A PRICE STABILISATION MODEL

FOR

PAKISTAN JUTE

BY

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A B S T R A C T

This study is divided into four main Chapters. In the opening Chapter the relevant background information regarding the Pakistan economy and fluctuations in jute output and prices are collected. The small individual peasants of East Pakistan who produce the bulk of total jute output are found to be highly responsive to changes in the relative prices of jute and rice (the substitute crop) with a lag of one year. This lag structure in the price-supply relationship results in cobweb type fluctuations of the relative prices of jute and rice and the production of jute. The statistical evidence is that year to year fluctuations in the total export proceeds from raw jute are more closely related to the fluctuations in the export volume than to those in the export price.

On the basis of the statistical evidence of Chapter I, the jute policies of the government of Pakistan and some other general stabilisation schemes proposed by several economists are examined in the following two Chapters. It was found that the Pakistan government schemes for jute price stabilisation were ineffective mainly because the important relationship between the

supply of jute in any season and the relative prices of jute and rice in the preceding season was ignored. For the same reason also the Bauer-Paish scheme was not found to be suitable for Pakistan jute.

In the concluding Chapter, a Price Stabilisation Model for Pakistan jute is proposed and tested with empirical data. The object of the suggested scheme, by eliminating (or atleast reducing) the cobweb cycle in the relative price and production of raw jute, is to keep the country's net gains from jute production and export at the maximum level. The main mechanism relied upon in the proposed model is to project optimum production quantity and then by setting the appropriate producer price, attempt to induce the growers to produce this optimum quantity. The producer price is to be announced well before the sowing starts for both jute and rice for the period concerned so that the jute/rice growers can make the necessary allocation of land and other resources between the two alternative crops. Any unforeseen changes in demand and/or in the planned output of jute are to be met from a national buffer stock, the operation of which will be relatively easy in the proposed scheme. As the supply of jute is to be adjusted to changing demand conditions, year to year fluctuations in the export price of raw jute would be comparatively small.

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Prices of many primary commodities tend to fluctuate more widely than those of manufactured goods in general because the supply of, and demand for the former group of commodities are relatively inelastic in the short-run. Shifts in supply or demand functions for primary commodities often result in largely price fluctuations of a cobweb type.

While this is so within a country, the underdeveloped countries, in general, face a similar problem for their trade of primary commodities with the developed ones. This has an important bearing on the development process of the low income countries producing primary commodities. Among the various problems of price fluctuations of primary products in the world market two are very important. First, when the prices of export commodities fluctuate widely the import capacity of the exporting countries, in the absence of any substancial foreign aid, may be adversely affected with serious consequences for their development process. Second, the uncertainties regarding the prices of primary products might have induced the developed countries to economise

in the use of these commodities and to search for suitable alternatives.[1/] Once a substitute is found the process is generally irreversible.

Even without entering into the controversy over the problem of terms of trade of the underdeveloped countries, one can reasonably conclude that the volume of trade in primary commodities since the second World War rose at a much slower rate than that of the manufactured goods. Thus, the G.A.T.T. study[2/] reveals an important trend: While the agricultural imports of the developed countries from the underdeveloped ones declined over the periods (1928-38, 1950-56) the desire of the developing countries to import from the developed ones increased considerably. The underdeveloped countries, therefore, faced a tremendous balance of payments problem. Fluctuations in the export prices of, and proceeds from agricultural commodities of these countries make the problem even more difficult.

1/ Nurkse, R. Patterns of Trade and Development, Wicksell Lectures, 1959, p.23.

2/ Trends in International Trade - A Report by a Panel of Experts, Geneva, 1958.

The literature on problems of price fluctuations and stabilisation policies for primary commodities have been growing since the last World War. During 1958-59 two long symposia initiated by Professor Nurkse and H.W. Singer and attended by a number of economists from all over the world were recorded in the Swiss economic and social journal - Kyklos. Various other proposals were made by the Food and Agricultural Organisation of the United Nations and by several other individual economists. But until now most of the discussions have remained more or less on an abstract plane.

The problems of stabilisation policies are very complex and are not subject to ready generalisation. These problems vary from one commodity to another, and from country to country, depending on the importance of the particular commodity in the economy and the nature and stage of economic development of the country itself. In order to narrow the gap between economic theory and empirical research we must, as observed by Professor Tinbergen[1/], attempt to obtain a deep insight into the main influences working on both the demand and supply sides. When it is found that the magnitudes and effects

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1/ Tinbergen, J, 'International Co-ordination of Stabilisation and Development Policies', Kyklos, 1959, fasc. 3, p.283.

of price fluctuations are of a serious nature, atleast a partial case is said to exist for a stabilisation scheme. An appropriate scheme can only be formulated when the causes of fluctuations are determined. A full case for such a scheme is established however only when one can be sure that by adopting this the specific object is fulfilled and no further disadvantages are caused as a result of the scheme.

In the opening Chapter, therefore, the nature, magnitudes and causes of jute price fluctuations and their effects on the Pakistan economy were investigated. On the ultimate analysis it was found that there was a cobweb cycle in the relative price and production of jute which led to year to year export price fluctuations. It appeared that year to year demand for raw jute was more stable than the supply of raw jute. The object of policy thus appeared to be the stabilisation of the export price of raw jute by eliminating the above cobweb fluctuations through production regulation.

Given the nature of the problem, the analysis is based on many simple assumptions. Wherever possible, the key propositions were tested with statistical data. Attempts were made to calculate the statistical demand

and supply functions for jute and the resultant elasticities were compared with those found by other investigators.

As to the measure of instability I have used the methods adopted by the U.N. study.[1/] This method consists of obtaining the absolute difference in values from year to year, expressing this difference as a percentage of the larger of the two annual values and then averaging these percentages. Thus, a rise is measured as a percentage of the terminal high point, rather than of the lower starting point, of an increase. A rise from 100 to 150, for instance, was not considered as an increase of 50 per cent, but an increase of 33⅓ per cent. The conventional method of measuring decreases was retained. As to the intra-year fluctuations, the method was to take the absolute difference between the highest and the lowest values within a year, and then expressing this difference as a percentage of the higher figure.

In Chapter I the statistical Tables are given in a summary form in the text , while the detailed time series data are given in four appendixes at the end of the thesis.

1/ Instability in the Export Markets of Underdeveloped Countries, N.Y., 1952. p.77.

A number of people helped me in many different ways in completing the study. I am deeply indebted to Professor Edith T. Penrose, Professor of Economics with reference to Asia in the University of London for her kind supervision and regular encouragement. Grateful acknowledgements are due to Messrs. Peter Ayre and Terence Byres who took an active interest in this study and suggested a number of improvements. Dr. K. Walker and Mr. P. O'Brien also were helpful in many respects. I am also grateful to Professor P.T. Bauer for his comments on an earlier draft of Chapter III. Mr. J. Shaffer gave many valuable comments and suggestions. I have also been greatly benefitted from occasional discussions with my friend Aminul Islam. Finally, I am obliged to the Fibre Section of the Food and Agricultural Organisation (U.N.), Rome for supplying me with various data.

CHAPTER I

Jute Fluctuations and the Pakistan Economy

1-1 Introduction

In order to examine and formulate a stabilisation scheme for Pakistan jute, we need some information about the Pakistan economy and jute fluctuations. This is necessary because the nature, extent and the effects of fluctuations of the price of jute will depend on the role of jute in the economy and the stage of economic development of Pakistan itself. We therefore propose to discuss in this Chapter the broad outlines of the following: the nature and stage of economic development of Pakistan; the growers' price responses; the role of jute in the Pakistan economy; Pakistan's place in the world economy of jute; recent trends in end-uses of jute and the extent, causes and effects of fluctuations in the price of jute. In the concluding section the desirability of a jute price stabilisation scheme is discussed.

1-2 The Economy of Pakistan

Pakistan is an underdeveloped country with a population of about 93.8 million in 1961 on a total land area of 233 million acres, of which about 26 per cent is under cultivation.[1/] In the same year the average per capita income was about Rupees 261 (£20 approximately) at the 1949-50 to 1952-53 average constant price.[2/] Pakistan is predominantly an agricultural country with about 75 per cent of labour force employed in agriculture and about 55 per cent of gross national product coming from this sector in 1959-60.[3/] During Partition in 1947 Pakistan inherited almost no manufacturing industry, but by 1959-60 she had attained significant industrialisation which accounted for about 14 per cent of gross national product in that year, the remaining 31 per cent coming from services.[4/]

The role of the government in economic activities extends from the regulation and control of private enterprises in trade, industry and agriculture to a

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1/ Government of Pakistan, Census of Pakistan, 1961, Census Bulletin No. 5.

2/ Government of Pakistan, (C.S.O.), Statistical Bulletin, July, 1964, Table 25.

3/ ibid.

4/ Government of Pakistan, Second Five Year Plan, p.45.

direct participation in certain specific fields through Five year Plans. The foreign exchange component in development expenditure has been on average about 35 per cent over the period 1949 to 1960, but this increased to about 53 per cent during the Second Plan period (1960-65).[1] Raw jute, raw cotton and their manufactures earned about 72 per cent of total export earnings during the First Five Year Plan period (1955-60), while in the pre-Plan period most of the foreign exchange was earned by the two agricultural commodities.[2]

The index of terms of trade, on the 1948-49 base rose to 125 for a short period during the Korean boom but rapidly declined afterwards and fell to 52 in 1959.[3]

Agricultural production in Pakistan is based on small and fragmented holdings by individual cultivators using mostly family labour. Something like $\frac{2}{3}$ of the normal value of Pakistan's total agricultural output consists of food and about $\frac{2}{3}$ of that is directly consumed

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1/ Government of Pakistan, Second Five Year Plan, p.82.

2/ ibid. p.83.

3/ The State Bank of Pakistan, Report on Currency and Finance, 1959-60, Karachi, p.188.

by the growers themselves on the farms; and only $\frac{1}{3}$ of the food products pass through the marketing system.[1/]

In East Pakistan the main agricultural crops are rice and jute, while in West Pakistan these are wheat and cotton. Under normal weather conditions the East Pakistani peasants can raise a food crop just sufficient for their subsistence. In West Pakistan where agriculture is more mechanised and less dependent on the weather than in East Pakistan, the peasants have normally some exportable surplus of food. The government of Pakistan in their Five Year Plans stressed the need for the development of agriculture in order to attain self sufficiency of the food supply.[2/] The East Pakistan government, however, maintains some food reserves to meet emergencies that may occur due to unfavourable weather conditions.

1/ Porter, R.C. 'The Inflationary Implication of Crop Failure' Pakistan Development Review, Spring, 1962.

2/ Government of Pakistan, First Five Year Plan, p. 16; Second Five Year Plan, p. 14.

1-3 The Characteristics of Jute Production in East Pakistan and the growers' Price Responsiveness

The geographical factors necessary for jute production (viz., soils of alluvial origin, a heavy rainfall between 60-80 inches per year, a moist heat, etc.) are sufficiently available in East Pakistan and, indeed, it is the most favourably situated place in the world for jute production.[1/] Of the total cultivatable land in East Pakistan,[2/] about 5 per cent, on average, is devoted to jute and about 76 per cent to rice and the rest to other crops, such as sugar cane, wheat, vegetable, fruits, pulses, etc.[3/] Jute is a summer crop, planted during February to April and harvested in June to September. The growing season for 'Aus' (summer rice) falls within this period and the main rice crop, 'Aman', though harvested during November to January, is partly sown in low land areas well before the jute crop is harvested, while in high lands it may follow the jute crop.[4/] But

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1/ Ahmad, N. An Economic Geography of East Pakistan, London, 1958, pp. 128-42.

2/ In Pakistan jute is produced in East Pakistan alone.

3/ Government of Pakistan, Census of Agriculture, (East Pakistan Data), 1960, p. 173.

4/ Ahmad, N. op.cit., p. 123.

such a double cropping of jute and 'Aman' (winter) rice is only successful under the most favourable weather conditions and usually involves sacrifices for both the crops. There can be no double cropping of jute and summer rice. The only other summer crop is sugar cane, but it does not usually compete with jute for land mainly because of differences in soil and climatic conditions necessary for their respective production. The production of sugar cane has, therefore, concentrated in the non-jute area of East Pakistan.[1/] The other crops, being winter products, do not compete with jute for the growers' land.

Thus, the cultivators' decision to grow jute involves a conscious sacrifice of the opportunity to grow both summer and winter rice crops on the same land. In fact, for most of the farmers of the jute growing areas of East Pakistan, the cultivation of jute is primarily a choice between the production of the cash crop (i.e., jute) and of a staple food crop. In areas where the farmers can devote their land to two rice crops a year, they have a choice between the two crops of rice and one of jute. On the average, jute being produced on a small

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1/ Ahmad, N. op.cit. p. 143.

proportion of rice land, the scope of variation in jute cultivation is potentially very wide in East Pakistan; and an increase of the jute crop usually takes place at the expense of the staple food output.

In East Pakistan jute is grown for cash income, whereas rice is mostly grown to meet the food requirements of the farmer and his family; and if much of his land is planted to jute, he will have to buy a part of his food requirements with the proceeds from jute. For the average farmer, the possibility of having a surplus of rice for sale simply does not arise, even if he planted all his land to rice, because the average size of the farm in East Pakistan is about 3.5 acres which normally yield a total rice output between 40-45 maunds (after considering the possibility of double cropping), which is not sufficient for an average farm family of six (adult equivalent) for year round consumption.[1/] Thus, by planting a part of his land to jute, an average farmer

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1/ Government of East Pakistan, Pakistan Census of Agriculture, 1960 (East Pakistan Data).
In East Pakistan, all the rice land is not under double cropping; only about $\frac{1}{3}$ of the total rice land was, on average, under both the summer and winter rice crops as appears from the Government of East Pakistan, Agricultural Production Levels in East Pakistan (1947-60), Dacca, 1961.

in East Pakistan expects to get a higher return from jute relative to that from rice,[1] as it may be sometimes cheaper to get food indirectly by producing and selling jute. The retail price of rice, therefore, can be considered 'largely to determine the opportunity costs of using land for jute production, because rice production is normally foregone in order to grow jute.'[2] The retail price which the growers expect to pay to buy rice, rather than the price they expect to receive in selling rice, in relation to the harvest price of jute[3] would be expected to influence their decision to allocate land and other resources between the alternative crops of jute and rice.

1/ It is shown later in this section that the price expectation of the jute/rice growers for the current season is usually based on the actual prices prevailing in the immediate past season.

2/ Shorter, F.C., 'Jute Production Policies of India and Pakistan', Indian Economic Journal, July, 1955; and his unpublished Ph.D. dissertation: Jute Policy in India and Pakistan, 1947-53: An Economic Analysis, Stanford, 1957.

3/ As the small growers have little holding power, most of the jute crop is sold immediately after the harvest (discussed in section 1-4).

For some rich farmers who may sell both jute and rice, the selling price of rice should be relevant, but these farmers appear to produce a relatively small proportion of total output of jute as indicated below.

Table 1-1(A)

Jute output by the size of farms in East Pakistan

Size of Farms (Acres)	Percentage of total Farms	Percentage of total Farm Area	Percentage of total jute Area
Under 7.5	89	61	72
Under 12.5	96	80	85
Under 25.0	99	94	94

Source: Government of Pakistan, Census of Agriculture, 1960, (East Pakistan Data), p.68.

In practice, however, there does not appear to be any important difference between the expected buying price of rice and the expected selling price of rice, probably because the marketing of rice takes place on a small scale.[1/]

In various studies[2/] on the price responsiveness

1/ Clark, R. loc. cit.

2/ Studies cited at the foot of Table 1-1(B)

of jute growers in India and Pakistan, the relative prices of jute and rice prevailing in the preceding season have been identified as the prices to which the growers respond in planning their production. The generally accepted hypothesis is that the jute growers' decision to devote a certain acreage to jute is dependent on the past prices of jute and rice together with the price expectation for them, which in practice is based upon the level of relative prices in the immediate past season.

Agricultural supply is usually a predetermined variable at time point (t) due to the influence of weather and other growing conditions on yields. Part of the influence of the factors affecting supply can however be attributed to economic conditions, and in agricultural markets this influence is transmitted with a time lag. The lag is inherent in the nature of the problem because of the time required for planting to mature. Acreage decisions in the case of jute are therefore based on previous year's relative prices. The lag structure in supply response to price makes the relationship a suitable form for a regression estimate of the one way effect of past price on current supply. The supply function

of jute in East Pakistan thus can be stated in the following equation:

$$O_t = a + b_1 P_{j(t-1)} - b_2 P_{r(t-1)} + U_t$$

where O_t is the current output, $P_{j(t-1)}$ and $P_{r(t-1)}$ are the prices of jute (harvest) and rice (retail) in the previous season. U_t is the random factor. Except U_t, we can observe all the variables in the above equation.

By taking data for the period 1952-53 to 1962-63 for East Pakistan, first, the acreage and then the output of jute in the current period have been regressed upon the prices of jute and rice prevailing in the preceding season. The fit of the semi-log multiple regression equation showing the growers' acreage response to changes in the relative prices is given below:

$$A_t = 565.98 + \underset{(276.66)}{1894.26} \log P_{j(t-1)} - \underset{(470.01)}{1292.40} \log P_{r(t-1)} \qquad (1\text{-}1)$$

$R^2 = 0.854$ Degrees of freedom = 8

where, A_t = jute area in thousand acres in the current period, $P_{j(t-1)}$ = harvest price of jute in Rupees per maund, $P_{r(t-1)}$ = retail price of rice in Rupees per maund. About 85 per cent of the variance in the East Pakistan jute

area during the period studied is explained by the two independent variables (i.e., the prices of jute and rice).

Thus, the acreage of jute planted is inversely related to the price of rice and directly related to its own price. In both cases the time lag is one year. This is further illustrated with the help of Chart 1-1. The partial elasticity (at the mean) of the growers' acreage response to the previous year's price of jute is +1.24 while to that of rice is -0.85.[1/]

On the basis of the above equation, the following estimation is obtained. When the average jute price rose from one season to another, say by 50 per cent and the average price of rice remained unchanged, about 340.97 thousand acres more were sown to jute in East Pakistan in the following season, and the crop was about 6.28 million maunds larger. On the other hand, when the price of rice rose by, say 50 per cent and that of jute remained unchanged, about 560.68 thousand acres less

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1/ The partial elasticities from the equation 1-1 are calculated by differentiating first with respect to the price of jute and then to that of rice. For instance,

$A_t = 565.98 + 1894.26 \log P_{j(t-1)} - 1292.40 \log P_{r(t-1)}$

Now $d A_t / d P_{j(t-1)} = 1894.26 / P_{j(t-1)}$

But $E = [d A_t / d P_{j(t-1)}][P_{j(t-1)} / A_t]$

Hence, $E = [1894.26 / P_{j(t-1)}][P_{j(t-1)} / A_t] = 1894.26/1522 = 1.24$ (app.)

were devoted to jute.

The coefficients of elasticity at the mean of response of acreage sown to jute to the changes in the relative prices of jute and rice in the preceding season are given in Table 1-1(B) indicating various studies.

In Pakistan licensing (allowing a maximum limit that an individual cultivator could devote to jute) was in force upto 1960. But as the acreage regulation was not in fact enforced, except to some extent in 1953-54, this did not modify, to any significant extent, the area response to prices.

The primary relationship established is between price and acreage, because it is only the acreage which is directly under the control of the growers. But for forecasting purposes it is the relationship between the price and the crop which is more important. Variations in yield of jute in East Pakistan, however, appear to be more or less random, and hence variations in jute output can also be considered to be almost as adequately explained by changes in the relative prices of jute and rice as can variations in the area. The following multiple regression equation supports this point:

$$O_t = 1805.46 + \underset{(1201.06)}{4971.63} \log P_{j(t-1)} - \underset{(1340.42)}{2504.88} \log P_{r(t-1)}$$

$R^2 = 0.684$ Degrees of freedom = 8 (1-2)

where, O_t is the output of jute in thousand bales in the current period, $P_{j(t-1)}$ and $P_{r(t-1)}$ are the prices of jute and rice per maund in the preceding season as in equation (1-1).

Thus, both the equations (1-1) and (1-2) give a good fit but that of equation (1-1) is better than that of (1-2) for the obvious reason that it is more within the control of the growers to make any change of acreage than of output, a portion of which is randomly determined. We may, therefore, conclude that in East Pakistan there is a definite relationship between the jute area (or output) in one season and the relative prices of jute and rice in the preceding season. For policy purposes, the important point is that if it is desired to regulate jute output by manipulating prices this relationship between the relative prices of jute and rice in one season and the jute acreage or output in the following season must be taken into consideration.

Chart 1-1

Changes in Jute Acreage due to changes in Jute/Rice Price Ratio with a one year lag.

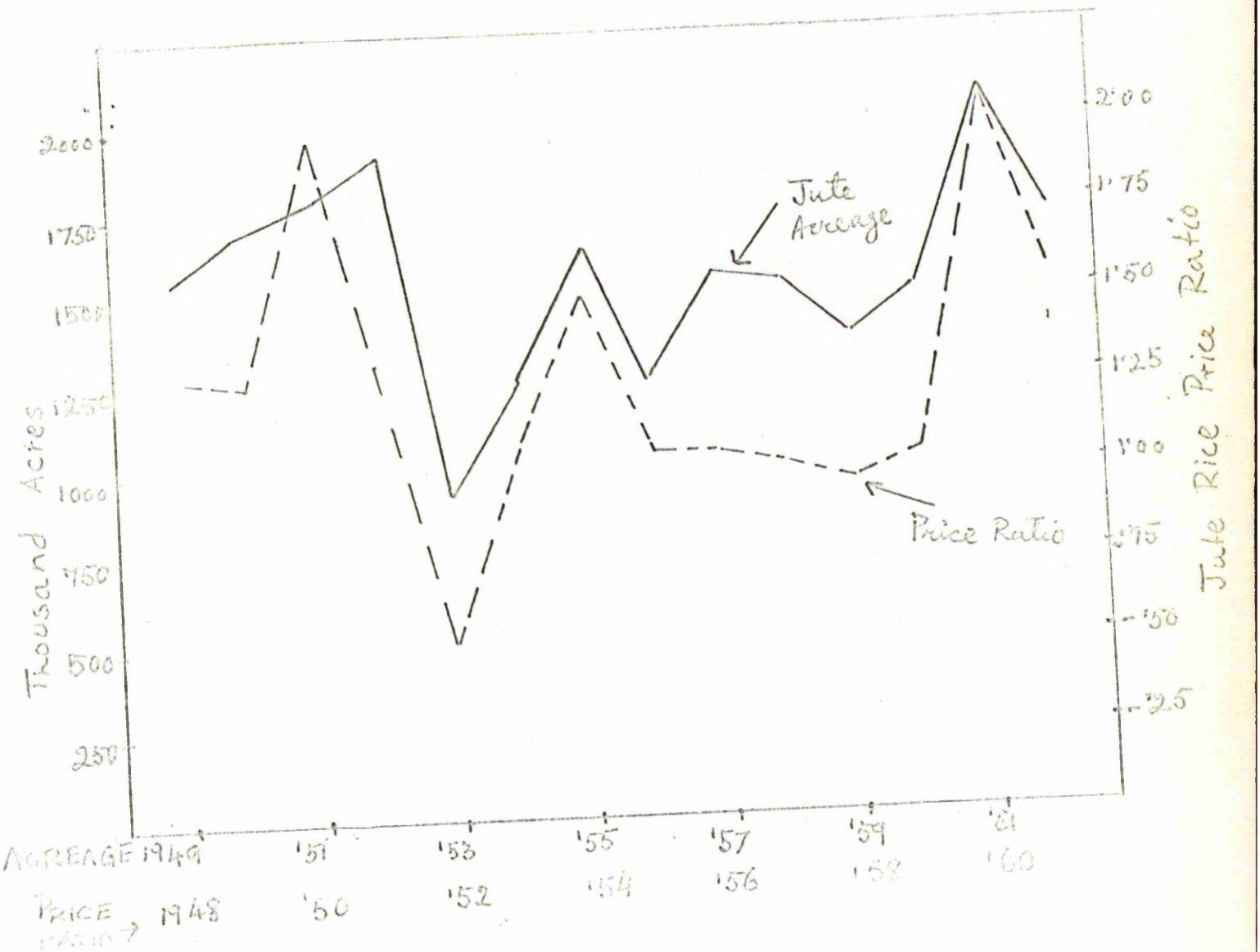

Table 1-1(B)

Coefficient of elasticity at the mean of response of acreage sown to jute to the relative prices of jute and rice in the preceding season

Study made by	Country	Period	Elasticity at the mean
A.R. Sinha	All India	1921-39	+ 0.65
F.A.O. (Rome)	Bengal	1911-40	+ 0.51
	East Bengal	1931-40	+ 0.68
	East Pakistan	1947-56	+ 0.48
R.M. Stern	All India	1893-1939	+ 0.68
	Bengal	1911-39	+ 0.76
R. Clark	East Bengal	1931-54	
	(partial elasticity with respect to the price of jute)		+0.60
	(with respect to the price of rice)		-0.60
Our Study	East Pakistan	1952-62	
	(partial elasticity with respect to the price of jute)		+1.24
	(with respect to the price of rice)		-0.85

Source: Sinha, 'A Preliminary Note on the Effect of Price on the future supply of Raw Jute', Sankhya, December,, 1941; F.A.O. (Rome), Jute, Commodity Bulletin No. 28, 1957; Stern, Review of Economics and Statistics, May, 1962; Clark, 'The Economic Determinants of Jute Production', Monthly Bulletin of Agricultural Economics and Statistics, F.A.O., Rome, September, 1957 and our equation (1-1).

Note: The partial elasticities in our study are significantly higher than those obtained by Clark probably because the jute/rice growers of East Pakistan became more price conscious over these years, as we studied a period more recent than that of Clark.

1-4 Marketing of Raw Jute in East Pakistan

The marketing of raw jute in East Pakistan consists of several stages. At the primary stage a major portion of raw jute is bought and sold in the homes of growers where buyers go around buying small lots from individual peasants. The price is determined by open bargaining and the quality is assessed by examining the whole lot. There is no proper standardisation or adequate system of ~~marketing~~ weights and measures at this level of marketing.[1/] The growers have little holding power, owing to the lack of adequate credit facilities and their cash needs to buy rice during the lean months after the jute harvest. An inadequate transport system does not enable sales by growers in distant markets in search of better prices. Hence, most of the growers have to dispose of raw jute almost immediately after the harvest.[2/] All these factors limit their bargaining power with the intermediaries.

Most of the sales by the primary intermediaries take place either in the village markets or in the premises of the balers. Most of the sales at this stage are also made on the basis of lot grading. At the higher stage

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1/ Dacca University Socio-Economic Survey Board(DUSESB), Marketing of Jute in East Pakistan, 1961, p.26.

2/ ibid.

of marketing, the open higgling diminishes and parties on both sides get fewer and the scale of operations gets larger.[1/] The Dacca University study reveals that there are about forty thousand intermediaries at the lowest level of marketing in direct contact with the jute growers, while at the highest stage there are only 14 domestic mills consuming raw jute.[2/] In 1959-60 the total raw jute export was undertaken by about 75 shippers of which only 7 shippers exported about 54 per cent and 16 shippers over 80 per cent.[3/] These few large exporters who are in a better position to get bank credits and information regarding supply and demand conditions than the jute growers and the primary intermediaries can press hard bargains over the small peasants and inter-mediaries at the primary stage.

1/ Government of Pakistan, Jute Enquiry Commission Report, 1960, p. 115.

2/ DUSESB, op.cit., p.38.

3/ Jute Enquiry Commission Report, p.115.

1-5 Role of Jute in the Economy of Pakistan

The value of jute is relatively small in comparison with the national income of Pakistan. But it is produced only in East Pakistan where it is the single most important cash crop contributing about 50 per cent of total cash earnings of the farmers of this region.[1/] As the leading export of the country, raw jute earned, on average, 43 per cent during the period 1948-54 and 46 per cent during 1955-62, while jute manufactures earned another 11 per cent of total export receipts during the latter period as shown below in Table 1-2.

Table 1-2

Position of Jute in Total Exports of Pakistan, 1948-62

Annual Average	Raw Jute			Jute Goods			TOTAL Exports
	Value million Rupees	Per cent of total		Value million Rupees	Per cent of total		million Rupees
1948-49	440	41		-	-		1076
1950-51	1047	46	43	-	-		2282
1952-54	573	43		-	-		1340
1955-58	761	50	46	110	7	11	1534
1959-62	805	43		293	16		1880

Source: Government of Pakistan, Statistical Bulletin, July, 1964, Table 1 and p.1348.

1/ Ahmad, N. op.cit., p.131.

For East Pakistan raw jute and its manufactures are the most important sources of foreign exchange earnings as can be seen in Table 1-3. During the period 1948-54 raw jute alone contributed about 88 per cent of total export earnings while during 1955-62 the jute industry not only met the domestic need of jute goods but, together with raw jute exports, earned about 90 per cent of total foreign exchange of East Pakistan.

Table 1-3

Position of Jute in Total Exports of East Pakistan, 1948-62

Annual Average	Raw Jute			Jute Goods			Total Exports
	Value million Rupees	Per cent of total		Value million Rupees	Per cent of total		million Rupees
1948-49	440	83		-	-		529
1950-51	1047	91	88	-	-		1149
1952-54	573	85		-	-		673
1955-58	761	80		110	12		955
1959-62	805	66	73	293	24	17	1222

Source: As Table 1-2.

Jute manufacturing capacity has been rapidly increasing in East Pakistan over these years. However, raw jute is expected to remain the single most important foreign exchange earner for the country for many years to come. Table 1-4 indicates that the Planning authority

expects that while raw jute is to earn more or less the same amount of foreign exchange in the Third Plan period (1965-70) as it did in the first two Plan periods, the export earnings from jute manufactures will increase, on an annual average, from Rupees 137 million in the First Plan period to Rs. 360 million in the Third Plan period. Actual performance in first four years of the Second Five Year Plan shows that the shares of both raw jute and jute manufactures in the total foreign exchange earnings were higher than what was expected. The over-all foreign exchange earnings were lower than what was planned.

Table 1-4

Share of jute in the planned foreign exchange earnings of Pakistan during the three Five Year Plan periods

Annual Average	Raw Jute		Jute Goods		Total Jute %	Total Foreign Exchange Earnings
	Value million Rupees	Percent of total	Value million Rs.	% of Total		
1st. Plan (1955-60)						
Actual	843	44.1	137	7.2	51.3	1911
2nd. Plan (1960-65)						
Projection	820	36.4	320	14.2	50.6	2250
Actual	811	39.0	312	15.2	54.2	2047
3rd. Plan (1965-70)	850	34.0	360	14.4	48.4	2500

Source: Govt. of Pakistan, Second Five Year Plan; Statistical Year Book, 1964; Haq, M. loc.cit., Table 60.

The Pakistan government's tax on raw jute exports formed, on average, about 4.4 per cent of the total revenue receipts over the period 1950-61 (Table 1-5).

Table 1-5

Share of Export tax on Raw Jute in the total Revenue Receipts of the Govt. of Pakistan, 1950 to 1961

Annual Average :	1950-52	1953-57	1958-61	Total (1950-61)
Total Revenue (Rs. million)	1561	1782	2552	23801
Tax on Raw Jute Exports (Rs. m.)	96	77	76	989
Percent of total	6	4	3	4.4

Source : Govt. of Pakistan, Pakistan Statistical Year Book, 1962, table 107; Ministry of Finance, Major Commodities of Pakistan - A Review, Karachi, 1960, p.19

Over and above this, the government of Pakistan earns various fees in the form of trade licences, excise duties, sales tax, etc. It is understood that the government of Pakistan earns a considerble amount of revenues from these sources.[1/]

1/ Govt. of Pakistan, Report of the Jute Enquiry Commission, 1960, pp.169-70.

1-6 Pakistan in the World Economy of Jute

Since 1947-48 Pakistan in the world jute economy has been showing very diverse trends. Thus, in 1947-48 Pakistan produced about 81 per cent of the world raw jute, but herself did not consume any as she had then no jute manufacturing capacity. But gradually as she has been gaining manufacturing facilities her share in the world raw jute production has also been declining as other countries, especially India and mainland China stepped up their own production of raw jute and allied fibres. The percentage share of Pakistan in world production and consumption of raw jute and allied fibres over the period 1947-48 to ~~1961~~ 1959-60 is shown in Table 1-6.

Thus, to start with, India and the rest of the world were heavily dependent on Pakistan's supply of raw jute at the time of Partition. But gradually as India and other countries became important raw jute (including allied fibres) producers themselves, the share of Pakistan fell to 43 percent in 1960. Pakistan, however, still produces more than half of the world's true raw jute and the world is dependent largely on Pakistan for quality jute.[1/]

1/ FAO (Rome), Postwar Trends in the Production of Jute, Kenaf and Allied Fibres, (mimeo.), July, 1964.

Table 1-6

Percentage Share of Pakistan in the World Production and Consumption of Raw Jute and Allied Fibres as compared with India and Rest of the World, 1947- 60

Annual Average	Production			Consumption		
	Pakistan	India	Rest	Pakistan	India	Rest
1947-48	81.0	19.0	0	-	82.6	17.4
1952-57	49.5	37.2	13.3	7.0	56.4	46.6
1959-60	43.0	34.5	22.5	10.4	41.6	48.0

Source : Indian Jute Mills Association,; Govt. of East Pakistan, Monthly Summary of Jute Statistics; FAO (Rome), Monthly Bulletin of Agricultural Economics and Statistics, October, 1959, p.24.

In 1947-48, as shown in the above Table, most of the raw jute consumption (about 83%) took place in India, Pakistan's mill consumption being nil. But by 1959-60, the raw jute consumption in Pakistan and other countries outside India rose to 10 and 48 per cent respectively and that of India fell to about 42 per cent of the world total (Table 1-6).

Of her total raw jute production, Pakistan consumed in 1961-62 about 23 per cent and for the rest she had to seek export markets (Table 1-7). From this Table it can also be seen that Pakistan's exports to India fell from 88 per cent in 1947-48 to 10 per cent

in 1961-62; and those to other countries rose from about 12 per cent in 1947-48 to about 90 per cent in 1961-62 partly because of Pakistan's trade diversification policy and partly because of India's own policy of self-sufficiency in raw jute production.

Table 1-7

Pakistan's Production, Consumption and Export of Raw Jute

Annual Average	Production	Consumption		Total Exports to	
		Quantity	Percent of total Production	India	Rest of the World
	(Million Bales .)			(Percentage ....)	
1947-48	6.84	-	-	87.6	12.4
1948-52	5.29	-	-	45.4	54.6
1952-55	5.03	-	-	26.3	63.7
1955-59	5.70	0.93	16.3	14.5	85.5
1959-62	6.05	1.51	25.5	11.7	88.3

Source: Government of East Pakistan, Monthly Summary of Jute Statistics, December, 1962, part ii.

In Table 1-8, it is shown that Pakistan's exports to the European Common Market, the U.K. and Japan increased substantially over the period 1948-63.

Table 1-8

Trends of Pakistan's Raw Jute Exports to Main Importing Countries (in thousand tons)

Annual Average	India	U.K.	U.S.A.	Japan	Common Market	Total Exports
1948-51	438	88	61	113	211	923
1952-54	243	139	68	28	314	925
1955-58	124	138	63	32	306	835
1959-62	96	125	41	42	230	721T

Source: Commonwealth Economic Committee, Industrial Fibres, London.

In the export market of raw jute, Pakistan is still a monopolist. Over the period 1947-63, Pakistan, on an average, covered about 90 per cent of the world export of raw jute (Table 1-9). Although India and other countries produced about 60 per cent of the world total in 1961-62 they needed almost all their raw jute for domestic use.

Pakistan started jute manufacturing in the early 1950's and by 1963 attained significant capacity for processing raw jute (Table 1-10). During the period 1954-63 world jute manufacturing increased from 1628 thousand metric tons to 2975 thousand metric tons (Table 1-10). However there has been some geographical shift in manufacturing from the traditional areas (India and Western Europe) to some developing countries like Pakistan and Centrally Planned Countries. Pakistan produced about 11 per cent of the world total in 1963 (Table 1-10).

Table 1-9

Exports of Raw Jute from Main Producing Countries, 1947-63

Countries	1947-50	1951-54	1955-59	1960-63
	(Yearly average in thousand metric tons)			
Pakistan : (total)	900	983	851	721
Percentage of total	(83)	(99)	(96)	(85)
India	183	-	-	12
China (mainland)	-	-	14	4
Nepal	7	5	4	3
Thailand[1/]	-	-	10	116
World total	1089	988	883	853

Source : Commonwealth Economic Committee, Industrial Fibres.

1/ Mostly Kenaf and wastes.

Table 1-10

Distribution of World Production of Jute Manufactures

Countries	1954	1963	1954	1963
	(thousand metric tons)		(Percentages)	
Pakistan	49	317	3	11
India	901	1259	55	42
Western Europe	517	497	32	17
Centrally Planned Countries	100	500	6	17
Others	61	403	4	13
Total	1628	2975	100	100

Source : As table 1-9

1-7 Postwar Trends in End-uses of Raw Jute

The principal end-uses of raw jute are in the production of packaging bags, floor coverings, roofing felts, soft furnishings, strings, etc. Among these, packaging bags account for about three fourths of the total, the next most important use being in floor coverings in the developed countries.[1/] During the postwar period, bulk handling methods, paper bags and the packaging of goods for retail sale reduced jute requirements in the distributive trades in the developed countries, but growth of new outlets in floor coverings, soft furnishing, etc. took place in the Netherlands, Belgium, the U.K., and the U.S.A.[2/] Outside the main industrial areas of the world, the demand for jute is still largely confined to packaging uses.[3/]

In Table 1-11 the regional trends in jute consumption are shown. Developed countries as a whole

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1/ F.A.O., Jute: A Survey of Markets, Manufacturing and Production, Commodity Bulletin No. 28, p.2.

2/ F.A.O., Monthly Bulletin of Agricultural Economics and Statistics, December, 1960, p.5.

3/ F.A.O., Jute, op.cit., p.4.

Table 1-11

Regional Trends in the Consumption of Jute Goods

Areas	1937	1953-55	1959-61
	(million metric tons)		
Developed Countries :			
United States	0.46	0.30	0.38
U.K.,France, West Germany	0.36	0.32	0.30
Other Western Europe	0.19	0.20	0.27
Canada, Australia, N.Z., and South Africa	0.19	0.19	0.26
Japan	0.03	0.02	0.04
Total	1.23	1.03	1.25
Centrally Planned Countries :			
Eastern Europe& U.S.S.R.	0.07	0.11	0.14
and Mainland China	0.01	0.26	0.40
Total	0.08	0.37	0.54
Developing Countries :			
India	0.18	0.18	0.30
Pakistan	0.07	0.10	0.10
Other Far East	0.17	0.14	0.20
Latin America, Middle East and Africa	0.34	0.39	0.41
Total	0.76	0.81	101
High Income Countries 1/	1.30	1.14	1.39
Low Income Countries 2/	0.77	1.07	1.41
World Total	2.07	2.21	2.80

Source : FAO (Rome), Jute Goods Available for Home Use, Doc. CCP/Jute Ad Hoc 62/4/Add.1.

1/ includes Eastern Europe and U.S.S.R.

2/ Developing countries and Mainland China.

increased their consumption of jute goods by about 25 per cent between 1953-55 and 1959-61, but a comparison with the pre-war figure suggests that total jute consumption in these countries was only fractionally higher in 1959-61 than in 1937, and that demand in the highly industrialised countries, e.g., the U.S.A., the U.K., West Germany and France failed to attain the pre-war level. Although manufacturing output in 1957-58 was more than double that of the pre-war level and agricultural production, part of which is packed in jute bags, was up by one third,[1/] jute consumption in the developed countries remained more or less the same (Table 1-11). Most of the expansion in jute consumption after the World War II took place only in the low income countries as can be seen in Table 1-11.

1/ F.A.O., Monthly Bulletin of Agricultural Economics and Statistics, December, 1960, p.1.

1-8 The Magnitude, Causes and Effects of Fluctuations in Prices of Pakistan Jute

Introduction

In the following sections we attempt to measure the extent of fluctuations in raw jute prices, determine the causes of such fluctuations and their various effects. We have considered only the percentage changes within the period of a year and year to year. As explained in the Preface, within-year fluctuations are obtained by expressing the range between the highest and the lowest prices in the period of a year as a percentage of the higher figure. Similarly, the year to year difference has been expressed as a percentage of the higher figure in order to arrive at the annual fluctuations. We have thus, confined the analysis to short-run fluctuations only.

1-9 Fluctuations in Jute Growers' Prices

During the period 1947-62 the jute growers of East Pakistan experienced large annual fluctuations in the volume of jute production ($\pm$18%), unit prices ($\pm$28%), and the estimated cash income from this commodity ($\pm$32%) as can be seen in Table 1-12 and Charts 1-2 and 1-3.

Thus, fluctuations in the volume of jute output and prices appear to have destabilising effects on the growers' cash income.

Table 1-12

Fluctuations in Jute Production, Prices and Cash Income from Jute in East Pakistan (1947-62)

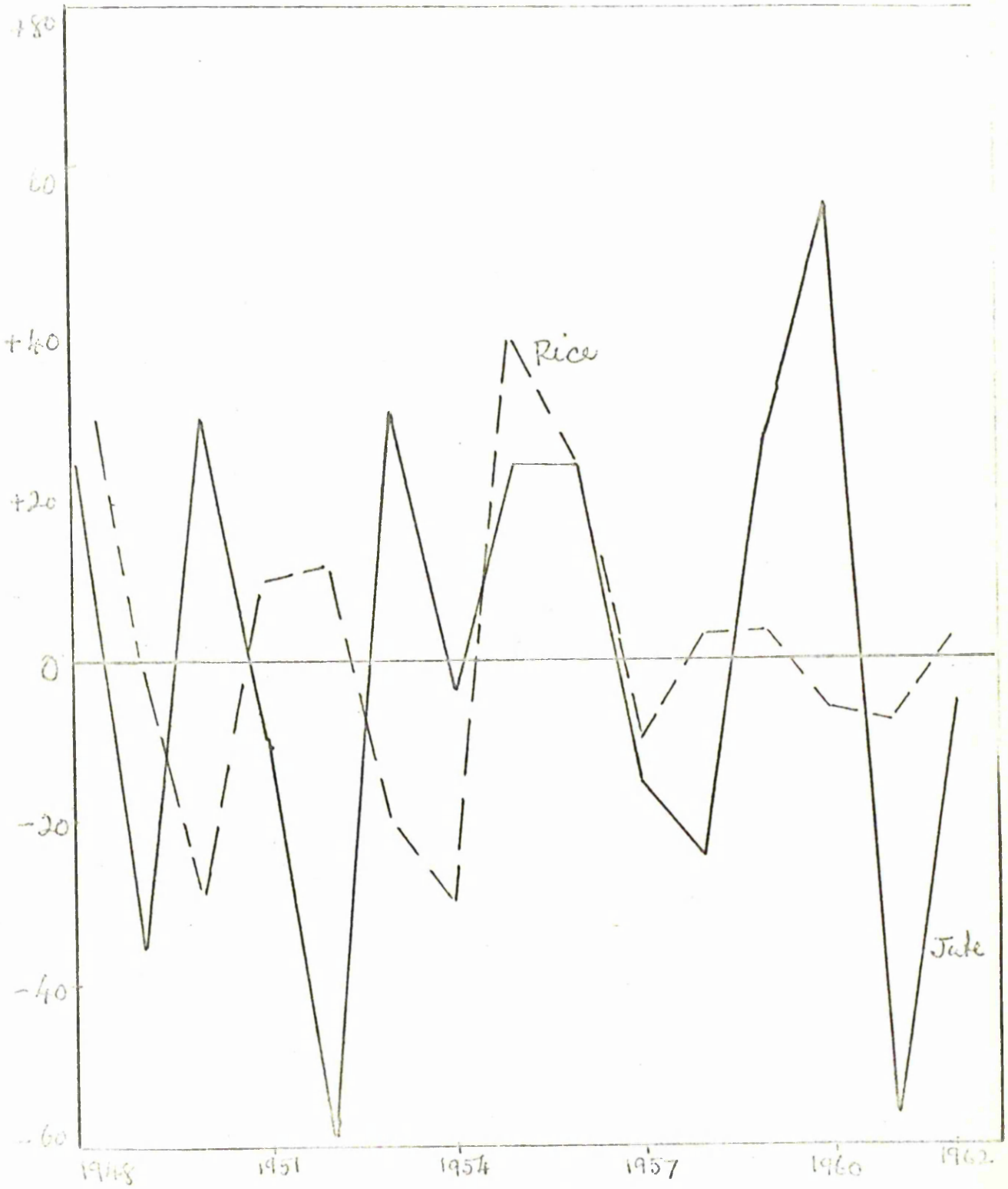
Annual Average	Production		Average Jute Price		Average Rice Price		Cash Income from Jute	
	million bales	Annual Percent Change	Rs. per maund	Annual percent change	Rs. per maund	Annual per cent change	million Rs.	Annual % change
1947-50	5.4	± 27	27	± 24	25	± 17	691	± 33
1951-55	5.4	± 23	23	± 29	22	± 25	457	± 33
1956-59	5.7	± 14	30	± 13	31	± 9	588	± 19
1960-62	5.9	± 15	48	± 21	28	± 5	894	± 44
Average Percentage change		± 18		± 28		± 15		± 32

Source: Government of East Pakistan, Monthly Summary of Jute Statistics, various issues.

In Table 1-13 fluctuations, both within a year (36%) and year to year (25%), for a particular kind of raw jute (white jat bottom) at Narayanganj (the most important jute market in East Pakistan) were found to be very wide during

Chart 1-2

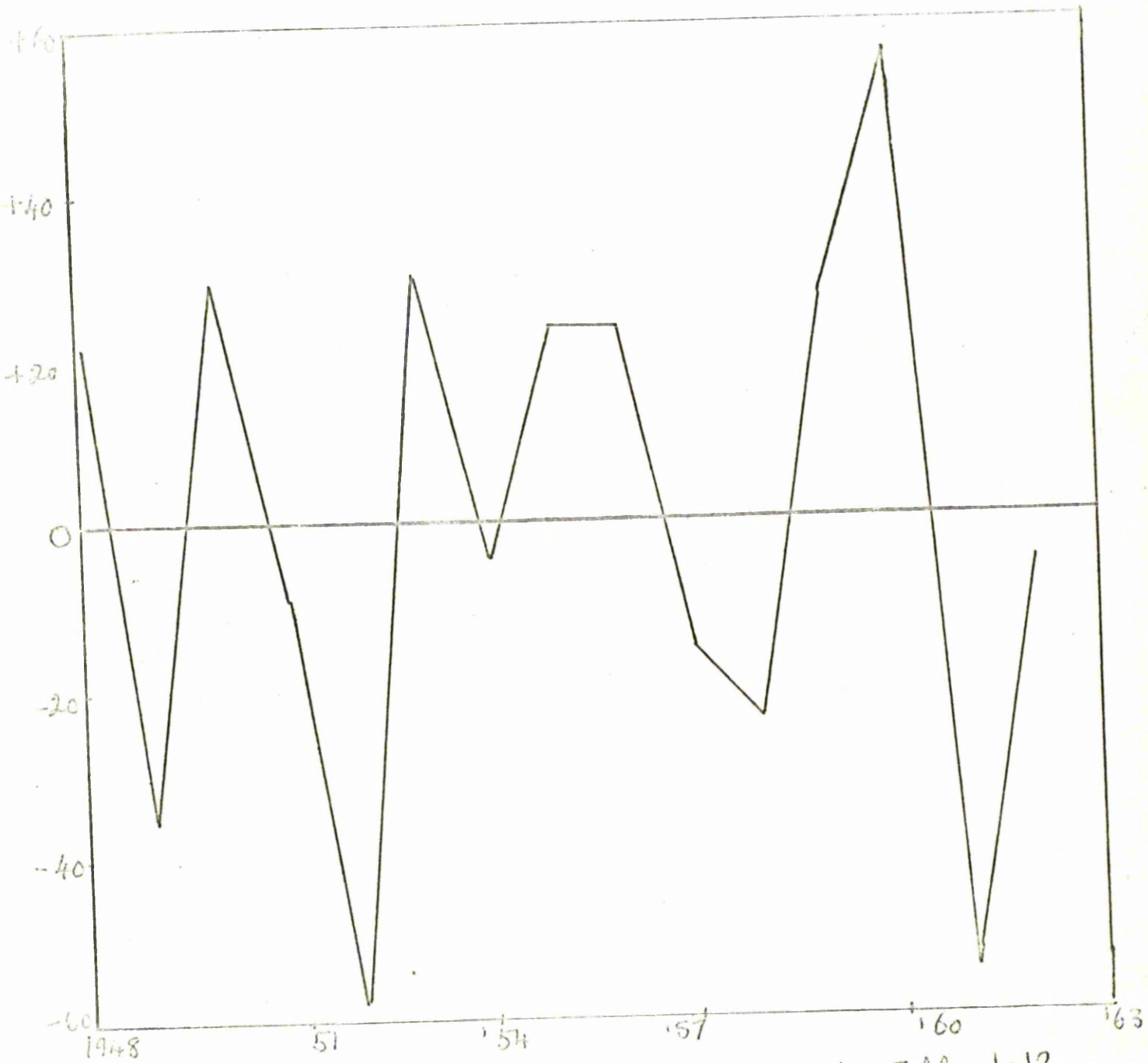
Annual Percentage Change in Jute and Rice Price



Source: As table 1-12

Chart 1-3

Annual Percentage Change in Average Prices of Raw Jute as Received by the Growers



Source : As Table 1-12

the period 1947-62. The wider intra-year price fluctuations might be due to seasonal influences such as arrivals of jute at the baling centres, etc.

Table 1-13

Jute Price Fluctuations at Narayanganj (1948-62)

Annual Average	Within-Year Percentage Fluctuations	Year to Year Percentage Fluctuations
1948-52	39	± 34
1953-57	30	± 18
1958-62	35	± 26
Average for 1948-62	36	± 25

Source: F.A.O. (Rome), Study Group on Jute, Kenaf and Allied Fibres (mimeo.), July, 1964; Economic Adviser to the Government of Pakistan, Pakistan Basic Facts, Rawalpindi, 1963, p.31.

Table 1-14 and Chart 1-4 demonstrate that the changes in the annual jute acreages were mainly responsible for wide fluctuations in total jute output. Fluctuations in yield per acre had a relatively small effect on changes in the output of jute during the period 1951-62.

Table 1-14

Fluctuations in Jute Acreage and Production (1951-62)

Annual Average	Percentage Change in		
	Acreage	Yield per acre	Total Production
1951-56	± 28	± 7	± 19
1957-62	± 15	± 9	± 11
Average for 1951-62	± 21	± 8	± 15

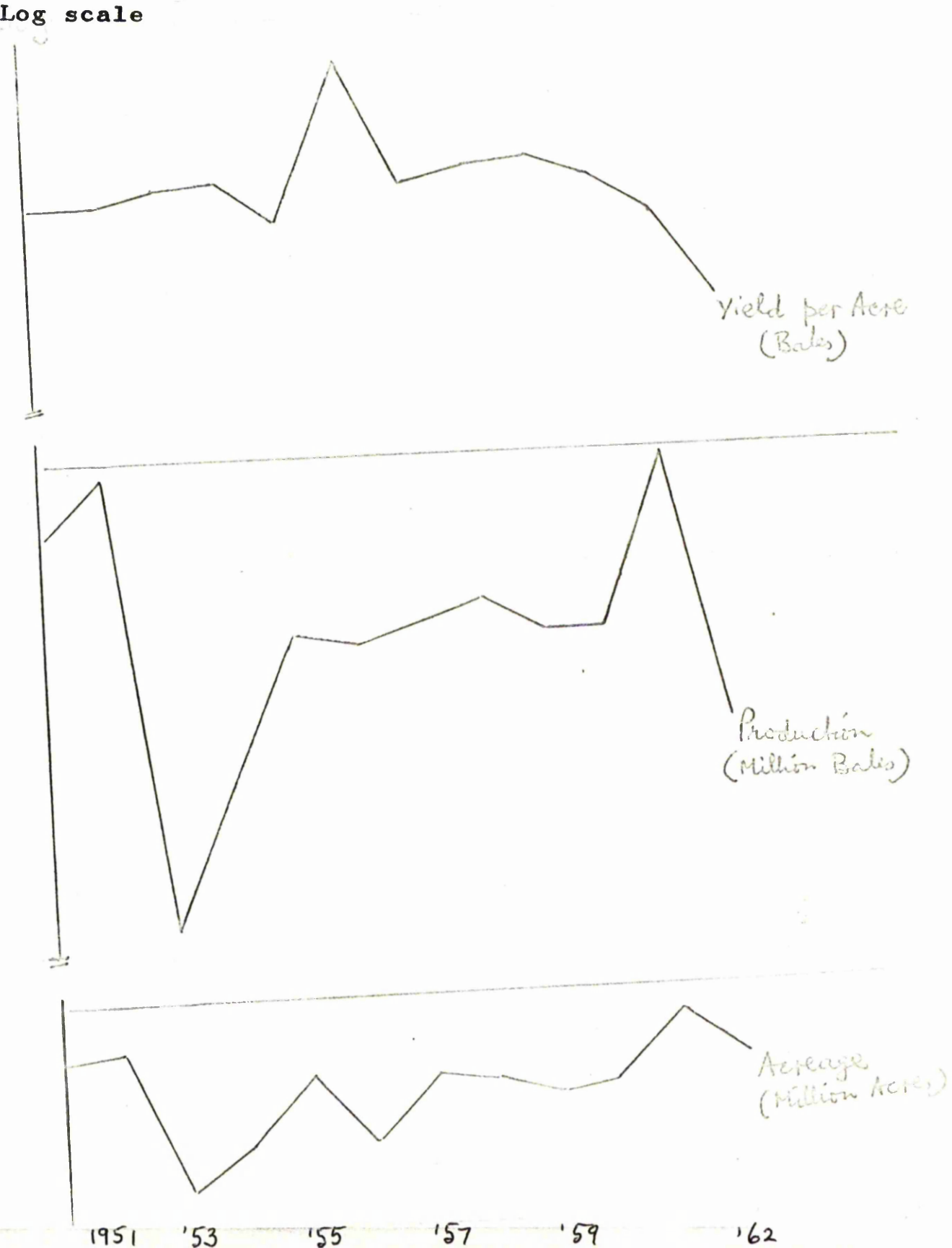
Source: Government of East Pakistan, Monthly Summary of Jute Statistics, (various issues).

1-10 Causes of Jute Fluctuations in East Pakistan

Fluctuations in growers' cash income from jute are the product of two variables - volume of output and the unit price. Such fluctuations in cash income become severe especially when the two variables move in the same direction. The changes in the volume of jute production, as shown in Tables 1-14 and 1-15 and Chart 1-4, are mainly due to the changes in the acreage made by the growers as a response to the relative prices of jute and rice prevailing in the preceding season.

Chart 1-4

Fluctuations in Area, Yield per Acre and Total Output of Jute



That fluctuations in acreages mainly influenced the annual fluctuations in total jute output and that changes in yield per acre had little influence on total output fluctuations are also statistically supported as evident from the following two regression equations.1/

Table 1-15

Statistical Analysis of Effects of Changes in Acreages and Yield Rates on Changes in Jute Production

$$\text{Log } Y = 0.504 + \underset{(0.171)}{0.749} \log X_1 \qquad \ldots\ldots\ldots (1\text{-}3)$$

$R^2 = 0.64$ Degrees of freedom = 11

$$\text{Log } Y = -0.481 + \underset{(0.066)}{0.106} \log X_2 \qquad \ldots\ldots (1\text{-}4)$$

$R^2 = 0.09$ Degrees of freedom = 11

where, Y is annual percentage change in total jute output and X_1 and X_2 are annual percentage changes in total acreages and yield per acre respectively.

The B coefficient of equation (1-3) is statistically far more significant than that of equation (1-4). The coefficient of correlation in the former equation is highly significant while that in the latter is not.

1/ Data of table 1-14 were transformed into logarithms and then year to year percentage changes of log values were calculated. Since the regression equations are in logarithm, the B coefficients measure the percentage response of total jute output to a given change in jute acreage or yield per acre.

The above statistical analysis supports the point made earlier that whenever the jute growers of East Pakistan want to make any change in jute output they can do it only by altering the acreage under jute. The growers are unable to bring about a planned increase in yield per acre as the factors of production on which they depend are traditionally known through long experience and generally are fully utilised.[1/] Hence, changes in yield per acre are more or less random.

1-11 Fluctuations in Raw Jute Consumers' Prices

Wide price fluctuations were experienced by raw jute consumers as well. In Table 1-16 we have measured the jute price fluctuations in the U.K. market[2/] for the period 1938-63, and in Chart 1-5 the average annual prices for an important variety of raw jute (Export Firsts) are plotted.

1/ It does not however, mean that output per acre cannot be increased in East Pakistan. This certainly can be done with the help of improved seeds, fertilizer and improvements in the methods of cultivation. Such factors however, must be introduced from outside. So far as the growers are concerned, they do their best within the limit of their knowledge to raise as much output as possible from their land.

2/ The U.K. market is chosen because this is the single most important raw jute market in the world.

The average intra-year fluctuations for the above period were 28 per cent, while the average year to year fluctuations for the same period were ± 18 per cent.

Table 1-16

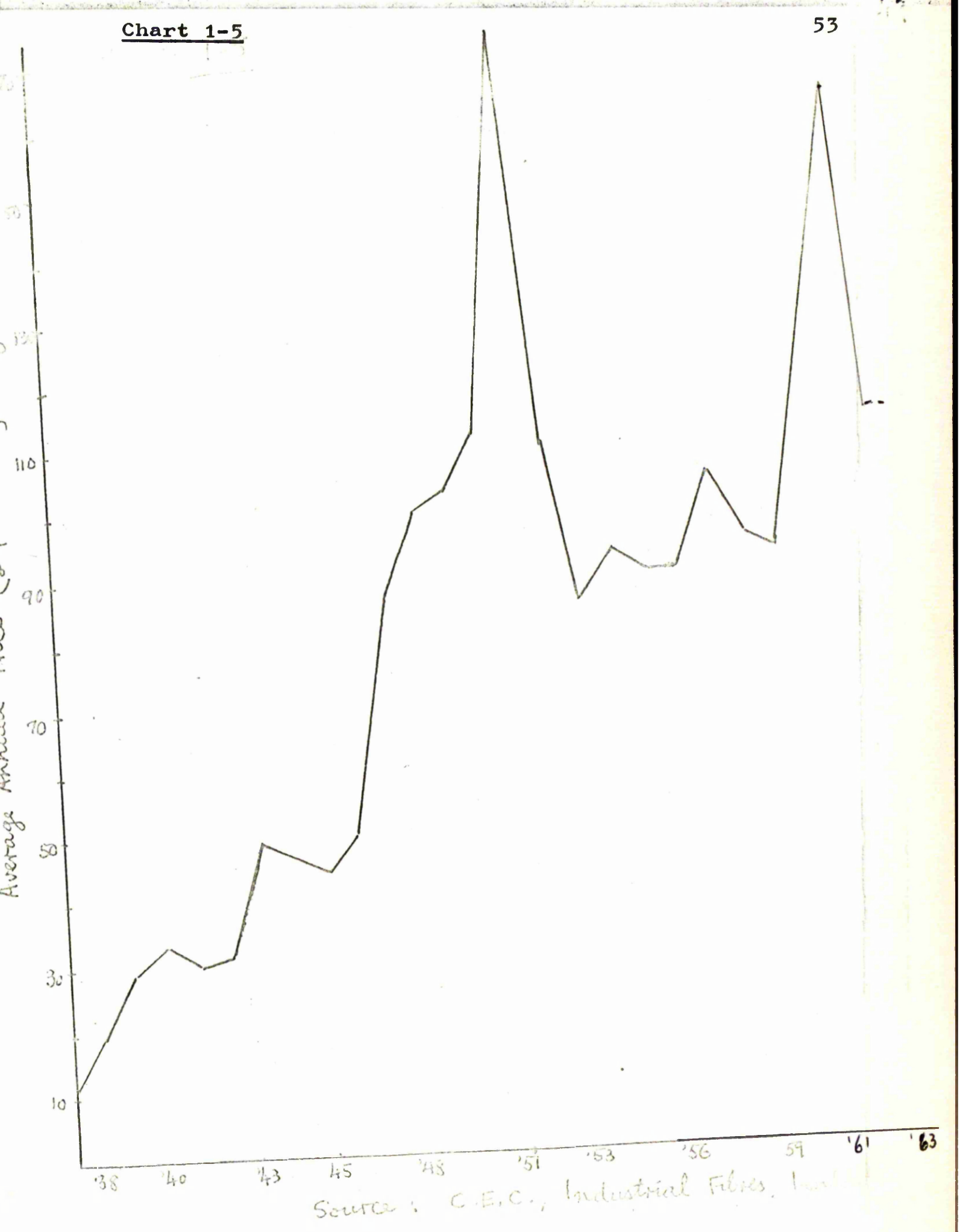
Jute Price Fluctuations in the U.K.(£ per ton,Export Firsts)

Annual Average	Percentage Fluctuations	
	Intra-Year	Year to Year
1938-46	33	± 15
1947-51	23	± 20
1952-59	25	± 15
1960-63	32	± 24
Average for 1938-63	28	± 18

Source: Commonwealth Economic Committee, Industrial Fibres, London.

As can be seen in Chart 1-5, raw jute prices in the U.K. attained staggering heights on two occasions - once in 1951 and again in 1961. Immediately after World War II, raw jute prices were rising and reached the peak during the Korean conflict. After the Korean boom the price abruptly went down because of large supply as a response of high prices. From 1953 to 1959 a steady price for raw jute prevailed, but in 1959 it began to rise and in 1961 it was almost double the average price ruling during the period 1953-59.

Chart 1-5



Source : C.E.C., Industrial Fibres, I

1-12 Extent of Jute Export Fluctuations

Over the period 1948-62 Pakistan experienced wide fluctuations in export earnings from raw jute as shown in Table 1-17. Calculated on a year to year basis, average fluctuations in the raw jute export proceeds for Pakistan were ± 20.4 per cent during the above period. The United Nations, making a study for a longer period (1901-50), found the average annual fluctuations in the export proceeds from raw jute (India and Pakistan) at ± 22 per cent and for some major agricultural commodities entering into the exports of the underdeveloped countries at ± 22.6 per cent.[1/]

Table 1-17

Jute Export Fluctuations: Pakistan (1948-62)

Annual Average	Export Proceeds		Unit Prices		Export Volume	
	Value (Rs. m.)	Percent Change	Rs. per metric ton	Percent Change	Volume (000 metric ton)	Percent Change
1948-51	678	± 42	1016	± 18	685	± 38
1952-55	628	± 22	683	± 19	924	± 13
1956-59	732	± 9	924	± 12	838	± 12
1960-62	947	± 8	1209	± 12	801	± 6
Average for 1948-62		± 20.4		± 15.2		± 16.6

Source: U.N., Year Book of International Trade.

1/ U.N., Instability etc. loc. cit.

Similarly, year to year average fluctuations in the export price and quantity of raw jute from Pakistan for the period 1948-62 were ± 15.2 and ± 16.6 per cent respectively (Table 1-17). The same study of the United Nations found the average year to year fluctuations in the export price and quantity of raw jute for 1901-50 at ± 16 and ± 17 per cent respectively.[1/] The summary of the above statistical findings is given in the following Table.

Table 1-18

Export Fluctuations in Pakistan Raw Jute as Compared with the U.N. Findings

Authors	Period of Study	Export Proceeds	Price	Quantity
U.N.(Average for 18 Major Agrl. Comm.	1901-50 (Under-developed Countries)	± 22.6[a/]	± 13.7[b/]	± 18.7
U.N. (Raw Jute)	1901-50 (India & Pakistan)	± 22.0[a/]	± 16.0	± 17.0
Our Study (Raw Jute)	1948-62 (Pakistan)	± 20.4[a/]	± 15.2	± 16.6

1/ U.N., Instability in the Export Markets of the Underdeveloped Countries, N.Y., 1952, Tables 1-3.

a/ In money terms.

b/ Average for 25 Commodities.

1-13 Causes of Export Fluctuations in Pakistan Jute

As mentioned earlier, Pakistan dominates the export market of raw jute; her share being, on average, about 90 per cent of the world total during 1947-63[1/] (Table 1-9). Thus, as a monopolist of this raw material in the export market, Pakistan is faced with a downward sloping demand function for this commodity.

It was mentioned earlier that the most important use of raw jute is still in the production of packaging bags. As the packaging charge is a very small proportion of the total price of the packageable commodities, the influence of the price of jute bags should be negligible. But as there have arisen suitable alternative means of packaging (cotton and paper bags, for example) and handling commodities in bulk, the demand for jute is now influenced by its price in relation to the prices of substitutes. Thus, the existence of various substitutes for Pakistan jute - ranging from Mesta or Kenaf and other fibres to paper and cotton - increases the price elasticity of demand for raw jute over what might be expected for it in the absence of any substitute.

1/ Although Pakistan is still a monopolist in the export market, her share in the world production of raw jute was about 43 per cent during 1959-60 (Table 1-6).

The competition is, however, more direct in the case of jute manufactures than for raw jute. If for example, the prices of substitutes fall, other things remaining the same, the demand for jute bags will fall with a consequent fall in the demand for raw jute.

It is therefore of great importance for Pakistan to know the various elasticities of demand for raw jute in order to formulate any export policy for this commodity. The best thing is to calculate the weighted average elasticity of demand for all the countries, but such an approach cannot be followed due to the lack of adequate data for all the countries importing raw jute. The U.K.'s elasticity of import demand for raw jute is, therefore, assumed to be typical to that of the developed countries as the U.K. is the single most important market for raw jute in the world. The U.K.'s elasticity of demand may not be representative for the underdeveloped countries where the trends of jute consumption are different from those in the developed countries. For Pakistan raw jute, however, the developed countries' demand conditions are relevant as most of her raw jute exports are still concentrated in these countries (Table 1-8).

By calculating the multiple regression equation (1-5), it is found that the U.K.'s import demand function for raw jute over the period 1948-63 was sensitive to its price. The price elasticity coefficient, i.e., the coefficient of log P_1 is found to be significant at the 5 per cent error probability level.[1/] The fit of the equation is shown below:

$$\begin{aligned} \text{Log } J = 2.0671 &- \underset{(0.2941)}{0.5891} \log P_1 + \underset{(0.4321)}{0.3217} \log P_2 \\ &+ \underset{(0.2819)}{0.4317} \log Y + \underset{(0.0071)}{0.0132}\, t \end{aligned} \qquad (1\text{-}5)$$

$R^2 = 0.5543$ Degrees of freedom = 11.

where, J is the total import quantity of raw jute (Export Firsts) in the U.K., P_1 is the ex C.I.F. price of 'Export Firsts', P_2 is the weighted index of prices of substitutes, Y is the index of production of jute using commodities and t is a time trend (1948=1, 1949=2 . . . . 1963=16). The data are summarised in Table 1-19.

1/ Dr. Rabbani, AK., in a statistical study (Jute in the World Economy, an unpublished Ph.D. thesis, University of London, 1964) found a slightly higher elasticity by taking the price of jute and that of substitute in the form of a ratio.

The numerical equation is given above without an error term because the single best numerical value that can be assigned to this term, in the absence of special knowledge, is its average, zero. The regression coefficients are also in a sense average values. The equation (1-5), therefore, gives an average estimate.

Table 1-19

U.K.'s Import Demand for Raw Jute, 1948-63

Annual Average	Import Quantity (000 long tons)	Jute Price (CIF, £ per ton, Export Firsts)	Index of Jute using Commodities (1954=100)	Index of Substitute Prices (1954=100)
1948-51	124	129	109	137
1952-54	140	105	116	123
1955-58	141	115	121	129
1959-63	130	131	129	127

Source: U.K., Board of Trade Journal; C.S.O., Annual Abstract of Statistics; Commonwealth Economic Committee, Industrial Fibres; and F.A.O., Monthly Bulletin of Agricultural Economics and Statistics.

Notes: The index of jute using commodities is prepared by using the weights as Agricultural commodities 50%, Mining 6%, Furniture and Upholstry 8%, Insulated Cables 6%, Linoleum 10% and Woven Carpets 20%.

The price of substitutes is represented by the weighted index of prices of Kraft paper 35%, Cotton 25% and Sisal 40%.

A statistical analysis indicates that fluctuations in the total export proceeds of raw jute are more closely related to fluctuations in the quantity exported from Pakistan than to fluctuations in unit prices as shown by the regression equations (1-6) and (1-7).

Total Proceeds and Unit Price

$$\text{Log } V = 1.00 + \underset{(0.45)}{0.81} \log P \qquad (1\text{-}6)$$

$R^2 = 0.26$

Total Proceeds and Total Quantity

$$\text{Log } V = 0.15 + \underset{(0.25)}{0.91} \log Q \qquad (1\text{-}7)$$

$R^2 = 0.61$

where, V is total proceeds, P is the unit price and Q is the total quantity exported.[1/]

The coefficient of determination between total proceeds and the total export quantity is highly significant while that between total proceeds and unit price is not

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1/ Data of Appendix 1-D were transformed into logarithms and then deviations from a five year moving average of log values were calculated as indicators of trend corrected short term fluctuations.

significant at the 5 per cent error probability level. The regression coefficient of equation (1-7) is more significant than that of equation (1-6), which indicates that the percentage response of total proceeds is significantly accounted for by a given change in quantity exported as compared to that of price.

Fluctuations in current jute output and hence in export are the consequences of producers decisions based on prices of jute, given the price of rice, prevailing in the preceding season. But the prices of jute are the results of shifts in both demand and supply. Shifts in supply were found to be caused by, besides the relative prices of jute and rice in the preceding season, some random factors in the current season. Thus, the causes of jute export fluctuations are rather complex. There appears to be a cobweb cycle in the production and the relative prices of jute. The cobweb cycle results from the fact that while the demand for raw jute depends on its current price, the supply depends on the preceding year's relative prices of jute and rice. Thus in 1953, to give an example, the jute acreage (and output) dropped considerably following a severe fall in the jute/rice price ratio in 1952 (Chart 1-1). In the year 1961 the jute acreage (and output) shot up following a considerable

rise in the jute/rice price ratio in 1960 (Chart 1-1). The supply of jute may, however, fluctuate because of fluctuations in the price of rice alone prevailing in the preceding season. The fluctuations in the supply of jute, in its turn, affect the price of jute even if the demand is stable. Similar effects on the price of raw jute, of course, can originate from fluctuations in demand.

It, however, appears that fluctuations in supply were more responsible than those in demand for fluctuations in the export price of, and proceeds from Pakistan jute over the period (1948-62). It seems plausible that year to year fluctuations in the supply of raw jute are greater than in the industrial demand for it for packaging and other purposes. It was found by an F.A.O. study that during the inter-war period the magnitude of fluctuations was significantly greater in jute production than in industrial demand for it. The study showed that for every 1000 tons by which production varied, the industrial demand varied by only 400 tons.[1/]

1/ F.A.O., Jute, p.26.

1-14 Effects of Jute Fluctuations on Pakistan's Import, Income, etc.

In Tables 1-20 and 1-21 on the following page, we have calculated the annual fluctuations in exports and imports and national and regional income for Pakistan and East Pakistan respectively for the period 1948-62. Although Pakistan's exports and imports fluctuated, on average, by ±18% and ±20% respectively, the nation's income fluctuated by only ±3% (Table 1-20). Similarly, in Table 1-21 it is found that year to year fluctuations in East Pakistan's exports and imports averaged about ±17% and ±25% respectively, but the regional income (for 1949-50 to 1959-60) fluctuated by about ±4% only. These are sketched on semi-log paper (Chart 1-6) and on a natural one (Chart1-7), but no significant relationship was noticed between export-import fluctuations and income, either for the nation or for East Pakistan. That national and regional income should remain unaffected by their export and import fluctuations is obvious from the fact that foreign trade forms only a small part of their respective income. We can, therefore, conclude that jute export being a part of the total export, also does not affect the national or regional income to any significant extent.

Table 1-20

Annual Percentage Change in Total Exports, Imports and National Income of Pakistan (1948-62)

Annual Average	Percentage Change in		
	Exports	Imports	National Income
1948-53	± 27	± 23	± 4
1954-58	± 13	± 19	± 2
1959-62	± 13	± 20	± 4
Average % Change	± 18	± 21	± 3

Source :Govt. of Pakistan, Statistical Bulletin, July, 1964.

Table 1-21

Annual Percentage Change in East Pakistan's Exports, Imports and Income

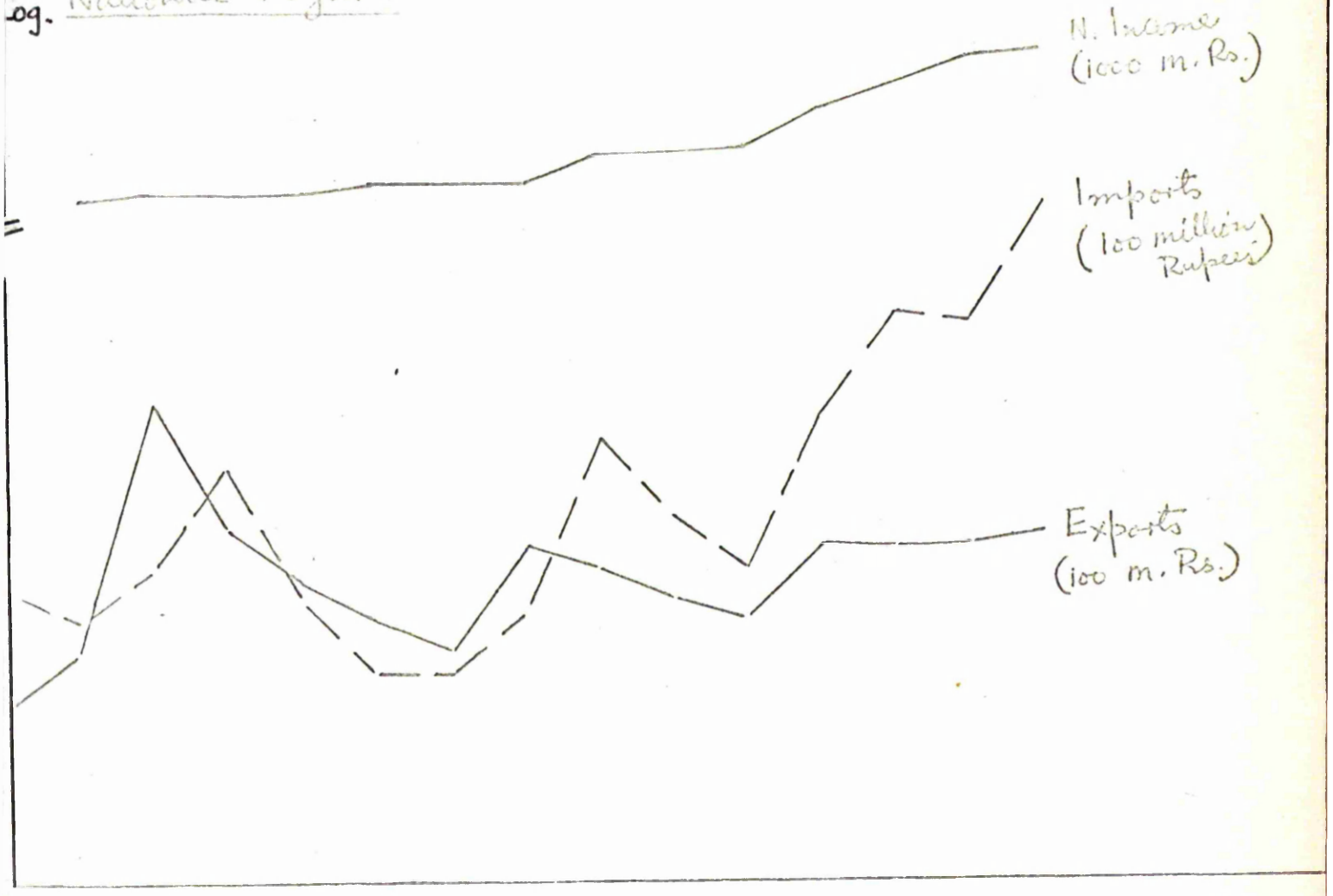
Annual Average	Percentage Change in		
	Exports	Imports	Income
1948-53	± 26	± 30	± 3 a/
1954-59	± 15	± 23	± 5
1960-62	± 7	± 21	-
1948-62	± 17	± 25	± 4 b/

Source : Govt. of Pakistan, Foreign Trade Statistics of Pakistan, vol. I, 1961; Statistical Bulletin, July, 1964; Haq, M. op. cit.; Appendix B, table B-1.

a/ Average for 1949-53.
b/ Average for 1949-59.

Chart 1-6 Fluctuations in Income, Exports and Imports

Log. National Figures



East Pakistan (100 m. Rs.)

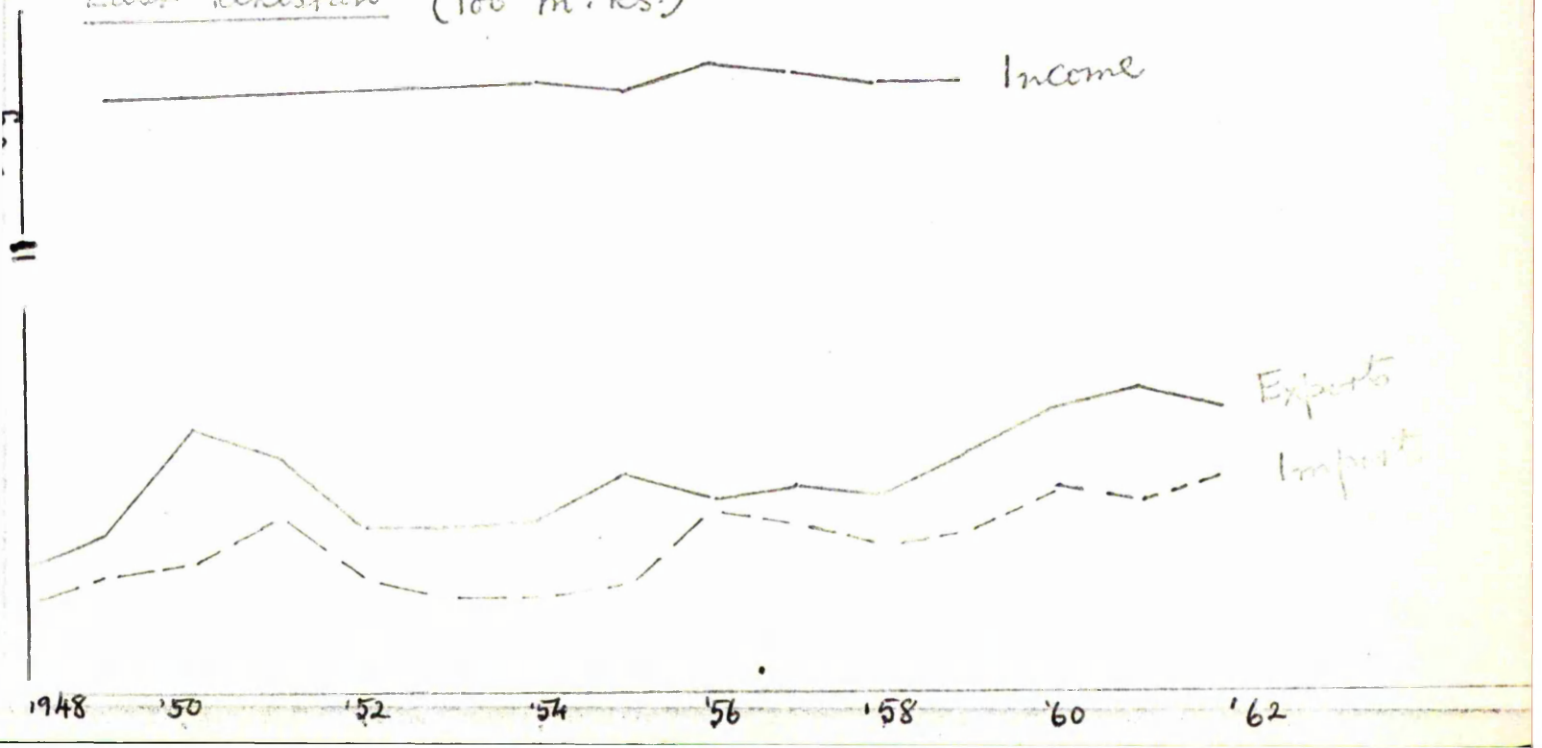
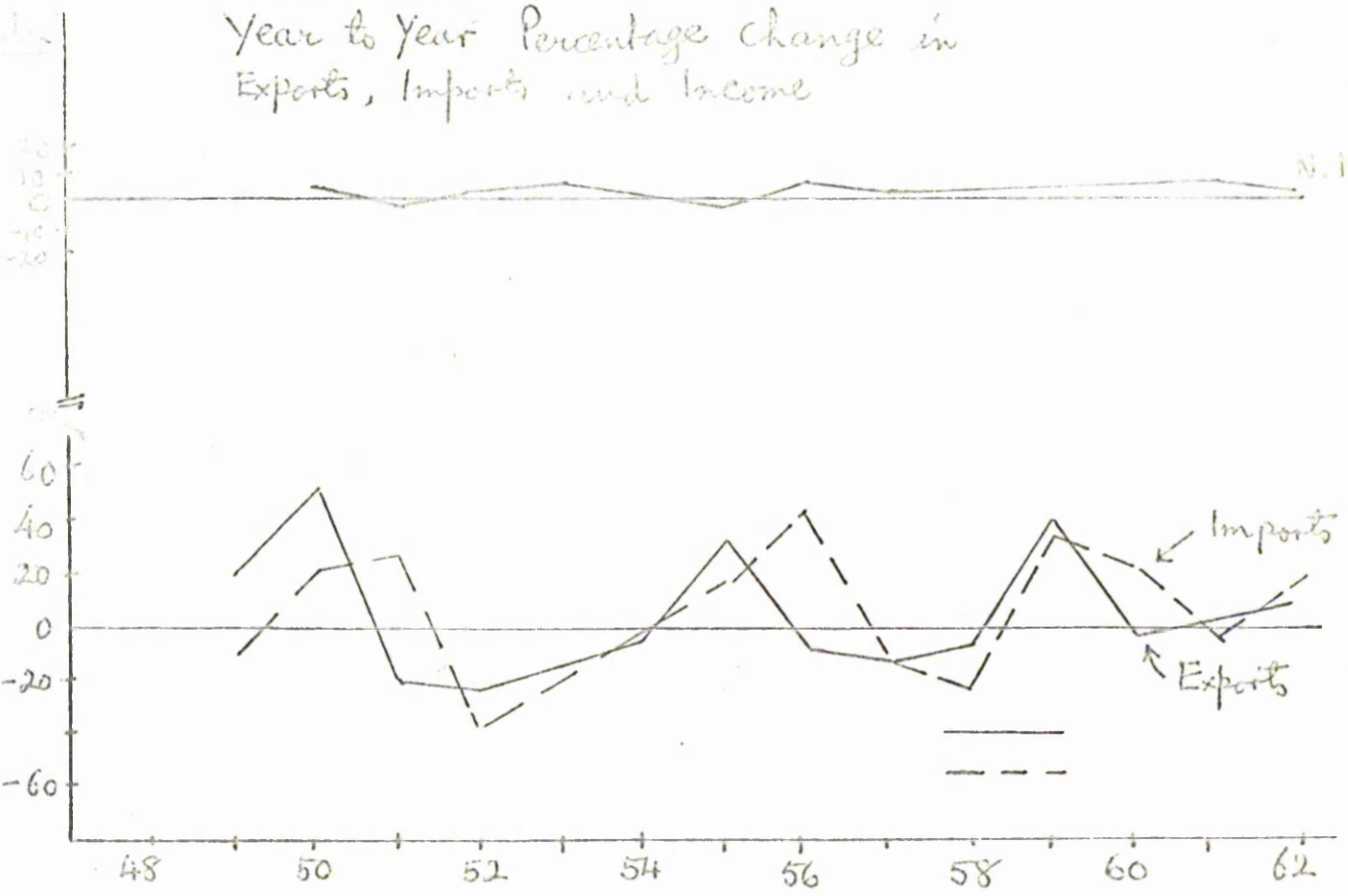
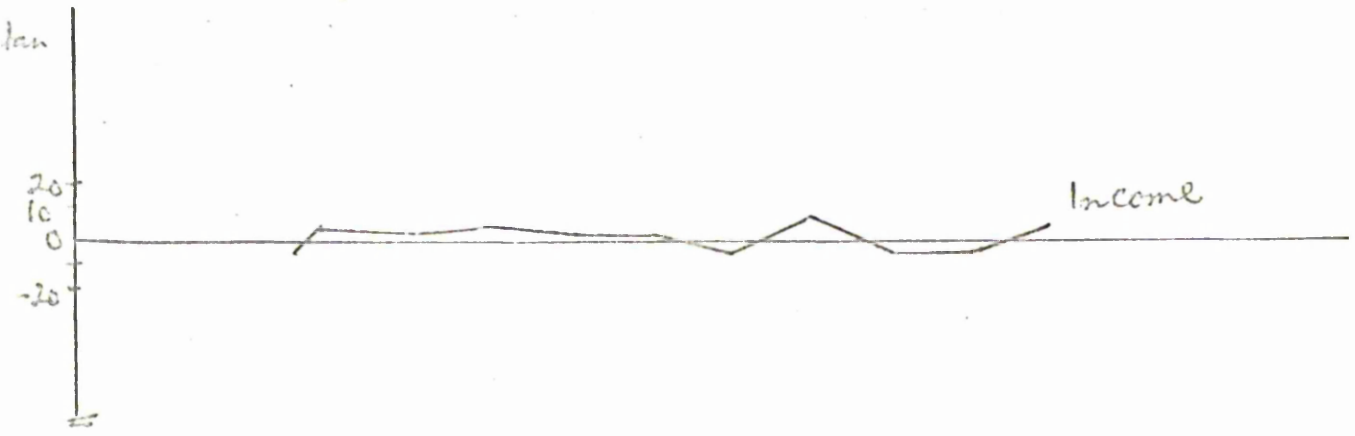
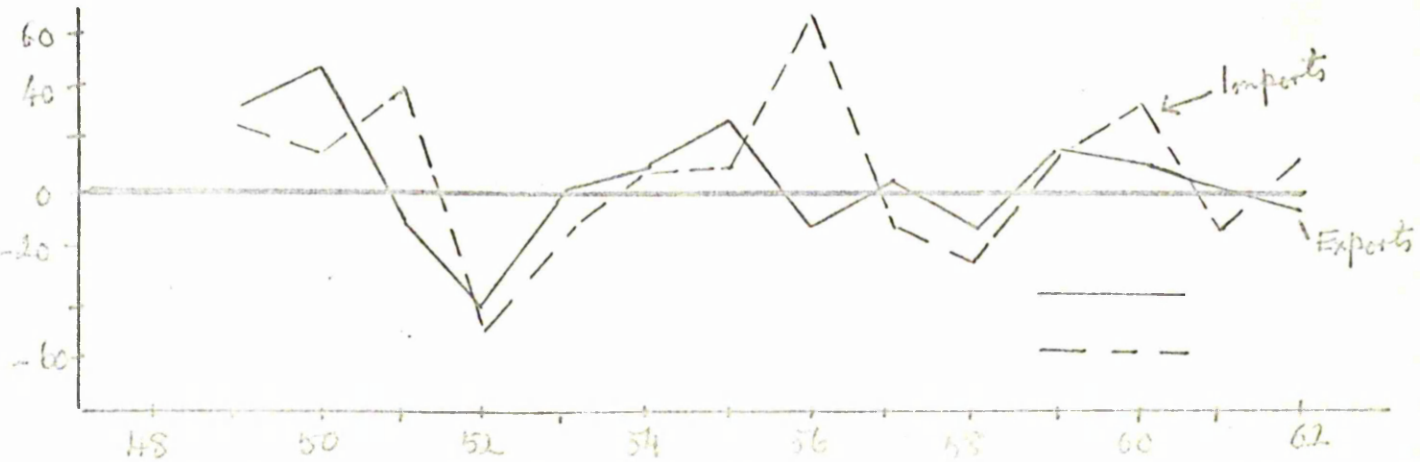


Chart 1-7

Year to Year Percentage Change in Exports, Imports and Income







Fluctuations in imports, however, appear to be significantly associated with those in the previous year's exports. As can be seen in Charts 1-6 and 1-7, the national and regional imports fluctuated in sympathy with the fluctuations in national and regional exports with a one year lag. That fluctuations in raw jute exports should account for most of the fluctuations in total exports of Pakistan is evident from the fact that raw jute is a significant portion of total exports of the nation and the region.

In Pakistan, the average foreign exchange component of total gross investment, as mentioned earlier, is very high and hence fluctuations in exports may significantly affect investment in Pakistan via fluctuations in imports. Besides, Pakistan has to maintain a large amount in foreign exchange in order to cope with fluctuations in export earnings.[1/] However, foreign aid and loans financed a great deal of the domestic imports, both for the purpose of development and consumption, which might have segregated to some extent the full effect of export fluctuations on the country's development expenditure.[2/]

1/ State Bank of Pakistan, Report on Currency and Finance, December, 1962, Table 74 indicates that, on average, Pakistan maintained about Rs. 1053 million per annum in gold and foreign exchange during 1948-62 which was about 70 per cent of the average annual export earnings of the country.

2/ Haq, M. op.cit. p.230.

1-15 Effects of Fluctuations on Long-run Demand for Jute

It was noted earlier that consumers as well as producers of raw jute experienced wide fluctuations both seasonal and year to year, in prices of raw jute. Fluctuations in supply, and prices of raw jute naturally affect the commodities produced out of this raw material since the raw material component of the total cost of jute manufactures is over 50 per cent.[1/] Rapidly changing raw jute prices place a high premium on skill in buying on the part of the manufacturers of jute goods.[2/] It is natural that a stable price would be an important aid to the jute industry.

Other main factors likely to affect the demand for raw jute are the trends of the production of jute - using commodities in the consuming countries and possibilities of substitution for jute. If the prices of substitutes fluctuate less than those of jute, the users of these commodities would tend to prefer them to jute, ceteris paribus.

1/ F.A.O., Monthly Bulletin of Agricultural Economics and Statistics, March, 1962, p.4.

2/ MacBean, loc.cit. p. 258.

As a packaging material, jute first faced competition from cotton bags, but since the last World War paper bags swamped both jute and cotton. Although their respective prices might be expected to determine their ultimate demand, paper bags are especially suitable for retail marketing as these can be attractively tailored to suitable sizes and can carry printed advertising on the container itself. Furthermore, the prices of paper bags appear to be more stable than those of jute as indicated by Table 1-22 and Chart 1-8. During the period 1948-61 both jute and paper prices in the U.S.A. rose compared to the level of 1939-40, but the rise in the price of jute was far more pronounced than that of paper (Table 1-22). It is plausible that, among other factors, the favourable change in the relative price of paper induced an increase in the use of paper sacks. But the market that paper bags gained from jute in the U.S.A. was not reversed although since 1952 jute prices became relatively stable. An investment in the paper industry might have committed the manufacturers to the new techniques and thus, could not be scrapped even if jute prices subsequently fell.

Between 1947 and 1951 the prices of raw jute and hessian were 4-5 times the pre-war level, whereas the world indices of agricultural and manufactured goods prices were only 2-3 times higher.[1] The price of jute rose especially because export supplies dropped with the disruption of trade between India and Pakistan following sterling devaluation in 1949 and again because of the Korean war. According to an F.A.O. study, during the period of relatively high hessian cost (1948-51) the turning over to paper involved technical adjustment and possibly capital expenditure which militated against reversal; certain sectors of the market were lost more or less permanently.[2]

Dr. Chacko found an asymmetry of the elasticity of demand for increases and decreases in jute prices.[3] In other words, the response to higher prices is greater than the response to lower prices, i.e., the market cuts down the import of jute more readily when prices rise than it increases the purchase when prices fall from the mean level.

1/ F.A.O., Monthly Bulletin etc., December, 1960.

2/ F.A.O., Jute, p.14.

3/ Chacko, G.K. International Trade Aspects of Indian Burlap: An Econometric Study, N.Y.1961, p.109.

Table 1-22

Consumption and Prices of Packaging Bags in the U.S.A.

Annual Average	Consumption(000Bales) Cotton	Jute	Paper	Total	New Bag Prices Cotton	Jute	Paper
					($ per 000 flour bags)		
1939-40	525	431	386	1341	87	104	67
1948-51	366	365	1291	2027	269	276	108
1952-54	270	401	1521	2185	233	190	118
1955-57	190	416	1791	2397	240	168	122
1958-61	165	398	1752	2316	244	180	129

Source: Textile Bag Manufacturers Association, Boston.

Note: Material consumption in '000' bales of cotton equivalent as reported in Container and Packaging.

The relatively large increase in the proportionate use of paper bags in the total packaging materials was mainly due to technological factors and developments in the system of retail marketing in the industrialised countries. Decisions to invest in the paper sacks industry or in bulkhandling methods must have been based on long-run considerations. High jute prices or short-run fluctuations might have been the final incentives required to induce the manufacturers to invest in the equipment necessary to handle either bulk deliveries or paper packaging.

By taking data (summarised in Table 1-22) for the U.S.A. over the period 1948-61 a regression of the proportion of jute in total consumption of packaging materials (J)

is made on the relative prices of jute and paper (P_1), the relative prices of jute and cotton (P_2) and a time trend (t). The resulting equation is as follows:

$$\text{Log } J = 0.594 - \underset{(0.304)}{0.364} \log P_1 + \underset{(0.447)}{0.218} \log P_2 - \underset{(0.003)}{0.012}\, t. \qquad (1\text{-}8)$$

$R^2 = 0.55$ Degrees of freedom = 10

In the above equation (1-8), a negative sign for the coefficient of (t), which is statistically significant, indicates a trend away from ~~m~~ jute. The coefficient of P_2 has a sign contrary to the expectation on ~~an~~ 'a priori' reasoning, but this is however statistically not different from zero. The coefficient of P_1 is also not significant when its standard error is considered.[1/]

By expressing the equation (1-8) in its first differences,[2/] the regression coefficient of P_1 improves to some extent as shown in equation (1-9).

1/ Dr. Maizels, A., however, obtained a higher and more significant coefficient (0.726) for P_1 (the relative price of jute and paper) in a similar demand equation for the U.S.A. over the period 1948-58. See F.A.O., Monthly Bulletin of Agricultural Economics and Statistics, January, 1961, p.15.

2/ The regression of first differences of the log variables is in fact a regression of the log of year to year percentage changes of the variables.

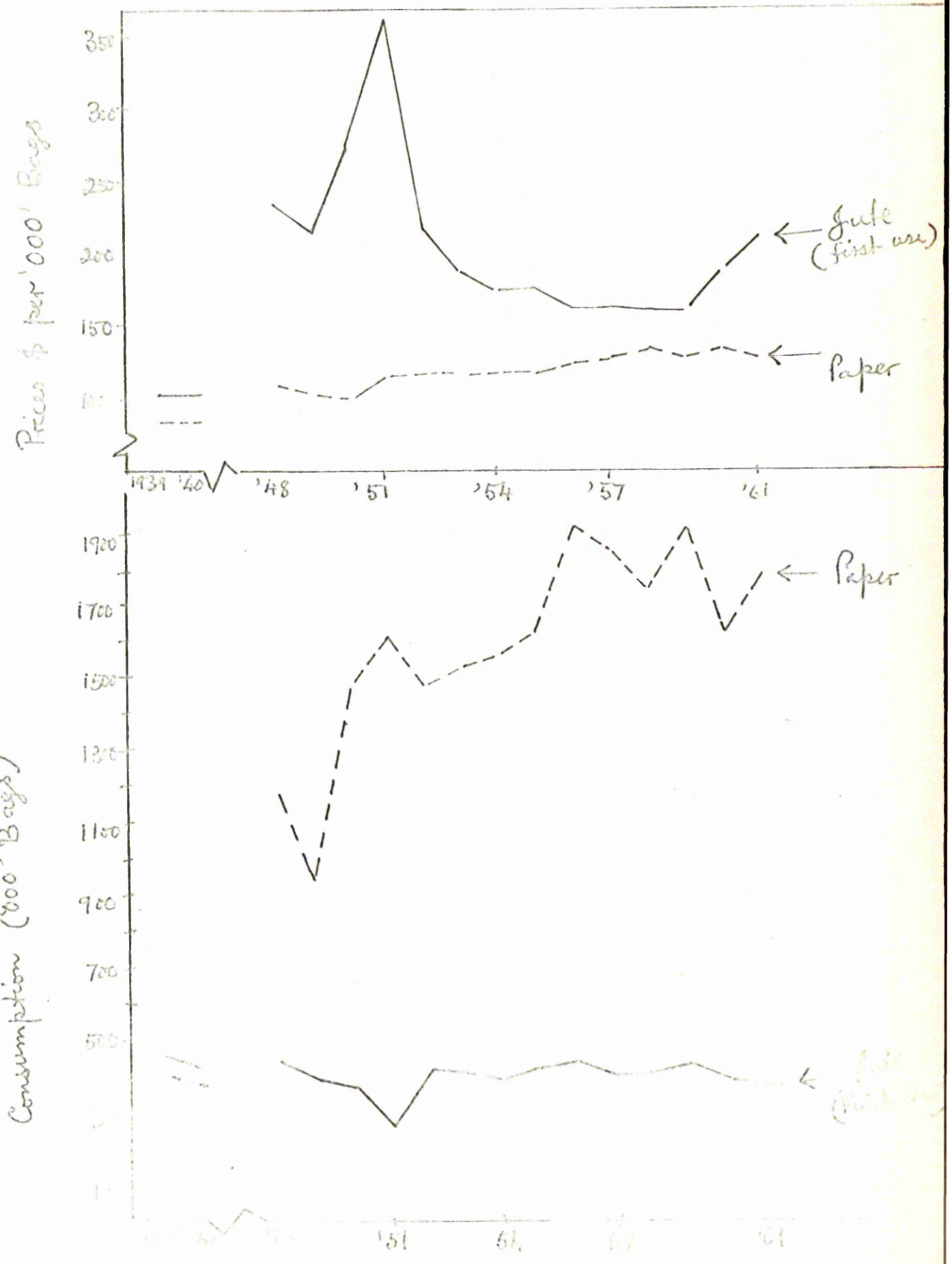
$$\Delta \log J = 1.513 - \underset{(0.273)}{0.541}\,\Delta \log P_1 + \underset{(0.371)}{0.132}\,\Delta \log P_2 \qquad (1\text{-}9)$$

$R^2 = 0.148$ Degrees of freedom = 10

Thus, when the variables are expressed in their first differences the regression coefficient of $\Delta \log P_1$ indicates that in the case of U.S.A. the annual fluctuations in the price of jute bags (relative to that of paper) influence the relative use of jute bags. This implies that stability in jute prices, among other things, may favour the demand for jute to some extent

Although the possibilities of handling commodities in bulk pose a constant threat to jute packaging, there are some commodities like raw cotton and wool which are likely to remain outside the scope of bulkhandling because it is economical to compress these fibres into standard bales in order to save shipping space. Again, bulkhandling methods require large capital outlays and steady flows of large volume of commodities between fixed places. Hence, in underdeveloped countries it may not be economic to introduce this method in immediate future.

Chart 1-8 Prices and Consumption of Jute and Substitutes in the U.S.A.



1-16 Summary and Conclusions

Pakistan is a developing economy with agriculture as her main source of income and employment. Her exports mostly consist of a limited range of agricultural products such as jute and cotton. Jute manufacturing has recently become important as an export commodity.

Jute is produced on a small scale by individual peasants in East Pakistan which is climatically the most suitable place in the world for the production of quality jute. Jute competes with rice for the growers' limited land and other resources which are transferable year to year between these two products. For the purpose of production regulation through the price mechanism, the most important relationship established is that the lagged reaction of the jute cultivators to a change in the relative prices of jute and rice is positive and when measured as a response of acreage or output of jute to the relative prices of the preceding season gives a high elasticity.

There are several stages in the jute marketing system. At the primary stages it is done on a small scale by the growers and small intermediaries. At the highest stage, the marketing is on a large scale and concentrated into a few firms. Lack of credit and storage

facilities put the growers and the primary intermediaries at a disadvantageous position vis-a-vis the few shippers and exporters in bargaining the price of jute.

Over the period 1947-62 jute has been very important in the Pakistan economy as the main foreign exchange earner and as the most important source of cash income for the peasants of East Pakistan. The dominant position of Pakistan in world jute production has, however, changed as other countries, especially India and Mainland China, now produce a large quantity of raw jute and allied fibres. Pakistan has mainly concentrated on quality jute production. In the export market of raw jute Pakistan is still the dominant supplier. In the field of jute manufacturing there has been recently a geographical shift from the traditional areas such as India and the U.K. to Pakistan and some other developing countries.

The main uses of jute are still in the production of packaging bags, the second most important use being in floor coverings. In the former sector jute is confronted with serious competition from bulkhandling methods and paper bags in the industrial countries where (excluding the Centrally Planned Countries) the consumption of jute in 1959-61 was not much higher than that of 1937 although agricultural and other industrial outputs substantially

increased during this period. Most of the increase in jute consumption since the last World War took place only in the developing countries.

Both the Pakistan jute growers and world jute consumers experienced wide fluctuations in raw jute prices. Fluctuations in export proceeds from raw jute mostly accounted for the instability in overall export earnings and affected, with a one year lag, the import capacity of Pakistan.

There is a definite cobweb cycle in the volume of current jute production and the relative prices of jute and rice in the preceding season. It is statistically found that fluctuations in the supply of raw jute were more closely related than those in unit prices to fluctuations in the export proceeds from Pakistan jute. Most of the year to year changes in acreage under jute as a result of the growers' price response led to fluctuations in the volume of output. The effects of yield per acre on total output were relatively small.

As most of the fluctuations in the export price of, and proceeds from raw jute were caused by supply fluctuations over the period 1948-62, there is a case of supply regulation of jute in such a way that Pakistan's net gains from jute production and export remain at the

maximum level. (Indeed it is a rational object of any export policy). This would need the elimination or minimisation of the cobweb fluctuations in the export price of raw jute (both by manipulating the annual jute production and through the operation of a national buffer stock). From the discussion of the background information it appears that the export price of jute is the most important object for a stabilisation policy.

In the domestic market, it would greatly help the growers if they could know for certain before the sowing starts the price they were going to get for their current jute crop, as in that case they would be in a position to allocate their land and other resources between the alternative crops of jute and rice without much uncertainty.

CHAPTER II

Problems of Stabilisation Policies : The Pakistan Government's Jute Policies

2-1 Introduction

In the preceding Chapter it was noted that jute, both in its raw and manufactured form, is very important in the Pakistan economy especially as the dominant foreign exchange earner. As wide price fluctuations of raw jute led to various problems, the government of Pakistan adopted several policies to cope with them. It is, therefore, of considerable importance to review these policies, since such a study should give us some idea about the complexities of the problems of stabilisation policies as experienced by the Pakistan government. This in combination with Chapter I will help us guard against mistakes already made and will be useful in our attempt to formulate a possible price stabilisation scheme.

The first serious problem of the country's jute trade arose from the Pakistan government's non-devaluation decision of 1949. Among other problems of this decision, the country was faced with a huge stock of raw jute. In order to maintain the price level, the government started

a buffer stock operation and introduced a price support scheme which, however, failed in 1951 immediately after the Korean boom. Another stabilisation policy of the government in terms of jute acreage control was also mostly a failure. At present the government has adopted a general plan to give the jute growers some minimum price and to develop the domestic jute industry so that in the course of time the country will be in a position to compete in jute manufactures in the world market and make raw-jute export subsidiary. In this Chapter we therefore intend to study the following: i) the Pakistan government's non-devaluation decision of 1949;[1/] ii) the government's buffer stock and price support scheme for raw jute; iii) the jute production regulation, and iv) plans for jute manufacturing.

2-2 Pakistan's Non-Devaluation Decision of 1949

Before we go into an examination of the reasons which led to Pakistan's non-devaluation decision in 1949 and the problems thereof, it is necessary to know the country's

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1/ The study of Pakistan's non-devaluation decision is interesting because, in the ultimate analysis, it appears that the decision was mainly influenced by the country's position as a producer and exporter of raw jute. It is relevant here because this decision resulted in a serious problem in the country's jute trade which, in its turn, led to a buffer stock policy.

position vis-a-vis India, the then main trading partner, with respect to jute. At the time of Partition in 1947, the area where the jute mills were located went to the Indian side while almost all the jute growing area came to the Pakistani side. Thus in 1947-48, about three quarters of raw jute consumption-needs of the Indian jute mills were met from Pakistan.

Until the trade deadlock between India and Pakistan in 1949, almost all raw jute grown in East Pakistan went to Calcutta both for the Indian mills and for exports. After Partition, Calcutta still remained the centre for the export trade of raw jute as East Pakistan at that time had no adequate port facilities. Over and above this, East Pakistan had no baling facilities to start with. In 1947 there was a 'standstill' agreement between the governments of India and Pakistan, which tended to preserve essentially free trade between the two countries until some permanent policies were worked out.[1/] Raw jute exports were subject to an Indian government export duty at the port of Calcutta although most of it was grown on the Pakistan side. India was in a special

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1/ Dr. Shorter, F.C. op. cit., gives a detailed discussion of the two governments' jute policies during this period.

a position to press hard bargains against Pakistan in determining raw jute prices. In the mean time, the Indian government started a vigorous campaign to "grow more jute" within the country in order to attain self-sufficiency[1/].

On the other side, Pakistan naturally wanted to be economically independent and to derive most of the advantages associated with the jute trade. Foreign exchange earnings, tax revenues, and better prices for jute growers were her important concerns. When a negotiation with India to share the export duty imposed at Calcutta on the raw jute exports originating from East Pakistan had failed, the Pakistan government imposed a duty in November, 1947 on raw jute destined to India. Thus, raw jute exports from Pakistan via Calcutta were subject to two governments' taxation - making raw jute quite expensive for the foreign consumers.

A serious crisis in the Pakistan jute trade occurred when India following Great Britain and other sterling area

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1/ Indian Central Jute Committee, Annual Report, Calcutta, 1948, p. 12.

countries devalued her currency in September, 1949, while Pakistan did not follow suit./ The Indian rupee was, thus, devalued by 30.5 per cent as compared to/the Pakistani rupee. India, the main trading partner of Pakistan, immediately reacted adversely to the Pakistani decision and stopped all trade transactions with Pakistan. Among others, jute, Pakistan's major export to India, suffered significantly. As a result, Pakistan was faced with a big disposal problem. During this period, India put a price ceiling on raw jute and an embargo on raw jute exports and imports. The Pakistan government, on the other hand, created a Jute Board and adopted price support schemes for raw jute. How effectively the government of Pakistan could operate this stabilisation scheme, will be discussed in the following section. Let us now briefly examine the basis and effects of the non-devaluation decision.

The basis for changing the rate of exchange of a country's currency with that of the rest of the world mainly depends on i) the country's balance of payments position, and ii) the elasticities of demand for the country's imports and for its exports. Let us discuss these two points with reference to Pakistan's case in 1949.

Table 2-1

Pakistan's Balance of Payments Position 1948-50
(Rupees in million)

Account	J/J,1948	J/D,1948	J/J,1949	J/D,1949	J/J, 1950
Balance of Trade:					
Private A/c	+316.3	+23.0	+25.8	+35.2	+155.5
Govt. A/c	-104.4	-247.6	-186.5	-156.4	-183.8
Others	+ 4.9	- 22.3	- 47.8	- 49.2	- 80.6
Total (Gross)	+216.8	-246.9	-208.5	-240.8	-108.9
Error, etc.	- 31.8	+ 38.1	- 85.4	+ 22.3	+ 12.7
Net Total	+185.0	-208.8	-293.9	-218.5	- 96.2

Source : Manager of Publication, Karachi, Pakistan Balance of Payments, Table III.

Note : J/J means January to June, and J/D June to December.

From Table 2-1 it appears that after experiencing a surplus during January to June, 1948, Pakistan was having deficits in her balance of payments, and the deficits were increasing during the two half yearly periods before the government's non-devaluation decision of September, 1949. Even then the government did not consider it alarming, probably because the country's gold and foreign exchange

reserves were rising during these periods (Table 2-2). The rise in her gold and foreign exchange reserves was mostly due to/her share of reserves obtaining as a consequence of the Partition.

Table 2-2

Gold and Foreign Exchange Reserves held by the State Bank of Pakistan (January, 1948 to December, 1950)

(In million rupees)

As on :	Total Rupee Value	Changes in Reserves
1 Jan, 1948	59.9 (Estimates)	---
30 June, 1948	517.9	+458.0
31 Dec., 1948	1416.1	+898.2
30 June, 1949	1655.1	+239.0
31 Dec., 1949	980.2	-674.9*
30 June, 1950	958.5	- 21.7
31 Dec., 1950	939.6	-18.9

Source : Manager of Publication, Karachi, Pakistan Balance of Payments, 1948-50.

* Of which Rs. 433.0 m. was on account of depreciation of sterling and other assets.

There might not have been serious difficulties in Pakistan's balance of payments position in this period as the country had substantial gold and foreign exchange reserves. But it is difficult to come to any judgement on the trend of the balance of payments during a short period of a country's

existence. The non-devaluation decision then must have been influenced by a consideration of elasticities of demand for Pakistan's imports and the rest of the world's imports from Pakistan[1/].

It was argued that foreign demand for Pakistan's main exports was price-inelastic as most of them consisted of agricultural commodities such as raw jute, raw cotton, tea, and hides and skin. No comprehensive calculation of elasticities of demand for Pakistan's imports and exports is yet available. But, on 'a priori' grounds it may be said that the world demand for a particular commodity may be inelastic, but in so far as the demand from a particular source is concerned, it is likely to be elastic, unless such a commodity is not supplied substantially by other countries. So far as cotton, tea, hides and skin are concerned, world demand for these commodities from Pakistan cannot be said to be inelastic as Pakistan is a small supplier of these goods in the world market. And even the

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1/ The Marshall-Lerner condition is that devaluation does not bring any improvement in a country's balance of payments position if the sum of elasticities of demand for the country's imports and exports is not greater than one.

demand for jute which is regarded as a monopoly commodity of Pakistan, may be inelastic in the short-run (within certain price range only), but given a sufficiently long period, over which production of both jute and its substitutes could be increased elsewhere, it should be considered fairly elastic.

On the other side, as Pakistan's imports consisted mostly of manufactured goods, it is reasonable to assume that the elasticity of import demand was quite high. Thus, the sum total of elasticities of demand for Pakistan's imports and exports tended to be greater than unity. In other words, according to Marshall-Lerner condition, Pakistan should have devalued her currency in 1949 when most of her trading partners did so.

It is moreover of paramount importance to consider the possible reactions of the trading partners to any change in the country's commercial policy. It is especially so when the country concerned is economically weak in relation to her trading partners. Thus, in 1949 Pakistan was too dependant on India for her vital exports and imports and she did not have enough time to develop trade relations with other countries.

The immediate consequence of Pakistan's non-devaluation decision was a trade deadlock between India and Pakistan as India refused to accept Pakistan's rate of exchange. Legitimate exchange transactions stopped between the two countries, and though it was not possible to prevent smuggling of goods and currencies across the long land frontier, the volume of normal trade fell considerably after Pakistan's decision as can be seen in Table 2-3.

Table 2-3

Pakistan's Trade Position with India (1948-52)

(million rupees)

Year	Pakistan's Exports to India			Imports from India	Balance
	Total	of which Jute Total	percentage	Total	
1948-49	1092.9	712.4	65	750.1	+342.8
1949-50	440.4	211.7	48	414.3	+ 26.1
1950-51	438.7	274.8	63	304.3	+134.4
1951-52	875.0	670.8	77	452.6	+422.4

Source : Reserve Bank of India, Bombay, Currency and Finance, 1953-54.

Thus, it appears that Pakistan relied a great deal on her own strength as the main producer and exporter of raw jute while arriving at the non-devaluation decision in 1949.

She could not probably apprehend that India would react so adversely.

Fortunately for Pakistan, the Korean boom introduced a new factor in the world's raw commodity markets. The demand for raw materials was greatly stimulated and the strategic stockpilings of different nations pushed up primary commodity prices all round. Pakistan's jute and cotton - the two major exports of the country, found strong outside markets while India had been experiencing an acute shortage of these materials during a period when the demand for their manufactures was high abroad. It was mentioned earlier that India was heavily dependant on Pakistan's supply of raw jute and cotton[1/]. Hence, in view of this radical change introduced by the Korean boom, India, on her own initiative, resumed negotiations with Pakistan, and in February, 1951, a trade agreement was reached between the two countries and India accepted the official par value of the Pakistani rupee[2/]. As can be seen in Table 2-3, the

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1/ While India could obtain raw cotton from other known sources at a higher transport cost, she could not get raw jute from any other source in the short run.

2/ Government of Pakistan, Proceedings of Indo-Pak Trade Agreements, Karachi, 1951.

trade between the two countries rose somewhat in 1951-52, but it was far less than the 1948-49 level. Pakistan, mostly aided by the Korean boom, diversified her foreign trade and her imports from India were far lower than her exports to India(mostly raw jute) in 1951-52 (Table 2-3).

Looking back, it thus appears that the Pakistan's non-devaluation decision in 1949 was not well considered, although the subsequent events (the Korean boom) turned out in her favour. India ultimately came to terms with Pakistan; Pakistan's foreign trade was diversified and during 1949-51 Pakistan's net barter terms of trade were favourable as mentioned in Chapter I.[1/] Nothing can be said precisely whether Pakistan could have done better had she devalued her currency along with other countries unless elasticities of demand for Pakistan's exports and imports were calculated and the index of her income terms of trade is prepared.

It appears that the Pakistan government's non-devaluation decision of 1949 was mainly influenced by her monopoly position in raw jute export. This shows how important was raw jute in the Pakistan economy. A short

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1/ This, however, does not say whether the nation's total welfare (income terms of trade) increased or decreased.

study of Pakistan's non-devaluation decision thus gives us the background history of the country's experiences in jute policy, such as buffer stock operation to support growers' and export prices and attempts to increase the jute manufacturing facilities within the country.

2-3 The Pakistan Government's Buffer Stock and Price Support Schemes for Raw Jute

Immediately after the non-devaluation decision of the government of Pakistan, and the consequent trade deadlock between India and Pakistan, there arose, as mentioned earlier, a serious disposal problem for raw jute in Pakistan. In the absence of baling and manufacturing capacity within the country there was no domestic demand for raw jute and the diversion of the jute trade from the Indian market to other countries needed some time. As a result, raw jute prices were bound to fall considerably. In order to maintain the price, the Pakistan government set up a Jute Board in October, 1949 to buy raw jute at a floor price of Rs. 23 per maund, "white jat bottom" basis.[1/] A commercial bank (the National Bank

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1/ Government of Pakistan, Dpartment of Trade Promotion and Commercial Intelligence, 'Pakistan Trade, Karachi, 1955 (March).

of Pakistan) was founded on government initiative mainly to ensure credit facilities to jute traders. The jute Board appointed agents to buy raw jute from the growers, and in 1949-50 the Board bought about 179 thousand bales of raw jute at a cost of about Rs. 20 million (Table 2-5). As during this period the Korean boom resulted in a strong demand for raw jute, the diversion of the raw jute trade became comparatively easy. The Jute Board, therefore, successfully maintained the floor price of Rs. 23 per maund during the period from October, 1949 to June, 1950.

As shown in Table 2-4, raw jute production was very low in 1949-50 because in the previous season the price of rice had risen significantly from the level of the season before (1947-48). Jute prices also rose from 1947-48 to 1948-49, but adverse weather conditions, political unrest as a consequence of Partition, etc., might have contributed towards low production of jute during this period. In 1949-50 the export of raw jute also fell considerably as a result of the disruption of trade between India and Pakistan.

In 1950-51, jute production came to its normal level and the export was actually higher than the production, the excess being met from the stock (Table 2-4).

In this period production was double the quantity of the previous year in spite of the fact that the growers, on average, received a low price for jute in the previous season. This is probably because a higher price (than what the growers actually received) offered by the Board at the end of 1949-50 season induced them to produce more in the following season. As exports were higher than production this year, the year-end stock of raw jute fell considerably in 1950-51. The export price was also higher in this period than that of the previous year. As a larger quantity was sold at a higher price, it obviously indicates that the foreign demand function for raw jute shifted to the right.

While the export quantity and the price were rising and the domestic stock of raw jute was falling in 1950-51, it is surprising to notice that the Board offered a very low price for raw jute (Table 2-4) during this period as compared to that of the previous year. The government also alicensed a smaller area as compared to that of the previous year. The growers, however, ignoring this, devoted more land to jute than that licensed because, the market price of jute was higher than the guaranteed floor price.[1/]

1/ The government's action (licensing a smaller area) might be justified on the ground that as they had to support

Table 2-4

Production, Exports and Stocks of Raw Jute and Prices of Jute and Rice in East Pakistan (1947-52)

Year (July to June)	Production (million bales) (1)	Export (million bales) (2)	Stock (million bales) (3)	Export Price Rs./ maund (4)	Free market Price of Jute (RS./ Maund) (5)	Free market Price of Rice (RS./ Maund) (6)	Jute Board's minimum Price: Rs. per maund. (7)
1947	6.8	6.1	1.3 1/	33	23	20	-
1948	5.5	5.7	1.8	41	30 2/	29	-
1949	3.3	3.4	1.7	31	19	29	23.0
1950	6.0	6.8	0.9	33	28	21	18.5
1951	6.3	4.9	2.3	37	25	23	24.0
1952	6.8	5.3	3.8	17	10	26	-

Source: Column 1; 5 and 6 are from Table 1-12; 2 and 4 are from Table 1-7 and 7 from Table 2-5(A); Column 3 is calculated.

Notes: 1/ includes carryover of 0.6 million bales from the previous season;

2/ Average free market price is lower than the Jute Board's guranteed floor price because, the Board was created in October, 1949 which started functioning probably one or two months later. It is, therefore, natural that some jute was sold at very low prices before the Price Support Scheme came into effect as 1949 season starts from July. Hence, the average free market price is lower than the guaranteed minimum price of the Board.

Similarly, free market prices of jute in two remaining years were higher than the Board's minimum prices, because private traders bought jute at higher prices in response to strong export demand.

(continued from the previous page) the growers' price in the previous season, they would naturally discourage the growers from producing more in this season.

But why did the Board fix the minimum price so low? Did the Board foresee the collapse of the Korean boom? We cannot answer affirmatively from the subsequent pricing policy of the Board and the licensing policy of the government. That the government wanted a larger jute output in 1951-52 is evident from the fact that the government increased the area licensed in this year compared to that of the previous year (Table 2-6). The Jute Board also offered a substantially higher (floor) price in 1951-52 in spite of the fact that the production was still higher in this year than that of the previous year (Table 2-4). Thus, while production increased, a higher price meant that the Board desired a larger quantity still in the following year. As exports fell a large stock accumulated (Table 2-4). In 1952-53, the Board did not offer any price, and thus went off the buyers' market. The production of raw jute again rose in this year as the growers were encouraged to produce a large quantity by a higher minimum price offered by the Board. Although a larger quantity was sold at a substantially lower price in 1952-53 as compared to that of the previous level, there still appeared a huge stock at the end of the season (Table 2-4). As the Board no longer operated as a buyer, but continued to sell its previous stock, both the export and growers' prices were substantially depressed (Table 2-4).

It appears that the Jute Board stopped its operation at the wrong time especially when the Korean boom had collapsed. It may be argued that the Board would have incurred still more losses if it bought jute in 1952-53 at a price higher than the ruling one. This is probably true as the Board did not regulate the jute output in accordance with the trend of demand. But the Board was primarily intended to operate a buffer stock and the price support scheme in 1949 when the growers' prices were falling. If it did not intend a permanent or a long-run operation, it should have stopped buying raw jute immediately after the recovery of the market in 1950-51.

It therefore appears that the minimum prices offered by the Board in 1950-51 and 1951-52 were wrong. In fact, given the demand and supply conditions, these two prices should have been reversed in order. In 1950-51, the Board offered a price which was very low under the circumstances (viz., a larger quantity was being demanded at a higher price in the export market compared to that of the previous year). On the other hand, a higher minimum price in the following year was unreasonable because the production of raw jute rose considerably in this year, and a very low quantity was being demanded at the previous year's price

in the export market. As the minimum price guaranteed by the government was relatively higher in this season, the growers were induced to produce a still a larger quantity of raw jute in the following year, which resulted in a sharp fall of the export price as well as the growers' prices. It may be emphasised that the Jute Board was intended to perform primarily an open market operation, i.e., to buy raw jute when the price tended to fall below a certain minimum, and to sell when it tended to rise beyond a certain maximum. From this point of view, as mentioned earlier, the Board had no business to buy raw jute during 1950-52, but as it did, it incurred a heavy loss ultimately.

After 1951-52, the Board does not appear to have been very active. In 1957, another government organisation known as the East Pakistan Jute Marketing Corporation was set up. These two together have undertaken to stabilise jute prices both in the export market and at the growers' level. In the export market, the Board's activities seem to have been concentrated in helping the government of Pakistan to fix the minimum export price.[1/] In the domestic market the Board and the Corporation have been operating a

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1/ Government of East Pakistan, Monthly Summary of Jute Statistics, November, 1962, p. 54.

Table 2-5(A)

Purchases and Sales of the Pakistan Jute Board (1949-51)

Year	Purchases		Sales	Profit	Prices	
	'000' bales	Million Rupees	(Million Rupees)		(Rs. per maund) Purchase	Sale
1949	179	20.0	20.1	+0.1	23.0	23.12
1950	489	44.1	62.5	+17.9	18.5	26.19
1951	1421	166.0	77.7	-88.2	24.0	11.19
Total	2089	230.1	160.3	-70.2	-	-

Source: Government of Pakistan, Pakistan Trade, Karachi, March, 1955 and Shorter, F.C., op.cit.

Note: Year begins in July except 1949 which started in October,(1949).

buffer stock on the basis of some minimum prices since 1962.

The Jute Enquiry Commission[1/] made the following two recommendations on jute price stabilisation policy: a) price fluctuations should be kept within a range of 10 per cent through buffer stock operations and b) policy should be designed to assure a fair and equitable price of Rs. 26 per maund to the growers.

These two recommendations, although much desirable, appear to be quite arbitrary. It was not explained how

1/ Govt. of Pakistan, Report of the Pakistan Jute Enquiry Commission, 1960, Chapter, VI.

price fluctuations would be kept within a range of 10 per cent with the help of only buffer stock operation without regulating production. As no reference was made to the relative prices of jute and rice or to the optimum allocation of land and other resources between jute and rice, these recommendations made by the Commission are extremely vague and unsatisfactory.

In the domestic market, the government guarantees a floor price for the current crop and this minimum price is determined probably on the basis of current demand and supply conditions. As the government did not specify any other criterion to fix the minimum price, it is likely that this price would tend to fall when the current supply exceeds the current demand, and vice versa. Though this type of price fixing would allow the government to guard against any loss, it does not guarantee the stabilisation of the growers' price. As the prevailing market prices have been above the minimum set by the Jute Board and the East Pakistan Jute Marketing Corporation (Table 2-5(B)), the operation of the buffer stock and the price support scheme did not create any difficulty as yet for these organisations.

Table 2-5(B)

Government Floor Prices of Raw Jute as Compared with those prevailing in the Market

Year	Area '000' Acres	Yield Maunds per Acre	Output '000' tons	Govt. Floor Price	Market Prices Jute	Market Prices Rice
				(Rs. per maund: white jat bottom)		
1961-2	2061	16	1244	-	41.6	30.6
1962-3	1723	14	919	22	32.8	31.5
1963-4	1700	16	1049	23	30.1	27.9
1964-5	1660	15	951	23	32.0	-

Source: Government of Pakistan, Statistical Year Book, 1964 and Economic Survey, 1964-65.

The Pakistan Planning Commission planned for an average annual output of raw jute of 1304 thousand tons during the Second Five Year Plan period (1960-65) but the actual average annual output during this period was only 833 thousand tons which is only 64 per cent of the planned target.[1/] This was bound to occur as the government's jute price policy was not at all encouraging for an expanded production. While yield per acre

1/ Government of Pakistan (Planning Commission), Preliminary Evaluation of Progress during the Second Five Year Plan, Karachi, 1965, Table 7-1.

fluctuated more or less randomly, the minimum prices for jute set by the government, given the price of rice, would have induced the growers to produce far less if the free market prices of jute were not higher than the guaranteed minimum prices (Table 2-5(B)). The jute/rice growers however responded to the market prices of jute prevailing in various years as these prices were higher than these guaranteed by the government. In order to induce the growers to produce the planned quantity, the guaranteed prices for jute should have been much higher than those set by the government.

As the minimum price is fixed by the government for the current crop when it is already planted, the government scheme does not appear to eliminate the cobweb fluctuations in the relative price and production of raw jute. The jute policy (including the minimum price) is normally announced in July every year for the current crop, while the plantation starts in February.[1/] The jute/rice growers' decision of resource allocation is based, as explained in Chapter I, on the relative prices of jute and rice prevailing in the preceding season.

1/ Government of East Pakistan, Monthly Summary of Jute Statistics, August, 1963 and 1964.

Hence, if it is intended to regulate jute output in the current season according to the trend of demand, the authority should adjust the price of jute with the price of rice prevailing in the preceding season and announce this guaranteed price well before the sowing starts for these two crops.[1] By fixing the minimum price well below the market price, the government is not helping much in stabilising the growers' price of jute. Again as the price offered by the government is announced for the current crop when it is already sown, the problem of cobweb fluctuations in the relative price and production of jute is not solved.

The government's buffer stock operation, however, may stabilise the jute growers' prices to some extent if a special care is taken to buy raw jute when the growers' price tends to fall below a certain minimum and release jute from stocks when it tends to rise beyond a certain maximum. But a buffer stock operation may lead to serious problems (including its ultimate breakdown as happened in 1952 in East Pakistan) if it is not combined with production regulation.[2]

1/ This is fully illustrated in the proposed price stabilisation model in Chapter IV.

2/ A possible scheme of a buffer stock operation is proposed in Chapter IV.

In the export market, the government sets minimum prices and never places an upper limit on them.[1/] It is not certain whether the minimum price which Pakistan, being a monopolist in the raw jute export market, can enforce by acting on supply, is optimum from the point of view of the country's net gains from jute production and export. The policy objective which would seem to be most desirable however, is the regulation of the export production of raw jute in such a way as to equate as nearly as possible marginal foreign exchange earnings from exporting jute with marginal opportunity cost (in terms of rice sacrifice). This is fully elaborated in Chapter IV.

In conclusion it may be said that the Pakistan government's policy of buffer stock operation for raw jute was not effective as it was not combined with production regulation. When the jute/rice growers are responsive to the relative prices of these two products with a lag of one year, jute production can be regulated by adjusting the price of jute with that of rice prevailing in the preceding season and announcing the guaranteed price well before the sowing starts for both the crops.

1/ Commonwealth Economic Committee, Industrial Fibre, London, 1962, p. 186.

2-4 Production Regulation through Acreage Control

The earliest attempt at stabilisation through a partial control over supplies was represented in a programme of jute acreage control in Undivided Bengal in 1940 following the recommendations of the Bengal Jute Enquiry Committee, 1939. Acreage control remained in effect in East Pakistan from then till 1959-60 when it was abolished according to the recommendations of the Pakistan Jute Enquiry Commission.

It was intended to control the supply of jute by licensing a certain area to individual growers for the sowing of jute at the beginning of the season in accordance with the expected level of demand. In East Pakistan a jute grower was given a license for each plot of land and a provision was made for the destruction of crops grown on unlicensed land. As can be seen in Table 2-6, jute acreage in nine out of thirteen years was more than that licensed, but the destruction of planted crops was seldom made probably in consideration of the growers' welfare.

During the first three years after Partition, the acreage sown under jute was well below the total area licensed, probably because of food shortage and unfavourable prices of jute as compared to those of rice, the substitute

crop. Further, as can be seen in Table 2-4, the prices which they received from the sale of jute during 1947-50 fluctuated so violently that it was too risky to commit too much land to this crop. Excess planting first appeared in 1950-51, but the destruction of crops on the unlicensed land was probably thought unwise on the ground that high prices were ruling for raw jute in the world market during the Korean boom (Table 2-4). In 1951-52, the area licensed was raised (Table 2-6), but planting was again below the upper limit permitted because the Jute Board offered a lower price for raw jute in the previous season as compared to that of the season before (Table 2-4). In subsequent years, continuous over planting (compared to the licensed area) took place until 1959-60 when the acreage regulation was given up.

Production regulation through acreage control was, thus, quite ineffective. Further, this type pf control, if successful, could put an upper limit and not a lower limit to acreage planted to jute.[1/] By simply

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1/ Acreage control is not very effective as a method of output control since the growers can increase output by employing the best land available under jute or by improved methods of production. In Pakistan these problems however, are not very important as firstly, the acreage license was issued for a particular plot of land and secondly, the growers employ their best methods of production in any case.

licensing a certain area to the growers for the sowing of jute, it was not enough to induce the growers to plant accordingly. Where the growers have a choice between the production of the alternative crops of jute and rice, and where the growers' land and other resources are mostly transferable between the two crops at the beginning of each season, their decision to produce either jute or rice largely depends on the prices they expect for the two crops. This price expectation, as explained earlier, is based on the actual prices prevailing in the immediate past season. This empirical analysis of the government's experience of production regulation through acreage control once again supports our earlier hypothesis that the farmers in East Pakistan make a high positive response (with a one year lag) of acreage to the previous season's prices of jute and rice.

Two important conclusions emerge from the above. First, any forecast of the jute crop in any season must take account of the relationship between the production of jute in the said season and the relative prices of jute and rice in the preceding season. Second, if it is desired that jute production is to be regulated by the price mechanism, it is necessary to adjust the price of jute to that of rice prevailing in the previous season.

Table 2-6

Jute Area Licensed and Cropped and Production in East Pakistan

Year	Area('000 acres) Licensed	Actually cropped	Area cropped as ·/. of licensed area	Production ('000' bales)
1947-48	2207	2059	93.4	6843
1948-49	2133	1877	88.0	5479
1949-50	1861	1561	83.7	3333
1950-51	1310	1711	130.6	6007
1951-52	1869	1779	95.2	6331
1952-53	1717	1907	111.1	6823
1953-54	811	965	118.5	3610
1954-55	1231	1243	101.1	4662
1955-56	1546	1634	105.5	5592
1956-57	1204	1230	102.1	5514
1957-58	1402	1563	111.5	5701
1958-59	1101	1528	138.8	6001
1959-60	991	1375	138.6	5554
1960-61	-	1518	-	5625
1961-62	-	2061	-	6969

Source : Government of East Pakistan, Directorate of Jute, Monthly Summary of Jute Statistics, December, 1962, No. 179.

2-5 Pakistan's Plan for Jute Manufacturing

It is generally accepted that domestic industrialisation is the best way of attaining rapid economic development in underdeveloped countries. This is especially so as there is now little chance of reliance on traditional export-led growth. This is the familiar Prebisch-Singer-Nurkse-Myrdal hypothesis. Singer maintains that the dynamic contributions of domestic industrialisation are its 'effects on general level of education, skill, way of life, inventiveness, habits, store of technology, creation of new demands, etc.'[1/]

In her quest for industrialisation, jute has been Pakistan's obvious choice as she has the best supply of raw material which is the most important component of final manufactures (Table 2-7). In this Table it can also be seen that the import content which is likely to fall in Pakistan in the long-run is also not very high in this particular field. Moreover, Pakistan has got an abundant labour supply which can be trained in a relatively short period for the textile industry.

1/ Singer, H.W., 'Distribution of Gains between Investing and Borrowing Countries', The American Economic Review, May, 1950, p. 476.

Table 2-7

Composition of Gross Value of Output and Import Content of Jute Manufacturing in Pakistan, 1959-60

Items	(Percentages) Total		Import Content	
Raw Material	42			
Fuel and Power	4		6	
Other Net Inputs	7			
Total Inputs		53		6
Labour	20			
Depreciation, Interest and Profit	27		9	
Gross Value added		47		9
Total Value of Output		100		15

Source: Government of Pakistan, (C.S.O.), Census of Manufacturing Industries, 1959-60, 1961.

Note: The various types of jute goods are treated together.

The Pakistan government's long-run policy is to export jute goods instead of raw jute. Pakistan's Second Five year Plan made a provision for an output of 380 thousand tons of jute goods in 1965, compared to 270 thousand tons in 1959-61 and 150 thousand tons in 1953-55; by 1970 production is expected to reach 600 thousand tons which will absorb about 50 per cent of the domestic raw jute production.

jute production.[1] Domestic demand is expected to rise to 110 thousand tons, leaving an exportable surplus of about 490 thousand tons in 1970.[2] The long-run policy of exporting jute manufactures instead of raw jute is justified on, among other things, the fact that Pakistan can earn more foreign exchange by exporting value added in jute manufactures[3].

In Chapter I, it was noted that world jute manufacturing in 1963 increased by about 84 per cent over that of 1954 (Table 1-10). Most of this increase took place in developing countries. Pakistan starting in the early 1950's accounted for about 11 per cent of the total world production by 1963. The competition for the share of the world market of jute goods is, however, mainly among India, Pakistan and Western Europe (Table 2-8). Pakistan, entering the world jute goods export market in 1954, captured about 17 per cent of the world total. As the main competition of Pakistan lies with India, Pakistan's gains were mainly at the expense of the latter. Between the two, the main area of competition lies in the markets for sacks and common

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1/ Government of Pakistan, Outline of the Third Five year Plan, (1965-70), 1964, p. 129.

2/ ibid.

3/ Mallon, R., 'Export Policy in Pakistan', Pakistan Development Review, Spring, 1966.

Table 2-8

World Export of Jute Goods by the Major Countries (excluding the Centrally Planned Countries)

Yearly avarage	India	Pakistan	U.K.	Other Western Europe	World Total ('000 metric tons)
	(Percent of world total)				
1937	85	-	5	10	1237
1948-50	90	-	2	8	921
1954-56	81	4	2	13	1078
1960-61	68	17	1	14	1146

Source : FAO,(Rome), Jute Goods Available for Home Use, (Statistical Supplement), CCP/Jute, Ad Hoc 62/4/Add.1.(mimeographed)

Table 2-9

Export of Sacking from India and Pakistan

Year	Total (000 metric tons)	From India (Percent)	From Pakistan (Percent)
1957	490	87.6	12.4
1958	424	81.5	18.5
1959	490	72.3	27.7
1960	436	71.6	28.4
1961	424	66.9	33.1
1962	457	64.0	36.0

Source : IJMA, Annual Summary of Jute and Gunny Statistics, Calcutta.

hessians (Table 2-9). India has been the traditional supplier of these products; and in view of the competitive position of India and Pakistan, the European industries have been increasingly concentrating on specialised products such as yarn for carpet backing, leaving sacks and common hessians to Indian and Pakistani manufacturers(Table 2-10).

Table 2-10

Proportion of Various Types of Jute Goods made in the Principal Countries

Types	Pakistan (1962)	India (1959)	U.K. (1959)	E.E.C. (1959)	Other West Europe (1959)
Yarn	-	-	37.5	25.2	14.5
Hessian	28.4	43.5			
Sacking	68.4	48.0	62.5	74.8*	85.5*
Others	3.2	8.5			
Total	100.0	100.0	100.0	100.0	100.0

Source : FAO, Monthly Bulletin of Agricultural Economics and Statistics, March, 1962, p.6; Pakistan Central Jute Committee, Jute and Jute Fabrics, July, 1963.

* cloth.

With their low labour costs and abundant supply of locally produced fibre, jute mills in India and Pakistan are fully competitive with mills in Western Europe in the

manufacture of sacking and common hessian, though not in the production of high quality goods such as yarns for floor coverings.[1/]

Thus, as Western Europe is giving up the production of sacks and common hessians, Pakistan is at present competing with India for an increased share of the world market of these goods, while India competes with Western Europe in the high quality hessian cloth sector of the world market.[2/] While India is self-sufficient in the supply of common varieties of raw jute, she is still dependant on Pakistan for quality jute. India is trying to attain self sufficiency also in this sector of raw jute supply but climatic and retting facilities are sufficiently available only in East Pakistan. About 90 per cent of total raw jute requirements of Western Europe is at present met by Pakistan.

In order to capture an increased share of the world market of jute goods, Pakistan has to quote a price which is competitive with that of India. Thus, in Table 2-11, it can be demonstrated that in the U.K. market, to

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1/ F.A.O., Monthly Bulletin of Agricultural Economics and Statistics, March, 1962 , p. 5.

2/ ibid. p. 6.

give an example, Pakistan's share of jute goods export has been increasing while that of India has been falling as Pakistan was, all along offering competitive prices with those of India.

Table 2-11

Imports of Jute Fabrics in the U.K. from India and Pakistan

Year	Volume (000 long ton)		Price £ per ton	
	India	Pakistan	India	Pakistan
1956	39.2	1.9	122	120
1957	30.6	1.4	132	128
1958	31.7	1.7	121	119
1959	36.7	5.7	118	119
1960	36.4	7.8	134	129
1961	23.9	7.8	164	162

Source : C.E.C.(London), Industrial Fibres (various issues).

But the Pakistani jute industry is undoubtedly not as efficient as that of India. As Table 2-12 indicates, the cost of production, other than that of raw jute, is significantly higher in Pakistan than in India. A lower raw jute cost in Pakistan, however, more than offsets her disadvantages over India in other respects[1/]. Higher costs

1/ FAO, Monthly Bulletin of Agricultural Economics and Statistics, March, 1962, p. 5.

in Pakistan are due to the high price of power, to high capital and depreciation charges, and to low productivity of labour. Although wage rates are lower in Pakistan than in India, output per worker is much lower in Pakistan so that the wage bill per ton of jute products is higher. Indian mills owe their greater efficiency to a long tradition of jute manufacturing, while Pakistan lacks the necessary infrastructure.

Table 2-12

Comparative Costs of Production in 1958 : A Sample of Indian and Pakistani Mills

Items	India (average)	Pakistan (most efficient)
	(U.S. $ per ton)	
Depreciation	3.77	19.55
Wages	35.00	45.94
Power	3.25	10.09
Head Office establishment	11.76	14.70
Insurance	0.63	2.52
Interest	0.97	3.49
Total	55.38	96.29

Source : The Pakistan Industrial Development Corporation, Fact Finding Committee of 1958, Comparative Cost of Industrial Production in India and Pakistan, Karachi, 1959.

In order to develop the jute industry, the Pakistan government has been giving many incentives, such as easy credit, tax concessions, duty on imports of jute goods and raw jute exports (an indirect protection of the domestic jute manufactures). Over and above these, the government introduced an 'Export Bonus Scheme' in 1959 as an additional incentive to exports. According to this scheme, an exporter of certain specific goods receives a voucher which entitles its owner to buy foreign exchange (to the extent of 20 per cent in the case of jute goods exports) and which can be used for imports of a wide range of goods or sold in the free market at a price which is usually 150-200 per cent higher than its face value.[1/] Such a voucher is not allowed in the case of raw jute exports. In the long-run, it is expected that Pakistan will be in a position to compete in the world market without any subsidy or protection to the domestic jute industry.

The Pakistan government's policy seems to make raw jute expensive for the foreign jute manufacturers in order to give competitive advantages to the domestic jute industry in the world market. For this purpose, the government

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1/ Bruton H.J. and Bose, S., The Pakistan Export Bonus Scheme, Institute of Development Economics, Karachi, 1963.

occasinally fixed the minimum prices for raw jute exports whenever these tended to go below a certain level and continuously taxed raw jute exports. The following Table indicates changes in the export taxation of raw jute made in response to government estimates of varying demand conditions.

Table 2-13

Changes in Taxation on Raw Jute Exports from Pakistan

Period	Taxes(Rs. per Bale) on	
	Jute	Cuttings
From 14 November, 1947 to 31 March, 1948	15.0	4.5
1 April, 1948 to 31 October, 1951	20.0	6.0
1 Nov.,1951 to 30 June,'52	15.0	10.0
1 July, '52 to 24 Mar.,'53	15.0	5.0
25 Mar. '53 to 22 Aug. '56	20.0	5.0
23 Aug. '56 to date	20.0	10.0

Source: State Bank of Pakistan, Report on Currency and Finance, 1962-63, Table 43.

Thus, during the Korean boom taxation on raw jute exports from Pakistan was at its maximum. When, after this boom, demand fell, the government lowered the tax, but raised it again in 1953. Given the long-run policy

of Pakistan to compete in jute goods instead of raw jute, it is reasonable to give some incentives to the domestic jute manufacturers. One of these incentives, as mentioned earlier, is in the form of taxation and fixing of a floor to the export price.

As mentioned earlier, most of the yarn produced by the Western European manufacturers is used in the woven carpet industry and other industrial uses where the possibilities of substitution are still very low. The yarn production needs superior varieties of raw jute which are only available from Pakistan. Because of low possibilities of substitution and the absence of competition from the supply side, Pakistan is in a position to utilise her monopoly power with respect to quality jute. In other varieties where competition is keen and substitutes are available, foreign demand should be sensitive to the relative price of common jute and its substitutes.

In conclusion it may be said that Pakistan's plan for jute manufacturing is justified on economic grounds. Although demand for jute in the developed countries may remain static, it is likely to increase substantially in the developing countries[1/], where Pakistan should be able

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1/ F.A.O., 'Agricultural Commodities Projection for 1970', Commodity Review, Rome, 1962, pp. 21-22.

to capture an increasing share of the market. At present Pakistan is the main supplier of raw jute in the world market, but in the course of time it would be a great advantage both in terms of foreign exchange earnings and stabilisation policies if she can export most of her raw jute in the form of finished products.

2-6 Summary and Conclusions

At the end of each section the conclusions were noted. Here the main conclusions of this Chapter are given in a summary form.

Discussions on Pakistan's non-devaluation decision in 1949 and her plan for jute manufacturing, although not directly related to our main topic, i.e., stabilisation policies, are interesting and important as allied problems. It was found that the government's non-devaluation decision was mainly influenced by the unique position of Pakistan in the world of jute. The plan for jute manufacturing indicates that in the course of time an export price stabilisation scheme for Pakistan jute may not be necessary when almost all her raw jute would be processed within the country.

Of direct relevance and importance are the schemes, i.e., buffer stock operation and acreage control, introduced by the government of Pakistan. The experiences of the government in these directions are very useful in our attempt to formulate a possible price stabilisation scheme. The important lesson is that the operation of a buffer stock without production regulation would be very difficult. The most effective method of production regulation appears to be the price mechanism. Thus, the policy objective should be an annual adjustment of the price of jute with that of rice prevailing in the preceding season, around a level which would induce the jute/rice growers to produce in such a way as to equate as nearly as possible marginal foreign exchange earnings from exporting jute with foreign exchange savings from producing rice. A detailed analysis of this problem is given in Chapter IV.

CHAPTER III

Problems of Stabilisation Policies: Some Schemes Considered

3-1 Introduction

The literature on stabilisation policies - both national and international - has been growing especially since World War II. It is not possible to give a comprehensive discussion of the literature here. We therefore intend to consider only those schemes which appear to be relevant to our case study. We shall not consider any international stabilisation scheme mainly because first, there has been, until now, no such scheme for jute and secondly, international schemes for other primary commodities have not, in spite of various efforts, made any real progress.

Wide fluctuations in primary commodity prices gave rise to an increasing interest which even before World War II led to a concerted action for international stabilisation of the primary commodity trade. After the World War II various international stabilisation schemes were put forward. Thus, in 1951 a United Nations Committee of experts in a report on 'Measures for International

Economic Stability,' came out strongly in favour of international commodity agreements and called upon the World Bank to finance buffer stocks of primary products. It emphasised the interest which both the exporting and importing countries have in promoting such stocks - for the importers in cheapening the average cost of imported commodities by making purchases in times of recessions and releasing reserved stocks in boom periods, and for the primary exporters in securing stable foreign exchange earnings.

However, a new committee of experts set by the United Nations in 1953 took a cautious line with respect to international commodity arrangements.[1/] It pointed to 'the tendency of such measures to break down as soon as they fail to serve the immediate national interests of the members.' Besides, the World Bank did not receive favourably the suggestion of financing such an operation. Thus, Professor Myrdal concluded from his experience of international trade of primary commodities that for the time being no substantive progress would be made in solving the problems of international price stabilisation of primary commodities of underdeveloped countries.[2/]

1/ Commodity Trade and Economic Development, p. 43.

2/ Myrdal, G., An International Economy, London, 1956, p.253.

Similar views were expressed by the experts of the GATT report that 'one should not expect any great dramatic change in international commodity policy. . . . Experience in the post World War period suggests that there are real difficulties in the way of rapid international progress in this field.'[1/]

We may, therefore, conclude that international action, if any, would be very slow in achieving desirable results in this field. Under these circumstances, the various nations will have to design their own policies to suit the particular characteristics of the commodity in question.[2/] Hence, we propose to examine some of the schemes offered by several eminent economists and see if these are suitable for Pakistan jute.

1/ GATT, op. cit., p. 79.

2/ It is not, however, suggested that international measures are not necessary. Such measures are desirable as being, at least, complementary to national policies.

3-2 The Bauer-Paish Scheme: Reduction of Fluctuations in the Incomes of Primary Producers

Professors Bauer and Paish proposed the above named scheme mainly as an alternative to the operation of the West African Marketing Boards. The authors thought that these marketing Boards had drastically reduced the incentives of the growers of several primary commodities by paying them far less than the world market prices. They held that these Boards even did not attain their ultimate objective, i.e., the stabilisation of the growers' incomes. Though Professors Bauer and Paish had the West African Marketing Boards in their minds, they held that their scheme was also suitable to many underdeveloped countries producing primary commodities.

The publication of their scheme in the Economic Journal (December, 1952) was followed by a number of articles criticising the scheme.[1/] Professors Bauer and Paish however, vigorously defended their scheme in their subsequent writings. We shall not go into the details of the long controversy but shall only describe the scheme very briefly so as to consider whether it is suitable for Pakistan jute.

1/ Hill, P., Economic Journal, June, 1953; Ady, P., ibid., September, 1953; Friedman, M., ibid., December, 1954 Nurkse, R., Kyklos, vol.XI, Fasc.2, 1958.

The Bauer-Paish scheme aims at reducing the violence and magnitude of temporary fluctuations in the incomes of primary producers, whether due to variations in prices or in the size of the crops, with as little effect as possible on the rate of adaptation of supply to long period changes in demand. Their scheme claims to be self adjusting in the sense that there can be no loss of contact with the trend of prices or incomes; and its adptation would render possible more accurate forecasting of the flow of producers' incomes for a year or two ahead.

There are two components in the scheme according to which a producer price is determined each season. The first component is a fraction of the estimated market price for the current year. The second component, which provides the smoothing element in the scheme, is derived from the differences between the realised proceeds in the past years and the amounts paid out to producers in those years on account of the first component. These annual differences are averaged over a given number of past years and then divided by expected quantity of the current year. This gives the second component of the producer price in the current year. The two components together constitute the price to be received by the producers in the current year for each unit (presumably delivered to the Organisation). A moving average is to

be used in determining the second component of the price. The scheme is claimed to be self adjusting in that an over (under) estimate of the first component of the price to be received by the growers for the current season automatically reduces (increases) the second component of the price paid over the relevant number of ensuing years. The algebraic formulation of the scheme is as follows:

$$S_t = \frac{\bar{P}_t}{X} + \frac{1}{n}\left[\frac{(P_{t-1}Q_{t-1} + \cdots P_{t-n}Q_{t-n}) - \left(\frac{\bar{P}_{t-1}Q_{t-1} + \cdots + \bar{P}_{t-n}Q_{t-n}}{X}\right)}{\bar{Q}_t}\right]$$

where, S= producer price per unit;

P =market price;

$\bar{P}$ = expected market price;

$\frac{1}{X}$ = fraction of the expected price paid to producers;

Q = volume of the crop;

$\bar{Q}$ = expected volume of the crop and

t = current period and hence, t-1 is the preceding period and so on.

Here we shall attempt an examination of the Bauer-Paish scheme with Pakistan jute data to see if the specific object of the scheme, i.e., the reduction of fluctuations

of the growers' incomes from the particular crop, i.e., jute. The testing of the Bauer-Paish scheme with Pakistan jute data is based on the following simple assumptions:

a) The generally accepted hypothesis (explained in detail in Chapter I) is that the jute/rice growers' decision to devote a certain area to jute is dependent on the prices of jute and rice ruling in the preceding season. The price response of the jute/rice growers of East Pakistan over the period 1952-62 was given by equations (1-1) and (1-2). Here we shall use the equation (1-1) showing the growers' acreage response to the relative prices of jute and rice in the previous season.[1/]

b) It is assumed that rice prices in East Pakistan are not affected by the changes in jute acreages. The basis of this assumption is that the jute area is a very small proportion of the rice area. Thus, during 1955-60 the total jute area was about 6 per cent while the rice area, on the average, was about 83 per cent of the total cultivated area.[2/] Hence, one half of the average jute area, if devoted to rice, will increase the rice area by less than 4 per cent. The assumption is necessary because in the

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1/ For ready reference the equation (1-1) is cited here:

$$A_t = 565.98 + 1894.26 \log P_{j(t-1)} - 1292.40 \log P_{r(t-1)}.$$

2/ Govt. of East Pakistan, Agricultural Production Levels of East Pakistan, Dacca, 1961.

testing of the Bauer- Paish scheme we have taken the rice prices as given and unaffected by the changes in the jute area.

c) While examining the applicability of the Bauer-Paish scheme to Pakistan jute, we could not clearly say what might have happened to total revenue from jute under changing demand and supply conditions. In our testing of the scheme it is, however, assumed that total proceeds from jute, on an average, would have remained the same as those actually earned if the scheme were in operation during the period studied here.[1/]

On the basis of the above assumptions, we now investigate the effects of the Bauer-Paish scheme when applied to Pakistan jute over a period of five years starting in 1955-56.[2/] The results are summarised in Table 3-1.

To start the scheme in 1955-56, the Organisation would have considered the following factors: a) the jute price in the previous year (1954-55) went up by about

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1/ This is a questionable assumption, but it does not affect the operation of the scheme if run over a number of years.

2/ We have chosen a back date in order to see the difference between what actually happened in the free market conditions and what would have happened if the scheme were in operation.

5 per cent while the price of rice went down by about 24 per cent over the previous year. From the regression equation (1-1), the Organisation could calculate the likely acreage and the production quantity of raw jute in 1955-56. The production quantity would have been about 29 million maunds which the growers would have produced as a response to the relative prices of jute and rice prevailing in the preceding season.

Let us now assume that the Organisation has estimated the expected price at Rs. 20 per maund in 1955-56 of which say, 50 per cent is given to the producers on account of the first component. As the scheme starts for the first time, let us take the 50 per cent of the average proceeds for the preceding three years (1952-53 to 1954-55) and divide these by the expected quantity for 1955-56 to get the second component of the producer price. Thus, in 1955-56 the estimated jute

acreage = 565.98 + 1894.26 log 22 - 1292.40 log 16
= 1554.17 thousand acres;

production = 28.6 million maunds; and

producer price = Rs. 18 per maund under the scheme.

The unit price of Rs. 18 per maund received by the growers in 1955-56 is lower by about 18 per cent compared

to that of the previous year. As the market price of rice also has gone up by about 56 per cent in this year over the year before (Table 3-1), the net change in jute production would be a fall of about 7 million maunds in 1956-57 from the levels of the previous year (calculated as before with the help of the regression equation 1-1). Thus, the total supply of raw jute in 1956-57 would be about 21 million maunds.[1/]

It is to be noticed that the fall in jute output in 1956-57 was accentuated by a sharp rise in the price of rice in the previous season. Had the price of jute alone gone down by 18 per cent and the price of rice remained unchanged, there would have been far less of a decline in jute production than this due to the growers' positive response to the relative prices of jute and rice.

Calculated as before, we get the following estimates:

Year	Acreage (000 acres)	Production (million mds.)	Producer Price (Rs. per md.)
1956-57	1137.2	20.9	42.6
1957-58	1707.3	31.4	30.2
1958-59	1479.5	27.2	31.3
1959-60	1489.9	27.4	30.4

(For details see Table 3-1).

1/ We have ignored the effects of random factors on jute output and considered only the results of the growers' price responses mainly because we do not know which way the random factors would affect jute output. In the absence of any special knowledge it is assumed that the effects of random factors are their average, zero.

By running the Bauer-Paish scheme for a period of five years starting in 1955-56, we find that not only the growers' and the ultimate buyers' prices but also the growers' incomes (which the scheme intended to stabilise) are destabilised and the scheme sometimes led cobweb type fluctuations. This is because the average price paid to each jute producer might bear such a relationship with the price of rice (which also fluctuates) that the jute producers might be induced to devote sometimes more (less) land to jute in any year as compared to that of the previous year for any jute price. This may happen even though the receipts from jute are averaged over a number of years because the price of rice may fluctuate. Thus, the fall in jute output in 1956-57, as mentioned before, was accentuated by a sharp rise in the price of rice in the previous season. Here the rise in the price of rice has increased the cobweb effect on jute production. On the other hand, the jute output in 1957-58 has tremendously increased from a level of 21 million maunds to 31.4 million maunds because, the growers have received a very high price for jute in the previous season. In this year the cobweb effect was retarded to some extent because of the rise in the price of rice in the previous year.

In the Bauer-Paish scheme, it appears that they have tacitly assumed that the production of an agricultural commodity is dependent on its price alone.[1/] But this appears to be an exception rather than the rule. In almost all cases an agricultural commodity competes with one or more alternatives for land and other resources of the peasants; and in the case of Pakistan jute it certainly does with rice. Thus, if the price of jute is left unadjusted with the price of rice in any season, there may appear an excess or shortage in jute output in the following season which may lead to cobweb type fluctuations in the price of jute and possibly in incomes from this commodity. By running the Bauer-Paish scheme for Pakistan jute over the period 1955-56 to 1959-60 it was found that the growers' and consumers' prices fluctuated, on average, by ± 43.5 per cent and ± 28.3 per cent respectively as compared to average free market fluctuations of

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1/ Professor Bauer while commenting on an earlier draft of this Chapter, expressed the view that Professor Paish and he had considered the relative prices (the price of particular product and that of substitute) in their model. Their model, however, cannot work as the two prices (of the particular product and that of substitute) may not move in the desired direction. There is no provision in the Bauer-Paish model for the adjustment of the price of the particular product with that of substitutes so that the growers are induced to produce the right quantity of the particular product.

± 11.4 per cent for the both. The jute growers' incomes (which the scheme intended to stabilise) fluctuated, on an average, by ± 24 per cent under the scheme as opposed to the average free market fluctuations of ± 9.6 percent.[1/]

Incomes from rice can be smoothed as complementary to jute, but this would mean an operation almost throughout the whole economy of East Pakistan, since rice is grown by innumerable peasants. Further, even assuming that smoothing the incomes from rice is possible, it does not guarantee that the two prices (of jute and rice) would move in the right direction to induce the growers to produce the desired quantity of jute.

Finally, the Bauer-Paish scheme introduces a certain degree of rigidity in the peasants' resource allocation between the two alternative crops.[2/] The authors themselves admit that how much a producer ultimately realises from his current crop depends not only on the size of that crop but also what happens in the future to his share of the total output. Producers may lose (gain) under this scheme, if they decide to switch over from this particular crop

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1/ The above calculations are very rough and based on many simple assumptions; but nevertheless are indicative of the results that the scheme would have produced.

2/ This point was also raised by Professor Friedman. (Friedman, M., op.cit).

to other crops when they are creditors (debtors) on account of the first few years. For instance, if in any year there is not an early rain in any particular area of the country, the jute/rice growers of this area may switch over to winter rice crop later. But in this case if a producer is a creditor to the Organisation, he may not feel like making this adjustment in resource allocation. This is because if he switches over to other lines of production (rice in this case), and comes back to this particular line of production (jute), he may find himself a debtor instead of a creditor because of the adjustment in the second component made in the scheme with the help of the moving average. This may happen, for instance, if the Organisation pays a higher amount to the growers on account of the first component (because of over estimation of the expected market price) which would reduce the second component of the producers' price.

The important point about the Bauer-Paish scheme is that fluctuations in incomes from jute would be reduced if the prices of jute and rice remain stable as this would lead to a stable jute output (other things remaining the same). As the price of jute and that of rice remained stable, in the present illustration, during 1958-9 to 1959-60 there was little fluctuation in the quantity

produced and hence in the incomes from jute (Table 3-1). But as the jute/rice growers are responsive to both of jute and rice prices while making decisions about jute acreage, fluctuations in either or both of them lead to fluctuations in the volume produced and thereby in incomes from jute as appeared to happen during 1955-56 to 1957-58 (Table 3-1). The crucial point is that if the price of jute is not adjusted to that of rice, fluctuations in incomes from jute are bound to occur via fluctuations in output due to the growers' acreage changes as a result of the changes in the relative prices of jute and rice. In the Bauer-Paish scheme there is no provision, as mentioned earlier, to adjust the price of jute with that of rice, and hence it is difficult to smooth fluctuations in the jute growers' incomes.

Table 3-1

Effects of the Bauer-Paish Scheme When Applied to Pakistan Jute:1955-59

Year	Ave. price of jute as received by growers in free market :Rs. per md.	Annual percentage change	Actual production : million mds.	Realised income : million Rs.	Annual percentage change	Growers' price under the scheme :Rs. per md.	Annual percentage change	Rice price : Rs. per md.	Annual percentage change	Income received by growers under the scheme : million Rs.	Annual percentage change	Expected price of jute : Rs. per md.	Estimated production under the scheme: million mds.	Estimated buyers' price under the scheme : Rs/md	Annual percentage change
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1954-55	22	-	23.3	513	-	-	-	16	-	-	-	-	-	-	-
1955-56	27	-	28.0	756	-	18	-	25	+56	504	-	20	-	27.0	-
1956-57	32	+19	27.6	883	+17	43	+137	32	+28	895	+77.5	40	21.0	42.1	+55.9
1957-58	30	-6	28.5	855	-3	30	-29	29	-8	948	+6.0	30	31.4	27.2	-35.4
1958-59	27	-10	30.0	810	-5	31	+4	30	+3	851	-10.2	30	27.2	29.8	+9.6
1959-60	30	+11	27.8	917	+13	30	-3	31	+3	833	-2.2	30	27.4	33.5	+12.4
Average for 1955-59		±11			±10		±44.				±24.0				±28.3

Source : col. 1 and 8 are from C.S.O., Pakistan Statistical Year Book, 1962;
Col. 2 and 3 from Table 1-12; others are estimated.

3-3 The Bauer-Yamey Scheme: Organised Commodity Stabilisation with Voluntary Participation

The most recent stabilisation scheme was put forward by Professors Bauer and Yamey.[1/] The authors claimed that their scheme was particularly superior to compulsory buffer fund scheme and its application would be practicable under any situation. The above claims and the comparatively recent formulation of the scheme deserve a detailed comment. Our main concern, however, is to see if the scheme is suitable for Pakistan jute.

The main object of the Bauer-Yamey scheme was to smooth the receipts per unit of a product or, by allowing for variations in output, the total receipts of member producers of particular commodities. The scheme, according to the authors, could equally be applied to a number of countries exporting a particular primary commodity. The various advantages, as claimed, were that the scheme was voluntary; it did not require any control over capacity, production, sale, stocks, exports or imports; and it did not directly affect the price of the commodity in question (and hence relative prices).

1/ Oxford Economic Papers, vol. 16, No. 1, March, 1964.

In the Bauer-Yamey scheme the producers of a specific commodity would participate in it according to a fixed quantity (to be known as the participation quantity) which the producers themselves would decide. The participation quantity would not necessarily be equal to the quantity produced or marketed. There would be a 'smoothing Organisation' to announce the smoothing payment every year (to be known as the smoothing adjustment) per unit of the commodity that it would make to members or receive from them. Each member would receive or pay the smoothing adjustment as announced by the Organisation in respect of his participation quantity regardless of his actual output or the price obtained by him in the market. (The members themselves and not the Organisation would market their crop). The Organisation would do no more than decide the appropriate smoothing adjustment and handle the buffer fund finances. It would broadly resemble a Savings Bank in which the participants would have individual accounts, with the sole difference that the Organisation and not the depositor would determine the amount of his annual deposit or withdrawal. Receipts and payments would be managed so as to ensure that a member did not during his membership receive more from the buffer fund than he had actually paid into it.

Professors Bauer and Yamey claimed that their scheme was useful for a producer who might wish to stabilise or smooth his expenditures through time. He could not do so because as they held, he lacked the 'self restraint necessary to build liquid balances in good years, especially when he is under strong social pressures to spend up to the hilt'.[1/]

Our main objection to the scheme is that if a producer lacks the necessary 'self restraint' to build up liquid balances in good years, he may not voluntarily participate in the scheme. To assume that he will voluntarily join the scheme is to suggest that he has got the foresight and self restraint; and if so,why should he join the scheme instead of keeping his surpluses (arising during good years) in a savings account (thereby avoiding the expenses that he would have to pay if he had joined the scheme, but on the other hand, earning some interest)? Moreover, in the above scheme, the amount to be deposited or withdrawn is decided not by the participant but by the Organisation. This loss of freedom in operating the savings would undoubtedly make the scheme less popular than an ordinary savings account.

1/ Bauer and Yamey, op.cit., p. 105.

The authors themselves realised that many people would probably not join the scheme voluntarily. Hence, they suggested that the scheme could be 'grafted on to a compulsory buffer fund'.[1/] Our point is that when it is made compulsory, its greatest advantage (arising from its voluntary nature) is already assumed away. Moreover, a compulsory scheme, as the authors visualised, would mean the fixing of production shares (participation quantity) for individual producers, the making of an elaborate list of innumerable jute growers (as is the case in East Pakistan) and the maintenance of individual accounts. These are undoubtedly very difficult tasks and administratively not practicable in the case of East Pakistan.

The next criticism of the Bauer-Yamey scheme is about the timing of its start. The authors had the following idea about this: where participation is confined to credit worthy producers, a voluntary scheme could be started any time. Otherwise, it has to be started at a time when it is to receive payments, i.e., when expected market prices were considered favourable in relation to the chosen smoothing objective.

1/ Bauer and Yamey, op.cit., p. 112.

Let us examine this with respect to the conditions of the jute growers in East Pakistan. These peasants are very poor and generally they live in debt. They have a continuous credit need for the purchase of basic needs and the maintenance of agricultural activities.[1/] Incomes from jute help to meet the cash requirements for all these purposes to a great extent. Most of the jute growers are left with practically no surplus after meeting these expenses. It is, therefore, likely that they could not afford to join the scheme. If this is so, the scheme would have to be started in a year when the Organisation itself would have to make payments to the participants. But this is not a business proposition as the number of credit worthy peasants in East Pakistan is very low. Thus, if the scheme is started with government finance, it is very doubtful if the advances could be recovered in the subsequent years.[2/] It therefore, appears that the Bauer-Yamey scheme is not suitable for Pakistan jute as conditions in East Pakistan are not right for the operation of such a scheme.

1/Government of Pakistan, Credit Enquiry Commission Report, 1959, Chapter 3. and Khan, M.I., Pakistan Development Review, Spring, 1962.

2/Growers' lack of adequate security and their inability to make timely repayments are the principal reasons why the commercial banks are reluctant to advance credit to the East Pakistani agriculturists. See the Credit Enquiry Commission Report, Chapter 1.

3-4 National Buffer Fund Scheme by Professor Nurkse

Governments in the underdeveloped countries have adopted various schemes which usually take either of the following forms: A central marketing agency (such as the West African Marketing Board) guarantees a certain minimum price to domestic producers and operates a buffer stock. The agency sells the products abroad and gives the producers an average smoothed price - creating a surplus when the export price is high and subsidising the producers out of this when the export price is low. A scheme essentially for the same purpose may operate in the form of variable export taxes (when the export price is high) and export subsidies (when it is low). This type of scheme is usually practised in South East Asia. An exchange control control agency can do the same by lowering and raising the official buying rates of foreign exchange (known to be practised in Latin America). All these methods are intended to break the connection between variations in external prices and export proceeds,on the one hand, and the net prices and incomes received by the primary producers, on the other.

Professor Nurkse has questioned the wisdom of such stabilisation schemes, whatever form they may take, on the

ground that they tend alternately to limit and to support the volume of export production just at the wrong time.[1/] Professor Nurkse has based his argument on the assumption that the supply of the primary products does respond to prices in the normal way. If this is so, the above policies according to him, interfere with the incentives to produce more when export prices are high and serve perversely to keep up production for export when export prices are low.

Thus, in his 'National Buffer Fund Policy' Professor Nurkse suggested that the domestic price of the export crop should be allowed freedom to follow the world market. His scheme would be like this: General taxation (excise revenues, income taxes, import and export duties, etc.) should be increased in the country during the export boom and reduced during the slumps. The export sector should not be relied upon entirely to provide revenues from taxes. Primary producers (of the export sector) should get some of the increased export prices so that they are encouraged to produce more. Alternatively, when the export prices are falling, they should not be subsidised as this tends to keep up production for export when the production should actually fall. By checking both

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1/ Nurkse, R., 'Trade Fluctuations and Buffer Policies of low income Countries', Kyklos, vol. XI, Fasc. 2, 1958.

the expansion of incomes and increases in imports in this manner, a budget surplus could be achieved in boom periods so as to accumulate the essential buffer fund of foreign exchange available for expenditure in depression years. The crucial point, according to Professor Nurkse, is that in this case it would be done without interfering with incentives to shift resources into or away from the production for exports in response to varying market conditions. In terms of national income magnitudes, Professor Nurkse maintains, this policy would aim at stabilising aggregate disposable income and not solely the disposable income arising from export production.

The immediate objection to the Nurksian plan of stabilisation is that this is a technique suitable only for the developed countries. As monetary and fiscal tools in the underdeveloped countries are relatively poor, it is likely that these countries would be unable to conduct a counter cyclical fiscal policy in the way suggested by Professor Nurkse.

In the case of Pakistan, we have seen in Chapter I that export earnings form only a very small part of the national income, and fluctuations in the former have little effect on the latter. A counter cyclical policy along the lines suggested by Professor Nurkse is therefore,

of limited use in the Pakistani context, even assuming that this could be conducted successfully. In the absence of any direct measures raw jute prices would fluctuate widely and this in combination with fluctuations in the prices of rice would lead to fluctuations in jute output.

Finally, Professor Nurkse was probably thinking of those export crops the production of which could be readily adjusted to the varying market conditions.[1/] In the case of agricultural commodities the world prices might well go down before the next stream of supply is ready. This may happen even when an annual crop like Pakistan jute is being considered. Indeed in 1953 this is exactly what did occur.[2/]

The peculiarity of the jute marketing system in East Pakistan also accentuates the problem. As there exists a long chain of intermediaries between the growers and the ultimate consumers, the growers do not immediately get a share of any high price paid by the latter. In other words, the existence of this long chain of intermediaries extends the time period required to pass the market developments to the growers. The jute producers can ill

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1/ This point was taken up in detail by Professors Bauer and Paish. Kyklos, op. cit.

2/ Following the Korean boom prices, the growers employed a large area under jute, but when the crop was ready for marketing, the expected prices collapsed.

afford to store any jute in the hope of better prices later. Their cash needs (to buy rice, etc.) in the lean months following the jute season and the absence of proper storing facilities force them to sell most of their crop as soon as it is ready for marketing. Hence, if a favourable price for jute develops later in the season, most of it goes to large exporters of raw jute. When the jute growers get a share of increased prices and are ready to market their product after a crop year, it may be too late. In this way a cobweb cycle may well develop. All this points to the conclusion that the Nurkse plan is inappropriate in the case of Pakistan. At best, a plan for stabilising national income through contra-cyclical fiscal policies, as suggested by Professor Nurkse, could be used as complementary to commodity stabilisation schemes.

3-5 Summary and Conclusions

In this Chapter no international stabilisation scheme was considered because it is thought that such an action in achieving stabilisation through international measures would be very slow. The primary producing under-developed countries would do better to seek solutions to the problems of instability for the specific commodity with which they are concerned.

I have, therefore, examined three specific proposals in this Chapter. The Bauer-Paish and the Bauer-Yamey schemes, aimed at reduction of fluctuations in the incomes of primary producers, were found to be inadequate for Pakistan jute. Professor Nurkse rightly visualised the fact that the producers of primary commodities positively respond to price incentives and hence found fault with several stabilisation measures. The Nurksian scheme to stabilise national income by a method of contra cyclical fiscal policy was, however, found to be limited in its scope in the Pakistani context.

CHAPTER IV

A Price Stabilisation Model for Pakistan Jute

The lagged relationship between the relative prices of jute and rice and the growers' supply of jute is a very crucial one. The various stabilisation measures for jute taken by the government of Pakistan (namely, the buffer stock operation, acreage control, etc.) were not successful because this important relationship was not taken into consideration. On the same ground the Bauer-Paish scheme, as examined in the previous Chapter, is not found very useful for Pakistan jute. The experiences of the government of Pakistan, in combination with the background information of Chapter I, will help us guard against mistakes already made and will be useful in our attempt to formulate a possible price stabilisation scheme.

Let us first define the particular object of our proposed model. We found that there were wide fluctuations in raw jute prices in both the domestic and export markets. These fluctuations were of a cobweb type. The cobweb cycle arose from the fact that while the demand for jute

depends on the current price,[1] the supply of jute in any season depends on, among other factors, the relative prices of jute and rice in the preceding season. A statistical investigation has revealed that fluctuations in the supply of jute were more responsible than those in demand for the short-run instability in the export price of, and proceeds from, Pakistan jute. The object of our proposed scheme is, therefore, the stabilisation of the export price of raw jute.[2]

By insulating the relative price of jute and rice received by the jute/rice growers from the export price of raw jute, it is hoped to eliminate as far as possible the cobweb cycle in the price and production of the commodity. The maintenance of a national buffer stock of raw jute would make it possible to reduce short-run fluctuations in the export price caused by unforeseen changes in demand and/or in planned output. The price

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1/ This is the ceteris paribus type demand function. Demand for jute is, in fact, a function of the current jute price, the price of substitutes, the current output of jute-using commodities, etc. as incorporated in the U.K. demand function for raw jute in Chapter I.

2/ Mr. MacBean also came to such a conclusion, but he did not show how it was to be done. See 'Problems of Stabilisation Policy in Underdeveloped Countries' in Oxford Economic Papers, October, 1962.

mechanism to be followed in the proposed model would make it relatively easy to operate such a national buffer stock of raw jute. It is however to be remembered that the intention is not to permanently stabilise the export price at a fixed level, rather the export price of raw jute would vary according to changes in demand for this commodity, or changes in the cost of production. The criterion of the export price stabilisation is to keep the country's net gains from jute production and export at the maximum level by adjusting supply to changing demand conditions.[1/]

In the following sections, we shall first discuss the problems of determining the optimum export quantity of raw jute under a given demand condition and then how to regulate the output of jute in order to meet the optimum export quantity. Supply regulation, both with the help of a price mechanism and a national buffer stock operation, is mainly relied upon in the proposed model to reduce cobweb fluctuations in the export price of raw jute. In Appendix 4-A the scheme is tested with empirical data.

1/ Stabilisation for its own sake is meaningless; it is to serve some purpose which is here to optimise national gains from the production and export of raw jute. Since demand for raw jute is not within the control of Pakistan, we can act only through supply by regulating output in order to minimise cobweb fluctuations.

4-2 Optimum Allocation of Resources between Jute and Rice

It was explained in Chapter I (Section 1-3) that jute and rice in East Pakistan compete with each other for the same scarce resources (mainly land) of the peasants. The rapidly increasing domestic demand for food has made East Pakistan a net importer of food grains. Since rice can be obtained directly through domestic production or indirectly through the production and export of jute, it is an important problem to determine the optimum point of jute and rice production for both the individual producer and the nation as whole.

The familiar concept of comparative (cost) advantage can well be applied to the Pakistani case of jute and rice production and trade. The following exposition is, however, based on certain simple assumptions such as that the world can be represented by two economies, each of which has given tastes and given quantities of factors of production; that only two goods are produced; and that perfect competition prevails in all markets. On these assumptions we can represent the given techniques of production of jute and rice and given quantities of factors of production by the transformation curve TT (Figure 4.1) showing the maximum amount of either of the commodities, or any combination

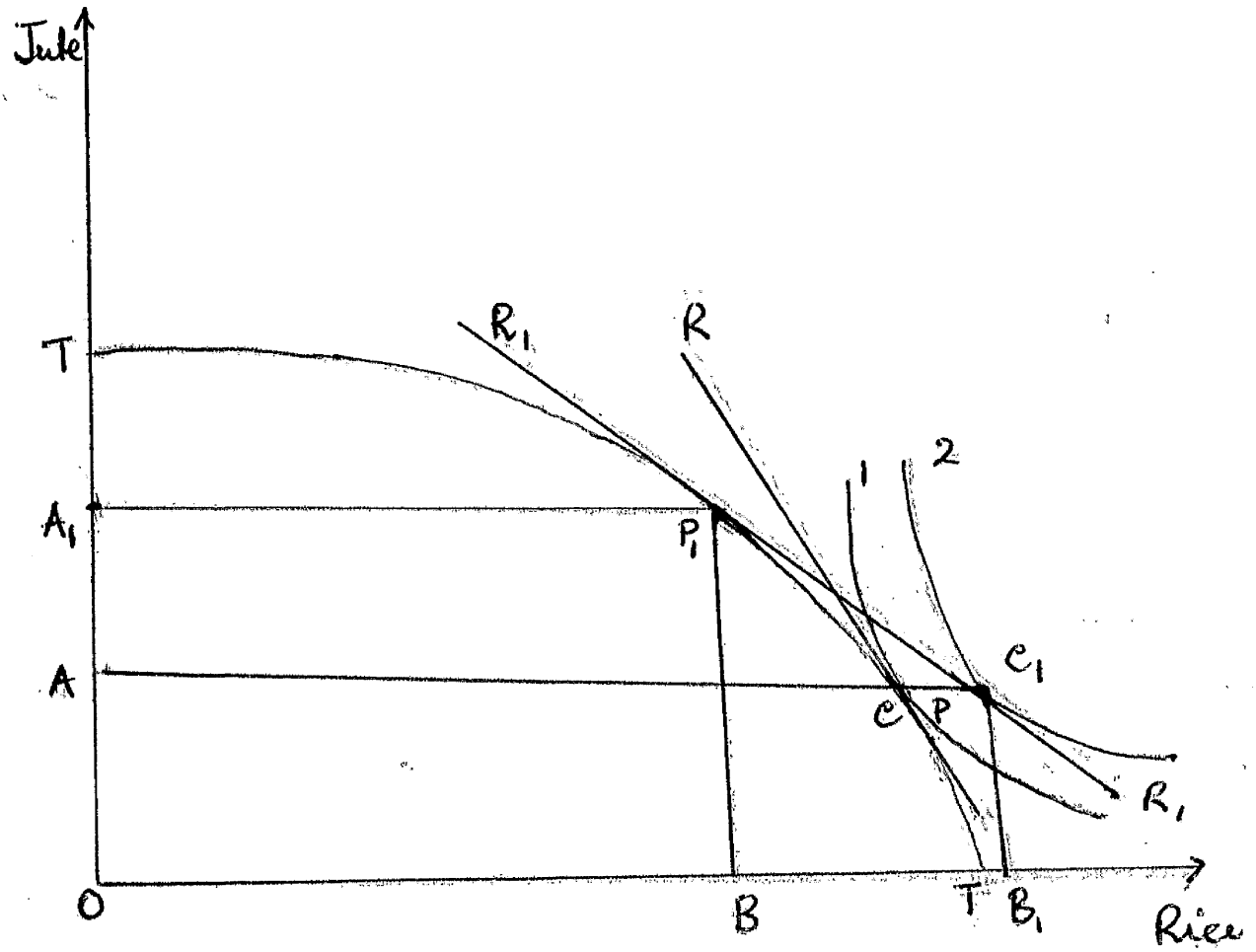

Figure 4.1

of them that can be produced. The transformation curve, TT, is assumed to be concave to the origin and therefore indicates increasing opportunity cost.

The demand side of the economy is represented by a set of community indifference curves the construction of which involves a number of difficulties.[1/] In a closed economy the equilibrium point will be P (C) where both the community indifference curve 1 and the price ratio, RR, are tangential to the transformation curve, TT, indicating the equality of the rates of substitution between commodities in production and consumption.[2/]

Now if we introduce international trade on the assumption that the country can exchange its goods at a different price ratio than the closed economy price ratio, it will indicate that the country is better off with trade, since it will be able to move to a higher indifference curve.

1/ Economists usually employ a number of restrictive assumptions while using the community indifference curve. We shall not go into the details as in the ensuing treatment of the problem we intend to avoid the use of the community indifference curve.

2/ The optimum allocation of the given resources between the two outputs of jute and rice is given by the equation:

$$\frac{MSU_j}{MSC_j} = \frac{MSU_r}{MSC_r}$$

i.e., the ratio of the marginal social utility of jute (MSU_j) to the marginal social cost of jute (MSC_j) must equal the corresponding ratio for rice.

In the open economy equilibrium, the world price line, R_1R_1', is tangent to both the country's transformation curve at P_1 and the community indifference curve 2. In other words, the country will now move from the production point P to P_1 and consumption point C to C_1, exporting AA_1 of jute for BB_1 of rice.

It was noted in Chapter I that Pakistan, being a monopolist in the export market of raw jute, can influence the world price of raw jute by changing the export quantity. On the other hand, as Pakistan's import of rice consists of a tiny portion of the world rice trade, she cannot influence its price. In these circumstances, a restriction of the volume of raw jute export by Pakistan will imply an increase in the export price. In this case, Pakistan need not fear retaliation in terms of a higher import price of rice, as rice is supplied by many countries. Thus, since the elasticity of foreign demand for Pakistan raw jute is not infinitely great (within the relevant price range) and since no retaliatory measures need be feared, it would be in the interests of the country to restrict export and production of raw jute as this would release land and other resources for the production of rice. The above problem, therefore, closely approximates

the optimum tariff case. The formula for an optimum tariff is, in the words of Professor Haberler,[1] 'that marginal terms of trade, i.e., marginal revenue or marginal receipts from exports, should be equated to the marginal rate of transformation, i.e., marginal opportunity cost in domestic production.'

We shall, however, enunciate the problem at hand in a way different from the usual theoretical treatment of the optimum tariff case,[2] mainly because the proposed treatment enables empirical testing to be carried out.[3]

The determination of the optimum export quantity of raw jute from Pakistan is, therefore, based on the following assumptions:

i) First, it is assumed that changes in jute output are mostly determined by the variations in land input alone (equations 1-3 and 1-4) and that land is very

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1/ Haberler, G., A Survey of International Trade Theory, Princeton, 1961, p. 53.

2/ The determination of optimum tariff involves the use of the community indifference curves which makes empirical testing difficult.

3/ See Appendix 4-A.

scarce in supply.[1/] This being so, we can further assume that the real costs of production per acre of jute and rice are more or less similar.

1/ There is no information with respect to the use of labour or capital inputs for individual crops in East Pakistan. Given the nature of production and ownership of factors of production, etc., the question of labour is one of allocation of time by the peasant and his family which may be determined by the allocation of his land to either crop. Under these constraints the total output of jute (O_j) in thousand maunds was regressed upon land under jute (L_j) in thousand acres by taking data over the period 1952-62, the resulting equation as shown below, indicates a high degree of correlation (about 91 per cent of the variance is explained by the independent variable. The introduction of a time trend, t, to catch other variation, does not modify this result.

$$\text{Log } O_j = 1.878 + \underset{(0.084)}{0.814} \text{ log } L_j$$

$R^2 = 0.913$ Degrees of freedom = 9

$$\text{Log } O_j = 1.857 + \underset{(0.088)}{0.824} \text{ log } L_j - \underset{(0.0025)}{0.0016}\ t$$

$R^2 = 0.917$ Degrees of freedom = 8

The regression coefficient of log L_j is so high because the production of jute is very land intensive.

Between jute and rice, the former is slightly more labour intensive than the latter. Hence, in the course of time when more and more labour is drawn off to urban occupations, labour as an input cannot be excluded from the production function. We, however, assume that this economic development leading to rural labour shortage, will take some time.

ii) For the moment we assume that the whole quantity of raw jute is exported. (This assumption is made for ease of exposition. We shall relax this assumption in the following section when the domestic consumption of raw jute will also be considered).

iii) It is assumed that the government is the sole authority with respect to jute export and rice import. Thus, for the jute/rice growers, only the domestic prices of jute and rice are relevant. In the case of jute, the harvest price and in the case of rice, the retail buying price are used as explained in Chapter I.

If the domestic price of rice (which the average jute growers pay)[1/] is equal to the import price of rice, the opportunity cost of export production of jute for the country as a whole and that for the growers would be the same. Let us for the moment assume that these two prices (domestic and import prices of rice) are the same. Having made these assumptions, we can now demonstrate the problem in a partial equilibrium diagram.

1/ It was explained in Chapter I why the buying price as opposed to the selling price of rice is relevant to calculate the growers' marginal opportunity cost.

In Figure 4.2, DD is the foreign demand function for raw jute from Pakistan. Along the Y axis price is measured in Rupees per maund at the official rate of exchange; and along the X axis the export quantity of raw jute is measured. DM is the relevant marginal revenue curve and MC (=SS) is the marginal opportunity cost curve (the marginal cost of producing one more unit of raw jute export being equal to the import price of rice multiplied by the number of units of rice which could alternatively be produced on the same land necessary to produce the marginal unit of jute). As an expansion of jute output can take place on land progressively more suitable for the production of rice, the marginal opportunity cost curve will be rising.

In Pakistan as raw jute is produced by innumera-ble small peasants, conditions would approximate those of a competitive model. Each individual producer considers the price of jute as given and hence each tries to equate his marginal(opportunity) cost with marginal revenue (not shown in Figure 4.2). But marginal revenue under competitive conditions is equal to price. As each peasant tries to maximise individual profits, they would, therefore, in competition produce among themselves OQ_1 quantity when P_1Q_1 is the price. In other words, in the absence of any

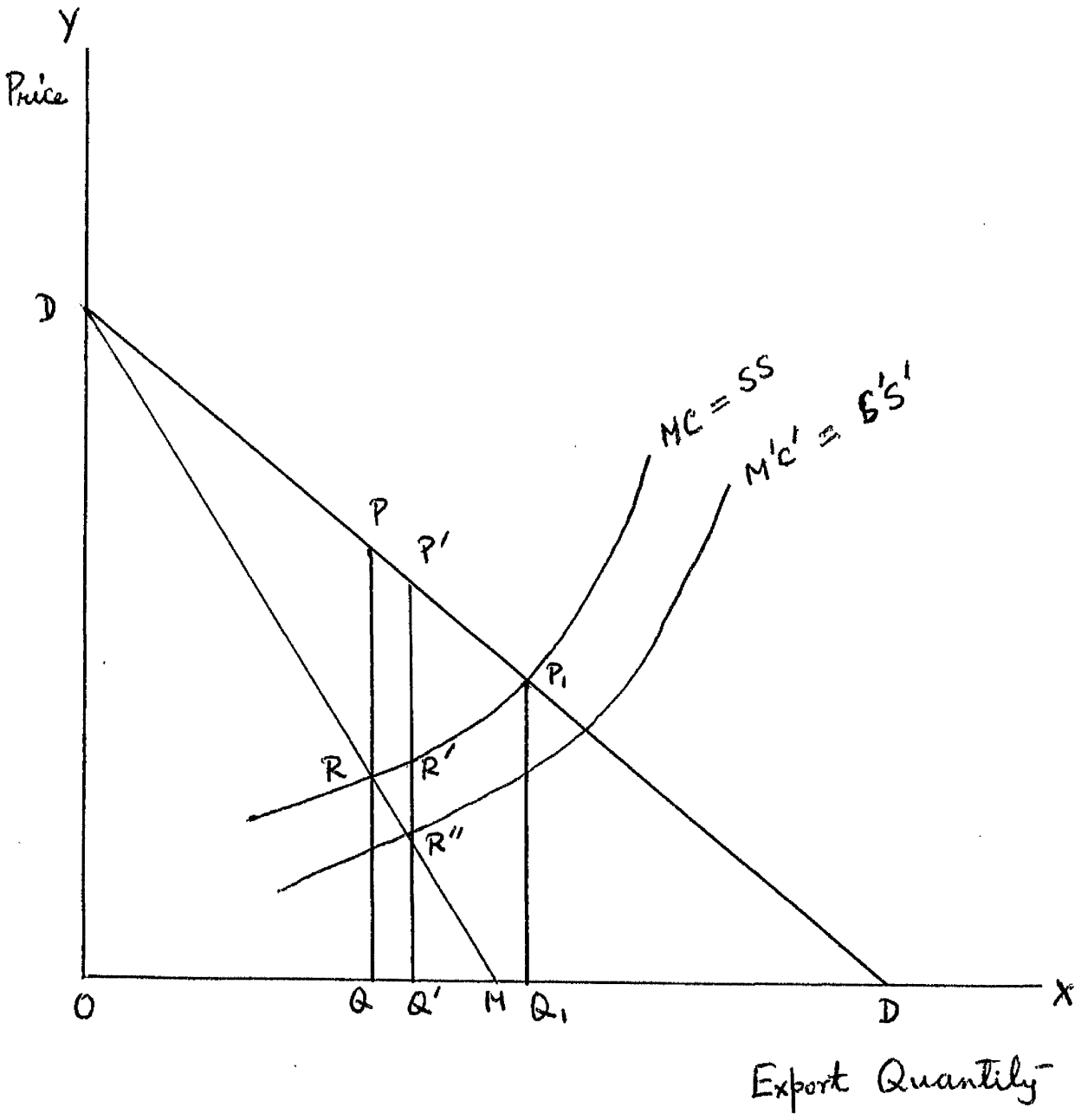

Figure 4.2

intervention by the government the equilibrium is established when supply is OQ_1 and the price is P_1Q_1.

But since the country as a whole is faced with a downward sloping demand curve for raw jute, the country's net gain is not maximised when OQ_1 quantity of raw jute is produced and exported, because at this quantity the marginal opportunity cost is higher than the marginal revenue (which at OQ_1 is less than zero). It would then pay the country as a whole to cut down the export production of raw jute to OQ where the marginal revenue is equal to the marginal opportunity cost. Thus, OQ would be the national optimum export quantity and PQ is the optimum export price. In order to induce the growers to supply this optimum export quantity it would be sufficient to give them a price equal to RQ, given the price of rice.

Let us now consider a case where the import price of rice is different from the domestic price of rice which the jute growers pay, thus giving rise to two different opportunity costs - one for the country as a whole and the other for the jute growers.[1/] This is important

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1/ The import price of rice may be different from the domestic price of rice and the evidence is that the former is lower than the latter. Over the period 1957-61 the import price of rice (CIF), on the average, was about Rs. 24 per maund (including marketing costs, etc.), (continued)

because we are considering the net gains from jute export for the country as a whole. If the import price of rice is lower than the domestic price, as the evidence suggests, the marginal opportunity cost curve relevant for the country, MC' ($=S'S'$) would lie at the right of the one relevant for the jute growers, MC ($=SS$) in Figure 4.2.

It appears from Figure 4.2 that the optimum export quantity for the country as a whole would be OQ' when MC' ($S'S'$) is the marginal opportunity cost curve (or supply curve for the country)).

Thus, when the import price of rice is lower than the domestic price of rice, the optimum export quantity

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(continued from page 160)

whereas the average domestic price of rice over the same period was about Rs. 29 per maund. (Calculated from the Government of E. East Pakistan, Monthly Bulletin of Statistics). Although the U.S. PL480 rice has been procured somewhat more cheaply, it is limited in supply and cannot be relied upon. In Pakistan the government is the sole importer of rice and the imported rice is sold through rationing mostly in the urban areas. There being a physical control on the quantity of rice that one can buy from ration shops and the rationed rice being a small portion of the total quantity consumed in a given period, one might take into consideration two prices of rice - the government controlled ration shop price and the open market price. For the purpose of calculating the jute growers' opportunity cost, we shall however ignore the controlled ration shop price of rice.

of raw jute is larger by QQ'. This is obvious because we are equating marginal export receipts with marginal opportunity cost. This would mean that the jute growers are now to be given RQ' price(instead of RQ) in order to induce them to produce the national optimum export quantity which is OQ' here. When there is a difference between the import price of rice and the domestic one, an adjustment has therefore to be made in the national optimum export quantity and the price to the producers. The price mechanism necessary to regulate the optimum export production is explained in the following section.

4.3 Implementation of the Scheme

In Figure 4.2 it was demonstrated that in the absence of any intervention by the Pakistan government, the jute growers in competition among themselves tend to supply an export quantity which is larger than the national optimum. But as the government of Pakistan imposes a fixed tax per unit of raw jute export, the jute growers receive a price less than what the ultimate buyers, i.e., foreign importers pay (the cost of processing and marketing of jute excluded). The growers therefore, with a lag of one year, supply a quantity lower than

what they would do in the absence of the export duty imposed by the Pakistan government. There is no reason however to believe that as a result of the export duty on raw jute, only the national optimum quantity is produced and exported where the marginal revenue is equal to marginal opportunity cost. Moreover, this export duty does not seem to eliminate or minimise the cobweb fluctuations in the relative price and production of jute. This is because the export duty on raw jute is a revenue raising device rather than one for regulating the export production of jute since once a tax is imposed it is hardly changed for a few years although the factors determining the supply of jute might change over time. As the jute/rice growers plan their current jute production according to the relative prices of jute and rice prevailing in the preceding season, fluctuations in the average price of rice alone, given the price of jute, can lead to year to year fluctuations in the jute output. Thus, even if we assume that the demand function for raw jute remains stable from one year to another, fluctuations in the export price will occur via fluctuations in supply due to changes in the relative prices of jute and rice.[1/] The export

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1/ In Chapter I we produced evidence that the demand for raw jute was more stable than the supply of raw jute.

taxation of raw jute therefore is not suitable for optimum production regulation or for reducing the cobweb fluctuations as it is difficult to adjust this tax on raw jute export every year with the changes in the price of rice or in demand conditions.

It would therefore be an advantage if we can project foreign and domestic demand for raw jute from which we can calculate the optimum quantity of jute production before the sowing of jute and rice starts every year and by setting the appropriate producer price for jute attempt to induce the growers to produce this optimum quantity. It is expected that the cobweb cycle in the export price and supply of raw jute will be eliminated or largely reduced as in the proposed scheme the producer price of raw jute is adjusted every year with the price of rice prevailing in the preceding season in accordance with the required (projected) production quantity.

Let us now explain this possible method of optimum production regulation in detail. A "Jute Price Stabilisation Board" (or Stabilisation Board in short), let us suppose, is given the responsibility for ascertaining, well before the sowing starts, the approximate quantity of raw jute that Pakistan will have to supply to meet the domestic needs and the optimum export quantity.

With regard to the domestic needs, the government has got a definite policy objective, which is to manufacture domestically as much jute as possible.[1/] The domestic demand for raw jute is, therefore, more or less known and is determined by the capacity of the domestic jute processing industry. With the help of supply and demand elasticities, estimated by the multiple regression equations 1-2 and 1-5 respectively, we can calculate so far as is practicable, the national optimum export quantity for a particular period.[2/] Over and above these two quantities, it is proposed that the Stabilisation Board should maintain a buffer stock of raw jute to cope with any short-run changes in demand and/or in the planned output of jute.[3/] All these three components will constitute the projected production quantity which is expressed in the following equation:

$$O_t = X_t + C_t \pm U_t$$

where, O_t is the projected production quantity; X_t is the

1/ Government of Pakistan, Outline of the Third Five Year Plan (1965-70), p. 129.

2/ The methods of estimating the national optimum export quantity are discussed and worked out in Appendix 4-A.

3/ The buffer stock in the proposed model is to be used only as a second line of defence; its special features are discussed in the following sections. The main device for the optimum supply regulation is the price mechanism.

national optimum export quantity; C_t is the domestic consumption and U_t is the necessary adjustment in the buffer stock to be maintained by the Board; all in the current period (t) for which the projection is made.

After determining the projected production quantity the important task of the Board is to fix the appropriate producer price for raw jute (which the Board will offer to the jute growers for the current period) and to announce it well before the sowing starts for this period.[1/] The announced price which will remain unchanged during the whole period is to be determined in relation to the prevailing price of rice in the preceding season. This can be done with the help of either regression equation 1-1 or 1-2. These equations, calculated and discussed in detail in Chapter I, are reproduced here for ready reference.[2/] As both the equations provide a good fit, we shall use equation 1-2 as it gives a direct relationship between output in the current season and the prices of jute and rice in the preceding season. As we know the projected

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1/ This must be given widest publicity so that the jute/rice growers can know the offered price for jute when they plan their resource allocation between jute and rice.

2/ $A_t = 565.98 + 1894.26 \log P_{j(t-1)} - 1292.40 \log P_{r(t-1)}$ ...(1-1)

$O_t = 1805.46 + 4971.63 \log P_{j(t-1)} - 2504.88 \log P_{r(t-1)}$ ...(1-2).

quantity to be produced in period t (O_t) and the price of rice prevailing in period (t-1), we can get the value of log $P_{j(t-1)}$ by substituting the values of O_t and log $P_{r(t-1)}$ in equation (1-2). If we now take the anti-log of this, we get the appropriate price of jute per maund[1/] which is to be paid to the growers in period (t) in order to induce them to produce the projected quantity.

The jute/rice growers will, therefore, consider the Board's guaranteed price of jute for the current season (which was announced before the start of the sowing) instead of the actual price of jute prevailing in the previous season in relation to that of rice in the immediate past season as a basis for their production decision.[2/] The price of rice would vary according to free market conditions while that of jute would be adjusted every year with the price of rice prevailing in the preceding season. Thus, jute production can be regulated either by changing the price of jute or that of rice (to which also the growers respond); but rice production being almost the entire agricultural activity in East Pakistan, it would be very

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1/ Given the price of rice, the jute/rice growers would have produced this quantity, (O_t) if this price of jute prevailed in period (t-1).

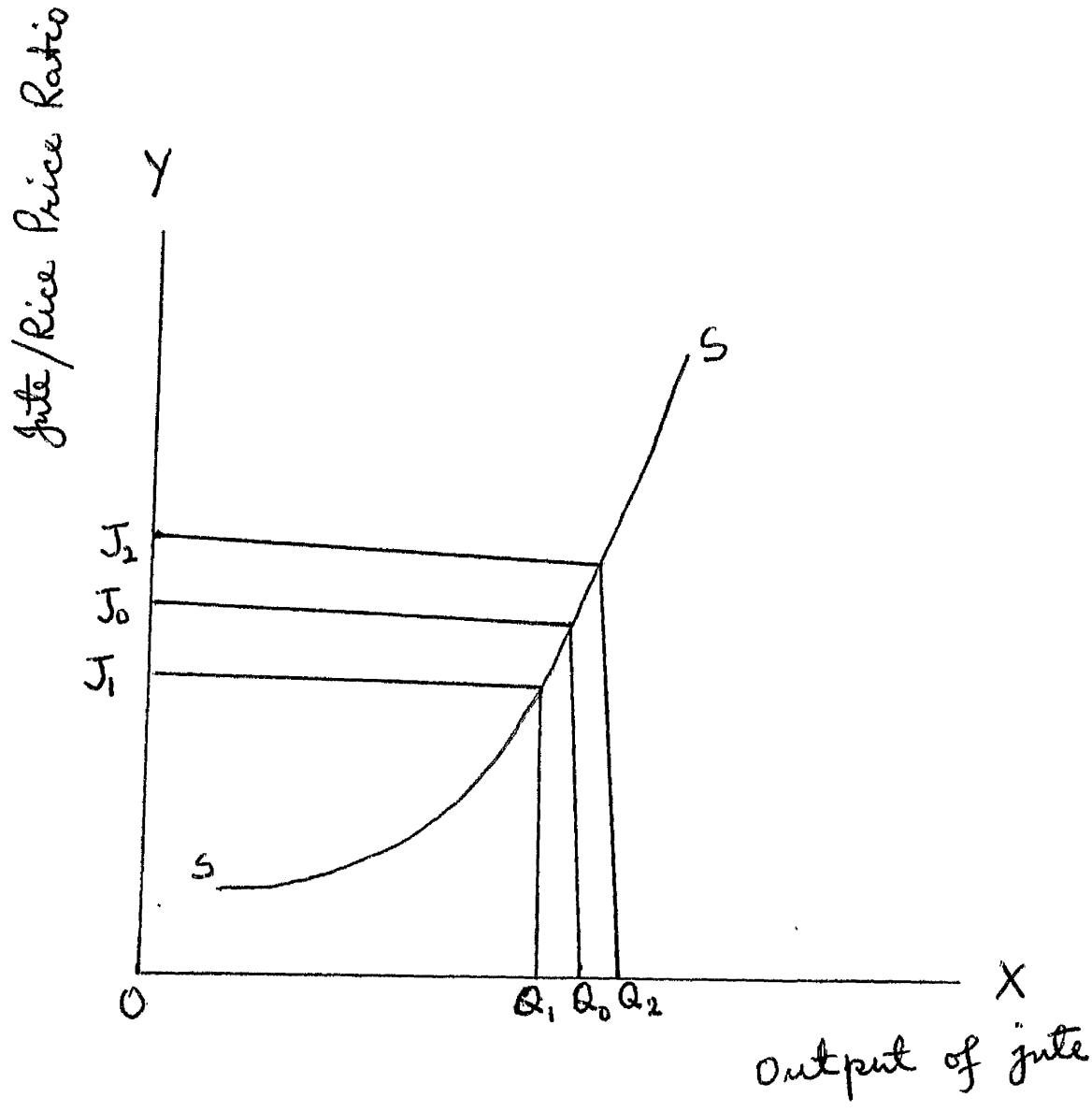
2/ The Stabilisation Board, as explained later, will have a statutory power to act as the only buyer of raw jute in the domestic market and only seller in the export market.

difficult and costly to control rice price for the purpose of regulating jute output.

Thus, if the Board finds that the projected production quantity should be larger (smaller) than the likely quantity which will be produced by the growers as a response to the relative prices prevailing in period (t-1), the Board will offer for the period (t) a higher (lower) price for jute than the one prevailing in the preceding period. The extent to which the price of jute is to be changed in relation to that of rice will depend on the extent of variation that the Board desires to attain in the quantity of raw jute to be produced in a particular period. The appropriate producer price of raw jute, given the price of rice and the projected production quantity, is to be calculated with the help of regression equation 1-2 as explained earlier.

Let us illustrate this further with the help of a diagram. In Figure 4.3 let us measure domestic jute and rice prices in the form of a ratio along the Y axis and the total quantity of jute output along the X axis. SS is the growers' supply curve of jute. Let us assume that the Stabilisation Board has estimated that in a particular period (t) OQ_o is the projected production quantity. The

Figure 4.3



jute growers will produce this quantity only when the jute/rice price ratio is J_o. If the Stabilisation Board finds that the jute/rice price ratio in the preceding season was J_1 or J_2, it will set a price for jute in such a way that the ratio becomes J_o so that the projected quantity is produced.[1/]

It is to be noted that the projected quantity, OQ_o, will be produced if the jute/rice price ratio is J_o, provided that there is no other factor except the relative prices of jute and rice that affects the total output of jute. Since there are some random factors that also influence the output of jute, the exact projected quantity will not be produced even if the relative prices are appropriate (J_o in this case). The following section will discuss how this problem (and also other related problems arising from unforeseen factors) can be tackled with the help of a buffer stock operation. The important point which we want to emphasize here is that since we do not know which way the random factors will affect total output of jute, it will be an advantage to control those observable factors (i.e., the relative prices of jute amd rice) that are

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1/ The ratio is determined by dividing the Board's set price for jute in period (t) by the actual price of rice in period (t-1).

important determinants of jute supply. To safe guard against the random influences we can adopt other measures, such as the buffer stock operation suggested in this scheme.

4-4 Export Price Stabilisation through Buffer Stock Operation

In the preceding section it was argued that by inducing the jute/rice growers through the price mechanism to produce the projected quantity of raw jute it would be possible to largely reduce the fluctuations in the export price (due to cobweb fluctuations in the relative price and production of raw jute) and at the same time to keep the country's net gains from jute production and export at the maximum level. Although the Stabilisation Board , by setting the appropriate producer price, will attempt to induce the jute/rice growers to produce the projected quantity of raw jute, the actual output may be smaller or larger than the planned one because of the presence of random factors, such as weather, etc.

On the demand side also it is likely that the forecast as to the foreign demand may not be completely correct; actual demand for the current season may not

be the same as expected. This may be so because the above forecast will be made on the basis of the multiple regression equation (U.K. import demand function) calculated by using past time series data.[1/] In the meantime, the various factors, such as prices of substitutes, production of jute-using commodities, etc., affecting import demand for raw jute might have changed. As a result, the foreign demand function for raw jute for the current period (for which the projection is made) may be different from what the Stabilisation Board had anticipated.

Thus, shifts in current demand and/or supply functions may lead to a new equilibrium position requiring a different quantity of raw jute than what was actually planned. To cope with such unforeseen changes either in actual demand or in supply or in both, it is proposed that the Board will operate a buffer stock (which may be within the range of 10-15 per cent of the normal annual output of jute).

While initiating the scheme, the Stabilisation Board

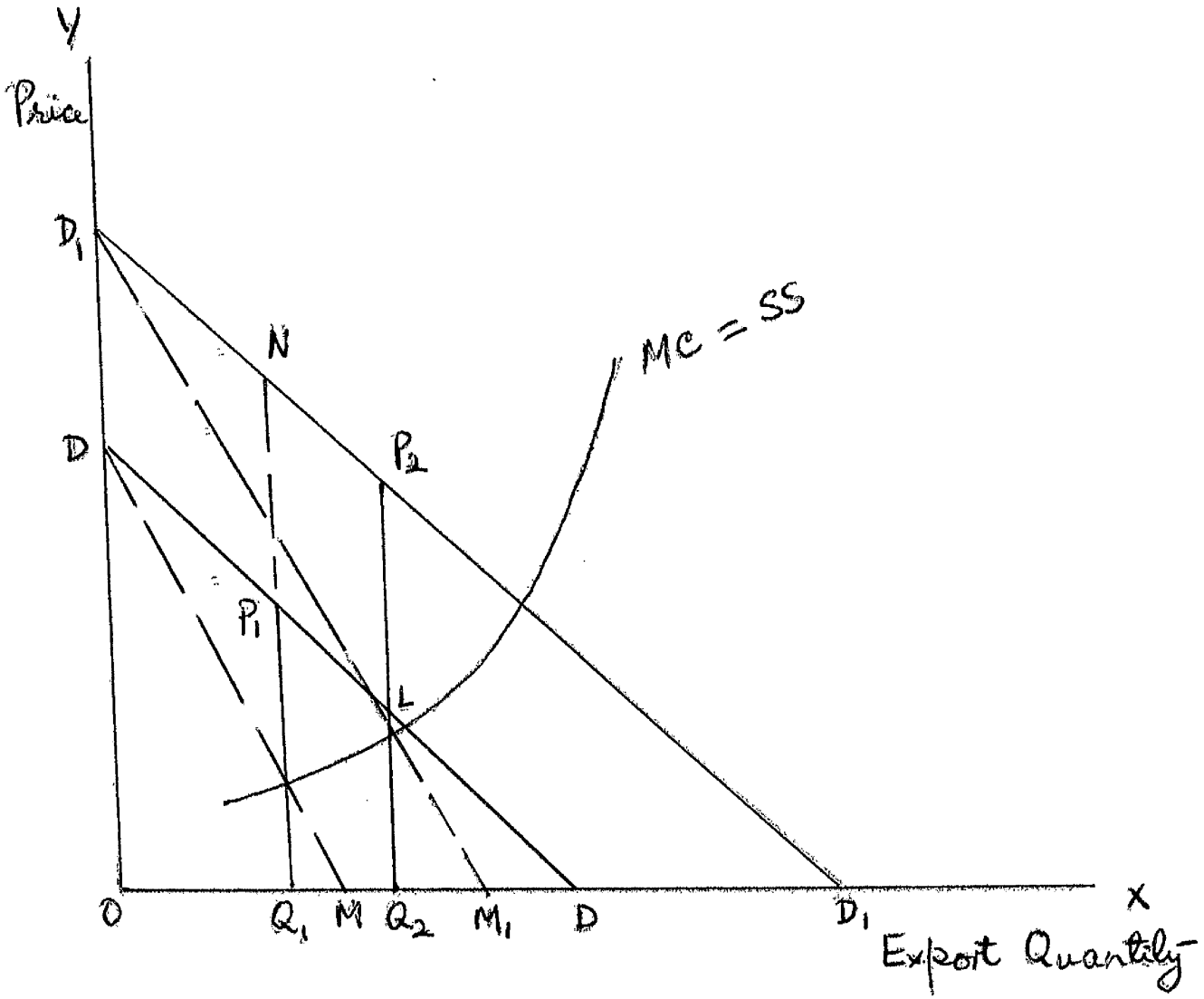
1/ As will be shown in Appendix 4-A, the optimum export quantity is calculated with the help of long-run supply and demand elasticities for raw jute and hence, this is some sort of an average quantity. The year to year optimum export quantity would however vary around this average quantity.

will set the producer price in such a way that a total of three quantities is produced. These are quantities for export, domestic consumption and buffer stock (less the stocks existing with the private dealers to be acquired by the Board). At the end of the projection period the Board should be left with only the quantity produced for the buffer stock provided every thing else remains the same as planned. But every thing may not turn out as expected and hence at the end of the projection period, after meeting the optimum export quantity and the domestic consumption need, the Stabilisation Board may be left with either a shortage or an excess in the planned buffer stock. In the following year's projection of production quantity this will be taken into consideration by setting the appropriate producer price to adjust the buffer stock. This will be further illustrated in the following section.

We shall now illustrate a case where the operation of a buffer stock would enable the Stabilisation Board to reduce export price fluctuations arising from short-run changes in demand and/or supply. In Figure 4.4 let us assume that a parallel shift in the foreign demand curve from DD to D_1D_1 occurs.[1/] Let us also assume that the marginal opportunity cost curve for the growers (which is

1/ The demand function may shift in various ways. This particular one is shown only for illustrative purposes.

Figure 4.4



also assumed here to be the supply curve for the country as a whole), MC=SS, is constant. When DD shifts to D_1D_1 the optimum export quantity would be OQ_2 and the optimum export price would rise from P_1Q_1 to P_2Q_2. We assume that this excess demand, Q_1Q_2, could not be foreseen and hence the producer price of jute could not be adjusted to induce the growers to produce the excess quantity required by the shift of the demand curve. In these circumstances the excess demand quantity would be met from the buffer stock. In the absence of the buffer stock, the export price would have risen to NQ_1 and the country's net gains from jute export would have been sub-optimal.

Conversely, if the foreign demand curve were to shift from D_1D_1 to DD, it would pay the country to contract the export quantity from OQ_2 to OQ_1 (where the marginal export receipts from jute equates the marginal opportunity cost), the rest being withheld in the buffer stock. (In the next year's projection of production quantity, the buffer stock is to be adjusted as the old stock has gone up over the preceding year). Thus, the operation of the buffer stock helps, in this instance, to maintain the export price somewhat(from falling to LQ_2) at P_1Q_1.

It will be however very difficult to precisely calculate the optimum export quantity for the current period and to obtain the exact point of intersection between the marginal foreign exchange receipt and the marginal opportunity cost. In practice we can only estimate the average optimum export quantity (also very roughly) by taking data over some past years. On the basis of this, (i.e., by extrapolation), we can project the export quantity for a future period. If demand changes for this period, the operation of a buffer stock would be useful. For example, if it is found that the quantity demanded is rising at a given price, the Stabilisation Board would expand export and at the same time raise the export price as shown in Figure 4.4. This may not lead to the exact optimum position, but nevertheless is a useful rule of thumb.

Thus, the operation of a buffer stock would be an ~~example~~ important aid to the proposed price mechanism in achieving some stability in the export price of Pakistan jute.

4-5 Special Features of the Proposed Model

The specific object of the proposed model is to maximise net foreign exchange receipts from jute by reducing export price fluctuations which arise due to the cobweb fluctuations in the relative price and production of raw jute. The main device adopted for this purpose as explained so far is to project the optimum production quantity and then by setting the appropriate producer price for jute (in relation with the price of rice prevailing in the preceding season) to induce the jute/rice growers to produce this optimum quantity in the current season. The maximimsation of the net export receipts from this commodity would provide the criterion for regulating the production of jute. The operation of a national buffer stock would enable the Stabilisation Board to cope with any unforeseen changes in demand and/or in the planned output of jute.

When the jute growers make large responses to the relative prices of jute and rice with a lag of one year (thus price - output relationship results in a cobweb cycle), the proposed price mechanism to adjust supply to changes in demand appears to be an appropriate policy in

order to attain the specific object (i.e., maximisation of the country's net export receipts from raw jute), and at the same time reduce export price fluctuations. The proposed method is superior to the existing policy of the Pakistan government (i.e., to guarantee a minimum price to the growers irrespective of the price of rice, etc, explained in Chapter II). It was found that the minimum price as announced by the government after the crop is already planted is not intended to regulate the supply of jute and does not therefore reduce the cobweb fluctuations.

Another usual method of price stabilisation as adopted by the West African Marketing Board, is to withhold part of the proceeds from the producers in times of high prices and pay out the accumulated funds in years of low prices, thus evening out peaks and troughs.[1/] This policy is wrong also because it gives incentives to the growers to produce more or curtail production just at the wrong time. This type of scheme even in its improved version as proposed by Professors Bauer and Paish, is not useful for Pakistan jute as shown in Chapter III.

1/ For details of the West African Marketing Boards see Bauer, P.T., West African Trade, Cambridge, 1954 and Professors Bauer and Paish, op. cit.

In the proposed model, therefore, if the Stabilisation Board foresees a rise in demand for raw jute, it would be appropriate, ceteris paribus, to offer a higher price to the growers relative to that of rice (and must be announced before the sowing starts) to induce the growers to supply the projected quantity. If the favourable demand develops later in the season after the sowing of the crop the excess is to be supplied from the national buffer stock to be maintained by the Board.

Let us now examine how effectively the proposed scheme can handle the usual problems of buffer stock operations and the problems of internal price adjustment as required in the proposed scheme.

Experiences show that operating a buffer stock involves difficult problems unless

i) it can be limited in size and used primarily to smooth out short-run fluctuations in supply;

ii) deterioration and wastage in storage may be caused if the stock is kept for long and if the old stock cannot be cleared in short intervals; and

iii) there may be a tendency for a buffer stock to grow beyond the limited storage capacity or funds, if the operating agency cannot cut back supply when it is necessary.

In formulating the proposed scheme, care has been taken that these problems do not arise or are minimised. The buffer stock in this scheme, as explained earlier, will be operated only to meet short-term changes in demand and/or supply; and the main device for reducing the cobweb fluctuations would be the production regulation through the price mechanism. As the buffer stock is to be adjusted every year, it is likely that the size of the buffer stock and the funds necessary for its operation would be fairly manageable. As the annual output would be regulated, it would not be a great problem to cut back stock or increase it as the case may be. For instance, if the total quantity of raw jute actually demanded in any period is less than the projected one, or if the actual output is larger than the planned one, there will arise an excess supply of raw jute. In the projection of the following period, this is to be taken into consideration. Other things remaining the same, the Stabilisation Board will now lower the price to the jute growers in relation to that of rice, so that the projected production quantity is reduced as there is already an excess in the stock.

In an opposite situation, if the actual quantity demanded is greater than the projected quantity, or if

there is a shortfall in the planned output, the shortage will now be met from the buffer stock. In the following year, the buffer stock is to be adjusted by offering the growers a higher price for jute in relation to the existing price of rice, ceteris paribus. This is the way the Stabilisation Board in this model will check the rise beyond or a fall below what it considers to be a 'normal' buffer stock for a particular period. The flexibility in the buffer stock adjustment would enable the Board to adjust the export quantity (to the optimum level) under changing demand conditions. It is the inability of a buffer stock organisation to cut supply when demand has fallen which leads to its breakdown.[1/]

Let us now examine whether the proposed Stabilisation Board will be in a position to make the necessary price adjustments without any political problem or disadvantage to the jute/rice growers.

The political problem[2/] may arise as a result of the dissatisfaction of the growers following a downward adjustment (lowering one price when the other has fallen) of the price

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1/ The experience of the Pakistan government in 1951 when, after the collapse of the Korean boom, it had to abandon the support price to the growers, is a case in point.

2/ Given the existing set up of the rural economy of East Pakistan, where jute and rice are produced by innumerable smallpeasants, it is unlikely that any political problem will be created. (continued)

of jute with that of rice. Such a necessity may arise because of either or all of the following reasons:

i) the foreign demand function for raw jute might have shifted to the left;

ii) the domestic price of rice might have fallen; and

iii) the Stabilisation Board might have accumulated a large stock from the previous period.

When the price of jute (relative to that of rice) is to be lowered because the foreign demand function has shifted to the left (case i), or the Board has accumulated a large stock from the previous year (case iii), this would be disadvantageous for the jute growers provided they had already sown a large area to jute because in this case their combined income from jute and rice would fall. But as the producer price of jute in the proposed scheme is to be announced well before the sowing starts for both the crops, the peasants would be able to make the necessary and timely adjustments in their allocation of land and other resources between these two crops. Thus, an early announcement of the guaranteed price of jute may act as a warning or an advice to the growers as to an

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(continued from previous foot note)

Under the existing political system the small growers in East Pakistan do not exercise any real political power. We are therefore concerned with economic merits and demerits of any action taken by the government.

optimum allocation of their land and other resources between the production of these two crops. In the absence of such a scheme the growers would have probably produced a larger quantity of raw jute, but as the demand function has shifted to the left, they would not get a price as high as they had expected; and hence they would become worse off as they have also a lower supply of rice. In the proposed scheme, as the jute/rice growers are told about the possible price for jute before the sowing starts they can now maximise their income from these two crops by making the necessary allocation of resources between them.

The other downward adjustment of the price of jute with that of rice may be necessary when the domestic price of rice (which gives the growers' opportunity cost) has gone down. In this case if the price of jute is not lowered (relative to that of rice), the growers would be induced to produce a large quantity of jute which, demand remaining the same, will bring them a lower price than they expected.

That the disadvantages of a downward adjustment of the price of jute with that of rice when the latter has gone down are not great becomes evident if we examine what the peasants normally do with their earnings from jute.

It was mentioned in Chapter I that jute is produced in East Pakistan by innumerable small peasants and most of them spend their earnings from jute on rice.[1/]

Hence, if the price of jute is lowered because that of rice has gone down, these growers are lightly affected as far as the jute earnings are spent on rice.[2/] For an average jute grower the possibility of having a surplus rice for sale simply does not arise, even if he planted all his land to jute rice. The average size of farm in East Pakistan is 3.5 acres, whereas the average size of the family is 6 (adult equivalent). Considering some possibility of a double crop of rice, the total rice output of 40-45 maunds per average family is not adequate for year round consumption.

1/ This is likely to be so as most of the peasants live at a bare subsistence level. About 73 per cent of total income is spent on food of which about 70 per cent is on cereals. Govt. of Pakistan, National Sample Survey, 1959, p. 16.

2/ The analysis is rather hypothetical. In the proposed scheme the guaranteed price of jute is adjusted with that of rice prevailing in the preceding season. The growers will undoubtedly be worse off if the price of rice rises in the current season because they will get a low price for jute as guaranteed by the Board. In the following year, of course, there will be an upward adjustment in the price of jute.

However, the jute/rice growers may not at all like a downward adjustment in the price of jute. Given the nature of the growers' price responsiveness, this cannot be helped. It may be noted that if the Board earns some profits, these could be spent on agricultural development.

There are however some rich farmers who may sell both jute and rice, for whom the lowering of the price of jute means making them worse off when the price of rice also has gone down. Most of raw jute in East Pakistan is, however, produced by small peasants as about 72 per cent of total jute area is in the farms, the maximum size of which is 7.5 acres (Table 1-1(A)).

Thus, if the Stabilisation Board makes some profits by offering a low price for jute in any season (as the price of rice was low in the preceding season) and selling jute at a higher price in the export market, this would mean an indirect taxation of the peasants. But this is not something new as under the existing system of export duty on raw jute the peasants do not get the full price paid by the ultimate buyers of raw jute (costs of marketing and processing apart). Whether taxing the peasants this way is right or not depends on the fiscal policies of the government and other considerations. In the proposed model it is provided that if the Stabilisation Board is left with any surplus after meeting the necessary expenses, this is to be paid back to the growers indirectly in the form of agricultural development measures. The surplus cannot be handed over directly to the peasants because this will disturb the desired balance between the two prices of jute and rice. The special features of the proposed scheme is

that we do not now have to worry about exploitation of the peasants by the shippers and exporters of raw jute.[1/]

Thus, starting from a given situation, if the average price of rice goes up (down), the average price of jute, ceteris paribus, is to be raised (lowered), so that the projected quantity of raw jute is produced. As far as the earnings from jute are spent on rice purchases, the adjustment of the price of jute in the same direction with that of rice will generally have a neutral effect on the growers' total income from jute and rice. In any year, for instance, if the growers receive a higher cash income from the sale of jute, their total income from jute and rice does not increase if they have to spend it on rice the price of which also has gone up. Thus, in the proposed scheme, the income from these two sources for an average farmer is more stabilised than in the absence of such a scheme when the two prices tended more often to move in opposite directions (Appendix 1-A).

This however presents a static view of the situation. In the course of time when economic development

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1/ It is alleged (see The Dacca University Socio-Economic Survey Board, op.cit.) that a small number of powerful exporters and shippers of raw jute usually have a large profit margin at the cost of the peasants and the primary intermediaries in the system of jute marketing in East Pakistan (noted in Chapter I).

takes place, labourers shift from rural occupations to urban jobs, the peasants will no longer produce only for subsistence. More and more rice will be produced for markets and incomes from jute and rice will be increasingly spent on manufactured goods. Hence, the adjustment of the price of jute in the same direction with that of rice may destabilise the peasants' real income.

Such an economic development in East Pakistan will, however, need a considerable period of time. When such a development has taken place, an export price stabilisation scheme for raw jute may become unnecessary probably because almost the whole raw jute output will then be manufactured within the country.

The other special features of the proposed scheme are that as the growers will be able to know and be sure of the future price of their jute crop, atleast one source of uncertainty is eliminated. Of the two major crops, accounting for about 80-85 per cent of the total cultivatable land, jute being the cash crop (whereas rice is mainly produced for self consumption), it will be a great advantage to know the price of jute before the allocation of land and other resources is made between the two crops. As there will be one fixed price for a particular grade of jute

throughout the whole season[1/] (thus intra-seasonal fluctuations are completely eliminated), the growers can market their produce any time without a risk of any loss.

4-6 Changes in the Jute Marketing System

The successful operation of the propsed scheme requires some changes in the system of jute marketing. First, the Stabilisation Board must have a monopoly of the export of raw jute from Pakistan. This is necessary in order to maintain the export price at the optimum level and a fixed price for the growers throughout a season. If the private traders are allowed to operate the jute trade, it may be difficult to maintain these desired prices.

The second most important reason why the Board should have an export monopoly is that as there would remain a surplus over what is paid to the growers, this could be used as the necessary fund to carry on the buffer stock operation. Otherwise, it may be difficult to collect the required fund through taxes.

It is necessary to grant the Stabilisation Board

1/ Except for some premium for private storage of raw jute as explained later.

a statutory power over raw jute exports on yet another ground. As at present the official rate overvalues the domestic currency in terms of the foreign currencies,[1] some private exporters have a tendency to under-invoice and deprive the country of full foreign exchange earnings. The Pakistan government has been trying to stop this malpractice through a mechanism known as the 'Export Price Check'. If the Stabilisation Board undertakes the full responsibility for raw jute exports, this problem will be eliminated.

In the domestic market the Board will buy raw jute through its agents, such as Cooperative Society and individual employees of the Board. The guaranteed price fixed for each grade of raw jute will be widely publicised throughout the country so that the growers can know it in time. The agencies of the Board will be distributed widely in the country in such a way that these would be in easy reach of the growers.

At present there are two government organisations- the Jute Board and the East Pakistan Jute Marketing Corporation - to look into the affairs of the jute trade

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1/ The proof of overvaluation of the Pakistan rupee in terms of foreign currencies is the successful operation of the 'Export Bonus Scheme' explained in Chapter II. At present there is a strict rationing of foreign exchange which provides further proof.

and stabilisation of jute prices. Instead of two, only one organisation with the necessary power and facilities can do the desired job. Already these organisations employ agents to buy raw jute from the interior of the country. Hence, in this respect, the proposed scheme does not entail any more difficulty than an expansion of activities in existing directions.

From the side of administration, this scheme is comparatively easy. It does not require any physical control over production or the maintenance of individual accounts. Operating a buffer stock requires facilities for storing. The government has built up a number of godowns in different parts of the country. Buffer stocks can be kept near mill areas which are also the points of jute export. In the proposed scheme, as a fixed price is to be maintained for each grade of jute for a complete season, the growers would usually like to sell their crop immediately after the harvest, although some rich growers can afford to wait. In order to utilise the private storage facilities the Board can induce the growers by offering some premium over the fixed price to use their own storage.

4-7 Summary and Conclusion

The object of the suggested Price Stabilisation Model for Pakistan Jute, by eliminating (or atleast reducing) the cobweb cycle in the relative price and production of raw jute, is to keep the country's net gains from jute production and export at the maximum level. The main mechanism relied upon in the proposed model is to project optimum production quantity and then by setting the appropriate producer price, attempt to induce the growers to produce this optimum quantity. The producer price will be announced well before the sowing starts for both jute and rice for the period concerned so that the jute/rice growers can make the necessary allocation of land and other resources between the two alternative crops. Any unforeseen changes in demand and/or in planned output of jute are to be met from a national buffer stock, the operation of which will be relatively easy. As supply of jute is to be adjusted to changing demand conditions, year to year fluctuations in the export price of raw jute would be comparatively small.

APPENDIX 4-A

4-A.1 Statistical Calculation of the National Optimum Export Quantity of Raw Jute

In the Appendix 4-A.1 we shall attempt a quantitative measurement of the national optimum export quantity of raw jute with the help of demand and supply elasticities.[1/] We would then calculate the projected production quantity (by including the domestic consumption need and changes in the buffer stock and of course the optimum export quantity) and then by setting the appropriate producer price for raw jute attempt to induce the growers to produce accordingly.

As explained in Chapter I the U.K. import demand elasticity for raw jute is assumed to approximate the world import elasticity for raw jute. The U.K. import demand function for raw jute, estimated in Chapter I by taking data over the period 1948-63, is given by the

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1/ Similar methods of calculation of the national optimum export quantity with the help of supply and demand elasticities were also used by Hansen, Bent, Cotton Vs. Grain, National Information and Documentation Centre, Cairo, U.A.R., 1964.

following multiple regression equation:

$$\text{Log } J = 2.0671 - \underset{(0.2941)}{0.5891} \log P_1 + \underset{(0.2271)}{0.3217} \log P_2$$

$$+ \underset{(0.2819)}{0.4321} \log Y + \underset{(0.0071)}{0.0132}\, t \qquad \text{(A-1)}$$

The coefficient of log P_1 (which is the price elasticity of import demand for raw jute for the U.K) indicates that other things remaining the same, a 10 per cent change in the price of raw jute will lead to about a 6 per cent change in the opposite direction in the quantity demanded. The coefficient of log P_1, however, gives an average estimate only.

In the export market of raw jute, Pakistan is still the dominant supplier, although in total world production her share is less than a half. Thailand, India and other countries are potential suppliers of substantial quantities of raw jute in the world market in the near future. Hence, although before 1960, it was reasonable to assume the world import demand schedule for raw jute as the one faced by Pakistan, it is unlikely to be true now or in the near future.

Given the world import elasticity of demand, the price elasticity of demand for raw jute faced by a single country like Pakistan, therefore, depends on the proportion of raw jute supplied by the rest of the world and its elasticity of supply. The formula to determine the elasticity of demand for this commodity faced by Pakistan , a single supplier, is given by the following formula:[1/]

$$E_p = \frac{1}{a} (E_w) - \frac{b}{a} (K_s),$$

where, E_p is the elasticity of demand for Pakistan jute; (a) is Pakistan's average share in the world supply; (b) is the share of the rest of the world; E_w is the world elasticity of demand and K_s is the elasticity of supply of the rest of the world.

Given Pakistn's share in the total world production of raw jute equal to 0.4 (Table 1-6), the elasticity of supply of raw jute by the rest of the world equal to zero,[2/]

1/ Shorter, F.C., op. cit.

2/ This is an extreme assumption, but not unrealistic because though more than a half of world's total raw jute is produced outside Pakistan, most of it is at present used by these countries for their domestic consumption.

and the world elasticity of import demand equal to 0.6 (as found for the U.K. which was assumed typical for the world), we get the elasticity of demand for raw jute faced by Pakistan, E_p, equal to 1.5.[1/]

Similarly, the supply function of raw jute as estimated by the equation 1-2 in Chapter I by taking data over the period 1952-62 is reproduced below:

$$O_t = \underset{}{1805.46} + \underset{(1201.06)}{4971.63 \log P_{j(t-1)}} - \underset{(1340.42)}{2504.88 \log P_{r(t-1)}} \qquad \text{(A-2)}$$

where, O_t is the output of jute in thousand bales in the current period, $P_{j(t-1)}$ and $P_{r(t-1)}$ are the prices of jute and rice respectively in rupees per maund in the preceding season. The equation is in a semi-log form and the partial elasticity of supply of raw jute with

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1/ For the purpose at hand, it is important to know the numerical value of the price elasticity of demand for Pakistan jute, but as it is difficult to calculate the elasticity of supply of raw jute by the rest of the world and the world elasticity of import demand for raw jute, an accurate measurement of the price elasticity of demand for raw jute faced by Pakistan cannot be made. In these circumstances the numerical value of $E_p = 1.5$ is very rough.

respect to its own price (with a lag of one year) is 0.9.[1/] The lag is inherent in the nature of the problem because of the time required for plantings to mature. Acreage decisions on which total output of jute depends are, as explained in Chapter I, based on the previous season's relative prices of jute and rice. In the proposed model however, as the current period's guaranteed price of jute will be announced well before the sowing starts, the growers are expected to base their acreage decision (and hence total output) on the guaranteed price of jute announced for the current period in relation to the price of rice prevailing in the preceding period instead of the previous period's (actual) relative prices of these two products. Hence, we can rewrite the equation (A-2) in

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1/ The price elasticity of supply can be calculated from a semi-log regression equation by differentiating in the following way:

$$Y = a + b \log X$$

$$\frac{dY}{dX} = \frac{b}{X}$$

Therefore, since the elasticity of supply is

$$\frac{X}{Y} \cdot \frac{dY}{dX} = \frac{X}{Y} \cdot \frac{b}{X} = \frac{b}{Y}$$

Hence, from the regression equation (A-2) and Appendix (1-A), the partial elasticity of supply with respect to jute price is $\frac{4971.63}{5563.27} = 0.9$ (approximately).

the following form:

$$O_t = 1805.46 + 4971.63 \log P'_{j(t)} - 2504.88 \log P_{r(t-1)} \qquad (A-3)$$

where, the current output of jute (O_t) is dependent on the guaranteed price of jute in the current period ($P'_{j(t)}$) and the price of rice in the previous period ($P_{r(t-1)}$).

Now by abstracting the supply and demand elasticities, we can formulate a simple supply - demand model for Pakistan jute in the following linear form:

$$Q_t^d = m_1 P_t^{-E} \qquad (A-4)$$

$$Q_t^s = m_2 P_t^K \qquad (A-5)$$

$$Q_t^s = Q_t^d \qquad (A-6)$$

where, quantity demanded (Q_t^d) in the current period depends on current price, quantity supplied(Q_t^s) is made to depend, as explained earlier, also on current price and in equilibrium the market is cleared. In equations (A-4) through (A-6) we have not deliberately used error terms simply for ease of exposition in the subsequent development of the model. Equations (A-4) and (A-5) are the ceteris paribus type demand and supply functions, but the elasticity of demand, E, and that of supply, K, which

are crucial for the purpose at hand, were statistically estimated by dropping the ceteris paribus assumptions and explicitly taking other observable factors into account as can be seen in the numerical equations (A-1) and (A-2).

Equation (A-4) can be written as

$$P_t = \left(\frac{Q_t^d}{m_1} \right)^{-\frac{1}{E}} \qquad \text{(A-7)}$$

Similarly, equation (A-5) can be written as

$$P_t = \left(\frac{Q_t^s}{m_2} \right)^{\frac{1}{K}} \qquad \text{(A-8)}$$

It was explained earlier that when an individual peasant acts independently, he takes the price of jute as given and therefore produces upto the point where the supply price equates the demand price in order to maximise his individual profits. In equilibrium, quantity supplied, (Q_t^s), is equal to quantity demanded, (Q_t^d), and hence obtain from equations (A-7) and (A-8), the following identity:

$$Q = \left(m_1^{\frac{1}{E}} \cdot m_2^{\frac{1}{K}} \right)^{\left(\frac{1}{\frac{1}{K} + \frac{1}{E}} \right)} \qquad \text{(A-9)}^{1/}$$

where, Q is the quantity (supplied and demanded) in equilibrium.

Equation (A-9) gives the equilibrium quantity demanded and supplied in the absence of any intervention by the government. This is the quantity which is equal to OQ_1 of Figure (4.2). But it was argued earlier that by restricting the quantity supplied in the export market (to the point where the marginal revenue curve for the country as a whole intersects the marginal opportunity cost curve), the country as a whole can increase her net gains from jute production and export. Hence, the national

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1/ Equation (A-9) is calculated in the following way: Taking the right hand sides of equations (A-7) and (A-8), we get

$$\left(\frac{Q_t^d}{m_1} \right)^{-\frac{1}{E}} = \left(\frac{Q_t^s}{m_2} \right)^{\frac{1}{K}},$$

writing Q for both Q_t^d and Q_t^s which are equal at equilibrium, we get

$$Q^{\left(\frac{1}{K} + \frac{1}{E} \right)} = m_1^{\frac{1}{E}} \cdot m_2^{\frac{1}{K}}$$

$$\text{or, } Q = \left(m_1^{\frac{1}{E}} \cdot m_2^{\frac{1}{K}} \right)^{\left(\frac{1}{\frac{1}{K} + \frac{1}{E}} \right)}.$$

optimum export quantity can be obtained by equating the marginal revenue (export receipts from jute) with the marginal opportunity cost. We know that

$$MR = P \left(1 - \frac{1}{E} \right) \qquad \text{(A-10)}^{1/}$$

where, MR is the marginal revenue, P is the price and E is the elasticity of demand.

Substituting the value of P from equation (A-7) into equation (A-10), we get

$$MR = \left(\frac{Q}{m_1} \right)^{-\frac{1}{E}} \left(1 - \frac{1}{E} \right) \qquad \text{(A-11)}$$

1/ This can be proved in the following way:
If P is the unit price, Q is the quantity sold, then PQ = R, where R is the total revenue. Differentiating, we get

$$\frac{dR}{dQ} = \frac{dPQ}{dQ} = P + Q \cdot \frac{dP}{dQ} = P \left(1 + \frac{Q}{P} \cdot \frac{dP}{dQ} \right)$$

We know the elasticity of demand, $E = -\frac{P}{Q} \cdot \frac{dQ}{dP}$

Hence, $MR = \frac{dR}{dQ} = P \left(1 - \frac{1}{E} \right)$.

From equations (A-8) and (A-11), by equating supply price with marginal revenue, we get the national optimum export quantity, Q_o, as in the following equation.

$$Q_o = \left[(m_1)^{\frac{1}{E}} (m_2)^{\frac{1}{K}} \right]^{\left(\frac{1}{\frac{1}{K} + \frac{1}{E}} \right)} \left[1 - \frac{1}{E} \right]^{\left(\frac{1}{\frac{1}{K} + \frac{1}{E}} \right)} \qquad \text{(A-12)}^{1/}$$

Dividing equation (A-12) by equation (A-9), we get

$$\frac{Q_o}{Q} = \left[1 - \frac{1}{E} \right]^{\left(\frac{1}{\frac{1}{K} + \frac{1}{E}} \right)} \qquad \text{(A-13)}$$

Equation (A-13) gives the national optimum export quantity expressed as a ratio of the equilibrium quantity supplied by the growers in the absence of government regulations.

1/ When MC = MR, the quantity supplied and demanded at the optimum point is the same. Thus, taking the right hand sides of equations (A-8) and (A-11), we get

$$\left(\frac{Q_o}{m_2} \right)^{\frac{1}{K}} = \left(\frac{Q_o}{m_1} \right)^{-\frac{1}{E}} \left(1 - \frac{1}{E} \right), \text{ or, } \frac{(Q_o)^{\frac{1}{K}}}{(Q_o)^{-\frac{1}{E}}} = \frac{(m_2)^{\frac{1}{K}}}{(m_1)^{-\frac{1}{E}}} \left(1 - \frac{1}{E} \right)$$

$$\text{or, } Q_o^{\left(\frac{1}{K}+\frac{1}{E}\right)} = m_2^{\frac{1}{K}} m_1^{\frac{1}{E}} \left(1 - \frac{1}{E} \right),$$

$$\text{or, } Q_o = \left[m_1^{\frac{1}{E}} m_2^{\frac{1}{K}} \right]^{\left(\frac{1}{\frac{1}{K}+\frac{1}{E}} \right)} \left[1 - \frac{1}{E} \right]^{\left(\frac{1}{\frac{1}{K}+\frac{1}{E}} \right)}.$$

Now by substituting the values of the elasticity of demand, (E=1.5) and that of supply, (K=0.9) in equation (A-13), we obtain the national optimum export quantity of jute as a ratio of the quantity produced by the growers when there is no intervention by the government. The optimum export quantity thus comes out to be about 54 per cent of the 'free' market equilibrium quantity.[1/] As over the period 1955-62 the import price of rice was somewhat lower than the domestic price of rice, the national optimum export quantity would be somewhat higher than this. Nothing can be said accurately as to the "true" optimum quantity, but it should be approximately between 54-65 per cent of the 'free' market equilibrium quantity. For the purpose of illustration, we take 60 per cent of the growers' free market equilibrium quantity as the possible optimum export quantity for the country as a whole.

1/ The assumptions of demand and supply elasticities are therefore very crucial as the extent of export contraction depends on the magnitudes of these two elasticities. Thus, the higher the value of elasticity of demand, E, and/or the lower the value of elasticity of supply, K, the lower is the quantity that should be contracted (and hence larger is the ratio). On the other hand, the higher the value of the supply elasticity and/or the lower the value of demand elasticity, the higher is the quantity that should be contracted (and hence, lower is the ratio).

In other words, if we can determine the 'free' market equilibrium quantity (which the growers would supply in the absence of any intervention by the government), we can now find that the country as a whole should produce for export about 60 per cent of that quantity so that the net gains from export production of raw jute are at a maximum (where the marginal revenue from jute export is equal to the marginal opportunity cost relevant for the country). 1/

1/ In the absence of actual observation we cannot say, however, what will be the exact elasticity of demand at the optimum price for Pakistan jute. The elasticity of demand of 1.5 which we have calculated for Pakistan jute may not be the one which we observe at the 'free' market equilibrium point as there has always been some intervention in the form of export duty on jute by the government of Pakistan. It is reasonable to assume, in the absence of any special knowledge, the elasticity of demand to remain constant within a small price range. For numerical measurement most econometricians favour the assumptions of constant elasticity in the field of demand and supply analysis. Hansen, B., op.cit. pp. 19-20.

4-A.2 Regulation of Production and Effects on Export Price and Proceeds, etc.

Having calculated the optimum export quantity of raw jute, we are to add m to it the quantities for domestic consumption and adjustment in the buffer stock. This would give the projected production quantity in a particular period. Now with the help of equation (A-3), by substituting the values of projected production quantity (O_t) and the price of rice prevailing in the preceding season ($P_{r(t-1)}$), we can estimate the appropriate producer price of jute which the stabilisation Board would guarantee to the jute growers in the current period. All these are calculated and given in detail in Table 4-1 and the possible effects of the measures taken are estimated for the period 1956-57 to 1961-62.[1/] The various items of Table 4-1 are derived in the following way:

Column (1) is taken from Table (1-7); these are the actual domestic mill consumption of raw jute.

Column (2): We have calculated the average export

1/ The calculation is made for a past period instead of a future one as it helps to compare the possible effects with the actual happenings.

quantity and export price over the period 1956 -61 from Table (1-17) and the average raw jute output and the average price received by the growers over the same period. Given the elasticity of demand for Pakistan jute at 1.5 and that of supply at 0.9, we have estimated the equilibrium quantity (that would take place when there is no intervention by the government), 60 per cent of which would give an approximation to the national optimum export quantity.

Column (3) is the actual export quantity that took place during the period.

Column (4) is the projected production quantity obtained by adding column (1) and (2). In practice, the projected production should be somewhat higher than this as we are to produce for the buffer stock also. But as there are about 4 million maunds with the private dealers, this could be taken, to start with, for the buffer stock operation. Figures in parenthesis show the actual output that took place.

Column (5) is the actual domestic price of rice prevailing in the preceding year. Thus, the price of rice shown against the year 1956-57, for example, is in fact the price prevailing in 1955-56.

Column (6) gives the producer price estimated with

the help of regression equation (A-3). Thus, for example, substituting the value of O_t as 23.9 and log of 25 for log $P_{r(t-1)}$ in regression equation (A-3), we get a value, the anti-log of which is 20 (producer price of jute) for the year 1956-57).

Column (7) gives the estimated export price which would prevail if the projected quantity given in (2) is exported.

Column (8) through (10) are self explanatory as indicated by their respective heading.

Column (11) is calculated after adding Rs. 2 per maund to the growers' price to cover the marketing cost of jute to be sold to the domestic mills. Rs. 4 per maund are added to the price given to the growers to cover the costs of marketing, processing, storing, etc, before the jute is exported. These calculations are based on the estimates of these costs by the Pakistan Jute Enquiry Commission, 1960.

Column(12) is the total of domestic and export proceeds and finally, column (13) gives the approximate money balance the Board would be left with. The Stabilisation Board would have made, on average, an annual profit of Rs. 120 million, provided it did not have to pay any tax, fee, etc. to the government. The Pakistan

government, however, earned about Rs. 76 million per year during 1958-61 from the export duty on raw jute alone (Table 1-5). Hence, after paying the taxes and fees, etc. to the government (i.e., by setting aside the amount as the normal government revenue), the Stabilisation Board would be able to just operate the scheme. In other words, the scheme seems to be financially viable.

Final Remarks

Although the suggested scheme is expected to largely eliminate the cobweb cycle in the relative price and production of jute, the calculations in Table 4-1 are tentative and little more than numerical illustrations. The whole analysis and calculations are based on simple assumptions such as constant elasticities of demand and supply. In practice, if the scheme were to be operated, the results would not be exactly as predicted. The present analysis merely indicates the various issues which must be taken into consideration when formulating such a stabilisation scheme. The main issues are the foreign demand function for raw jute, the import price of rice, the jute/rice growers' price responses and the marginal productivity of land in jute and rice production.

Table 4-1

Stabilisation Effects of Production Regulation on Export Price Proceeds, etc. (1956-61)

Year	Domestic Mill Consumption of Raw jute: Million maunds.	Estimated National Optimum Export Quantity Million maunds	Actual Export Quantity Million maunds	Projected Production Quantity: Million maunds.	Rice Price Prevailing in the preceding season: Rs. per maund	Producer Price of Jute in the Scheme: Rs./md.	Export Price of Raw Jute in the Scheme: Rs./md.	Actual Export Price: Rs. per maund	Export Proceeds in the Scheme: Million Rs.	Actual Export Proceeds Million Rupees	Total cost of operation of the Scheme (Growers' price + costs of Marketing, etc.): Million Rs.	Total Revenue : Million Rupees	Money Balance at the end of each year
	1	2	3	4 = 1+2	5	6	7	8	9	10	11	12	13
1956	4.5	19.4	21.5	23.9 (27.5)	25	20	39.4	34	764.4	732	628.6*	863.4	234.8
1957	4.8	19.8	19.1	24.6 (28.5)	32	24	39.8	40	788.0	764	679.2	912.1	232.9
1958	6.8	20.2	22.3	27.0 (30.0)	29	29	40.2	33	812.0	736	877.4	1022.8	145.4
1959	7.8	20.6	20.0	28.4 (28.0)	30	33	40.6	41	836.4	820	1035.2	1109.4	74.2
1960	8.3	21.0	18.0	29.3 (28.0)	31	37	41.0	56	861.0	1008	1184.7	1184.7	-
1961	8.6	21.4	20.4	30.0 (35.0)	29	36	41.6	42	890.2	857	1182.8	1217.0	34.2

* including the cost of acquiring the existing private stocks of about 4 million maunds which were to be used as the buffer stocks for the initial period.

APPENDIX 1-A

Statistics Concerning Jute and the Pakistan Economy

Year July to June	Jute Acreage (000 Acres)	Jute Output (Million Bales)	Jute Yield per Acre (bale)	Harvest Price of Jute Rs. per maund	Retail Price of Rice Rs. per maund	Estimated Cash Income from Jute: Million Rupees
1947-48	2059	6.8	3.3	23	20	771
48	1877	5.5	2.9	30	29	832
49	1561	3.3	2.1	19	29	324
50	1711	6.0	3.5	35	21	838
1951	1779	6.3	3.6	33	23	802
52	1907	6.8	3.6	14	26	354
53	965	3.6	3.7	21	21	271
54	1243	4.7	3.8	22	15	333
55	1635	5.6	3.4	27	25	523
1956	1230	5.5	4.5	32	32	677
57	1563	5.7	3.7	30	29	594
58	1528	6.0	3.9	27	30	476
59	1375	5.6	4.0	33	31	604
1960	1518	5.6	3.7	62	29	1736
61	2061	7.0	3.4	42	27	1176
62	1723	5.2	3.0	41	28	1065

Source: Government of East Pakistan, Agricultural Production Levels in East Pakistan (1947-60), Dacca, 1961 and Monthly Summary of Jute Statistics.

APPENDIX 1-B

Statistics Concerning Jute and the Pakistan Economy

Year July-June	Domestic Use of Raw Jute	Total World	Raw Jute Exports from Pakistan to: India	U.K.	U.S.A.	European Common Markets
		(Figures in thousand long tons)				
1948	-	[illegible]	698	51	53	98
1949	-	[illegible]	296	84	39	117
1950	-	[illegible]	457	117	126	343
1951	-	[illegible]	300	99	27	285
1952	-	[illegible]	266	150	93	292
1953	-	[illegible]	243	125	55	312
1954	-	[illegible]	220	141	57	338
1955	146	[illegible]	246	124	70	358
1956	174	[illegible]	109	118	42	287
1957	188	[illegible]	115	166	88	302
1958	240	[illegible]	31	143	51	268
1959	314	[illegible]	111	137	57	275
1960	292	[illegible]	64	101	17	155
1961	298	[illegible]	68	122	43	228
1962	305	[illegible]	53	139	46	261

Source: Commonwealth Economic Committee, Industrial Fibres, London, and Govt. of East Pakistan, Monthly Summary of Jute Statistics.

APPENDIX 1-C

Statistics Concerning Jute and the Pakistan Economy

Year July-June	Total Exports Rupees Million	Annual % Change	Total Imports Rupees Million	Annual % Change	National Income * Rupees Million	Annual % Change
1948	958	-	1459	-	[illegible]	-
1949	1194	+ 20	1297	- 11	17909	-
1950	2554	+ 53	1620	+ 20	18623	+ 4
1951	2009	- 21	2237	+ 28	18488	- 1
1952	1510	- 25	1384	- 38	19023	+ 3
1953	1286	- 15	1118	- 19	20177	+ 6
1954	1223	- 5	1103	- 1	20343	+ 1
1955	1784	+ 31	1325	+ 17	20086	- 1
1956	1608	- 10	2335	+ 43	21377	+ 6
1957	1422	- 13	2050	- 12	21471	+ 1
1958	1325	- 7	1578	- 23	21858	+ 2
1959	1843	+ 39	2461	+ 36	22738	+ 4
1960	1799	- 2	3188	+ 23	23559	+ 4
1961	1843	+ 2	3109	- 3	24956	+ 6
1962	2034	+ 9	3819	+ 19	25510	+ 2
		± 18		± 21		± 3

Source: Govt. of Pakistan, (C.S.O.), Statistical Bulletin, July, 1964 Tables 1 and 25.

*National income estimated at constant price of 1949-50 to 1952-53 average.

APPENDIX 1-D

Fluctuations in Exports of Pakistan Jute

Year	Export Proceeds		Unit Value		Export Volume	
	Rupees Million	Annual % Change	Rupees per m. ton	Annual % Change	000 metric tons	Annual % Change
1948	353	-	1044	-	338	-
9	250	- 29	1063	+ 2	235	- 31
1950	904	+ 72	812	-24	1113	+ 79
1	1208	+ 25	1147	+29	1053	- 5
2	696	- 42	828	-28	841	- 20
3	571	- 18	581	-30	982	+ 14
4	546	- 4	612	+ 5	892	- 9
5	697	+ 22	710	+14	982	+ 9
6	751	+ 7	874	+19	859	- 13
7	782	+ 4	996	+12	785	- 9
8	840	+ 7	927	- 7	906	+ 13
9	680	- 19	841	- 9	809	- 11
1960	806	+ 16	1065	+21	757	- 6
1	865	+ 7	1060	- 1	816	+ 7
2	795	- 8	917	-14	867	+ 6
		± 20.4		± 15.2		± 17

Source: U.N. Year Book of International Trade and Govt. of East Pakistan, Monthly Summary of Jute Statistics.

Notes: Year begins 1 April for 1948 to 1951; 1 July for 1952 to 1962.

1948-1949 figures exclude exports to India.

Bibliography

Ahmed, N., An Economic Geography of East Pakistan, London, 1958

Bauer, P.T. and Paish, F.W., " The Reduction of Fluctuations in Incomes of Primary Producers," in the Economic Journal, December, 1952 and 1954.

Bauer, P.T. and Yamey, B.S., " Organised Commodity Stabilisation with Voluntary Participation," in Oxford Economic Papers, March, 1964.

Bruton, H.J. and Bose, S.R., The Pakistan Export Bonus Scheme, Karachi, 1962.

Chacko, G.K., International Trade Aspects of Indian Burlap : An Econometric Study, N.Y., 1961.

Chatterjee, T.P. and Sinha, A.R., " A Statistical Study of Foreign Demand for Raw Jute," Sankhya, December, 1941.

Clark, R., " The Economic Determinants of Jute Production in India and Pakistan," FAO, Monthly Bulletin of Agricultural Economics and Statistics, September, 1957.

Commonwealth Economic Committee, Industrial Fibres, London.

_____, Jute Manufactures : A Memorandum on Production, Prices and Trade, London, 1955.

Dacca University Socio-Economic Research Board, Marketing of Jute in East Pakistan, Dacca, 1961.

Economic Commission for Asia and Far East (U.N), " Devaluation, Price Movements and Changes in External Trade in ECAFE countries," in Economic Bulletin for Asia and Far East, 2nd. Qr., 1950.

Food and Agricultural Organisation (U.N.), A Reconsideration Of the Economics of the International Wheat Agreement, Commodity Policy Study No. 1, Rome, 1952.

_____, Jute : A Survey of Markets, Manufacturing and and Production, Bulletin No. 28, Rome, 1957.

_____, Monthly Bulletin of Agricultural Economics and Statistics, September, 1957; February, 1958; July - & October, 1958; December, 1960; January, 1961; March, 1962; January, 1963.

_____, An Enquiry into the Problems of Agricultural Price Stabilisation and Support Measures, Rome, 1960.

_____, "Agricultural Commodities Projections for 1970", Commodity Review, 1962.

_____, " Jute Goods Available for Home Use ", Statistical Supplement, (mimeo.), 1962.

_____, Post-war Trends in the Production of Jute, Kenaf and allied Fibres, (mimeo), July, 1964.

_____, Trade in Agricultural Commodities in the U.N. Development Decade, Rome, 1964.

Friedman, M., " The Reductions of Fluctuations in the Incomes of Primary Producers," Economic Journal, December, 1954.

General Agreement on Tariffs and Trade, Trends in International Trade - A Report by a Panel of Experts, Geneva, 1958.

_____, Background Information on Jute Manufactures, March, 1960.

Haq, M., The Strategy of Economic Planning - A Case Study of Pakistan, Karachi, 1963.

Harberger, A.C., " A Structural Approach to the Problem of Import Demand," American Economic Review, May, 1953.

International Labour Organisation, Report to the government of Pakistan on a Productivity Survey Mission in the Jute Industry, Geneva, 1960.

Indian Jute Mills Association, Annual Report.

Indian Central Jute Committee, Annual Report.

Government of India, Report of Jute Enquiry Committee, Delhi, 1957.

Kundu, B.C.,and others, Jute in India, Calcutta, 1959.

Kyklos, Symposium on Trade Fluctuations and Buffer Policies of Low Income Countries, Bern, 1958 and 1959.

Macbean, A.I., " Problems of Stabilisation Policies in Underdeveloped Countries," Oxford Economic Papers, October, 1962.

Mathur, P.N. and Ezekiel,H, " Marketable Surplus of food and Price Fluctuations in a developing Economy," Kyklos, vol. XIV, Fasc. 3, 1961.

Myrdal, G., An International Economy, London, 1956.

Nurkse, R., Patterns of Trade and Development, 1959.

_____, " Trade Fluctuations and Buffer Policies of Low Income Countries," Kyklos, vol. XI, 1958.

Government of Pakistan, Balance of Payments (1948-50), Karachi, 1951.

_____, Foreign Trade Statistics of Pakistan, vol. I, Karachi, 1961.

_____, Basic Facts, Rawalpindi, 1963.

_____, First Five Year Plan (1955-60), Karachi, 1957.

Second Five Year Plan (1960-65), Karachi, 1960.

Third Five Year Plan (1965-70), Outline, 1964.

Government of Pakistan, Census of Pakistan, 1961.

———, Census of Agriculture, 1960

———, Census of Manufacturing Industries (1959-60).

———, Credit Enquiry Commission Report, 1959.

———, Jute Enquiry Commission Report, 1960.

———, Pakistan Statistical Year Book, 1962.

———, Statistical Bulletin, various issues.

———, Major Commodities Of Pakistan - A Review, 1960.

———, National Sample Survey, 1959.

———, Pakistan Central Jute Committee, Report on Survey of Cost of Production in East Pakistan, Dacca, 1962.

———, Pakistan Trade, March, 1955.

———, Agricultural Production Levels of East Pakistan, Dacca, 1961.

———, Monthly Summary of Jute and Statistics, Dacca.

Nerlove, M., " Distributed Lags and Demand Analysis for Agricultural and other Commodities," U.S. Dept. of Agriculture, June, 1958.

Nerlove, M. and Addison, W., " Statistical Estimation of Log-run Elasticities of Supply and Demand, " Journal of Farm Economics, November, 1958.

Porter, R.C., " The Inflationary Implication of Crop Failure," Pakistan Development Review, Spring, 1962.

Qayum, A., Theory and Policy of Accounting Prices, North-Holland Publishing Co., 1960.

Rabbani, A.K.M.G., Jute in the World Economy : A Statistical Study, (unpublished Ph;D. dissertation, University of London, 1964.)

Rajkrisshna, " Farm Supply Response in India-Pakistan : A Case Study of the Punjab Region," Economic Journal, September, 1962.

Reserve Bank of India, Currency and Finance, 1953-54.

Robertson, W., "The Tin Experiment in Commodity Market Stabilisation," Oxford Economic Papers, Oct., 1960.

Schultz, T.W., ~~Changing~~ Transforming Traditional Agriculture, 1964.

Shorter, F.C., "Jute Production Policies of India and Pakistan," Indian Economic Journal, July, 1955.

Singer, H.W., "Distribution of Gains between Borrowing and Investing Countries," American Economic Review, May, 1950.

State Bank of Pakistan, Report on Currency and Finance.

Stern, R.M., "The Price Responsiveness of Primary Producers," Review of Economics and Statistics, May, 1962.

U.N.,Department of Economic Affairs, A Study of Trade Between Asia and Rmx Europe, Geneva, 1953.

_____, Measures forInternational Economic Stability, N.Y., 1951.

_____, Commodity Trade and Economic Development, N.Y., 1953.

_____, Year Book of International Trade.

_____, Instability in the Export Markets of Underdeveloped Countries, N.Y., 1952.

Viner, J., International Trade and Economic Development,