

# A Development Model and Foreign Aid Requirements in Pakistan

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In the transitional period of development, absorptive capacity is not a binding constraint to development for long. As attempts to increase investment are made in a bid to achieve the desired growth rate, savings fall short of funds required for the purpose. In the initial period of development, the under-developed countries like Pakistan generally face the emergence of a gap [6a] between investment and savings which we will refer to as the resources gap. If domestic resources are sufficient to generate required savings, there may be another limit to the investment of these resources due to lack of complementary inputs, in which their own production capacity is limited, and their traditional exports are not, in general, sufficient to finance the imports of capital goods and other complementary inputs in accordance with the needs of the economy. Therefore, there emerges another gap termed as the trade gap.

Most of the under-developed countries are severely dependent upon foreign aid and Pakistan is no exception. Its development is highly sensitive to change in external impetus. After the separation of East Pakistan, values of parameters, and the economic and socio-cultural environments have changed. This new situation calls for a study which can provide an up-to-date insight into the economy and its dependence on foreign aid. Therefore, an attempt has been made to estimate the investment-savings and the import-export gaps, for perspective planning and policy formulation.

## REVIEW OF THE STUDIES

In the perspective plan contained in the Third Five Year Plan, [20] it was expected that net foreign inflow would become zero in its terminal year. In that document a 7.2 percent growth rate of gross domestic product was

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envisaged which is higher than the average experienced in the past. Moreover, no attempt was made to estimate the foreign aid requirements at alternative growth rates of gross domestic product. Chenery and MacEwan[5] developed their model, estimating foreign aid requirements, under time and other sets of binding constraints within the two gap theoretical framework. No attempt was made to measure foreign aid requirements under the set of targets fixed in the perspective plan. Rehman criticised both these estimates emphasizing that they did not include debt servicing [23]. In another study he made merely projections of the investment-saving gap assuming a 7.2 percent compound growth rate of the economy [24]. Similarly Naqvi did not deal with the resource gap, focusing his attention only on the import-export gap [16]. Both the investment-savings and import-export gaps were measured at alternative growth rates of gross domestic product of the economy in a United Nations Study [27]. In this marginal propensity to import MPM was used for projections of imports. But as the sectoral composition of the economy changes, MPM also changes. Therefore, the use of a constant MPM for projections is not realistic. Moreover, all the above mentioned studies were at macro level and based upon data for Pakistan as a whole. Kemal estimated only investment-savings gap, using Pakistan (West Pakistan) data [11]. In the recent draft of a perspective plan [21], a 9 percent growth rate of GDP was used in the projections of imports and foreign aid requirements leaving other growth rates aside.

The present study consists of a set of projections of the import-export and the investment-savings gaps at alternative growth rates, viz. 5, 6, 7, 8 and 9 percent for the gross domestic product at various incremental capital output ratios. The detailed projections are given in the appendix.

### THE MODEL

The model consists of 8 stochastic behavioural and 13 other equations. In the estimation of functional relationships, time series data from 1960 to 1974 are used. The notational glossary used in the model is given in the following.

Symbols used in the two gap model:

- Y = Gross domestic output
- Q = Industrial output
- V = Agricultural output of food grain
- C = Consumption
- I = Investment
- S = Savings
- \*  
S̄ = Saving requirements
- X = Exports
- M = Imports
- F<sup>mx</sup> = Net foreign inflow based on trade gap
- \*  
F̄<sup>mx</sup> = Net borrowing based on trade gap
- F<sup>is</sup> = Net foreign inflow based on resource gap
- \*  
F̄<sup>is</sup> = Net borrowing based on resource gap

- $G^{mx}$  = Gross inflow
- $G_{IS}^*$  = Gross foreign inflow based on resource gap
- $B$  = Debt outstanding of base year
- $D$  = Debt outstanding
- $P$  = Population
- $M^k$  = Imports of capital goods
- $M^R$  = Imports of raw material
- $M^F$  = Competitive food stuffs imports
- $M_{F}^*$  = Non competitive food stuff imports
- $M^C$  = Imports of consumer goods
- $M^I$  = Invisible imports
- $g$  = Rate of growth of GDP
- $r$  = Rate of growth of industrial production
- $e$  = Rate of growth of food grain production
- $K$  = Incremental capital output ratio
- $i$  = Interest rate
- $a$  = Rate of principal paid on outstanding debt
- $b$  = Principal paid on outstanding debt of base period
- $n$  = Grace period
- $m$  = Amortisation period
- $R^K$  = Relative prices of capital goods
- $R^R$  = Relative prices of raw material
- $R^F$  = Relative prices of food stuff imports
- $T$  = Time period

The standard identity used in the two gap model is:

$$Y_t = C_t + I_t + X_t - M_t \quad \dots \quad (1)$$

### Income Path Equation

The rate of growth of the gross domestic product is visualized as:

$$Y_t = Y_0 e^{gt} \quad \dots \quad (2)$$

where  $g$  is fixed exogenously.

### Production Function

We assume here simple production function with one year time lag as basis for the estimates of the investment.

$$I_t = K [Y_0 e^{g(t+1)} - Y_0 e^{gt}] \quad \dots \quad (3)$$

### Net Foreign Inflow

Net foreign inflow is by definition

$$F_t^{\text{mx}} = M_t - X_t \quad \dots \quad \dots \quad \dots \quad (4)$$

To see the structural behaviour of the economy, we classify imports into capital goods, raw materials, competitive food stuffs, non-competitive food stuffs, other consumer goods and invisible imports. The details on the estimates of import demand functions are given in Ali [3]. The equations used for projections of the above mentioned categories of imports are expressed in the following functions estimated using data for the period 1960-74.

### Import Demand Functions

$$M_t^K = 776.949 + .260 I_t - 632.532 R_t^K \quad \dots \quad (5)$$

(6.58) (3.90)

$$R^2 = .88 \quad F = 41.50 \quad \text{D.W.S.} = 1.50$$

$$M_t^R = -512.171 + 856.834 R_t^R + .069 Q_t \quad \dots \quad (6)$$

(6.080) (2.224)

$$R^2 = .89 \quad F = 42.52 \quad \text{D.W.S.} = 1.92$$

where

$$Q_t = Q_0 e^{rt} \quad (r \text{ is fixed exogenously, in relation to } g)$$

$$L_N M_t^F = 12.239 - 3.383 L_N V_t - 2.926 L_N R_t^F \quad \dots \quad (7)$$

(3.776) (1.856)

$$R^2 = .69 \quad F = 9.0 \quad \text{D.W.S.} = 1.87$$

where

$$V_t = V_0 e^{et} \quad (e \text{ is fixed exogenously, in relation to } g)$$

$$M_t^{*F} = -2799.778 + 7.309 P_t \quad \dots \quad \dots \quad (8)$$

$$R^2 = .81 \quad F = 38.54 \quad \text{D.W.S.} = 1.90$$

$$M_t^C = M_0 - .0018 \frac{d}{dt} Y_0 e^{st} \quad \dots \quad \dots \quad (9)$$

where

$$M_0 = 214.65$$

$$M_t^i = -208.898 + .039 Y_t \quad \dots \quad \dots \quad (10)$$

(9.337)

$$R^2 = .88 \quad F = 87.19 \quad \text{D.W.S.} = 1.89$$

### Export Function

To facilitate our work, in estimating trade gap ( $M-X$ ) we use a simple export function which assumes a close correlation between the growth of exports and the gross domestic product. The export function used for projections is:

$$X_t = -616.799 + .1089 Y_t \quad \dots \quad (11)$$

(10.308)

$$R^2 = .93 \quad F = 106.25 \quad D.W.S. = 1.62$$

Equations 5, 6, 7, 8, 9, 10, and 11 permit us to estimate trade gap as defined in equation (4).

### Saving Requirements

Saving requirements at alternative rates of growth of the economy are determined as:

$$S_t^* = I_t - F_t^{mx} \quad \dots \quad (12)$$

### Consumption

Consumption expenditure in the system is estimated as:

$$C_t = Y_t - S_t \quad \dots \quad (13)$$

Estimation of savings generated by the economy are given in the next pages.

### Resource Gap

The resource gap is by definition:

$$F_t^{Is} = I_t - S_t \quad \dots \quad (14)$$

### NET FOREIGN INFLOW, NET BORROWING AND GROSS FOREIGN INFLOW

The net borrowing will be the current deficit in the balance of payment plus interest payment on the debt outstanding of the base period and interest on the newly accumulated debt.

$$F_t^{mx} = F_t^{mx} + iB_t + i \left[ D_{t-1} - B_0 + \int_{j=1}^{T-1} b_j \right] \quad \dots \quad (15)$$

$$\text{or } F_t^{Is} = F_t^{Is} + iB_t + i \left[ D_{t-1} - B_0 + \int_{j=1}^{T-1} b_j \right] \quad \dots \quad (16)$$

Gross foreign inflow by definition is:

$$G_t^{mx} = F_t^{mx} + A_t^{mx} \quad \dots \quad (17)$$

$$\text{or } G_t^{Is} = F_t^{Is} + A_t^{Is} \quad \dots \quad (18)$$

where

$$A_t^{mx} = b_t + \frac{1}{m} \int_{j=1}^{T-1} G_j^{mx} W_j \quad \dots \quad (19)$$

$$\text{or } A_t^{Is} = b_t + \frac{1}{m} \int_{j=1}^{T-1} G_j^{Is} W_j \quad \dots \quad (20)$$

$$b_t = aB_t$$

with

$$W_j = 1 \text{ for } j < t-n$$

$$W_j = 0 \text{ for } j \geq t-n$$

### FUNCTIONAL RELATIONSHIP OF SAVINGS

Some of the latest studies available use refined and complex functional relationship in explaining the savings behaviour. The explanatory variable often used in these studies is net foreign inflow which is repeatedly discussed in development studies for its negative and positive effects. The economic literature is full of contradictions in this regard. In some cases the foreign inflow is shown to have been a substitute for domestic savings whilst, in some other cases, it has been additive to domestic savings. We present here a summary table of some of the studies.

Table 1

#### *Effect of Aid on Savings*

	No. of observation	Time series or cross country	Effect of foreign inflow on savings
Griffin and Enos;			
Griffin	32	C	-0.73
Rehman	31	C	-0.25
Weisskopf	38	T <sup>a</sup>	-0.23
Chenery	90	C <sup>b</sup>	-0.49
Subrahmanyam	22	C	-0.59

\* Savings in all calculations is defined as investment minus foreign inflow.

<sup>a</sup>T = Stands for time series data.

<sup>b</sup>C = Stands for cross section data.

In these studies Professor Haavelmo's hypothesis  $I_t = a(Y_t + H_t)$ : [26], where H stands for external capital inflow, is discussed. The inference drawn from his hypothesis is that savings could be negative if foreign inflow is large enough. Rehman emphasised the importance of psychological factors including the tendency of government to relax its savings efforts when

The statistical testing shows that both the explanatory variables  $Y$  and  $F$  are significant. Ex-ante foreign inflow is a function of investment and domestic savings. Therefore, we cannot use the figures for foreign inflow based on independent projections of imports and exports, i.e.,  $F^{mx} = M - X$  directly for the projections of savings. This is inherent in the two gap model.

$$M - X \stackrel{\approx}{=} I - S \text{ ex-ante}$$

whereas

$$M - X = I - S \text{ ex-post}$$

In order to use the saving function for projection purposes, we have to replace  $F^{mx}$  by  $I_t - S_t$  which gives us, the following equation for the projections of saving and which is consistent in the system too.

$$S_t = \frac{525.177 - .366 I_t + .111 Y_t}{1 - .366} \quad \dots \quad (21)$$

### THE DATA USED IN THE MODEL

For the projections of import requirement of the economy and the estimation of trade and resource gaps a base period has to be chosen. As the period 1972-73 was subjected to the repercussions of the East Pakistan crisis, we take 1973-74 as base period. The base period data<sup>1</sup> are taken from the Pakistan Economic Survey 1974-75 and 1975-76 [18, 19], and are:

$$\begin{aligned} Y_o &= 36,521 \\ Q_o &= 5,829 \\ V_o &= 11,321 \\ F_o &= 3828.8\$ \end{aligned}$$

For the estimation of net foreign inflow, net borrowing and gross foreign inflow, the values of parameters used are given in Table 2.

Table 2  
Values of Parameters

g	r	e	
.05	.7330	.0464	K = 2.42, 2.75, 3.00
.06	.0880	.05559	i = .05
.07	.1023	.06486	a = .03
.08	.1173	.07412	m = 20 years
.09	.1320	.08339	n = 10 years

<sup>1</sup>Values of  $Y_o$ ,  $V_o$  are expressed in million rupees at constant 1959-60 prices.  $Q_o$  is in millions of tons. Debt outstanding of West Pakistan in the base period is not available, therefore, subtracting disbursed aid in 1974-75 and Bangladesh share from debt outstanding in 1975 is taken as  $D_o$ .

## ECONOMIC DEVELOPMENT, FOREIGN AID AND TRADE

In the development history of Pakistan, the Second Five Year Plan was the most successful plan. In this plan period greater emphasis was laid on the availability of substantial foreign funds to supplement domestic resources for development. No considerable measures were taken to curtail the dependence on aid and therefore, net foreign inflow was as high as 9.20, 8.34 and 14.10 per cent of GDP in 1960-61, 1962-63 and 1964-65 respectively.

### Foreign Aid Trap

In the perspective plan 1965-85, it was considered that foreign inflow would fall to zero in its terminal year. Therefore, in the Third Five Year Plan 1965-70, some measures were taken to reduce the increasing trade gap and foreign inflow was indeed reduced to 3.36 percent of GDP in 1967-68 and 4.51 in 1969-70. The present development policies are also focused on reduction of the foreign inflow. This is reflected in our estimates of net foreign inflow needed to cover the trade gap at alternative rates of growth of gross domestic product.

Table 3

*The Estimated Net Foreign Inflow, (Equal the Trade Gap) as Percentage of Gross Domestic Product*

(Incremental Capital Output Ratio = 3.0)

Period	g = .05	g = .06	g = .07	g = .08	g = .09
1975-76*	3.0	3.9	4.6	4.9	6.1
1979-80	2.3	3.0	3.6	4.3	4.9
1984-85	1.7	2.2	2.8	3.4	4.2

\*Throughout this study figures for 1975-76 are *not* actuals, but derived from the models.

But inspite of a decreasing trend over time the magnitude of the trade gap is projected to remaining very high, although the degree of its severity varies with the assumed growth rates of the gross domestic product. The projected net foreign inflow seems to be implying a severe constraint to the development of the economy. If it is assumed that Pakistan for the time being is capable enough to persue the nations with abundant foreign exchange resources to bridge this gap, the problem of debt servicing in future years will become another binding constraint directly affecting the rate of development. The following table shows how the relationship between the estimated net foreign inflow, the amount of net and gross borrowing consistent with the net inflow will change over time.



Table 4

Relationship Between Net Foreign Inflow, Net Borrowing and Gross Inflow<sup>a</sup>  
(Based on Estimated Trade Gaps)  
(Incremental Capital Output Ratio = 3.0)

Period	g = .05			g = .06		
	$\frac{F^*}{F^{mx}}$	$\frac{G}{F^{mx}}$	$\frac{G}{F^*}$	$\frac{F^*}{F^{mx}}$	$\frac{G}{F^{mx}}$	$\frac{G}{F^*}$
1975-76 <sup>b</sup>	1.773	2.124	1.198	1.627	1.946	1.196
1979-80	2.252	2.639	1.172	2.009	2.291	1.145
1984-85	3.068	3.565	1.162	2.547	2.892	1.135

  

g = .07			g = .08			g = .09		
$\frac{F^*}{F^{mx}}$	$\frac{G}{F^{mx}}$	$\frac{G}{F^*}$	$\frac{F^*}{F^{mx}}$	$\frac{G}{F^{mx}}$	$\frac{G}{F^*}$	$\frac{F^*}{F^{mx}}$	$\frac{G}{F^{mx}}$	$\frac{G}{F^*}$
1.52	1.789	1.728	1.451	1.673	1.153	1.393	1.584	1.369
1.846	2.072	1.223	1.703	1.883	1.106	1.608	1.753	1.091
2.235	2.489	1.113	1.991	2.200	1.105	1.823	1.965	1.079

<sup>a</sup>Note that super scripts have not been used for G and F in this table.  
<sup>b</sup>See footnote, table 3.

From table 4, it can be seen that in using the model for 1975-76 and 1979-80, respectively, net borrowing is estimated to be in between 1.4 and 1.8 times net foreign inflow, and 1.6 to 2.25 times, at the different visualized growth rates of gross domestic products, assuming that the incremental capital output ratio equals 3.0. It would reach as much as 1.8 to 3.1 times the net foreign inflow at the postulated growth rates of the economy in 1984-85. The gross foreign inflow situation is even more disturbing. It would reach a peak of 2.0 to 3.6 times the net foreign inflow in 1984-85. The effect of this would be to increase Pakistan's foreign capital requirements to more than 3 times the estimated 1975-76 requirements in the course of a decade. It is highly doubtful that the country will receive such a high inflow; since it would assume that Pakistan's share of probable future world wide foreign assistance and loans would have to increase considerably.

Pakistan has already been facing difficulties to finance the debt servicing and has been looking for relief. In future the debt servicing problem would become much more severe, if we as an example calculate the estimated future debt servicing as a percentage of export earnings in 1973-74, we find in 1975-76, that 27.6, 28.0, 28.5, 29.0 and 29.4 percent respectively, of the 1973-74 export earnings would have to be retained merely to repay the interest on the accumulated debt at 5, 6, 7, 8, or 9 percent growth rate of gross domestic product. Similar calculations show that it would reach 41, 43.6, 47.4, 49.4, and 52.7 percent in 1979-80, and 60.1, 67.7, 76.5, 84.4 and 93.8 percent in 1984-85. The situation as regards total debt servicing (interest payments, plus repayments of principal) is naturally more acute. Total debt servicing would become 42 to

44 percent of the 1973-74 export earnings in 1975-76, 54 to 65 percent in 1979-80 and it would reach to as much as 76 to 110 percent of these earnings in 1984-85 on the assumption of 5 to 9 percent growth rates of gross domestic. If exports are assumed to grow according to the "export performance function", the debt servicing in relation to export will still remain high and increase over time as shown in Table 5

Table 5  
*Debt Servicing as the Ratio of Projected Export Earnings*  
(Incremental Capital Output Ratio = 3.0)

Period	g = .05		g = .06	
	Interest	Debt Servicing	Interest	Debt Servicing
1975-76*	.261	.396	.259	.391
1979-80	.308	.403	.306	.395
1984-85	.347	.430	.341	.417

  

g = .07		g = .08		g = .09	
Interest	Debt Servicing	Interest	Debt Servicing	Interest	Debt Servicing
.257	.386	.255	.381	.254	.376
.311	.394	.304	.381	.303	.376
.342	.413	.336	.407	.332	.390

\*See footnote, table 3.

It seems rather likely that the country would not be able to use such a high proportion of its hard currency (foreign exchange) for debt servicing, and still be able to finance imports needed for its future development. If the economy is unable to service its foreign debt, the availability of new foreign loans would perhaps fall or even cease over a sustained period; keeping in view that availability of foreign loans is directly related to the capability of servicing such loans. It implies that Pakistan would not be able to get that much a amount of foreign funds over a sustained period. However, instead, we may assume that additional foreign funds might be available also for the repayment of debt servicing. This is a short term expediency solution that would lead to an extremely grave situation. Every inflow of foreign aid to repay debt servicing will add to the debt outstanding by its full amount leading to an additional inflow of its debt servicing in the subsequent period. This cycle of increasing foreign aid may continue for a long period and consequently, the country will end in a foreign aid trap. Suspension of foreign aid may lead to the collapse of the economy at any time. It is possible that the development effect of foreign aid may be nullified by the negative effect of repayment of loans later on. It is also likely that the net foreign inflow may disappear and even become negative while the gross inflow would remain high in order to finance

the servicing of old debt. Hence, it is not advisable to frame long term economic policies heavily dependent on foreign aid. In this respect, we have bitter experience (third five year plan).

### Export Expansion

If Pakistan is to achieve economic independence, one solution would be to increase its exports beyond the limit set by the assumed export function.

Table 6  
*Estimated Exports as a Percentage of Gross Domestic Product*

Period	$g = .05$	$g = .06$	$g = .07$	$g = .08$	$g = .09$
1975-76*	9.36	9.39	9.42	9.45	9.48
1979-80	9.64	9.71	9.78	9.84	9.91
1984-85	9.91	10.01	10.11	10.19	10.26

\*See footnote, table 3.

The bulk of our exports are comprised of some few commodities viz; rice, raw cotton, cotton textiles etc. The demand for our rice product in the international markets appears to be inelastic. Therefore, we can count on selling the desired quantity at the prevailing international market price. But there is the problem of generating an exportable surplus. This can be overcome marginally, by curtailing domestic consumption of rice. But to achieve this, we will have to increase the output of alternative food stuffs. Since, per acre yield is low, in order to generate an exportable surplus we may have to adopt, mechanized farming. Raw cotton frequently is facing an adverse price situation. Similarly, cotton textile exports are limited by the quota and tariff restrictions in many importing countries. Live animals, chinaware, manufactured cotton products by small-scale industries such as *dhotis*, embroidered ladies garments (*Kurtas*) etc; non-vegetable oil products, spices and poultry products, potatoes, tomatoes, garlic, onions were responsible for a 15 percent increase in export after devaluation (1972). Therefore, a large-scale programme is needed to stimulate additional exports of these long neglected products. Similarly, Pakistan's handicrafts are very popular in the developed countries, hence, resources should be diverted to these small-scale industries to earn foreign exchange. While, much more of our labour force is unskilled, if training facilities are provided according to foreign demand, we can earn substantially by export of our manpower. Moreover, such emigration will help to reduce the unemployment. Pakistan may be able to earn a handsome amount of foreign exchange from European and American tourists. Pakistan has many historical places worth seeing as well as natural scenery. Therefore, the tourism industry should be developed in order to attract a significant part of world tourism. But all these promising items represent a minor share in the present exports of Pakistan, which means that in the short run, they cannot be expected to bridge the trade gap. To abridge the trade gap, it is needed to sustain a growth rate of exports higher than the one inherent in the export performance function based on past experience. According to this export function the exports would be growing by 10 percent annually if the growth rate of the gross domestic product would reach 9 percent. The share of exports in the GDP would on this assumption

increase from 9.5 to 10.2 percent in the course of ten years. In the present situation it appears to be difficult to raise the exports beyond the limit set by the export performance function (see table 6). Rather, there are reasons to believe that exports would fall in relation to GDP at higher growth rate of gross domestic product. Thus it is not justified to expect too much from export expansion during the next decade. To narrow the gap, we would also have to make an attempt to reduce imports as a supplement to a policy of export promotion.

### Import Reductions

Imports have shown greater fluctuations in relation to gross domestic product than exports and corresponded to 15 and 13 percent of gross domestic product in 1960-61, and 1969-70, respectively, while exports were 8.4 percent of our domestic product in 1964-65 and 8.9 percent 1969-70.

Table 7

*The Estimated Imports as a Percentage of Gross Domestic Product*  
(Incremental Capital Output Ratio = 3.0)

Period	$g = .05$	$g = .06$	$g = .07$	$g = .08$	$g = .09$
1975-76*	12.5	13.3	14.0	14.8	15.6
1979-80	12.0	12.7	13.4	14.1	14.8
1984-85	11.6	12.2	12.9	13.6	14.4

\*See footnote, table 3.

Table 7 shows that estimated import requirements in 1975-76 would be 12.5 percent of GDP at a 5 percent growth rate of gross domestic product but as high as 15.6 percent at a 9 percent growth rate. Therefore, one way to reduce the level of imports is simply to lower the planned growth rate of GDP from 9 percent to 6 or 5 percent. But as shown in table 4 at 5 or 6 percent growth rate, there would be a still greater magnitude of gross foreign inflow, hence, we have to consider other alternatives such as to plan for a lower incremental capital output ratio. By lowering ICOR, for example from 3 to 2.75, we could reduce the level of imports which is shown in Table 8 and in turn, also the trade gap.

Table 8

*The Estimated Imports as a Percentage of Gross Domestic Product*  
(Incremental Capital Output Ratio = 2.75)

Period	$g = .05$	$g = .06$	$g = .07$	$g = .08$	$g = .09$
1975-76*	12.2	12.9	13.6	14.3	15.0
1979-80	11.7	12.3	12.9	13.6	14.2
1984-85	11.2	11.8	12.4	13.1	13.9

\*See footnote, table 3.

In a recent study on industrial development in Pakistan [9], it is shown that there is scope for import substitution in capital goods and if capital goods industries could be developed successfully, they would contribute towards reducing the growth of imports. Many of these industries are characterised by low capital output ratios, although, unfortunately, they are very skill intensive and cannot be developed very rapidly. However, skills can be developed in a certain period, if proper planning is made to achieve this. This being said, it is a fact that ICOR in the past has been greater than 2.75, therefore, the option of lowering ICOR would probably be a very optimistic solution in the short run.

To reduce the growth of imports, structural changes are needed in the economy. In the study mentioned earlier [9] it is shown that imports substitution in manufactured consumer goods has almost been exhausted, while there still is a large scope for import substitution in capital goods. Consumer goods are the hard core of the economy, hence, their imports will stay almost constant with a minor scope for reduction. Capital goods represent a significant part of our total imports. Thus to reduce the import bill, import substitution in capital goods appears to be the strategic point. It is estimated that imports of competitive food may be curtailed significantly after 1980 and self sufficiency in food is expected to be achieved before 1985, if the specified targets for food production are fulfilled. But non-competitive food stuff imports will go on increasing with an increase in population. Imports of raw material and intermediate goods are the dominant part of our total imports. Import substitution in intermediate goods and raw materials is partly highly sophisticated and some times impossible for lack of specific natural resources. Therefore, these imports will increase much with the expansion of the industrial sector. In the attempts to find the functional relationship of raw material import to domestic variable it turned out that mineral production as an explanatory variable was insignificant. This shows that import substitution in minerals was insignificant in the past. It also symbolizes the backwardness of the domestic mining sector. Therefore, it is desirable that the mining sector of the economy should be developed together with other remedial steps like better utilization of agricultural raw materials, continued research for petroleum etc.

### VICIOUS CIRCLE OF SAVINGS

Savings represented 8.9, 8.5 and 9.7 percent of gross domestic product in 1960-61, 1964-65 and 1969-70 respectively. The saving rate of the economy has been considerably less than even the 10 percent of gross domestic product which is lower than that of the most of the underdeveloped countries.

We will look at savings from two angles:

Firstly, on the basis of our estimates of imports, exports and net foreign inflow equal to the trade gap ( $F^{mx}$ ) we use equation (12) to estimate *savings requirements*. Absolute figures are shown in appendix table XIII while Table 9 shows the savings requirements in relation to the GDP under different growth assumptions.

Secondly, we show estimated savings on the basis of equation (21), which assumes that the net foreign inflow would have to correspond to the difference between investment and saving ( $I-S = F^{IS}$ ).

Table 9  
*Savings Requirements as the Percentage of Gross Domestic Product*  
 (Incremental Capital Output Ratio = 3.0)

Period	$g = .05$	$g = .06$	$g = .07$	$g = .08$	$g = .09$
1975-76*	11.4	13.5	17.5	19.7	22.1
1979-80	13.0	14.5	18.2	20.7	23.3
1984-85	13.7	16.3	19.0	21.5	24.1

\*See footnote, table 3.

Table 9 shows that to raise the growth rate of the GDP from 5 to 9 per cent would entail raising the ratio of savings to GDP from 11.4 to 22.1 percent in 1975-76. Savings requirements would be even higher in 1979-80 and in 1984-85, when they would reach from 13.7 to 24.1 percent of GDP depending on the growth rate. Even to sustain a rate of growth of 5 percent annually would imply a significant increase of the savings performance of the economy while the highest growth targets would require that savings in relation to GDP had to be increased by two to two and a half times.

In Table 10 we show, on the other hand, what the actual savings performance would be if savings reacted to changes in GDP and in net foreign inflow as in the past. The results stand in very sharp contrast to the estimated savings requirements, and they clearly demonstrate the validity of the foreign increases. At a 5 percent growth rate of GDP the two tables show that in 1984-85 savings requirements would reach 13.7 percent of GDP while savings are projected to correspond to 9.0 percent. This may be considered as a manageable gap which could be closed through policy measures. However, on the assumption of 9 percent annual growth of GDP we are faced with savings requirements of the order of 24.1 percent of GDP against projected savings of 2 percent only. This point is to a very serious policy dilemma.

Table 10  
*The Vicious Circle of Savings*  
 (Incremental Capital Output Ratio = 3.0)

Period	Y	C	S	I	FIS
$g = .05$					
1975-76*	40362.0	89.3	10.7	15.4	4.7
1979-80	49298.2	89.7	10.3	15.4	5.1
1984-85	63300.2	90.1	9.9	15.4	5.4
$g = .06$					
1975-76*	91177.3	91.2	8.8	18.6	9.7
1979-80	52346.6	91.6	8.4	18.6	10.2
1984-85	70660.5	92.2	7.8	18.6	10.6

*Continued—*

Table 10—Continued

		$g = .07$			
1975-76*	42009.1	93.1	6.9	21.8	14.8
1979-80	55583.5	93.6	6.4	21.8	15.4
1984-85	78876.8	94.0	6.0	21.8	15.8
		$g = .08$			
1975-76*	42857.8	95.0	5.0	25.0	20.0
1979-80	59020.7	95.5	4.5	25.0	20.5
1984-85	88048.4	96.0	4.0	25.0	21.0
		$g = .09$			
1975-76*	43723.6	96.9	3.1	28.3	25.2
1979-80	62670.3	97.5	2.5	28.3	25.7
1984-85	98286.3	98.0	2.0	28.3	26.2

Note: Values of C, S, I, and FIS are in percentage of GDP.

\*See footnote, table 3.

The table 10 indicate that private and public consumption will absorb from 89.3 percent in 1975-76 to 90.1 percent of GDP in 1984-85 at the lowest postulated growth rate. On the assumption of a 9 percent growth rate consumption will reach as much as 97 to 98 percent of GDP. The planning agency of Pakistan is very optimistic about the saving behaviour, on the assumption that an improving level of income, will result in higher savings. But in order to maintain a high rate of growth of income, both large investments and foreign funds in abundance are needed. The table 10 shows that when the foreign inflow is high the encouragement to saving of growing income may be nullified by the negative effect of the foreign inflow. This implies that economy is under a vicious circle of falling savings rate and growing net foreign inflow and higher income will not lead to higher savings under these circumstances.

Table 11

*The Two Gaps (Trade and Resource)*  
(Incremental Capital Output Ratio = 3.0)

(Values in millions of rupees  
constant at 1960-61 Prices)

Period	Investment	Savings	Imports	Exports	Net foreign inflow	
					FIS	F <sub>max</sub>
$g = .05$						
1975-76*	6208.2	4311.0	5053.2	3778.6	1897.4	1274.6
1979-80	7582.8	5082.0	5920.2	4751.8	2500.7	1168.8
1984-85	9736.4	6290.2	7329.2	6276.5	3446.2	1056.4

Continued—

Table 11—Continued

$g = .06$						
1975-76*	7638.8	3627.8	5463.9	3867.4	4011.0	1596.5
1979-80	9710.8	4387.2	6638.9	5083.7	5323.6	1555.1
1984-85	13108.2	5632.3	8639.5	7078.1	7475.9	1561.4
$g = .07$						
1975-76*	9138.0	2908.0	5893.3	3958.0	6230.0	1935.3
1979-80	12090.8	3580.5	7435.1	5436.3	8510.3	1998.9
1984-85	17157.8	4733.1	10182.9	7772.9	12424.0	2210.0
$g = .08$						
1975-76*	10708.5	2150.0	6343.5	4050.4	8558.5	2293.1
1979-80	14748.8	2648.4	8321.1	5810.6	12098.6	2510.5
1984-85	22000.0	3543.5	11140.1	8971.7	18458.4	3040.8
$g = .09$						
1975-76*	12352.9	1352.3	6818.7	4144.7	11000.6	3673.6
1979-80	17705.8	1579.3	9304.8	6208.8	16126.5	3096.8
1984-85	27768.2	2006.2	14163.1	10086.7	25762.2	4080.4

\*See footnote, table 3.

In Table 11 we show the two "gaps" in absolute figures; the trade gap  $F^{mx}$  resulting from independent projections of exports and imports, based on past performance; and the resources gap  $F^{is}$  from independent projections of investment and savings, also based on functional relationships in the recent past. The two gaps are widely different, and the difference between the two is much larger at higher growth rates, and is seen to be increasing over time. It was to be expected that independent projections of the two gaps would show different results, because, Ex-ante I-S is not necessarily equal to M-X. But the difference is large already under the assumption of an annual growth rate of 5 percent, and becomes truly enormous at the highest growth rate. How can the two estimates lead to such large differences?

To find the answer it is necessary to return to the basic equations:

$$Y = C+I+X-M; \text{ and } Y = C+S$$

$$\text{from these follows } S = I+X-M$$

Using the percentage presented in table 6, 7 and 10, on the assumption of 9 percent annual rate of growth and an incremental capital output ratio of 3 following percentages for 1984-85 to enter at the right hand side of the equation we find,  $S = 28.3 + 10.3 - 14.4$  (in percent of GDP) or  $S = 24.2$ . This is the "Savings requirement" figure presented in table 9. This figure is the rate of savings which is consistent with the projections of imports and exports.



We can also turn the equation around in the following way:

$$M - X = I - S$$

and insert the figures for I and S for 1984-85 from table 10 (9 percent rate of growth):

$$M - X = 28.3 - 2.0 = 26.3$$

If we assume our export projection to hold, we can estimate M:  $M = I + X - S$ , or  $28.3 + 10.3 - 2.0 = 36.6$ . Thus an import figure that is *consistent with* our estimates of investment, exports and savings would represent 36.6 percent of GDP in 1984-85 under the highest growth alternative, against the figure of 14.4 which we arrive at under an independent estimate.

It should be added that a trade gap of 26.3 percent of GDP could, of course, occur with lower exports than 10.3 percent of GDP, and correspondingly lower imports.

The use of the two gap method on Pakistan shows that with consistently higher growth rates than during the reference period 1960-74 the past functional relationships between exports, imports and savings on the one hand, and explanatory variables like GDP and investment on the other will be altered in one direction or other. If the foreign trade functions shall behave as in the past, the savings behaviour must be changed very considerably. Or inversely, if the savings behaviour continues as in the past, the propensity to import would become very much higher than in the recent past, and the ability to export may also be reduced.

The main conclusion is that of the two gaps, the investment-savings gap (the "resource gap") appear to be the crucial one. The availability of foreign funds to fill the import-export gap and meet debt servicing is discussed briefly in the preceding pages and the conclusion was drawn that it seems unlikely that Pakistan might get that much of foreign funds. Hence the possibility of bridging the investment-savings gap which reaches very extreme figure at higher growth rates must be ruled out. There is very little possibility to achieve 9,8 or even 7 percent growth rates when we considered the extremely gloomy outlook for the saving behaviour of the economy. To reduce the I-S to a manageable size gap, we would have to reduce the magnitude of investment, but this would, of course, automatically result in a lower growth rate.

The alternative way of reducing the investment-savings gap imply that the consumption must grow much slower and bears the brunt of necessary adjustment to release sufficient domestic funds to narrow the widening "resource gap". To sustain a higher rate of growth, under-developed countries have to break their traditional savings pattern otherwise Pakistan's case will be sufficient to teach a lesson. To raise the funds saved in accordance with the needs of the economy, the consumption liberalization policy which has been under practice for long in most of the underdeveloped countries may have to be removed. This cannot be done unless fiscal tools are used accompanied by appropriate monetary policies. Therefore, we have to revise the tax structure of the economy. By imposing more taxes, forced savings can be raised to a

significant level. But the crux of the problem is whether or not a significant portion of funds can be converted into development. When inflow of foreign funds are abundant: a government will tend to feel relaxed in her saving efforts, and liberalizes its non-development expenditure. Therefore, we have to take into account the non-development expenditure which has shown an increasing trend. There is need for a study which could act as a guide to the various possible sources of savings in other sectors of the economy. However, efforts should in any case be combined with fiscal and financial tools to encourage and increase savings.

## CONCLUSION

To sustain a high growth rate of the economy a substantial net inflow of foreign funds is needed to supplement the domestic foreign exchange earnings to pay for the import requirements of the economy. The "trade gap" will be much wider, both in absolute terms and in relation to the GDP, if the growth rate would increase to as high level as 8 or 9 percent annually. Net inflow to cover the trade gap represents merely a part of the need for foreign funds. The debt servicing must also be covered. Taking these into account we find that the need for gross borrowing as percent of GDP will increase over time under all growth assumptions, and under a high growth rate it will increase three times in the course of a decade. In this case Pakistan's share of available foreign assistance and foreign loans would have to increase, and it is not very likely that the need for ever increasing foreign funds can be met in this manner. Should the foreign inflow decline, Pakistan would be left with an accumulated debt, the servicing of which would require a substantial proportion of her export earnings. Payments difficulties would weaken other countries' confidence in Pakistan and lead to further contraction of foreign capital inflow. Therefore, policies depending on an excessive net foreign inflow would either lead to a "foreign aid trap" which means that the inflow has to increase each year or if enough foreign aid was not forthcoming some time in the future to cover payment difficulties, it would curtail national development efforts. To ease the intense need for foreign assistance and loans, structural changes in the economy are needed.

It is visualized that projected import requirements are very high at high GDP growth rates, such as 9 percent leading to a widening trade gap. To reduce the trade gap and the required net foreign inflow a growth rate of 5 or 6 percent is recommended to be a more realistic target. Since exports cannot increase sufficiently to relieve the country from the dependence on foreign funds, therefore import substitution in capital goods is emphasised. To generate export surplus though the sale of agricultural commodities such as rice and to achieve import substitution in foods mechanised farming is probably necessary.

Already the projected trade gap is so large that measures to reduce it are called for. When we look at the results of our estimates of the "resources gap" the findings are far more disturbing. Under a 5 percent growth rate assumption, savings requirements in 1984-85 turn out to be about 40 percent higher than the savings projected in that year. At a 9 percent growth rate of the

economy, however, savings requirements will become twelve time higher. The difference between savings required and expected would have to be covered by net inflow of foreign funds, if the targets should be reached and the savings behaviour follow the path shown by the estimates in the present paper. At all levels of growth of GDP from 5 to 9 percent, the resources gap and the need for net foreign inflow would be higher than the estimate of the trade gap. From this two possible conclusions can be drawn: (i) the investment-savings gap is the most serious constraint for achieving the national development goals; and (ii) since the resource gap is substantially higher than the trade gap which is itself in our judgement would lead to a higher net foreign inflow than can be sustained, it is out of question to meet the projected resources gap through foreign assistance and loans.

Even if less ambitious goals are set for growth in the perspective plan, such as 5 to 6 percent, the savings performance of the economy must be improved, to close the difference between the trade and the resources gap. Lavish spending should be discouraged, both by the private citizens and by government. In this case fiscal tools would have to be utilized, under the umbrella of an honest and efficient administration.

Ambitious perspective plans, with growth rates as high as 9 percent may be good but the factor that must be born in mind is the feasibility of such plans and whether the economy can sustain such idealistic targets over a specified period of time. The rate of growth of the economy in the perspective planning should be scientifically justified. In case of perspective planning for development, in under-developed countries like Pakistan, an intensive enquiry is needed concerning the possibility of adequately mobilizing their domestic resources.

Appendix Table I  
Imports of Capital Goods

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
	1975-76*	1330.215	1507.770	1642.281	1630.257	1848.726	2014.233	1944.696	2206.043
1976-77*	1396.974	1583.632	1725.039	1729.326	1961.304	2137.046	2083.661	2363.958	2576.305
1977-78	1467.155	1663.383	1812.041	1834.520	2080.844	2267.453	2232.703	2533.324	2761.067
1978-79	1540.934	1747.224	1903.503	1946.220	2207.776	2405.924	2392.551	2714.969	2959.226
1979-80	1618.497	1835.362	1999.655	2064.827	2342.556	2552.957	2563.989	2909.786	3171.753
1980-81	1700.036	1928.020	2100.736	2190.768	2485.671	2709.082	2747.858	3118.728	3399.690
1981-82	1785.755	2025.429	2207.000	2324.497	2637.636	2874.862	2946.060	3342.821	3644.154
1982-83	1875.870	2127.832	2318.712	2466.496	2798.998	3050.893	3156.560	3583.161	3906.345
1983-84	1970.604	2235.485	2436.152	2617.275	2970.337	3237.809	3383.395	3840.929	4187.545
1984-85	2070.196	2348.657	2559.612	2777.377	3152.272	3436.284	3626.678	4117.387	4489.136

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
	1975-76*	2274.077	2580.340	2812.358	2618.965	2972.258
1976-77*	2461.134	2792.905	3044.247	2862.953	3249.518	3542.369
1977-78	2663.770	3023.174	3295.449	3129.919	3552.888	3873.319
1978-79	2883.784	3272.620	3567.572	3422.026	3884.828	4235.435
1979-80	3121.080	3542.842	3862.360	3741.642	4248.028	4631.653
1980-81	3378.681	3835.572	4181.791	4091.358	4645.432	5065.185
1981-82	3657.737	4152.681	4527.638	4474.008	5080.261	5539.544
1982-83	3960.034	4496.701	4902.388	4892.693	5556.040	6058.576
1983-84	4287.510	4868.332	5308.349	5350.808	6076.626	6626.487
1984-85	4642.260	5271.457	5748.121	5852.066	6646.236	7247.881

\*Figures for 1975-1976 and 1976-77 are not actuals but derived from the models.

## Appendix Table II

*Imports of Raw Material*(Values in millions of rupees  
constant at 1960-61 prices)

Period	g = .05	g = .06	g = .07	g = .08	g = .09
1975-76*	1520.526	1534.391	1548.276	1563.273	1578.413
1976-77*	1555.868	1578.413	1601.319	1626.427	1652.153
1977-78	1593.897	1626.484	1660.077	1697.441	1736.299
1978-79	1634.819	1678.977	1725.163	1777.293	1832.318
1979-80	1678.852	1736.299	1797.260	1867.084	1941.886
1980-81	1726.235	1798.893	1877.124	1968.049	2066.916
1981-82	1777.221	1867.245	1965.589	2081.580	2209.588
1982-83	1832.085	1941.886	2063.584	2209.241	2372.392
1983-84	1891.121	2023.393	2172.135	2352.791	2558.169
1984-85	1954.647	2112.396	2292.378	2514.206	2770.161

\*See footnote, appendix table I.

## Appendix Table III

*Imports of Food Stuff*(Values in millions of rupees  
constant at 1960-61 prices)

Period	*MF	MF	MF	MF	MF	MF
		g=.05	g=.06	g=.07	g=.08	g=.09
1975-76*	231.594	95.881	89.793	84.336	79.215	74.401
1976-77*	243.902	81.840	74.403	67.724	61.651	56.117
1977-78	256.503	70.002	61.651	54.385	47.981	42.326
1978-79	269.410	59.875	51.084	43.672	37.342	31.924
1979-80	282.624	51.214	42.329	35.070	29.062	24.079
1980-81	294.274	43.806	35.074	28.163	22.618	18.162
1981-82	306.165	37.469	29.062	22.615	17.603	13.698
1982-83	318.305	32.049	24.081	18.161	13.700	10.233
1983-84	330.693	27.413	19.954	14.584	10.662	07.793
1984-85	343.337	23.447	16.534	11.711	8.298	05.878

\*See footnote, appendix table I.

**Appendix Table IV**  
*Imports of Consumer Goods*

(Values in millions of rupees  
constant at 1960-61 prices)

Period	g = .05	g = .06	g = .07	g = .08	g = .09
1975-76*	211.197	210.444	209.468	208.670	207.849
1976-77*	211.020	210.184	209.107	208.189	207.228
1977-78	210.834	209.907	208.720	207.668	206.548
1978-79	210.638	209.614	208.304	207.103	205.803
1979-80	210.433	209.303	207.859	206.491	204.989
1980-81	210.216	208.972	207.381	205.828	204.098
1981-82	209.989	208.621	206.868	205.110	203.123
1982-83	209.750	208.248	206.319	204.332	202.056
1983-84	209.499	207.852	205.729	203.489	200.889
1984-85	209.235	207.432	205.097	202.576	199.612

\*See footnote, appendix table I.

**Appendix Table V**

*Invisible Imports*

(Values in millions of rupees  
constant at 1960-61 prices)

Period	g = .05	g = .06	g = .07	g = .08	g = .09
1975-76*	1351.898	1383.428	1415.595	1448.412	1481.892
1976-77*	1431.922	1481.892	1533.384	1586.445	1641.121
1977-78	1516.048	1586.445	1659.714	1735.975	1815.345
1978-79	1604.488	1697.463	1795.204	1897.956	2005.977
1979-80	1697.463	1815.345	1940.518	2073.430	2214.562
1980-81	1795.204	1940.518	2096.368	2263.519	2442.789
1981-82	1897.956	2073.430	2263.519	2469.439	2692.510
1982-83	2005.977	2214.562	2442.789	2692.510	2965.748
1983-84	2119.536	2364.420	2635.058	2934.160	3264.718
1984-85	2238.918	2523.545	2841.268	3195.936	3591.843

\*See footnote, appendix table I.

Appendix Table VI

## Net Foreign Inflow

(Values in millions of rupees  
constant at 1960-61 prices)

$$F_{\max} = (M - X)$$

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	962.498	1140.049	1274.564	1212.496	1430.965	1956.472	1455.968	1737.315	1935.305
1976-77*	917.552	1104.210	1245.582	1173.423	1405.401	1581.143	1449.393	1729.690	1942.37
1977-78	873.555	1069.783	1218.441	1136.085	1382.409	1569.018	1426.333	1727.254	1954.997
1978-79	830.015	1036.302	1192.582	1100.994	1362.552	1560.070	1407.277	1729.695	1973.952
1979-80	787.312	1004.177	1168.847	1066.980	1344.709	1555.11	1391.070	1736.867	1998.834
1980-81	742.746	970.730	1143.446	1032.252	1327.154	1550.566	1376.022	1746.890	2026.854
1981-82	698.170	937.844	1119.415	998.472	1311.611	1548.837	1363.951	1761.712	2063.045
1982-83	653.354	905.386	1096.286	965.586	1298.088	1549.983	1355.003	1781.604	2105.188
1983-84	608.480	873.361	1074.028	933.572	1286.634	1554.106	1349.423	1806.957	2153.573
1984-85	563.195	841.656	1052.611	902.486	1277.381	1561.393	1347.582	1838.291	2210.040

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	1754.830	2061.093	2293.108	2053.230	2406.523	2673.634
1976-77*	1748.613	2080.387	2331.728	2097.899	2461.464	2754.315
1977-78	1749.118	2108.521	2380.789	2108.846	2531.816	2852.247
1978-79	1756.496	2145.332	2440.284	2152.283	2615.085	2965.449
1979-80	1769.221	2190.983	2510.501	2206.270	2713.156	3096.781
1980-81	1787.104	2243.995	2590.124	2289.500	2843.554	3263.327
1981-82	1811.869	2306.813	2681.770	2362.732	2968.985	3428.268
1982-83	1844.429	2380.826	2786.513	2451.786	3115.134	3617.170
1983-84	1884.823	2465.645	2905.662	2558.354	3284.171	3834.032
1984-85	1934.934	2564.131	3040.795	2684.586	3478.756	4080.401

\*See footnote, appendix table I.

Appendix Table VII

## Net Borrowing

(Values in millions of rupees  
constant at 1960-61 prices)

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	1933.07	2119.066	2259.978	2195.338	2424.095	2596.929	2451.456	2771.276	2952.207
1976-77*	1984.777	2189.180	2343.995	2266.032	2519.735	2711.92	2567.454	2875.926	3132.383
1977-78	2040.100	2264.212	2434.054	2341.995	2622.730	2835.39	2673.066	3017.286	3306.624
1978-79	2098.479	2343.941	2529.897	2424.003	2734.009	2698.211	2787.363	3170.591	3490.915
1979-80	2160.701	2429.014	2632.658	2511.191	2852.867	3111.662	2910.525	3336.293	3690.344
1980-81	2224.17	2517.017	2738.889	2602.022	2977.956	3262.701	3041.003	3513.130	3902.288
1981-82	2290.803	2609.982	2851.803	2698.343	3111.311	3424.108	3202.881	3703.609	4134.216
1982-83	2360.527	2708.023	2971.264	2800.374	3253.353	3396.458	3354.077	3908.681	4383.069
1983-84	2433.679	2811.40	3097.569	2908.369	3404.566	3780.404	3511.201	4150.073	4650.608
1984-85	2510.678	2920.264	3229.531	3022.712	3565.542	3976.712	3709.906	4388.910	4939.605

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	2763.681	3083.791	3326.514	3101.058	3444.864	3724.205
1976-77*	2895.359	3257.274	3531.460	3274.491	3672.048	3991.096
1977-78	3040.631	3473.007	3757.094	3349.162	3926.002	4288.583
1978-79	3200.041	3658.732	4004.443	3665.057	4205.570	4616.213
1979-80	3372.768	3887.321	4274.883	3902.798	4513.921	4978.357
1980-81	3559.290	4134.699	4568.250	4180.667	4870.034	5393.820
1981-82	3783.918	4404.252	4888.309	4462.933	5238.948	5828.453
1982-83	4005.673	4698.477	5237.367	4775.133	5647.043	6309.277
1983-84	4246.351	5018.220	5618.489	5120.457	6098.433	6841.103
1984-85	4508.630	5367.567	6054.533	5502.713	6597.940	742.527

\*See footnote, appendix table I.



Appendix Table VIII

## Gross Foreign Inflow

(Values in millions of rupees constant at 1960-61 prices)

 $F^* = (M - X)$ 

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	2443.085	2629.081	2769.993	2705.338	2934.20	3106.945	2961.471	3281.291	3462.222
1976-77*	2479.492	2683.895	2838.710	2760.747	3014.450	3206.634	3062.169	3370.641	3627.098
1977-78	2519.892	2744.085	2913.926	2821.868	3102.603	3315.263	3152.939	3497.159	3786.497
1978-79	2563.957	2809.418	2995.374	2889.480	3199.486	3438.688	3252.840	3636.068	3956.392
1979-80	2612.214	2880.527	3084.171	2962.704	3304.380	3563.175	3562.038	3787.806	4141.857
1980-81	2662.138	2954.985	3176.857	3039.990	3415.924	3700.669	3478.971	3951.098	2340.848
1981-82	2715.631	3034.810	3276.631	3123.171	3536.139	3848.936	3627.709	4128.437	4559.044
1982-83	2772.611	3120.107	3383.348	3212.458	3665.437	4008.542	3766.161	4320.765	4795.153
1983-84	2833.400	3211.120	3497.290	3308.099	3804.287	4180.125	3910.922	4549.794	5050.329
1984-85	3018.353	3436.984	3752.648	3676.073	4096.375	4515.345	4243.097	4934.285	5500.006

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	3273.696	3593.806	3836.529	3611.073	3954.879	4234.220
1976-77*	3390.074	3751.989	4026.175	3769.206	4166.762	4485.811
1977-78	3520.504	3952.880	4236.967	3929.035	4405.875	4768.456
1978-79	3665.518	4124.209	4469.920	4130.534	4671.047	5081.690
1979-80	3824.282	4338.834	4726.396	4354.311	4965.434	5429.870
1980-81	3997.258	4572.667	5006.218	4618.635	5308.002	5831.788
1981-82	4208.746	4829.080	5313.137	4887.761	5663.776	6253.281
1982-83	4417.757	5110.561	5649.551	5187.217	6059.052	6721.361
1983-84	4646.072	5417.941	6018.210	5520.178	6498.154	7240.824
1984-85	4912.213	5927.977	6690.391	6061.955	7173.984	8017.801

\*See footnote, appendix table I.



## Appendix Table X

## Net Borrowing

(Values in millions of rupees constant at 1960-61 prices)

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	914.210	2050.765	2905.586	2678.444	4066.194	5117.588	4521.312	6180.686	4737.789
1976-77*	1010.797	2251.215	3190.614	2967.569	4506.662	5672.641	5057.116	6914.417	8321.466
1977-78	1106.202	2466.697	3497.048	3280.747	4983.816	6274.020	5642.170	7715.633	9286.437
1978-79	1208.685	2698.238	3826.346	3619.778	5500.405	6925.12	6280.566	8589.934	10339.446
1979-80	1318.710	2946.904	4180.006	3986.574	6059.350	7629.632	6976.717	9543.376	11487.35
1980-81	1436.772	3213.831	4559.424	4383.208	6663.807	8391.533	7735.174	10582.474	12739.331
1981-82	1563.412	3500.234	4967.111	4811.869	7317.124	9215.043	8561.689	11714.276	14102.565
1982-83	1698.896	3807.409	5404.108	5274.917	8022.903	10104.709	9461.190	12946.368	15586.538
1983-84	1844.712	4136.716	5872.620	5774.886	8785.004	11064.903	10439.984	14286.929	17201.346
1984-85	2000.621	4489.612	6374.726	6114.454	9607.518	12102.242	11504.089	15744.784	18957.389

  

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	6454.335	8396.787	9870.504	8480.856	10722.046	12419.905
1976-77*	7286.862	9481.119	11145.834	9664.140	12219.228	14154.898
1977-78	8203.50	10675.100	12550.045	10989.376	13881.775	16081.538
1978-79	9211.975	11988.749	14095.009	12436.534	15731.49	20163.227
1979-80	10320.893	13433.024	15793.624	14052.945	17777.041	22630.675
1980-81	11538.839	15019.883	17682.530	15843.834	20043.476	25358.921
1981-82	12876.374	16762.321	19710.409	17826.751	22552.89	28373.949
1982-83	14344.113	18674.433	21959.376	20020.954	25329.759	31704.265
1984-83	15953.877	20771.616	24426.036	22447.56	28400.804	35381.110
1984-85	17718.461	23070.553	27129.991	25131.3	31795.302	39438.786

\*See footnote, appendix table I.

Appendix Table XI

## Gross Borrowing

(Values in millions of rupees constant at 1960-61 prices)

FIS = (I - S)

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	1424.225	2560.780	3415.601	3188.459	4576.209	5627.534	5031.273	6690.701	7947.804
1976-77*	1505.512	2745.930	3685.330	3462.284	5001.377	6167.356	5551.831	7409.132	8816.181
1977-78	1586.075	2946.570	3976.921	3760.820	5463.689	6753.893	6122.043	8195.506	9766.310
1978-79	1674.162	3163.715	4291.823	4085.255	5965.882	7390.597	6746.043	9055.411	10804.923
1979-80	1770.223	3398.417	4631.539	4438.087	6510.863	8081.145	7428.30	9994.888	11938.863
1980-81	1874.74	3651.80	4997.392	4821.176	7011.775	8829.501	8173.342	11020.441	13177.299
1981-82	1988.24	3925.062	5391.939	5236.697	7741.952	9639.971	8986.517	12139.104	14527.393
1982-83	2110.98	4219.493	5816.192	5687.001	8434.987	10516.793	9873.273	13358.452	15998.622
1983-84	2244.433	4536.437	6272.341	6174.607	9184.725	11464.624	10839.605	14696.65	17601.067
1984-85	2456.63	4996.851	6920.78	6849.057	10204.528	12746.531	12119.65	16736.015	19702.864

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	6964.350	8906.722	10380.518	8990.872	11232.061	12929.920
1976-77*	7781.577	9975.834	11640.549	10158.854	12713.934	14649.613
1977-78	8683.373	11154.973	13029.918	11469.249	14361.648	16561.411
1978-79	9677.452	12454.226	14560.486	1290.2011	16196.967	20628.704
1979-80	10772.306	13884.537	16245.137	14504.458	18228.560	23082.188
1980-81	11976.807	15457.815	18120.498	16281.802	20481.44	25796.889
1981-82	13301.202	17187.149	20135.237	18251.579	22977.718	28798.777
1982-83	14756.197	19068.517	22371.460	20433.038	25741.842	32117.349
1983-84	16353.598	21171.337	24825.757	22847.281	28800.525	35780.831
1984-85	18417.416	23466.235	27979.666	25916.125	32678.067	40395.747

\*See footnote, appendix table I.

## Appendix Table XII

## Savings

(Values in millions of rupees  
constant at 1960-61 prices)

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	5003.855	4609.625	4310.965	4480.412	3995.337	3627.856	3927.888	3347.610	2908.004
1976-77*	5217.933	4803.489	4489.517	4706.243	4191.172	3800.967	4152.632	3530.279	3058.798
1977-78	5442.996	5007.304	4677.234	4946.039	4399.784	3984.784	4393.67	3726.190	3220.524
1978-79	5679.590	5221.559	4874.566	5200.660	4619.919	4179.965	4652.184	3936.307	3393.976
1979-80	5928.316	5446.802	5082.018	5471.034	4854.382	4387.223	4929.441	4161.657	3580.457
1980-81	6179.800	5683.597	5300.395	5758.117	5103.334	4607.786	5226.808	4403.353	3779.524
1981-82	6464.690	5932.534	5529.383	6062.960	5367.688	4840.967	5545.792	4662.567	3993.505
1982-83	6753.970	6194.226	5770.407	6386.652	5648.386	5089.094	5887.774	4940.576	4223.082
1983-84	7057.463	6469.340	6023.792	6730.348	5946.430	5353.044	6254.582	5238.748	4469.144
1984-85	7476.836	6758.559	6290.167	7095.305	6262.913	5632.313	6648.075	5558.538	4733.131

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	3345.132	2665.125	2449.968	1946.516	2730.946	1352.252
1976-77*	3554.746	2818.104	2260.042	2910.121	2051.819	1401.590
1977-78	3781.821	2983.826	2379.284	3094.883	2167.041	1455.577
1978-79	4027.802	3163.344	2508.452	3320.681	2293.106	1514.641
1979-80	4294.282	3357.826	2648.389	3555.393	2431.047	1579.270
1980-81	4582.945	3368.495	2799.972	3812.209	2581.948	1649.988
1981-82	4895.644	3796.703	2964.172	4093.214	2747.128	1727.366
1982-83	5234.407	4043.938	3142.066	4400.676	2927.825	1812.021
1983-84	5601.370	4311.750	3334.766	4737.099	3125.517	1904.664
1984-85	5998.901	4601.873	3543.519	5103.653	3341.871	2006.019

\*See footnote, appendix table I.

Appendix Table XIII

## Savings Requirements

(Values in millions of rupees  
constant at 1960-61 prices)

Period	g = .05			g = .06			g = .07		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	4045.453	4550.805	4933.640	4949.460	5571.258	6042.316	5915.37	6639.204	7202.716
1976-77*	4347.162	4878.420	5280.923	5469.567	6029.815	6530.002	6456.43	7254.195	7858.232
1977-78	4661.087	5219.583	5642.685	5811.501	6512.575	7043.692	7052.42	7908.037	8556.229
1978-79	4988.394	5575.526	6020.322	6276.207	7020.631	7585.220	7686.58	8604.233	9299.424
1979-80	5329.413	5946.647	6413.870	6766.401	7556.861	8155.693	8362.166	9346.355	10091.954
1980-81	5687.59	6336.471	6828.045	7285.519	8124.858	8760.720	9084.403	10139.957	10940.615
1981-82	6061.857	6744.005	7260.784	7833.641	8724.881	9400.063	9854.940	10987.028	11844.672
1982-83	6453.267	7170.320	7713.575	8412.674	9359.026	10075.959	10677.350	11891.524	12810.952
1983-84	6862.505	7616.395	8187.524	9024.607	10029.479	10790.744	11555.374	12857.585	13844.109
1984-85	7290.836	8083.379	8683.791	9671.437	10738.481	11546.820	12492.918	13889.55	14947.605

Period	g = .08			g = .09		
	K=2.42	K=2.75	K=3.00	K=2.42	K=2.75	K=3.00
1975-76*	6883.359	7755.031	8415.391	7911.450	8916.977	9679.275
1976-77*	7609.026	8553.293	9268.651	8805.198	9228.419	10761.921
1977-78	8387.891	9410.807	10185.751	9821.042	11024.875	11936.870
1978-79	9224.795	10333.408	11172.886	10901.094	12218.298	13216.423
1979-80	10126.669	11327.074	12236.470	12075.899	13517.150	14609.007
1980-81	11099.560	12399.941	13385.079	13338.229	14915.209	16109.891
1981-82	12148.088	13556.774	14623.961	14736.727	16462.219	17769.409
1982-83	13279.211	14803.993	15960.562	16258.003	18292.138	19576.283
1983-84	14497.338	16150.447	17402.802	17913.417	19979.204	21544.195
1984-85	15811.649	17602.440	18959.101	19715.096	21975.450	23687.802

\*See footnote, appendix table I.

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