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## Devaluation and its consequences in developing countries

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measures against merchandise originating in certain third countries.

#### Strategy of Complemental Buying-in

The examined types of intra-company imports focused — to varying degrees — on the “production element”. In the kind of intra-company imports still to be investigated — the buying-in of ready-made garments from outside sources by clothing manufacturers intent on complementing their assortment it is the „merchant“ element which provides the sole motive. Without production there is no production risk — what risk there is concerns mainly the sales side and can be countered by correct demand analysis. The “industrial character” of the clothing *manufacturer* recedes into the background. Complemental buying-in of ready-made garments offers advantages in that

- The entrepreneurial risk is smaller than in the other two kinds of intra-company imports;
- The bought-in garments made at lower cost in a foreign country benefit from the brand image of the German manufacturer;

Orders can in principle be placed more quickly; and

Overhead cost spreading enables the principal to offer better value and a more comprehensive assortment.

If the sample is representative, complemental buying-in by clothing manufacturers accounts for another 5% (by volume) of all garments imports.

The importance and dimensions of the *three* business strategies show clearly in the fact that at least 40 vol. % of all clothing imports are attributable to the activities of German clothing manufacturers. To give an example, the total value of their purchases in 1976 was of the order of DM 2.8 bn. It may thus be noted as a fact that even today firms in industries reputed to be structurally weak can still safeguard their survival by setting different priorities. In highly industrialized countries well-managed clothing firms taking heed of all these strategies in their business calculations have still a better “survival chance” than badly-managed enterprises in so-called growth industries.

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#### TRADE REGIMES

## Devaluation and Its Consequences in Developing Countries

by Anne O. Krueger, Minneapolis \*

**To analyze the role of the trade and payments regime in economic development the National Bureau of Economic Research undertook a major research project on this issue. In this article a brief report on some of the findings pertaining to the effect of exchange rates, i.e. devaluation under exchange control is provided.**

**E**ver since conscious efforts to increase growth rates in developing countries began in the early 1950's, a major source of controversy has been the role of exchange-rate policy in affecting the rate of economic growth. Numerous issues are related to this central question. Many developing countries' exchange rates were maintained by use of fairly severe quantitative restrictions which restricted purchases from foreigners well below desired levels. This, in turn, led to relatively weak incentives for exports, and a marked divergence in domestic prices of import-compet-

ing goods from their international prices even inclusive of tariff charges. Some “export pessimists” believed that this did not matter because they regarded import substitution as the only feasible means of rapid growth. Others saw the bias against exports as a major impediment to rapid development. In addition to these issues, “stabilization programs” which included currency devaluation and efforts to curtail the government deficit and the growth of the money supply were highly controversial. Critics alleged that devaluation resulted in more rapid inflation and recession, with little or no improvement in the balance of payments, while defenders asserted that over-

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valued exchange rates and rapid inflation had to be corrected.

By the late 1960's, it was evident that there had been enough experience in the developing countries so that economic analysis might narrow, if not eliminate, the controversy and significantly increase our understanding of the role of the trade and payments regime in economic development. To analyze the issue, the National Bureau of Economic Research undertook a major research project on Foreign Trade Regimes and Economic Development. That project is now completed, and the results are available.<sup>1</sup>

In this article, a brief report on some of the findings pertaining to the effect of exchange rate changes, i.e. devaluation under exchange control, is provided. Obviously, it is impossible to begin to explore the many findings emerging from the project in any depth, and the interested reader is referred to the individual country studies and the syntheses for more detail.

Even so, a brief idea of the nature of the overall project and research design must be given. The project started with the philosophy that the economic environments within which policies are undertaken differ vastly between countries, and that the effects of specific policy actions will vary depending upon the context within which they are undertaken. For that reason, sensible economic analysis must start with an understanding of the economic milieu, both foreign and domestic, that affects the operation of the trade and payments regime. In some countries, for example, agricultural marketing agencies buy up crops at prices that do not necessarily reflect international prices and which are often unaltered in the face of international price fluctuations or exchange rate changes. When such policies are followed, it is unrealistic to expect alteration of the exchange rate to spur additional exports of agricultural commodities: individual decision-makers within the domestic economy are faced with the same prices before and after exchange rate changes.

### A Common Analytical Framework

It was decided, therefore, that the same issues should be analyzed, within a common analytical framework, for individual countries, by analysts already familiar with those countries. The analysts agreed upon the framework before starting, and all used it to analyze, for their countries, three closely interrelated questions. The first pertained to the functioning of the trade and payments regime, the quantitative restrictions contained therein, and the effects of that set of policies upon resource allocation, saving and investment, and income distribution within the economy. The

second question related to the experience the country had had when it altered its exchange rate: what factors affected the evolution of the balance of payments and the interaction of the foreign sector with the domestic economy after the exchange rate alteration? The third question focussed upon the interrelationship between the trade and payments regime and economic growth. Country authors analyzed the ways in which periods of severe quantitative restriction and periods of fairly liberalized<sup>2</sup> trade and payments regimes differed with respect to growth rates and the role that the different trade and payments regimes had in affecting growth rates.

Naturally, analysis of each of these questions is closely interrelated with examination of the other two (and knowledge of the working of the economy). One cannot analyze a devaluation, for example, without reference to the quantitative restrictions and other regulations and taxes in effect prior to the devaluation. Likewise, one cannot analyze the interrelationship between the nature of the trade regime and growth without first understanding the functioning of the trade and payments regime over time and the way in which it differed at historically different periods.

Limitations of length, however, preclude examination of all three issues here. Instead, focus is upon devaluation from a position of exchange control and the conclusions that emerged from analysis of the individual country study results as a group.

Since the focus of analysis was on the exchange rate in the context of the trade and payments regime, a first task was the identification of episodes of devaluation. After all, rapid-inflation countries such as Brazil and Chile have had years during which they adopted a sliding peg exchange rate policy under which the exchange rate was

<sup>1</sup> There are nine country studies, each of which may be ordered from Colombia University Press. They are all entitled "Foreign Trade Regimes and Economic Development". The individual volumes, and authors, are Turkey (Anne O. Krueger), Ghana (J. Clark Leith), Israel (Michael Michaely), Egypt (Bent Hansen and Karim Nashishibi), the Philippines (Robert E. Baldwin), India (Jagdish N. Bhagwati and T. N. Srinivasan), South Korea (Charles R. Frank, Jr., Kwang Suk Kim, and Larry Westphal), Chile (Jere R. Behrmann), Colombia (Carlos F. Diaz-Alejandro).

In addition to those, there are two synthesis volumes, which analyze the results of the individual studies. They have the same major title, with identifying additions:

"Liberalization Attempts and Consequences" (Anne O. Krueger) and "Anatomy and Consequences of Exchange Control Regimes" (Jagdish N. Bhagwati). These last two volumes may be ordered from Ballinger Press, Cambridge, Mass. A preliminary report on the project and some findings by Bhagwati and Krueger, the project co-directors, may be found in American Economic Review, Papers and Proceedings, May 1973, under the title of "Exchange Control, Liberalization, and Economic Development".

<sup>2</sup> In this regard, it is important to stress that "liberalized" means an absence of quantitative restrictions. A regime could, in principle, have very high tariff protection against imports and simultaneously be liberalized, while another regime could have quantitative restrictions which nonetheless provided less protection to imports than the liberalized regime. As will be explained below, the differential incentive toward import-substitution is the degree of bias of the economy.

altered at frequent intervals by relatively small amounts in line with the differentials between domestic and world rates of inflation. Moreover, countries are continuously imposing tariffs, export incentives, and other measures which are analytically equivalent to partial devaluations. To permit focus upon periods of interest for purposes of analysis of the overall trade and payments regime, it was decided that exchange rate alterations would be regarded as devaluations if they met two tests: 1) the nominal, or parity, rate of exchange was altered for substantially all transactions; and 2) the intent of the devaluation was to enable the exchange rate (and other prices in the system) to play a larger part in resource allocation and to reduce reliance upon quantitative restrictions as a means of containing *ex-ante* deficits in the balance of payments that would have been realized in the absence of devaluation.

### How to Quantify Devaluation

Under this definition, there were twenty-two devaluations undertaken by the ten countries in the project<sup>3</sup>: three by Brazil (1957, 1961 and 1964), three by Chile (1956, 1959, and 1965), five by Colombia (1951, 1957, 1962, 1965, and 1967), one by Egypt (1962), one by Ghana (1967),<sup>4</sup> one by India (1966), two by Israel (1952 and 1962), two by the Philippines (1960 and 1970), two by South Korea (1961 and 1964), and two by Turkey (1958 and 1970). A first problem was how to quantify them. This was especially severe since, in the context of exchange control, devaluation seldom consists of a single action, such as changing the exchange rate, but rather of a package of measures, often including changes in the exchange rate, other aspects of the payments regime, and monetary and fiscal policy. In addition, debt rescheduling, new foreign borrowing (often to permit an immediate increased flow of imports), altered domestic prices for major commodities, and other measures are often undertaken, sometimes in support of the devaluation "package" and occasionally using the devaluation as a camouflage to undertake other, unpopular, measures.

It proves necessary to analyze exchange rate changes in developing countries in terms of a devaluation package, itself containing (at least) the following components: 1) the exchange rate change itself; 2) alterations in domestic macroeconomic policy; 3) shifts in the short-run supply of foreign exchange; 4) changes in the quantita-

tive restriction system and 5) domestic policy changes that may accompany the devaluation.

The exchange rate change itself requires considerable analysis. From the outset, it was recognized that one could not simply talk about the size of "the" devaluation: several measurable concepts are needed. These include the nominal, or parity, exchange rate, referred to above; the effective (premium exclusive) exchange rate for various categories of transactions; the effective (premium inclusive) exchange rate for transaction categories; the price-level-deflated (PLD) effective exchange rates (EER); and, finally, purchasing-power-parity (PPP) PLD EERs. Measurement of the amount of nominal devaluation is usually straightforward. The amount by which the EER, or the amount actually paid or received per dollar of foreign exchange sales or purchases, alters can be quite different, and those differences can prove highly significant for analysis of the effect of devaluation. In many countries with exchange control, the last highly restrictive phases of exchange control prior to devaluation are accompanied by the imposition of numerous *ad hoc* surcharges on imports and export rebates and subsidies. These measures constitute an effort on the part of the authorities to maintain the exchange rate and simultaneously to absorb part of the premiums<sup>5</sup> on import licenses that are otherwise generated by the system.

Very often, with devaluation, many of these special surcharges are removed, and that can make a significant difference to the change in incentives after devaluation. In Egypt, for example, the nominal devaluation in 1962 was 23%. The net devaluation, or change in the EER was 3% for both exports and imports. What had happened was that the Egyptians had been encouraged to devalue in order to be eligible to receive IMF assistance.<sup>6</sup> Since they were fundamentally reluctant to do so, they altered the nominal exchange rate but removed taxes on imports and export subsidies to an extent sufficient to leave EERs virtually unaltered.<sup>6</sup> In Colombia, the 28% nominal devaluation of 1957-58 was, in reality, an appreciation of 1% for exports, according to Diaz' estimates.<sup>7</sup> It would be surprising, in these circumstances, if devaluation had any significant effect upon the various components of the balance of payments. Even in cases where nominal devaluation resulted in some net devaluation, there was often a significant difference in the magnitude of the two. South Korea's 104% increase in the nominal price of foreign exchange

<sup>3</sup> Al Fishlow participated in the project and conducted an analysis of the Brazilian experience, in addition to the nine country volumes listed above. Pressures of time prevented his publishing his analysis in the series, however.

<sup>4</sup> The Ghanaian devaluation of 1971 occurred too close to the time Leith conducted his analysis to permit satisfactory evaluation of that experience.

<sup>5</sup> The concept of "premiums" is defined below.

<sup>6</sup> See Hansen and Nashashibi, *op. cit.*, Chapter 4 for details.

<sup>7</sup> For estimates for all twenty-two devaluations, see Krueger, Table 5-1.

in 1961, for example, was accompanied by an increase in the import EER of 47% and an increase in the export EER of only 2%. Similarly, the 1970 Turkish nominal devaluation of 67% resulted in a 34% increase in the export EER and a 47% increase in the import EER.

Even separate EERs for exports and imports are not the end of the story, especially in countries undergoing fairly rapid inflation. To reflect this, all country authors computed PLD EERs, or real exchange rates, for their countries. Interestingly enough, one year after devaluation, there were only four instances where the PLD EER was more than 10% greater than it had been at the time of devaluation. In all, there were eleven of the twenty-two devaluations in which the real exchange rate, one year later, is estimated to have been below (i.e. more overvalued) its level at the time of devaluation.<sup>8</sup>

With rapid world-wide inflation, even the PLD EER is not a sufficient indicator of the path of the real exchange rate. This is because other countries' rates of inflation provide a margin within which the country in question can inflate without altering incentives to domestic producers (contrasted with the no-inflation case). In the 1970's, calculation of PPP PLD EERs is essential, if one is to examine the impact of differential inflation rates upon countries' exchange rates.<sup>9</sup> In the 1960's, however, the rate of increase of dollar prices of internationally traded goods was very low, averaging less than half a percent per year, so that this adjustment to the estimated PLD EERs was generally very minor.

### Components of the Devaluation Package

A first task in all country studies, therefore, was the calculation of nominal, effective and PLD exchange rates. These measures constituted a means of organizing a great deal of information about the devaluation and its effects. Before turning to that, however, other components of the "devaluation package" should be considered.

As already mentioned, alterations in domestic macroeconomic policy are often made, or inaugurated, at the time of devaluation. In many instances, the fundamental objective of the government in the first place pertained to attempting to control the domestic rate of inflation. For example, in Chile in 1956, the devaluation was undertaken as

part of a concerted effort to control the rate of inflation which had previously been exceeding 90% per annum. As such, the central objective of the authorities was to reduce the rate of inflation, and devaluation was undertaken primarily as a necessary measure if success was to be achieved domestically.

In other cases, both devaluation and domestic macroeconomic measures are undertaken as a precondition for obtaining fresh foreign credits or rescheduling debt obligations that would otherwise be unsustainable. In those instances, the International Monetary Fund or consortia of lenders and foreign aid donors have negotiated an agreement with the debtor country under which, in return for debt rescheduling and fresh credits, the government undertakes to adhere to certain monetary ceilings, ceilings on government expenditures, and to put into effect other measures believed to be essential for the restoration of credit-worthiness.

In Turkey in 1958, for example, the country was far in arrears in its foreign-debt obligations, and imports were declining rapidly as export earnings had fallen sharply. With inflation exceeding 25% per year, the TL had become greatly overvalued. Inflation itself resulted largely from rapid expansion of the money supply, itself the result of large public sector deficits. The Turkish government received sizeable credits, enabling it immediately to expand the flow of imports sharply, in return for which ceilings upon the rate of money expansion were imposed, limits were also set for government spending (in addition to a large devaluation), and public enterprises raised their prices to reduce their deficits. The result was a sharp drop in the rate of inflation – from something in excess of 25% per annum to about 5% annually in the first half of the 1960's.

In some cases, governments have initially instituted restrictive monetary and fiscal policies, only to reverse them when domestic political pressures arose shortly thereafter. Such was the case in Brazil in 1961, where the effort to restrict monetary and fiscal policy lasted barely six months, and the real exchange rate two years after devaluation was below its level of one year before, and almost equal to what it had been two years before. Similarly, the Colombian devaluation of 1962 was followed by a rapid inflation that more than offset the devaluation within a year.

One of the lessons that seems to emerge from examination of the twenty-two devaluations and their outcome is that it is undesirable in most circumstances to devalue to a fixed exchange rate as part of a policy package designed to halt inflation. Even if the anti-inflation drive is suc-

<sup>8</sup> See Krueger, *op. cit.*, Table 5-3, p. 83, for estimates for all 22 devaluations.

<sup>9</sup> To be sure, the Purchasing Power Parity theory of exchange rates is not always valid. One can well imagine circumstances under which the PPP PLD EER should change. However, there is no presumption that those circumstances are in any way correlated with differences in countries' rates of inflation when, as in most developing countries, the source of the inflation lies in domestic policies. See the August, 1978, Symposium on PPP in the "Journal of International Economics".

cessful, it normally takes a period of time before prices have entirely stopped rising. During that time the exchange rate can become seriously overvalued. And, if the anti-inflation campaign is unsuccessful, as it often is, that failure automatically spells failure for the devaluation as well. It seems far more satisfactory to resort to a sliding peg policy. Should inflation be substantially slowed or halted, future changes in the exchange rate can be small and infrequent. Meanwhile, if the effort to curb inflation is unsuccessful, the economic costs of inflation appear to be substantially reduced when a sliding peg exchange rate policy is adopted.

Such a policy was successfully adopted in both Brazil and South Korea. In each instance, a major anti-inflation program was undertaken, but the authorities adjusted the exchange rate periodically to keep pace with inflation, without depending upon cessation of inflation for success.<sup>10</sup> It seems evident that neither the Brazilian exported boom of the late 1960's and early 1970's nor the South Korean success of the past eighteen years would have been feasible had a fixed exchange rate been adhered to for long periods of time, even though inflation was radically slowed down.

The third component of a devaluation package is **any shift that may occur in the short-run supply of foreign exchange.** Normally, such a shift is closely related to the debt-rescheduling issue, cited above, and is associated with the receipt of sizable foreign credits at the time of devaluation. Such fresh foreign borrowing enables countries to permit immediate expansion of their imports, without waiting for foreign exchange earnings to increase in response to the exchange rate. Since devaluation typically takes place in the context of an import-starved economy, such increased flows of imports serve two functions. On the one hand, they can enable the resumption of production in cases where earlier critical shortages of petroleum, intermediate goods, and spare parts impaired output. On the other hand, the pre-devaluation import shortages cause domestic prices of imports to exceed their landed cost (inclusive of tariff) by sizeable margins. These margins, termed premiums on import licenses, are reduced somewhat by the very act of devaluation.

Nonetheless, pre-devaluation domestic prices of imports are often so high that the devaluation cannot eliminate the import premiums. Increasing the flow of imports, by augmenting domestic supply, very often drives down the post-devaluation domestic price of both imports and import-competing goods. In this way, such an increase in im-

ports can help speed the adjustment of the economy in the critical, post-devaluation period. Since imports can otherwise be liberalized at the time of devaluation only if there is a reduction in aggregate demand through deflationary policies, borrowing from abroad at the time of devaluation may have a very high social product in permitting import liberalization without recession.

#### Change in the Quantitative Restrictive Systems

The fourth component of the devaluation package, a change in the quantitative restrictive system, can be achieved in any number of ways. In some instances, the authorities have introduced a "liberalized list" of goods at the time of devaluation, whose importation is no longer subject to the licensing procedures. In other instances, the control system is overhauled and simplified. Sometimes these alterations take the form of administrative changes in procedure, while in other instances they represent formal, legal changes in the system. In South Korea, for example, imports were effectively liberalized by shifting from a "positive" list system to a "negative" list. Under a positive list system, anything not listed as eligible for importation is automatically banned. Under a negative list system, anything not listed as banned is automatically permitted. Although the two should, in principle, be similar, a negative list system is in fact considerably less restrictive than a positive list system.<sup>11</sup> Another example is in India, where the prevailing control system was altered after 1966 so that a number of industries designated as "priority" could automatically import intermediate inputs, in amounts equal to their utilization in the preceding six months, without administrative formality.

The final component of the devaluation package, various domestic measures, is sometimes of considerable importance in positively affecting the outcome of the liberalization attempt, and sometimes can render analysis of the entire package extremely difficult. On one hand, there are fundamental reforms of interest rate and monetary instruments, such as occurred in South Korea and Brazil, which can contribute significantly to the subsequent success of an export-promotion strategy. In other instances, the authorities can use the devaluation as an excuse to carry out unpopular measures; the devaluation is then blamed for these other phenomena. Such was the case, for example, in Turkey and Colombia where the 1959 and 1965 devaluations were accompanied by significant price increases in the services provided by the public sector.

<sup>10</sup> In Brazil, the sliding peg was calculated as a weighted average of Brazil's PPP with its eight largest trading partners.

<sup>11</sup> See Frank, Kim and Westphal, *op. cit.*, pp. 58 ff. for more details.

Whereas it makes sense to analyze what happens with an exchange rate change in terms of the five components discussed above, a different framework of analysis is needed for analyzing what happens after devaluation. It is convenient to distinguish among four main effects of the devaluation package: 1) the degree to which the regime is liberalized; 2) the extent to which the "bias" of the regime is altered; 3) the extent to which the regime is rationalized; and 4) the extent to which variance in incentives is reduced.

#### Four Main Effects

At the outset of the project, a major question was the extent to which each of these four affected resource allocation and growth. Not surprisingly, all four do, but it would appear that the effects of rationalization (by which is meant the simplification and streamlining of the regime) are not in the aggregate very strong. It proved impossible to separate the effects of increased variance from the effects of altered bias, because it would appear that, as an empirical proposition, regimes biased toward import substitution generally have a considerably greater variance in sector-specific incentives than do regimes biased toward exports. That is, import-substitution regimes seem to have greater variance in incentives than do export-oriented regimes.

In turn, it does not appear possible to achieve as great a degree of bias toward import-substitution through tariffs under a liberalized regime than is possible with quantitative restrictions. Instances where countries attempted to dismantle their quantitative restrictions while maintaining protection for their domestic industries are informative in this regard. In the Philippines, for example, Baldwin traced the effects of the 1960 devaluation, where the clear intent was to shift from quantitative restrictions to tariff protection for domestic industries, while leaving the degree of protection intact. Baldwin concluded that it was surprising that this did not seem possible: the degree of protection of domestic industries seems to have fallen.<sup>12</sup> Moreover, comparison of the spread in effective rates of protection between

those trade and payments regimes with heavy biases toward import substitution with that in export-oriented regimes confirms the smaller spread of incentives in the latter, contrasted with the former.

While the evidence based upon 22 devaluation episodes in ten countries can never be conclusive, the evidence from the country studies lends considerable support to the view that what really matters in exchange control regimes is the fact that quantitative restrictions simultaneously import a tremendous bias toward import-substitution and a large variance in incentives across sectors, while liberalized regimes of necessity have considerably less bias toward import-substitution industries, or what is the same thing, more of a bias toward exports. While it is in principle possible (although the empirical evidence from the country studies did not confirm it) that a liberalized regime could support a strong bias toward import-substitution, it is not possible that a quantitative restriction system could support a bias toward export promotion. Although theory suggests that the optimal system is one in which incentives are balanced at the margin, in practice it would appear that import-substitution regimes, supported by exchange control and quantitative restrictions, tend to become increasingly biased over time, while export-oriented regimes tend to maintain a fairly even bias over time.

With a convertible currency, the chief effects of a devaluation lie in its impact on monetary variables. If there is a significant relative price effect, it is in the price of home goods relative to all traded goods. Under quantitative restrictions, the effect is very different: devaluation tends to raise the domestic price of exportable goods relative to import competing goods and thus to reduce the bias of the trade and payments regime. This is the big difference between devaluation under exchange control and devaluation under convertibility and there can be little doubt that the growth effects of altered bias are significant. To explore the link between export-promotion, import-substitution, and growth would be to go well beyond the scope of this report. These links are, however, considered in both synthesis volumes.

<sup>12</sup> See Baldwin, Chapter 3, for a full discussion.

## KONJUNKTUR VON MORGEN

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