AN ANALYSIS OF AGRICULTURAL AND INDUSTRIAL GROWTH IN PAKISTAN (1955-65) - A STUDY IN INTERSECTORAL RELATIONSHIPS.

A dissertation submitted

by

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for The Degree of Master of Letters in Arts in The University of St. Andrews.

I certify that M. Mumtaz Malik has spent not less than twelve months (full-time) in higher study in the field of Economics; that he has fulfilled the Conditions of Resolution 9 of The University Court of St. Andrews (1967); and that he is qualified to submit the accompanying dissertation for the Degree of Master of Letters.

The work of which this dissertation is a record has been done by the undersigned and has not been accepted in any previous application for a Higher Degree.

(M. M. MALIK)

The candidate was admitted for The Degree of Master of Letters in Arts in October, 1971.

To

One _____the reminiscences of whose short-lived associations would always remain the most cherished of my possessions.

CONTENTS

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Chapter I

Introduction

For some years a controversy has been going on in the economic-circles which can be loosely titled 'Agriculture Versus Industry' as means to development. The issue is whether rapid industrialisation is a sufficient condition for take-off into self-sustained growth or whether a significant improvement in agriculture is a prerequisite to industrialisation and hence to development.

Obviously, there can be no simple, single answer to the question. The answer shall vary with the nature of economy in view, its resource endowment, etc. However, the planning experience of many developing countries has demonstrated the limitation of overemphasizing industrialisation. Pakistan's example is one amongst many where it became very evident in late 1950's that a lagging agricultural sector may upset the applecart of industrial strategy. Retrospectively, one can see that the agricultural bottleneck is one of the principal explanations of slow industrial growth during Pakistan's First Five Year Plan of 1955-60. Thus, the development experience of many countries including Pakistan, has proved the earlier confrontation of agricultural versus industrial development to be a false issue and the concern now is with the inter-relationships between the two sectors and the contributions that each can make to the other.

The sectoral interdependence between agriculture and industry in a developing economy is complex and can be viewed in many ways. Here, it is analysed in relation to (a) the supply of and effective demand for agricultural products, (b) the supply of and demand for industrial products, and (c) finally, the interdependence at factor level.

The Supply of and demand for Agricultural Products:

One of the most basic inter-relationships between the two sectors arises from agriculture's role in provisioning the non-farm population. Apart from autonomous changes in demand, the annual rate of increase in demand for food is given by $D = P + ng$, where P and g are the rate of growth of population and per capita income and N is the income elasticity of demand for agricultural products.

Growth of demand for food is of major significance in an underdeveloped country for several reasons. First, high rates of population growth of 1½ to 3 per cent now characterise most of the world's underdeveloped nations, so that growth of demand from this factor alone is substantial. The population determinant of demand for food has been quite significant in Pakistan, since throughout the period under consideration, the rate of population growth remained as high as 2.5 per cent per annum. Secondly, the income elasticity of demand for food in underdeveloped countries is considerably higher than high income nations - on the order of .6 or higher in low income countries vs. 0.2 or 0.3 in Western Europe, the United States and Canada. Hence a given rate of increase in per capita income has a considerably stronger impact on the demand for agricultural products than in economically advanced countries.

The inflationary impact of a given percentage increase in food prices is much more severe in an underdeveloped country than in a high income economy. This is a simple consequence of the dominant position of food as a wage good in lower income countries. Pakistan's case shows that a food shortage, may have strong impact on the price level in a developing country like hers. During the

First Five Year Plan of 1955-60, when the food shortages appeared in Pakistan as a result of the relative neglect of agriculture, the whole-sale price index rose by 60 per cent in the first two years of the plan. On the contrary, during the Second Plan of 1960-65 and the Third Plan of 1965-70, the increased agricultural production was a principal factor causing a stability of prices in Pakistan over this period.

Apart from the food-supply, there is another important aspect of inter-relations between the two sectors, i.e. the supply of agricultural raw materials to the industrial sector. This aspect has been specially important in Pakistan where the availability of agricultural raw materials to the industry at the highly favourable terms to the latter proved to be one of the major factors shaping the character of industrialisation in the country.

The second type of inter-relation, i.e. the supply of and demand for industrial products is discussed below.

Non-Agricultural Products: Supply and Effective Demand.

There are two important facets of sectoral interdependence which may be discussed under the above sub-heading. First, the role of industrial sector as a supplier of inputs to the agricultural sector. Secondly, the expanding agricultural sector may relax the demand constraint on industrial growth which is not uncommon in many of the developing countries.

As economic development proceeds, the expansion of farm output comes to depend increasingly on the availability, improved design and reduced cost of farm machinery and other inputs purchased from industry. Of course, such an inter-relation is subject to one proviso that the agricultural strategy is such as to rely on increased use of farm inputs that are within the capacity of developing country's industrial sector at successive stages of

technical maturity. Pakistan makes an interesting example of a country where such an interdependence between the two sectors has been quite significant. As explained later, the industrial sector in Pakistan made important contributions towards the agricultural growth of the 1960's by providing two key inputs, i.e. tubewells and fertilizers, to the agricultural sector. These two inputs, in turn mainly explain the agricultural growth in Pakistan during the Second Plan period of 1960-65 and Third Plan period of 1965-70.

As regards the second inter-relationship under the above heading, it is a plain economics that investment decisions may in fact be influenced not only by the availability of capital but also by demand conditions. Since the agricultural sector happens to be a predominant sector in many of the developing countries, it has the potentialities to stimulate industrial expansion by providing sufficient demand for industrial goods. Of course, such a demand will be forthcoming only if the agricultural sector is growing at a reasonably high rate. Pakistan's case illustrates this point very well. During the 1950's when agricultural sector was virtually stagnant, the domestic demand as a source of industrial growth remained neglegible. Whereas during the Second Plan period of 1960-65, when agriculture was progressing well, the domestic demand as a source of industrial expansion was dominant. This contrast between the two periods in Pakistan well explains the significance of a healthy agricultural sector as a market for industrial goods in a developing country like Pakistan.

Interdependence at Factor Level.

It is useful to consider the competition for resources in relation to two parallel production functions, relating to agricultural and non-agricultural output, respectively:[1]

$$Ya = fa\ (Pa, La, Ta, Ka, K1)$$

$$Yn = fn\ (Pn, Nn, Tn, Kn, K1)$$

In these production functions, Pa refers to the agricultural and Pn to the non-agricultural labour force. La refers to the input of agricultural land, and Nn represents minerals and other resources exploited by the non-agricultural sector. Ta and Tn refer to factors such as the availability and application of technical knowledge and the levels of skills and intrepreneurial capacity. Ka and Kn represents the capital inputs in agriculture and non-agriculture, respectively, whereas K1 refers to investment in infrastructure - transportation, communications power supplies, and the like - much of which is important to both sectors.

The most important aspect of the sectoral interdependence with respect to labour inputs is the process of labour reallocation from the rural sector to the industry as economy undergoes a structural change. This aspect has been much emphasized by the authors of two sector models.[2] However, the empirical evidence from many countries including Pakistan shows that the labour absorption has lagged much behind the industrial production. There are many factors responsible for this, rather tardy process of labour transfer. To name a few, rising urban wages, insufficient capital widening investment as envisaged by the above referred models, etc. The consequence of this has been the use of more capital-intensive production methods. Moreover, such methods of production have also been subsidized by other price distortions - especially through too low a rate of interest and too low a price for foreign exchange. As explained later, such price-distortions have been very conspicuous by their presence in Pakistan until recently. The public policy in Pakistan ensured that industrial producers receive

scarce factors of production, notably foreign exchange and capital at less than their opportunity cost. Such distortions have resulted in making the country opt for a technology which is ill-suited to the local factor-availabilities.

In spite of the above referred lag between industrial production and employment in a number of developing countries, the fact remains that the agricultural sector is an important source of labour in countries like Pakistan.

Theoretically speaking, the volume of employment offered by the industrial sector, apart from other factors, also depends upon the availability of capital - for the establishment and expansion of industrial enterprises and for the supporting investment in infrastructure. The development experience of many countries has demonstrated the fact that the agricultural sector makes an important source of capital formation at early stages of development. Pakistan's case is one amongst many examples, where the 'saving strategy' has been based on the notion of agriculture being an important source of savings. As it is explained later, about 15 per cent of the total value added in the agricultural sector was being transferred to the industrial sector in Pakistan during most of the period under review. If we take into account the terms of trade effect in Pakistan, the above percentage of resource transfer from agriculture to industry rises very sharply. In brief, the empirical evidence from many countries including Pakistan has shown that the agriculture has great potentialities for making significant contributions towards the industrial growth in particular and overall development in general.

In spite of the above noted significance of the agricultural-sector, strangely enough, the growth strategies of many developing countries have an 'inward-looking' nature whereby there is an

over emphasis on industrialisation and the agricultural sector is relatively neglected. Pakistan is no exception. Throughout the 1950's the growth strategy in Pakistan centred around rapid industrialisation and the agricultural sector was virtually ignored. Retrospectively, one can see that the penalising effect of such a policy in Pakistan, appeared in the form of foreign exchange shortages which in turn not only slowed down the industrial growth during the First Five Year Plan of 1955-60, but also adversely affected the Plan priorities. However, since the beginning of the Second Five Year Plan of 1960-65, there has been some departure from the earlier policy. Though the agriculture sector grew in the 1960's, yet such a growth has been limited in scope and unevenly spread geographically. In spite of this shift in policy, the industrial sector did remain a high priority sector until recently, both with respect to the allocation of development funds and the economic policies.

The situation in which Pakistan finds itself today is a direct consequence of the above noted approach to the development problems of the country. Despite the fact that three development plans have been completed in Pakistan, the majority of the population remains as rural poor. The per capita gross domestic product rose in real terms over the period under study, and not only has all the additional income accrued to the more prosperous manufacturing sector, but the real income per head of the rural population has declined.

However, in view of both the outcome of Pakistan's inward-looking growth strategy and a highly interdependent nature of the agricultural and industrial growth in the country, it is suggested here that there is a dire need to further narrow down the present gap which exists between the growth of two sectors in Pakistan.

Such a policy would not only facilitate a smooth economic growth in the country but also help in improving the economic lot of the majority of the population.

Before discussing the sectoral inter-relationships in Pakistan and their implications for the development policies, I find it useful to start with the analysis of the growth of two sectors, and that is attempted in the chapters that immediately follow.

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CHAPTER II

Agricultural Growth - its Magnitude and Sources.

Introduction

As emphasized in the preceding chapter, the agricultural sector has a key role to play in the development process. Yet success stories of development are few and agricultural bottleneck remains a difficult problem in most of the underdeveloped countries and areas with traditional peasant agriculture. There are, of course, the often cited gains that have been recorded in Greece and Israel - and also the gains that are attributed to the impressive growth of agriculture in Mexico and Taiwan. Nevertheless, the agricultural bottleneck is one of the largest and most widespread development problems.

It is both the comparison and contrast with the general stagnation in agricultural sector of most of the underdeveloped countries which makes the growth of this sector in 1960's, in Pakistan, an interesting case study. For Pakistan in the first dozen years of her existence as

Table 1 : Agricultural production targets and achievements during First Plan (1955-60).

Crops	Planned increase over the base period %	Achievement at the end of plan period %
Rice	8	- 2
Wheat	12	4
Maize	15	4
Sugarcane	33	30
Fruits and veg.	19	n.a.
Oilseeds	15	8
Cotton	21	2
Jute	15	5
Tea	15	- 3
Tobacco	16	-20

Source : Second Five Year Plan, Planning - Commission, Government of Pakistan, Islamabad 1960.

an independent country, was typical of much of the underdeveloped world, (Table 1). Many of these initial difficulties can be traced to the political and social upheavals accompanying partition. The remainder, however, involved the familiar pattern of reliance on an age old agricultural technology and of constraints on key agricultural inputs such as water and fertilizer. The result was that agricultural production increased only by 7% as against the First Plan target of 15% over the plan period. It is regrettable, however, that the agricultural sector which comprised some 80% of total population and which contributed about 60% of GNP, grew at a rate less than the expansion of population throughout 1950's.

It was, however, during the Second Plan period of 1960-61 to 1964-65, that the agricultural picture changed radically. The agricultural output increased by 19% as against the target of 14% increase over the Second Plan period. The annual agricultural growth

Table 2 : Growth in agricultural value added, 1947-48 to 1964-65. (1959-60 prices).

	Trend Rates of growth per annum	
	1949-50 to 1958-59	1959-60 to 1964-65
Total Agriculture	1.1	3.2
Major crops	1.0	3.6
Minor crops	- 1.1	3.6
Livestock	2.2	1.9
Forestry	2.3	3.2
Fishery	6.2	4.9

Source: Government of Pakistan, Central Statistical Office, Statistical Bulletin, August 1965.

rate nearly tripled, rising from 1.2 to 3.2, agricultural exports

expanded rapidly and there was a surge in rural private investment. All these factors bear witness to the significant changes that have been taking place. A more disaggregated picture of agricultural growth is given in the following table.

Table 3 : Annual Growth Rates in Crop Production

(per centages)

Crop	1950-51 to 1959-60	1959-60 to 1967-68 (average) % per annum	Total	1959-60 to 1967-68 (actual) % per annum	Total
Wheat	-0.6	3.1	28	7.9	69
Rice	0.4	3.8	35	5.5	44
Other food - grains	-0.5	2.5	21	4.9	39
Total food - grains	0.1	3.5	32	6.1	51
Sugarcane	4.0	7.9	84	7.9	84
Cotton	2.3	6.9	70	6.9	70
Jute	0.3	1.2	10	1.8	13
Tea	4.9	1.7	14	1.7	14

Source: Agriculture and related industries in Pakistan, Development Centre of the O.E.C.D., Paris, 1970.

Thus, it appears from the table that there has been a rapid growth in crop production throughout 1960's as compared to the 1950's. Moreover, the results of the Third Plan of 1965-70, give considerable evidence that the break-through that was achieved in the development of agriculture during the Second Plan, was further consolidated during the Third Plan period. The annual rate of growth of agricultural sector was 4.5% during 1965-70 as compared to the 3.2% of the Second Plan. An encouraging upward trend was discernible in all sub-sectors of the agricultural development programme during the Third Plan period. The output of the food grains attained an increase of 29% over the 1964-65

level, giving a compound rate of increase of 5.1% per annum against the population growth of about 3 per cent.

Promising as these developments have been, but their spread was far from complete. The growth of agricultural sector have been slower in the former East Pakistan than that of the west during the period under review.

In the sections that follow, an attempt is made to analyse the magnitude and sources of agricultural growth in Pakistan. To account for differences between the former two provinces as regards the growth of agricultural sector the analysis has been done on regional basis. Since the agricultural policy has played a major role in the transformation of Pakistan's traditional agriculture, a full section is devoted to its discussion. Finally, a few suggestions have been made with regard to the future agricultural strategy of Pakistan.

West Pakistan - Magnitude and Sources of Agricultural Growth:

The general growth of West Pakistan agriculture has been an integral part of the national agricultural performance described above. The national accounts by Province do not exist for years prior to 1959-60. But it is, nevertheless, possible to obtain a general picture by examining the provincial trends in crop output. During the years 1947-48 to 1958-59 there were considerable year to year fluctuations - but few of the crops showed significant changes. Stagnant is the word which aptly describes the position of agricultural sector in the 1950's. But a sudden change in fact took place in the 1959-60 to 1964-65 which was further consolidated in the period 1965-70. One indication of the surge is given by the trends in national accounts in table 4. From the series below it is clear that 4.9% annual expansion of major crops played the decisive role. A more disaggregated picture of the widespread improvements within the crop portion of GNP

Table 4 : Growth of Agricultural Valueadded 1959-60 to 1964-65 West Pakistan (1959-60 prices)

Item	percentage per year
Total Agriculture	3.8%
Major crops	4.9%
Minor crops	4.8%
Livestock	1.9%
Forestry	3.9%
Fishery	9.7%

Source: Evaluation of the Second - Five Year Plan, Planning Commission Government of Pakistan, 1965.

is given in Table 5. The figures in the table below show that virtually

Table 5 : Crop production in West Pakistan, 1959-60 to 1964-65. Average Levels and Rates of Growth.

Crop	Average Production (Thousand Tons)	Annual Rate of Growth	Planned output over the Plan period. (1960-65)
Rice	1127	7.8%	55%
Wheat	4021	3.7%	14%
Bajra	378	6.9%	n.a.
Millet	247	3.7%	n.a.
Maize	485	3.4%	n.a.
Barley	120	6.2%	n.a.
Sugarcane	14757	10.6%	32%
Cotton Seed	682	7.6%	38%
Potatoes	123	9.0%	n.a.
Onions	129	12.0%	n.a.
Cotton Lint	1934 (Thousand Tons)	7.1%	n.a.
Tobacco	152 (Million Pounds)	6.7%	14%

Source: Falcon, W.P. and Gotch, C.H. Agriculture in Pakistan. Cambridge: Harvard University Economic Development Series, 1966.

all commodities recorded a sizable and consistent growth during the six year period. While these averages and trends are in themselves impressive, they serve mainly to pose the major question which must be answered in later sections: was the 27 per cent trend growth in crop output a weather phenomenon, or was there a more fundamental structural transformation which accounted for most of the growth? In attempting to answer this question it is useful to examine first the increased use of improved inputs which might explain the growth, i.e. to provide a rather crude and descriptive agricultural production function for West Pakistan.

Sources of Growth:

Water: Water is and will continue to remain a very important constraint on agricultural production in West Pakistan. Measures which increase the availability of water are therefore of great importance. About 80% of the agricultural production of West Pakistan comes from the Indus Basin where agriculture depends upon world's largest irrigation net work. The rest of the region's output is produced by rainfed agriculture mainly in the North-West Frontier Province. Because of an inadequate water supply less than half of cultivable land (27 out of 73 million acres) in the Indus Basin is now being cropped.

Prior to 1957-58, there was little that individual farmers could do to supplement their meagre water supplies. Furthermore there was relatively little increase in public water supplies at the field level between 1947-48 to 1957-58. There is one irrigation programme in the earlier period, however, which deserves a special comment. For approximately 30 years the Department of Agriculture had been sinking a limited number of small mechanical tubewells for private farmers. While water actually delivered by these tubewells was only marginally important - only 600 were drilled between 1950 and 1955. These installations helped to spread a new water technology which was to play

a critical role in the second plan period.

Private Tubewell Development:

The very brief description of irrigation in West Pakistan set forth above gives only the broadest picture of very complex system. Nevertheless, two points emerge: (a) that irrigation was an input with very high marginal value product and (b) that tubewell technology which had been known for years on the sub-continent had begun in the First Plan period, to be disseminated in West Pakistan to farmers and to private firms in the business of sinking wells. Both of these factors were probably necessary conditions for what was one of Pakistan's most amazing developments during the second plan period - the surge in tubewell installation. In 1959-60, about 1350 tubewells were installed. By 1963-64 the number of annual installations accelerated to 6600.[1] As of July, 1965, it was estimated that total of over 31500 private tubewells were installed.[2]

The private tubewells that were installed were of various shapes and sizes and while from technical engineering point of view many of them were not very efficient, they all had one point in common - they were highly profitable. Installation costs ranged between Rs.5000 and 12000. Most of these wells were installed by cultivators with 2.5 acres or more. By any standard the benefits produced by these wells were very large both to the individual and to the economy. A typical well averaged about one cusec in delivery, i.e. it could produce about 2 acre feet of water in twenty four hours a day. Annual utilisation averaged about 2400 hours or about 200 acre feet per well.[3] In total, therefore, the estimated 25000 tubewells represented about an initial investment on the order of Rs. 250 million during 1960-65.[4] This compares very favourably with the First Plan investment which amounted to Rs. 60 million over the Plan period.

Measured in value terms, the returns were very large. Assuming Rs. 11.00 per year as average depreciation charges, and approximately Rs. 3000 per year as operating charges, the cost per acre foot of water averaged about Rs. 20. In the case of cotton where approximately 2.5 acre feet of water per acre were typically used, the total water cost averaged about Rs. 50 per acre whereas the gross return was on the order of Rs. 240 per acre - clearly a profitable venture. (See footnote please). The exact contribution of the wells to the growth of aggregate agricultural C.N.P. is more difficult to measure. At the start of sixties, the revised Master Plan indicates that the total field availability of irrigation water (wells plus surface) in the Indus Basin was approximately 59 million acre feet.[5] Therefore private tubewells alone during 1960-65 accounted for about 9% increase in irrigation water supplies. This increase in water supplies had an equally direct impact on irrigated crop production. It thus appears that private tubewells contributed about one fourth of the total 2,7% increase in the value of crop output. (See footnote please).

In summary, private tubewells played a critical role in the increased agricultural performance of the region. Moreover, these wells gave tangible evidence of the rural resources that were available for high return, non-traditional investments in agriculture.

Public Ground Water Development:

While the private tubewell development is especially interesting because of its large and unplanned nature, it was definitely not the only element in the water improvement programme. Indeed, the Combined Public Tubewell and surface water development were almost of equal

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Assuming 8 maunds of seed cotton per acre X Rs. 30 per maund = Rs. 240 (Then Rs. 1.00 was equal to $2.5 and 1.00 maund equals 82.2 pounds).

The calculation assumes that 80% of gross value of crop production comes from irrigated lands. Thus .80 x .90 = .72 or ¾th of 27 percent.

importance.

The first Salinity Control and Reclamation Project (SCARPI), covering some 1.2 million acres was completed in 1961. This project consisted of about 2,000 deep turbine tubewells, and these wells supplied more than 2.5 m.a.f. of supplemental water. In addition to SCARPI, about 0.5 million acre feet of irrigation water was delivered by Public Wells in SCARPII.

The contribution of the public tubewells to agricultural growth cannot be determined precisely; however data indicate that increases in output were less than proportional to improvements in water supplies. One could advance several reasons for this non-linearity.

First, the projects were under designed and capacity did not exist in the critical sowing period to plan maximum acreages. This factor coupled with the pricing of tubewell water on acreage basis, gave rise to extremely high seasonal applications of water per acre. Studies by World Bank Consultants show that deltas of as much as 100 inches per acre were being applied to rice. With these high deltas, strongly diminishing returns were present. Secondly, the SCARPI area was highly waterlogged and Saline area and that portion of water used primarily for reclamation purposes had a very low direct effect on production. Therefore even though the public tubewells increased the total irrigation water by 5% they increased output by 3%.

Public Surface Water Development:

Between 1960-65, some progress was also made on number of surface water projects. Included in this category are the Guddu, Ghulam Mohammad and Taunsa Barrage developments and a number of smaller schemes outside the Indus Basin. Preliminary estimates indicate that about 0.8 million acres of new area were affected.[6] In addition some 2 million cropped acres received increased irrigation deltas. It is

estimated that about 3 million acre feet of water was utilised from these sources. While 3 million acre feet represents approximately 6% of total irrigation supply of Indus Basin, it is clear that this water also had less than proportionate effects on output. Unlike tubewell installations in settled areas, the development and settlement of new agricultural lands from barrages involve relatively long time periods. In addition increased canal supplies have the same time distribution as the existing canal water and thus lack the flexibility of tubewells in meeting the critical water demand periods. Hence, the increase in agricultural production from surface waterdevelopment was probably on the order of 3 to 4%.

If this 3-4% is added to the 10% increase in output estimated to have resulted from Ground Water Development, additional irrigation water accounts for approximately half of increase in crop production during 1960-65. In addition, the large and more flexible water supplies helped to induce the use of other inputs, especially fertilizer, and permitted a greater utilisation of underemployed land, labour and bullocks.[7]

Fertilizer:

Fertilizer ranks second only to water as an explanatory variable for increased agricultural growth of West Pakistan. Up to 1959-60, the total consumption of fertilizer was negligible. From a base of 31000 tons in 1960-61, consumption more than doubled in 1964-65. In 1964-65 it was estimated to be over 75000 nutrient tons. In assessing the changes in agriculture in West Pakistan, the sharp increase in fertilizer consumption in the sixties is one of the best indicators. This record increase is unique example in developing countries and shows how a satisfactory combination of various elements can succeed very rapidly.

Table 6 : Fertilizer Distribution in West Pakistan.

(1960-61 to 1967-68).

Year	Quantity
1960-61	31
1964-65	77
1965-66	71
1966-67	116
1967-68	193

Source : Economic Survey of Pakistan, Planning Commission, 1967-68.

A comparison of the annual rates in 1960 and 1965 shows an increase of about 45000 tons. This amount although smaller than what might have been hoped for, made an important contribution to growth. Nevertheless the total quantity of fertilizers used fell short of the Plan target by 35%, mainly because of (a) inadequate domestic production, (b) inadequate allocation of foreign exchange especially from the country's own cash resources for the import of fertilizers, and (c) unsatisfactory arrangements for the distribution of fertilizers.[8] However, a rough idea of the contribution made by the quantity used during 1960-65 can be had from the following table.

Table 7 : Increase in the Value of West Pakistan Agricultural Output from Fertilizer. (1960-65).

Crops	Distribution among crops %	Increment in nutrient tons	Tons of output/Tons of nutrient	Value of output/Tons of nutrient	Total increase in value. Million Rupees
Wheat	35	15750	9	3700	58.3
Rice	8	3600	8	4300	15.5
Minor Grains	2	900	10	3360	3.0
Oil Seeds	1	450	6	4030	1.8
Sugar Cane	22	9900	150	6720	66.5
Fruits and veg.	4	1800	20	6500	11.7
Cotton	28	12600	4	3580	45.1
Total	100	45000			201.9

Source : Evaluation of the Second Plan, Planning Commission Government of Pakistan, 1966.

The above Table indicates that 45000 tons added about Rs. 200 million of output. When compared with estimated gross value of major crops in 1960-65 (Rs. 4290 million) it can be seen that fertilizer contributed about 5% to the gross increase in crop production during the Second Plan period of 1960-65.

Other Sources:

The rough calculations of previous sections indicate that about 14% and 5% of 27% Second Plan growth in major crops can be attributed to water and fertilizer development respectively. Five other categories of inputs remain - Plant Protection, improved seeds, improved cultural practices and interaction effects, it appears their combined contributions are on the order of 7% for the period under

study.

Plant Protection:

By the last year of Second Plan about 6 million acres of crops were covered annually by preventive and/or curative measures. It is estimated that on this acreage the average increase in yield was approximately 10 to 20% with the exact contribution depending upon the

Table 8 : Area Covered by Plant Protection in West Pakistan, 1959-60 to 1968-69.

	1959-60	1964-65	1965-66	1966-67	1967-68	1968-69
Curative	1.35	3.23	2.56	2.30	5.00	7.50
Preventive	2.32	2.10	1.67	0.43	6.00	n.a.

Source : Economic Survey of Pakistan, Planning Commission, 1968-69.

particular crop, the intensity of infestation, and the number and timeliness of spraying. (See footnote please). Thus, a small part of the 27% growth in the second plan crop production is due to 4 - 5 million acre increase in the area treated with plant protection. When a 15% yield factor is applied to the approximately 15% of additional crop land covered, the conclusion is that over 2% of the growth in gross production is directly attributable to the plant protection measures.

Seeds:

Much has been written about the necessity and potential for improved seed varities which are fertilizer responsive. While the

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At a "Third Plan" meeting held in Karachi, Pakistan, a group of agricultural experts suggested the following effects on yields from Plant Protection: Rice, 15%; Wheat 10%; Minor Grains, 15%; Sugar Cane 20%; Oil Seeds, 10%; Cotton, 20%. (A Hand-book of agricultural statistics, 1965).

future looks quite promising especially in case of wheat, the figures show that improved seeds have been only marginally important until mid-1960's. This was due to several factors which include a lack of foundation stock for many commodities, bureaucratic - difficulties in getting good seeds multiplied and several transfer of responsibility for distribution among government agencies. As a result, most of the seed improvements came from farmer to farmer transfers of relatively better local varieties.

However, statistics indicate that 3 million additional acres were sown with locally improved seeds during 1960-65. If 10% yield factor is applied to the about 6% of total area affected slightly less than 1% of the five year growth is explained.[9]

Improved Practices and Interaction:

Two important factors in rural development are improved farming practices and more than additive effects that are obtained when several inputs are used simultaneously. The line sowing of crops is an often cited example of an improved practice, and the combined water and fertilizer applications already noted are the classic example of interaction effects. How much increase in gross crop output should be attributed to each of these elements is unclear. Given the relatively low level use of improved inputs during the period under study, however, and the only recently increased drive in extension, the magnitude is probably not large.

In addition to the factors influencing agriculture that have been described above, a great many other forces have undoubtedly had an impact. The difficulty is in assessing them in even an approximately quantitative way. Soil conservation activities, increased labour intensity from population growth and improved implements probably acted to increase production, while increases in waterlogging, salinity

and erosion of soil had adverse effects. On the balance, however, these forces were not great and probably tended to cancel one another out.

To summarise, it is possible to explain in broad terms the 27 per cent trend growth in major crop output during the Second Plan period. The public and private ground water development increased irrigation water availability by over 8 million acre feet and also improved the time distribution of water to farmers. These qualitative and quantitative improvements helped to increase the utilisation of underemployed land, labour and bullocks and were directly responsible for more than one third of increase in output. Moreover, the ground water development programme and the control which it gave farmers over critical water supplies, helped to induce the use of other inputs such as fertilizer. In addition to 10% growth which came from groundwater approximately 4% of growth came from surface water development, 5% from fertilizer and about 7% from improved seed, plant protection and improved practices. Obviously these percentages presented rather precisely here, should be viewed only as broad orders of magnitude.

Although there can be differences of opinion about some of the points raised above, it is clear that sustained West Pakistan's agricultural growth was more than a weather phenomenon.

Former East Pakistan:

The stagnation of agriculture in the 1950's was common to both East and West Pakistan. The progress during the sixties has, however, been largely confined to West which with the 1968 wheat harvest appears to have made a remarkable breakthrough in agriculture. The picture in former East Pakistan is less encouraging. Some of the observers, have however expressed contrary views and some others

have suggested that it also was at the threshold of an agricultural revolution at the end of Second Plan period.

On the basis of experience during 1959-60 to 1964-65, several studies show that agricultural growth outstripped population growth in both the West and former East Pakistan.[10] The conclusion about West Pakistan is strengthened, but that about East is undermined if base year is changed from 1959-60 to 1960-61. It is then found that in West Pakistan during the 1960's value added in agriculture and in major crops grew at 4.6% and 5.5% respectively per annum, while the corresponding rates in East were 2.1% and 2.2%. (Table 9).

Table 9 : Agricultural Growth in Pakistan 1960-61 to 1967-68.

(Value added 1959-60 prices)

(% per annum)

Items	West Pakistan	Former E. Pakistan	Pakistan
Total agriculture	4.6	2.1	3.2
Major crops	5.5	2.2	
Rice	5.3	1.7	
Jute		2.6	
Wheat	4.5		
Cotton	6.8		

Source : Economic Survey of East Pakistan, Government of East Pakistan 1967-68.

The above table shows beyond doubt that the picture in the East was discouraging. Given the population growth rate of approximately 3% per annum in the region, a 2% agricultural growth rate can hardly be considered as indicative of any radical change.

Major Factors Explaining Agricultural Disparity:

The monsoon-rice-jute agriculture of East is basically different

from irrigated wheat-cotton-rice culture of West Pakistan particularly in regard to water availability. However an explanation of the sharp contrast in recent development may be sought in the relative achievement of increased use of improved inputs and techniques suited to different natural conditions, the relative efficacy of public investment and policies and the response of farmers to opportunities for innovation in the two former provinces of Pakistan. The physical requirements for agricultural development may generally be considered to be improved farming techniques with proper and adequate use of such inputs as water, fertilizers, pesticides, improved seeds, etc. The adoption of these innovations by the majority of farmers depends upon their knowledge, willingness and ability to do so. Therefore in addition to effective public investment for development of rural infra structure, there is a need for proper institutions and agricultural policies to encourage farmers to adopt innovations. Moreover, extension services may disseminate knowledge of improved techniques to farmers to make them aware of the opportunities open to them. It is reasonable to assume that farmer's behaviour is economically rational and their willingness to adopt new techniques depends upon expected rewards.

The recent agricultural breakthrough in West Pakistan is largely explained by these factors - the previous section bears ample testimony to this. The situation in the case of East Pakistan's agriculture was radically different. There the increase in rice output has been associated with increase in Aus (April to July) and Boro (Dec. to Mar.) rice acreage and some increase in yield of Aman (Aug. to Dec.) and Boro rice. The acreage expansion has partly been due to increased winter irrigation and coastal embankments and partly due to cultivation of some marginal land as a result of heavy

population pressure. The small yield increases are difficult to explain and may be considered the combined effects of fertilizer, pesticides, improved seeds and increased use of labour. But the progress in irrigation, fertilizer use, plant protection and use of improved seeds has been poor. Farmers' response to the use of improved inputs and techniques has not been encouraging. These are the factors mainly explaining the cleavage in the performance of agriculture in the West Pakistan and former East, the details of which are discussed below.

Water - Development and Use:

In the East most of the agricultural land is submerged under water by flooding and monsoon rainfall in the summer, while there is hardly any traditional system of irrigation in the winter. In some years excessive flooding results from inadequate drainage or severe flows from rivers. Effective use of water in the East therefore involved flood control and drainage in summer and irrigation in the winter. Progress was slow on both of these fronts.

There were two broad types of irrigation and water control measures during the sixties: (1) flood irrigation, small scale flood protection, tubewell irrigation, coastal embankments and drainage by WAPDA and (2) lowlift pump irrigation by A.D.C. (See footnote please). According to one estimate (Prof. Thijsse, Preliminary Comments on hydrology of East Pakistan) 1.3 million acres could be irrigated by pumps. As against this potential the number of pumps increased from 1367 in 1960-61 to about 6600 in 1967-68 and corresponding irrigated area increased from 3200 acres to 400 thousand acres. In addition the area irrigated by WAPDA (Water and Power Development Authority)

WAPDA, Water and Power Development Authority.
A.D.C., Agricultural Development Corporation.

surface water and tubewell projects had reached 172 thousand acres in 1967-68 out of total command area of these projects of 322 thousand acres.

Not only has the expansion of irrigation facilities been small, the programme also failed to generate a response from the farmers. Most pumps were owned and operated by the A.D.C. (Agricultural Development Corporation) which hired them out to farmers. In the case of tubewells installed by WAPDA, it had been reported that farmers were not eager to obtain irrigation water. This is in sharp contrast to the great demand for irrigation water and the surge in tubewell installation in West Pakistan.

It seems to me that the popularity of tubewell and lowlift programme depends on the quality and size of extension service for educating farmers in proper ways of using irrigation water and thus generating the demand on the part of farmers and secondly on the ability of government to install and maintain them in increasing numbers. Availability of requisite finance is also necessary if farmers are to own them in large numbers. All these requisites were missing from the agricultural scene of then the East Pakistan.

Another major factor hindering progress in irrigation facilities was the much greater poverty of farmers in the East as compared to West Pakistan. Private tubewell development in West Pakistan was pioneered by large farmers having 25 acres and above, who constituted 8% of total number of farmers and operated 42% of total farm area. The following table shows that in East Pakistan only 3% of farms were of 12.5 acres and covered 19% of the area; farms of 25 acres were less than 1% of total farm area. This degree of disparity in farm sizes was another cause of slow progress on irrigation front in East Pakistan. In short, these were the major

Table 10 : Size Distribution of farms in East and West Pakistan.

Size of farms (acres)	East Pakistan		West Pakistan	
	percent of farms	percent of area	percent of farms	percent of area
less than 5	78	43	49	10
5 to under 12.5	19	38	28	2.2
12.5 to under 2.5	2.5	14	15	2.6
2.5 and above	0.5	5	8	42

Source: Pakistan Census of Agriculture 1960.

factors responsible for insufficient irrigation in the East and thus the major reason of agricultural setback in the East. Another reason was insufficient use of fertilizer which is discussed below.

Fertilizer Use:

In former East Pakistan, the use of this key input increased rather slowly as compared to the West. As the table indicates the use of this key input was slightly higher than half of the amount

Table 11 : Fertilizer Distribution in Pakistan (1960-61 to 1967-68)

(Thousand Tons)

Period	West	East
1960-61	31	24
1964-65	77	45
1965-66	71	54
1966-67	116	77
1967-68	193	115

Source: Economic Survey of East Pakistan, 1967-68.

which was being used in the West by 1964-65. By 1967-68 the average

dose of fertilizer being used in the East was less than six pounds per cropped acre whereas in the West it was over ten pounds per cropped acre. This disparity in fertilizer use is self explanatory.

Moreover, there has been in the past an over-emphasis on making farmers use nitrogen in the form of urea. Exclusive use of urea can eventually lead to reduction in yield. These evil effects actually took place in the East wing and led the farmers to resist the use of this important input.

Another factor causing the use of fertilizer rather half-heartedly on the part of Eastern farmers was that they were applying fertilizer in such small quantities that it had very little effect on increasing yields. As a result farmers hardly felt encouraged to repeat the experience.

There is another important factor too, which discouraged the use of fertilizer and that is the greater risk of crop failure in the East. That was partly because of vagaries of nature and partly because plant protection did not make much headway during the sixties.

Thus the relatively less satisfactory progress of fertilizer use in the East may largely be explained by poor extension work, inadequate credit, inadequate winter irrigation and failure to reduce risks of crop failure.

This is the second factor explaining East-West disparity in agricultural performance and now I move to the third factor - seed and plant protection as an explanatory variable.

Improved Seeds and Plant Protection:

As the following table shows, the picture with respect to the use of improved seeds is not very encouraging either, virtually no improvement took place in the use of improved seeds in the former East Pakistan. The use of Irri paddy seeds also remained at

Table 12 : Distribution of Improved Seeds by Major crops in Pakistan (1961-62 to 1965-66)

(Thousand Tons)

Period	East Pakistan	West Pakistan
1961-62	3	-
1964-65	9	31
1965-66	8	56

Source: Economic Survey of East Pakistan, Government of East Pakistan, 1967-68.

experimental stage throughout this period. As regards plant protection programme, little progress was made in the region; only about 2·4 24 million acres were covered as against the plan target of 6.5 million acres and out of the total cultivable area of 21.5 million acres. This is no significant achievement.

Some other Reasons:

Since the proportion of large farmers was very small and the knowledge of improved agricultural practices very poor, development efforts in former East Pakistan required a much greater participation of government through public investment and extension work etc. Public investment in agriculture and irrigation has been much smaller in East Pakistan. At current prices it is estimated to have been Rs. 150 million in East Pakistan and Rs. 285 million in West Pakistan in 1959-60, and Rs. 210 million and Rs. 386 million respectively in 1964-65. Moreover, during the second plan, the public sector expenditure on agriculture was envisaged at Rs. 2515 million but the actual expenditure came to Rs. 1856 million. This shortfall in the plan target may be traced to the underspending on agriculture in

the East. Apart from not very impressive public sector expenditure on agriculture in the East, the policy of agricultural price support and stabilisation has also not been much successful in that region. Export duty on Jute was reduced as late as 1964. The specific effects of this reduction are not clear, partly because of the nature of export demand and lack of knowledge about prices received by farmers.

To summarize, East's sluggish growth as compared to the West may be explained by the poor progress of irrigation facilities in winter, inadequacy of the amount of fertiliser used, poor plant protection measures, lack of flood control and ineffective use of water in summer, and finally by the less impressive public investment activity in agriculture.

Though, it is pretty obvious from the discussion above that the then East Pakistan lagged behind in agricultural performance during the Second Plan period of 1960-65, yet it is difficult to deny that stagnation of East's agriculture was definitely broken and start was made on many fronts. Some of the schemes which were started during 1960's in East attracted world wide attention and interest. The Rural Work's Programme which was financed through the sale of P.L.480 commodities, and Comilla Experiment are the two most obvious examples. However, the fact remains that agriculture fared much better in West Pakistan than in the East. (See footnote please).

The Impact of Agricultural Policy on Agricultural Growth in Pakistan:

The preceding two sections have dealt at length with the physical aspects of the recent increase in agricultural production. But the physical aspect is only a part of the story, and probably

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The Commila Experiment: It started in 1960, aimed at fundamental reform in village life with agricultural change a consequence (b) Rural works programme: It was a locally administered rural public works programme financed largely out of P.L.480 agricultural commodities. It represented government's effort to tackle the problem of unemployment in the region.

the lesser part in terms of the lessons it provides to other countries of greater importance, and perhaps of more interest were the rural institutions and agricultural policies that have evolved since the late 1950's. For it was the latter which created the economic climate that induced the use of physical inputs.

Since the late 1950's there were a number of Government policy actions which aimed directly or indirectly at improving the price and income incentives to farmers. While it is not possible to go into the history and complete details of all these actions, three examples will indicate the general direction of agricultural policy during this period. These examples will also show the extent to which farmers responded to improved economic climate.

Export Duties:

The reduction of export duties on cotton and jute was a relatively simple measure for improving prices to farmers on two of the most important export crops. The duty system of taxation, which was really a revenue measure, had long had the adverse effect of altering domestic price ratios against export commodities in which Pakistan appeared to have a comparative advantage.

These duties were sizable and their effects on production were substantial. In short these duties produced Rupee Revenue but at a considerable cost in terms of lost production and lost foreign exchange. In the case of cotton, for example, the export duty on American varieties was Rs. 115 per bale in 1958. According to one estimate, the negative effect on cotton prices which farmers received was on the order of 25%.[11]

In the post-1958 era there were several duty reductions and by 1964-65 the cotton duty had been lowered to a nominal sum of Rs. 25 per bale. The farmer incentive argument played an important role in these reductions and certainly harvest cotton prices were

much stronger than they would have been otherwise. These reductions were clear cases, therefore, where Government policy had a direct impact on raising the absolute and relative prices of cotton and where policy acted as a contribution to the rather spectacular growth in cotton production.

In the case of jute, the duty reduction policy was initiated only late in the second plan period. In December 1964 export duty on jute was reduced from Rs. 20 per bale to Rs. 10 per bale. Because of the nature of export demand for raw jute, and because of the lack of information on jute prices received by farmers, much less can be said on the specific effects of the duty reduction. There is, however, evidence that internal wholesale jute prices were much stronger in 1964-65 than they had been in the two previous years. The second example of agricultural policy is Decontrol and the role of P.L.480.

Decontrol and P.L.480:

A second policy example centres around the general decontrol of agriculture that took place since 1958. The Decontrol is particularly interesting because of the way P.L.480 agricultural commodities were used as a positive instrument of agricultural policy.

The series of control that existed in Pakistan in 1958 can only be described as extensive and cumbersome. Many of the regulations, such as restrictive zoning of surplus areas and non-voluntary procurement of food grains below market prices by the government, were introduced during the Second World War. In addition, there was strict acreage zoning of cotton varieties in West Pakistan to prevent the mixing of staple lengths, and also acreage licensing of jute in the then East Pakistan. Even more controls were added in 1958.

However, the control system in the economy did not last long.

Beginning in 1959, distribution and export controls were relaxed and in January 1960 rice rationing was virtually abolished.

An even larger decontrol action took place in mid 1960. The direct control on wheat movements, wheat prices and wheat rationing were abolished in West Pakistan. A bufferstock system was then initiated. Under this system, the government guaranteed farmers a minimum price of Rs. 13.50 per maund of wheat. Sales to the government were voluntary and the government entered usual market channels only when prices dipped below the statutory minimum. A ceiling was also placed on wheat price movement by establishing a release price of Rs. 16 per maund. When prices rose above that level, the government released wheat into the market. The bulk of government stocks came from wheat supplies under P.L. 480. Because P.L. 480 was so critical to the entire decontrol policy, a few additional points on its role are called for.

On balance, there can be no doubt about the importance of P.L. 480 to the development of Pakistan's total economy. In the first place, approximately 15% of West Pakistan's wheat was supplied under title I auspices. This along with the domestic production, permitted a wheat price stabilisation, which in turn provided industry with the key wage good at stable prices. This stability along with import liberalisation, were two important factors in permitting an industrial growth rate of 16% per annum.[12]

In several other respects P.L. 480 commodities were important. Certainly P.L. 480 transfers helped relieve the critical foreign exchange bottleneck, for without them either (a) foreign exchange would have been required for food imports, thereby decreasing the availability of producer imports in both Provinces, or (b) the threat of inflation would have required a drastic reduction in the size of

development plan. Either of these alternatives could have seriously impaired the development of the general economy.

The effect of P.L. 480 on agricultural sector perse was less clear, but probably also positive in the long run. First of all, the P.L. 480 programme was a critical element in the decontrol movement. Without the expanded P.L. 480 programme it seems doubtful whether the relaxation of controls would have occurred, or at least whether decontrol would have survived. It is possible only to speculate about such a consequence, but the disincentive and uncertainty aspects of a control system could have been disastrous. The disincentive aspects of the existing control system also highlight another aspect of P.L. 480 programme. Much has been written about the negative price effects and hence the disincentives to agricultural production of P.L. 480 shipments. But in West Pakistan, the shift from very low controlled price in surplus areas, to a bufferstock system, did not lower and perhaps even increased prices and incentives for wheat production in the more productive regions.

The P.L. 480 programme also aided agricultural development in a more subtle way. It is rightly argued that farmers could increase incomes by shifting from lower valued subsistence crops to cash crops. However, because of uncertainty in prices and yields, farmers in Pakistan had long known that it generally made good sense always to grow sufficient food for home consumption rather than specialise and depend upon the market for food grains. Since P.L. 480 wheat added an important element of stability to the food grain market, farmers soon learned that they too could purchase food grains at reasonable prices in the market. The P.L. 480 programme, thus added an impetus for farmers to move in to the higher valued cash crops.

In former East Pakistan, the net effect of P.L. 480 on the

agricultural sector was productive, though mechanism was quite different - P.L. 480 commodities were used in support of rural works programme.

This programme had several remarkable features in its conception and implementation. In the first instance, it represented one of the initial attempts of Government policy to reduce the severe unemployment and underemployment that existed in the then Eastern Province of Pakistan. This problem was of major consequence since over half of the 7.5 million man years of unemployment estimated for 1964-65 were in East Pakistan.[13] Secondly, the programme relied upon local initiative and organisation. Finally the financial support of the programme came from the sale of a number of P.L. 480 commodities. Though sufficient data is not available on the results of this programme, the fact remains that works programme was far from a failure.

In short, P.L. 480 played a positive role in agricultural performance of Pakistan during the period under study. It was a critical ingredient in the decontrol movement and Rural works programme. From here I go to the discussion on input subsidies which make third example of agricultural policy.

Input Subsidies:

A third illustration of the incentive policy was pricing of agricultural inputs. Major subsidies were provided on fertilizer, plant protection and irrigation water. In the case of plant protection activities, the government provided the service at no charge to the farmers. As previously mentioned, the plant protection remained limited in scope in both the provinces throughout this period. However, this programme did spread the pesticide technology throughout Pakistan.

The subsidy on fertilizer, another key output, ranged from 25 to

55% during 1960-65.[14] With these subsidies, the average return on fertilizer as seen by the farmer was generally greater than 4 to 1 - an appealing alternative.[15]

During the early years of the Second Plan, the subsidy features of fertilizer programme, though important, were not sufficient to induce rapid utilisation because of severe difficulties in distribution. In West Pakistan, fertilizer movement was the exclusive responsibility of rural cooperatives, except in a few project areas under Agricultural Development Corporation's jurisdiction. In the East, on the other hand, distribution was handled by the Department of Agriculture and later by A.D.C. (Agricultural Development Corporation).

For a variety of reasons, however, fertilizer distribution was inefficient. In West Pakistan, many cooperatives purchased fertilizer from Government on credit; and often these co'ops also sold to farmers on credit basis. Collections at the farm level were not always easy. Nevertheless, in 1964 fertilizer distribution was changed in the West. In an act which took considerable courage and which indicates both the Government pragmatism and the reliance on incentives, distribution was turned to the private sector. The results of this shift to private trade were rather remarkable within eight months the stock position went from a reported surplus to a deficit position. In the East similar events occurred. In the early 1960's distribution at farm level was opened to private trade and this caused a spurt in region's fertilizer consumption during 1960's.

Much more could be written about the incentive policy of Government. There were, for example, subsidies provided for digging of tubewells, and for irrigation water, etc.

There were both advantages and disadvantages of these policies.

Certainly using the extension staff directly for plant protection activities and providing a subsidy on the fertilizer at a time when supplies were short, were questionable short-run uses of resources. All things considered, however, the agricultural policy aspects of the period under study should be considered a bright spot. For in the last analysis, nothing succeeds like success: the policies were designed to stimulate output by providing incentives for the use of improved inputs, and that they did.

So far I have tried to assess the role of physical and policy factors in determining the growth of agricultural sector in Pakistan during the 1960's. As hinted in the preceding chapter, that agriculture played a definite role in facilitating industrial growth in the country and is likely to play more effective role in future (this point to be elaborated later), an attempt is made in the following pages to suggest a few measures thought to be relevant to the future growth of this key sector. The measures are dealt with under four sub-headings: (1) Role of Government, (2) Role of private sector, (3) Role of foreign aid donors and (4) finally some considerations underlying agricultural strategy in Pakistan.

Role of Government:

At present, agricultural planning is carried out centrally with the co-operation of Provinces. The planning procedure does include co-operation down to the district level, but there seems to be a need to go even further and include farmers in the elaboration and implementation of agricultural development plans. The present situation is that plan targets are given to the district authorities for checking. They, however, tend to neglect the actual production potential since they are not involved at village level. In order to make the plan targets more realistic, it would be helpful, if ways

could be found to involve the farmers more closely in the planning procedure.

Another area which could be improved with advantage is the procurement of agricultural inputs from abroad. At present the central government allocates the foreign exchange that becomes available to the provincial procurement authorities, provided their budgets have a rupee provision. The total procedure is very lengthy and often results in crash tendering, ordering and late arrivals. Delays crop up at all stages in the procedure. The delays in aid allocation procedure are discussed below. But Pakistan Government should streamline its own internal machinery in order to strengthen the case for the speedy disbursement of commitments. It is not only the centre but provincial machinery moves very slowly too. Tendering and ordering is often made at the last moment. Such delays may have an unfavourable effect on procurement prices. In this context, two lines of action are suggested. First, both at the central and provincial level, all Government employees concerned in the procurement process should be made fully aware of the unfavourable effects such delays may have on the attainment of production targets. Second, Government may consider setting up an Input supply and Procurement Body to handle procurement of the agricultural inputs from abroad.

The Price and Subsidy Policy:

The Government price and subsidy policies will also have to be reviewed and under the present circumstances there is a need to announce support prices for sufficiently long periods ahead. This may of course lead to a problem in that the unexpectedly rapid rate of production may impose charges on the budget which are difficult to bear. But a support price policy is important in any agricultural

development programme both because it reduces the traditional risk of harvest time reduction in prices and because it enables farmers to plan ahead.

However, there is another aspect of the support price policy: support prices are a powerful tool for shifting agricultural production to crops which offer the best financial returns to farmers. This may have undesirable side effects if incentives are too heavily in favour of one crop. For example, in West Pakistan there is a concern that new Irri rice will encroach on the growing of Basmati rice. This would have an unfavourable effect on the foreign exchange earnings of the country. Given that support prices cannot be reduced, the balance can only be restored by raising the prices for crops which are likely to be less acceptable; this has already been done for Basmati rice in Pakistan. While this may be correct policy in the short run, it might lead to a vicious circle whereby price adjustments are made upwards only, resulting in an inflated price structure for agricultural commodities. This, in turn may dampen the export prospects of the commodities in question.

The other related problem is that of subsidies on inputs with the considerable rise in the use of agricultural inputs, the cost of subsidisation to the government will rise very rapidly. Given the considerable returns that farmers obtain at subsidised input rates, there seems to be room for reduction of subsidies on some of the inputs. To sum up; it is not too early to start thinking about the price and subsidy policies which will be required if Pakistan moves in to a surplus position as may now be a distinct possibility.

Pesticides is another area in which Pakistan needs to take a definite action. It may be important for two reasons. First, the cost of pesticides will rise very rapidly within the next six or

seven years. Secondly, unless something is done quickly to improve the confused situation in Pakistan as regards pesticides, the country runs the risk of a serious crop failure because of lack of pests control which would discourage farmer's receptiveness to innovations for a long time. It would in fact be difficult to persuade them to continue with new seeds and use of inputs if they experience a serious crop failure.

As regards fertilizer policy the question which in particular should be reviewed is that of giving more priority to the application of complex fertilizers to the soil than nitrogenous fertilizers, which has been the case so far. Research results in Pakistan have indicated that in many cases yields respond better to complex fertilizers than other varieties.

Finally agricultural research needs to be given the same top priority as other agricultural inputs. This does not seem to be the case so far. As a first step research may be concentrated on priority areas. While research is carried out in most areas which are important for Pakistan agriculture, some might require particular attention. One of these may be research into pests and pest control.

The Role of Private Sector:

As pointed out in the preceding pages, there is a general willingness at all levels of Pakistan Government to try to involve the private sector in many aspects of agricultural development programme. With reasonable attitude on both sides, there is a good chance that private sector could play an increasingly important role in the whole effort.

Concerning fertilizer production in Pakistan, the first entirely private plant has now come on stream and other plants are being negotiated. The production of complex fertilizer is an area where private sector's participation will be welcome.

There may also be a role for private sector (foreign) in the medium term financing of fertilizer and perhaps pesticide imports. Fertilizer and pesticide producers may consider the possibility of advancing foreign exchange needed for two to three years by Pakistan. This would serve a double purpose. First, it would help to smooth out fluctuations in the public aid disbursements in this field. Secondly, there is a bulge in the foreign exchange requirements for agricultural development in Pakistan in the next few years and if foreign private sector could be induced to provide additional finance, this would ease the financing problem.

Foreign private sector may also consider the possibility of contributing to fertilizer trials and demonstrations in Pakistan. First, it would seem that both the Phosphate and Potash industries have an interest in sponsoring fertilizer trials for their respective products. But also local producers and private distributors may be given a financial incentive to contribute to the type of programme that Freedom From Hunger Campaign has organised in a number of countries under the FAO auspices. It might also be considered whether this programme could offer other services to the farmers such as soil testing and general extension advice.

And, finally one large area which might offer opportunities for private initiative is marketing and storage. This would primarily concern food grains when Pakistan becomes an exporter. From here I move on to the contributions which foreign aid could make towards further improvements in the agricultural sector of Pakistan.

Role of foreign aid donors:

The first and most important area is the volume of aid. It is felt that the efforts Pakistan can make from its cash and barter resources, have probably reached the maximum tolerable limits. The

problems connected with aid from communist sources both on repayment period and political grounds are such that contributions from that source cannot be expected to provide a rising disbursement level for the next few years. Moreover, the private foreign investment is likely to be limited to investments in manufacturing facilities for inputs. Previous experience and the cost structure of fertilizer production in less developed countries shows that it is likely that private contributions are only forthcoming if they are supported by considerable amount of Public Aid. The experience with the recent construction of urea plant in Pakistan bears this out. The participation of the private investment in the total foreign exchange cost does not average more than 30%. There does not seem, therefore, to be any alternative to a sharp rise in disbursements from bilateral and multilateral Non-Communist aid donors. The total additional finance required can be roughly estimated at $ 750 million.[16]

There may, for example, be an unorthodox way of involving the banking system in the developed countries. In the preceding section it was suggested that foreign private sector may consider giving medium term export credits. These could then be rescheduled with public aid. Even then a substantial gap between aid requirements and availability remains. Some further reductions could be found in two ways. The first would be to examine whether aid pledges made in the past which have not been translated in to firm commitments because of the hard conditions attached to them, would not be offered on softer conditions. The second area in which some relief might be found is the improvement of aid administration. It is possible to cut down the delays between commitments and disbursements and thereby reduce the pipeline of undisbursed commitments, the well-known leads and lag effect will permit a temporary increase in the aid volume. Every effort, therefore, should be made, not only by the Pakistan Government, but

also by the aid donors to avoid unnecessary delays. This effort is particularly necessary in agricultural development, because if foreign exchange becomes available too late and the inputs do not reach the farmer well in time, production suffers irrevocably. It is hard to assess how much finance could be made available by a consistent effort to reduce delays between pledges, commitments and disbursements but it would be an appreciable amount.

Another crucial and increasingly important factor is the terms of aid. If new bilateral aid to Pakistan were given in conformity with the DAC recommendations, some relief would be obtained. Such relief could be important if the private foreign investor is to become deeply involved in Pakistan's development effort. The repayment capacity and the obligations of the economy will be one very important consideration that will determine direct private investment; unless the problem is to be manageable throughout the expected lifetime of investment under consideration, private investors are likely to decide against involvement.

Two specific suggestions may be made in this context. One concerns the softer terms for hard pledges so far uncommitted and has been made above. The other refers to increase in prices due to some aidtying practices. Where this effect can be clearly defined, the amounts involved should be given as straight grants.

In my view, these are the most important suggestions but there may also be some scope for improvements in the technical assistance, probably, the agricultural research in Pakistan will require an infusion of technical assistance, particularly in the pesticide field.

Basic Considerations for the Strategy of further Agricultural Development in Pakistan.

1. Beyond self-sufficiency in food grain production:

The goal of recent agricultural policy in Pakistan has been

self-sufficiency in food-grain production. In the light of past developments, one can confidently state that substantial increase in yields obtainable by the progress of the 'green revolution' will make it possible for the mass of nation's farmers to achieve satisfactory increases in output and solve the problem of food grain deficit within a short period of time. As a consequence, it is now necessary to re-examine the basic orientation of the agricultural policy of the country.

Since the food grain is one of the cheapest sources of calories it is only natural that emphasis has been placed on the rapid increase in its output, when there is a widespread shortage in food energy intake. Simply eliminating the food grain deficits, however, does not provide a final solution to the food problem of the country. There is whole range of other problems of which those in the areas of production and marketing stand out.

In the sphere of production, there is an increasingly difficult problem of producing an improved output mix to provide the nation with a more nutritional diet. Pakistan's deficits in high quality proteins, edible oils, vegetables and fruits are obvious even today. As the pattern of food consumption changes in response to an increase in per capita income, the overwhelmingly large proportion of calories currently derived from starchy staples in Pakistani diets will have to decline. The demand for "protective foods" that are rich in vitamins and minerals will certainly increase. If Pakistan were to dissipate valuable foreign exchange on imports of these food items, the attainment of self-sufficiency in food grains and the consequent savings of the foreign exchange would lose much of its meaning.

Diversification of Pakistan's agriculture is rightly the next order of business; policy measures should be designed to change the

cropping patterns to bring forth this result.

The improvement of food storage, processing and distribution systems in Pakistan is as important as increasing production. It is estimated that losses caused by micro-organism, insects amount to 10 to 15% of output of food grains. As the marketable surplus of farm products increases, the problem of adequate handling of these products will assume greater importance.

2. Selective Mechanisation:

Mechanical-engineering technology in agriculture can embrace a wide range of different configurations involving motive power, machines and implements. There are many ways in which one may classify mechanical engineering technology. Most important from our point of view are two types of distinctions: (i) mechanisation as applied to each specific operation and mechanisation as applied to several or all farm operations; (ii) mechanisation as introduced into a given socio-economic organisation of agriculture and calling for minor adjustments; and mechanisation calling for highly sophisticated organisation not easily introduced in a given situation.

The first distinction recognises the many different operations related to growing and harvesting of crops. Machines can be designed specifically for a limited number, for many, or for all operations. Aside from implements relying on human or animal power, tubewells, lowlift pumps etc., are examples of machines used specifically for limited tasks, as are Japanese tillers, sprayers etc. On the other hand, the development of tractor and so called power take-off, make possible more widespread application of engine power to many different operations.

Mechanisation of selected processes of cultivation and post-harvest operations, may prove to be more beneficial for the

agriculture of Pakistan mainly because it does not replace the most abundant resource of Pakistan and secondly it is within the scope of production of local industrial sector. Moreover, tractor mechanisation, necessitates large management units, output standardisation which call for highly sophisticated organisation, whereas selective mechanisation would be much easier to introduce into the given organisation of agriculture. It also has the advantage of involving the bulk of nation's farmers in the process of agricultural innovation. It is on these grounds, that I feel, the wise course for Pakistan is to adopt selective mechanisation as defined above because it suits the resource set up of the country.

3. Emphasis on divisible, farm-resource augmenting inputs:

Biological and chemical innovations that have brought forth the green revolution are by their very nature, neutral to scale. They can, therefore, be incorporated into existing institutional framework of Pakistani agriculture without drastic adjustments. Small scale peasant farms can adopt these innovations with relatively minor adjustments in contrast to technical innovations involving tractors and combines. Undoubtedly, this aspect of recent innovations has contributed to the very rapid diffusion of technology in Pakistan. The benefits of this have not been limited to large farmers. As with the recent private tubewell development, many small farmers are taking advantage of the development.

Tubewell water, new seeds and increased applications of fertilizers are basically complementary to the farm resources of labour and land. By making it possible to grow more crops, more lucratively, per acre of cultivated area, these inputs have increased the use of labour on farms as well as incomes of farmworkers concerned. In contrast to investments in tractors and combines, which are

fundamentally labour displacing, investments in inputs such as seeds, fertilizers, tubewells are much more conducive to augmenting the income of the bulk of Pakistan's farmers. Emphasis on these inputs, furthermore, would retard the polarisation of rural population and land-holdings and make it possible for the mass of the nation's farmers to achieve satisfactory increases in output at modest costs in terms of scarce resources of capital and foreign exchange.

Much can be done to make animals more effective by improving the equipment they power. It is often said that farmer's reluctance in accepting improved animal drawn equipment is evidence of the inertia existing in the present situation and that a drastic improvement, such as tractor mechanisation, is needed for breaking this situation. In view of the progress of private tubewell development in Pakistan and quick adoption of other inputs, I expect the majority of farmers to accept voluntarily new technology developed in this area. The development and diffusion of the mould board plough, various harrows, the seed-cum-fertilizer drill, all of which are animal-drawn, are highly desirable. These kinds of equipment can remove bottlenecks and increase the economic efficiency as well as engineering efficiency of the agriculture of Pakistan.

4. Inter-relationship between agriculture and Industry:

The economic relation between agriculture and industry involves exchange of products, flows of productive factors and diffusion of ideas. Typically, an underdeveloped economy is fragmented, hetrogenous and lacking in cohesive forces emanating from adequate transportation and equipment. Although, they are not obvious under these circumstances the intersectoral flows of products, productive factors and ideas characterise a two-way relationship between agriculture and industry.

The importance of each sector for the other in Pakistan, may be

appreciated by first looking at exchange of products. On the one hand, there is the interdependence of sectors through direct intermediate deliveries; both sectors buy products as intermediate inputs for further production from each other. Obvious examples are cash crops such as cotton, jute and sugar on agricultural output side, and machines, implements, fertilizers and pesticides on the industrial output side. On the other hand each sector is a source of effective demand for the other. It is important to have consistency and compatibility in industrial planning; it is equally important to recognise this interdependence and to exploit positive intersectoral relationships that promote rapid economic development.

A broad-based agricultural development is essential for creating a market for developing indigenous industries. A conscious effort to develop agricultural technology will foster domestic industries and will return a handsome reward. It is appropriate to recall one such example in the recent experience of Pakistan. In reference to the spontaneous, private tubewell development during early 1960's, W.P. Falcon and C.H. Gotch observed that, "These tubewells represented an initial investment on the order of Rs. 250 million, a sum thought impossible in West Pakistan's traditional agriculture. Moreover, this investment was an important stimulus to the small scale machine industry. Whole streets in such cities as Multan, Lyallpur, Lahore, Gujr ramwala, Sialkot and Daska have been devoted to the manufactore of pumps and engines, and the skill, ingenuity and training demonstrated in these shops have been impressive."[17]

There is undoubtedly a similar opportunity for a rapid expansion of indigenous production of improved farm implements. The emphasis on selective mechanisation would, as in the case of tubewells, nurture indigenous industries catering directly to the agricultural sector of

the country. The development of such industries, in turn, would make it possible for the farmers to acquire the machines and implements at increasingly favourable terms, encouraging further use of such inputs. It would be a clear mistake to minimise this type of positive interaction between agricultural and industrial development by using large amounts of capital and foreign exchange for tractor mechanisation in Pakistan.

Conclusions:

The highly successful performance of agricultural sector in Pakistan during the period under study had a profound influence on the entire economy of the country. The near tripling of the agricultural growth rate was a major factor in permitting the total economy to grow at over 5 per cent per annum, in allowing exports to expand at 17 per cent annually, and in providing sufficient jobs to prevent a rise in unemployment. Two immediate questions arise from this success story: What are the lessons that other developing countries may learn from Pakistan's experience? And, is the performance likely to be accelerated, or at least maintained in future?

To some, the Pakistan case shows only that agricultural development is easy if a country has 30 million acre feet of ground water which can be developed cheaply. Such a statement is at best a half-truth. It overlooks the two much more basic lessons of Pakistan's experience: (1) The importance of achieving the right division in the agricultural development programme between the public and private sectors, and (2) the importance of incentives as a tool for inducing development activity in the private agricultural sector.

All too often in the past, discussions about agricultural development have focused only on specific investment projects in the

public sector. While these schemes may be very important in particular geographic areas, e.g. SCARPI region, there are likely to be severe limitations on the amount that GNP can be raised by direct investments in agriculture. This is particularly true when, as in the case of Pakistan, agriculture makes up half of the GNP and where it consists of millions of small decision units. Thus, the agricultural sector is vastly different from the manufacturing sector where a decision to double or triple domestic output can be made almost overnight. The latter is technically possible, whereas the former is not. The limitations on increasing agricultural production via direct investment immediately under score the importance of incentives for farmers who are not directly affected by public investments. One of the lessons from the Second Plan was that the government of Pakistan did recognise the importance of these incentives. It used a variety of policy instruments including export tax policy, input subsidies, price support - stabilisation policy, and P.L. 480 policy to create a favourable economic atmosphere. Furthermore, and to the surprise of many, the supposedly unresponsive farmers of Pakistan reacted to price and income opportunities.

The second important lesson concerns the relative roles of the public and private sectors in agriculture. The private sector responded to the favourable economic climate as was stressed in the sections on water and fertilizer. But the public sector was also vital - both for what it did and for what it had the sense not to do.

Public investments in ground water development, for example had a very high pay-off, particularly with regard to the spreading of private tubewell technology. A similar effect can be expected from the public importation and distribution of new seed varieties. Finally, the Rural works programme showed that something productive

could be done with underemployed agricultural labour.

These positive contributions of the Government were important and impressive. But very high marks must also go to the government for resisting the temptation to do things which it probably could not have done as well as the admittedly imperfect market. Foremost in this category was the grain trade where quick and decentralised decisions were vital. As indicated earlier, the focus of the government during the Second Plan period was in helping to improve the perfection in the market, rather than in taking over the extremely difficult marketing function. Similarly, the move since 1964 to return the distribution of some improved inputs to the private trade was another case where the advantages of decentralisation and the profit motive were recognised while there were probably other fields (such as pesticide distribution) where scope still existed for a change in the public - private role, the Second Plan period showed that the public and private contributions in agriculture could be complementary rather than competitive. A third insight gained from the Pakistan experience involves the package of inputs required for an effective agricultural development effort. To be sure, improved inputs when used simultaneously, yield a higher return than when used singly or even in pairs. But the difficulties of carrying out an integrated programme involving all inputs are much greater than if efforts can be directed toward identifying and breaking some of the major constraints. While package approach has much to recommend it, a growth oriented agricultural policy must also consider the trade-off between technical efficiency and ease of focus and administration. The successful concentration on irrigation water and fertilizer in Pakistan highlights the necessity for evaluating this trade-off before embarking on a complex multi-factor programme.

As regards the second question raised above, the results of the Third Five Year Plan of 1965-70, show that the agricultural breakthrough of Second Plan period was further consolidated during 1965-70. The agricultural growth rate during the Third Plan was 4.5% per annum as against the target of 5% and the output of food grains reached the level of 22 millions as against the target of 21.5 millions by 1969-70.[18] Thus, one can conclude by saying that, if Pakistan continues to emphasize the quick response inputs for agriculture and keep on following the sensible economic policies, the future appears very bright.

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CHAPTER 3

Industrial Growth - Its Tempo and Pattern

Introduction:

Industrial progress since the early 1950's has been impressive in Pakistan. Production in large scale manufacturing industries increased five-fold from 1950 to 1959. The industrial capacity expanded more rapidly during the Second Five Year Plan of 1960-65. The Plan target of 60 per cent increase in industrial production was not only achieved but exceeded. During 1964-65, the index (base 1959-60 = 100) of industrial production went up to 161.4. During the Third Plan of 1965-70, a growth rate of 7.8 per cent in value added in the manufacturing sector was realised compared with Plan target of 10 per cent.[1] If one makes an allowance for the unusual circumstances of the period (like war with India and political disturbances etc.), the achievement was fairly reasonable.

In spite of this impressive record of industrialisation, even a casual observation of and familiarity with Pakistan industrialisation strongly supports the view that industrial inefficiency is a common phenomenon in Pakistan. Differences between potential capacity and realized output, skill deficiencies, infrastructure - shortcomings, undermaintenance of capital equipment, poor quality control, and so forth have been the normal accompaniment of Pakistan industrialisation.

In the following pages, an attempt is made to analyse the three aspects of Pakistan's industrialisation:

(a) What caused the rapid growth of manufacturing industry in the country; (b) What were the factors which shaped the industrial structure?; (c) Finally, some observations on the industrial structure and its efficiency are offered.

The rapid growth of manufacturing industry:

The differential growth rates among the sectors of Pakistan

economy are given in the following Table. The sharp changes in growth patterns between the two periods are quite obvious. The change

Table 1. Annual Growth Rate of Value-Added in Pakistan by Major-Sectors (factor cost of 1959-60)

Items	1949-50 - 1959-60	1959-60 - 1964-65
Agriculture	1.2%	3.5%
Non-Agriculture	4.1%	7.3%
Large-scale manufacturing	16.3%	13.1%
GNP	2.4	5.3
GNP per capita	0.	2.7

Source : T.M. Khan and A. Bergan; Measurement of structural change in Pakistan Economy: A review of national income estimates, 1949/50 to 1964/65, Pakistan Development Review, Summer 1966.

accompanied many shifts in economic policy and in the flow of resources between the two periods. Large scale manufacturing, which was the most rapidly growing sector, was such a small part of the national product that even though it grew at an annual rate of over 16 per cent in the 1950's, that growth was not enough to make any improvement in the level of per capita income in the country. The growth rate for the 1950's as a whole, however, hides a shift within the decade. From 1949-50 to 1954-55 value added in large scale manufacturing increased over 23 per cent per year, while in the next five years the growth rate decelerated to 9.3 per cent. The reasons for the deceleration were related (1) to the stagnation of agriculture and the consequent shortage of foreign exchange, and (2) to an expected slowing after the growth from a small base had

proceeded for a while.

An interesting change, however, occurred in the general characteristics of the more rapidly growing industries over the three periods, (Table 2). Prior to 1954-55, the consumer goods industries

Table 2 : Annual Growth Rate of Value-Added for Major Groups of Industries. 1951-52/1964-65.

Industries	1951-52/ 1954-55	1954-55/ 1959-60	1959-60/ 1960-65
Consumption goods	43%	15.6%	12.8%
Intermediate goods	28%	27%	13.7%
Investment goods	16.8%	28%	26%

Source: Evaluation of the Second Five Year Plan (1960-65) Planning Commission, Government of Pakistan, Dec. 1966.

were growing much rapidly, while during the First Plan the intermediate and investment goods industries were growing much more rapidly. In the Second Plan period the investment and related goods industries grew at rates almost twice as fast as the rest of manufacturing industry. Investment goods industries were those most affected by the import-liberalisation programme in intermediate goods as discussed below while consumer goods industries did not grow as rapidly as other industries after the beginning of the First Plan, the former were certainly larger in terms of their contribution to total value-added. In most intermediate and investment goods industries, the rates of growth were very high throughout the period, and the lower growth rate for intermediate goods in the Second Plan period is due largely to the heavy weight of jute and leather industries, which primarily process agricultural raw materials for export. Whatever one might say about the relative weights of the

consumption, intermediate and investment goods industries there was certainly no stagnation in the growth of the latter two groups. If there was imbalance in the structure of production due to a heavy weight of consumption goods during the period under study, one would have to look to the differential growth of the period prior to the First Plan for the explanation.

Sources of Growth in Manufacturing output:[a]

Before looking at alternative explanations for high overall rates of industrial growth, and for the differential rates within manufacturing, it is useful to examine the sources of growth of various Industrial Groups. Theoretically speaking, all increases in output must be exhausted by either domestic demand, export demand or import substitution. Thus, one may attribute the increase in industrial output to these three sources. The three sources are summarised in the following table.

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a. Import substitution is defined with reference to the proportion of imports in the total supply of an industrial good. If domestic production rises faster than imports, import substitution may be said to be taking place. Growth in domestic output is due to
(i) The growth of demand (assuming that constant proportion of total supply is imported) and
(ii) Change in the ratio of imports to total supply or import substitution.

Table 3 : Summary sources of output growth by sub-groups of industries, 1951-52/1964-65.

Industries	Domestic Demand	Export Growth	Import Substitution
1951-52/1954-55			
Consumption goods	2.5	1.4	96.2
Intermediate goods	7.2	5.2	87.4
Investment goods	-6.7	0.9	106.0
Total 11 industries	2.4	1.8	96.6
1954-55/1959-60			
Consumption goods	55.7	16.5	27.8
Intermediate goods	34.0	57.9	8.1
Investment goods	71.8	1.0	27.2
Total 26 industries	53.1	24.0	22.9
1959-60/1964-65			
Consumption goods	110	-1.1	-8.9
Intermediate goods	47.6	21.8	30.6
Investment goods	108.5	1.2	-9.6
Total 26 industries	95.7	4.6	-0.3

Source: S.R. Lewis and R. Soligo, Growth and structural change in Pakistan's manufacturing industry, Pakistan Development Review, spring 1965.

Looking first at the figure for all industries there is a striking difference in the attribution of growth to the three sources: virtually all of the growth from 1951-52 to 1954-55 was due to import substitution while none was attributable to import substitution during the Second Plan. The reverse is true for growth due to domestic demand: increased domestic demand was not a source of

industrial growth up to 1954-55, but was dominant after 1960. In the First Plan period, import substitution accounted for over one-fifth of growth of manufacturing output, while exports were responsible for one quarter.

To understand the differences among time periods, one should recall that imports contracted sharply following the collapse of export earnings at the end of Korean War boom. In fact imports as a ratio of GNP reached a peak in 1951-52 that was not repeated until well into the second plan period.[b] Thus, import substitution in the early period was in part due to a movement towards high protection of domestic manufacturing output. Conversely, the lack of overall import substitution in the Second Plan period can be explained by the sharp acceleration in imports due primarily to increased aid during the period. Manufacturing output grew at 15 per cent per year, but there was no import substitution (in the proportionality sense of the term) since imports increased even more rapidly. During the First Plan, there was a moderate increase in the ratio of imports to GNP, and import-substitution was an important source of industrial growth.

The pattern of growth attribution differs among industries in the last two periods. In the Pre-Plan period, there is considerable uniformity among industries due largely to the sharp contraction of imports. In the First Plan period, 1955-60, import-substitution was equally important as a source of growth to both the consumption goods and investment goods industries, but was considerably less important in intermediate goods. Export demand led in intermediate goods (due to the growth of jute textiles), and exports provided a

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b. The relevant ratios of imports to GNP are:

1951-52	1954-55	1959-60	1960-65
9.9%	5.4%	7.7%	10.7%

market for about one-sixth of the increase in consumption goods industries production. The pattern is completely different in the Second Plan period, with considerable import substitution in intermediate goods industries (particularly petroleum refining, chemicals and paper-manufacturing). Export growth continued to be important in intermediate goods. The growth of domestic demand for consumption goods (due to a much faster rate of GNP) and for investment goods (as the rate of investment rose from 10 to about 18 per cent of GNP) dominated these two types of industries, and both import substitution and exports suffered (by the definition chosen).

The pattern of growth in manufacturing industries is quite clear from the above analysis. The task now, is to interpret the results in terms of either some policy related variable or some other appropriate notion of the determinants of growth patterns.

There were a number of factors which influenced the pattern and rapid growth of the industrial sector in Pakistan. In my view, three factors have had the primary role: (i) one of the most important was the partition of the sub-continent; (ii) the second important influence was that of the commercial policy adopted by Pakistan. It had three major aspects: (i) over-valuation of the currency relative to other currencies, (ii) use of quantitative controls on imports to regulate the level and composition of imports, and (iii) a highly differentiated structure of tariffs on imports and export taxes on two principal agricultural exports: jute and cotton. The third major influence on the structure of industrial production was the domestic production of a variety of agricultural raw materials that could be processed within the country rather than exported. While there is some overlap among these three forces, an attempt will be made to keep them separate in

the analysis which follows.

The Effects of the Partition:

One of the important causes of the rapid growth of manufacturing industry in Pakistan after Partition was the abnormally low level of industrialisation in the country at the time of Partition. The reasons for the original location of industrial activity within undivided India are well beyond the scope of this chapter. The fact is, that there was very little manufacturing in the area that became Pakistan in 1947. Even in processing of Jute, there was not a single factory in the country, despite the fact that Pakistan was then the largest jute growing area in the world. Manufactured consumer goods flowed in to the area that became Pakistan in exchange for agricultural raw materials and food grains. Much of this trade was with other parts of India.

The precise magnitude and composition of flows of goods between Pakistan and India before Partition is not known. Whatever data exist, it indicates that over one-half of West Pakistan and 80% of the then East Pakistan's foreign trade in 1948-49 was with India.[2] By 1951, the share for all Pakistan had fallen to 3 per cent. About one third of Pakistan's imports came from India. Over 60 per cent of those imports from India were manufactures. Since by 1949 a considerable disruption of trade flows between India and Pakistan had occurred, these figures underestimate the importance of trade between India and Pakistan before Partition. Nevertheless, these figures do give some idea of the level of manufacturing in Pakistan at the time of Partition.

There is more direct evidence on the level of manufacturing in Pakistan contained in the following table.

Table 4 : Domestic production as a percentage of total supply of Manufactures : India and Pakistan.

Industries	Pakistan		India	
	1951-52	1954-55	1950-51	1955-56
Consumption goods	22.5	76.9	90.	89
Intermediate goods	26.7	47.6	83	84
Investment goods	23.7	28.2	47	49

Source: J. Ahmad, import substitution and structural change in Indian Manufacturing-industry. Harvard, 1966. (ii) The First Five Year Plan, Government of Pakistan, 1955.

It is quite clear from the above table that Pakistan was well behind India in the early 1950's with respect to the share of production in total supply of manufactures, particularly in the output of consumption goods and intermediate goods industries. By 1955, Pakistan had made rapid strides in approaching the Indian productive structure, particularly in those latter two groups of industries. There is no immutable law that Pakistan and India should have had similar productive structures. One would expect India to have higher shares of production in total supply in all industries, because of (i) the much larger size of her domestic market and (ii) the significance of the country size in determining imports and production of manufactured goods. Pakistan was a large country, however, and had markets of considerable size for a wide variety of manufactures. Differences in resource endowments between the two countries might explain the larger share of production in India.

One must remember, however, that the most important manufactured goods which were imported in Pakistan comprised mainly the textiles, which was produced from the Pakistani cotton in India and shipped back to Pakistan. Unless one were convinced of the innate superiority

of Indian over Pakistani technology or ability, one would expect to find some of these goods produced in Pakistan after the two countries became separate.

All of this evidence points to the conclusion that, (i) by whatever measure one chooses, Pakistan was under-industrialised at Partition, and (ii) some part of the growth of manufacturing output was a readjustment to changed static conditions of relative costs due to the fact of Partition.

Another important factor causing rapid industrialisation in Pakistan may be sought in the role of private entrepreneurs. Pakistan, like all other countries in Africa and Asia, not only lacked industrial entrepreneurs; it seemed unlikely to develop them in the short-run. Muslims in British India played a very small role in commerce, banking or the professions and were negligible in industry. It was widely assumed that they had a "Trader's mentality," looking for short-run speculative profit. In 1947, Pakistan was an excellent example of a country where industrial growth would be largely in Government hands due to the lack of private entrepreneurs.

In fact, industry grew rapidly and was largely developed by private entrepreneurs. The question arises what were the causal factors in the development of entrepreneurship in Pakistan?

To say that these developments were the result of multiple causes is not very original. It is standard operating procedure in books on economic development to point to multiple causation. Without a good deal of further work, one cannot point with assurance to the factors which ultimately caused the development of Pakistan's entrepreneurs. Fortunately, the proximate causes are of more relevance to my purpose. It is sometimes assumed that the emergence of group of industrial entrepreneurs is strongly affected by an

education or by the development of a modern outlook. The evidence from Pakistan lends little support to these notions. Many of the industrial entrepreneurs had no significant formal education. Another explanation is that partition uprooted potential entrepreneurs from their traditional environment and induced them to look for new activities. Another set of explanations focuses on political and social changes in society as a whole. In Pakistan the political environment shortly after 1947 was hardly more favourable than before Independence. For a variety of reasons the social environment was similarly unpropitious to industrial entrepreneurs. Traders and industrialists were accorded none of the prestige given to civil servants and landlords.

There can not be conclusive proof of the relative importance of different factors in the genesis and later development of entrepreneurship. The hypothesis advanced here, is that in Pakistan strong economic incentives were sufficient to develop a number of industrial entrepreneurs, given, first, a social and political environment that was not excessively hostile, though it was not favourable, and, second, some groups or individuals in touch with the market and therefore affected by economic incentives. From here, I move on to the other factors which affected the industrial structure of Pakistan.

Trade Policy and its effects:

From the Industrial Policy statements of Pakistan during the 1950's, it seems obvious that there was little in the way of systematic bias in the thinking about favouring the production of consumption goods per se.[3] The question that becomes important now is: to what extent were the general sentiments expressed in industrial policy statements translated into particular taxes and quantitative restrictions

on imports? The answer may be found by analysing the structure of tariff protection and quantitative controls.

The rates of tariffs on imports are given in the following table.

Table 5 : Average Rate of Duty on Imports. 1955-56/1964-65.

	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65
Consumption goods										
(a) Essentials	35	35	35	35	35	55	55	55	56	58
(b) Semi-Luxuries	54	54	54	54	54	111	111	111	116	118
(c) Luxuries	99	99	99	99	99	140	140	140	142	143
Raw Materials for Consumer goods										
(a) Unprocessed	26	26	26	26	27	27	27	27	30	n.a.
(b) Processed	43	43	43	43	43	50	50	48	51	53
Raw Materials for capital goods										
(a) Unprocessed	23	23	23	23	23	28	28	28	31	31
(b) Processed	38	38	38	38	38	40	40	39	42	42
Capital goods										
(a) Consumer durables	71	71	71	71	81	85	85	85	89	90
(b) Machinery and equipment	14	14	14	14	14	17	17	17	17	n.a.

Sources: G.M. Radhu. "The rate structure of indirect taxes in Pakistan, The Pakistan Development Review, Autumn, 1964.
(ii) Pakistan statistical Bulletin, 1965.

Several things are obvious from the table. First, imports of consumer goods, and particularly luxury consumer goods and consumer durables,

were discriminated against most strongly over the period covered, with tariffs exceeding 100 per cent. Second, the lowest rates of duty, less than 20 per cent, were given to imported machinery and equipment throughout the period. Third, there is some cascading of the tariff structure, as H. Jhonson suggests is typical of most countries, where finished goods received the highest tariffs (50-100 per cent), followed by semi-finished intermediate goods (35-50 per cent). Thus, one might expect the effective rates of protection to be higher than nominal rates on finished consumer goods. Fourth, the extent of cascading has risen markedly over the period 1955-1965. The tariff differentials were not very sharp in the earlier period except for low rates on machinery and high rates on luxuries.

If the average tariffs were any guide to the differential incentive during the early years of industrialisation, the very high incentives for domestic production were given to those items for which the domestic market was the smallest: luxuries and consumer durables. Only since 1959-60, after the first rush of industrialisation was over, were the differential incentives given to broad-based consumption items widened sharply.

While the average tariffs as given in Table 5 are of some interest, they are not the determinants of the level of protection. First, there are offsets to tariff protection in the form of domestic indirect taxes. In the extreme case, a tariff on imports accompanied by an indirect tax of the same amount on domestic production would result in no incentive to domestic production. Second, effective production is more reliable measure of actual incentives given to domestic production, because it takes into account both the tariffs on the inputs into the goods and the tariff on the good itself. The following table makes the difference clear. The rates of nominal

Table 6 : Average rates of tariff protection on Major Groups of Industries, 1954-55/1964-65.

Industries	Average Tariffs		Average Nominal Protection.		Average Effective Protection.	
	1954/55	1964/65	1954/55	1964/65	1954/55	1964/65
Consumption goods	65	88	53	66	76	74
Intermediate goods	40	54	32	33	71	60
Investment goods	39	44	33	35	49	81a

Source: Pakistan statistical Bulletin, 1966.

tariff and nominal protection increased overtime but not so much one would have expected from table 5. Domestic indirect taxes also increased over the decade, offsetting part of the increased tariff protection. If one ignores the figure for effective protection of investment goods (because of the distorting effects of the two industries mentioned) there is a clear increase in the differential protection given to the two groups of industries over the period covered. The investment goods industries were relatively less protected in the later period as compared to the 1950's.

To summarise, tariff structure was differentiated throughout tending to favour domestic production of consumer goods, over that of intermediate and that of intermediate over the production of investment goods. It is also clear, that extent of differential protection increased over the period, and there were relatively more equal incentives to the domestic production of different types of goods in the early period than there were in the later period.

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a. The very high average rate for investment goods in 1964-65 is due primarily to extreme value for transport equipment and metal products.

The Import Control System in Pakistan:

While the tariff structure played some role in directing resources in Pakistan, the role was a relatively minor one. The principal determinant of the structure of imports and relative domestic prices was the import licensing system. A brief description of the system is necessary, since its mechanics are an important aspect of its effect on prices and incentives.

From 1953 to 1964, virtually all imports into Pakistan were regulated by some form of quantitative controls. In the Government and semi-Government sectors, foreign exchange was allocated among various agencies for development and non-development imports. In the private sector, a detailed and comprehensive licensing controlled the level and the composition of imports, specifying the importer, the commodities he could import, and in many cases the currency areas or countries from which the imports must come.

An import licence in Pakistan is a permit to an individual or firm to import a specified value of a specified type of commodity into a specified part of the country. From 1953 to 1965, the dominant type of licences were commercial licences (which were issued to importers who were generally expected to re-sell the commodities) and industrial licences which were issued to the manufacturers exclusively for their own use. In determining the allocation to each importer and each type of good, there were several criteria in use, most of which were thought of in terms of essentiality to the economy. Essentiality was a broad heading used to include decisions about regional distribution, luxury or non-luxury imports, exchange-earning or exchange saving nature of the activity receiving imports.

In 1959 an Export Bonus Scheme was introduced which allowed a free market in import licences for certain commodities. Exporters of

certain goods received a transferable import licence (Bonus voucher) equal to a fixed proportion of f.o.b. value of exports. Besides, this scheme there were three new schemes introduced into the licensing system in the early 1960's. First, was the Automatic Licensing System. It allowed the importers to get more than one Licence for a commodity in one shipping period. The Second development was open General Licence (OGL). Its main purpose was to allow newcomers into the import trade. Finally came the 'Free List' which marked a departure from Quantitative Controls in 1964. Initially it was composed of four items which could be imported by anyone without Licences subject to the requirements of creditworthiness, nationality, etc. The Free List was expanded in mid 1964. Despite the apparent freeing of controls in the first three devices, it is obvious that each of these improvements was still a system of Licensing and direct controls were still exercised.

The Combined effects of Import Quotas and Tariffs:

The tariff structure that evolved through the period under study, became more differentiated and it provided increasingly high protection to the domestic production of consumer goods. The Import Control System was, however, so detailed and so strictly regulated that it either could have offset or could have reinforced the differential protection provided by the tariffs. An empirical question then is the combined effect of import controls and tariffs on the relative prices of imports, and therefore on the incentives for import substitution in the various industries.

One method of examining the effects of the import licensing system is to look at the pattern of domestic relative prices that emerged. In the absence of quantitative controls on imports, prices of imported goods would be set by the C.i.f. price of imports plus

tariffs plus a normal trade markup for the commodity. Differences between this price and the actual domestic market price could be attributed to the effects of quantitative controls. A close examination of the table 7, gives a fairly precise idea of the extent to which the licensing system affected the price structure even after the

Table 7 : Average percentage Markups for three types of goods. 1964-65.

Items	Karachi-Survey 1964		Karachi-Survey 1964-65		Chittagong Survey 1964-65
Consumption goods	61	(63)[a]	55	(60)[a]	51
Raw Materials	57	(60)	39	(45)	40
Capital goods	62	(63)	37	(39)	38
Total	59	(61)	43	(48)	42

Source: Central Statistical Office, statistical-year book, 1965, Karachi, Pakistan.

restrictions have been relaxed. The average markups are shown in the table above. The figures represent unweighted averages of the percentage by which domestic wholesale prices exceeded full landed costs of imports. For the first survey in Karachi this figure was around 60 per cent, while for the second survey the average markup was between 40 and 45 per cent. Table 7 also gives an average markup for the goods common to both Karachi samples. The markup came to about 60 per cent in the first and between 45 and 50 per cent in the second. Broadly speaking, the domestic value of imports in Pakistan in the mid-1960's exceeded their full duty paid value by about 50 per cent. This result may be further investigated by analysing the following data. The data given in table 8, may be used to examine the relations among types of import licence (i.e. whether the good was nominally

Table 8 : Unweighted Averages of Duties, Markups and price Differentials, 1964-65.

	Commodity Group	Duty	Mark-up	Price Differential
	Consumption goods	109.3	60.7	176.2
	Raw Materials:			
-1-	Regular Licence	47.0	64.4	159.5
-2-	O.G.L.	33.5	57.7	115.9
-3-	Other Licence	21.3	11.5	38.5
	Total Raw Materials	38.4	57.3	129.0
	Capital Goods	23.0	61.7	100.4
	Raw Materials and Capital Goods	34.0	58.4	121.5
	All items	52.2	59.0	133.9

Source: Central Statistical Office, Statistical Year book, 1965, Karachi, Pakistan.

liberalised or not), types of commodities that were imported and the levels of tariff on each and to tie the analysis of tariffs to the effects of quantitative restrictions. The average rate of duty, markup, and price differential (the extent by which wholesale domestic price exceeds c.i.f. price at the official exchange rate), for major types of goods by type of licence are given in table 8.

It is clear from the table that the average markup was very similar for consumption goods, raw materials, and capital goods, and averaged around 60 per cent. Average duties differed considerably among types of goods, from over 100 per cent for consumption goods to only 23 per cent for capital goods. The price-differential varied from 100 per cent for capital goods to 176 per cent for consumer goods. As the average markup was the same for all groups, the duty was a

smaller share of the total price differential in high duty consumption goods than in low duty capital goods. In such a case, the use of average tariffs would not simply understate the extent of protection; rather, the extent of protection afforded to low-duty items would be systematically understated relative to protection on high duty items. The low relative protection given by the duty structure to intermediate and capital goods, therefore, appears to have been offset to some extent by the licensing system.

There are two principal conclusions which follow from the above analysis. First, the licensing system and other less formal quantitative controls on imports worked to improve greatly the competitive position of manufacturers of intermediate and capital goods. Another, and related, conclusion to be drawn from the above analysis, is the enormous advantage given to those import licensees who were able to purchase imports at landed costs. Industrialists not receiving import licenses had to purchase raw materials and spares at prevailing prices that averaged 40 - 60 per cent paid by the industrial license holder. The commercial licenses issued for raw materials and capital goods in 1964-65, were about one third of the value of industrial licenses issued for raw materials and spares. The share of industrialists purchasing raw materials domestically at high markups was quite significant. This latter fact, too, indicates that the markups were an important part of the incentive to domestic manufacture of intermediate and investment goods, since the markup does not reflect a narrow grey market for raw materials but emerges from a market in which a significant share of imported raw materials and capital goods are exchanged.

The above analysis gives a broad picture of industrial growth in Pakistan. In the following section, the points raised above are

further analysed in terms of the effects of import controls over a longer time period.

Some Measures of the Incentives given by Quantitative Controls Through Time:

Since there are few systematic data available on the behaviour of prices of imported goods, there is no way of reconstructing accurately the movements of markups and, therefore, the level of nominal protection that was given to different industries in Pakistan at different points of time. One alternative is to make use of the notion of implicit exchange rates. An implicit exchange rate is the ratio between the domestic wholesale price in rupees and the international price of the same item in dollars or any other international medium of exchange. The average implicit exchange rate represents the domestic value of ₹ 1.00 worth of commodity in question and this information is used to examine the difference between the terms of trade that agriculture and industry did have domestically and the terms of trade they might have had if they had traded in world markets without the distortions introduced by the country's trade policies.

The implicit exchange rates are given in table 9.

Table 9 : Implicit Exchange Rates for Agricultural and Manufactured goods, East and West Pakistan (1951/54 - 62-65)

(Three Year Averages)

Period	Pakistan East				Pakistan (West)				
	Manufactured goods:		Agricultural goods		Manufactured goods		Agricultural goods		
	Gross output	Purchased by agric.	Marketings	Purchased by industry	Gross output	Purchased by agric.	Marketings	Purchased by industry	Official Exchange Rate
1951-54	6.15	9.07	2.87	3.32	7.07	8.39	3.81	4.13	3.31
1952-55	6.62	9.74	2.73	3.01	7.63	8.94	3.81	4.15	3.31
1953-56	6.88	10.17	2.86	2.97	7.84	9.00	3.76	4.06	3.78
1954-57	7.00	9.81	3.70	3.77	7.66	8.51	3.94	4.19	4.27
1955-58	7.20	9.83	4.46	4.57	7.90	8.56	4.33	4.57	4.75
1956-59	7.14	9.46	4.85	5.01	7.96	8.57	4.73	5.06	4.75
1957-60	7.20	9.07	4.65	4.95	7.95	8.68	4.85	5.30	4.75
1958-61	7.21	8.56	4.75	5.10	7.73	8.59	5.06	5.60	4.75
1959-62	7.13	8.42	4.83	5.17	7.68	8.61	5.19	5.70	4.75
1960-63	6.85	8.29	4.87	5.09	7.53	8.41	5.40	5.79	4.75
1961-64	6.63	8.15	4.77	4.93	7.39	8.33	5.35	5.69	4.75
1962-65	6.60	n.a.	4.80	n.a.	7.38	n.a.	5.25	n.a.	4.75

Source: S.R. Lewis, Effects of Trade policy on domestic relative prices. Pakistan 1951-64; American Economic Review, March, 1968.

Several characteristics of the above table stand out.

First, even in the mid-1960's the agricultural sector received around Rs. 5 for agricultural goods worth ₹ 1.00 but it paid over Rs. 8.00 for manufactured goods worth ₹ 1.00. Thus, the agriculture got one third less than it might under free trade. Second, there has been a considerable narrowing of the gap between the implicit exchange rates for the two sectors since the mid-1950's. Third,

even though a considerable portion of the disequilibrium between sectors was eliminated by 1959, there was still some narrowing of the gap after 1959. One could say that the process has been a continuing one. Fourth, East Pakistan's farmers had worse terms of trade than did West Pakistan's in the 1950's, due both to a lower implicit rate for agricultural goods in the former East Pakistan and to a higher implicit rate for manufactured goods in that province.

The above characteristics are self-explanatory. Obviously those industries using domestically produced agricultural products as raw materials were given a tremendous boost by the fact that they could purchase inputs at a very low exchange rate and sell them at very high prices. Since, consumer goods industries were the principal users of agricultural raw materials, they had the greatest incentives to expand first.

The Effects of Tax and Non-Tax Policy on Relative Prices - and Incentives:

The implicit exchange rates as defined above may be used to further investigate the results obtained earlier that the quantitative controls were more important than tariffs in determining the internal prices and thus the level of protection. The following table gives the picture from the agricultural sector's point of view, If farmers had been forced to pay only the tariff-protected prices of goods in 1954-55, they could have purchased ₹ 1.00 of manufactures for Rs. 5.50, while it appears that actually they were forced to pay around Rs. 9.00 for these goods. The extent to which tariffs understated the true exchange rate for manufactures fell by 1959-60 and by 1964-65 the weighted average tariff on manufactured goods that farmers purchased (Rs. 10.00) exceeded the implicit exchange rate for those goods (Rs. 8.00). Broadly speaking, tariffs understated the amount of

Table 10 : Implicit Exchange Rates Compared with Rates Implied by Tariffs and Taxes.

	Implied by Tariffs and Taxes			Implicit rate estimates		
	1954-55	1959-60	1964-65	1954-55	1959-60	1964-65
West Pakistan						
Gross output weights, producer prices	4.95	6.64	8.90	7.45	8.36	7.57
Agricultural sector purchases of manufactures, Market prices	5.37	7.63	9.98	8.59	8.97	8.25
East Pakistan						
Gross output weights, producer prices	4.72	6.70	7.69	6.57	7.51	6.55
Agricultural sector purchases of manufactures, Market prices	5.28	7.58	10.10	9.63	8.94	7.73

Source: Pakistan Statistical Bulletin, 1966.

protection that the manufacturing sector received during the early part of industrialisation but by the second plan period, the weighted average tariff had become redundant and actual protection was lower than tariff implied protection.

In order to evaluate better the movements in tariffs relative to those of implicit exchange rates, the industrial sector is divided into three groups: industries producing primarily consumption goods, (ii) intermediate goods and (iii) investment goods. The results are given in the following table. The results are quite consistent with the findings in the preceding sections. Consumption goods industries had experienced a fall in prices relative to intermediate and investment goods and by 1964-65 the tariffs on the consumption goods were on the average redundant. For the intermediate and

Table 11 : Implicit Exchange Rates and Tariff-implied Exchange Rates for Major Subsectors of Manufacturing. (1954-55 to 1964-65)

	Rates implied by Tariffs			Implicit Exchange Rates		
	1954-55	1959-60	1964-65	1954-55	1959-60	1964-65
East Pakistan						
Purchased by Agric.						
Consumption goods	5.35	7.71	10.48	9.81	8.95	7.60
Intermediate goods	4.90	6.75	7.38	8.48	9.32	8.41
Investment goods	3.94	6.21	6.33	6.98	8.46	9.18
West Pakistan						
Purchased by Agric.						
Consumption goods	5.47	7.90	10.63	8.45	8.84	7.78
Intermediate goods	4.80	6.20	6.77	8.68	8.31	9.67
Investment goods	3.94	6.41	6.54	8.61	9.86	9.31

Source: Pakistan Statistical Bulletin, Dec. 1966.

investment goods, where imports were still an important share of total supply, quantitative restrictions on imports offset tariffs, and the estimated implicit exchange rates are above the exchange rates implied by tariffs.

To summarise, the above results strongly support the view that non-tax and non-tariff policies have been more important that tariffs and tax policies in setting relative prices overtime. Such a conclusion is complementary to the results of analysing import prices only: quantitative restrictions, rather than costs or tariffs, set prices of imports. Thus, despite the differentiation in the tariff structure that favoured the domestic production of consumer goods, the effect of the licensing system outweighed it. In 1954-55, while averages of nominal tariffs for the industries covered in table 11

were 80, 50 and 30 per cent on industries producing consumption, intermediate and investment goods respectively, import licensing restrictions made domestic prices 194, 185 and 167 per cent above c.i.f. prices for the three groups of industries. The implication of such evidence is that there must be reasons other than differential protection for the early development of the industries producing primarily consumer goods.

Other Influences on Investment Decisions:

I have repeatedly emphasized the importance of the domestic production of raw materials by the agricultural sector as the principal basis for determining the industries that were first established on large scale in Pakistan. The evidence on implicit exchange rates for major groups of industries around the mid-1950's suggests that, there was little in the prices of output relative to world prices that would have led to a choice of consumer-oriented goods by entrepreneurs making investment decisions. There are two other aspects of the problem. First, what were the sizes of the markets for output of the different types of industries? Second, what could be said about the prices of inputs into the industries?

While the market size relative to efficient plant size would be the most appropriate measure of the first aspect of potential (private) profitability, such information is exceedingly hard to come by. The following table gives the value of total supply of the three major groups of manufactured goods.

Table 12 : Total Supply (at Market Prices) of Products Classified by Industry. Rs. Million.

Industries	1951/52	1954/55	1959/60	1964/65
Consumption goods	1953	1856	3270	5448
Intermediate goods	332	656	1649	2711
Investment goods	449	795	1934	4592
Total	2734	3306	6853	12751
	Percentage Distribution:			
Consumption goods	71.4	56.1	47.7	42.7
Intermediate goods	12.1	19.8	24.1	21.3
Investment goods	16.4	24.1	28.2	36.0

Sources: Government of Pakistan, The Budget 1960/61, Economic Survey and Statistics.

CSO, Statistical Year Book, 1965, Karachi, Pakistan.

It is clear that the market for consumer goods was much larger than either the market for intermediate and investment goods or both combined, in the 1950's, and it was only in the last part of the First Plan and the early years of the Second Plan that the market for intermediate and investment goods became larger than that for consumer goods. This change in relative market sizes must have been closely related to the acceleration in investment activity in the same periods. The other principal aspect of profitability is the spread between output prices and input prices. For industries based on raw materials produced by the agricultural sector the spread was large, with ₹ 1 worth of manufactured output worth Rs. 7.00 to Rs. 8.00 in the mid-1950's, and ₹ 1 worth of agricultural goods purchased worth Rs. 3.00 to Rs. 4.00. For industries based on intermediate products that had been processed by the manufacturing sector, the cost of ₹ 1

worth of intermediate manufactures if purchased on domestic market was something over Rs. 8.oo, approximately the same as, or slightly more than, the value placed by the domestic market on ₹ 1 worth of output of intermediate and investment goods. Such a consideration would be less relevant, however, if producers were able to meet all raw material needs through direct imports. If import privileges were available they would have had to pay under Rs. 5.00 per dollar of intermediate goods. The figures in the following table, however, give some notion of the relative amounts of (i) goods imported directly by industrialists and (ii) those that were resold by commercial importers (for which the price was the domestic market price, not the c.i.f. price plus duties). In 1954/55, the first year for which data are available, raw materials and capital goods

Table 13 : Comparisons of Import Licences issued for Raw Materials and Capital Goods on Industrial and Commercial Licences. Rs. (Million). 1954-55/1964-65.

	1954/55	1957	1959	1964-65
Raw materials and capital goods	302.7(100.0)	366.7(100.0)	405.9(100.0)	n.a.
Commercial Licence	153.4(50.7)	148.2(40.4)	159.2(39.2)	382.7
Industrial Licence	149.3(49.3)	218.4(59.6)	246.6(60.8)	n.a.
Total value of industrial Licences issued	185.6	274.6	369.3	770.2
Commercial Licences for raw materials and capital goods as percentage of those Licences plus total industrial licences.	45.3	35.1	30.1	33.2

Source: S.N.H. Naqvi, "The allocative biases of Pakistan's Commercial Policy," Pakistan Development Review, Winter, 1966.

imported under commercial licenses were over 45% of the total supply of privately licensed imports of such goods, and even in 1964-65, the share of commercially licensed imports was about one third of the total.

A substantial proportion of demand for intermediate goods was met from goods that were legally resold on domestic markets, and for which the domestic price was much higher than the c.i.f. price plus duties. This means then that there was another disincentive to the investment in industries producing any goods which depended on manufactured intermediate products. In the late 1950's, as suggested in the last section, the rate of investment in sanctioned capacity for producing intermediate and investment goods increased, increasing the claims of such producers on relatively cheap foreign exchange. But in the earlier period, any lag in the rate of investment and import substitution in the intermediate and investment goods industries must have been due not to the failure of quantitative controls to provide high domestic prices of output, but instead to the relatively smaller domestic markets for such goods and the relatively higher prices of manufactured inputs into their production.

To summarise, a few points stand out very clearly from the above sections:

(i) The evidence is quite clear that non-policy determinants of industrial growth and structure in Pakistan were more dominant up to 1960. The non-policy variables that played a crucial role were (a) the partition of the sub-continent in 1947, which destroyed the customs union in which Pakistan was a food and raw material producing area for the rest of India, (b) the domestic production of agricultural raw materials used in producing the major manufactured goods consumed in Pakistan, (c) a relatively large market for mass

consumption goods, and relatively simple technologies for producing such goods.

(2) The policy variables, however, became more important in the allocation of investment resources after 1960. It is clear also that amongst the policy variables tariffs and indirect taxes played a relatively minor role in directing resource allocation. Direct quantitative controls were dominant in setting prices and incentives. Through their substantial impact on relative prices, these controls speeded the process of structural change both by improving the inducements to invest in various industries and by transferring substantial amounts of income to industrialists who reinvested them in manufacturing sector.

(3) The most important point which emerges from the above discussion is, that given the relative roles of policy and non-policy variables, the industrial structure which evolved through the period under review, was marked by the dominance of consumer goods industries. It became increasingly clear in Pakistan, by late 1950's that a major bottleneck to continued growth rates of output was the lack of capital goods, and lack of intermediate goods to utilize existing capital goods.

The Question Arises: Why should industrialisation, oriented toward the production of consumption goods be less effective in contributing to self-sustaining economic growth than one which emphasizes capital goods production or production for export?

On the surface, the farmer would seem to have definite advantages. There is an existing market which can easily be reserved for domestic industry by import restrictions. The products are familiar and the marketing system is already established. And there may be fundamental comparative advantage reasons for developing consumption goods industries first. In spite of these advantages,

there are certain fundamental dangers inherent in the industrial structure which is dominated by consumer goods industries. First, such an industrial structure implies Nurkse's balanced growth. There can be no specialisation for the home market. This means encouraging production of a little bit of a lot of things with all of the disadvantages this implies. It means in some cases an uneconomically small scale of production. In other's, too few firms for the kind of competition that enforces efficiency and progress. It means scattering thinly scarce capital, foreign exchange, and technical and organisational talent. It means, in short, doing many things poorly instead of fewer things well. As a consequence, the rise in value added in manufacturing includes a lot of just plain inefficiency in production. (The evidence on this point is given in the next section). Turning the terms of trade against agriculture (by substituting high-priced domestic manufactured goods for cheaper foreign ones) can be justified when a reasonable degree of efficiency turns the high prices into profits for reinvestment. If the high prices are matched by high cost of production, however, the hope of self-sustaining growth via such a strategy tends to be frustrated and the rationale for a transfer of saving from agriculture to industry is less evident. The second danger inherent in this kind of industrial structure is that the early momentum of industrial development will not be maintained because of a failure to develop a self-generating mechanism of industrial growth. This is clearly related to the first danger since a profits-saving reinvest sequence is a necessary part of such mechanism. The failure in the operation of "Savings-reinvestment" mechanism was evident during Pakistan's Third Plan period of 1965-70. The marginal rate of saving declined during the Third Plan to 9.5%, even below the average saving rate.

The average saving rate came down from 11.7% to 10.7% between the terminal years of the Second and the Third Plan. As a result, the gross investment as a proportion of GNP declined from 18.3% in 1964-65 to 14.3% in 1969-70. Thus the result of the failure in the operation of "savings-reinvestment" sequence was the serious shortfalls in the implementation of the Third Plan.

But even if this mechanism operates, what about the market inducements to investment after the painless take-over of the existing market from foreign competition has been accomplished?

The pace of investment and industrial growth will be gradually slowed as these market limits are reached[b.] unless some combination of three things happens. The first is the rapid growth of productivity across the whole economy and especially in agriculture which moves real income per capita ahead fast enough to warrant continuing high investment in industrial growth. The second is the operation of a "backward linkage" effect inducing investment in the production of equipment and intermediate goods used in the consumption goods industries. That is, import substitution must be extended to the prior stages of production. Third is the opening up of export markets for the surpluses that would develop inevitably if the pace of industrialisation is maintained.

Now none of these will happen automatically. There is no natural, spontaneous evolution from the kind of "hot-house" industrial growth induced by shutting out imports to this kind of permanent, self-sustaining growth. A rapid rise in productivity is itself inhibited by the implications of the balanced growth strategy, as

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b.
There is some evidence that this has occurred in Pakistan. Between 1950 and 1955 industry grew at an annual rate of 26 per cent. In the First Plan period of 1955-60, the average rate of growth was 11 per cent while during the Second Plan, it was 10 per cent. And during the Third Plan period of 1965-70, it came to 11 per cent as against the target of 15 per cent.

discussed above. The same can be said for the development of export markets, with one additional comment. A few markets will even initially be large enough in a country the size of Pakistan to support a number of firms of economical size. These will be for the consumption goods which have a heavy weight in budgets of low income families, e.g., cotton cloth. While these have great natural advantages for import-substitution, they have definite disadvantages for export promotion. The usual low-income-elasticity of demand for such goods means that demand in the advanced countries is not growing rapidly. As the less developed countries nearly unanimously select such industries for early import-substitution, the export market is further limited. This phenomenon has been quite manifest in the foreign trade sector of Pakistan economy. Though Pakistan's manufactured exports have expanded considerably in the last few years, i.e., at about 15% per annum between 1960-61 and 1969-70, but the increase in the manufactured exports is not necessarily an incontrovertible indication of the competitive efficiency of the Pakistani industries. Since 1959-60, when the rate of growth of manufactured goods accelerated, they have been the recipient of considerable subsidies. In addition to the export-bonus and export performance licensing, they have been entitled to such additional incentives as exemption from taxes on the imported components, the exemption from the sales tax and excise duties, rebates of the income tax on the profits earned from the export sales and concessional freight rates on exports, etc. The magnitude of total export subsidy in 1968-69 varied between the minimum of 60 per cent f.o.b. value of exports and the maximum of about 110 per cent of the f.o.b. value of exports in the case of few minor exports. Thus, the much talked about export performance of Pakistan under the shelter of heavy subsidies

is hardly any achievement.

This leaves the "backward linkage effect" on investment to replace imported capital equipment and intermediate goods. What is required is that profits from consumption goods industries be diverted away from reinvestment there to investment in equipment and material supplying industries. This should be a natural development, but there are some influences working against it. First, the capital market is not sufficiently developed to make this kind of reallocation of profits easy. The most likely place for reinvestment of profits is in the industry where they are earned. Nor has the government's taxing and relending activities developed sufficiently to fill this gap. Eventually giant, diversified monopolies of the Japanese zaibatsu type might substitute for a capital market. This development is quite conspicuous by its presence in Pakistan.[c.] Second, since final goods are given greater protection in the import control system than intermediate and capital goods, investment in the production of the latter always seems less profitable anyway. Ultimately, the growing supply of consumption goods would reduce the profitability of investment there, but this might occur only after the aggregate consumption function has been permitted to rise steadily, defeating all attempts to raise the saving rate. This brings me to the third danger of industrial structure dominated by consumer's goods industries - the danger of consumption liberalisation. Unfortunately, this sort of industrial structure carries within it an automatic decontrol of consumption.

We must start with a recognition that some sort of control over consumption was essential right from the beginning of the development effort. The principal instrument of control have been the controls

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c.
About 20 families control 66 per cent of industrial assets, 70 per cent of insurance funds and 80 per cent of bank assets in Pakistan.

on imports - duties and licensing system. When most manufactured consumption goods had to be imported, this worked not only to curb imports, but to constrain consumption as well. With the substitution of domestic production for imports, however, the proportion of consumption goods demand so constrained has steadily dwindled with the consequence that consumption has been automatically liberalised. The growth of domestic private savings in Pakistan supports the above point. From the data presented by the Planning Commission of Pakistan, one would consider that saving effort in Pakistan has been reasonable. According to that data the gross domestic savings were about 5.9% of GNP in 1959-60, whereas they rose to 9.5% of GNP in 1964-65. But if one accepts the estimate that depreciation accounts for 4% of GNP, then the net domestic saving ratio is only slightly higher than 5%. This can hardly be considered a respectable saving effort.

Finally, note must be taken of the natural tendency for the emergence of pressures to minimise the constraints on consumption when the business community is overwhelmingly committed to the output of consumption goods. As domestic production rose, the constraints on consumption steadily took more the form of restrictions on the licensing of materials, parts and equipment for the consumption goods industries, and less the direct limitation of imports of finished goods. And so the phenomenon of excess capacity due to scarcity of imported supplies emerged. While this was clearly the result of a misallocation of investment - too much capacity installed to produce finished consumption goods and too little to produce materials and equipment - and while to justify the full use of the existing capacity would have required such a rise in consumption as to emasculate the saving plan, all of the pressures were on the side of liberalising the licensing of supplies. For the excess capacity was there and the cheapest way to get an increase in production was

to import supplies. What the economy really needed, of course, was a stiff increase in taxes on consumption to offset the steady erosion of control over consumption, but how can one call for higher consumption taxes when there is excess capacity in the consumption goods industries? This is the kind of trap into which the type of industrial structure evolved through the period under review in Pakistan naturally leads.

Any analysis of Pakistan's industrialisation will be incomplete, however, without at least a brief comment on the industrial efficiency in Pakistan. This is undertaken in the next section.

Economic Efficiency and Pakistan's Industrial Growth:

Increasingly manifest, in recent discussions of economic policy-making of less developed countries, has been a greater concern for problems of industrial efficiency. This awakening interest is stirred by the realisation that the process of industrialisation has all too often led to a high cost industrial structure and a consequent inability to compete effectively in world markets and against imports.

An analysis of Pakistan's industrial structure in terms of its efficiency is especially interesting because there is a strong evidence that development policies themselves in Pakistan have contributed to inefficiency. Before I look into the sources of inefficiency, some evidence of its level and degree is called for.

There is a sufficient evidence to prove that industries in Pakistan suffer, on the whole, from a high cost disadvantage vis-a-vis competing imports. According to the data derived from the various reports of Pakistan Tariff Commission, the weighted average cost ratios vary between 1.50 and 1.90, i.e. the ex-factory prices are 50 to 90 per cent higher than the c.i.f. prices. About 30 per cent of

the industries have ex-factory prices 51 - 100 per cent higher than their corresponding c.i.f. prices; about 16 per cent of the industry have prices 100 - 200 per cent higher than the c.i.f. prices. A more detailed evidence is given in the following table. The differences

Table 14 : Indicators of the Distortions in the Price of Manufactured Goods in Pakistan. (1964-65).

Industries	Domestic wholesale value of ₹ 1.00 of Product	Industries	Domestic wholesale value of ₹ 1.00 of Product
Consumption goods:		Thread and Thread ball	8.23
Sugar	14.96	Saw-Milling	8.23
Edible Oils	9.81	Tanning	7.43
Tea	6.62	Rubber Products	7.28
Cotton Textiles	7.43	Fertilizer	5.47
Silk and Artificial Silk Textiles	21.42	Paints	9.62
Footwear	7.90	Chemicals	8.62
Wearing Apparel	15.47	Petroleum Products	9.85
Printing and Publishing	6.09	Paper Products	9.23
Soaps	9.23	Investment Goods:	
Matches	7.72	Non-metallic-mineral products	12.09
Plastic goods	15.99	Cement	8.33
Sports goods	7.62	Basic Metals	7.90
Pens and Pencils	12.14	Metal products	9.28
Electrical Appliances	19.42	Non-electrical machinery	9.00
Motor Vehicles	16.61	Sewing Machinery	7.62
Intermediate goods:		Electrical Machinery and equipment	7.62
Jute Textiles	6.95		

Source: S.R. Lewis, 'Economic Policy and Industrial Growth in Pakistan. 1969.

between world and domestic relative prices are shown in the form of implicit exchange rates for the products of manufacturing industries. There is a heavy concentration of rates in a range between 50 and 100 per cent above the official price of foreign exchange, but the range is quite wide. Thirteen of the thirty-two industries had implicit exchange rates more than twice the official price of foreign exchange. This evidence strongly supports the view that there existed a substantial amount of economic inefficiency in Pakistan's manufacturing sector during the period under review. It leads me to investigate into the sources of industrial inefficiency in Pakistan.

As indicated above, a simple notion of inefficiency underlies this analysis: namely, high-cost output relative to elsewhere or what might be in Pakistan. It should prove helpful to classify the sources of inefficiency along three lines: (a) the choice of unsuitable industries; (b) the use of inappropriate techniques of production; and (c) poor operating performance. Such a classificatory system, although not completely watertight and mutually exclusive, has one virtue that it reflects Pakistan's past and prospective industrial development.

Choice of Industry:

The task of choosing an appropriate pattern of industrialisation was made extremely difficult by the impact on industry selection exerted by two rather prominent features of Pakistan's position. One concerns the general attitudes influencing selection. There was a strong psychological commitment to "closure," a belief that path of industrialisation is best served by progressively and quickly creating a full range of all possible industries. The other relates to the presence of specific environmental disabilities.

(a) The Effect of 'closure':

Closure dominated the strategy of industrialisation for several reasons. Symbolically, it represented a throwing off and rejection of colonial past. It was an assertion of national-manhood. Objectively, it reflected distrust of reliance on traditional exports. Several other factors also pushed towards closure. Over confidence as a result of fairly successful experience of late forties and the early fifties, supported the ambitious efforts to create a new and more complex industries without at the same time fully and thoroughly analysing in what ways past experience was relevant. Likewise, the example of advanced industrial countries was misread because necessary requirements and preconditions were inadequately appreciated and all costs not evaluated. Emphasis on physical feasibility criteria at the expense of closer consideration of economic advantage also biased decision-making toward closure.

The economic planners in Pakistan, however, failed to realise that countries attempting to accelerate industrialisation via a strategy of closure have often found that their dependency has increased overtime since now much of their production depends upon being able to sustain a smooth flow of critically needed imports. Pakistan found itself exactly in that sort of situation during the Third Plan period of 1965-70. The industrial strategy of the Plan was reoriented in favour of a fuller utilisation of industrial capacity. This could not be achieved because of the shortage of imported inputs required for the fuller utilisation of existing industrial capacity. To quote from the Evaluation of Third Plan, "The Industrial Investment Schedule could not become fully operative since it was found necessary to impose an ad hoc restriction on import oriented industries. A better utilisation of industrial

capacity, the most important element in the revised industrial strategy, was not possible as the supply of imported raw materials remained erratic."

Thus, the strategy of "closure" pursued by Pakistan adversely affected the choice of industries during the period under review.

(b) Environmental Disabilities:

In addition to the influence exerted by the "strategy of closure," several other specific choice-distorting considerations tended to bias selection toward inappropriate and incorrect patterns of industrial growth.

1. First, and perhaps most important, disarray in the structure of relative prices seriously inhibited proper resource allocation. At least three distinct causes were at work to produce a pattern of relative prices ill-adapted to induce the proper choice of industries: (a) particularly key prices, such as exchange rate and interest rates, were wholly or largely administratively determined and maintained at disequilibrium; (b) non-competitive markets were tolerated and even encouraged, thus raising prices in the industries concerned and impeding desirable market adjustment process; (c) serious distortions existed in the wage structure, reflecting too little effort to compensate for market failure and the consequences of private preferences and institutionalised practices harmful to development.

(a) Overvaluation of the exchange rate had far-reaching effects. Imports became excessively cheap which encouraged their uneconomic use and inhibited the creation of domestic substitutes. Or, perhaps more accurately with respect to the latter necessitated numerous and complex ad hoc measures designed to offset such disincentive effects. Exports despite the export bonus and other incentive schemes, have

been held back by the relatively depressed price incentives.

Likewise, interest rates were also distorted. Where interest rates were set by Government either directly through public-financing bodies (e.g. PICIC, IDBP) or implicitly through direct funds allocation to public-sector enterprises, they were usually below the market-clearing equilibrium level. Interest rates established in the private sector were no higher than 6 per cent and the repayment period to favoured clients typically were five or more years. Moreover, they were strongly influenced by the high concentration of financial power and substantial interlinks among financial and industrial concerns. These close connections tended to generate various kinds of captive and preferential arrangements for access to finance. In addition, captive finance arrangements combined with the dominance of family arrangements were a major force inducing what ECLA has called industrialisation in breadth: the setting up of many industries at sub-optimal levels.

(b) The consequence of non-competitive markets in general was to raise prices and restrict entry. This affected relative prices and resource allocation in several ways. Directly, it affected other industries whose inputs must be purchased in non-competitive markets. Since such markets could only be maintained through sheltering firms from external competition, the easier conditions created thereby tended to cause firms to concentrate on the home market at the expense of potential exports and to adversely affect their efficiency. Finally, the excessive profit share, because of the nature of Labour market, tended to support either capital flight and luxury consumption or, in view of the limits upon expansion, within a

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PICIC : Pakistan Industrial credit and Investment Corporation.
IDBP : Industrial Development Bank of Pakistan.

non-competitive market 'mini-conglomerate industrialisation.'

(c) The third factor affecting the structure of relative prices was the distortion in wage structure associated with the failure sufficiently to compensate for aberrations resulting from externalities and from rather widely held preferences and institutionalised practices inimical to development. With respect to externalities it was not so much that wage structure was or was not appropriate in itself, but that the horizontal supply curve for labour was not conducive to training and health expenditure by the firm to continuously improve the quality of the work force. Because the firm could always find someone else at the going wage and could little ensure that it was able to completely capture the benefits of labourforce improving expenditure, it had little incentive to extend its efforts in these directions. Moreover, there was too little attempt in Pakistan to offset with respect to human input costs, private valuations with allowances for social cost and benefits.

With respect to preferences and institutionalised practices, there was, of course, the well-known desire for clean occupations. Similarly there was excessive demand for ornamental education unrelated to the emergent structure of occupational needs defined by Pakistan's development goals. The universality of these conditions tended simultaneously to create perverse wage differential and excess supply for highly desired but socially unprofitable kinds of jobs.

To summarise, there were substantial departures in the structure of relative prices from what should exist in terms of providing desirable incentives for an appropriate pattern of industrialisation. Such departures tended to be systematically biased in the wrong direction and were not usually offset either by specific corrective policies or through extensive use of accounting prices in planning.

It is, therefore, little wonder that much of planning consisted of ad hoc responses to the undesired consequences of an irrational price structure.

2. The Milieu of Underdevelopment:

A second factor which affected the ability to choose the appropriate pattern of industrialisation was a marked insensitivity to the milieu of underdevelopment. There was, I suggest, an inability to perceive or react sufficiently to the environmental deficiencies and peculiarities which constrain and influence choice. The countless difficulties of transplanting technologies where underlying conditions are vastly different tended to be systematically underestimated. The close interdependence and cohesive articulation of an industrial society was insufficiently recognised or appreciated.

Similarly, the greater uncertainty, instability and discontinuity associated with underdevelopment produced an inhospitable environment for many modern industries. Such industries require smooth-flowing networks of sub-assembly, finely graduated divisions of labour and function, assuredeness of continuity of input supply, all of which reflect, in short, substantial operating interdependency. Because the establishment of such environmental requirements takes much effort and even more time, prematurely creating industries heavily dependent upon them necessarily entailed an efficiency penalty.

3. Non-Competitive Markets:

The predominance of non-competitive markets was a third factor distorting the ability to choose properly. It affected choice not only through its impact on relative prices, as discussed above, but also tended to curb expansion of existing firms within an industry, and discouraged new entry. A sheltered, insulated industry, moreover, was not under great pressure to reduce its costs and improve its

product, thus directly affecting the operating conditions of other industries. Although this effect is impossible to quantify or fix with any great precision, it would be unwise to ignore the thrust towards expansion into other industries such restrictionist policies induce.

4. Foreign Assistance:

A fourth factor affecting choice of industry was the susceptibility to unwise selection associated with dependence upon foreign assistance. Sometimes this took the form of establishing industries simply because an offer of aid could not be resisted. However inappropriate or untimely or non-competitive an industry's establishment might be, the argument was, "It is free or on concessional terms, and after all, the economy is likely to grow sufficiently to make good use of it in the future." In my view, one must take only when the taking is good. Doubtlessly, there were many exceptions to such a pattern but there are also many reasons to account for it. In part, it reflects bargaining in expertise and the lack of technical sophistication; partly it reflects an inappropriately high time-discount and write down of future operating costs.

The other source of industrial inefficiency in Pakistan lies in the use of inappropriate techniques of production. That is discussed below.

Choice of Production Techniques:

Many of the factors affecting choice of industry apply with equal force to choosing techniques of production. The psychology of closure took the form of a bias towards imitation rather than adaptation. The elements of perversity in the structure of relative prices exerted their influence. Foreign assistance was probably systematically biased towards duplicating its own technology. The lack of competition engendered a permissiveness with respect to improper choice of technology.

There were some special features of Pakistan's economy which made conventional technology unsuitable. First, limited size and/or scale of operation - sometimes due to inadequate domestic demand and the impossibility of competing in world markets, sometimes due to severe input deficiencies - meant either choosing a less efficient technology or not fully utilising an efficient, but excessively large, relative to normal operating range, facility. As already referred to, under-utilisation of industrial capacity in Pakistan was widespread during the period under review. The strategy of industrialisation during the Third Plan of 1965-70, especially emphasised the fuller utilisation of capacity. But because of input deficiencies, this phenomenon continued as ever. Secondly, there was a much greater frequency of physical discontinuity and supply interruptions in Pakistan. Usually, this reflected inadequate maintenance, excessive breakdowns, lack of complimentary inputs, etc. Sometimes it was due largely to policy-associated instability - periodic foreign-exchange crises, stop - go kind of economic policies and administrative procedures, etc. Finally, the nature of entrepreneucial behaviour and motivation had far-ranging effects. For one thing entrepreneurial time horizons were excessively myopic; they always tended to look through the wrong end of a telescope partly this represents a safety first attitude towards uncertainty, and given the high degree of instability has much private rationality, however regrettable its social consequences. But this sort of attitude had a definite impact on the issue of technology. It tended to degrade proper maintenance, emphasized short-lived physical assets, was set against quality control, and, in general, thoroughly distorted the pattern of private incentives towards quick gains when socially desired pattern of resource allocation would have been different.

The third source of industrial inefficiency lies in the level of

performance of Pakistani industries.

Level of Performance:

No matter how extenuating the circumstances, there seems to be an infinitely extensible catalogue of horrors concerning industrial performance in Pakistan. In the use of capital, organisation of labour, control over input flow, standards of professional and administrative competence and maintenance of product quality, there are gross departures from efficient practice.

Physical equipment was systematically undermaintained and abused. Paradoxically, it was sufficiently scarce that every effort was made to keep antiquated equipment in service, if possible, through extraordinary repairwork. A popular rule of the game seemed to be that 'what can be gotten away in the care of physical assets up to the point of actual breakdown will be tried.'

Likewise so far as labour is concerned, similar deficiencies abound. Even the most casual observer was struck by the abundance of super-numerarics. Inadequate training programmes, lack of appropriate internal manpower policies within the production unit, limited job and in-plant mobility - all contributed to poor job performance and consequently inefficient production. One of the effects of a horizontal supply curve of labour, was to create a marked disinterest in the skill development of their workforce by employers. Employers seemed to prefer low nominal money wages to low real wage costs reckoned in terms of efficiency wages.

One of the most striking indicators of poor performance has been the excessive frequency with which normal production operations were disturbed. Although sometimes this reflected poor marketing forecasts, for the most part it was caused by supply discontinuities, which in turn stemmed from poor production planning, equipment breakdown,

critical input unavailability etc.

Finally, poor performance is reflected in inferior output. Quality control standards leave much to be desired. Adulteration has been a constant danger. Standardisation programmes have been difficult to secure agreement upon, even with respect to exportables where great harm to an export drive can be done by a small percentage of sub-standard output. In many cases, incentives to use inferior materials inevitably led to poor product results.[c.] In short, these were some of the factors responsible for very glaring industrial inefficiency in Pakistan. This leads me towards the conclusions which stand obvious from the preceding discussion.

Conclusions:

It is of course easier to suggest caution and beware of danger than to point out the proper path of industrialisation. Yet it is possible to draw some general conclusions from the preceding sections.

It seems clear that the pattern and tempo of Pakistani industrialisation has been largely shaped by the joint influence of a) the availability of raw materials, which in practice led to emphasizing those industries capable of utilising domestic raw materials; b) The physical possibility of easily producing an item, which led to those industries requiring less technical skill and less complicated production processes; and c) the assurance of a substantial domestic market, which led to the path of import-substitution behind tariff barriers and import restrictions. In addition, the system of foreign-exchange licensing and generous amounts

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c. Press reports in recent years, in Pakistan, have revealed that textile producers have imported 'seconds' of synthetic fibres in order to stretch out a given amount of foreign exchange allocation, and then, by virtue of protected home market, could sell with impunity the resultant inferior output.

of aid tended to provide capital equipment and intermediate goods at especially attractive prices to support the growth of these industries.

The industrial structure which emerged as a result of these factors had two principal features: (a) It had an inverted-pyramid structure of output - in which a wide variety of finished goods, mostly consumer type, rested on a narrow and inherently fragile base of imported capital and intermediate goods. Such lopsidedness coupled with greater compounding because of increasing interdependence created a situation in which any interruption to the flow of what had now become critically essential imports would have very damaging repurcussions; and (b) most of the industries were highly inefficient in the sense as defined above. These features of Pakistan's industrialisation point towards the following conclusions:

Firstly, there is a paramount need of selectivity and diversification of existing industrial pattern. The shift in emphasis from consumer goods to capital goods and intermediate goods industries will help in correcting the unbalanced nature of Pakistan's industrial structure. Secondly, the possibilities of a more discriminating use of the international division of labour should be carefully explored in future. Industries are sometimes divisible and it may be worthwhile to consider the advantages of splitting up an industry rather than simply accepting it as a complete package. Make - or - import decisions should receive greater consideration on a sub-industry basis.

Thirdly, on a longer term basis, criteria of reasonably priced imports should be given more weight in devising industrialisation strategy. World markets for many commodities are, and likely to remain, vigorously competitive, and buyers should not fail to take advantage of competitive, international supply conditions. Thus,

with a substantial number of producing countries in a world of international rivalry, importing countries can look forward with some assurance to the maintenance of competitive conditions. Given the persistent bias of policy in Pakistan towards import-substitution industrialisation, is it not now time to reconsider whether the balance of advantage does not lie in more ambitious export-promotion?

Finally, the relationship between relatively few firms within a sheltered market and the nature of industrial expansion needs more thorough investigation. The combination of absence of external competition and relatively few firms has inhibited desirable expansion and improvement, since sheltered markets tend to output restriction and excessive complacency. Potential exports are also hindered because home market sales appear easier and more desirable. Frequently, also, greater home sales and more vigorous competition, both for their effects in increasing firm size and accelerating reduction in cost, will lead to the emergence of new or radically larger export industries. All in all, too little thought has been given to the consequences of efficiency and export potential of sheltering domestic industries.

The upshot of these observations is that the expansion path for industrialisation needs to be more closely evaluated in terms of comparative advantage rather than an indiscriminate filling-out of industrial tableau in future, and in the past, efficiency has been too much sacrificed at the altar of growth where in fact greater efficiency would be highly rewarding in terms of growth.

References:

1 **Evaluation of The Third Five Year Plan (1965-70), Planning Commission, Government of Pakistan, May, 1971.**

2 **M.A. Rahman, 'Partition, Integration, Economic Growth and**

Inter-regional Trade,' Karachi, 1963.

3 Report of The Economic Appraisal Committee, Karachi, 1963.

Chapter IV.

Interrelationships between the Agricultural and Industrial Growth in Pakistan.

Introduction:

The interrelationships between the growth of agriculture and industry has long interested economists. Agriculture and industry are linked most obviously through the provision by the former to the latter of a surplus at the start of development process. However, development by means of channelling of the surplus from one sector to another, so establishing economic relations between the two, is only one type of development model. Egypt, for example, may be said not to follow this model.[1] In that country the exportation of cotten in exchange for food, i.e. development along the lines of comparative advantage, has been the obvious growth pattern; the marketed surplus, especially of food grains, has been relatively unimportant; what has been important was the establishment of a trade surplus and its relationship to the development of the economy.

How, then, can the study of interrelationships between the growth of agriculture and industry be justified in Pakistan's context? Firstly, Pakistan is a country for which, on account of its weak trade-sector, and its inability to maintain an export surplus, the surplus development model is more relevant. The necessity of providing food for its population and being self-sufficient in food-grains and agricultural raw materials is at the heart of Pakistan's development strategy. Secondly, history provides numerous cases of economic development being thwarted by the failure of these two major sectors to grow in step because of relative neglect of one or the other. As already referred to, Pakistan's own development experience under planning is scarred by the pernicious effect on industrial development of the slowing down of the rate of

agricultural growth.

Few would disagree that economic development experience of many countries has proved there to be some underlying inter-relationships between the two sectors. This fact has induced much talk about the need for balanced growth. The theoraticians such as Smith and Ricardo were on to the subject of agriculture-industry interaction earlier than the applied economists;[2] sectoral growth has become integrated into modern theoretical writings,[3] but there is still a dearth of empirical treatment. In this chapter, an attempt is made to explain the sectoral inter-relationships as visible in the development experience of Pakistan in the light of the theories referred to above.

In the sections that follow the subject is discussed under the following sub-headings:

(a) Inter-relationships in the early period (1947-48 to 1959-60); (b) Inter-relations in the 1960's; (c) the economic implications of intersectoral relationships and finally (d) sectoral growth - the future.

Inter-relationships in the early period:

One of the commonly held ideas about the development process is that increased agricultural production is "necessary" for industrialisation. For example, Nicholls[4] states that "agricultural progress is normally a pre-requisite for industrial development," and Mellor[5] argues that "agriculture must provide major increases in agricultural production and make significant net contributions to the capital needs of the other sectors of the economy." Japan is usually cited as the example par excellence which other Asian countries should observe in this regard.

Given the strong agrarian character of Pakistan in 1947, one

might have expected the above set of arguments to have been particularly important. The evidence on this issue, however, is somewhat mixed. The first thing that is clear from the data is that in the early period industry grew fairly rapidly whereas agriculture remained stagnant. This evidence, however, is not sufficient to disprove the pivitol nature of significance of agriculture to the economy of Pakistan. Firstly, because of the reason that even the stagnant agricultural sector can be squeezed (as will be shown below) in favour of industrial sector. Secondly, there were some very special reasons which facilitated the industrial growth in Pakistan during the early period. But in spite of these favourable factors, the industrial rate of growth slowed down during the First Five Year Plan of 1955-60 and one of the major factors responsible for the failure of the Plan was the stagnation of agricultural sector.[6] The special circumstances favouring rapid industrial growth in this period may be enumerated as, (a) much of the very early capital for trade and industry came from the accumulated savings of several groups which emigrated to Pakistan at the time of partition,[7] (b) equally important for Pakistan, was the importance of foreign aid and loans. HAQ[8] estimated that foreign aid and loans accounted for about 19% of Pakistan's imports and 35% of its development expenditure by the beginning of the First Plan, and finally (c) by considering the region of West Pakistan rather than the total Pakistan economy, there was the possibility of a net transfer of resources from the former East Pakistan. Although each of the above points is significant, even collectively they do not prove that there were no net transfers from the agriculture to the industry in aggregative terms. The empirical evidence from Pakistan supports

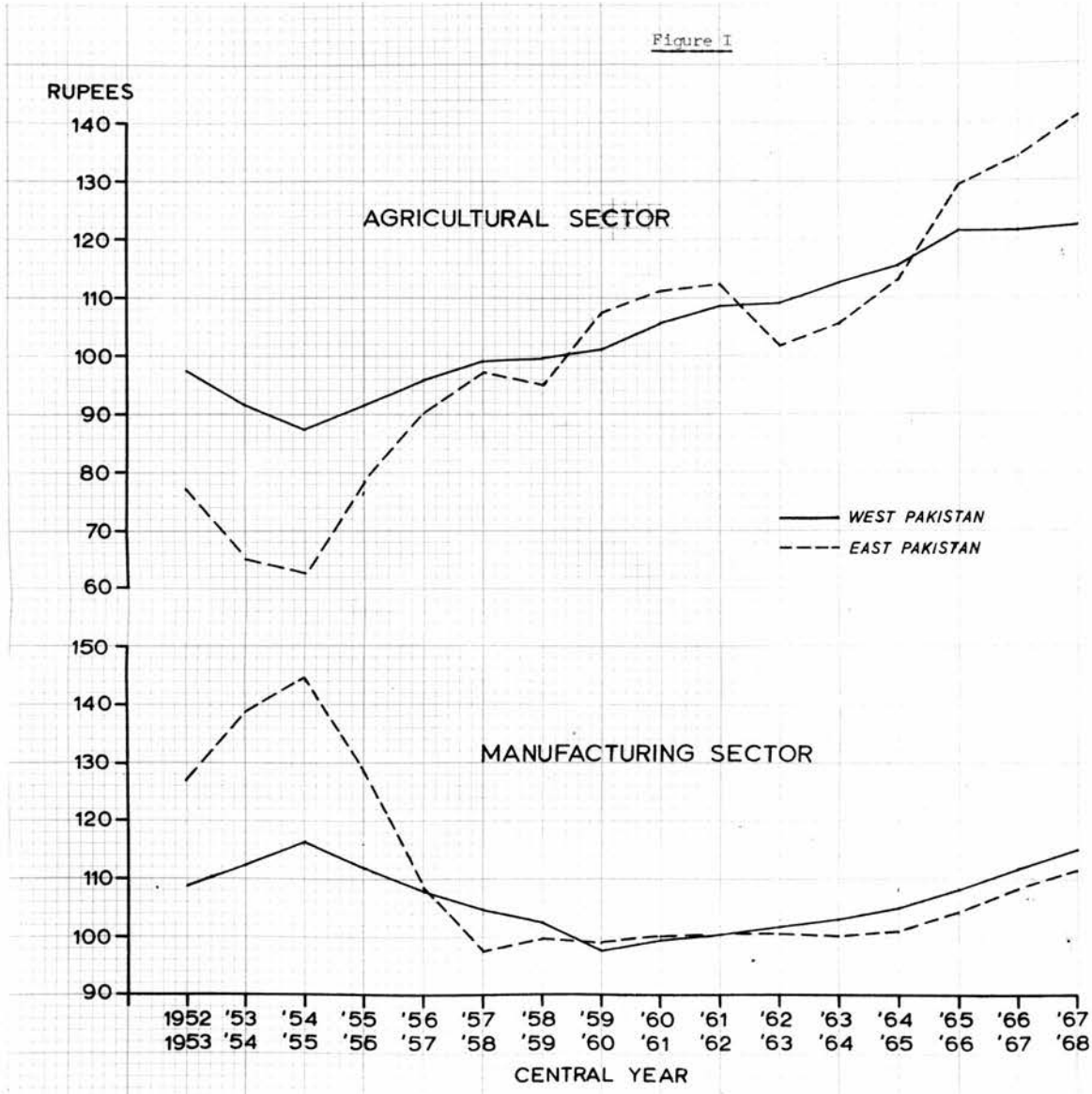
my contention that the government did effect transfers from agriculture to industry via fiscal and foreign exchange policy and through sectoral terms of trade during the period under review.

Terms of Trade and Resource Transfer:

The terms of trade are important determinants of the distribution of income between the two sectors as well as capacity for saving (particularly in the manufacturing sector) and incentives to produce and sell particularly on the agricultural sector. In Pakistan, the terms of trade remained depressed to the benefit of the growth of industrial sector throughout the 1950's. Current official interpretation of the "saving strategy" that the country pursued in the 1950's, indicates that the terms of trade were important in transferring income from the socalled low saving sector (agriculture) to the high saving sector (industry) as assumed by the economic planners in Pakistan.[9]

The following table sheds a sufficient light on the direction of terms of trade in the 1950's and onward. The principal results are given in Table 1, and are shown in figure 1, where all numbers are three year moving averages which smooth out some of the year to year fluctuations. The gross barter terms of trade favoured the manufacturing sector and were against the agricultural sector from the period 1951-52 to 1959-60, after which there was a reversal that lasted throughout the 1960's. The movements in former East Pakistan were much sharper than the movements in West Pakistan, but in both cases the movements are quite distinct. The manufacturing sectors in both regions faced worse terms of trade in the mid-1960's than even in 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

Figure I



Source: Table I

Table 1 : Domestic Terms of Trade for East and West Pakistan, 1951-52 to 1968-69.

(Three Year Moving Averages).

Period	West Pakistan		Former East Pakistan	
	Industry	Agriculture	Industry	Agriculture
1951-54	108.62	97.39	126.86	77.09
1952-55	112.22	91.44	138.55	65.32
1953-56	116.42	87.36	144.81	62.83
1954-57	112.00	91.44	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	97.87	101.25	99.15	107.24
1959-62	99.47	105.79	100.01	111.34
1960-63	100.29	108.53	100.66	112.36
1961-64	101.90	109.19	100.57	101.93
1962-65	103.10	112.55	100.11	105.46
1963-66	104.98	115.46	101.38	112.91
1964-67	108.37	121.47	104.67	129.10
1965-68	111.95	121.44	108.62	134.03
1966-69	114.97	122.44	111.68	140.79

Source: S.R. Lewis, Relative price changes and industrialisation in Pakistan, Pakistan Development Review, Spring 1970.

turned against them during the 1950's. The movements are quite obvious in all cases, and they are of considerable magnitude, particularly in the former East Pakistan.

An Interpretation of results:

The movements in the terms of trade of the two sectors in the period under study must be understood in terms of the conditions

and policies that existed in the beginning of the period.

As discussed in the preceding chapter, at the time of partition of the sub-continent, the area that comprised Pakistan was essentially raw material and food growing area for the rest of the sub-continent. While the exact magnitudes are not known, it is believed that most of the manufactured goods consumed in Pakistan were produced in India and exchanged for cotton, jute and food crops from Pakistan. 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.

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.

The result of the price movements was to provide "abnormally" high incentives to production in manufacturing and to transfer resources from agriculture to industry 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 was not met by devaluation and was accompanied by direct controls and its effect was to create a severe disequilibrium in the markets for manufactured and agricultural goods. So far, I have been discussing the terms of trade between the two sectors in terms of domestic prices. One very important aspect of the issue is the question that how domestic agriculture fared relative to the terms of trade it might have had if it could have traded directly in world markets.

In the absence of monopoly and of restrictions on the free movement of goods or prices, the price structure of traded goods in a country would be identical to the price structure it faces in international trade. Trade theory tells us that the result of opening trade is to move domestic price ratios between goods into equality with world price ratios. Tariffs and other restrictions on trade prevent domestic relative prices from equalling world relative prices. Many countries employ a variety of devices that distort domestic from world price structures, and many developing countries use those devices to protect their manufacturing sectors. The latter policies also tax domestic agriculture which receives lower prices for its goods than if it were allowed to buy and sell directly in international markets.[a] Policies to transfer income out of agriculture include multiple exchange rates or an overvalued currency that implicitly taxes exports, export taxes, tariff protection to domestic manufacturing sector, etc. Most of these devices have operated in Pakistan throughout the 1950's and sixties.

The basic aim, here, is to measure the extent to which domestic prices were prevented from reaching the relative prices that existed in international trade. The principal building blocks for the empirical investigations are implicit exchange rates for

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a. Please refer to page 33.

individual commodities. An implicit exchange rate is the ratio between the domestic wholesale price of a commodity in local currency (e.g. Rs.1 per yard of cloth) and the foreign price of the same item, at the port of entry or exit, in some international currency (e.g. $.20 per yard). The exchange rate implied by these prices (Rs. 5.00 per $ 1.00) is the implicit exchange rate for cloth. If this item were imported, subject to no duties and to no quantitative restrictions, then the implicit exchange rate for a good would be equal to the official exchange rate between the two currencies. To the extent that there are trade restrictions, however, the implicit exchange rate would differ from the official exchange rate. In competitive equilibrium, with no trade restrictions, implicit exchange rates for tradable commodities would all equal the official exchange rate, and there would be no difference between relative prices domestically and internationally. Trade restrictions would result in differences between domestic and international relative prices, which would be reflected in differences among implicit exchange rates for various commodities.

One subset of relative prices, the terms of trade between agriculture and manufacturing is more relevant to the analysis undertaken in this chapter. In order to estimate the extent to which the terms of trade get turned against agriculture, one can use implicit exchange rates. If Pi is the implicit exchange rate for manufacturing good i and Pk is the rate for agricultural good K, one can obtain an implicit exchange rate for goods originating in each sector by using an appropriate set of weights such as marketings of agricultural products, Sk, and purchases of manufactured goods by the agricultural sector, Bi. Taking the ratio of the average implicit exchange rates for agricultural goods, $\sum_k$ PkSk, to the average rate for manufactured goods, $\sum_i$ PiBi, one

finds the expression for the ratio of the terms of trade agriculture has domestically to the terms of trade it could receive if allowed to trade directly in international markets. Thus, the movements in average implicit exchange rates for the two sectors may be used to analyse the extent to which the agricultural sector was being discriminated against by government policies.

The implicit exchange rates for manufactured and agricultural goods in East and West Pakistan from 1951 to 1964 are given in Table II.

Table II : Implicit Exchange Rates for Agriculture and Manufacturing Goods, East and West Pakistan.

Period	Former East Pakistan				West Pakistan				
	Manufactured goods		Agricultural goods		Manufactured goods		Agricultural goods		
	Gross output	Purchases by Agric.	Marketings	Purchases by Manufacturing	Gross Output	Purchases by Agric.	Marketings	Purchases by Manufacturing	Official Exchange Rates
1951-54	6.15	9.07	2.87	3.32	7.07	8.39	3.81	4.13	3.31
1952-55	6.62	9.74	2.73	3.01	7.63	8.94	3.81	4.15	3.31
1953-56	6.88	10.17	2.86	2.97	7.84	9.00	3.76	4.06	3.78
1954-57	7.00	9.81	3.70	3.77	7.66	8.51	3.94	4.19	4.27
1955-58	7.20	9.83	4.46	4.57	7.90	8.56	4.33	4.57	4.75
1956-59	7.14	9.46	4.85	5.01	7.96	8.57	4.73	5.06	4.75
1957-60	7.20	9.07	4.65	4.95	7.95	8.68	4.85	5.30	4.75
1958-61	7.21	8.56	4.75	5.10	7.73	8.59	5.06	5.60	4.75
1959-62	7.13	8.42	4.83	5.17	7.68	8.61	5.19	5.70	4.75
1960-63	6.85	8.29	4.87	5.09	7.53	8.41	5.40	5.79	4.75
1961-64	6.63	8.15	4.77	4.93	7.39	8.33	5.35	5.69	4.75

Source: S.R. Lewis, "Effects of Trade Policy on domestic relative prices: Pakistan 1951-64," The American Economic Review, March, 1968.

The rates facing agriculture are shown in figure II, where agricultural exchange rates are weighted by agricultural marketings and manufactured goods exchange rates are weighted by estimated purchases of manufactured goods by the agricultural sector.

Several characteristics of figure II stand out. First, even in the mid-1960's the agricultural sector received around Rs. 5 for agricultural goods worth ₹ 1.00, but it paid over Rs. 8.00 for manufactured goods worth ₹ 1.00. Thus, agriculture received about one third less per unit of output exchanged than it might under "free trade". Second, there has been a narrowing of the gap between the implicit exchange rates for the two sectors since the mid-1950's. Third, even though a considerable portion of the disequilibrium between sectors was eliminated by 1959, there is still some narrowing of the gap after 1959, so that the process has been a continuing one for about a decade. Fourth, the then East Pakistan's farmers had worse terms of trade than did West Pakistan's in the 1950's, due both to a lower implicit rate for agricultural goods and to higher implicit rates for the manufactured goods in that region.

The above discussion leaves no doubt that adverse movement in agriculture's terms of trade in the years after partition and particularly after the exchange crisis, taxed the agricultural sector quite heavily. Unfortunately, no detailed information is available on the magnitude of resource flows between the two sectors during the mid-1950's. The indications are that the agricultural marketings were the same in the mid-1950's as in 1962-63, i.e. ₹ 500 million in West Pakistan and ₹ 300 million in the then East Pakistan. As already referred to, that in the 1950's, for each dollar of agricultural goods sold, farmers received less than 50 cents worth of manufactures in West Pakistan and less than 40 cents

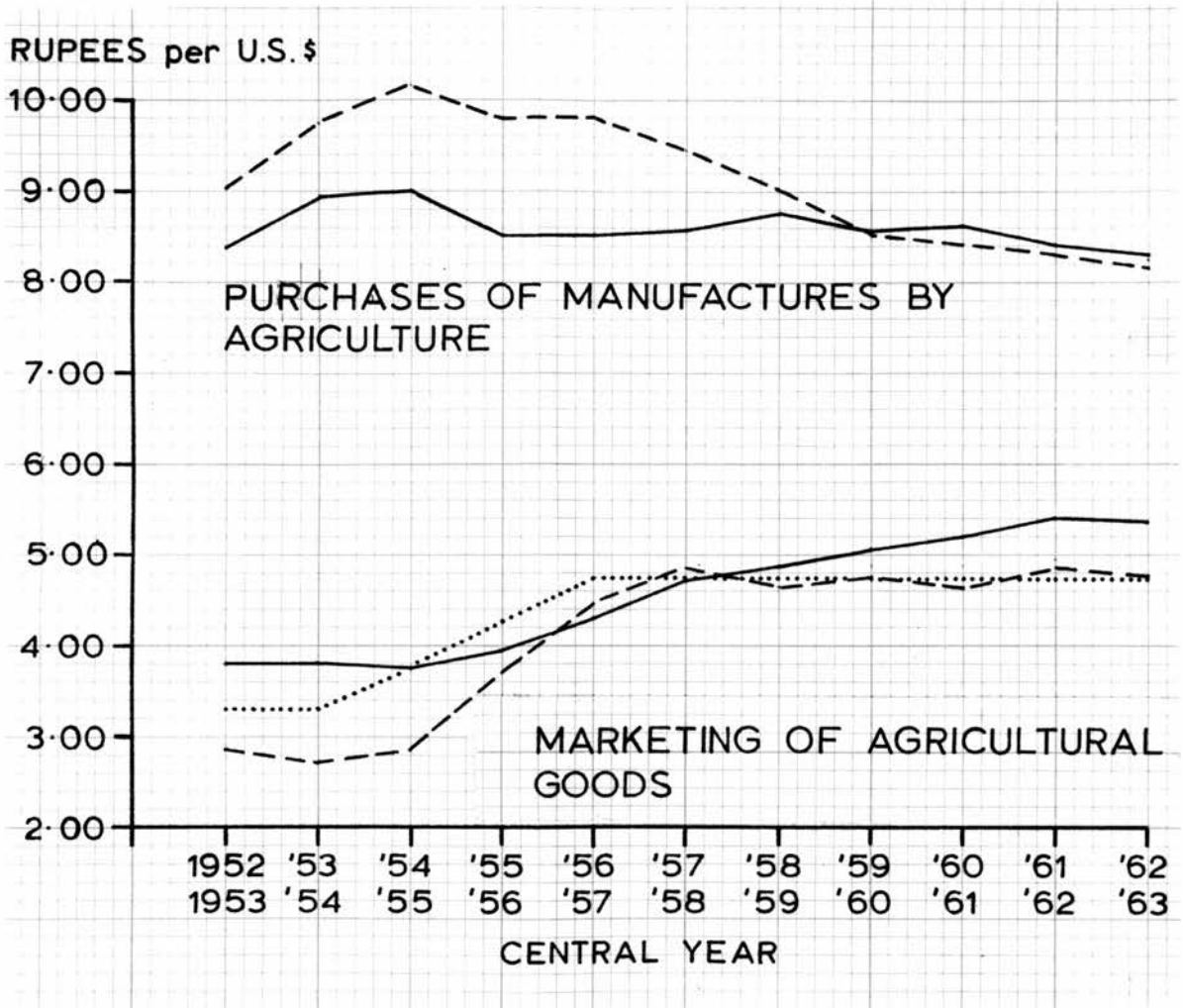

Figure II. Implicit Exchange Rates facing the agricultural sector.

Source: Table II

of manufactures for one dollar worth of agricultural goods in the then East Pakistan. This means that ₹ 500 million that West Pakistan agriculture sold, exchanged for around ₹ 200 million in manufactured goods. The net transfer to the rest of economy have been in the order of ₹ 300 million. The annual transfer over this period came to approximately 10 per cent of value added in West Pakistan agriculture. Since East Pakistan had a lower total value of marketings than West, the total value of resource transfer was less, but there was a higher transfer per unit of marketing. In short, agriculture in both the regions was being heavily taxed in order to channelise resources from rural sector to the industrial sector.

Agriculture as a Supplier of food and raw materials:

It is evident from the discussion in the preceding section, that agriculture was a major source of supply for the industrial sector's requirements of food and raw materials. The chapter on industry has shown that an availability of agricultural raw materials at highly favourable prices to industry was one of the principal factors which determined the tempo and pattern of industrial growth in Pakistan in the 1950's. This role of the agricultural sector has been further highlighted by the discussion on the terms of trade, between agriculture and industry, in the above section.

As regards the food supply, the statistics show that during the mid-1950's food supplies lagged behind the demand for food. As a result a food deficit developed and threat of inflation seemed imminent in the country.

There were many causes of the failure on the part of agricultural sector to sufficiently meet the domestic requirements of food during this period. Firstly, on the supply side, it was

the sheer neglect of agricultural sector during the First Plan of 1955-60, that caused the slow growth of food production in the country. Though agriculture was given high priority during the First Plan in terms of resource allocation, yet it was sheerly discriminated against as far as the economic policies were concerned. The result was that because of the disincentive effects of various policies (as explained in chapter on agriculture) the agricultural sector remained virtually stagnant during the First Plan period of 1955-60. On the demand side, there were many factors causing rapidly growing demand for food. To enumerate a few: populations grew at the rate of 3.5% per annum as against the plan's projections of 2.5%; rapidly growing commercial demand for food because of high rate of industrial growth; monetisation of the economy etc. Thus, both the supply and demand factors were responsible for the food gap of 1950-60. The result was that food deficit had to be met through imports, which totalled about Rs. 2330 million over the plan period. This development further aggravated Pakistan's foreign exchange difficulties. The result of more than anticipated food imports was a drastic cut of 28% in the development imports, which in turn resulted not only in a cut in the development programme but also in serious distortion of the Plan priorities. This points towards the significance of adequate food supply in a developing country like Pakistan.

Thus, it is clear that agricultural sector did not adequately meet the country's requirements for food during the First Plan period of 1955-60, but it is difficult to deny at the same time that it did supply the major segment of the country's demand for food even in this period. This was possible in spite of agriculture being a lagging sector during the mid-1950's.

Agriculture as a Source of Foreign Exchange Earnings in Pakistan:

Like many other underdeveloped countries, foreign exchange has been one of the principal constraints on the process of economic development in Pakistan. As already referred to, until 1952, no serious foreign exchange gap developed in Pakistan. This is mainly because of increased exports during the Korean crisis. When the Korean war boom collapsed, however, the exchange earnings fell sharply and a serious foreign exchange crisis ensued. The strict foreign exchange control and quantitative restrictions on imports bear ample testimony to the gravity of foreign exchange problem in Pakistan. The inadequacy of foreign exchange resources was one of the major causes of the failure of the First Plan. The foreign exchange shortage resulted not only in a cut in the development expenditure but also in serious distortion of the Plan priorities. Since development imports were not available in adequate quantity, the bulk of private investment was used for purposes for which the import component of investment is small.

The above paragraph sheds enough light on the importance of foreign exchange resources to the economy of Pakistan. The question is, what contributions did agriculture make towards the much needed foreign exchange earnings in Pakistan during the 1950's. The figures show that primary commodity exports remained the mainstay of foreign exchange earnings in Pakistan during the 1950's. The total foreign exchange earnings came to Rs. 9554 million during the First Plan and out of this Rs. 6547 million came from primary commodity exports. This is an impressive contribution which an agricultural sector can make towards the industrialisation of the country. There are no figures available on the amount of foreign exchange spent on agricultural development, but it appears that it was insignificant. Thus, the major chunk of foreign exchange earned by agriculture was

channeled to the industrial sector.

So far I have been talking about resource flows from agriculture to the industry in the early period. The question to be now answered is: What has been the resource flows from the industrial sector to the agriculture in Pakistan? Theoretically speaking, industrial sector provides the consumer goods and supplies some of the inputs to the agricultural sector. In addition, it is supposed to absorb a part of the labour force already engaged in agriculture.

It has been made clear in the chapter on industry that consumer's goods industries flourished very rapidly during the 1950's and to very great extent the local production of consumer goods met the domestic demand, unfortunately, owing to the protection given to these industries the prices remained high and agriculture had to buy at unfavourable terms until the end of 1950's. I have already talked about the terms of trade and the resultant resource transfer, in detail, so I need not elaborate this point.

As regards the supply of inputs, the fertilizer was the only unconventional input which was in demand during the 1950's. In the early 1950's the demand for fertilizer was as low as 10,000 tons per annum and all of it was being imported. However, with the completion of a fertilizer factory sponsored by Pakistan Industrial Development Corporation, in mid-1950's, the domestic production met the local needs. During the First Plan period of 1955-60, only 31 thousand nutrient tons were used in West Pakistan and about 7 thousand tons in the then East Pakistan. The domestic production came to about 50,000 tons per annum which adequately met the local needs. However, during the sixties the local supply lagged behind demand and the gap had to be met by imports.

As regards the labour absorption, the performance of industrial

sector has not been impressive at all. The following table gives the figures on employment between 1951 and 1961. It seems obvious

Table III : Composition of Employment in Pakistan, 1951-1961.

	1951	1961
Pakistan.		
Agriculture	76.5	74.3
Industry	8.7	12.0
Services	14.8	13.7
East Pakistan		
Agriculture	84.7	85.3
Industry	6.6	6.0
Services	8.7	8.7
West Pakistan		
Agriculture	65.3	59.3
Industry	11.6	20.2
Services	23.1	20.5

Source: Population Census of 1951 and 1961, Government of Pakistan.

from the table above that there has been no significant shifting of the economy's centre of gravity from the agricultural to the industrial sector through labour reallocation as envisaged by some of the authors of two-sector models.[10] This is despite the fact that industry grew at a record rate of 16 per cent per annum throughout this period. The reasons of the slow process of labour reallocation from agriculture to the industry in Pakistan were not different from those of other developing countries. As already referred to, the psychology of closure which dominated the

industrial policy in Pakistan, took the form of a bias towards imitation rather than adaptation. Thus, no efforts were made to adapt the foreign technology to suit the resource base of Pakistan economy. Secondly, the factor price distortions encouraged the choice of inappropriate techniques of production. For example, the domestic currency has been kept overvalued throughout this period. Similarly, the price of capital, i.e. interest rate, has been far below an equilibrium price. The rate of interest on borrowed capital in Pakistan has been no higher than 6 per cent and repayment period to the favoured clients has typically been 5 or more years. These are some of the obvious reasons inducing the use of capital intensive techniques in Pakistan's industrial sector.

Thus, to summarize the early period, it is clear that despite the stagnant nature of agriculture, it made important contributions towards the promotion of industrialisation in the country. Throughout the early period, it was being increasingly squeezed in favour of industrial sector. Protection almost from the beginning permitted high trading and industrial profits. And in turn, it was the reinvestment of these profits earned largely from sales to the rural masses that made for the spectacular industrial growth." It is mainly in this sense that agriculture was a net contributor to the industrial sector during the 1950's.

Inter-relationships during 1960-65.

This period is different from the 1950's, in a sense that agricultural picture changed rather radically in Pakistan between 1960-65, and industrial growth, too, was equally impressive. Consequently, the inter-relationships between the two sectors during this period were more significant and of a direct nature. Some of the important intersectoral flows are discussed under the following sub-headings.

Terms of Trade and Potential Resource Transfer:

It is evident from the discussion in the preceding section that a substantial transfer of resources took place from the agriculture to industry via terms of trade throughout the 1950's. The data indicate that in the 1960's, the terms of trade moved in favour of agricultural sector. This is true in terms of domestic wholesale prices. But if we compare the domestic terms of trade of the agricultural sector with the prices it would have received, had it been allowed to trade in the world market, the position remains the same as in the earlier period. The table 2, sheds sufficient light on this point. It is clear from the table that in 1962-63, a dollar worth of agricultural goods exchanged for 63 cents worth of manufactured goods in West Pakistan and for 61 cents worth of manufactured goods in the former East Pakistan. Of course, this is a better position when compared to the 1950's, but the fact is that agriculture was being squeezed during this period too.

The following table will give some idea of the magnitude of such a transfer from agriculture to industry during the early 1960's. It is clear from the following input - output table that

Table of flows : West Pakistan Economy, 1962-63.

From \ To		1	2	3	Final Demand[b]	Gross-output
		Billion of Rupees				
-1-	Agriculture	4.61	1.98	0.00	7.17	12.74
-2-	Manufacturing	0.57	2.28	0.70	8.79	12.47
-3-	Services	0.90	2.04	0.19	5.94	9.26
		(1-A) Matrix (direct and indirect requirements)				
-1-	Agriculture	1.591	0.314	0.024		
-2-	Manufacturing	0.099	1.263	0.098		
-3-	Services	0.132	0.233	1.039		

Source: Government of Pakistan, Planning Commission, Perspective Planning Section, West Pakistan input - output table, 1962-63, Karachi, Nov. 1966.

b One rupee then equalled $ 0.205

sales of agricultural sector to the manufacturing sector came to about 2 billion of rupees in 1962-63 which at the then prevailing exchange rate equalled about 500 million dollars. This figure shows the agriculture's sales in West Pakistan only. If we value these sales at world prices as indicated above, this will mean that agriculture in West Pakistan received the equivalent of only ₹ 315 million in manufactured goods during 1962-63.[12] Industry and trade sectors which purchased the undervalued agricultural goods, were receiving the equivalent of ₹ 185 million per year in "free" manufactures paid for by agriculture.

The situation was not different in the former East Pakistan during the early 1960's. According to the data available, the sales of agricultural sector to Industry came to ₹ 300 million in the East during 1962-63. By this year, one dollar worth of agricultural goods exchanged for 61 cents worth of manufactures in the East. Since East Pakistan had a lower total value of marketings than West, the total value of resource transfer was less, but there was a higher transfer per unit of marketing.

Thus, it is obvious, that even in this period, the "squeeze" on agricultural sector was going on. There may be a change in the amount of resources being transferred from agriculture in the early 1960's, but the fact remains that agriculture was still being made to pay for the benefit of industrial sector.

Agriculture and Capital formation:

In the preceding section, I have discussed an indirect contribution of the agricultural sector to the capital requirements of the industrial sector in Pakistan. There is evidence of agriculture's making contributions to the industrial sector via export surplus, i.e. excess of sales over purchases from the industrial sector. A rough measure of such transfer is given in

the following table.

Table IV: Sales and Purchases of the Agricultural Sector, 1964-65.

		Rs. Million
1	Sales by agriculture to urban sector and foreign countries	14425
2	Purchases of intermediate goods	1518
3	Purchases of capital goods from abroad	69
4	Purchases of capital goods from urban sector	262
5	Purchases of consumer goods	8914
6	Total purchases	10,763
7	Sales - Purchases - Resource - Transfer	3662

Source: K. Griffin, Financing Development-Plans in Pakistan, Pakistan Development Review, Winter, 1966.

It appears from the above table that agriculture annually transfers about 3600 million rupees of resources to the urban sector. This represents over 15% of the value of its gross output. Without a flow of funds statement it is difficult to trace the financial flows and determine the form in which assets are accumulated. Some of the savings are deposited in rural branches of national banks and then transferred to the urban sector. Probably a large proportion is deposited directly in urban banks. Some of the funds may be invested directly in manufacturing. Some of the savings, of course, are transferred through agricultural taxes.

What is measured above is the difference between the current price exports from the sector and the current price imports made by this sector at domestic prices. This does not reflect the terms of trade loss referred to above. Even if there is no resource transfer from the agricultural sector according to the above

measure, there can be a significant transfer due to the terms of trade loss.

The total resource transfer from agriculture in terms of world prices may be expressed by the following relation:

$$\frac{E}{Pe} - \frac{M}{Pm} = \frac{E - M}{Pe} + \frac{M}{Pm}\left(\frac{Pm}{Pe} - 1\right)$$

where E and M are the exports and imports of the agricultural sector respectively. Pe and Pm are the ratios of domestic prices of exports and imports to the corresponding indices of world prices. Thus, if E = M, the first term in the right hand side will be zero, but still there can be significant resource transfer due to the second term (terms of trade loss) if the ratio of Pm to Pe is greater than unity. Some evidence on the estimates of Pm and Pe for Pakistan has been given in the preceding sections. It is common knowledge in Pakistan, however, that agriculture buys its purchases from the non-agricultural sector, on the average, at a price much higher than world prices and sells its products to the non-agricultural sector at a much lower price. Some evidence of the excess of domestic prices over c.i.f. prices of imported goods was also produced in the chapter on industry.

To provide a broad range of the magnitude of total resource transfer from agriculture, it is possible to make four alternative assumptions about Pm and Pe, and use the estimates of sectoral sales and purchases given in table 4. The results are shown in the following table.

Table V : Alternative Estimates of the Potential Resource Transfer from the Agricultural Sector.

Estimate No:	E-M (1)	Pm (2)	Pe (3)	$\frac{Pm}{Pe}$ (4)	$\frac{E-M}{Pe}$ (5)	$\frac{M}{Pm}\left(\frac{Pm}{Pe}-1\right)$ (6)	Total of cols. 5 and 6 (7)
0	3662	1	1	1	3662	0	3662
1	3662	1.50	0.75	2	4883	7175	12058
2	3662	1.573	0.90	1.75	4069	5126	9195
3	3662	1.425	0.95	1.50	3858	3777	7615
4	3662	1.25	1.00	1.25	3662	2153	5815

If we take the second estimate in Table V, then the resource transfer from agriculture on account of the terms of trade loss will be as high as 67% of agriculture's total value of imports measured at world prices (col. 6) and this blows up the estimate of resource transfer in table 4 by about 229 per cent. Even the modest assumptions of Pm and Pe (Estimate No. 4) give the total transfer from agriculture to the industry to be 59 per cent higher than the estimate given in table 4.

Thus, if all transactions between agriculture and industry are valued at world prices, the agricultural sector's contributions to the capital formation becomes substantial. It, thus, appears from the above discussion, that agriculture in Pakistan has played a significant role in financing industrial development.

Agriculture and price-stability:

Theoretically speaking, if food supplies fail to expand in pace with the growth of demand the result is likely to be a substantial rise in food prices leading to pressure on wage rates with the consequent adverse effects on the industrial profits, investment and economic growth. There is scant evidence concerning

the price elasticity of demand for food in underdeveloped countries.

The inflationary impact of a given percentage increase in food prices is much more severe in an underdeveloped country than in a high income economy. This is a simple consequence of the dominant position of food as wage good in lower income countries where 50 to 60% of total consumption expenditure is devoted to food. Pakistan's experience is very interesting in this respect. During the First Plan period of 1955-60, the agricultural sector was virtually stagnant. The result was that food supply lagged behind the demand and inflation seemed a real threat. The statistics show that during the first two years of plan the price index rose by 60 per cent.[13] The situation, however, became entirely the opposite during 1960-65 when agricultural breakthrough was on the way. The average annual increase in the wholesale prices came to less than 2.5% throughout the period of the Second Plan, which is one of the lowest in the world. This stability has existed despite a rather rapid increase in the money supply. Currency in circulation and demand deposits increased at an average compound rate of 8% per annum. The major reason for price stability during 1960-65 was the rapid increase in agricultural production.

In brief, agriculture by maintaining the price stability during the Second Plan, made an important contribution to the industrial sector. The soaring prices would have resulted in higher wages, thus cutting down the industrial profits and consequent slowing down of investment activity in the country.

Agriculture as a market for industrial goods:

There are, of course, number of factors which may influence an investment decision. But one of the principal considerations may be the demand conditions and estimates of the future profitability of additions to capacity. Ragnar Nurkse has been especially emphatic

in stressing the importance of opportunities for profitable investment as a strategic factor influencing the rate of capital formation and Prof. Lewis, too, emphasized that increased rural purchasing power is a valuable stimulus to industrial development.[14] My chapter on industry gives plenty of evidence that domestic demand was the most important source of industrial growth during 1960-65. This is in sharp contrast to the First Plan period when import substitution was the dominant source of industrial growth. This difference in sources of industrial growth in Pakistan may be explained by the contrast in the performance of agriculture during the two periods. The agricultural breakthrough during 1960-65, enhanced the rural purchasing power which stimulated industrial growth considerably. An interesting example is that of rural investment of Rs. 250 million in tubewells during 1960-65 and consequent stimulus to small scale machine industry in Pakistan. In reference to the spontaneous, private development of tubewells, W. P. Falcon and C.H. Gotch observed that, "These 25000 wells represented an initial investment on the order of Rs. 250 million a sum thought impossible in Pakistan's traditional agriculture. Moreover, this investment was an important stimulus to small scale machine industry. Whole streets in such cities as Multan, Lyallpur, Lahore, Gujranwala, Sialkot and Daska have been devoted to the manufacture of pumps and engines, and the skill, ingenuity and training demonstrated in these shops have been impressive."[15]

Thus it is obvious that agricultural sector facilitated industrial growth during this period by providing substantial domestic absorption for the manufactured goods.

So far I have attempted to present oneside of the picture only. The question arises: what have been the reverse flows from industrial to the agricultural sector during 1960-65?

The experience of Second Plan is different from that of First Plan in one respect at least, i.e. industrial sector played an important role in promoting the agricultural growth during this period. The chapter on agriculture gives ample information on the sources of agricultural growth. Amongst the physical factors causing agricultural growth during the Second Plan two stand out very clearly - tubewells and fertilizers. As already referred to, ground water development was responsible for almost 10% increase out of the total of 27% in crop production during the Second Plan period. All the tubewells which were at the heart of ground water development were manufactured locally. Thus, industrial sector by relaxing the water constraint on Pakistan's agriculture, made possible the spectacular growth in agricultural sector. The increased water supply was in turn one of the major factors inducing the use of unconventional inputs.

Another input provided by the industrial sector which proved to be equally effective in promoting agricultural growth was the fertilizer. As already explained the fertilizer explains about 5% of the total of 27% gross increase in crop production during the Second Plan period in West Pakistan. Even in former East Pakistan where the agricultural growth was relatively slow, the use of fertilizer increased from a base of only 7400 tons in 1958-59 to a total of 40,000 tons by the end of Second Plan.

The statistics on the fertilizer production in Pakistan indicate that fertilizer output increased quite rapidly during 1960-65. In 1959-60, the production of fertilizer was of the order of 43,500 tons. The Second Plan target was to increase the production capacity to 345000 tons by 1964-65. In former East Pakistan, the Fenchuvanj-Fertilizer factory with an annual production capacity of 1,170,00 tons of urea was completed in 1961. Moreover, the work was started

on three more projects by the East Pakistan Industrial Development Corporation. In West Pakistan, the Natural Gas factory at Multan with a capacity of 103,000 tons of Ammunium Nitrate and 59,000 tons of urea was completed in 1962. Some of the existing plants were expanded also. Included among these were Pak-American Fertilizer at Daudkhel and Chemical and Fertilizer factory at Lypallpur. Thus, the above quoted figures show that indigenous production of fertilizer grew quite rapidly. The above discussion shows that industrial sectors contributions in the form of input supplies to agriculture were quite impressive. However, the behaviour of industrial sector with respect to the labour absorption was not different from that of 1950's. The reasons of this poor record of

Table VI : Composition of employment in Pakistan, 1951-1967.

Item	1951	1961	1966-67
Pakistan:			
Agriculture	76.5	74.3	67.1
Industry	8.7	12.0	16.5
Services	14.8	13.7	16.4
East Pakistan:			
Agriculture	84.7	85.3	77.8
Industry	6.6	6.0	9.6
Services	8.7	8.7	12.6
West Pakistan:			
Agriculture	65.3	59.3	53.4
Industry	11.6	20.2	25.4
Services	23.1	20.5	21.2

Source: 1951 and 1961 figures are based on Population Censuses of respective years. 1966-67 figures are from Pakistan Labour Force sample survey 1966-67.

industrial sector in this respect are the same as previously mentioned. The factor price distortions continued during this period, thus encouraging the unsuitable production techniques. Moreover, the kind of industries which flourished during this period were less amenable to labour intensive techniques. The result was that industrial sector which grew at an annual compound rate of 13.1% between 1960-65 failed to relieve the agricultural sector from its heavy population pressure, by absorbing a substantial chunk of labour force already engaged in the rural sector. Nevertheless, the industrial sector did contribute to the agricultural growth in 1960-65 by providing two inputs which were the root cause of agricultural development during the Second Plan period.

In short, to describe all of the other important inter-relationships of the later period would require a complete volume. Simply too many things were happening in agriculture, industry and government policy to make even a brief summary which is above challenge. What generally seems to have happened, however, is that in absolute aggregate terms, agriculture was again a net contributor to industry. But in contrast to the earlier period, agriculture received two critical new inputs at attractive prices which led to a vastly improved agricultural performance.

The Economic Implications of the Interactions of Agriculture and Industry in Pakistan:

It is evident from the discussion above that economic policy in Pakistan has especially favoured the industrial sector. Agriculture has always been made to pay for the rapid industrialisation in the country. Theoretically speaking, agriculture is supposed to subscribe to the process of capital formation in the country at

initial stages of economic development because it happens to be the predominant sector in the economy. This supposition is quite valid as long as agriculture's contributions to the process of capital formation remain within reasonable limits. In Pakistan, the squeezing of agriculture has gone rather too far. This has had far-reaching implications for the income distribution and regional development in the country. I will take up each of these in turn:

(a) The distribution of income:

In order to enjoy a higher level of consumption in the future, present consumption must be restrained and surplus thus mobilised must be used for productive investment. Evidently a growing proportion of the national income must be saved and invested if growth is to be accelerated, and it is this refraining from consuming which constitutes the real sacrifice or cost of economic development. What is of crucial importance is whose consumption is restrained, i.e. the way in which these sacrifices are distributed among the population, because the control of the surplus and the way in which it is mobilised determine not only the distribution of income throughout the development period but also the form and composition of development itself.

To the extent that domestic resources have been mobilised in Pakistan, it has been achieved by restraining the growth of the living standards of the poorest members of society - the rural masses. The Third Plan of Pakistan states: "There was a considerable transfer of savings from the agriculture to the industrial sector... as terms of trade were deliberately turned against agriculture through such policies as licensing of scarce foreign exchange earned primarily by agriculture to the industrial sector, compulsory

government procurement of food grains at low prices to subsidize the cost of living of the urban, industrial workers, generous tax concessions to industry and lack of similar incentives for commercial agricultural investment." The measures were particularly strong in the 1950's; they have been modified since then but have not been abandoned completely.

The evidence is quite strong that agricultural prices were squeezed in the 1950's through such policies as compulsory delivery of food-grains and export taxes on cotton and jute. At the same time tariff protection, import licensing and other exchange controls allowed industrial prices to soar. The government's measures had the effect of reducing per capita income and consumption in rural areas relative to the growth of G.N.P. per capita and, perhaps also in absolute terms. It was mostly in the agricultural sector that consumption was restrained and a surplus generated.

The following table presents the existing data on real G.N.P. per capita, and the per capita availability of food grains. It shows clearly that most of this period-average agricultural incomes were declining. During the last five years, they rose fairly rapidly, but at the end of the period they were still no higher than at the beginning. G.N.P. per capita, on the other hand rose by about 50 rupees. Moreover, the last column indicates that in spite of substantial increase in domestic production the per capita availability of food grains is no higher today than the time of partition.

Table VII: Per Capita Income and Consumption in Pakistan, 1948-49 to 1964-65.

Period	GNP per capita Rupees	Rural Income per capita Rupees	Food-Grains per capita ounces per day
1948-49	n.a.	n.a.	16
1949-50	311	207	15
1950-51	312	205	14
1951-52	313	204	13
1952-53	314	202	13
1953-54	315	202	15
1954-55	316	201	13
1955-56	316	199	12
1956-57	316	198	15
1957-58	317	195	14
1958-59	317	195	13
1959-60	318	194	14
1960-61	326	197	15
1961-62	334	199	14
1962-63	342	202	13
1963-64	351	205	15
1964-65	360	207	15

Sources: Central Statistical Office, Statistical-Bulletin, 1965. Pakistan Economic Survey, Government of Pakistan, 1964-65.

By looking at the evidence in the following table, which refers to the two Plan periods, it would appear that average urban incomes are six times higher than rural and that they grew four times faster.

Table VIII : Rural - Urban Income Distribution in Pakistan 1954-55/1964-65.

	1954/55	1964/65	Increase	
			Absolute	Percentage
Population (millions)	88	112	27	27.3
Urban	10	16	6	60.0
Agricultural	78	96	18	23.1
Income per capita	316	360	44	13.9
Urban	1133	1278	145	12.8
Agricultural	201	207	6.0	3.0

Source: Pakistan Statistical Bulletin, 1966.

The conclusions which follows is that squeezing of agriculture in Pakistan has gone rather too far and as a consequence the fruits of development are being reaped by the minority of urban rich while the majority of the nation remains the rural poor.

Regional Development:

As already referred to, the squeezing of agriculture have had some far reaching implications for the regional development of the country. Then, of course, a transfer of resources from agriculture to the industry also meant a transfer from the East to the West Pakistan, since during the period under review more than 60% of East Pakistan's gross output originated in agriculture and about 40% in West Pakistan.

To understand the measurement of resource transfer from East to West Pakistan, it is useful to divide the transfer into three components:

(i) The value of goods and services exported abroad by the former East Pakistan less the value of goods imported from abroad (X - M);
(ii) the volume of goods and services traded between the regions and their prices. Symbolically,

P ($X^r - M^r$), assuming some constant degree of overvaluation of the rate of exchange for all domestically traded good; and (iii) East Pakistan's share of the total foreign aid inflow (dA). Symbolically the total resource outflow would amount to;

$$(X - M) + P (X^r - M^r) + dA.$$

In order to measure resource transfer quantitatively, values of the parameters P and d have to be established. All available data suggest the value of P to be approximately 0.6 and d to be o.2 For about a decade and a half since independence the following relation held for the former East Pakistan

$$(X - M) + (X^r - M^r) > 0$$

so that irrespective of the values of d and P East Pakistan suffered an unambigious resource transfer via the terms of trade effect. One unfortunate result of this resource transfer was the widening economic gap between the two former provinces of Pakistan. In 1964-65 the per capita income in West Pakistan was higher by 36% than that of the East, whereas in 1969-70, this difference rose to 47%.

Effects on Agricultural Growth:

There is a most interesting aspect of squeezing agriculture in Pakistan. Prior to 1960, agriculture received much less than the opportunity cost of its marketings to the economy. Simultaneously there was a stagnation of the agricultural sector. The expost logic of "too much squeeze leads to no incentives leads no growth" would sound very attractive as an explanation.

As already referred to, the stagnation of agricultural sector had had adverse effects on the industrial growth during the First Plan. The foreign exchange shortage which was the direct result of agricultural stagnation was further aggravated by higher than anticipated imports of food. This resulted not only in a cut in

development programme but serious distortions in the Plan priorities. Since development imports were not available in adequate quantity, the private investment was used for purposes such as building construction for which the import component of investment was small. This was at the cost of investment in industry and transport which had been assigned a high priority but required larger capital imports.

To sum up, the 'saving strategy' referred to above, had had sad consequences with respect to the agricultural development in the 1950's and for the income distribution and regional development throughout the period under review. From the growth point of view one could have justified such a strategy, had it resulted in a well-balanced and economically efficient industrial structure in the country. As already explained, this was hardly the case. Instead, the strategy adopted led to the creation of unequal income distribution, regionally uneven economic development and a highly inefficient industrial structure.

The Future Sectoral Interdependence:

So far, I have tried to analyse the inter-relationships between the two sectors which have existed in the past. The above analysis gives a sufficient evidence of the contributions which each sector has made to the other.

The question arises: What sort of sectoral inter-relationships are likely to exist in future? It is difficult to give a precise nature of the sectoral flows simply because it depends upon the shape of the growth of the two sectors in future. Nevertheless, in the light of past developments, a few general comments may be offered.

Of course, the direct interdependence of industry on agriculture will become less important as the processing sectors reach the limits of their expansion in domestic markets. Indirect

interdependence, however, will toncinue so long as agricultural products continue to be important wage goods. Most important will be the role of agriculture as a foreign exchange earner in future. With the separation of East Pakistan, the foreign exchange bottleneck will become more acute in the area which comprises Pakistan now. This is because of many reasons. Firstly, about 51% of Pakistan's exports in 1969-70 comprised raw jute and jute manufactures both of which originated from the former East Pakistan. Though, that region contributed more than half of foreign exchange to the total foreign exchange earnings of Pakistan, only 30% of total foreign exchange allocations were going to the East until 1969-70. Thus, the loss of two major exports will aggravate Pakistan's foreign exchange difficulties. Secondly, as against this background, the foreign exchange needs of Pakistan are likely to increase in future. As discussed in the preceding chapter, Pakistan's industrialisation has reached a stage, whereby, it has become necessary to switch over to intermediate and capital goods industries. Since, most of these industries will depend on foreign raw materials, the foreign exchange needs of the country will multiply, at least, in the shortrun, To meet the situation Pakistan shall have to take some steps if economic growth in the country is not to be slowed down.

There may be two possibilities open to the country: first to rely more on foreign aid and secondly, to step up her own export promotion efforts to meet the foreign exchange requirements of the country. As regards the first possibility, the rising external debt liability of the country might not allow her to look for more foreign aid. Given the volume of foreign loans, external debt liability is a function of the repayment period, the rate of interest and the degree of loan-tying. Pakistan was able to secure most of the foreign assistance required during the First Plan period in the form of

grants or soft loans, so that the burden of repayment remained insignificant. But a different trend has developed since 1960, with most foreign aid taking the form of loans repayable in foreign exchange. As a result, Pakistan's burden of annual debt repayment increased from ₹ 17.2 million in 1960-61 to ₹ 95.7 million in 1966-67. Furthermore, the country's foreign exchange position did not improve as rapidly as its debt-servicing liability worsened; consequently repayment liability rose from 3.6% of foreign exchange earnings in 1960-61 to 13.1% in 1966-67 and to about 17% at the end of Third Plan of 1965-70. In view of this situation, the only possibility open to Pakistan to meet her foreign exchange needs, is to rely on her own exports. The problem is difficult here, too. The country has already lost two commodities in raw jute and jute manufactures which were important export items and most of the manufactured goods suffer from cost disabilities. The question arises, what is the way out of this dilemma? In my view, agricultural sector may come to the rescue of the country by introducing some more commodities into the export market.of course, this is not to argue that manufactured goods have no role to play in this respect. What I am trying to emphasize is that some of the primary commodities have greater potentialities as an export items. Apart from the traditional exports like cotton, hides and skins, there are two primary commodities which have greater export prospects as compared to some of the other primary commodity exports and these are: Fine rice and maize.

So far, Pakistan's exports of fine quality rice have been confined to middle-east and Persian Gulf countries. In the absence of data on quantities of fine rices, produced and traded and on their prices, it is difficult to say what does the world demand curve for fine rices look like? According to the data available the demand for

fine quality rice is elastic. So Pakistan needs to explore the possibilities of gaining ground in other markets. There may be two essential steps if Pakistan has to compete successfully with the traditional exporters of fine rice like Burma, Thailand and United States. Firstly, price reduction is essential if Pakistan has to compete well with the traditional exporters. According to the available estimates Pakistan's price averages at $ 160 per ton whereas prices prevailing in the world markets for fine rice average at $ 140 per ton. The second important step will be to improve the quality of the product, because importers in Europe and Asia are likely to be much more discriminating as to the quality and specification, etc. Thus, given a necessary effort, Pakistan has good chances of selling its fine quality rice in the world markets. The second important primary commodity having export prospects is maize. Total world imports of maize reached 25 million metric tons in 1969-70, and the quantities that Pakistan will have available are marginal by comparison with this total. The exportable surplus, during 1969-70, came to about 1.25 million tons. Furthermore, Japan has become a large importer of maize, and Pakistan appears to be geographically in a good position to compete on the maize market in Japan. This will of course require some price adjustment. Average world market prices of maize were about Rs. 302 in 1970-71 as compared to the support price in Pakistan of about Rs. 395.

To summarise, agricultural sector can make important contributions to the industrial sector by somewhat relaxing the foreign exchange constraint in future. The foreign exchange gap was as high as Rs. 11303 million in 1969-70. Any contribution to narrow down this gap will be a great help to the development process in the country. Another important aspect of future inter-relationships between

agriculture and industry could be the role of agriculture in the capital formation in Pakistan. Theoretically speaking, agriculture can contribute to the process of capital accumulation by means of - (a) Agricultural taxation and, (b) a movement in the terms of trade against the agricultural sector. As already explained, a substantial resource transfer from agriculture to the industry has taken place in the past. However, since 1960's, the terms of trade have been moving in favour of agriculture and the index of agricultural production which stood at 93 in 1957-58, increased to 146 by 1968-69. On the basis of these developments, one can make out a case for agricultural taxation in Pakistan. According to the information available, agricultural income increased by over 16,600 million since 1959-60, whereas agricultural taxes increased by only 107 million rupees. Moreover, it is worth noting that land taxes as a percentage of total provincial taxes have fallen substantially since 1960-61. In West Pakistan where land taxes as percentage of total provincial taxes have declined from 60.8 per cent in 1960-61 to 40.6% in 1969-70.

Thus, with the terms of trade favouring agriculture and rising income of the sector, one can say that a great tax potential exists in the agricultural sector which may be exploited in future through relationalising the existing tax structure of the country.

So far, I have talked about the flows which could be expected from the agricultural sector to the benefit of industrial sector in future. The question, now, is: what about the reverse flows from the industry to the agricultural sector? As already explained, the industrial sector has made significant contributions to the agricultural growth by providing two key inputs, i.e. tubewells and fertilizer, in the past. But the figures show, that because of inadequate domestic production of fertilizer, a major part of the requirements remained unsatisfied. Over the Second Plan period the

domestic production came to 31,9000 tons whereas about 6,60000 tons were consumed over the period and the gap had to be met by imports. The situation was rather worse as regards the Third Plan period of 1969-70. The demand for the fertilizer increased by 229% in 1969-70 over the 1964-65 level, whereas domestic production rose 437,000 tons in 1969-70, as compared with the production level of 31,9000 tons in 1964-65 - this is hardly an impressive achievement. Thus, fertilizer production, is one of the important areas where industrial sector can subscribe to the agricultural sector. However, fertilizer is only one of the inputs required by the agricultural sector. As already suggested, the maintenance of agricultural progress in future shall hinge upon a variety of physical inputs like plant protection materials, improved implements, equipment needed to handle and transport agricultural produce and provision of manufactured materials required for the development of associated facilities such as irrigation etc. Thus, these are some of the areas related to agricultural development in Pakistan, where indigenous industrial sector can do a lot in future.

Conclusions:

A few significant points stand out clearly from the issues discussed in this chapter. They may be enumerated as follows:-

(1) The "squeezing" of agriculture has been a continuous phenomenon in Pakistan throughout the period under review. The mechanics of agricultural taxation were many. To name some, an overvalued currency that implicitly taxes exports, revenue raising export taxes, tariff protection to domestic industries, and quantitative restrictions on the imports of manufactures. Most of these devices have operated in Pakistan over the period under study.

(2) The second point which has emerged is that it is possible to put an increasing squeeze on agriculture, at least in the shortrun,

even if there are no increases in agricultural production. In Soviet Union and China, this was done through forced procurements. In Pakistan, where the administrative and political structure would certainly not have stood up under forced deliveries, a similar result was achieved through the use of commercial policy.

(3) The third result which follows is that an excessive taxing of a predominant sector in the economy may have important consequences for the income distribution in the country, regional development and for the development of that particular sector.

(4) And, finally Pakistan's case shows that both the agriculture and industry can make significant contributions towards each other's growth. Thus, the questions of sectoral interdependence and of the intersectoral flows of resources through private and government channels and through the price system, seem to me to be of great importance to questions of agricultural and industrial growth in a developing country like Pakistan.

The above conclusions have some relevance to the question of future development strategy of Pakistan and that makes the subject matter of the following chapter.

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Chapter V

Conclusions and Suggestions

It seems clear from the sectoral analysis in the preceding chapters that inter-relationships between the growth of agriculture and industry in Pakistan have been critically important during the period under review. The agriculture's contribution took mainly the following forms:

(a) It supplied food and agricultural raw materials to the industrial-sector.

(b) It served as a market for the industrial goods.

(c) It subscribed significantly to the process of capital-formation in the economy.

(d) The increased agricultural production has been one of the major factors in keeping inflation at bay in Pakistan.[a]

On the opposite side, the industrial sector's contributions mainly took the shape of supply of inputs to the agricultural sector. The notable among these were: (a) tubewells and; (b) fertilizer. These two inputs played an important role in boosting up agricultural production during the Second Plan period of 1960-65 and even in the Third Plan period of 1965-70. Though, there is no denying of the fact that the industrial sector has been supplying aforementioned inputs to the agricultural sector, yet the fact remains that Pakistan still depends upon imports for some of the key agricultural inputs including fertilizer.[b] In addition the process of labour reallocation from agriculture to the industry has lagged much behind the rate of industrial growth over this period,[c] and as a result, there has

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a. Please refer to page 125.

b. The fertilizer imports came to Rs. 278 million in 1969-70, which is nearly 30 times the level in the base year 1960.

c. The large-scale manufacturing in Pakistan has been growing at an average rate of 14 per cent per annum over the last two decades.

occurred no significant shifting of the economy's centre of gravity from the agriculture to the industry.[d]

Thus, it is obvious that the agricultural sector has been a net contributor to the process of industrialisation in Pakistan. As already discussed, the direct interdependence of industry on agriculture is likely to become less important as the processing sectors reach the limits of their expansion in domestic markets, but indirect interdependence will continue being important as long as agricultural products remain important wage goods and Pakistan's economy retains its agrarian character.

As against this background of agriculture's key role in the development efforts of Pakistan, retrospectively one can see that the development strategy in the country discriminated against the agricultural sector and had a clear bias in favour of the industrial sector. This is true with regard to the distribution of development expenditure among various sectors, as well as in terms of economic policies which remained strongly biased in favour of the industrial sector throughout the period under consideration and even afterwards. The table below shows the sectoral priorities over the last 20 years.

Table 1 : Sectoral Priorities in Development Expenditure, (1950-70).

(Percentages)

Sectors	Pre-Plan 1950/55	First-Plan 1955/60	Second Plan 1960/65	Third Plan 1965/70
Agriculture	6.0	7.0	13.3	15.3
Industry	36.0	31.0	27.6	24.8

Source: The Third Five Year Plan 1965-70, Planning Commission, Government of Pakistan, June, 1965.

d. Please refer to page 129.

It is clear from the above table that, despite the increasing emphasis on agriculture in the recent development plans, industrial investment has consistently absorbed over one quarter of public and private development expenditure. Moreover, when the above figures are seen in the light of economic policies pursued by Pakistan, the strong bias in favour of the industrial sector and against primary sector becomes very obvious. The growth strategy in Pakistan until recently centred around mainly two elements. First, expansion was to occur largely through industrialisation. Second, industrialisation was to be financed in part by channeling the resources away from the agricultural sector to the industrial sector which was thought to be a "high saving sector", and in part with foreign aid. Taxation and public savings were intentionally kept low so as to provide strong incentives to private entrepreneurs.

This development strategy had several consequences. First, the extreme protection of industry implied a relative misallocation of resources in favour of industry and against agriculture beyond the limits of comparative advantage. Second, the arbitrary trade controls distorted the relative price structure to such an extent as to make intra-industrial priorities unrecognisable; within the industrial sector resources were allocated in favour of the wrong sectors.[e] Third, many of the new industries were technically inefficient and the period required for these infant industries to mature seems to have been quite long.[f] In other words, Pakistan has been neglecting agriculture relative to industry and has been producing the wrong industrial goods in the wrong way[g] and moreover

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e. Please refer to pages 66 & 84.

f. Please refer to page 90.

g. Please refer to page 98.

has been doing so inefficiently. As discussed earlier, the financing aspect of the growth strategy, also, had unfortunate effects.[h] The process of redistributing resources from agriculture to industry was accompanied by a redistribution of income from the rural poor to the urban rich and from the former East Pakistan to West. As already referred to, this saving strategy had the effect of reducing per capita income and consumption in rural areas relative to the rate of growth of G.N.P. per capita, and also, widening the economic gap between the two former provinces of Pakistan.

Theoretically speaking, in order to enjoy a higher level of consumption in the future, present consumption must be restrained and the surplus thus mobilised must be used for productive investment. Evidently a growing proportion of national income must be saved and invested if growth is to be accelerated, and it is this refraining from consumption which constitutes the real sacrifice or cost of economic development. On these grounds, one would have accepted the aforementioned effects of the saving strategy in Pakistan as costs of economic growth, had the behaviour of domestic savings in the country been encouraging. The answer may be found by looking into the saving efforts of the country in a greater detail.

The table below explains the behaviour of savings overtime.

Table 2 : Gross Domestic Savings and Investment As a percentage of G.N.P. 1949-50/1969-70.

	1949/50	1954/55	1959/60	1964/65	1969/70
Domestic savings as a percentage of G.N.P.	4.6	6.8	5.9	9.5	7.9
Investment as a a percentage of G.N.P.	4.6	7.9	10.9	15.8	14.3

Source: The Fourth Five Year Plan 1970-75, Planning Commission, Government of Pakistan 1970-75, July, 1970.

h. Please refer to page 131.

The Planning Commission has repeatedly called attention to what it considers the 'remarkable acceleration in gross investment' and the 'considerable increase in domestic savings.' The data it presents would appear to substantiate this claim. Yet if one makes an allowance for the fact that the depreciation of capital stock accounts for 4 per cent of G.N.P. then the net domestic savings ratio on the most optimistic assumption is only slightly higher than 5 per cent. This is remarkably poor performance, particularly for a country which has consciously pursued a policy of redistributing income to the "saving sectors."

Since mobilisation of domestic savings has been a key element in Pakistan's Development strategy, it is worthwhile to examine what occurred during the Second Plan period of 1960-65 somewhat more closely. It is estimated that about 11,474 million rupees were invested in the private sector over the Second Plan period of 1960-65. Of this amount, 451 million rupees were financed by private foreign investment and 1,600 million rupees by foreign loans and grants. A further 221 million rupees represent investment by the two P.I.D.Cs.[i] Roughly 2,525 million rupees were spent on private housing. The Planning Commission candidly states that: 'In the private sector, the construction activity has been impressive, especially in the upper income groups.' These four items account for, 4,797 million rupees of investment in the private sector. This means that private initiative and savings were responsible for only 6,677 million rupees of investment in directly productive activities.[j] This effort of private savers represents only slightly more than 3 per cent of the Gross National Product.

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i. P.I.D.C., Pakistan Industrial Development Corporation, established in 1952. It was divided into two organisations, one for each wing, in July, 1962.

j. All that is meant by 'Directly Productive Activities' in this context is investment in anything other than housing.

Table 3 : Private Domestic Savings in Directly Productive Activities During the Second Plan. (1960-65).

	Rs. Million	
1. Total investment in private-sector		11,474
2. Foreign Private Investment	451	
3. Foreign Loans and Grants	1,600	
4. Investment in P.I.D.C.s	221	
5. Investment in housing	2,525	
6. Sub-Total: rows 2 through 5		4,797
7. Private savings in directly productive activities - row 1 - row 6		6,677
8. Private savings in directly productive activities as percentage of G.N.P.		3.3

Source: Government of Pakistan, Preliminary Evaluation of Progress during the Second Five Year Plan, Karachi, March, 1965.

This is, however, only a part of the story. As indicated earlier that the strategy of development was to restrain the growth of agricultural incomes and facilitate investment in industry by private entrepreneurs. Up to now it has been implied that all private saving was in fact done by this class and invested in manufacturing. Yet, we know from the discussion in the second chapter that there was a substantial amount of private investment in rural sector during the Second Plan period of 1960-65. During this period the annual average of the private investment in agriculture came to about 780 million rupees.

Now if we take the annual average of item 7 in table 3, we get 1335 million rupees as an estimate of private investment in directly productive activities. As we have seen, 780 million

rupees were invested in agriculture, so the approximate amount of private savings invested outside agriculture was only (1335 - 780) 555 million rupees. This was only slightly more than 1 per cent of G.N.P. This is a remarkably poor performance, particularly for a country which has consciously pursued a policy of redistributing income to the "saving sectors."

The discussion of sectoral growth and their inter-relationships in the earlier chapters along with the comments on the development strategy of Pakistan, leads to the following principal conclusions:

1. The inter-relationships between the agricultural and industrial growth in Pakistan have been highly significant during the period under consideration.
2. In spite of the agriculture's past contributions to the process of development in Pakistan and the potential that exists for future development, strangely enough, it has remained a relatively neglected sector as compared to the industry.
3. The development strategy of Pakistan, despite its strong bias in favour of manufacturing, has failed to produce a self-sustaining and an efficient industrial structure in the country.

The above results not only form a sufficient basis for suggesting a reorientation of Pakistan's future growth strategy but also point towards the nature of changes which are called for in the light of past experience. In this context, a few suggestions are attempted along the following lines:

(a) The overall growth strategy of Pakistan.

(b) Agricultural policy.

(c) Industrial policy.

<u>The overall growth strategy of Pakistan</u>:

In retrospect one can see that imbalances have been a

characteristic feature of Pakistan's intersectoral growth. In my opinion the strongly interdependent character of agricultural and industrial sectors in Pakistan makes it sufficiently clear that Pakistan cannot push one of these sectors far out of line with the other without penalising the development effort.

The choice between 'balanced' and 'unbalanced' growth has been one of the most controversy ridden subjects in the theory of economic development. But if one glances through some of the latest writings on the subject it seems obvious that the controversy has been resolved to very great extent.[1] In fact many of the features of the two variants of growth strategy are overlapping and the optimum development strategy combines some elements of both.

It is a common knowledge that in a developing country like Pakistan, because of the resource constraints, the investment spread-over has to be limited, but at the same time one has to recognise that in case of sectors where both the horizontal and vertical interdependence exists, some degree of balance becomes essential. This is particularly true with reference to the agricultural and industrial sectors which are interdependent both from the output side and the input side. The need for the 'balance' between the growth of two sectors has been increasingly recognised by the various writers on development economics. For instance, Ranis and Fei observed that, "For, from the output side, the two sectors must provide the marketing outlets for each other products; and, from the input side, the industrial sector must provide the employment opportunities for the absorption of workers released by the agricultural sector. Consideration of this basic interdependence during the take-off process is really nothing else but a consideration of the balanced growth problem...."[2]

The development experience of many countries including Pakistan shows that a variety of difficulties may arise, if economic

development is concentrated upon industrialisation, to the neglect of agriculture. There is then an acute shortage of agricultural products, and an inflation of their prices, which drives up all other prices in a spiral movement. There is also difficulty in disposing of the manufactures at profit. If the farmer's real incomes rise, real wages of factory workers must rise in sympathy, while the prices of industrial products are being kept relatively low. Alternatively, if farmer's real incomes are kept low, they can not afford to buy the manufactures, which can not be sold profitably unless foreign markets are developed. This links also with the analysis of savings made above. If agriculture stagnates, the capitalist sector can not grow; capitalist profits remain a small part of the national income, and saving and investment are correspondingly small. Pakistan's experience during the First Plan period of 1955-60, and in the Third Plan of 1965-70, not only bears out the above noted difficulties but also shows that the lagging agricultural sector apart from arresting the growth of industrial sector, might distort the plan priorities. For example during the First Plan, agricultural stagnation worked as a double-edged weapon. On the one hand it impaired the country's exportable capacity and on the other caused a food deficit, thus forcing the country to resort to food imports. The latter development aggravated the foreign exchange difficulties of Pakistan, which resulted not only in a drastic cut in the development programme but also in serious distortion of the Plan priorities. Since development imports were not available in adequate quantity, the bulk of private investment was used for purposes such as building-construction for which import component was small. This was at the cost of investment in industry and transport which had been assigned a high priority but required large imports of capital goods.

Besides, the very structure of Pakistan economy points towards

the need of giving equal importance to the agricultural sector, if the overall rate of growth of economy is not to be adversely affected. This is because of the following reasons:

First, since agricultural output accounts for about half of the nation's total production, stagnation in this sector is bound to retard the overall rate of advance. Second, many of Pakistan's industries, particularly textiles,[k] are dependent upon agricultural raw materials. Hence slow growth of agriculture will badly hit these industries. Third, agricultural exports are one of the principal sources of foreign exchange earnings of the country.[l] Thus, the nation's capacity to import and invest are largely determined by the export performance of the agricultural sector. Finally, the breakthrough in the agriculture is important on grounds of welfare. The great majority of the people lives and works in rural areas and the most direct way of improving their standard of living is by raising output in the sector on which they depend for their livelihood.[m]

To sum up, Pakistan can not plan for an imbalance against agriculture, so important from income, employment and balance of payments considerations. Similarly, the country can not plan against industry which has displayed such a dynamism in the past and has an important role to play in future. Pakistan's choice, therefore, falls on 'balanced-growth' as the fundamental planning postulate.

Agricultural Policy:

As discussed earlier, the introduction of new varieties of seed,

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k. Textiles account for about 30 per cent of the total value added by industry in Pakistan.

l. In 1969-70, primary commodity exports came to Rs. 1275 million as against the Third Plan target of Rs. 2050 million. The value of total merchandise exports, however, stood at Rs. 3143 million in 1969-70.

m. Please refer to page 129 & 133.

wide use of fertilizers, and increased supply of water through tubewells has extended the technological possibilities of agriculture in Pakistan. The resultant upsurge in production has raised a number of problems for agricultural planning. After self sufficiency in food-grains has been achieved, the cropping pattern and land utilisation may have to be altered in favour of more valuable crops. Extensive cultivation of food-grains on irrigated lands and the use of other highly productive inputs may not be the most economical use of these resources. As yields per acre increase, the food requirements of the country would be met by comparatively a smaller area under these crops and the land resources released from food-grains cultivation will have to be employed in alternative uses. Agricultural research should, therefore, be directed towards identifying an optimal cropping pattern for the future.

A number of other problems deserve serious consideration. The transformation of agriculture from subsistence to cash crops presupposes the existence of adequate storage, marketing and transport facilities. The lack of these and other distribution facilities for the major grain crops has, in the past, led to wide fluctuations in market prices during the year. Prices are generally low at the time of harvest, when the farmers sell the bulk of their crops, and gradually climb during subsequent months. With the present bright possibilities of achieving self-sufficiency, storage facilities will play a critical role. Unless the supplies are properly stored and marketed throughout the year, there will be a danger of unduly depressed prices at the harvest time which will act as a disincentive to the farmer. Indeed, one of the reasons for supporting prices of agricultural products is that it reduces market price fluctuations and ensures a more or less stable income for the producers.

Pakistan's experience with rapidly rising agricultural productivity has demonstrated the fact that farmers are responsive to the cost-price

structure of incentives and adopt improved farming techniques quickly if the necessary inputs are available in adequate supply. The available evidence suggests that the terms of trade were against agriculture throughout the 1950's and specially after the Korean War. Compulsory procurement of food-grains at less than market prices, export taxes on jute and cotton and large imports of food-grains under P.L.480 reduced farm incentive and kept the prices depressed. On the other hand the infant domestic industry was protected through a number of devices and was thus able to sell its products at higher prices. This trend in terms of trade appears to have reversed since early 1960's. The liberalisation of import policies, a fall in prices of domestically produced goods due to increased competition, reduction in export taxes on jute and cotton, abolition of food-price controls, and stability in expected minimum wheat prices led to favourable climate for investment in agriculture.

Along with the improvement in prices of agricultural produce, a network of incentives was worked out to lower the prices of essential inputs like water, fertilizers, seeds, etc. The main impact of these increased inputs is seen in the higher yields of the major crops, especially wheat and rice. Thus, the growth of agriculture in the 1960's is the result of set of policies which aimed at improving the prices of farm output on the one hand, and lowering the prices of farm inputs on the other. Thus, the contention that higher agricultural prices may not lead to a greater production in under-developed economies is not warranted as far as Pakistan's experience is concerned.

Similarly, the fear expressed in economic literature that a favourable turn in the terms of trade of agriculture vis-a-vis industry will lead to a curtailment in industrial investment is not valid as far as Pakistan's case is concerned. Agriculture is the largest

sector of the economy and growth impulses generated in this sector are bound to be transmitted to other sectors. The present method of subsidies resulting in high rates of profit in fact hampers greater productive activities by the industrialists. Once these artificial supports are taken away from them, they will be forced to increase production in order to maintain their profit position. This, by itself, should lead to greater investments. Again, the available data of private investment during the past few years show that these fears are not well-founded. As a matter of fact, private investment in industry has shown a considerable acceleration since 1960. The higher demand for various agricultural inputs and also higher agricultural incomes would encourage investment in industry producing both intermediate and consumer goods.

Finally, a few concluding remarks on agricultural technology are warranted. As suggested earlier that the changing nature of the inter-relationships between agriculture and industry provides an important general criterion that should guide the choice of measures for promoting agricultural development. When relatively little structural transformation has taken place, and the scope for absorbing the relative surplus of labour in agriculture into non-agricultural employment is therefore distinctly limited, priority should be given to promoting the development and widespread adoption of yield-increasing technical innovations.

The demographic data in Pakistan show that economy's centre of gravity, from the agricultural to the industrial sector has not shifted significantly.[n] Thus, there is a strong case for labour using agricultural technology in Pakistan. The latest development in Pakistan's agriculture, however, is the introduction of tractor

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n. Please refer to page 129.

on large farms. Unlike the other elements in the 'green revolution', tractor mechanisation is a substitute for, rather than a complement to labour and it is being used by large farmers to reduce labour. It is a matter of current dispute whether tractor-mechanisation should be encouraged. The advocates of it, claim that they are essential for the modernisation of the country's agriculture. In my opinion, both logic and historical experience of Japan can be used to argue that tractor mechanisation is premature in Pakistan. Pakistan suffers from a shortage of good land and water, not labour. The objective of policy, therefore, should be to increase yields, not output per worker. Yet there is no evidence that tractor mechanisation perse will increase yields; output per worker will rise only by causing unemployment. Thus, there is a danger that Pakistan's agriculture, which made undoubted progress in the 1960's, will take a wrong turn in the 1970's.

Industrial Policy:

As discussed earlier, the industrialisation in Pakistan has been heavily oriented toward production for domestic consumption. In my opinion to achieve a pace of industrialisation that will propel the whole economy towards self-sustaining growth requires apart from other things, the extension of import substitution to intermediate and capital goods industries.

As already referred to, the domestic demand in Pakistan for many intermediate and capital goods is now large enough to permit domestic production on an economical scale° and the country's long-term objective of eliminating dependence on external assistance cannot be achieved unless more and more of intermediate and capital goods required for development are produced within the country. To achieve this shift successfully special attention would have to be paid to research and training to develop skills and technology necessary for

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° Please refer to page 81.

promotion of these industries. Efforts will also have to be made to enlarge the size of market for many of these industries through various bilateral or multilateral arrangements to promote the setting up of efficient and economic units.

Another area of industrial strategy which needs rethinking is the choice of production techniques in Pakistan. The manpower situation in Pakistan is characterised by an overall surplus of labour. The surplus problem is firstly due to high population growth of 2.5 per cent per annum in recent years and, secondly, the slow process of labour absorption in the industrial sector. Over the last two decades the industrial production has increased at an average rate of 14% per annum whereas the industrial employment has increased at a rate of less than 0.5 per cent per annum. As a consequence of these features of Pakistan economy the unemployment and underemployment in the country stood at 20 per cent of the total labour force in 1969-70. Thus to tackle this problem, apart from other measures, there is a great need for adapting the foreign technology so as to suit the conditions which prevail in Pakistan.

Unfortunately, the economic planning in Pakistan has failed to give sufficient recognition to the demographic situation of the country while making the choice of production techniques. Many forces have been at work in Pakistan which encouraged the wrong choice of production techniques. Firstly, the elements of perversity in the structure of relative prices exerted their influence. As already referred to, the public policy in Pakistan ensured that privileged producers receive scarce factors of production, notably foreign exchange and capital at less than their opportunity costs. The exchange rate has been over valued throughout the period covered here. Similarly, the price of capital has been far below an equilibrium price. This distortion of factor-prices, besides other repurcussions,

induced entrepreneurs who had access to credit to enter sectors which were relatively capital intensive and to adopt methods of production with high capital-labour ratios. Secondly, the highly sheltered nature of Pakistan's market was another factor which engendered permissiveness with respect to improper choice of technology. Finally, foreign assistance was systematically biased towards duplicating its own technology. Moreover, its great disservice to the economy of Pakistan was in putting off the day of reckoning for the distortions which existed in the economy and were in turn responsible for encouraging unsuitable production techniques. These were, in brief, the factors causing an adoption of technology which was ill-adapted to the environmental conditions of Pakistan.

The most regrettable thing in Pakistan has been the lack of awareness and sensitivity to the problem. Even a casual study of Pakistan's industrialisation indicates that physical considerations always tended to dominate and there was a bias towards "technologism and modernism" without thinking through its economics or considering the possibilities of imaginative adaptation. In my opinion, the manpower position in Pakistan makes it imperative to creatively adapt the production techniques where possible by adjusting some parts of a process and recombining inputs in ways more suitable to prevailing conditions in the country.

Finally, there is another aspect of industrial policy in Pakistan which requires reconsideration, i.e. protection versus promotional policies. As already explained, the highly protectionist nature of industrial policy in Pakistan resulted in numerous costs to the economy of the country. Firstly, the industrial structure of Pakistan which emerged under the shelter of protected market, is characterised by an inverted pyramid structure of output in which a wide variety of finished goods, mostly consumer type rest on a narrow and, given

chronic foreign exchange stringency, inherently fragile base of imported capital and intermediate goods. Secondly, as a result of highly protected market, economic inefficiency is a common phenomenon in Pakistan. As discussed earlier, the manufacturing industries in Pakistan suffer on the whole, from as high a cost disadvantage as 60 per cent vis-a-vis competing imports.[p] What is of concern is that included among these industries are the principal industries of Pakistan, like textiles, leather and leather goods, etc. Thirdly, the protection policy has adversely affected the export performance of the country. Though following the introduction of Export Bonus Scheme in 1959, manufactured exports assumed importance in Pakistan, with jute and cotton textiles being the principal items, yet foreign sales of cotton and jute declined in an amount exceeding the rise in textile exports. Moreover, high subsidies to manufactured exports have imposed a substantial cost on the national economy.[q]

Thus, these are some of the results of protectionist policies in Pakistan which lead to suggestion that in order to eliminate the loop-holes as by-products of protection a shift to promotional policies is called for. In recent years Pakistan has been following somewhat in-between policies like the Export Bonus Scheme, multiple exchange rates etc., to neutralise the adverse effects of protection. Unfortunately such 'in-between' policies do not have the effect of giving a uniform degree of effective promotion to each industry: that is, the degree to which value-added would be raised by such a measure would still differ from industry to industry to the extent some industries rely more heavily than others on non-manufactured inputs.

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p. Please refer to page 90.

q. The magnitude of the total export subsidy during the period under review, varied between the minimum of 60 per cent of the f.o.b. value of exports and the maximum of about 11 per cent of the f.o.b. value of exports in the case of few minor exports.

Moreover, such policies do not attack the root cause of domestic distortions which constitute the case for giving special encouragement to the industry. For example, the Export Bonus Scheme in Pakistan, no doubt neutralised the adverse effect of protection on exports to some extent, but it did so at the expense of creating new distortions in the economy. The Export Bonus Scheme provided assistance to those industries facing the greatest obstacles in exporting which in turn resulted in encouraging investment in industries that were least competitive and desirable. Thus, it seems clear that in-between policies followed by Pakistan in recent years, may be superior to protection as such, but are no substitute for promotional policies which are strongly desirable at this stage of Pakistan's industrial-development.

In brief, the highly interdependent nature of the agricultural and industrial sectors in Pakistan, leads to the conclusion that 'balanced growth' strategy is a desirable pattern of growth for Pakistan. Moreover, the analysis of two sectors strongly points towards the need of revising sectoral policies on the lines suggested here.

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