

Exchange Rate Policies of Developing Countries in the Context of External Shocks

MOHSIN S. KHAN*

I. INTRODUCTION

In the past decade a combination of events caused the international economic climate to become increasingly inimical to the growth and current account prospects of most developing countries. Worsening terms of trade, falling growth rates in industrial countries, and sharp changes in the availability of foreign financing that were accompanied by a dramatic increase in real interest rates on external borrowing, made the problem of economic management very difficult for policy-makers in the developing world. Adjusting to these shocks would have typically called for fiscal and monetary restraint to control both public and private spending, and more flexible exchange rate policy. Such a strategy, for one reason or another, was not followed by a number of developing countries, and consequently these countries experienced falling growth rates, rising inflation, and current account deficits that over time became unsustainable.

Pakistan too suffered from external shocks during the late 1970s and early 1980s that were quite severe, although it can be argued that in some respects the Pakistan economy did manage to do better than a number of other similarly placed countries. While the balance of payments picture was highly uncertain from year to year and there was an increase in the level and variability of inflation, the growth performance — reflecting both domestic policies and fortuitous circumstances — remained strong. The country did, however, build up a significant amount of foreign debt, and debt servicing has over time become both an increasing drain on foreign exchange resources as well as a constraint to macroeconomic policymaking.

This paper, as the title suggests, does not intend to discuss the whole gamut of policy responses by developing countries to changes in the international economy in recent years.¹ Instead, the focus is more narrowly on the issue of exchange rate

*The author is Chief of the Financial Studies Division of the IMF, Washington, D.C. The views expressed in this paper are the sole responsibility of the author and do not necessarily reflect the views of the World Bank or the IMF. The author is grateful to Mr A. G. N. Kazi, to the discussants Nasir Khilji, Tahir Andrabi, and Habib Zuberi, and to Nadeem Ul Haque, Saul Lizondo, Peter Montiel, Syed Nawab Haider Naqvi, and Arshad Zaman for helpful comments. Ravi Bulchandani provided excellent research assistance.

¹For a discussion of the various policies, see Balassa [1], Fry and Lilien [4], Khan [9], and Tanzi [12].

policies of developing countries in general, and of Pakistan in particular, in the context of external shocks. An external shock will affect the real exchange rate of the country, and policies have to be designed to assist or counteract movements in this rate.² To achieve a desired real exchange rate requires in turn a combination of nominal exchange rate action and a variety of other policies that restrain domestic prices and factor costs.³ Exchange rate policy is thus a critical element in any comprehensive adjustment plan.

The remainder of this paper proceeds as follows. In Section II we discuss the broad changes in the international economic picture for developing countries and Pakistan during the period 1977–84. Section III presents a simple theoretical framework that can be used to determine the likely effects of external shocks on the real exchange rate, and Section IV examines how real exchange rates actually evolved both in developing countries and in Pakistan. The concluding section summarizes the main issues covered in the paper, and attempts to form a view on the appropriateness of exchange rate responses in different groups of developing countries.

II. EXTERNAL SHOCKS TO DEVELOPING COUNTRIES

Generally speaking, four external factors have been identified in the literature as being mainly responsible for the serious economic difficulties of developing countries in recent years.⁴ These were deteriorations in the terms of trade, the slowdown in economic activity in the industrial world, the sharp rise in real interest rates in international capital markets towards the end of the decade, and finally, the drastic contraction in capital flows to these countries in the period 1982–84.⁵ We can obtain a sense of the relative importance of these external shocks by examining the data on these factors, first for developing countries as a group and then for the particular case of Pakistan.

1. Developing Countries

After a momentary improvement in 1977, reflecting the substantial increase in the world prices of primary commodities, the *terms of trade* of non-oil developing countries deteriorated steadily over the next five years (Table 1). The fall was particularly noticeable in 1980–81 as the effects of the jump in the world price of

²For example, see the papers by Dornbusch [3] and Harberger [6].

³A recent paper by Khan and Lizondo [10] discusses the relationship between devaluation and the real exchange rate, and outlines the supporting policies that would be required to ensure that a nominal exchange rate change is translated into a corresponding change in the real exchange rate.

⁴See Khan and Knight [11], and Balassa [1].

⁵Another external factor on which there is little quantitative information is the growth in protection in the industrial countries against exports of developing countries.

Table 1
Developing Countries: External Shocks, 1977-1984¹

	(Percent)							
	1977	1978	1979	1980	1981	1982	1983	1984
Change in Terms of Trade	6.5	-3.9	-1.2	-5.9	-5.3	-2.6	0.2	1.5
Real GNP Growth of Industrial Countries	4.0	4.2	3.3	1.2	1.4	-0.4	2.6	4.7
Foreign Real Interest Rates ²	-7.4	3.1	-4.6	0.8	19.6	20.2	14.6	10.2
Capital Flows ³	28.2	43.9	47.3	61.1	73.1	49.3	17.5	13.4
Latin America ³	17.1	25.8	27.4	35.9	54.1	28.8	2.0	7.0
Memorandum Item								
Current Accounts ⁴	-12.4	-11.9	-14.5	-17.5	-19.9	-16.8	-11.2	-6.1
Real GDP Growth	5.9	6.1	4.6	4.6	2.7	2.5	3.0	5.5
Inflation	28.0	21.4	25.7	32.3	30.7	28.0	37.1	47.6

Sources: IMF [8] and IMF, *International Financial Statistics*.

¹ Non-fuel exporting countries; for a precise classification see IMF [8].

² Three-month Eurodollar rate, adjusted for percentage changes in export prices of non-fuel exporting countries.

³ "Other" net external borrowing in billions of U.S. dollars.

⁴ As percentage of exports of goods and services.

energy products in 1979-80 worked its way through the system. The average decline in the terms of trade over the period 1978-82 was about 4 percent per annum. The downward trend was reversed somewhat in 1983-84, although the improvement was by no means sufficient to compensate for the cumulative terms of trade losses experienced since 1977. For the period as a whole, the terms of trade of non-oil developing countries deteriorated at an annual average rate of 1.3 percent, but as is obvious from Table 1, this average figure masks wide variations in particular years.

Changes in *economic activity in the industrial countries* have a direct impact on the current account positions of non-oil developing countries through their influence

on exports.⁶ During 1977–79 real GNP of industrial countries grew at an annual average rate of nearly 4 percent, which helped to moderate the effects of worsening terms of trade. However, the average growth rate fell dramatically in 1980–82 to less than 1 percent a year (Table 1). This fall led to serious problems for developing countries, which the recovery in industrial countries in 1983–84 only partially alleviated.

The third major external factor affecting developing countries from the late 1970s was the increased level of *foreign interest rates* that directly affected payments on foreign debt. In the years upto 1977 conditions in the international credit markets had been generally favourable. The foreign real interest rate relevant for developing countries in 1977, for example, was negative and close to the average value observed in the period 1973–77 (–7.1 percent).⁷ Beginning in 1978, however, the picture changed quite dramatically as interest rates in the international capital markets were climbing to post-war highs and export prices of non-oil developing countries were beginning to weaken. The foreign real interest rate rose sharply and became positive—averaging a little over 9 percent a year during 1978–84 (Table 1). In fact, in the period since 1981 it had reached an annual average of about 16 percent. This turnaround of more than 16 percentage points between 1977 and the period 1978–84 forced a number of oil-importing developing countries into serious debt-servicing difficulties, particularly once the recourse to foreign financing diminished.

Throughout the 1970s *foreign commercial financing* was not a major issue for developing countries. For example, between 1977 and 1981 net external borrowings by oil-importing countries more than doubled (Table 1). Latin American countries were the primary recipients of the flows, increasing their borrowings from about \$17 billion in 1977 to over \$54 billion in 1981. However, as is now well known, in 1982, the year of the Mexican crisis, the ability of developing countries to borrow abroad began to weaken. Although net borrowings in that year were still nearly \$50 billion (\$30 billion for Latin America), most of these had in fact taken place in the first half of 1982. By 1983 net foreign financing to Latin America fell to near zero, and for all oil-importing countries amounted to a little over \$17 billion. This situation was repeated for 1984 where net foreign borrowings by oil-importing countries

⁶ An indirect effect also occurs via the effect on the terms of trade. Goldstein and Khan [5], for example, describe the empirical evidence on the positive relation between growth in industrial countries and the international prices of primary commodities.

⁷ The foreign real interest (rrf) is defined here as

$$rrf = (rf - DXP)/(1 + DXP/100)$$

where rf is the nominal foreign interest rate and DXP is the percentage change in the export prices of oil-importing developing countries.

declined by a further \$4–5 billion to only \$13.4 billion.⁸ Clearly, the sudden reduction in the availability of foreign capital forced a number of developing countries to adjust more rapidly than they would obviously have preferred.

2. Pakistan

Broadly speaking, the pattern of *terms of trade* changes that was experienced by developing countries was also evident in the case of Pakistan (Table 2). After falling in 1977-78 by a little less (3.3 percent against 3.9 percent for all developing countries in 1978), there was a sizeable improvement in Pakistan's terms of trade in 1978-79 – by nearly 20 percent – despite the increase in the price of imported oil in 1979. The improvement can be attributed almost entirely to the spectacular increase of 54 percent in the prices of agricultural exports. From 1979-80 onwards, however, there has been a steady deterioration. Between 1979-80 and 1984-85 the average annual decline in the terms of trade was about 5 percent, compared with an average 2½ percent decline for developing countries as a group.

The *growth rate of real GNP* in the main export markets of Pakistan was fairly steady during 1977–79, averaging about 3.7 percent per year (Table 2).⁹ With the onset of the international recession the growth rates slipped considerably in the subsequent three years to an average annual rate of only 0.3 percent. As the industrial economies started to expand in 1983 there was some improvement, but the rate was still below the average growth rate registered prior to 1980.

The *foreign real interest rate*, defined here as the Eurodollar rate adjusted by the percentage change in Pakistan's export prices, was negative through 1979. In 1980, however, the picture changed and the foreign real interest climbed to over 12 percent. This represented an increase of over 23 percentage points in a period of five years (1977–81). While the nominal foreign interest rate remained relatively high in the subsequent years, the increase in Pakistan's export prices pushed the corresponding real rate down substantially. For the period 1982–84, the foreign real interest rate averaged about 1.5 percent per annum.

It can, of course, be rightly argued that for a considerable part of the period under consideration the foreign real interest rate, as defined here, was not particularly relevant to the case of Pakistan. For example, during the period 1977–84 the concessional component of Pakistan's long-term foreign debt was over 80 percent. As such, fluctuations in commercial rates in the international credit markets would

⁸ There was a slight increase in the flows to Latin American countries, although as compared to the historical values, the amount was quite negligible.

⁹ This series represents a weighted average of the growth rates of real GNP in the United States, France, West Germany, United Kingdom, and Japan. The weights are based on the shares these countries had in Pakistani exports in 1980-81.

Table 2

Pakistan: External Shocks, Fiscal Years 1977/78–1984/85

(Percent)

	1977- 78	1978- 79	1979- 80	1980- 81	1981- 82	1982- 83	1983- 84	1984- 85
Change in Terms of Trade	-3.3	19.8	-11.7	-12.9	-8.0	0.0	4.4	-1.2
Real GNP Growth in Major Export Markets ¹	3.6	4.2	3.2	0.1	0.5	0.3	2.6	3.7
Foreign Real Interest Rates ²	-11.4	-4.7	-3.3	7.2	12.3	3.1	2.1	-0.6
Interest Payments/ Foreign Debt	2.3	2.6	2.7	2.8	2.3	2.6	2.9	2.8
Capital Flows ³	847.0	603.0	866.0	107.0	34.0	513.0	157.0	263.0
Memorandum Items								
Current Account ⁴	-20.8	-30.5	-23.3	-17.9	-27.4	-7.8	-14.7	-27.2
Debt-service Ratio ⁴	11.4	11.9	11.9	10.4	8.8	9.6	10.9	12.8
Workers' Remittances ⁵	1156.0	1397.0	1748.0	2095.0	2225.0	2886.0	2737.0	2446.0
Real GDP Growth	7.8	5.6	7.4	6.5	7.0	6.4	4.4	8.8
Inflation	7.8	6.3	10.7	12.4	10.0	4.5	8.4	7.5

Sources: IMF, *International Financial Statistics*; and *Pakistan Economic Survey (1985-86)*.¹Calendar years.²Three-month Eurodollar rate, adjusted for percentage changes in export prices of Pakistan.³Change in outstanding long-term and medium-term debt, in millions of U.S. dollars.⁴As percentage of foreign exchange earnings.⁵In millions of U.S. dollars.

have little, if any, impact on debt servicing. As shown in Table 2, interest payments as a percentage of the outstanding medium-term and long-term debt were remarkably stable between 1977 and 1982, averaging only about 2.6 percent a year. Clearly the "effective" interest rate faced by Pakistan on its foreign liabilities was quite different from the foreign real interest rate relevant to middle-income debtor countries. Table 2 shows some increase in the ratio of interest payments to medium-term and long-term foreign debt, reflecting the fact that the government began in 1982 to borrow in the capital markets at floating rates of interest. The share of variable-interest debt in

total public foreign debt rose from an average of less than 1 percent prior to 1982 to over 6 percent during the period 1982–84. Should this trend continue, movements in the Eurodollar interest rate will start to play an increasingly important role in debt-service payments.

Long-term foreign debt has risen steadily over the period, going from \$6.3 billion in 1977-78 to nearly \$10 billion in 1983-84. There have, however, been fluctuations in *foreign capital inflows* from year to year (Table 2). There was a sharp decline in 1980-81 – 1981-82 and then again in 1983-84. In 1984-85 external debt increased by \$263 million, but this was only half the inflow registered in 1982-83. There has been a continuous use of IMF credits in recent years, and between 1980 and 1984 borrowing from this source increased by nearly \$1 billion. However, with no stand-by programme with the IMF in operation at present, this type of inflow will be reversed.¹⁰ After falling steadily from 1978 the debt-service ratio began to increase in 1981-82, reaching a peak of 12.8 percent of foreign exchange earnings in 1984-85.

The current account of Pakistan, as in almost all oil-importing developing countries, has been continually in deficit. Provided that foreign financing is available, whether from official donor agencies, other governments, international institutions, or private commercial sources, a deficit on current account does not in itself represent a problem. Indeed, it has been argued that developing countries should be net importers of capital during the development process, and thus use foreign savings to supplement domestic resources. In the case of Pakistan during 1977–84 the current account deficit averaged about 21 percent of foreign exchange earnings (Table 2), or 4 percent of GDP. The deficit rose to over 27 percent of foreign exchange earnings in 1984-85 (4.6 percent of GDP). These deficits which have been financed mainly by foreign borrowing would have been far worse had it not been for the cushion provided by workers' remittances. Between 1977-78 and 1982-83, the remittances of Pakistani workers abroad just about tripled, going from \$1.1 billion to \$2.9 billion. From an economic standpoint these transfers, although classified in the balance of payments accounts as factor incomes, are akin to foreign capital inflows (with no corresponding foreign liability) and can be analyzed within the same framework. Any decline in workers' remittances would, thus, have the same effect on the economy as would a decline in foreign lending. There is evidence from the experience of 1983-84 and 1984-85 of such a decline.¹¹

¹⁰ In 1984, for example, debt to the IMF which had reached \$1.4 billion in 1983, declined by about \$138 million.

¹¹ However, to the surprise of many observers workers' remittances rose to \$2,570 million in 1985-86.

The growth performance of Pakistan in the last 8 years has been most impressive, despite the adverse impact of international events. During 1977-78 – 1984-85, the growth in real GDP averaged about 6 percent per annum, while the average growth rate of all non-oil developing countries over the same period was only 4.4 percent. Inflation has been quite variable, reaching double digits in the period 1979-80 – 1981-82. In the last three years it has averaged only about 7 percent per annum, as compared with a much higher average rate of 38 percent per year for non-oil developing countries as a group.

III. THEORETICAL ASPECTS OF EXTERNAL SHOCKS ON THE REAL EXCHANGE RATE

The recent papers by Diaz-Alejandro [2], Dornbusch [3], and Harberger [6] that have appeared on the subject of the real exchange rate bring out the important point that the real exchange rate is not constant, as is sometimes assumed, but can be affected both by external and domestic shocks, as well as by government policies. In the analysis here we utilize the theoretical model developed by Dornbusch [3] to trace out the effects on the *equilibrium* real exchange rate of a variety of external shocks. This framework, which is a variant of the standard traded-nontraded goods model, turns out to be quite useful for the type of issues we are interested in examining in this paper, and the analysis sets the stage for the study of the actual behaviour of the real exchange rates of developing countries and Pakistan.

The economy, as represented by this model, is assumed to produce non-traded goods and two types of exportables – manufactures and primary commodities. It also imports manufactures. The country is small so that it takes the world price of primary commodities and the price of imported manufactures as given.¹² The exogenous, or external, relative price of commodities in terms of imported manufactures, which we define as the terms of trade, is therefore:

$$P^* = P_c/P_m^* \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

Also given to the economy are the foreign interest rate (i^*) and foreign real income (y^*).

Using the price of imported manufactures (P_m^*) as the numeraire, there are three relative prices in the system: the world relative price of commodities, P^* ; the relative price of domestic manufactures, P_m/P_m^* ; and the relative price of non-tradables, P_n/P_m^* . This last relative price is defined customarily as the real exchange rate, and an increase in the ratio P_n/P_m^* would represent an appreciation of the real

¹²The country does, however, exercise some control over the prices of domestic manufactures and non-tradeable goods.

exchange rate. Assuming fixed factor supplies and price flexibility, the supply and demand functions for the three goods will be functions of these relative prices (and other variables, such as y^* and r^* , and domestic real income).

In the market for manufactures equilibrium will be achieved when supply (S_m) equals domestic demand (D_m) plus foreign demand (D_m^*):

$$S_m(P_m/P_m^*, P_n/P_m^*, P^*) = D_m(P_m/P_m^*, P_n/P_m^*, P^*, y, i^*) + D_m^*(P_m/P_m^*, y^*, i^*) \dots \dots \dots (2)$$

where y is domestic real income, and other variables are defined as before.

Equilibrium in the non-traded goods market requires equality of domestic demand and supply:

$$S_n(P_m/P_m^*, P_n/P_m^*, P^*) = D_n(P_m/P_m^*, P_n/P_m^*, P^*, y, i^*) \dots \dots (3)$$

The market for commodities will always be in equilibrium since we have assumed that the country faces a perfectly elastic world demand. Also, as the country can borrow at a given foreign interest rate, all current accounts deficits can be financed.

The equilibrium schedules for the manufactures and non-traded goods markets are drawn in Figure 1 for given values of the external variables P^* , i^* , and y^* , as well as the stock of external debt.¹³ Along MM the market for manufactures is in equilibrium. Any increase in P_m/P_m^* would create an excess supply of manufactures so that the real price of non-traded goods (P_n/P_m^*) has to rise to induce substitution towards manufactures.¹⁴ The NN schedule describes equilibrium in the non-traded goods market, and any increase in the real price of non-traded goods would result in an increase in the relative price of manufactures to clear the market. The overall equilibrium in the economy is defined at A.¹⁵

We can now proceed to use this model to analyze the effects of external shocks on the real exchange rate — P_n/P_m^* . We consider four specific external shocks: (a) a worsening of the terms of trade; (b) a fall in the growth rate of foreign real income; (c) an increase in the foreign real interest rate; and (d) changes in the net inflows of foreign capital.

a. Deterioration in the Terms of Trade

Suppose that there is a decline in the relative price of commodities, which is equivalent to a fall in a country's terms of trade. This worsening of the terms of

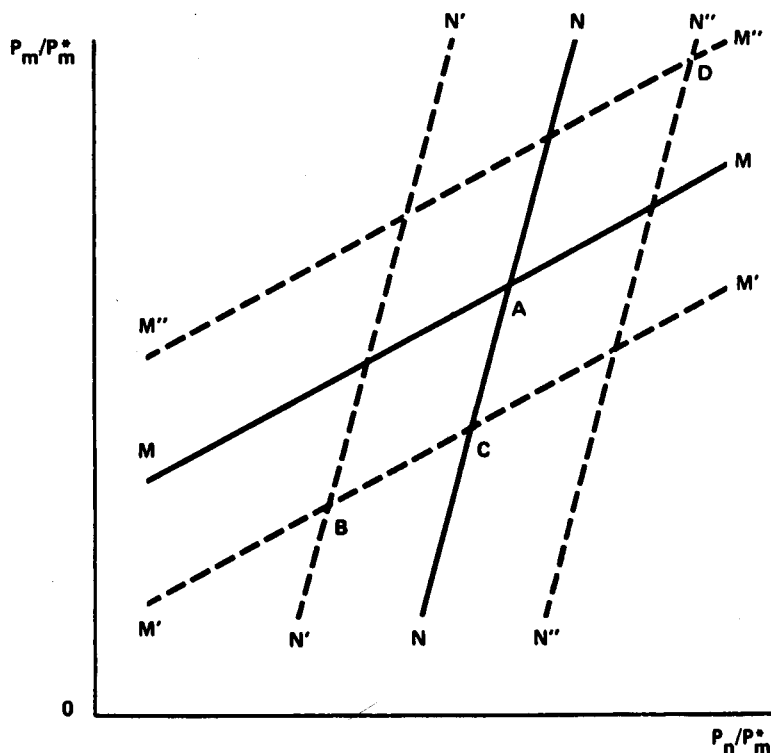


Figure 1. Effects of External Shocks on the Real Exchange Rate

trade has both supply- and demand-side effects. The decline in the real price of commodities would lower factor costs and increase the production of both domestic manufactures and non-traded goods. Furthermore, as is well understood, the decline in the terms of trade reduces real income and, thus, spending on manufactures and non-tradables. In Figure 1 the combination of supply and demand effects shifts the MM schedule down to $M'M''$ and the NN schedule to the left to $N'N'$. The relative prices of manufactures and non-traded goods adjust to maintain full employment, and a new equilibrium is reached at point B. At this point there is a gain in external competitiveness in manufactures and a decline in the relative price of non-tradables to the price of imported manufactures. A worsening of the terms of trade would, therefore, typically result in a depreciation of the real exchange rate. By contrast, an improvement in the terms of trade would shift both the MM and NN schedules upwards and this would imply an appreciation of the real exchange rate.

¹³ It is assumed that all goods are gross substitutes.

¹⁴ In the special case of the small country where domestic and foreign manufactures are perfect substitutes the MM schedule in Figure 1 would be horizontal because the demand for domestic manufactures is perfectly elastic.

¹⁵ The relative slopes of the MM and NN curves ensure that the model is stable.

b. Decline in Foreign Real Income

Starting from the original equilibrium at A we can show the effects of a fall in foreign economic activity (y^*). This decline in y^* would reduce spending on manufactures so that there would be an excess supply and the MM schedule in Figure 1 would shift downwards to $M'M'$. As there is no effect on the market for non-traded goods, the NN schedule would remain unchanged. The equilibrium real prices of manufactures and non-tradables would fall to C. In other words, the move from A to C that follows a fall in foreign real income would depreciate the real exchange rate.

c. Increase in the Foreign Real Interest Rate

An increase in foreign real interest rates would tend to reduce borrowing and spending through two separate channels. Firstly, the rise in interest rates would reduce investment and increase savings. This is the standard consumption-savings substitution effect. Higher interest rates would also raise debt servicing requirements and this would have an impact on domestic expenditures as real disposable income would be reduced. In Figure 1 both the MM and NN curves would shift in the same way as was observed in the case of the deterioration in the terms of trade, i.e., to $M'M'$ and $N'N'$, respectively. There is a decline in real prices of manufactures and non-traded goods from A to B, or a real depreciation, following the increase in foreign interest rates.

d. Outflow of Foreign Capital

An inflow of capital from abroad would allow domestic residents to raise spending on both manufactures and non-tradables, and thus shift the MM schedule to $M''M''$ and the NN schedule to $N''N''$ (Figure 1). A new equilibrium would be reached at D, where the relative prices of manufactures and non-tradables are higher than in the original equilibrium at A.¹⁶ Conversely, therefore, a fall in the level of foreign financing would tend to depreciate the real exchange rate and the equilibrium would move from D towards A. The results discussed here for changes in capital flows carry over directly to the case of workers' remittances. An increase in such transfers would tend to appreciate the real exchange rate, while a decline in workers' remittances would result in a real depreciation.

In summary, Table 3 below shows expected responses of the real exchange rate to the four specific external shocks we have considered:

¹⁶Harberger [6] shows that if the foreign resources are spent exclusively on tradable goods the real exchange rate will be unchanged.

Table 3
Effects of External Shocks on the Real Exchange Rate

Type of Shock	Effect on the Real Exchange Rate
1. Deterioration of Terms of Trade	Depreciation
2. Decline in Foreign Real Income	Depreciation
3. Increase in Foreign Real Interest Rate	Depreciation
4. Decline in Foreign Financing	Depreciation

IV. REAL EXCHANGE RATE BEHAVIOUR IN DEVELOPING COUNTRIES

Despite the importance of the real exchange rate as a key relative price in the economy, there is very little direct empirical work on the subject.¹⁷ Recognizing the difficulties in performing rigorous statistical tests, we adopted a more informal approach to examining the effects of external shocks on the paths of the real exchange rates in developing countries. The basic question we intend to consider is the following: did real exchange rates in developing countries behave in the manner predicted by the theory when there were external shocks? However, it must be stressed that this is not an easy question to handle since the real exchange rate is affected by factors other than changes in the external environment, and it would not be entirely accurate to attribute all changes in real exchange rates to shocks emanating from abroad.

Nevertheless, subject to this caveat, the behaviour of real exchange rates for various groups of developing countries should provide useful information. What criterion then should we adopt for judging the "appropriate" exchange rate response? From Section III it is evident that external shocks of the type that occurred would generally cause a real depreciation. Now we know that as prices are not flexible downwards, nominal exchange rate action with supporting policies would have to be utilized to obtain a real depreciation. Consequently, cumulative real appreciations imply that countries did not use exchange rate action with the necessary supporting policies when they were hit by external shocks. In some instances it may even be the case that exchange rate policies compounded the negative effects of such shocks. This is, of course, a narrow criterion, but it makes the

¹⁷Harberger [6] goes so far as to argue that, given the state of knowledge at present, an empirical analysis would be a futile exercise.

analysis manageable. We first examine exchange rates for various developing country groupings, and then turn to the specific case of Pakistan.

1. Developing Countries

The behaviour of *real effective exchange rates* for different country groupings over the period 1977–84 are shown in Table 4. These indices measure the evolution of a country's prices relative to those of its trading partners, adjusted for exchange rate changes.¹⁸ The base period for these real exchange rate indices is chosen to be 1980 (=100), and values above 100 represent an *appreciation*, while values below signify a *depreciation*. Ideally we would have wished to have the real exchange rate index defined as the relative price of non-tradable goods to tradable goods, as was discussed in Section III, but such data are generally not available for developing countries. However, for the purpose at hand the use of an effective exchange rate index based on the ratio of domestic to foreign prices should be adequate.

The first two rows in Table 4 show the real effective exchange rate indices calculated for all developing countries, as well as for the non-oil developing countries

Table 4
Developing Countries: Real Effective Exchange Rates, 1977–1984
(1980 = 100)

	1977	1978	1979	1980	1981	1982	1983	1984
Developing Countries	104.8	100.3	99.4	100.0	105.3	106.1	104.4	104.6
Non-oil Developing Countries	104.7	100.1	100.5	100.0	103.6	102.1	98.9	97.2
Asia	105.3	97.6	98.0	100.0	98.1	97.2	93.4	90.2
Western Hemisphere	105.4	102.3	99.1	100.0	110.5	106.8	103.2	104.4
Africa	92.6	92.5	96.0	100.0	102.8	102.9	108.9	108.5

Source: IMF.

¹⁸ Prices are measured by the average annual consumer price index, with indices of partner countries averaged by using import weights, and exchange rates are measured by an import-weighted index of average annual exchange rates. Group indices are GDP-weighted averages of country indices. For a classification of the countries, see IMF [7], Appendix IX.

group. From 1977 through 1980 the real exchange rate indices depreciated steadily as the terms of trade of developing countries worsened. The period 1980–82 was characterized by a continued deterioration in the terms of trade, a sharp slow-down in the growth rates of industrial countries, and the dramatic increase in foreign real interest rates, all of which, other things equal, would have tended to depreciate the real exchange rate. In point of fact, the real exchange rates for both the total developing countries group and the non-oil developing countries appreciated. This phenomenon can be attributed to both the larger flow of foreign financing as well as to inappropriate exchange rate policies. While a number of non-oil developing countries changed their policies and allowed the real exchange rate to depreciate during 1983–84, the oil-exporting countries experienced a continued appreciation. Looking at the period as a whole, we find that for developing countries as a group there was virtually no change in the real effective exchange rate index. For non-oil developing countries, however, we observe a real depreciation that amounted to about 7 percent between 1977 and 1984.

If we examine more closely the experiences of countries that make up the non-oil developing countries group, we can see much more diversity in real exchange rate movements. In Table 4 the index for the Asian group of developing countries indicates a continuous real depreciation throughout the period. This result supports the generally held view that these countries, particularly the ones in South-East Asia, adjusted fairly rapidly to external shocks. The picture for the Western Hemisphere group (principally Latin America) is more mixed. Between 1977 and 1980 there was a real depreciation of a little over 5 percent that was partly due to external developments, and partly to active policy. The large-scale foreign borrowing by Latin American countries to finance the imbalances in the economies led to a sharp real appreciation, amounting to over 10 percent, in 1981. From then on, as strong adjustment efforts were undertaken, including greater flexibility in the management of the exchange rate, the real exchange rate depreciated significantly. The behaviour of the real exchange rate index for African countries is quite interesting. These countries experienced a steady real appreciation, even though they were the most susceptible to variations in the world prices of commodities, and thus, the terms of trade. The cumulative real appreciation over the period amounted to over 17 percent. The behaviour of the real exchange rate for the African countries certainly suggests that the exchange rate was not used actively as a policy instrument.

2. Pakistan

Exchange rate policy in Pakistan can be divided into two distinct episodes. In the first, covering the period 1977–81, the authorities maintained a fixed rate of Rs 9.9/\$. As Table 5 shows, the nominal exchange rate (defined as an index) was

Table 5
Pakistan: Exchange Rates Indices, 1977–1984
(1980 = 100)

	1977	1978	1979	1980	1981	1982	1983	1984
Nominal Exchange Rate	100.0	100.0	100.0	100.0	100.0	83.9	75.6	70.6
Nominal Effective Exchange Rate	100.2	99.7	98.3	100.0	112.9	105.9	104.4	108.0
Real Effective Exchange Rate	113.1	102.9	100.0	100.0	112.8	102.7	99.5	101.3

Source: IMF.

constant through 1981 despite the fact that there were serious difficulties in financing the current account deficits in certain years.

There were several reasons advanced for the policy of keeping a fixed relationship of the Pakistani rupee with the U.S. dollar. These included, among others, the argument that depreciation would create inflationary pressures and perhaps a contraction in domestic economic activity. The authorities were also concerned that a devaluation would cause budgetary problems by raising the rupee cost of servicing external debt and of financing subsidies on imported goods. Furthermore, it was believed that the price elasticities of both import demand and export supply were fairly small, at least in the short run. This meant that a depreciation would not affect trade flows in any significant fashion. In other words, devaluation would yield only costs – inflation, reduced economic growth, larger budget deficit – and no benefits in terms of an improvement in the current account position.

The *nominal effective exchange rate* did depreciate by some 8 percent in 1978, and remained stable through 1980.¹⁹ There was a sharp appreciation, however, in 1981 (of about 13 percent) which was associated with a trade balance deficit that amounted to nearly 60 percent of foreign exchange earnings. Since the Pakistani rupee was fixed to the U.S. dollar, the movements in the nominal effective exchange rates that took place during 1977–81 were simply the reflection of changes in the exchange rates between the U.S. dollar and the currencies of the other countries that trade with Pakistan. The movements in the *real effective exchange rates* (Table 5) more or less replicated those of the nominal effective rate. There was a significant depreciation in 1978 and an equally large real appreciation in 1981.

¹⁹The nominal effective exchange rate is simply a weighted index of the exchange rates of countries that trade with Pakistan, with the weights being given by import shares.

The second episode corresponds to the period after 1982. In this year the authorities abandoned the fixed peg with the U.S. dollar, "delinking" is the term used, and adopted a more flexible exchange rate policy that allowed for frequent small changes according to an undisclosed rule. With de-linking, the rupee depreciated by 16 percent against the U.S. dollar in 1982 and by 10 percent in 1983. The rate of depreciation slowed down in 1984 to only 6 percent. Given that in 1984 Pakistan's terms of trade deteriorated, capital inflows were reduced, and workers' remittances declined by over 10 percent, it was clear that the rate of depreciation should have been larger, rather than smaller, than in previous years. The current account deficit widened substantially, going from 14.7 percent of exports of goods and services (or 3.5 percent of GDP) in 1983 to over 27.2 percent (5.5 percent of GDP) in 1984.²⁰

The nominal effective exchange rate also depreciated in 1982 and 1983, with the cumulative depreciation between 1981 and 1983 amounting to 7.5 percent (Table 5). In 1984, however, it appreciated by over 3 percent as the U.S. dollar moved strongly against other currencies. Clearly, slowing down the pace of the nominal depreciation of the rupee with respect to the U.S. dollar was inadvisable at that point.²¹ Because inflation in Pakistan was below the average rate of its trading partners over the period 1981–83, the real effective exchange rate generally depreciated by more than the corresponding nominal effective exchange rate. From 1981 to 1983 the real depreciation amounted to nearly 9 percent and there was a small real appreciation in 1984.²²

V. CONCLUSIONS

In the face of a series of external shocks in the late 1970s and early 1980s, developing countries have paid increasingly closer attention to their exchange rate policies and practices. Over the last five years or so, the trend in developing countries has been away from fixed pegs against a single currency toward flexible arrangements and pegging to currency composites. Allowing for more flexibility in exchange rates has enabled countries to adapt to changes in the international environment that put their current account positions under pressure. The movement in this direction is evident in the case of Pakistan as well.

The purpose of this paper was to examine how the various external shocks that occurred during the last decade affected real exchange rate developments in the

²⁰ A faster rate of depreciation was resumed in 1985 with the rupee being devalued by about 12 percent.

²¹ The nominal effective exchange rate did depreciate by over 6 percent in 1985.

²² However, this was reversed in 1985 when the real effective exchange rate depreciated by 7.3 percent.

developing countries in general, and Pakistan in particular. At the theoretical level, assuming full wage-price flexibility, it was shown that external disturbances such as a worsening of the terms of trade, a slow-down in growth in the industrial countries, an increase in foreign interest rates, and a reduction in foreign financing would, other things equal, tend to depreciate the real exchange rate of a developing country.

The actual experiences of countries did not fit the pattern described by the stylized model. In examining the movements of the real exchange rate for various country groups, we found in many instances that the behaviour was contrary to that predicted by the theory. This could be the consequence of two factors. First, that the authorities followed exchange rate policies that were aimed at offsetting the effects of external factors. Second, as the real exchange rate is not solely dependent on international events, other domestic factors worked to move the rate in a different direction. The correct answer is probably a combination of the two.

By and large, the real exchange rate for developing countries remained relatively stable over the period 1977–84. However, within this broad aggregate, there was a considerable diversity of experiences. The Asian group of countries, which rely heavily on exports of manufactures, followed policies that placed more emphasis on a real exchange rate that maintained or improved international competitiveness. African countries and primary product exporters apparently were not as concerned with the behaviour of the real exchange rate, which was allowed to appreciate steadily over the period under study. Towards the earlier part of the period the real exchange rate for major debtor countries appreciated, but in recent years the need for adjustment has been particularly acute among this group. These countries have diversified economies that can respond to changes in relative prices, and consequently a more active use was made of exchange rate policy for external adjustment. The result of this change was a sizable depreciation of the real exchange rate between 1981 and 1984.

In many respects the exchange rate policy of Pakistan was very similar to that of the group of major borrowers. From 1977 through 1980 the real exchange rate depreciated, and then appreciated sharply in 1981. Following the adoption of a crawling peg exchange rate regime in 1982, the real exchange rate depreciated steadily. The cumulative nominal depreciation between 1981 and 1985 amounted to 37 percent; the corresponding real depreciation over the same period was nearly 17 percent. While Pakistan is certainly not classified as a "major borrower", foreign transfers, including development assistance, lending by the IMF, and more importantly perhaps workers' remittances, play a critical role in the evolution of the balance of payments and the real exchange rate. When foreign transfers are large the real exchange rate would have a tendency to appreciate, and vice versa. This was evident in both the case of Pakistan and the major-debtor developing countries. By abandoning the policy of maintaining a fixed peg with the U.S. dollar, the Pakistani authorities were clearly better placed to adjust to the more recent external shocks.

In conclusion, exchange rate policy to achieve an "optimal" or "equilibrium" exchange rate is a complex task for governments. Ideally, the level of the exchange rate should be consistent with the country's production, consumption, and trade structure, with account being taken also of the tariffs, export subsidies, and the system of exchange controls. Establishing such a consistency would require a general equilibrium model integrating the real and financial sectors. This model could then be solved to yield optimal values for the exchange rate under differing external and domestic conditions. In practice this is a nearly impossible task since such models do not exist. Consequently policy-makers have to exercise a great deal of judgement in managing the exchange rate. Even though exchange rate policy remains more of an art than a science, we have learned two important lessons in the last few years. One, that there are very few circumstances when a real appreciation, or an over-valued currency, is desirable or justifiable. Generally speaking, therefore, it is much better to err on the side of undervaluation rather than overvaluation. Two, that more flexibility does add an important degree of freedom in the ability of governments to adjust to a variety of external shocks. The experiences of the export-oriented Asian economies is a good example of appropriate adjustment, and to an extent, the same has been true for Pakistan in certain years.

REFERENCES

1. Balassa, Bela. "Policy Responses to Exogenous Shocks in Developing Countries". *American Economic Review*. Volume 76, No. 2. May 1986. pp. 75-78.
2. Diaz-Alejandro, Carlos F. "Latin American Debt: I Don't Think We Are in Kansas Anymore". *Brookings Papers on Economic Activity*. Vol. 2. 1984. pp. 335-389.
3. Dornbusch, Rudiger. "Policy Performance Links between LDC Debtors and Industrial Nations". *Brookings Papers on Economic Activity*. Vol. 2. 1985. pp. 303-356.
4. Fry, Maxwell, and David M. Lilien. "Monetary Policy Responses to Exogenous Shocks". *American Economic Review*. Vol. 76, No. 2. May 1986. pp. 79-83.
5. Goldstein, Morris, and Mohsin S. Khan. "Effects of Slowdown in Industrial Countries on Growth in Non-Oil Developing Countries". Washington: International Monetary Fund. August 1982. (Occasional Paper No. 12)
6. Harberger, Arnold C. "Economic Adjustment and the Real Exchange Rate". World Bank. May 1985. (Unpublished)
7. International Monetary Fund. *Annual Report 1985*. Washington. September 1985.

8. International Monetary Fund. *World Economic Outlook*. Washington. April 1986.
9. Khan, Mohsin S. "Developing Country Exchange Rate Policy Responses to Exogenous Shocks". *American Economic Review*. Vol. 76, No. 2. May 1986. pp. 84–87.
10. Khan, Mohsin S., and J. Saul Lizondo. "Devaluation and the Real Exchange Rate". Development Research Department, The World Bank. April 1986. (Report No. DRD 170)
11. Khan, Mohsin S., and Malcolm D. Knight. "Determinants of Current Account Balances of Non-Oil Developing Countries in the 1970s: An Empirical Analysis". *IMF Staff Papers*. Vol. 30, No. 4. December 1983. pp. 819–842.
12. Tanzi, Vito. "Fiscal Policy Responses to Exogenous Shocks in Developing Countries". *American Economic Review*. Vol. 76, No. 2. May 1986. pp. 88–91.

Comments on "Exchange Rate Policies of Developing Countries in the Context of External Shocks"

Dr Mohsin Khan has presented an excellent analysis, consistent with the literature one finds in the World Bank publications, of the exchange rate policies of the developing countries during the 1977-84 period. The importance of the present study may be recognized in the light of Professor Harberger's observation in his article, "Economic Adjustment and Real Exchange Rate" (1985) that very little empirical work has been done on exchange-rate behaviour in the developing countries. This, he continues, is largely due to the fact that our present knowledge on the subject is so meagre that even "an empirical analysis would be a futile exercise."

Yet, Dr Mohsin Khan has boldly attempted such an analysis, knowing that in doing so he would be exposing himself to criticism. In the process, he has explored new areas of economic analysis that have hitherto been ignored, and has done a reasonably good job of it. The author recognizes that sophisticated procedures have not been developed that would have allowed him to present a more rigorous analysis. The results he presents in this paper should, therefore, be viewed as first approximations only.

Dr Khan utilizes the standard theoretical framework of the Dornbusch/Harberger type for his analysis. My predecessors have already discussed the limitations of this approach to the present problem. Perhaps the author should explore the application of intertemporal model to the exchange-rate problems as an alternative to the approach he has followed. Granted that the intertemporal model has not been widely accepted as a theoretical basis for such an analysis; nevertheless it would be worth while to explore its applicability to such problems.

My predecessors have also commented on the problem of specification in this paper. I agree with their comments and recommend that the author revise his paper in the light of these comments.

The author identifies three well-known external shocks, viz. (i) deterioration of the terms of trade, (ii) decline in the economic activity of the world, i.e. a decline in foreign real income, and (iii) a sharp increase in real interest-rate in international

capital markets. To these three he adds a fourth factor, viz. (iv) inflow and outflow of foreign capital. This fourth factor appears to be closely tied to the first shock.

Dr Khan correctly points out that as the economic activity in the developed industrial world slowed down, the demand for raw material sharply declined and hence the terms of trade shifted against the less developed countries (LDCs) during the 1980s. These results are quite consistent with Raul Prebisch's thesis that terms of trade have deteriorated for the LDCs.

Dr Khan attributes the inflationary demand management and rigid exchange-rate policies to the decline of economic activities in the LDCs and a deterioration in the terms of trade. Interestingly, the author, on the basis of Table 1, attributes the plight of the LDCs to the decline of the economic activity in the industrial world. This argument supports the notion of "trickle down effect". (Professor John K. Galbraith once explained the trickle down effect to his television audience by telling a story about a horse and a sparrow. You feed the horse plenty of oats and make him run on the road. The sparrow follows the horse. What the horse is unable to digest becomes the share of the sparrow.)

So, when the real GNP growth rates of industrial countries decline, the LDCs suffer more. Higher growth rates in industrialized countries help moderate the effects of worsening terms of trade. For the good of the LDCs, let us hope and pray that the rich countries will continue to do well.

Although Dr Khan recognizes the expansionary domestic fiscal and monetary policies that may have contributed to the inflationary pressures of the 1977-84 period, he overemphasizes the role of real interest-rate in the slow-down and deterioration in the terms of trade between 1980 and 1984. The role of interest rate in the literature on inflation is highly controversial. Economic recovery in West Germany and Japan in the 1950s was attained when the interest rates were relatively high by historical standards. The recent economic recovery in the USA was similarly achieved when the real interest-rates were high by historical standards.

The analysis presented in this paper does lend support to two arguments: (a) that the gap between the developed and the developing countries continues to widen, and during the period of economic slow-down the LDCs tend to lose more, and (b) that external shocks were largely responsible for the balance-of-payments problem of the LDCs during the 1980-84 period. The author has underemphasized, if not altogether ignored, the first conclusion. In my judgement, this point should be emphasized.

The story about the performance of Pakistan's economy and its foreign-trade sector is reported in an excellent style. Dr Khan says that the procedure used in determining the value of the rupee remains a secret. The procedure adopted by the government of Pakistan after delinking the rupee from the dollar in establishing day-to-day foreign-exchange rate is explained in the *Pakistan Economic Survey, 1985-86*.

The author, perhaps, had no access to that publication when he wrote the paper. There is some concern about the data, as the chairman of the session pointed out. However, when secondary data are used, one can hardly blame the author for the inaccuracy of the data. There is no question about the discrepancy in the data. The author has used World Bank data as well as the data published in the various issues of the *Pakistan Economic Survey*. What is important is the conclusions that the author draws about Pakistan's foreign-trade policy during this period. According to the author, Pakistan adjusted itself to the external shocks better than an average LDC. The data he presents support his conclusion and on an *a priori* basis it can be said that the conclusion would not have been any different had he used the data supplied by the government of Pakistan.

In making his policy prescriptions, Dr Khan advocates an equilibrium rate of exchange determined by the market forces. However, if an error is being made, he would like the domestic currency to be somewhat undervalued rather than overvalued. This would be a reasonably good policy for an export-oriented economy, but for countries that import capital for modernization and have a relatively small export sector, such a policy would have a negative effect on economic growth. Indeed, such a policy may contribute to deflationary tendencies and retard economic growth.

I congratulate Dr Mohsin Khan on this pioneer work in an area which did not receive adequate attention in the past.

Department of Economics,
Central Michigan University,
Mt. Pleasant, Michigan
U.S.A.

Habib A. Zuberi

Comments on “Exchange Rate Policies of Developing Countries in the Context of External Shocks”

In this lecture Dr Mohsin Khan ably projects IMF's wisdom which, coupled with Thatcherism, Reaganomics, Nakasonism, Kohlism, Mulrooneyism and the like, seems to hold sway with a majority of policy-makers in the Western world.

The main thesis of this lecture is that during the 1977 –1982 period specifically, the effects of external shocks (to the economies of developing countries) – such as worsening terms of trade, falling growth rates in industrial countries, and increasingly stringent requirements on foreign financing – were reinforced by inappropriate domestic policies of these countries.

Inappropriate domestic policies mean (1) adoption of inflationary demand management policies, mostly by monetizing the government deficits and (2) rigid exchange rate policies, which, it is suggested, led to domestic demand pressures, and inefficiencies in the allocation of resources due to distortions in relative prices. To support this thesis one version of the story regarding international events that took place and their effects between 1977 and 1984 is told in the first two sections. Not everyone would agree with it. To further substantiate this thesis, a theoretical model developed by Dornbusch is employed for comparative static exercises.

Before I get bogged down in the specifics of the model, there are some general comments I have to make on the paper.

Firstly, Dr Khan sets himself too ambitious a task in covering all non-oil-exporting developing countries which come in all shapes and sizes with differing policies. For that reason, it is very hard for him to prove his thesis conclusively, as he himself admits near the end of his paper.

Secondly, the study relies on casual empiricism presenting the time path of the real effective exchange rate for the above-mentioned countries in various groupings. We see different movements in the real exchange rate depending on the types of groupings used. It is very hard, based on this information alone, to be convinced of the “inappropriateness” of domestic policies adopted by the concerned countries.

Thirdly, from much generality the study eventually narrows its focus to Pakistan, but not only the data which have been used are questionable but also Pakistan emerges as having done fairly well, especially after delinking from the U.S. dollar in 1982.

Fourthly, the story stops at 1984. The natural question is, Why? Why not cover later developments, especially the significant fall in real interest rates and oil prices. These were happy shocks and it would be interesting to see how the non-oil-exporting developing countries (NOEDCs) have coped with them. This could reinforce the thesis, if the policies were indeed inappropriate in such happy circumstances.

Finally, in spite of a theoretical model which seems to be out of place in this paper anyway for reasons I shall elaborate below, this is a descriptive study which ends up arguing for flexibility in exchange rate policy — the general IMF line — without a convincing evidence in favour.

I wonder whether the model used in this paper, which is based on wage/price flexibility, is an appropriate one to analyse countries where money wages and prices are rigid, and suffer from capital immobility and barriers to trade. Instead of using this model to cover an NOEDC, the model could have been modified to cover same general characteristics for a particular grouping of countries such as Asia, Africa, South Asia etc. There are some specific questions I have, pertaining to the model itself:

1. The terms of trade (TOT) is defined in Equation 1 as price of primary commodity exports relative to price of imported manufactures. If the country also exports manufactures as is assumed, why is not their price included in the definition? Shouldn't a weighted average of the prices of the two exports relative to the price of imported manufactures be used?
2. In the scenario of a decline in foreign real income, it is stated that the NN schedule would remain unchanged while the MM schedule would shift downwards to $M'M'$. The reasoning is that a decline in Y^* (Y^*/Pm^*) leads to a reduction in expenditure on domestic manufactures which, through effects on Pm/Pm^* , causes the shift. Now, since Pm^* is given, this would mean that Pm declines, which would lead to Pm/Pn declining. Substitution then would lead Pn to decline. Again, given Pm^* , the NN schedule should shift in. Although the result is of course the same, i.e. depreciation in the real exchange rate, the NN schedule does shift in, contrary to what is asserted, thus having a stronger effect.

3. Going back to the decline in foreign real income, wouldn't this also reduce foreign demand for world manufactures leading to reduction in Pm^* ? If that is so, then the results become ambiguous. If both Pm and Pm^* decline in the same proportion, then the MM schedule may not shift while the NN schedule would.
4. In scenario (C), "increase in foreign real interest rate", it is stated that 'the rise in interest rates would reduce investment and increase savings. This is the standard consumption – savings substitution effect'. Does Dr M. S. Khan mean investment or consumption here? I think he means consumption.

The Catholic University of America,
Washington, D.C. (USA)

Nasir M. Khilji