premiums because QRs were not operative surrounding the two devaluations, and for the Philippines in 1970, there is no difference between premium -inclusive and premium-exclusive EERs. We are therefore left with the Brazilian, Chilean, and Turkish data, as well as one observation from the Philippines, from which any inferences about the difference between premium-inclusive and premium-exclusive estimates of the bias can be drawn.

First, however, changes in bias themselves need close scrutiny. Even if the nine episodes all showed the same pattern, it would be extremely difficult to generalize. However, the data given in Table 6-2 do not reflect a uniform pattern. In most of the cases, including the two Turkish devaluations, the Philippine 1960 episode, and the Chilean 1956 devaluation, devaluation was accom-

Table 6-2. Bias of Trade Regimes before and after Phase III Episodes, Five Countries

Country	Devaluation Year	Export EER			Import EER Plus Premium			Bias		
		Old	New	Two Years Later	Old	New	Two Years Later	Old	New	Two Years Later
Brazil	1957	53	65	114	130	188	258	2.45	2.89	2.26
	1961	160	245	553	287	367	779	1.79	1.50	1.41
	1964	884	1874	2200	1245	2601	2953	1.41	1.39	1.34
Chile	1956	0.181	0.351	0.715	0.667	0.994	1.387	3.69	2.83	1.94
	1959	0.715	1.049	1.049	1.387	1.893	2.093	1.94	1.80	1.99
	1965	2.471	3.310	5.080	4.817	6.040	9.106	1.95	1.82	1.79
Philippines	1960-1962	2.00	3.15	3.90	4.03	5.27	5.33	2.01	1.67	1.36
	1970	3.90	5.15	7.26[a]	5.36	8.03	8.41[a]	1.37	1.55	1.16[a]
South Korea	1961	147.6	150.6	189.4	100.2	146.4	148.1	.67	.97	.78
	1964	189.4	281.4	322.9	148.1	293.1	296.4	.78	1.04	.92
Turkey	1958-1959	3.17	5.87	9.00	20.0	17.9	14.3	6.31	3.05	1.59
	1970	9.96	12.90	14.52	30.0	27.2	26.2	3.01	2.11	1.80

Sources: Export EERs from same source as Table 5-1, except as noted below:

Brazil–Data provided by Fishlow.

Chile–Export EER source is same as for Table 5-1; Import EER plus premium source is from Behrman, column 14 of Table A.4 adjusted for premium rates in column 4 of Behrman's Table 5.1.

Philippines–Export EERs are for traditional exports. Import EER for "New" and "Two Years Later" are weighted averages of EER using same table as reported above. The 1963 proportions are used for 1965, 1970, and 1971, as well as 1963. For 1959, import premiums for the exchange control classes: nonessential consumer goods, essential consumer goods, essential producer goods, and semi-essential producer goods were obtained by the technique explained in Baldwin, Section 2 of Chapter 5. Specifically, the figure obtained in step 3 of the implicit protection estimates was divided into the 1959 price index as reported in Table 5-6. This, less unity, gives the import premium. The four classes were weighted by the relative importance of the transactions for 1959 as reported in Table 2-6.

South Korea–Data provided by Frank, Kim, and Westphal.

Turkey–Data provided by Krueger.

[a]Estimates for 1971.

panied by a sharp reduction in bias. Even two years afterward, bias toward import substitution was less than it had been before the Phase III episode. On the other hand, the Brazilian 1957 devaluation presents a very different picture. There, it will be recalled, QRs were replaced by tariffs. Fishlow's estimates indicate that the bias of the regime was higher immediately after devaluation than before. This came about because the export EER rose only 22 percent, while the premium-inclusive import EER rose 44 percent as tariffs were increased substantially. Two years later, however, the bias of the regime was less oriented toward import substitution than it had been before. The 1961 and 1964 Brazilian devaluations appear to have resulted in continued further reductions in the bias of the regime, but by relatively small amounts. It was not until 1967/68 that the regime favored exports. Other exceptions to the tendency for devaluation to result in bias reduction are Chile's second and third Phase III episodes, in which bias of the regime appears to have been virtually unaffected.

Knowledge of the circumstances surrounding the Phase III episodes, combined with the data in Table 6-2, suggest the following hypothesis: when QRs are severe before devaluation, and devaluation comes about because the resulting "shortage" of imports appears too damaging to the domestic economy, bias is almost certain to be reduced substantially. Such was the case in Chile in 1956, in the Philippines in 1960, and in the two Turkish devaluations. The data reported by Bhagwati and Srinivasan on premiums on imports before and after devaluation in India, and their account of the situation, both suggest that the bias of the regime must also have fallen sharply in India following the 1966 devaluation.

The converse of the hypothesis stated above is that, when devaluation is undertaken largely as a catch-up move, with domestic inflation rates quickly eroding any change in real EERs, there is unlikely to be any significant or lasting change in the bias of the regime as a result of devaluation. The Chilean data for 1959 and 1965 seem to bear that out; the intent seems to have been largely to control domestic inflation, and the program turned out to be unsuccessful. The proposition that bias is likely to be unaltered when the real exchange rate does not change significantly follows in part simply from theory. Exports will not increase under such circumstances, and import demand is likely to be as great as before; it must follow, therefore, that premiums on import licenses will remain much as before.

The alteration in bias that accompanied South Korean devaluations is also of interest. In South Korea, devaluation was accompanied by reduced bias toward exports. The export-promotion strategy in that country was carried out by sharply increasing the subsidies and incentives toward exports as the real exchange rate eroded between devaluations. So, when devaluation took place, export subsidies were replaced by the exchange rate change. In the South

Korean case the policy orientation toward exports was reflected in the fact that the subsidies and subsidy-equivalents of incentives to export were substantial. Their removal meant that the net devaluation for exports was significantly smaller than for imports, with the result that the bias of the regime toward exports lessened.

The Usefulness of Proxy Variables

Given the difficulties involved in obtaining estimates of premium-inclusive EERs, it is of some interest to examine the extent to which proxy variables might adequately reflect the bias of the regime. There are two obvious candidates for proxies: the ratio of the premium-exclusive import EER to the export EER, and the ratio of the black market exchange rate to some other exchange rate.

There is no *a priori* reason why premium-exclusive rates should accurately reflect bias. As indicated at the outset, however, net devaluation is usually greater for the class of commodities that bias is against: import-competing goods for South Korea and exportables for Turkey. In addition, changes in bias are the result of changes in premiums and in EERs; it could be argued that it is better to have data on one part of the change than no data at all. The difficulty with that argument, of course, is that the purposes of devaluations are sufficiently different so that there are grounds for believing that premium-absorption will not be systematically related to the differential change in export and import EERs. For the Israeli 1952-1955 devaluation, for example, it is clear that the very much larger change in the import EER reflected the intent of the authorities to absorb the premium; as already noted, the protection accorded to Israeli industry actually increased.

Given that theory is of little help except to point out the pitfalls, it is instructive to examine the data. Table 6-3 presents estimates of the premium-exclusive ratio of export and import EERs surrounding devaluation episodes and also for two years afterward. For the countries for which premium-inclusive estimates are available, those numbers are given in parentheses to enable ready comparison of the two means of estimating changes in bias.

Two things stand out clearly. First, failure to include premiums can significantly distort estimates of bias, as in Chile where the premium-exclusive EERs are all in the range of 1.2, while the premium-inclusive EERs range much closer to 2. Second, the amount of bias reduction will be understated in those instances where liberalization is a major facet of the devaluation episode. Before the Philippines 1960-1962 devaluation, for example, premiums on import licenses had been at least as important as tariffs in increasing the incentive to produce import substitutes. Those premiums were, according to Baldwin's estimates, wiped out by the devaluation that took place over the next two years. To ignore the impact of the omission of premiums

Table 6-3. Ratio of Import to Export EERs before and after Phase III Episodes, Nine Countries

Country	*Devaluation Year*	*Before Phase III*	*After Phase III*	*Two Years Later*
Brazil	1957	1.28 (2.45)	1.75 (2.89)	n.a. (2.26)
	1961	1.64 (1.79)	1.55 (1.50)	n.a. (1.41)
	1964	1.00 (1.41)	1.22 (1.39)	n.a. (1.34)
Chile	1956	1.21 (3.69)	1.23 (2.83)	1.18 (1.94)
	1959	1.18 (1.94)	1.19 (1.80)	1.23 (1.99)
	1965	1.18 (1.76)	1.19 (1.82)	1.17 (1.79)
Egypt	1962	.98	1.01	1.01
Ghana	1967	1.83	1.78	1.93
India	1966	1.29	1.30	1.27
Israel	1952	.95	1.00	1.04
	1962	.97	1.15	1.13
Philippines	1960-1962	1.64 (2.01)	1.31 (1.31)	1.36 (1.36)
	1970	1.37	1.55	1.16[a]
South Korea	1961	.68	.97	.78
	1964	.78	.96	.92
Turkey	1958-1959	1.87 (6.31)	3.05 (3.05)	1.59 (1.59)
	1970	1.63 (3.01)	1.85 (2.11)	1.70 (1.80)

Note: Numbers in parentheses are premium-inclusive estimates of bias.

Sources: Same as for Table 5-1 for EER ratios and Table 6-2 for bias.

[a]Estimate is for 1971.

significantly distorts the results. If only the data on Philippine premium-exclusive EERs were inspected, bias reduction would seem to have been remarkably small—from 1.64 to 1.36. If, however, the estimate of predevaluation bias includes the premiums, the estimate of bias is changed to 2.01. The same general phenomenon holds for Turkey, where a substantial portion of the increase in the import EER went to virtually eliminating the premiums on import licenses in both devaluations.

The Indian devaluation is another instructive case where time series on premium-inclusive EERs are unfortunately not available. Bhagwati and Srinivasan's sample data show a decline in the simple average of premiums from 226 percent to 81 percent. In contrast their estimates of premium-exclusive EERs show bias virtually unchanged before and after the Indian devaluation. Apparently, bias was significantly reduced by the Indian devaluation, and the main mechanism for achieving that reduction was the liberalization of the regime—that is, the reduction in the premium on import licenses.

It seems reasonable to conclude that nothing can be inferred about the nature of change of bias in the trade and payments regime from inspection of the premium-exclusive EERs. Despite the difficulty of obtaining data on premiums, it is far better to use some data than to ignore the phenomenon completely. As the data in Table 6-3 clearly show, the reduced size of premiums on import licenses may be the most significant component of the bias reduction that results from devaluation.

The second possible candidate for use as a proxy for premium-inclusive EERs is the black market exchange rate relative to some indicator of other rates. In theory, something can be said for use of such a rate. After all, what is omitted from estimates of EER is the premium accruing to licenses, and it might be expected that the ratio of the black market rate to the EER (or any authorized rate) would increase as the restrictiveness of the regime increased. The difficulty with this conjecture is largely empirical. The black market in foreign exchange is, to a considerable extent, a market for currency, which is heavily influenced by a variety of factors that differ widely from country to country—the ease with which tourists can bring goods and foreign assets into and out of the country; the degree to which the trade and payments regime discriminates against consumer goods; the openness of the border; the ease with which foreign assets can be accumulated through faked invoicing; and the extent of smuggling. In one situation, tourists might be prohibited from carrying currency with them in a regime that is very liberal about the importation of most commodities, and in another one, tourism might be freely allowed while imports of most capital and intermediate goods are heavily circumscribed, with attendant high premiums on licenses. In the former case, one would expect the ratio of the black market rate to the relevant exchange rate to be higher than in the latter case, even though most people would assert that the latter regime was more restrictionist.

Therefore, as with premium-exclusive EERs, little can be said *a priori*, but a comparison of the relationship of black market rates to official rates with estimates of bias is of interest. This is done in Table 6-4. As anticipated, little systematic relationship can be found. Even if one takes the estimate of the premium by subtracting the premium-exclusive import EER from the premium-inclusive one, no systematic relationship can be inferred.

It may be possible that, given knowledge about the particular circumstances, black market exchange rates can provide some information on individual countries. The Turkish data, for example, seem to conform to the evidence available from other sources, indicating that the premium on foreign exchange was virtually eliminated in the 1970 devaluation.[30]

Of some interest, also, is the fact that the ratio of the black market rate to the official parity fell following all Phase III episodes. It is difficult, however, to go beyond that statement. The impression that emerges, based on comparison of the bias estimates given in Table 6-2 with either premium-exclusive

EER ratios or with black market/official parity ratios is that there is no satisfactory substitute for examining the behavior of both EERs and premiums before and after Phase III episodes in order to obtain any indication at all of the resource pulls that result from devaluation and liberalization. It is almost certainly preferable to obtain estimates of premiums—even though very rough—than to rely on proxy variables or to omit consideration of premiums altogether.

Individual Country Experiences

The difficulty encountered in obtaining premium data led some of the country authors to attempt other means of estimating the impact of devaluation on the bias generated by the trade and payments regime. Those endeavors are of interest not only because of the additional light they shed on the link between devaluation, liberalization, and bias reduction, but also because they illustrate methodologies that can be employed in attempting to estimate the impact of devaluation (and other measures) on import license premiums.

The Ghanaian gross devaluation of 1967 was 43 percent, and restrictions prior to the devaluation were quite severe. Leith attempted to estimate the extent to which the devaluation was passed through to the domestic economy. On the export side, he compared unit value statistics with domestic producer prices. For some commodities the devaluation was more than reflected in domestic prices, as taxes on exports were simultaneously removed. For others, subject to the State Cocoa Marketing Board (which, despite its name, operates in a number of primary-commodity markets), changes in the domestic producer price of exportable commodities were delayed until the next growing season.

When all these factors were taken into account, Leith found that the average increase in domestic producer prices of exportables was less than a percentage point *greater* than the devaluation; that is, the net devaluation was on average equal to the gross for exports, and domestic prices reflected the full amount of the devaluation. To ascertain the effect on the domestic prices of imports, Leith compared the domestic and international price of imports, by individual items, in the periods before and after devaluation. He was unable to obtain an estimate of these prices for intermediate and capital goods imported for own use—less important in Ghana than in many other countries—so his estimate understates the degree to which the devaluation was premium-absorbing. Despite that, Leith found that about 55 percent of the gross devaluation was reflected in wholesale prices for commodities imported for resale.[31] Thus, domestic prices of importables rose 23 percent, while domestic prices of exportables rose 45 percent, and the bias of the regime was reduced to that extent. Comparison of that result with the Ghanaian data on

Table 6-4. Black Market Exchange Rates before and After Phase III Episodes (local currency units per dollar)

Country	Devaluation Year	*Before Phase III*			*After Phase III*			*Two Years Later*		
		Parity	*Black Market*	*Ratio*	*Parity*	*Black Market*	*Ratio*	*Parity*	*Black Market*	*Ratio*
Chile	1956	0.181	0.565	3.12 (3.69)	0.351	0.526	1.50 (2.83)	0.715	1.100	1.54 (1.94)
	1959	.715	1.100	1.54 (1.94)	1.049	1.059	1.01 (1.80)	1.059	1.049	1.01 (1.99)
	1965	2.418	4.750	1.96 (1.76)	3.237	5.35	1.65 (1.82)	5.08	6.50	1.28 (1.79)
Colombia	1957/58	2.51	6.62	2.64	5.31	5.94	1.11	6.40	8.05	1.25
	1962	8.90	8.96	1.10	11.09	10.00	.90	9.00	10.00	1.11
	1965	12.74	13.70	1.52	13.50	18.76	1.38	14.54	19.30	1.32
	1967/68	13.50	18.70	1.38	15.82	19.30	1.22	17.17	18.17	1.06
Egypt	1962	35.20	43.50	2.26	43.00	84.00	1.95	43.00	77.00	1.79
Ghana	1967	.71	2.00	2.81	1.02	1.61	1.57	1.02	1.63	1.61

India	1966	4.77	10.70	2.24	7.51	11.61	1.55	7.51	10.30	1.37
Israel	1952	.357	2.402	6.73	.700	2.663	3.80	1.420	2.613	1.84
	1962	1.80	2.570	1.43	3.00	3.207	1.07	3.00	3.273	1.09
Philippines	1960/62		na			na		3.90	3.68	.94 (1.36)
	1970	3.90	6.64	1.70	6.40	6.63	1.03	6.79	7.01	1.03
South Korea	1961	62.5	144.9	2.23	130.0	148.3	1.14	130.0	174.5	1.34
	1964	130.0	174.5	1.34	255.0	285.6	1.11	271.3	302.7	1.12
Turkey	1958/59	2.80	19.42	6.93 (6.31)	9.00	14.58	1.62 (3.05)	9.00	13.50	1.50 (1.59)
	1970	9.08	13.73	1.51 (3.01)	15.00	16.07	1.07 (2.11)	14.00	14.43	1.03 (1.80)

Note: Figures in parentheses are the corresponding estimates of bias from Table 6-2. Data for Brazil were not meaningful and are therefore omitted.

Sources: With the exceptions noted below, all data are from Pick's *Currency Yearbook*, various issues:

Israel–Michaely, Table 9, Chapter 2 for 1952. Parity is the weighted average of formal rates; before is IV 1951; after is II 1952; for 1962, parity is from Chapter 4, Table 7 of Michaely; black market rate is from *Statistical Abstract of Israel, 1966* p. 519.

South Korea–Black market rates are those for U.S. greenbacks from Table 3.1 of Frank et al.

EERs in Table 6-3 further reinforces the view that devaluation operates to reduce bias via premium absorption and that important relative price effects result.

The second interesting experience is that of the Philippines. There, it will be recalled, the intent was to replace QRs with tariff protection. Even in this case, where it was intended that protection to domestic industry should be continued, bias of the regime fell substantially—an indication of the extent to which devaluation is bias-reducing. Fortunately, premium-inclusive EER data for the Philippines are available (see Table 6-2). Like Leith, Baldwin estimated the discrepancy between the behavior of import EERs and the domestic prices of the comparable commodities:

> From 1959 to 1962, when the exchange rate per dollar including the margin fee rose from P2.50 to P3.90, or by 56 percent, the wholesale price index of imported products increased only 22 percent. If the rise in the dollar price of imports is taken into account, the net rise in import prices associated with the increase in the price of foreign exchange was only 15 percent. . . . Permitting unlimited imports of most items at the same time that the currency was depreciated meant that these windfall gains absorbed most of the price-increasing effects of the depreciation.[32]

Baldwin summed up the effects of the devaluation as follows:

> . . . What must have surprised government officials was the extent of the economic difficulties that the import-substitution sector did face. They did not seem to appreciate that, by providing the export sector with more favorable trading terms and increasing the import costs of raw materials and capital goods, resources would be pulled out of the new industrial sector even if the level of protection on final consumption goods was maintained. . . .[33]

The Philippine intent to maintain an import-substitution strategy while liberalizing the trade and payments regime points to a conclusion that emerges fairly uniformly from the country studies: QR regimes tend to provide more protection to import-substitution industries than is generally recognized and intended. Liberalization, therefore, by reducing the premium on import licenses, tends to reduce the bias of the trade and payments regime. Even when tariffs replace preexisting quotas or import prohibitions, those tariffs tend to provide less protection, perhaps for a variety of unintended reasons. Michaely's description of the resistance of Israeli entrepreneurs to a shift from QRs to tariffs for protective purposes provides further evidence along this line.

In general the evidence from the country studies is that bias reduction is usually a major concomitant of net devaluation and that the reduction comes about more through the absorption of preexisting premiums on import licenses than by differential changes in export and import EERs. While liberalization

may have effects of its own, it seems clear that a major part of its impact is through the removal of premiums on import licenses and the consequent reduction in bias of the regime.

IV. RATIONALIZATION OF THE REGIME

The term rationalization applies to all the measures employed to simplify procedures, remove inconsistencies, speed formalities, and otherwise reduce the complexities and clumsiness of the QR system. Just as liberalization and bias reduction interact, there is a close relationship between rationalization of the regime and reduction in the extent of variance. To the extent that rationalization consists of simplification of the regime, variance reduction inevitably results. Just as liberalization—by absorbing premiums on import licenses—has its greatest effect through reducing the bias of the regime, it is probably through reduced variance that rationalization has its greatest impact. This effect of rationalization cannot be separately treated and is dealt with below in considering the effect of the various devaluations on the variance of the trade and payments regimes.

In addition to reducing variance, rationalization can have another effect that, while difficult to quantify, may be important: in simplifying paperwork, reducing delays, and otherwise streamlining procedures and implementation, the deadweight costs of the QR regime may be substantially reduced. In the sense of simplification of procedures, rationalization can take a number of forms: (1) the number of steps involved in obtaining import licenses may be reduced; (2) the paperwork necessary to obtain export subsidies may be diminished; (3) delays associated with obtaining imports may be shortened or eliminated; and (4) the effort required to obtain the necessary licenses and permits may be cut substantially.

Effects of this type accompanied a large number of the devaluations studied here. The Indian regime was rationalized and simplified by introducing priority industries (which could obtain imports with vastly simplified procedures) and by replacing export subsidies, at least temporarily, with a uniform exchange rate. After the Turkish devaluation of 1970 the import licensing procedure for Quota List imports was altered so that the formalities became annual, rather than semi-annual.

Reducing the amount of paperwork required for obtaining import licenses (or export subsidies) can cut down the clerical staff required to enter international transactions; it can thereby, inter alia, permit the entry of small firms which might otherwise be precluded from engaging in foreign trade. Simplification can also result in a reduction in the amount of entrepreneurial time and resources devoted to the necessary formalities. To the extent that

delays in obtaining imports are cut down, inefficiencies resulting from missing spare parts, using inappropriate intermediate goods, and production stoppages can be eliminated. When restrictions requiring the purchase of imports from particular sources (as under bilateral agreements) are removed, individual firms may face lower input prices, both because they can buy in the cheapest market and because their bargaining power vis-a-vis suppliers is increased.

It is difficult if not impossible to estimate the net benefits that can result from simplification and rationalization of the regime, and no country author tried to do so. There is little doubt that some deadweight losses are eliminated and that the benefits of removing them may be substantial.

V. REDUCING VARIANCE

The theory of QR interaction with devaluation in the two-commodity case may be generalized whenever the composite-commodity theorem can be invoked, but not otherwise. Yet a reasonable hypothesis often put forward is that QR regimes permit greater variance in the treatment accorded to various categories of tradables than do liberalized regimes, and that the significant difference between tariffs and QRs lies in the greater variation that occurs under QR regimes.

A first step in analyzing this hypothesis is to trace the effect of devaluation and concurrent, related policy measures on the variance of the different trade and payments regimes. There are a number of ways in which devaluation itself tends to reduce variance, and rationalization reinforces the trend. Therefore, the effects of variance reduction cannot be estimated independently of the other components of the move to Phase III. Here, the evidence about the variance-reducing component of devaluation packages will be examined in anticipation of later evaluating the impact of devaluation packages in their entirety.

Rationalization resulting from the replacement of multiple procedures and charges with a unified exchange rate may have important microeconomic effects, but those effects are difficult to pinpoint and quantify. In contrast, devaluation under QRs almost always results in reduced variance in the EER for different categories of transactions because premiums for some commodities are invariably absorbed by the exchange rate change, and the replacement of surcharges, guarantee deposits, and taxes diminishes the EER change for others. In most countries some categories of imports—usually termed "essential"—were accorded favored treatment prior to devaluation, while others—especially those that might threaten import-substitute industries, were highly restricted. Almost always the exchange rate change served to increase

the EER on essential imports and partly or entirely to replace the preexisting premium on import licenses for the others. The differential between these import categories was in this way reduced.

Fishlow's account of the Brazilian experience aptly illustrates this point:

> The Phase II reform initiated in [1953] which auctioned rather than awarded licenses was successful only in progressively increasing the cost of imports encompassed in the regular auctions. It maintained a large proportion of subsidized imports never part of the regular system, as the low ratio of the implicit average [import] rate to the average general category [import] rate shows. And it continued to discriminate increasingly against exports by adjusting the exchange rate infrequently and belatedly. . . .
>
> . . . The establishment of the tariff in [1957], and the effective elimination of auctions by aggregating into a general category . . . seemed a step in the direction of unification, and away from the auction multiple rate structure. In fact, however, the policy was remarkably similar to the 1953 changes in its execution. Import prices were again successfully increased to discourage purchases. But simultaneously the quantity of imports admitted under special circumstances at lower exchange rates dramatically increased. . . .
>
> A true Phase III liberalization occurred in March 1961. . . . It maintained and extended the focus on export profitability, but also definitively came to grips with the favorable treatment of petroleum, wheat, and capital goods imports. While the average general category imports did not rise in real cost, the effect of the elimination of the subsidy was to increase the average price of imports as a whole: wheat and petroleum represented about a quarter of total imports at this time. . . .[34]

Even after 1961, however, variance was still wide in Brazil. This can be seen in Table 6-5, in which the effective rates of protection (ERP) on various categories of commodities are given for 1963, after special subsidies for wheat had been eliminated, and for 1966, after the next Phase III episode but before the 1967 tariff reforms. Even after the massive variance reduction associated with the 1961 Phase III, the variance in effective protective rates accorded to different industries in 1963 was huge—with an average ERP of 75 percent, crops were subject to negative protection of minus 15 percent (contrasted with an estimated minus 45 percent in 1958). By 1966, the average ERP had declined to 44 percent.[35]

Other country studies provide similar findings. Baldwin reports devaluation "narrowing somewhat the differences in the degree of protection among consumer goods, essential producer goods and essential consumer goods" in the Philippines' 1960-1962 Phase III, despite the intent to maintain protection by substituting tariffs for QRs.[36]

In the Egyptian case the 23 percent gross devaluation was almost entirely offset, leaving only a 3 percent net devaluation. It can therefore be taken as

Table 6-5. Brazilian Effective Rates of Protection, before and after 1964 Changes

ERPs Applicable to Individual Categories:

	1963	*1966*
Crops	−15	−13
Animal Products	12	16
Mining	34	24
Nonmetallic Minerals	130	72
Machinery	68	30
Electrical Equipment	169	112
Transport Equipment	147	103
Food Products	176	120
Furniture	367	251
Paper and Products	169	91
Leather Products	405	174
Chemicals	146	56
Pharmaceuticals	60	1
Plastics	489	332
Textiles	298	232
Clothing	481	321
Beverages	243	183
Tobacco	469	299
Printing and Publishing	305	142
Rubber Products	221	158
Miscellaneous	175	95

Overall ERPs:

	1963	*1966*
Mean ERP	75	44
Standard Deviation	242	154
Variance/Mean	780	539
Consumer Goods	360	230
Intermediate Goods	131	68
Capital Goods	112	69

Source: Fishlow summary, p. 58a, Table X.1.

typifying the effects of the rationalization component of devaluation. Hansen and Nashashibi conclude:

> The devaluation of 1962, followed by strongly expansionary domestic demand policies over the next two years, was doomed to be an empty gesture. To some extent it codified earlier de factor devaluation undertaken via the exchange premium system introduced in 1957, but the unification of the exchange rates was a decisively new feature which by itself removed some of the protection enjoyed earlier by some industries highly dependent upon imported raw materials.[37]

Michaely believes that reduced variance was an important result of the gross component of the 1962 Israeli devaluation. He calculated the coefficient of variation in import EERs, and found that it fell from 0.435 before devaluation to 0.268 afterward.[38]

In India a major motive for the devaluation episode appears to have been recognition that the piecemeal incentives of Phase II were inefficient; Bhagwati and Srinivasan reported:

> The fact that a major impulse behind the devaluation was the growing realization that the export subsidies and tariffs were only an inadequate and inefficient substitute for the formal parity change that was called for, meant that the government desired the devaluation primarily to substitute for existing measures. Hence the degree of the devaluation was to reflect mainly the *existing* levels of export subsidization and *only partially* to go beyond that.[39]

In evaluating export peformance following the 1966 Indian devaluation, Bhagwati and Srinivasan conclude that a factor of major significance was that incentives for a wide variety of exports were not materially altered, although export subsidies were quickly reintroduced.

The same sort of variance reduction among export EERs happened elsewhere. In most countries, selected export commodites—"new," or "nontraditional," or "manufactured," or "minor"—were usually granted larger EERs prior to Phase III than were other export categories. In Ghana the ratio of the cocoa EER to the EER for other exports rose from 0.60 in 1966, prior to devaluation, to 0.72 in 1967, after devaluation.[40] In the Turkish devaluation of 1958 the export EER was likewise unified.

The country studies provide sufficient evidence to conclude that devaluation from a QR-dominated situation results in a substantial reduction in discrimination among commodity categories. Such a conclusion does not unequivocally confirm the notion that QR regimes have higher variance in the implicit protection accorded to different commodity categories than do liberalized regimes. Examination of that hypothesis would require a great deal of addi-

tional research to insure that (premium-inclusive) EERs were measured for Phases II and IV on a comparable basis. It is sufficient to indicate that the results of devaluation and the measures that accompany it will include the resource reallocation and other effects of reduced variance. As with liberalization, bias reduction, and rationalization, these effects are bound to result from a Phase III episode. Analysis of the consequences of Phase III devaluations must, therefore, take into account the effects of all those interrelated phenomena as well as the conventional macroeconomic considerations that follow exchange rate changes under currency convertibility.

NOTES

1. See the list of Symbols under *Definitions* in the first section of Chapter 5.

2. A difficulty arises with this definition whenever QRs are prohibitive, as the value of trade would be zero. It is not obvious how this particular difficulty can be overcome.

3. Turkey and Brazil, among the countries included in the project, licensed exports of various commodities at one time or another in an attempt to keep domestic prices of some export commodities low.

4. If there were a premium on export licenses, the ad valorem premium would have to be subtracted from the denominator of Equation (6.2). Obviously it would not make sense to subsidize exports and restrict them by licensing.

5. Other measures are possible. Hansen and Nashashibi, for example, used $n_i + t_i - r_i - s_i$. With many commodities, of course, weights must be employed.

6. With monopoly power in trade, B should be redefined to be the divergence of domestic prices from those that would prevail with an optimal tariff (that is, the divergence of the domestic marginal rate of transformation from the international marginal rate of transformation).

7. Strictly speaking, the estimate of bias should be derived from those commodities that are domestically produced, or would be produced under free trade, since those are the ones affected by the incentives created by the trade and payments regime. Tariffs and premiums on imported commodities not domestically produced do not directly affect resource allocation between production of exportables and import substitutes. However, the costs of obtaining import licenses and the higher prices of imports that are inputs to other activities may be highly significant determinants of resource allocation.

8. When there are transactions other than for imports and exports, resource misallocation would nonetheless occur, but focus here is on the simple two-commodity situation.

9. The diagram is not useful for examining the macroeconomic implications of devaluation. It is, nonetheless, satisfactory for representing the QR-related aspects of devaluation.

10. Again, the partial equilibrium nature of the presentation should be noted—consumption of something else must rise and domestic resources must flow from some other industry as the price of foreign exchange increases.

11. There could, of course, be quantitative restrictions upon exports, but that would complicate the analysis without adding anything essential. Note also that one might in principle draw a general-equilibrium demand and supply schedule in the context of a model with home goods, but the resulting schedules would never be valid in the case where tariffs and quotas were imposed at differential rates on imports and exports.

12. Even here, different possible impacts on bias are evident: if the deficit were made up entirely by increasing the export EER, leaving imports (and therefore their domestic price) unaltered, bias would be reduced by the devaluation. If, instead, the deficit were eliminated by decreasing imports, bias of the regime would be increased.

13. Depressing income may also increase export supplies and thus permit further increases in the quantity of imports.

14. Fishlow summary, p. 71.

15. See the discussion in the second section of Chapter 9 and Table 9-8 for more detail.

16. Exports were also subject to licensing, but open licensing was the rule throughout the 1960s.

17. Leith, p. 23.

18. Ibid., pp. 140-41.

19. Ibid., p. 142.

20. Bhagwati and Srinivasan, p. 84.

21. Data are from ibid., Table 11-1.

22. The Indian recession is discussed in Chapter 8, below. By 1969, economic activity was expanding, and India was again in Phase II.

23. Michaely, pp. 178-79.

24. Ibid., p. 59.

25. Private foreign capital flows were also a significant factor enabling import liberalization to continue after the reforms of 1964 and 1965.

26. The 1970 Turkish devaluation also appears to have eliminated most premiums on import licenses, at least for the period immediately following devaluation. In that case, however, the devaluation itself carried almost the entire burden of liberalization, and few other policies were undertaken; monetary and fiscal policies were expansionary, the flow of imports increased only in response to increased foreign exchange receipts, and no substantial changes were made in the exchange control regulations governing foreign trade.

27. When intermediate goods are present, the usual qualifications to the above statement would have to be made. The relevant unit of observation for traded goods is then a unit of (foreign-currency) value added.

28. It might, of course, happen that the premium-exclusive data were perfectly correlated with premium-inclusive estimates or that the direction of change in the two series was always the same. In some particular circumstances, such an inference can be drawn, but it is extremely inappropriate when considering devaluation.

29. Tariff redundancy occurs when the domestic price is below the international price times one plus the tariff. In that case the economically relevant tariff is defined by the price ratio.

30. The black market rate after the 1958/59 Turkish devaluation is identical to the tourist exchange rate that went into effect that year.

31. These estimates and the discussion are drawn from Leith, pp. 116-22.

32. Baldwin, p. 58.

33. Ibid., p. 62.

34. Fishlow summary, pp. 68-69.

35. Variance and standard deviations in Table 6-5 were calculated from Fishlow's data without applying weights. Fishlow's mean estimates are clearly weighted. If weights were used for variance, there would still be a decline; whether it would be greater or smaller is conjectural in the absence of sectoral weights.

36. Baldwin, p. 58.

37. Hansen and Nashashibi, pp. 90-91.

38. Michaely, pp. 59-61.

39. Bhagwati and Srinivasan, p. 83. Italics are in the original.

40. Leith, Table II-9. Both export EERs rose relative to the import EER, of course, but that served to reduce the bias of the regime.