Relative Price Changes and Industrialization in Pakistan: 1951 - 1964

by

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INTRODUCTION

The terms of trade between the agricultural and industrial sectors in developing countries have received considerable attention in the general literature on economic development. The terms of trade are important determinants of the distribution of income between the two sectors, as well as the capacity for saving (particularly in the manufacturing sector) and incentives to produce and sell (particularly in the agricultural sector). In Pakistan, the terms of trade of the agricultural sector are alleged to have been depressed to benefit the growth of industrial sector. Considerable opposition to increased taxation of the agricultural sector has been based on the assertion that that sector is already "taxed" for the benefit of the industrial sector through the terms of trade. Current official interpretation [11] of the "saving strategy" that the country followed in the 1950's indicates that the terms of trade were important in transferring income from the low-saving sector (agriculture) to the high-saving sector (manufacturing). As yet, however, there had been no empirical study of the facts of the Pakistan experience.

The present study focusses on the following issues:

1) What have been the directions and size of the movements in the terms of trade between agriculture and manufacturing industry in Pakistan? Have the movements varied between provinces?
2) What movements of relative prices within sectors in each province have taken place?
3) Does the knowledge of the terms of trade movements and the movements

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in intrasectoral relative prices add anything to our understanding of the structural changes that have taken place in Pakistan over the past fifteen years?

Section II presents the results of the calculations for the terms of trade of the agricultural (Ag) and manufacturing (Non-Ag) sectors in Pakistan from 1951 to 1964, and discusses some interpretations of the movements and their implications for evaluating development policies. Section III gives a discussion of intrasectoral relative price changes and their interpretations. Section IV discusses some implications of the findings for questions of economic policy in Pakistan.

There were numerous theoretical and empirical problems encountered in undertaking this study and four appendices dealing with them have been prepared. The first, Appendix on Method, is included in this paper since it discusses some of the theoretical and practical considerations in choosing prices and weights for the price and terms of trade indices. The other three are statistical appendices which have been omitted here and will be presented in a forthcoming monograph of the Pakistan Institute of Development Economics. They will include the sources of price data used in the study and the tables giving price indices by commodity for all commodities and for all years of the study; the methods and sources for choosing the weights for the production, sales and purchases of the two sectors in each province for the base year, 1959/60; and alternative calculations of price indices for each sector and subsector and for the terms of trade using different plausible weighting systems for the individual commodities. Since some fairly crude data or assumptions were used in calculating some of the weights, the fact that the indices are not very sensitive to alternative weighting schemes is reassuring. Some readers may wish to look into the problem in more detail.

II. THE RELATIVE PRICES OF AGRICULTURAL AND MANUFACTURED GOODS

The terms of trade indices presented here for the two sectors of the economy, agriculture (Ag) and manufacturing industry (which we have called Non-Ag) represent the gross barter terms of trade for the sector in question, that is, the wholesale prices of goods that the sector sells relative to the wholesale prices of the goods that it buys. All our weights for the indices used here were based on estimated production, sales, and purchases for 1959/60, and all indices are representative of the movements of the relative prices of bundles of goods produced, bought, and sold in that year. There are many objections both of a practical and a theoretical nature that could be made about such a procedure. Most serious, in our view, would be that the use of 1959/60 weights would distort the results, and mean that the indices would not be representative of the economy in periods before or since that date. Fortunately, when we varied the weighting

schemes quite considerably, the outcome of our analysis did not change. Some of the variations that were tried are reported in the appendices.

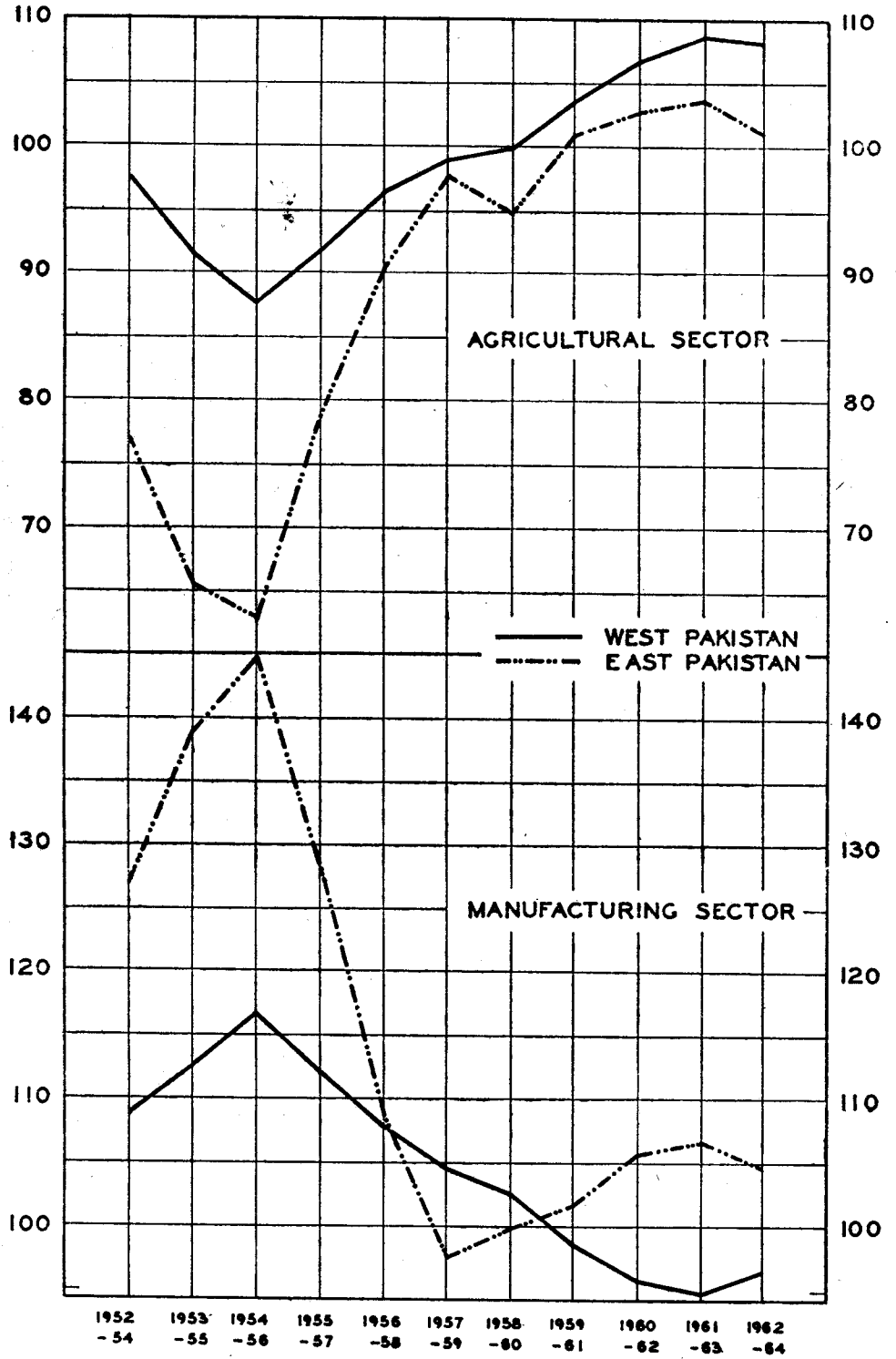
The principal results of our investigations are given in Table I and are shown in Figure 1, where all numbers are three-year moving averages which smooth some of the year-to-year fluctuations. The gross barter terms of trade of the manufacturing sector improved (and those of the agricultural sector deteriorated) from the period 1951/52 to about the mid-1950's, after which there was a reversal that lasted through the Second-Plan period and the mid-1960's. The movements in East Pakistan were much sharper than the movements in West Pakistan, but in both cases the movements are quite distinct. The only possible exception to the general movement is in the case of East Pakistan manufacturing sector's terms of trade, which improved somewhat in the period 1959—1964. The manufacturing sectors in both provinces faced worse terms of trade in the mid-1960's than even in the early 1950's, while the agricultural sectors in both provinces had better terms of trade in the mid-1960's than they had had before the terms of trade were turned against them during the 1950's. The movements are quite obvious in all cases, and they are of a considerable magnitude, particularly in East Pakistan. Farmers in East Pakistan had terms of trade in the three years from 1961/62 to 1963/64 that were 60 per cent better than they had had in the three years 1953/54 to 1955/56. In West Pakistan, comparing the same periods, farmers had terms of trade that were almost 25 per cent better in the later than in the earlier period. As mentioned above, the use of different weights or different years changes the magnitudes of the movements somewhat, but does not change the pattern that emerges of *i*) turning the terms of trade against agriculture during the early 1950's, and *ii*) improving terms of trade for the agricultural sector from the mid-1950's to the mid-1960's.

An Interpretation of the Results

The movement in the terms of trade of the two sectors in the period under study must be understood in terms of *i*) the movements of the relative supplies of the two goods over the period, and *ii*) the conditions and policies that existed in the beginning of the period.

At the time of partition of the subcontinent into Pakistan and India, the area that comprised Pakistan was essentially raw-material and food-growing area for the rest of the subcontinent[1]. While the exact magnitudes are not known, it is believed that most manufactured goods consumed in Pakistan were produced in India and exchanged for cotton, jute, and food crops from Pakistan.

[1] The best collection of information and analysis of the conditions just prior to and just following Partition are in Rahman [15]. He took a somewhat different point of view, but the theme of the breaking of a customs union is a basis of his analysis of the growth of interwing trade.



SOURCE: TABLE I

The effect of Partition was to break up a customs union, and due to hostilities between the two countries, and the fact that Pakistan did not devalue with India, trade between them was cut back drastically.

TABLE I

DOMESTIC TERMS OF TRADE FOR EAST AND WEST PAKISTAN
Three-Year Moving Averages: 1951/52—1963/64

Period	West Pakistan		East Pakistan	
	Manufacturing sector	Agricultural sector	Manufacturing sector	Agricultural sector
1951—54	108.62	97.39	126.86	77.09
1952—55	112.22	91.14	138.55	65.32
1953—56	116.42	87.36	144.81	62.83
1954—57	112.00	91.41	128.54	78.34
1955—58	107.77	96.03	108.67	90.11
1956—59	104.52	98.76	97.28	97.19
1957—60	102.60	99.43	99.65	94.93
1958—61	98.05	103.13	101.67	100.65
1959—62	95.32	106.39	105.53	102.14
1960—63	94.75	108.28	106.21	103.01
1961—64	96.06	107.84	104.36	100.46

Source: Appendix C tables in the forthcoming monograph.

Notes: For the manufacturing sector's terms of trade:
The weights for manufacturing price are the values added in each industry in 1959/60 and the weights for agricultural prices are estimated purchases of agricultural goods by the nonagricultural sector in 1959/60.

For the Agricultural sector's terms of trade:
The weights for agricultural prices are the gross output of each commodity in 1959/60, and the weights for manufactured goods are estimated purchases of manufactures by the agricultural sector in 1959/60.

Fortunately, the Korean War boom in world prices expanded Pakistan's exchange earnings from raw jute and cotton, and permitted increased imports of manufactured goods from the rest of the world. When the Korean War boom collapsed, however, exchange earnings fell sharply and imports were curtailed through the use of a detailed import control system since the currency was greatly overvalued. The net effect of these three factors, *i*) a fall in world prices of exports, *ii*) an overvalued currency, and *iii*) a cessation of substantial imports of manufactures was to turn the terms of trade sharply against agriculture (the export sector) and in favour of manufacturing industry (the import-competing sector). World prices and exchange earnings fell off in late 1952, but there had been substantial inventories of imported manufactured goods built up during

the period of high exchange earnings, so that a sharp movement in the terms of trade occurred in the period 1952 to 1954[2;3].

The result of the price movements was to provide "abnormally" high incentives to production in manufacturing and to transfer resources from farmers to manufacturers through the market. Even before the trade crisis there had been relatively high tariffs on many manufactured goods, and domestic production had begun in some industries. The exchange crisis in 1952/53 *i*) was not met by devaluation and *ii*) was accompanied by direct controls, and its effect was to create a severe disequilibrium in the markets for manufactured and agricultural goods. The short-run disequilibrium was removed by rapid increases in relative prices of manufactures. Another disequilibrium, this one between prices and cost of production, was created. It was caused first by Partition and then by the exchange crisis and the adoption of rigid controls by the government, but it contained in it the mechanism for its own removal: very high profitability of producing the goods whose supplies had been cut off. The rapid industrial growth that followed was largely a response to, and working off of, the initial disequilibrium and it was accompanied by a substantial movement in the terms of trade back in favour of agriculture.

The movements in agricultural and manufacturing production are shown in Figure 2, where indices for value added at factor cost of 1959/60 for agriculture and for large-scale manufacturing industry are shown. The difference in the growth rates is obvious. One should expect to find, *ceteris paribus*, some changes in relative prices, unless the relative growth of demand for the two types of products was just as different as the relative supply growth. The movement of the terms of trade against agriculture in the period after the Korean War boom

[2] Imports and exports, in million rupees, for the period 1948/49 to 1954/55 are as follows:

Year	*Imports*	*Exports*
1948/49	1,459	958
1949/50	1,297	1,194
1950/51	1,620	2,554
1951/52	2,237	2,009
1952/53	1,384	1,510
1953/54	1,118	1,286
1954/55	1,103	1,223

Source: [9, p. 56].

It is likely that imports and particularly exports are understated for the first two years, due to unrecorded movements of goods between India and Pakistan. In any case, the decline in imports after 1951/52 is quite obvious. A discussion of the import control system that was introduced is given by Thomas [17].

[3] In West Pakistan about 8,00,000 tons of wheat was imported in 1953/54, and both provinces showed fairly substantial harvests for that year, which contributed to relatively lower food prices in 1953/54. *See* [10] for data.

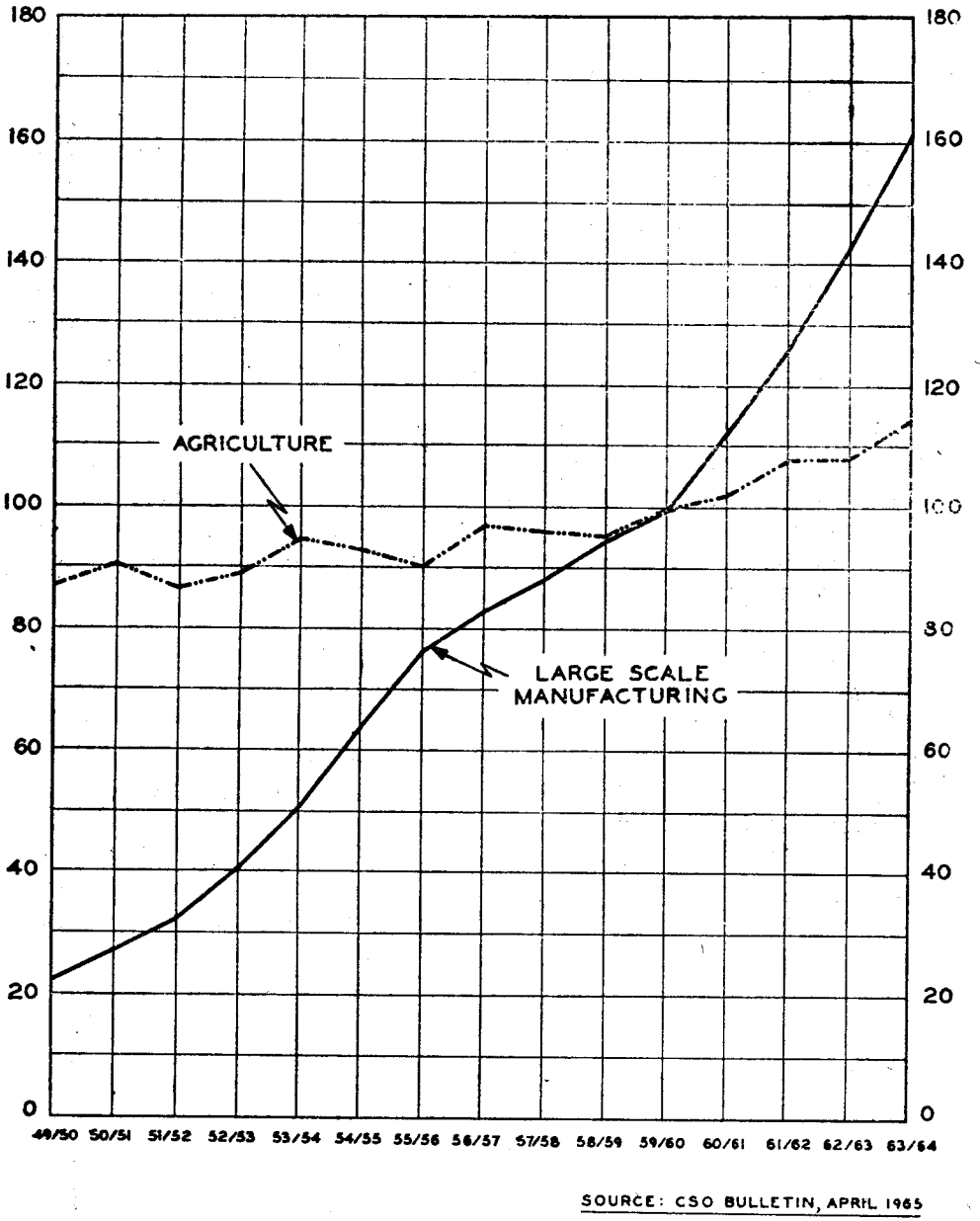


Figure 2. Index of Value Added at Factor Cost of 1959/60 for Agriculture and for Large Scale Manufacturing (1959/60=100)

was due largely to a relative glut of agricultural products in domestic markets and a relative scarcity of manufactures. The large difference in the growth rates of production in the two sectors worked to remove that situation.

Some Implications for Agriculture

Several questions are raised by the findings on the movements in relative prices. One of the most interesting and important of these concerns the recent acceleration in the growth rate of the agricultural sector in Pakistan. Although the elasticities of output and marketings of agricultural products with respect to the terms of trade of the agricultural sector are not known, the improvement of the agricultural sector's terms of trade during the late 1950's followed closely by the acceleration of the growth rate in the period 1958—1965 raises some important questions that bear further investigation. In their detailed analysis of the recent growth of the agricultural sector, Falcon and Gotsch [2] place considerable emphasis on the role of improved incentives provided to farmers by a removal of foodgrain price controls, decreases in export duties, *etc.* Some of these improved incentives account for the improvement in the agricultural sector's terms of trade that we have seen. There were also the forces of the increased domestic supply of manufactured goods that resulted in nearly constant absolute prices in manufactures accompanying rising prices of agricultural goods, and these, too, improved the "incentives" for the agricultural sector. Indeed, one might go so far as to suggest that the relative stagnation of agricultural output in the mid-1950's was in part the result of extremely adverse terms of trade, and that a part of the "growth" of agriculural output was partly a short-run response to improved terms of trade. Such a hypothesis clearly bears considerably more investigation, however.

There are two other matters related to agriculture that have relevance to our results. The question has been raised, *inter alia*, by Beringer and Ahmad [1] of whether programmes such as the import of PL 480 foodgrains into Pakistan had depressed the prices of agricultural commodities, thus acting as a disincentive to agricultural production and agricultural growth. While it is not possible to answer the question "what would have been the case if PL 480 wheat had not been imported", it is at least of interest to point out that in fact, in both provinces, the relative prices of agricultural goods, or the terms of trade of the agricultural sector, were much better during the period since the large PL 480 programmes have been undertaken than they were a decade earlier[4]. A second matter of importance to the agricultural sector concerns income transfers and the

[4] The better terms of trade are, of course, not because of but in spite of the large PL 480 programme. Without examining other developments in the economy, including the direct and indirect effects of expenditures for which the PL 480 imports are an offset, the effect of the programme cannot be specified. For a detailed discussion of agricultural growth and the relation of PL 480 to it, *see* Falcon and Gotsch [2].

potential for increased taxation. It would seem that the real income of the agricultural sector improved greatly in the decade 1953/54 to 1963/64 not only because of the acceleration in the growth of real output, but also because of the substantial improvement in the terms of trade of the agricultural sector that occurred simultaneously. Since, in West Pakistan particularly, the share of marketings in production is fairly large, the effect of the improved terms of trade on real income in agriculture must have been substantial. We need hardly point out the implications of these improvements for the question of reforming the agricultural tax base to make it more income elastic[5].

A final point should be mentioned about the findings and the interpretations that we have placed on them. One could argue that the movements found in domestic prices were merely reflections of the movements in international prices that were transmitted through the foreign trade sector to the domestic economy. We have been exploring the movements in international prices of the same goods for which we have domestic prices. While the study of international prices is not yet complete, the following general results seem to be quite clear. For major commodities where comparable data exist, the prices internationally generally moved in the *opposite* direction from the prices domestically. Broadly speaking, for the goods that are of importance to Pakistan, the relative prices of agricultural goods fell internationally while they were rising domestically. The domestic economy throughout the period of the 1950's and to a considerable extent into the 1960's was cut off from international prices due to the maintenance of an overvalued currency and the control of import levels and composition by a comprehensive system of import licences. The fact that the international and the domestic prices moved in opposite directions, therefore, should be no surprise. Thus, while we cannot show the point rigorously at this writing, present explorations indicate that the movements that we observe in the domestic movements of relative prices were not due to similar movements in international relative prices.

III. RELATIVE PRICE CHANGES WITHIN SECTORS

In this section we present briefly the findings for major subsectors in each major sector, and then take a more detailed look at the price changes among industries within the manufacturing sector, where the import substitution process was important to the price structure.

Table II and Figure 3 give some indication of relative price movements within the two major sectors. For manufacturing, in both provinces, the prices of

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[5] For a discussion of the problem of elasticity of the agricultural tax base, *see, inter alia,* Lewis [7].

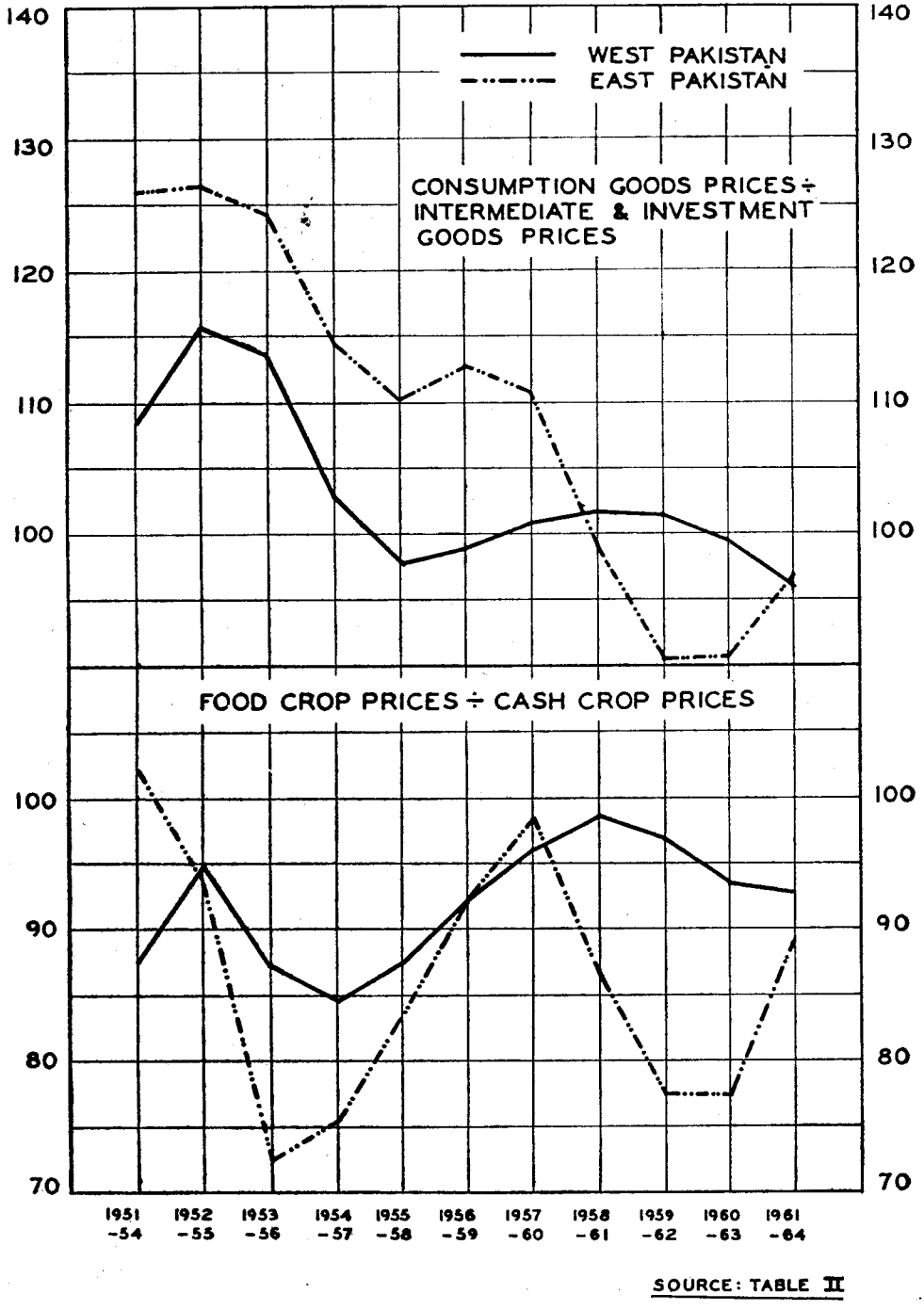

Figure 3. Relative Price Changes within Sectors.

consumption goods relative to intermediate and investment and related goods were highest at the time of the restriction of international trade at the end of the Korean War boom. It appears that the consumption-good prices remained relatively high in East Pakistan longer than they did in West Pakistan, which is probably related to the time it took *i*) to establish provincial production and *ii*) to expand interwing trade. The very low relative prices of consumption goods in the early 1960's in East Pakistan are due in part to the high absolute prices of jute textiles in 1960/61, which was due to the high price of raw jute. Unfortunately, the prices of intermediate and investment and related goods are among the least reliable in the sample, particularly for the earlier years, where some of the items had to be dropped from the sample altogether[6].

The prices of food crops relative to those of cash crops give a very mixed picture[7]. There is considerable variation in the relative prices of the two types of crops, but little if any trend. In West Pakistan, where the year-to-year variations are not as marked, there is a gentle upward trend in the relative prices of food crops, whether one starts with 1951/52, or at the "bottom" of the squeeze

TABLE II

INTRASECTORAL TERMS OF TRADE FOR EAST AND WEST PAKISTAN
Three-Year Moving Averages: 1951/52—1963/64

Period	Food crops relative to cash crops		Consumption goods relative to intermediate and investment goods	
	West Pakistan	East Pakistan	West Pakistan	East Pakistan
1951—53	87.16	102.64	108.08	125.99
1952—54	94.88	93.34	115.77	127.17
1953—55	87.02	72.42	113.45	124.03
1954—56	84.62	75.30	102.64	114.28
1955—57	87.41	83.67	97.91	110.06
1956—58	92.22	92.48	98.96	112.66
1957—59	96.01	98.29	100.86	110.62
1958—60	98.43	86.29	101.53	98.91
1959—61	96.98	77.75	101.28	90.24
1960—62	93.44	77.46	99.46	90.61
1961—63	92.99	89.69	95.99	96.82

Source: Appendix C tables of the forthcoming monograph.

Notes: *Within the agriculture sector*: the weights for agricultural prices are the marketings for both food crops and cash crops.
Within the manufacturing sector: the weights for manufacturing prices are the gross value of output for consumption goods and for intermediate and investment goods.

[6] For a discussion of prices of investment goods, *see* Appendix to Lewis [7].

[7] We have not shown any results for the livestock subsector, as its data are the least reliable of the agricultural sector. For a discussion of problems of the livestock subsector, *see* Falcon and Gotsch [3; 4].

on agriculture generally, which occurred in 1954/55. In East Pakistan, there is too much year-to-year variation to make any reliable statement about trends. In either case, there is no strong movement one way or the other, so that one could certainly not attribute any of the growth in the agricultural sector after the mid-1950's as a response to more profitable opportunities for production of one type of crop relative to another.

Relative Price Changes within Manufacturing

In order to examine the changes in the relative prices within the manufacturing sector over the period under study, we fitted time trends to the individual price series in each industry. Differences in the trend coefficients would indicate different rates of change in absolute price and, therefore, changes in the relative prices among industries. We measured the relative price changes (or fit the trend lines) from the year at which the industrial sector had the best terms of trade of the period (or the year when the agricultural sector had the worst). The coefficients, thus derived, would then tell something about the rate at which different industries worked off the disequilibrium created for manufactured goods in general by the restriction of trade[8].

The rates of growth of absolute prices for manufacturing industries are given in Table III. Within West Pakistan, major consumption goods such as edible oils, cotton textiles, cigarettes, soap, and matches show either no trend or a slightly negative trend after 1954/55. Among consumption goods, sugar has a high trend coefficient, probably reflecting the continuing restrictive policy on imports, combined with a high income elasticity of demand for sugar. Silk and artsilk textiles, shoes and footwear, and tea, have high coefficients as well, indicating an increase in their prices relative to the other consumer goods over the period. Intermediate and investment goods are erratic in their trends, and show no consistent behaviour. Within East Pakistan, most consumption goods have negative trends, or no significant trend at all. The somewhat superior consumption goods (sugar, silk and artsilk textiles, shoes and footwear, tea) are exceptions to this generalization, and have, therefore, increased in relative prices from 1954/55 to 1963/64. Once again, intermediate and investment and related goods industries do not show any consistent behaviour from which to generalize.

As with many of the price phenomena, there are some interesting differences between East and West Pakistan in the relative price coefficients in the consumer-goods industries. With few exceptions, a trend value of the estimate plus one standard error for East Pakistan is lower than the trend value minus one standard

[8] Two considerations of practical importance entered into the choice. One was the fact that more industries had price data by 1954 than if one used an earlier period. The second was that the analysis of industrial growth done by Lewis and Soligo [8] had as its base year 1954/55.

TABLE III

ANNUAL PERCENTAGE INCREASE IN PRICES OF MANUFACTURED GOODS, WEST AND EAST PAKISTAN, 1954/55 to 1963/64

		West Pakistan	East Pakistan
Consumption Goods			
2070	Sugar manufacturing	4.6	5.0
2091	Edible oils	— 0.79*	— 3.9
2092	Tea manufacturing	3.2	2.4*
2099	Food manufacturing *n.e.c.*	3.9	— 2.0*
2100	Beverages	1.8	— 0.06*
2200	Tobacco manufacturing	0.18*	— 2.2
2311, 2390, 2490	Cotton and other textiles	1.2	— 0.76
2314	Silk and artsilk textiles	7.9	7.9
2420	Footwear	3.7	2.2
2500, 2600	Wood and furniture	1.8	— 0.06*
2800	Printing and publishing	1.8	— 0.06*
3150	Soap, perfume, *etc.*	0.91*	— 1.6
3191	Matches	— 0.72	— 2.4
3900	Miscellaneous manufacturing industries	1.8	— 0.06*
Intermediate Goods			
2313	Jute textiles	...	3.1
2700	Paper manufacturing	3.5	2.9
2900	Leather manufacturing	5.6	3.8
3000	Rubber and rubber goods	1.3	2.0
3114	Fertilizer	—**	—
3199	Chemicals + pharmaceuticals		
	Chemicals	4.6	— 0.17*
	Pharmaceuticals	—	0.12*
3200	Petrol and coal products	2.3	2.0
Investment and Related Goods			
3300	Non-metallic minerals	2.8	—
3400	Basic metals	4.2	6.7
3500	Metal products	0.93*	0.98*
3600	Machinery except electric	1.3*	6.7
3700	Electric machinery	—	—
3800	Transport equipment	—	—

Source: Least squares estimate of "b" in the equation: log commodity price = a + b time for data in Appendix A of the forthcoming monograph.

* = not significant at the 95 per cent level of confidence.
** = blank indicates no observation for 1954/55.

error for West Pakistan. This result suggests a significant lowering of the prices of consumption goods in East Pakistan relative to the prices of the same goods in West Pakistan. (Alternatively, of course, it implies that the consumption goods prices in the East wing were much higher than they were in the West wing at the beginning of the period.) The finding is, of course, consistent with the results we have reported on the terms of trade of the agricultural sectors in the two wings, and the implication that the squeeze had been greater in East than in West Pakistan at the time when foreign trade was restricted. Once again, there is no clear pattern within the intermediate and the investment and related goods industries.

The general pattern of relative price movements within and between sectors are clear from the above discussions. As can be seen from the statistical tables, to be presented in a forthcoming monograph of the Pakistan Institute of Development Economics, substantial variations in weighting would not change the results very much. In view of our crude methods for arriving at some of the weights, such a result was comforting. Changing the base year, which was tried on a related set of data, exaggerates the terms of trade movements if an earlier year is used, and dampens the movements if a later year is used, due primarily to the changing weight of the consumption-goods industries over time in both domestic production and domestic availability. The direction of movement of the terms of trade indices stays the same, however.

IV. SOME FURTHER IMPLICATIONS

Industrial Policy

One interesting question that has been discussed in Pakistan in recent years is the import substitution process and the efficiency with which that process has proceeded. Two indictments of the pattern that was followed (*i.e.*, emphasis on consumer-goods industries) were offered by Power [13] and Khan [6] and by Soligo and Stern [16] on two different bases. The Power-Khan argument stated import substitution had led to "consumption liberalization", reflected in falling relative prices of some consumer goods, and frustrated the saving goal of the First Plan. The Soligo-Stern argument stated that effective tariff protection to consumer-goods industries was so great, and production had proceeded so far that, at the margin, the productivity of resources in such industries was in fact negative. Our present results are at least tangentially relevant to both of these analyses, since both are concerned with price ratios or price movements.

Even before the trade crisis of the early 1950's, there were substantial tariffs on manufactured consumer goods, and the currency was substantially overvalued due to the failure to devalue with England and India in the late 1940's. As a result, the domestic prices of manufactured goods were higher than the free-trade prices. The foreign-exchange crisis and the import-licensing system that was adopted exaggerated this distortion even further, as is reflected in our relative price movements from 1951/52 to 1954/55. In general, one might expect a return toward the pre-crises level of relative prices as industrial growth proceeded rapidly in response to *i*) the profitable price-cost situation and *ii*) higher profits and investment rates due to the favourable terms of trade. The adverse movement in agriculture's terms of trade in the years after Partition and the exchange crisis taxed the agricultural sector heavily. If the industrial response was sufficiently large, however, and if costs and prices in the new import-substituting industries fell as efficiency progressed, then one might conclude that the policy was in some

sense successful in the long run since there was not a permanently higher level of prices of manufactured goods. Presumably, if protection results in a low volume of high-cost manufactures, it is not as successful as a protective policy that results (with reasonable lags) in a higher volume of low-cost manufactures. Thus, the behaviour of the relative prices over the period of protected industrialization may tell us something useful in evaluating the success of the import-substitution policy. It should be clear, however, that using the readjustment of relative prices as a criterion of the success of the policy is not a sufficient measure.

The above considerations bear heavily on the Power-Khan and the Soligo-Stern criticisms of industrial policy. In the first place, the "normal consumption" base period chosen by Khan [6] was the period 1951-1955, precisely that period during which domestic supplies of consumer goods were substantially reduced and when relative prices were exceedingly unfavourable to the agricultural sector. The base period was defended as one in which an effort was being made to restrain consumption by restraining imports of consumer goods. It is not at all clear that such was the intent of policy makers at the time. In addition, we would think that the failure of prices to readjust at least somewhat (perhaps back to the pre-crisis level where only tariffs accounted for price differentials) would have left the country with an intolerably inefficient set of prices to direct resource allocation. The failure to remove the disequilibrium between costs and prices would have been a matter of substantial concern. Second, the Soligo-Stern criticism basically assumes that domestic prices are different from international prices by the amounts of tariffs on the goods. Our results, while not yet providing a firm answer to this problem, at least raise some questions about the validity of their assumptions and their conclusions. Indeed, we found that consumption-goods prices were falling sharply relative to intermediate and capital goods, while Radhu's study of tariff rate structure [14] found that tariff rates for consumer goods were rising relative to intermediate and investment goods. The results of our study on relative prices, therefore, creates at least a prima facie case that both the Power-Khan and the Soligo-Stern arguments must be re-examined.

East-West Development

The economic relations between East and West Pakistan have played an important part in all studies and explanations of economic growth and economic policy in Pakistan. Broadly speaking, it has been alleged that East Pakistan was squeezed for the benefit of industrial growth in West Pakistan, and that inter-wing trade provided easy profits for businessmen in West Pakistan, while forcing East Pakistan to pay more for its manufactures than it would have if it could have traded freely with the rest of the world. There is not enough information here to make a judgment about the accuracy of the "free trade" assertion. It is quite clear,

however, that the agricultural sectors in *both* provinces were placed at a disadvantage relative to the industrial sector in each, though it is also clear the agricultural sector in East Pakistan did appear to have a worse decline in its terms of trade than did the agricultural sector in the West wing. The behaviour of the relative prices in the two provinces is also consistent with what is known about the relative amounts of manufacturing capacity in the two provinces and the development of interwing trade[9].

Interwing trade was just getting under way when the effects of the foreign-exchange crises and the restrictions on international trade were felt. There was less manufacturing production capacity in East Pakistan at the time of the trade restrictions, and the source of supply from the West wing was not yet as developed as it was to become. The more severe increase in the relative prices of manufactures in the East wing was partly due to these supply conditions, holding the demand for the products in the two provinces constant. Once productive capacity in the West wing increased enough to provide adequate exports to the East wing (and at the same time there was some growth of capacity in the East wing) the relative position of East wing agriculture must have come to approximate the relative price position of West wing agriculture. If the domestic prices of manufactured goods were "too high" relative to what they would have been without so much protection, they were too high for both the West wing agriculturalists and for those in the East wing. Income transfers were an Ag/Non-Ag price problem as well as were an East-West transfer problem.

Related to the problem of interwing trade, Nurul Islam noted in his study of interwing trade and terms of trade in Pakistan [5] that the relative prices of the agricultural goods in interwing trade rose (or industrial-goods prices fell) over the decade 1950/51 to 1959/60. This is an aspect of the same phenomenon that we have been observing in our indices of terms of trade in each province. The tables Nurul Islam gives [5, p. 20] show the same sort of fall in the relative prices of agricultural goods, followed by the rise in relative prices later in the decade. For the commodities involved in interwing trade, however, the relative prices of agricultural goods are much higher at the end of the decade than are the relative prices of agricultural goods based on our provincial production or marketing weights. The movement that Professor Islam found, however, is quite consistent with the movements in provincial terms of trade that we have measured for the agricultural sector, and his results are also broadly consistent with the hypothesis of industrialization as a working off of a price-cost disequilibrium.

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[9] *See* Rahman [15] for discussion of this point. Some relevant data with regard to impor prices and absorption capacity in the two provinces are provided by Pal [12].

V. SUMMARY AND CONCLUSIONS

We have tried to accomplish a number of objectives in this paper. Since some analyses and implications of the results of the study were developed at various points throughout the paper, we will summarize the results briefly.

1) One of the major characteristics of Pakistan's early economic history was the crisis in foreign exchange and international trade brought about by the dissolution of British India by Partition, and the subsequent decline of international prices for her principal exports after the Korean War. These facts, and the policies that were adopted at the time to cope with them determined, to a large extent, the subsequent growth of industry. Industrialization could be thought of as the removal of the disequilibrium of costs and prices between agricultural and industrial goods created by the conditions of the late 1940's and early 1950's.

2) The results of our investigations showed that the terms of trade were turned against agriculture and in favour of manufacturing in both East Pakistan and in West Pakistan following the restriction of international trade. The general order of magnitude and the direction of movements that are involved are quite insensitive to the use of different weighting systems, and to a large extent to the use of different commodity groups. The squeezing of the agricultural sector was greater in East Pakistan than in West Pakistan, and developments in interwing trade and in industrial growth in the two provinces are related to these differences in relative movements. As the cost-price disequilibrium was removed by differential growth of the two sectors, the relative prices of agricultural commodities in East Pakistan rose something in the order of 60 per cent in the late 1950's and early 1960's, and the increase in West Pakistan was of the order of 30 per cent. Such a substantial improvement of the agricultural sector's terms of trade must be taken into account when evaluating the recent experience of agricultural growth in Pakistan. A part of agricultural growth may have been a short-run positive response to greatly improved incentives.

3) A related issue of development policy on which this paper has some bearing is that of resource transfers between sectors through the price system. We have given quantitative estimates of the magnitude of the relative price (or terms of trade) shifts that occurred, but we have not tried to estimate the value of the income transfer involved. When a study of international relative prices of the same goods is completed, it will be possible to present a range of estimates of the size of the income transfers that resulted from government policies.

4) The data and the analyses presented in the paper have a bearing on the discussion of import-substitution policies and their results. The Power-Khan [13; 6] arguments about "consumption liberalization" were based on the assumption

that the relative prices in the base period of their analyses were in some way appropriate. We have suggested that there is reason to believe that this was not the case, at least for some reasonable definitions of appropriateness. The Soligo-Stern argument [16] that investment in the consumption-goods industries in Pakistan has gone too far was based on the assumption that relative domestic prices were different from the relative international prices by only the amounts of the tariffs. The results presented here, while not bearing directly on this problem, certainly raise questions as to whether their conclusions could be supported.

5) Since the statistical data that supports this paper should be of use to others working on the economy of Pakistan, they will be published in full in a separate monograph. We hope they will form a point of departure for further refinement of the prices and weights that are relevant to various questions of research and policy. The estimates are hardly to be considered the last word in accuracy, but we have tried to make the best and most complete use of data that are presently available from published and unpublished sources.

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Appendix on Method

THE CHOICE OF PRICES AND WEIGHTS FOR THE EMPIRICAL STUDY

One of the principal difficulties in this study (apart from unavailability of certain basic data) was the determination of the appropriate prices and weights for the sales and purchases of the different sectors. One could distinguish wholesale, ex-factory, and retail prices for manufactures, retail, wholesale, and harvest prices for agricultural goods, at the very least. Weighting might be done on the basis of value added, gross output, or sales (or marketings) for the sector selling goods, and while actual purchases of the other sector goods would be appropriate weights for the commodities a sector is buying, such information is not available. This appendix discusses briefly what prices (and weights) one might like to have, and explains briefly the selection of prices and weights actually used. Detailed information on sources and methods are being published in a separate monograph of the Pakistan Institute of Development Economics.

From the literature on the dual economy[1], one can get an idea of the Ag and Non-Ag prices that are important to each sector. For the manufacturing sector the relevant Non-Ag prices are the ex-factory prices of manufactures net of indirect taxes on output. These prices might be weighted by domestic output or by value added. The latter would be more appropriate if we were interested in income transfers to profit receivers. The relevant Ag prices would be *i*) retail prices of agricultural wage goods weighted by relative shares in budgets of wage earners and by the manufacturing wage bill, and *ii*) the wholesale prices of agricultural raw materials, weighted by the use of agricultural raw materials in domestic manufacturing. The reasons for these choices are obvious. If prices of wage goods or of agricultural raw materials rose, wages or other costs of production would rise, cutting into profits (and presumably saving and re-investment), while if ex-factory prices of manufactures rose, profits should rise, increasing saving and re-investment.

For the agricultural sector, the relevant prices of Non-Ag goods would be retail prices of manufactured consumer goods, and the farm level price (whether wholesale or retail would presumably depend on farm size and on the distribution system) of manufactured intermediate goods (insecticides, diesel oil, fertilizers, *etc.*) and capital goods. The relevant weights would be the purchases by the agricultural sector of each type of good. The prices of Ag goods

[1] For some basic characteristics of the dual economy, *see* [18 or 19]

that concern farmers are harvest prices received, and the proper weights would presumably be *marketings* of agricultural produce. For some purposes, such as testing the notion that farmers market or produce enough to get a given bill of manufactured goods, it might be important to consider only consumption goods prices relative to harvest prices. Alternatively, if one were interested in the reactions of agricultural output to changed supply conditions of capital goods or intermediate products, one would want to eliminate consumer goods from the ratios.

There are at least two distinct sets of Ag/Non-Ag terms of trade that one would be interested in empirically, one for each sector. Each ratio has both a different price concept and different weighting for the components of Ag and Non-Ag goods.

Harvest prices of Ag goods plus any indirect taxes plus trade and transport margins would give the Ag prices to the industrial sector for domestically produced goods. Ex-factory prices of Non-Ag goods plus taxes plus trade and transport margins would give the prices to the Ag sector for domestically produced Non-Ag goods. Purchases by each sector of the other sector's output would have to include imports, for which the appropriate prices would be c.i.f. prices plus taxes plus trade and transport margins. Weights for each commodity would be different in each sector too. Sales of Ag goods by farmers plus imports minus exports would equal purchases of Ag goods in the industrial sector. Production of Non-Ag goods minus industrial sector use plus imports minus exports would equal purchases of the agricultural sector. It appears that because of both different weights and different price concepts, it would not be sound from a theoretical point of view to speak of *the* terms of trade between the Ag and Non-Ag sectors of the economy.

When one turns to the data available for studying relative prices, one discovers the absence of data corresponding to the theoretical concepts. Such a lack of data is certainly the case in Pakistan. Farm level prices for Ag and for Non-Ag goods are not available. "Harvest prices" used by the Central Statistical Office (CSO) for national accounts purposes are a fixed proportion of wholesale prices prevailing during the months of harvest, so there is no independent measure of harvest prices. Prices in urban centres are somewhat more readily available, but when prices of various items are controlled, they are most firmly controlled in cities. Even when available, price data are often not reliable measures of relative scarcities. Retail prices of some goods sold in urban centres are available, but there is some feeling that wholesale prices of the same goods are measured more accurately in the official statistics than are retail prices. In addition, wholesale prices are available for a wider group of commodities. Ex-factory prices

are sometimes given as the wholesale price in official statistics, but often they are not.

As a first approximation to the prices for Ag/Non-Ag terms of trade calculations, we have used wholesale prices for both Ag and Non-Ag goods in both the Ag sector's index and the Non-Ag sector's index. The use of wholesale prices in most cases changes both the Ag and the Non-Ag prices from the "most appropriate" prices facing both sectors. The justification for using wholesale prices instead of those that would be more appropriate theoretically is primarily practical: wholesale prices are more uniformly available over time and space in Pakistan. The theoretical justification is twofold. First, one would expect that wholesale prices would move in the same direction over time as retail, or harvest, or ex-factory prices and in approximately the same magnitude[2]. Second, in another study, the same information is being used to estimate the difference between world market and domestic market relative prices of Ag and Non-Ag goods. When one is concerned with such comparison among prices, wholesale prices would seem to be more appropriate than retail or harvest prices. The prices relevant for purposes of comparing with an international trade alternative would be the c.i.f. price of imports (Non-Ag goods) and the f.o.b. prices of exports (Ag goods), in foreign currency. The ratio of these prices, when weighted appropriately for each of the two sectors, would give the free trade relative price alternatives each sector would face in the absence of barriers to free trade at equilibrium exchange rates. If these are the appropriate "international" prices, or price ratios, then the domestic wholesale price ratios would seem to give the most meaningful comparison for each sector. Farmers could not hope to receive f.o.b. export prices as harvest prices, since there would still be domestic trade margins similar to those from "harvest" to "wholesale" prices. Farmers could not hope to pay c.i.f. prices for manufactured goods at the farm level, since there would still be domestic trade and transport margins similar to those between ex-factory and wholesale price of intermediate and capital goods, and between ex-factory and retail prices of consumer goods. Similar arguments apply to the terms of trade alternative facing the industrial sector. Thus, because one must account for necessary domestic margins between international and domestic (delivered) prices of imports and between farm level and export prices of exports, it seems then an appropriate standard of comparison would be between potential f.o.b. export prices of agricultural goods or potential c.i.f. prices of manufactures and domestic wholesale prices of each. In our empirical study, the prices used for the Ag/Non-Ag terms of trade facing each sector are the same,

[2] One might object that indirect taxes would invalidate this expectation, but Radhu [20] has shown that over the period under study, price changes were uncorrelated with indirect tax changes in the same commodities.

but the weights would reflect the production (or sale) of output by the sector and its purchases of the other sector's goods.

The general form of the price indices is given here, and the specific weights adopted are discussed in the forthcoming monograph, though the weights generally approximate those discussed above. The symbols used are defined in Table A-1, and 1959/60 is used as base 100 for all individual price indices. The weights can be varied by letting s and b vary, *i.e.*, by defining a different weighting for the sale and purchase of each good by a sector in the base year, or by changing the base year.

If the weights and prices are defined as in Table A-1, then the weighted price indices for each year are as follows:

Index of prices of agricultural goods sold by the agricultural sector

$$= \sum_{k} P^{a}_{dkj} . w^{a}_{sk} \text{ for each year j.}$$

Index of prices of manufactured goods sold by the industrial sector

$$= \sum_{i} P^{m}_{dij} . w^{a}_{si} \text{ for each year j.}$$

Index of price of manufactured goods bought by the agricultural sector

$$= \sum_{i} P^{m}_{dij} . w^{m}_{bi} \text{ for each year j.}$$

Index of price of agricultural goods bought by the manufacturing sector

$$= \sum_{k} P^{a}_{dkj} . w^{a}_{bk} \text{ for each year j.}$$

TABLE A-1

DEFINITION OF VARIABLES

P^{m}_{dij}	=	is the index number of the domestic (d) price (P) of manufactures (m) of sector i in year j.
P^{a}_{dkj}	=	is the index number of the domestic (d) price (P) of agricultural products (a) of sector k in year j.
w^{m}_{si}	=	is the percentage weight of manufactured goods sold by sector i in the base year.
w^{m}_{bi}	=	is the percentage weight of manufactured goods of sector i bought by the agricultural sector in the base year.
w^{a}_{sk}	=	is the percentage weight of agricultural goods (produced or sold, depending on specifications) of sector k in the base year.
w_{bk}	=	is the percentage weight of agricultural goods of sector k bought by the Non-Ag sector in the base year.

The domestic terms of trade of the agricultural sector for any year j, with the base year equal to 100, would be written

$$\frac{\sum_k P^a_{dkj} \cdot w^a_{sk}}{\sum_i P^m_{dij} \cdot w^m_{bi}}$$

and the domestic terms of trade of the manufacturing sector for any year j, with the base year equal to 100 would be written

$$\frac{\sum_i P^m_{dij} \cdot w^m_{si}}{\sum_k P^a_{dkj} \cdot w^a_{bk}}$$

It is obvious from the above expressions for the terms of trade of each sector that even using the same (wholesale) price indices for each good whether bought or sold by a sector, that the Ag sector's terms of trade will not be the reciprocal of the Non-Ag sector's terms of trade, as long as there are leakages out of the intersectoral trade in the form of sales to other domestic sectors or to or from the foreign sector. One further problem must be mentioned. *Actual* purchases by one sector of the other sector's output have not been used in computing the b weights, since data on such flows are unavailable. Instead we have divided the available supplies of each type of good on the basis of a reasonable proportion that would have been used in each sector, and calculated the percentage weights for purchases of each good on the basis of this estimated share of the total availability. Such a method would be open to serious question if various reasonable alternative weighting schemes gave different results. Substantial variations of weights for the purchases of different commodities makes little difference in the behaviour of the price indices in the case of Pakistan, however[3].

[3] Because of the somewhat imprecise nature of the methods used to obtain weights for the base year, a number of alternative calculations were tried. The empirical results were, for all practical purposes, invariant to the choice of weights in terms of the direction of movement, though there is some variance in the magnitude of movement. The statistical data, to be presented in a forthcoming monograph will give the results of the alternative calculations for the reader who is interested in the detail.