

An Estimation of the Extent of Overvaluation of the Domestic Currency in Pakistan at the Official Rate of Exchange, 1948/49—1964/65

by

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The purpose of this paper is mainly two-fold: to examine some methodological issues involved in estimating the rate of overvaluation and to make a point-estimate of the rate based on observed data; and to construct time-series estimates of rates of overvaluation of Pakistani currency at the official exchange rate for the period from 1948/49 to 1964/65.

I. THE PROBLEM DEFINED AND THE PROPOSED METHODOLOGY

The implications of the overvaluation of the domestic currency at the official rate for allocation of resources have been analyzed with the help of Figure 1. The demand for foreign exchange in Pakistan is indicated by D-D.

Price of
\$ in Rs.

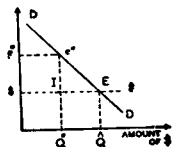


Figure 1

The official rate of exchange is assumed to have been fixed at \hat{e} - \hat{e} . It has also been assumed that the total foreign-exchange earning at rate \hat{e} is Q^* , implying that point I with coordinates (Q^* and \hat{e}) is also a point on the country's foreign-exchange supply function. As we are not interested in the nature of the country's balance-of-payments disequilibrium, but in the effects of a specific exchange-rate policy on resource allocation, it is not necessary for us to

consider the other points on the supply function above and below the point that has been determined by such policy.

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The opinions and conclusions presented in the paper are entirely those of the author and do not represent official position of the Government of East Pakistan.

As can be seen from Figure 1, the magnitude of the 'policy-determined' trade gap¹ corresponding to the rate of exchange \hat{e} is given by $\hat{Q}-Q^*$. In a situation characterized by exchange control and import licensing, the balance-of-payments disequilibrium is not, however, reflected in any actual trade gap, but in a discrepancy between the scarcity price e^* ², and the official price \hat{e} , which is symptomatic of a potential trade gap of $\hat{Q}-Q^*$. In other words, depending on whether or not there is free trade, a balance-of-payments disequilibrium originating from exchange-rate policy may be characterized either by an excess of spending over earnings of foreign exchange³, or by an excess of demand price over supply price of foreign exchange. The magnitude of the excess of demand price over supply price of foreign exchange, as a percentage of the latter, has been defined, for purposes of our study, as the "rate of overvaluation of the domestic currency" at the official rate of exchange. In terms of Figure 1, this is equal to $[(e^* - \hat{e})/\hat{e}].100$.

It may, however, be mentioned here that the definition of the rate of overvaluation of the domestic currency at the official rate of exchange, as being equal to $[(e^* - \hat{e})/\hat{e}].100$, implicitly assumes that *a*) exports are inelastic with respect to changes in the rate of exchange, and *b*) the allocation of foreign exchange resulting in a particular scarcity price for it is optimal. Since the purpose of our exercise is not to measure the divergence of the given situation from what would have obtained if there were equilibrium in the balance of payments, but to measure the divergence of scarcity price from the official price of foreign exchange in the context of the given situation, the assumptions referred to above will not affect the analysis. In other words, while the assumptions may be quite unrealistic and are, therefore, subject to verification, these will not invalidate our findings.

In Pakistan, while the earning of foreign exchange is being determined by the official rate of exchange, its spending is sought to be controlled by various restrictions, such as import licensing, tariffs, sales tax, *etc.* Defining import duty and sales tax as *fiscal controls* and import licensing and quota as *administrative controls*⁴, it is possible to say that while the difference between the landed cost and the *c & f* value of imports is explained by the former, that between their

¹This qualification was considered necessary in order to distinguish it from various other concepts of trade gap. In a very static sense, and for the short run, one could have a different concept of trade gap; as, for example, the difference between earning of foreign exchange corresponding to the point of intersection of given demand and supply schedules, and the actual earning of foreign exchange. If the elasticity of supply of foreign exchange, of which I is a point, is positive, this concept of trade gap will measure less than $\hat{Q}-Q^*$.

²This is a variable dependent on the supply of foreign exchange. Whenever the term is used in this paper, we shall mean it to refer to the one which corresponds to the given supply of foreign exchange, *i.e.*, Q^* .

³Such an excess of spending over earnings may be financed, *inter alia*, by running down the foreign-exchange reserves.

⁴This distinction has been made in order to highlight the role of licensing control of imports in influencing their domestic-market prices.

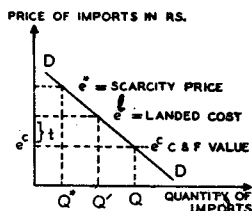
domestic-market price and the landed cost is explained by the latter⁵. In so far as the administrative controls operate through arbitrary fixation of the quantity imported, the quantity fixed by it has to be necessarily less than what would have been imported in the absence of such controls⁶. This implies that when administrative controls are in use, both the quantity and the domestic-market price of imports will be uniquely determined by them, irrespective of whether or not the fiscal controls are also in use. In other words, for the purpose of fixing the quantity of imports, both the instruments of control are as good as the other; and when both of them are used simultaneously, one of them is redundant for the purpose for which it is used.

The above argument is not, however, intended to suggest that both the instruments could not be used simultaneously. When the number of purposes, *i.e.*, the objectives of policy are increased, it is in fact necessary to increase the number of instruments in order to achieve all the objectives. To be precise, it is necessary to have as many instruments as there are objectives of policy [11]. If, for example, the government had wanted not only to fix the quantity of imports, but *also* to allocate the scarcity-created profits between the importers and itself in a predetermined way, it would be necessary to employ both the instruments of fiscal and administrative control simultaneously, in order to achieve both the objectives of policy. In the light of the preceding argument, it may be concluded that in Pakistan the administrative control is employed in order to limit the quantity of imports, while fiscal controls are designed to mop up part of the scarcity profit for the government⁷.

In the light of the above, it may be argued that the domestic-market price of imports net of appropriate deductions⁸ would reflect the scarcity price of foreign exchange caused by the prevalent administrative controls. The concept

⁵This has been explained with the help of diagram below:

The demand and supply schedules of imports are given by D and $cc-cc$, respectively. The country being a very small buyer in the world market, the supply schedule has been assumed to be perfectly elastic. Without any control, the quantity imported would be Q at price cc , the $c\&f$ price. For the moment, we are ignoring the normal profit of the importer, and the cost of distribution.



Both the fiscal and administrative controls will, however, reduce the quantity of imports and raise their domestic-market prices. Thus, with fiscal control equal to t in the diagram, the quantity would fall from Q to Q' and the price would rise from cc to e' . Similarly, with a quota of Q^* , the amount imported would be Q^* and the domestic-market price would be e^* .

⁶If it were not so, the administrative control would have been completely unnecessary and irrelevant.

⁷In the form of revenue from import duty, import surcharge, and sales tax on imported goods.

⁸These deductions are required in order to account for such charges as the "normal profit" of the importers, the cost of distribution, *etc.* Details of such deductions are provided in the text.

of the scarcity price of foreign exchange in this context, however, is a hypothetical one in that, given the system of exchange control, there is no directly observable data on how much more the importers are willing to pay, in domestic currency, for the foreign exchange they buy from the exchange control authority. But since foreign exchange is not being required for its own sake but for the sake of its purchasing power abroad, and since the scarcity price in the domestic market of the imported goods is observable, the weighted average scarcity price of such imported goods may be considered to reflect the scarcity price of foreign exchange in the domestic economy.

In view of the limitations imposed by the paucity of requisite statistical materials, it is necessary to formulate some indirect method for estimating the magnitude of the overvaluation of the domestic currency at the official rate. Before undertaking the actual statistical work involved in the estimation, it is appropriate to make a digression on the method used.

First of all, the question of how to treat the fiscal controls. As has been pointed out before, from an analytical point of view, fiscal controls are as effective as administrative controls in influencing the quantity and the domestic-market price of imports. When administrative controls are already in use, however, fiscal controls are quite unnecessary and redundant in limiting imports. Since, with a sufficiently high level of fiscal controls, it is possible to completely wipe out the importers' scarcity margin, and be still left with the underlying balance-of-payments disequilibrium, the markup on landed cost cannot be considered as the appropriate measure of the scarcity margin at the controlled level of imports. That is to say, the *real* scarcity margin has to be worked out without reference to the nature of its allocation between the parties concerned, *viz.*, the importers and the government. We shall, therefore, define the overvaluation of the domestic currency at the official rate as the rate of markup on the *c & f* value of imports, and *not* on their landed cost.

Secondly, there is a need for making appropriate adjustments of the observed scarcity prices of imports in the domestic market on account of the "normal" trading profit and the cost of distribution. The reason why it is considered necessary to make such adjustments is that they would in any case be reflected in the domestic-market prices *irrespective* of whether or not there is any scarcity of foreign exchange. The extent of markup due to the scarcity of foreign exchange will, therefore, be less than what would appear to be indicated by the observed scarcity price.

In view of the above considerations, we shall define the adjusted scarcity price of composite imports in the domestic market as:

$$e^* = e^{**} - \eta - \mu \quad \dots\dots\dots (1)$$

where,

- e^* = adjusted scarcity price of composite imports,
 e^{**} = actual domestic-market price of composite imports,
 η = normal trading profit per unit of composite imports,
 μ = cost of distribution per unit of composite imports.

But,

$$\begin{aligned}
 e^{**} &= \alpha e^c \quad \text{with } \alpha > 1 \\
 \eta &= \beta e^c \quad \text{with } 0 < \beta < 1 \\
 \text{and } \mu &= \gamma e^c \quad \text{with } 0 < \gamma < 1
 \end{aligned}$$

where,

- e^c = c & f value of composite imports,
 α = ratio of actual market price to c & f value,
 β = normal profit as a proportion of c & f value,
 γ = cost of distribution as a proportion of c & f value.

Equation (1) may, therefore, be rewritten as follows:

$$\begin{aligned}
 e^* &= \alpha e^c - \beta e^c - \gamma e^c \\
 &= e^c (\alpha - \beta - \gamma) \dots\dots\dots (2)
 \end{aligned}$$

But the c & f value of a unit of composite imports may not be the same as the official price of a unit of foreign exchange. In other words, the scale for measuring one unit of composite import may be different from that for measuring units of foreign exchange. By making the necessary adjustment of scale, Equation (2) may be rewritten to measure the adjusted scarcity price of foreign exchange. Such an adjustment of scale is made here under the assumption that the ratio of domestic-market prices of imports to their c & f value is equal to the ratio of scarcity price of foreign exchange to the official rate of exchange. That is to say, if

$$(e^*/e^c) = (\dot{e}/\hat{e}),$$

$$\text{then } \dot{e} = \hat{e} (\alpha - \beta - \gamma) \dots\dots\dots (3)$$

where,

- \dot{e} = scarcity price of a unit of foreign exchange,
 \hat{e} = official rate of exchange.

The overvaluation of the domestic currency, as defined, may, therefore, be expressed as:

$$\left[\frac{\hat{e} - \hat{e}}{\hat{e}} \right] .100 = \left[\frac{\hat{e} (\alpha - \beta - \gamma) - \hat{e}}{\hat{e}} \right] .100$$

$$= [(\alpha - \beta - \gamma) - 1] .100 \dots \dots \dots (4)$$

II. THE ESTIMATION OF THE OVERVALUATION OF THE DOMESTIC CURRENCY IN PAKISTAN AT THE OFFICIAL RATE OF EXCHANGE

In view of the fact that there is no published statistical material on the domestic-market prices of imported goods, it is necessary to rely on indirect methods, and on second-hand sources. The estimates of markup of domestic prices of imports on their *c* & *f* values have been presented by Mr. Mati Lal Pal⁹ for selected items grouped under three broad commodity classifications¹⁰. The domestic-market prices refer to those ruling in Karachi during the period between June and August 1964. These estimates¹¹ have provided the basis of our computations.

From a study of the literature on the import-control policy in Pakistan, it appears that consumption goods, raw materials, and capital goods are treated with different degrees of stringency by the licensing authority¹². John H. Power, for example, has noted that "foreign exchange is valued more highly in substituting for imports of final consumption goods than in producing equipment" [10]. In view of the different distortions caused by import licensing among the various groups of commodities, we have proceeded by taking the simple average of the scarcity price of sample items falling under each group to arrive at the group averages, and then computing the weighted average of the group averages for arriving at the overall average scarcity price of composite imports. As may be seen from Appendix B, the average rate of markup on all imports works out at 1.22 for June-August 1964.

It is now necessary to quantify the proportions of "normal" trading profit (*i.e.*, β) and the cost of distribution (*i.e.*, γ), which would in any case be included in the domestic-market price. In view of the fact that there is no definite

⁹See, [9]. In terms of notations used in this paper, this is equal to

$$\frac{e^{**} - ec}{ec} \text{ where,}$$

e^{**} = domestic-market price of imports,
 ec = *c* & *f* value of imports.

¹⁰The groups are: *i*) consumption goods and consumers' durables; *ii*) raw materials; and *iii*) capital goods.

¹¹Although Pal [9] has estimated markups separately for items under regular licensing, bonus licensing, and free list, we have made use of his sample for items under regular licensing only, primarily because it accounts for about 90 per cent of controlled imports in Pakistan.

¹²*i.e.*, the Chief Controller of Imports and Exports, Government of Pakistan.

statistical evidence on this, we need to look for some indirect indicator. The markup on *landed cost* of commodities imported under bonus licensing appears to be a reasonably good indicator¹³. There does not, however, seem to be a uniform rate of markup on landed costs for imports under bonus licensing; and it varied between 82 per cent for meat and meat preparations to 5 per cent for consumer durables [9]. For the purpose of our study, "normal" trading profit has been assumed to be 20 per cent of the *c & f* value. That this is a fairly realistic assumption is substantiated by other evidence¹⁴. The cost of distribution has been assumed to be 10 per cent of the *c & f* price.

On the basis of the above computations and assumptions, the extent of the overvaluation of the domestic currency at the official rate of exchange works out as follows¹⁵:

$$\begin{aligned} \left[\frac{(\hat{e} - \bar{e})}{\bar{e}} \right] .100 &= [(\alpha - \beta - \gamma) - 1] .100 \\ &= [(2.22 - 0.20 - 0.10) - 1.00] .100 \\ &= 92 \end{aligned}$$

III. TIME-SERIES ESTIMATES OF RATES OF OVERVALUATION OF PAKISTANI CURRENCY AT THE OFFICIAL RATE, 1948/49—1964/65

Having estimated the rate of overvaluation of the Pakistani currency at the official rate as of June-August 1964, we shall now make an attempt here to estimate the rate for other years. The official rate of exchange being given and fixed, this rate, viz. \hat{e}/\bar{e} would depend entirely on the scarcity price and its time trend. As is quite obvious, the scarcity price of foreign exchange will depend

¹³For imports under bonus licensing, foreign exchange is bought by the importer at a *premium* which is considered to reflect its scarcity price at the margin. The markup on landed costs for such imports may, therefore, be considered to equal 'normal' profit *plus* the cost of distribution.

¹⁴Cf. [2]. He shows that the percentage of profit allowed on invested capital was 15 per cent in 1964, 19 per cent in 1965, and 20 per cent in 1966.

¹⁵It may be noted here that our result corresponds fairly closely to those derived by S.R. Lewis, Jr., in [4].

Although the Lewis implicit exchange rates are comparable to our e^{**}/e_c there are certain differences not only between the purpose of the two exercises, but also in the methods used. While the purpose of the Lewis' exercise [4] is to measure the difference between the terms of trade which agriculture has domestically and that which it *could have* if allowed to trade directly in international market, we are interested in showing the divergence between the purchasing power of the domestic currency at home and abroad. Thus, while Lewis weights the implicit rates of agricultural and industrial goods by the domestic sectoral trade between them, we have weighted the scarcity prices of imported goods in the domestic market by their shares in the import trade. Lewis' relative prices refer to agricultural vs. industrial sectors [4], our scarcity prices refer to the exporting and importing sectors.

on the position and slope of the demand function for composite imports, the degree of stringency of import licensing determined by the position and slope of the supply function of exports, and on the shifts of these functions over time.

In the absence of direct observation of scarcity prices for the other years, it is necessary to work out some indirect method of estimation. This has been done below:

Let,

p_b = rate of overvaluation of domestic currency at the official exchange

$$\text{rate in period 'b'} = \left[\frac{e_b - e_b^*}{e_b} \right] = \left[\frac{e_b^* - e_b^c}{e_b^c} \right]$$

p_c = domestic wholesale price index of the major imported goods; with $p_b = 100$

m_c = import price index; with $m_b = 100$

Subscript b = base period, July 1963-June 1964

Subscript c = current period, i.e., each of the years under consideration except the base year.

By definition,

$$(e_c^*/e_b^*).100 = p_c; \text{ or, } (e_c^*).100 = p_c e_b^*$$

$$\text{and } (e_c^c/e_b^c).100 = m_c; \text{ or } (e_c^c).100 = m_c e_b^c$$

$$\begin{aligned} p_c &= \frac{(e_c^* - e_b^*)}{e_b^c} \\ &= \left[(p_c e_b^*) - (m_c e_b^c) \right] / m_c e_b^c \\ &= (p_c/m_c) \left[(e_b^*/e_b^c) - (m_c/p_c) \right] \\ &= (p_c/m_c) \left[\left\{ (e_b^*/e_b^c) - 1 \right\} - \left\{ (m_c/p_c) - 1 \right\} \right] \\ &= (p_c/m_c) (p_b - \lambda_c) \end{aligned}$$

where,

$$\lambda_c = \left[(m_c/p_c) - 1 \right]$$

On the basis of indices of domestic wholesale prices of imports (i.e., p_c) and indices of import prices (i.e., m_c), the markup of scarcity prices of foreign exchange on its official price (i.e., p_c) has been worked out for each year in Table I.

TABLE I

MARKUP OF SCARCITY PRICE OF FOREIGN EXCHANGE ON ITS OFFICIAL
PRICE IN PAKISTAN, 1948/49—1964/65

Year (July - June)	P _c
1948/49	1.17
1949/50	1.68
1950/51	1.61
1951/52	1.47
1952/53	2.16
1953/54	1.74
1954/55	1.64
1955/56	1.12
1956/57	0.92
1957/58	1.21
1958/59	0.94
1959/60	0.74
1960/61	0.80
1961/62	0.88
1962/63	0.92
1963/64	0.92
1964/65	1.19

REFERENCES

1. Islam, A. I. Aminul, *Regional Development in Pakistan with Special Reference to the Effect of Import Licensing and Exchange Control*. Unpublished Ph. D. thesis submitted to the University of London in 1969).
2. Islam, Nurul, "Comparative Costs, Factor Proportions, and Industrial Efficiency", *Pakistan Development Review*, Vol. VII, No. 2, Summer 1967.
3. Islam, Nurul, *Imports of Pakistan: Growth and Structure—A Statistical Study*. (Karachi: Pakistan Institute of Development Economics, September 1967).
4. Lewis, Stephen R., Jr., "Effects of Trade Policy on Domestic Relative Prices: Pakistan, 1961-64", *American Economic Review*, March 1968.
5. Pakistan, Central Statistical Office, *Pakistan Statistical Yearbook, 1964*. (Karachi : CSO).
6. Pakistan Institute of Development Economics, *A Measure of Inflation in Pakistan, 1951-60*. (Karachi: PIDE, March 1961).
7. Pakistan Planning Commission, *A Revised Balance of Payments, 1960/61—1962/63*. Mimeographed. (Karachi: Planning Commission, April 1964).
8. Pal, Mati Lal, "Domestic Prices of Imports in Pakistan: Extension of Empirical Findings", *Pakistan Development Review*, Vol. V, No. 4, Winter 1965.
9. Pal, Mati Lal, "The Determinants of Domestic Prices of Imports", *Pakistan Development Review*, Vol. IV, No. 4, Winter 1964.
10. Power, John H., "Industrialization in Pakistan: A Case of Frustrated Take-off?", *Pakistan Development Review*, Vol. III, No. 2, Summer 1963.
11. Tinbergen, J., *On the Theory of Economic Policy*. (Amsterdam: North-Holland Publishing Co., 1952).
12. *CSO Statistical Bulletin*, Monthly Bulletin issued by the Central Statistical Office of Pakistan.

Appendix A

A NOTE ON STATISTICS USED IN ESTIMATING THE RATE OF OVERVALUATION OF DOMESTIC CURRENCY

It is possible to derive the series of ratios of scarcity price of foreign exchange to its official price for all the years on the basis of the ratio that may be directly computed for any particular year. As has been mentioned earlier, it is possible to compute this ratio from prices ruling in the Karachi market during June-August 1964.

The use of Karachi prices in estimating p_0 raises a major problem. *A priori*, it seems inappropriate to use the scarcity price observed in the Karachi market to reflect the overall scarcity of foreign exchange in the country. The scarcity price of foreign exchange is likely to vary between the regions insofar as the level of demand for imports, their composition, the elasticity of substituting imports for domestically produced goods, *etc.*, would be different between them.

Nevertheless, the phenomenon of any spatial divergence in the domestic-market prices of imports will not constitute a serious problem for our analysis. There are three reasons for this. *First*, Karachi being the only sea-port¹ and by far the largest industrial market in West Pakistan, the prices of imported goods ruling there can be considered as representative of the whole of West Pakistan after adjusting for the cost of transportation and distribution. *Secondly*, available evidence does not suggest that there is any significant difference in the domestic-market prices of imports between East and West Pakistan [8]. *Thirdly*, insofar as Karachi accounts for the bulk of imports in Pakistan², prices ruling there would be more representative for the country as a whole than any other price ruling anywhere else in the country.

There is another statistical problem which needs to be mentioned before we undertake the proposed estimation. It may be recalled that the estimated scarcity margin of imports in Karachi is based on prices ruling during June-August 1964. In the absence of information on domestic-market prices of

¹The hinterland of the Port of Karachi is the entire region of West Pakistan. Also, imports via land and air routes constitute only a negligible fraction of total imports of West Pakistan. Consequently, the regional demand for imports in West Pakistan is likely to be well reflected in the Karachi prices.

²The importance of the Port of Karachi may be seen from import statistics in [12].

imports for any other period, we had to assume that the prices observed during June-August 1964 were the same as those which prevailed during June 1963-July 1964. It seems reasonable to think that the month-to-month fluctuations in domestic-market prices of imports during a short period would not be considerable, and hence this assumption would not greatly jeopardise the reliability of our estimate.

TABLE A-1
PAKISTAN'S IMPORT-PRICE INDEX (m)
1948/49—1964/65

Year (July-June)	Import-Price Index	
	Base=1948/49	Base=1963/64
	(1)	(2)
1948/49	100.0	62.1
1949/50	79.4	49.0
1950/51	84.3	52.3
1951/52	94.6	58.7
1952/53	77.7	48.2
1953/54	85.4	53.0
1954/55	76.2	47.3
1955/56	120.8	75.0
1956/57	143.6	89.1
1957/58	128.1	79.5
1958/59	154.9	96.2
1959/60	156.3	97.0
1960/61	163.0	101.2
1961/62	158.5	98.4
1962/63	159.5	99.0
1963/64	161.1	100.0
1964/65	143.0	88.8

Sources: i) Col. (1), years 1948/49—1963/64 from [5].
Col. (1), year 1964/65 from [12, September 1967].
ii) Col. (2), computed from Col. (1).

As mentioned before, for the derivation of the deflator for years other than $b = 1963/64$, import-price indices and indices of domestic wholesale prices of imports with base 1963/64 are required. Import-price indices are computed by the Central Statistical Office with 1948/49 as base. We have recomputed the CSO series so as to express them with reference to 1963/64 as the base³. This has been done in Appendix Table A-1 above. It may be noted here, however, that in view of the substantial changes that have taken place in the composition of imports in Pakistan over time, the use of CSO indices is, for obvious reasons, far from satisfactory. In the absence of a better alternative, the results may, therefore, be viewed with proper caution.

³It may be emphasized that the CSO import-price indices are constructed with current-year weights. Hence, the change of base would not involve any problem with regard to weights.

Appendix B

RATES OF MARKUP ON IMPORTED GOODS

In Pal's study [9], imported items have been grouped in accordance with the Pakistan Planning Commission-ECAFE definitions [7]. As the number of commodities imported is very large, he proceeds by selecting a few commodities from each group. The criterion used for selection has been their weights in total import. The prices used in this study represent spot quotation for the items under consideration in the Karachi area during the period June-August 1964.

On the basis of data presented in Pal's paper [9], the simple average markups on *c* & *f* value of representative imported commodities under regular licensing control work out at 1.73 for consumption goods, 1.13 for raw materials, and 1.00 for capital goods.

The average rate of markup on all imports has been estimated in Appendix Table B-1.

TABLE B-1
AVERAGE RATE OF MARKUP ON ALL IMPORTS
KARACHI, JUNE-AUGUST 1964

Commodity group	$\frac{(e^{**} - e^c)}{e^c}$	Percentage share of the group in total import as in 1963/64
	(1)	(2)
Consumption goods	1.73	25
Raw materials	1.13	25
Capital goods	1.00	50
Weighted average	1.22	
$\alpha = (e^{**}/e^c)$	2.22	

Notes: e^{**} = Karachi prices of imports during June-August 1964.

Sources: Col. (1), from [9]
Col. (2), from [3].

e^c = c & f value of imports.

Weighted average has been calculated according to the formula

$$\frac{\sum_i \left[(e_i^{**} - e_i^c) / e_i^c \right] w_i}{\sum_i w_i}$$

where,

w = share of the group in imports

i = commodity group.

Appendix C

CONSTRUCTION OF INDICES OF DOMESTIC WHOLESALE PRICES OF IMPORTS IN PAKISTAN

The commodities included in the construction of the domestic wholesale price indices for imported commodities in Pakistan are:

- | | |
|-------------------|------------------|
| (1) Refined sugar | (6) Coal |
| (2) Tobacco | (7) Steel ingots |
| (3) Motor tyres | (8) Kerosene oil |
| (4) Motor tubes | (9) Motor spirit |
| (5) Paper | |

The criteria for selecting these nine items have been their importance in total imports and the importance of their imports as sources of supply in the domestic market. It can be seen from Appendix Table C-1 that the average share of the selected items in the total value of imports during 1951-60 was about 15 per cent.

The quantity and price data used in constructing our index were taken from the relevant tables in Appendix A of *A Measure of Inflation in Pakistan, 1951-60* [6]. As these statistics are available for the period 1951-60, we first constructed the index for this period, and then derived the indices for the other years¹ by extrapolating the trend. In constructing the index for 1951-60, we have used the Laspeyre formula by using the base-year quantities as the weights. We have used 1959/60 as the base year. In [6], the price and quantity statistics are presented separately for East and West Pakistan. It was, therefore, necessary to sum them over the regions to derive the index for the country as a whole.

The time coefficient of the indices for 1951-60 works out to be +2.08. Indices for 1948/49—1950/51 and 1960/61—1964/65 are then computed by extrapolating the trend observed for 1951-60. The resulting series for 1960-65 correspond fairly closely to the indices computed by the CSO for the same period.

¹That is, 1948-51 and 1960-65.

TABLE C-1

THE RELATIVE IMPORTANCE OF THE SELECTED IMPORT ITEMS

Items	Import category	Total value of imports during 1951-60	Imports as per cent of domestic availability (average for 1951-60)
	(1)	(2)	(3)
		(million rupees)	(per cent)
Refined sugar	Consumer goods	549.0	40.0
Tobacco	Material for consumer goods	49.9	1.8
Motor tyres } Motor tubes }	Consumer goods } -do- }	98.7	100.0
Paper	Material for consumer goods	265.5	38.3
Coal	Material for capital goods	535.7	66.1
Steel ingots	Material for capital goods	229.4	82.8
Kerosene oil	Consumer goods	207.0	91.6
Motor spirit	Consumer goods	104.4	45.0

Sources: Cols. (1) and (2), from [3]
Col. (3), from [6, Appendix-A tables].

TABLE C-2

INDICES OF DOMESTIC WHOLESALE PRICE OF SELECTED IMPORT ITEMS
IN PAKISTAN, 1948/49—1964/65; BASE = 1963/64.

Year	Index (Laspeyres; base = 1963/64)
1948/49	70.5
1949/50	72.7
1950/51	74.2
1951/52	78.2
1952/53	89.2
1953/54	80.4
1954/55	68.7
1955/56	83.5
1956/57	89.2
1957/58	92.1
1958/59	97.5
1959/60	88.6
1960/61	95.0
1961/62	96.8
1962/63	98.7
1963/64	100.0
1964/65	101.9