

RESEARCH REPORT NO. 62

INTER-INDUSTRY RELATIONS IN EAST PAKISTAN
1962/63

by

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Author's Note

As the reader of this report will soon discover the results are frequently qualified and caution is urged in their use. This not only reflects the relatively weak statistical basis from which the present ambitious attempt to construct an inter-industry table for East Pakistan began but the fact that the construction of such a table calls for a broad range of knowledge not usually found in any one person or even any one department of the government. Consequently there is a need to present even these tentative results to a broader audience in the hope that others, whose scope of information may cover areas not known to the author, can contribute additional information which can be incorporated in a revision of the input-output table. At the risk of being repetitive to the point of becoming boring, it should be added again that the present draft is for comments only and the information and results contained herein are likely to undergo substantial revision. The material is neither to be used nor quoted without specific written permission of the author or the Institute.

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Preface

The construction of an inter-industry table is not generally considered to be a 'one-man' job and the present effort is no exception to this rule. Many persons were at some time during the past year involved in various aspects of the tedious task of data gathering and checking which underly the East Pakistan input-output table. Although they are too numerous to list individually, I acknowledge the debt I owe to each of them. In addition I have freely drawn upon the work done by others in analyzing and presenting in coherent form some of the statistical series available in Pakistan. Every effort has been made to note such borrowing at the appropriate places in the text but I apologize in advance for any omissions.

Work on input-output analysis in Pakistan was begun in 1963 by advisors of the Harvard University Development Advisory Service working in the Planning Commission in Karachi. Although these first crude efforts (crude even when compared to our present work) were successfully used in a number of planning techniques, most notably the development of a growth model for the Third Five Year Plan, it soon became apparent that a drastic revision of the tables was required. Even more important, it was felt that account had to be taken of the regional character which permeates all planning in Pakistan because of the oft mentioned peculiar geographic situation that characterizes that country. Out of these needs grew a project to develop two regional tables based on the latest available statistics.

The Pakistan Institute of Development Economics agreed to undertake a part of this effort. It was during my stay at the Institute that the bulk of the work on the East Pakistan table

was completed. Needless to say, final responsibility for the resulting tables and for any conclusions remains of course with the author. At the same time, it is also true that without the assistance of the Institute staff this work could not have been completed.

As even a cursory review of the statistical data underlying these tables will show, much work remains to be done. At best the present effort is a first and rather tentative step in what one hopes will one day become a thorough analysis of the inter-industry structure in East Pakistan. If the present effort can serve the dual purpose of pointing out the desperate need to collect more accurate data, and to give other economists in Pakistan the impetus to carry on studies in the field of input-output analysis, some positive contribution will have been made.

A word of caution should be added to those expecting to find here an analysis of the inter-industry relations in East Pakistan. Such was not the purpose of this work. Rather it has as its more modest aim to present the methods employed in deriving the input-output tables and to list the variety of sources used. As such it should prove helpful for those who wish to continue to improve or to use the tables. An application of these tables to economic problems of planning in East Pakistan hopefully will be forthcoming soon.

CHAPTER 1.

INTRODUCTION

'Input-output analysis involves mathematics scarcely beyond simple arithmetic ... /The/ usefulness of results depends more on /the/ unromantic process of assembling data than on any intricacies of mathematics.'

Linear Programming Methods
Heady and Candler

A not uncommon phenomena of countries experiencing economic growth is the creation of disparities between the fortunes of various areas of the country. At times these areas have been identified as the urban centers and the rest of the country. More recently, with an increasing interest in the problems of regional planning in developing economies^{1/} and the revival of interest in regional economics itself^{2/}, the discussion of the problem of what might be called "economic dualism" has tried to emphasize not only the urban-rural dichotomy but to define regions more operationally. Three definitions have been put forward. The first emphasizes homogeneity with respect to some one or combination of physical, economic, social or other characteristics. The second stresses nodality or polarization, usually around some central urban place. The third is the programming or policy oriented definition, concerned mainly with administrative coherence or identity between the area being studied and available political institutions for implementing policy decisions.

^{1/} The development plans for the Mezzogiorno in Italy, the Guayana of Venezuela, the Amazonia North in Brazil, the Patagonia region of Argentina, and the Aisen province in Chile, are among the major examples of recent regional planning.

^{2/} For a summary of recent developments in the field of regional economics, see /1/.

In practice, however, the regional definitions used represent a compromise between these ideal definitions. The availability and limitations of data, more often than not, govern the definition of a region finally adopted. Given this limitation perhaps the most useful definition of a region for the purpose of economic analysis was given by Fisher when he suggested that,

... the most helpful region in many instances is what might be called the economic development region ... /where/ ... the emphasis is on the development of policies, programs and actions /designed/ to move the region from where it is economically toward predetermined economic objectives.

/2/

This concept of an economic development region is particularly useful for analyzing the problems of regional planning in Pakistan, where the need for such planning is of utmost importance. The partition of the sub-continent and the creation of Pakistan left the two provinces, East and West Pakistan, as physically distinct units, separated by over a thousand miles. This makes the identification of the provinces with regions nearly unavoidable.^{3/} Even more important, however, is the fact that the two provinces are differentiated in terms of area, population, climatic conditions, and, to some extent, by resource endowments /3/.

Although the process of partition itself was a factor in accentuating disparity between the two regions /4/, /5/, the process of economic growth has made the problem even more acute and political, and economic attention has been increasingly focused on the question of economic dualism. The Constitution of March 1962, for example, provides that the Government

^{3/} It is, of course, possible and indeed for some purposes practical and necessary, to define regions within each province. But as a minimum each province is usually considered a region.

should allocate resources in such a manner as to remove the disparities in "income per capita ... /between the two Provinces/ ... in the shortest possible time." /5/^{4/}. More concretely, the Third Five Year Plan states that "we are firmly committed to eliminate disparities in per capita income in the shortest possible time and that this has been made a specific objective of the Perspective Plan (1965-1985). The current disparity in per capita income of East and West Pakistan has to be completely removed over the next twenty years, preferably in a shorter period." /6/

The identification of the two provinces with what we have previously described as "the economic development region" seems to be very close. There is a definite emphasis on the development of policies and programs designed to achieve an economic objective, in this parity in per capita incomes. More important, perhaps, is the fact that because of the physical separation of the two provinces a number of pre-conditions for successful regional analysis are also fulfilled. Not only are the regions policy oriented, and to some extent homogeneous, in terms of the definitions previously used, but a large body of statistical data is available separately for each province.

Nevertheless, although there is an increasing tendency to take account of the regional impact of development plans and other policy measures in Pakistan, no explicit formulation of a regional planning model has so far been attempted.^{5/}

^{4/} The Constitution also provides for the removal of disparities between regions within each province but the discussions of economic disparity have, for a variety of reasons, tended to emphasize only the inter-provincial aspects to date.

^{5/} Some theoretical work on regional planning for Pakistan has however been undertaken. See /7/ and /8/.

The Growth Model for the Third Five Year Plan /9/ concentrates on achieving a consistent macro-economic framework for the Third Five Year Plan, but only on an all-Pakistan basis. Porter, in pointing out the extensions of the Tims model which would be desirable, stated that "the fact that Pakistan consists of two geographically distinct regions cannot continue to be neglected in such models. Not only are there special technological and transportation problems as a result of the geographic separation, but also the goals of the Plans are, and will continue to be, stated in terms of regional income targets."

/10/

It is expected that the work on a regional input-output table for East Pakistan, presented here, will form the core of further work on developing a regional planning model for Pakistan. No attempt will be made to develop such an analysis here. Our primary concern is to present the input-output table for East Pakistan and to provide a full description of its construction with a view to aiding those who wish to undertake further work in the field of regional economics in Pakistan. Although the scope of the present work is therefore limited, we nevertheless feel that it is of prime importance to those who wish to apply these results with any degree of understanding.

CHAPTER II.

GENERAL STRUCTURE AND SECTIONAL SPECIFICATIONS.

2.1 The Structure of the Table

There are major advantages in approaching the problem of regional planning through the use of inter-industry analysis. Not the least of these is the fact that during the past few years a substantial amount of research work has already gone into the construction of various input-output tables for Pakistan.^{1/} More important, however, is the fact that an input-output model is capable of describing the links between the economies of the regions in specific and concrete terms. The more traditional approach to analysing the inter-action between two economies is to concentrate on their aggregative indicators. Input-output analysis however is capable of describing the links between each industry, or producing sector, in one region to all other sectors in all other regions.

The first interregional input-output model was suggested by Leontief /12/. His approach relies on a single national table while the regional aspects are incorporated into the analysis by considering two classes of commodities: national and regional. The advantage of this approach is that it makes relatively fewer demands on data availability and computational needs than alternative regional input-output models. The result of relying on a single "national" table however, is to embody the implicit assumption that changes in national or total final demand are reflected proportionally in all regions. This assumption appears to be unduly restrictive for purposes of regional planning. The Leontief regional model is, on the other hand, useful for analyzing the effect of changes in "national" final demand on the projections of regional final demand.

^{2/} For a review of past work in this field, see /11/.

An alternative approach suggested by Isard /13/ and elaborated by Moses /14/ seems to be more suitable to regional planning, especially in Pakistan. This model allows for the determination of the national implications of regional projections. Clearly the problem of achieving a higher relative rate of growth in one province of Pakistan than in the other, an apparently necessary condition for removing regional income disparity, makes it desirable to have a model that emphasizes regional projections as a first step and relates these regional projections to the national final demand.

The Isard-Moses approach uses distinct technical matrices for each region. These matrices are related through separate trade matrices, allowing the production in any sector to be related to the activity levels in all other regions of the economy. A necessary condition is, therefore, that each commodity is considered distinct from the same commodity in any other region.

Given n regions and m goods and services, the allocation of the output ${}_k X_i$ of any industry i in any region k to each industry in each region is given by:

$${}_k X_i - k_2 X_{i1} - k_1 X_{i2} - k_1 X_{i3} \dots - k_2 X_{i1} - k_2 X_{i2} - k_2 X_{i3} \dots - k_1 X_{ij} \dots - k_n X_{in} = {}_k Y_i \quad (2.1)$$

Where ${}_k Y_i$ is the final demand (bill of goods) for the output of industry i in region k and ${}_k X_{ij}$ is the amount of output of industry i in region k absorbed by industry j in region l .

More generally,

$${}_k X_i - \sum_{l=1}^{l=n} \sum_{j=1}^{j=m} k_l X_{ij} = {}_k Y_i \quad (2.2)$$

$$i = 1; 2; 3; \dots m$$

$$k = 1, 2, 3, \dots n$$

Assuming constant production coefficients, the technical coefficients, k_{ij} , are given by:

$$k_{ij} = \frac{X_{ij}}{X_j} \quad (2.3)$$

$$\begin{aligned} i, j &= 1, 2, 3, \dots, m \\ k &= 1, 2, 3, \dots, n \end{aligned}$$

Equation (2.2) in terms of technical input coefficients and total outputs becomes:

$$\sum_{j=1}^n k_{ij} X_j = Y_i \quad (2.4)$$

$$i = 1, 2, 3, \dots, m$$

$$k = 1, 2, 3, \dots, n$$

Since we are at present only concerned with the inter-industry structure of one region, equation (2.1) can be rewritten as:

$$\begin{aligned} X_i &= 11X_{i1} + 11X_{i2} + 11X_{i3} + \dots + 11X_{im} + \sum_{j=1}^m 12X_{ij} \\ &= Y_i \end{aligned} \quad (2.5)$$

$$\begin{aligned} i &= 1, 2, 3, \dots, m \\ k = 1 &= \text{East Pakistan} \\ k = 2 &= \text{West Pakistan} \end{aligned}$$

Where $1X_i$ is the total output of industry i in East Pakistan (region 1); $11X_{ij}$ is the delivery of intermediate inputs from industry i to industry j in East Pakistan; $12X_{ij}$ is the delivery of inputs from industry i in East Pakistan to industry j in West Pakistan (region 2) and $1Y_i$ is the final demand in East Pakistan for the output of industry i .

The Y's require a special interpretation. As presently defined, the term "final demand" corresponds to that in national input-output systems, that is, the demands by sectors in each region which is exogenous to the system. No functional relationships are formulated for the components of this final demand; e.g., exports, consumption, investment; within the input-output framework. Alternatively, we can define final demand as consisting of both the usual final demand, Y , and the need for industry i in region 1 to meet the requirements of intermediate inputs by all industries in region 2 of

products produced by industry i . Using Z to represent this alternative definition of final demand, we have:

$${}_1Z_i = {}_1Y_i + \sum_{j=1}^m {}_12X_{ij} \quad (2.6)$$

$i = 1, 2, 3, \dots, m$

and we can restate equation (2.5) as:

$${}_1X_i = {}_11X_{i1} + {}_11X_{i2} + {}_11X_{i3} + \dots + {}_11X_{im} = {}_1Z_i = {}_1Y_i + \sum_{j=1}^m {}_12X_{ij} \quad (2.7)$$

$i = 1, 2, 3, \dots, m$

In effect the last term ($\sum_{j=1}^m {}_12X_{ij}$) of equation (2.7) represents the aggregation over the columns of the regional trade matrix applicable to West Pakistan (region 2), to obtain an additional export column for the final demand of East Pakistan; that is, the demand for regional exports. The demand for regional exports cannot be taken as exogenously determined in the formulation of a regional model. It will, instead, depend at least on the activity levels for each industry in the other region. The present formulation, however, greatly facilitates the presentation of the regional input-output table for East Pakistan alone.

It is important to note that the structure of the regional table, as given by equation (2.7), in no way reduces the possibility of using the two regional tables^{2/} in a general regional programming model. The table for East Pakistan includes a full regional import sub-matrix, showing imports from West Pakistan by sectors of origin and destination, while the West Pakistan table has a similar import sub-matrix for regional imports from East Pakistan. The use of these two tables, each with their own sub-matrices for regional imports, will permit us to move from the formulation as given

^{2/} An input-output table for West Pakistan has been prepared by the Planning Commission.

in equation (2.7) to the more general structure of equation (2.1.).

2.2. Sectoral Specification.

The scheme of classification has to be decided at the outset. A number of factors influence the decision on what the sectoral specification should be. In general it has been found that tables of approximately sixty sectors are adequate for most analytical purposes. On the other hand, since it is much easier to aggregate a matrix than it is to disaggregate one, it is desirable to present as much detail as possible at the outset. In addition, the initial choice of a classification scheme will, to a considerable extent, determine the applicability of the results to any further investigation. Against these factors one has to weigh the availability of data.

For the analysis of the inter-industry structure of East Pakistan in 1962/63 we have specified sixty-two sectors.^{3/} The majority of these, 49, deal with large scale manufacturing. Although large scale manufacturing accounted for only about four percent of the gross provincial product of East Pakistan in 1962/63 /15/, the decision to present this part of the economy in such detail reflects the availability of data from the most recent census of manufacturing. Small scale industries, however, which accounted for only slightly less of the gross provincial product in 1962/63, is represented by only one sector.^{4/} This again reflects the problem of data availability, albeit

^{3/} The definition of large scale manufacturing is discussed in Chapter III.

^{4/} This is not entirely correct. Although only one sector is called "small scale manufacturing" two sectors, shown in the large scale manufacturing part of the table, are normally considered small scale manufacturing enterprises. See Chapter III.

a negative aspect. Of the remaining sector, four are devoted to agriculture and one each to mining; construction; electricity, gas, water and sanitation services; transportation, trade; banking and insurance; government services and all other services, including ownership of dwellings. The sectors are listed in Table 2.1.

In addition to the limits which data availability have placed on the degree of disaggregation, certain sectors have been included in order to make it possible to link the present table to the West Pakistan table. Thus among the four sectors devoted to agriculture, one (cotton growing), has been included, not because of its importance to agriculture in East Pakistan, but because of the major role it has in West Pakistan agriculture. Among the large scale sectors, three (salt processing; products of coal and petroleum refining; sports goods), do not exist in East Pakistan as large scale manufacturing enterprises but their inclusion as "dummy sectors" has been necessitated by the need to make the regional tables comparable.

The table is defined to be at purchaser's (market) prices. All services on the final product -- such as transport charges, trade margins -- are shown as inputs for the sector producing the final product. The treatment of foreign and regional trade has been modified somewhat from the procedure usually followed in inter-industry analysis so as to allow the presentation of imports at both their cif and market prices. This procedure was adopted to provide for a variety of possible uses of the table.

At the bottom of the table there are two separate rows for imports, one for foreign imports and one for regional imports. These show the cif value of imports while the transport costs and trade margins on these imports have been combined with the transport and trade inputs on domestic output. See Appendix

TABLE 2.1.

Sectoral Specification

<u>No.</u>	<u>Sector Number</u>	<u>Description</u>
1.	0101	Jute growing.
2.	0102	Cotton growing.
3.	0103	Agriculture, nes.
4.	0104	Rice growing.
5.	0200	Mining and quarrying
6.	0301	Canning and preserving of fruits, vegetables and dairy products.
7.	0302	Grain milling.
8.	0303	Rice milling.
9.	0304	Bakery and confectionary products.
10.	0305	Sugar refining.
11.	0306	Edible oils.
12.	0307	Tea blending and processing.
13.	0308	Salt processing.
14.	0309	Alcoholic beverages.
15.	0310	Non-alcoholic beverages.
16.	0311	Cigarettes and tobacco products.
17.	0312	Bidi manufacturing.
18.	0401	Cotton textiles (mill-made).
19.	0402	Woollen textiles.
20.	0403	Jute textiles.
21.	0404	Silk and art-silk products.
22.	0405	Finishing of textiles.
23.	0406	Knitted goods.
24.	0407	Thread and thread ball making.
25.	0408	Footwear (except rubber footwear).
26.	0409	Wearing apparel (except footwear).
27.	0410	Umbrella making.
28.	0411	Handloom products.
29.	0500	Wood, cork and furniture
30.	0601	Paper and paper products.
31.	0602	Printing and publishing.
32.	0701	Leather tanning and finishing.
33.	0702	Leather goods (including leather footwear)
34.	0800	Rubber products (including rubber footwear)
35.	0901	Chemical fertilizers.
36.	0902	Paints, varnishes and polishes.
37.	0903	Perfumes, cosmetics and soaps.
38.	0904	Matches.
39.	0905	Pharmaceuticals.
40.	0906	Industrial chemicals, nes.
41.	1000	Products of coal and petroleum refining.
42.	1100	Non-metallic minerals.
43.	1200	Basic metals.
44.	1300	Metal products.
45.	1400	Non-electrical machinery.
46.	1500	Electrical machinery.
47.	1600	Transport equipment.
48.	1701	Photographic and optical goods.
49.	1702	Plastic products.
50.	1703	Sports goods.
51.	1704	Manufacture of ice.
52.	1705	Cotton ginning.
53.	1706	Jute baling.
54.	1707	Manufacture of pens, pencils, office equipment and miscellaneous industries.
55.	1800	Construction.
56.	1921	Small scale industries.
57.	2200	Electricity, gas, water and sanitation services.
58.	2300	Transport services.
59.	2400	Wholesale and retail trade.
60.	2500	Banking and insurance.
61.	2600	Government services (including central govt.).
62.	2730	Services, nes.

N.B. nes: not elsewhere specified

Table C.1. It is however possible to obtain imports at their market value.

The two trade matrices show imports by sectors of origin and destination at their cif value but also show separately the transport charges and trade margins on these imports. If imports are to be taken at their market values, the transport costs and trade margins on imports must be added to the import flows at cif prices. In order to allow the use of imports at market prices in conjunction with the domestic flow tables, the transport charges and trade margins on the imports into any sector then must be subtracted from the transport charges and trade margins on the domestic output.

More succinctly, if x_{ij} are the domestic deliveries from industry i to industry j and if industry β is the transport or trade sector, the delivery from β to industry j is the gross value of output of the j^{th} industry then:

$$\sum_{j=1}^n x_{ij} + F_j^M + R_j^M + D_j^T + M_j^T + W_j = X_j \quad (2.8)$$

where: $\sum_{j=1}^n M_j^T$ is the total imported inputs into industry j at cif prices; D_j^T is the total indirect taxes paid on domestic output of industry j ;

M_j^T is the total indirect taxes paid on imported inputs used by industry j ;

W_j is the value added in industry j .

and the subscripts F and R indicate foreign and regional imports respectively. If we define V_j as the transport charges on imports used by industry j and u_j as the trade margins on imports used by industry j then equation (2.8) can be changed to:

$$\sum_{j=1}^n X_{ij} - F_j^V - R_j^V - F_j^u - R_j^u + F_j^{M*} + R_j^{M*} + D_j^T + M_j^T + W_j = X_j \quad (2.8a)$$

where the * indicates the imports are now valued at their market prices.

One additional consequence arising from the "dual" treatment of imports is that certain parts of the table which

ordinarily would not show either transport or trade inputs when output is valued at market prices do so when imports are given at their cif prices. For example, the demand for transport and trade services shown in the "investment" and the "changes in stock" columns of final demand reflect the difference between the cif value of imported investment goods and their market value or the transport charges and trade margins on imported goods currently held as stocks. Finally, the demand for transport services in the consumption column reflects both the demand by consumers of transport services and the transport cost on imported consumer goods, while the delivery of trade services to the consumption column are the trade margins on imported consumer goods.

Imports of goods have all been treated as "non-competitive" even in those cases where an alternative treatment was called for. Aside from certain commodities which are obviously competitive, the decision on what imports are to be classified as competitive or non-competitive will depend, to some extent, on the time horizon of the problem for which the table is used. For East Pakistan at present most imports would be classified as non-competitive in any case, but with use of Appendix Tables B.1 and B.2 showing the distribution of imports, it is possible to regroup imports into competitive and non-competitive categories. Service imports are however treated as competitive even at this stage.

As has been shown in equations (2.8) and (2.8a) indirect taxes domestic output and foreign imports are shown separately in a row at the bottom of the table so that the column totals (gross value of product) are expressed at purchasers' (market) prices regardless of whether imports are valued at cif or market prices.

CHAPTER III.

OUTLINE OF THE METHODOLOGY OF ESTIMATING INPUTS AND OUTPUTS

3.1. Introduction

Discussion of the detailed estimation of sectoral inputs and outputs is reserved for the succeeding chapter. Here we merely wish to concentrate on the general procedure followed and to highlight some of the problems which were applicable to all, or most, sectors. As the single most important source for estimating total (domestic plus imported) inter-industry flows, is the Census of Manufacturing Industries for 1962/3, (CMI) /16/, this will be discussed first. The CMI for Pakistan suffers from a number of shortcomings and for this reason the construction of an input-output table for Pakistan must rely heavily on the information available from the trade statistics. The tabulation of the import sub-tables, regional as well as foreign, is therefore described in some detail. Finally a brief description is given of some of the other sources of information and the procedure used to bring all these sources into a consistent whole.

3.2. The Census of Manufacturing Industries (CMI)

The CMI for 1962/63 was the seventh census of manufacturing held in Pakistan. The census is supervised by the Central Statistical Office of the Government of Pakistan (CSO), but is conducted by the provincial statistical organizations and tabulated separately for East and West Pakistan. The census relates to a specific fiscal year (July to June) and covers all manufacturing activities omitting other industrial activities such as mining and construction.^{1/} Government or semi-government owned enterprises are included but defence and railway workshops are omitted.

^{1/} In the past the CMI has also omitted "electricity" generation, but in East Pakistan for 1962/63 some attempt at including such units was made.

The definition of factories covered in the CMI raises a first problem. Factories in Pakistan are required to register under the Factories Act of 1934.^{2/} The Factories Act defines large scale factories as those which employ 20 or more worker on any day during the year and use power in their manufacturing process. Such factories are registered under Section 2(j) of the Act. Factories using ten or more persons with or without the use of power are registered under Section 5(i).^{5/}

In the past, the CMI has only covered large scale manufacturing and the national accounts /17/ have lumped all other manufacturing in a category called "small scale manufacturing". The CMI for 1962/63 covered both large and medium scale factories for the first time. In addition, it carried out a special survey of hand loom industries and bidi manufacturing.^{4/} This increase in the scope of the latest CMI leaves the definition of small scale manufacturing rather uncertain. Although a survey of small scale manufacturing is available for 1960/61, /18/, the definition of the establishments covered in this survey is based on the value of fixed assets rather than on employment size or use of power. It is therefore impossible to say how far the CMI and the survey of small scale overlap, or leave gaps, in their coverage.^{5/} We have accepted the results of the survey of small scale industries as being more or less accurate but have subtracted from it all medium scale manufacturing, covered by the CMI, as well as the

^{2/} The degree to which factories do register is an open question. On the one hand registration means that the factory owner is liable for payment of a variety of taxes and is burdened with implementing a number of provisions relating to working conditions. Weighing against these "negative" aspects is the fact that only duly registered factories can, legally, apply for import licenses, electricity connections, etc. Obviously, if the costs involved in registering outweigh the benefits which accrue from obtaining a variety of permits through legal channels, the factory owner will prefer to operate without being registered. The extent to which factories avoid registration is a moot question.

^{3/} Factories registered under Section 5(i) will be referred to as medium scale factories here.

^{4/} Bidis are a local variety of hand rolled cigars.

^{5/} One part of small scale industry definitely omitted from the table is "cottage industry" defined as manufacturing carried on wholly or largely by members of a household. A survey on cottage industries became available only after the work on the present table was completed.

handloom industry.^{5a/} The remainder we have taken as small scale manufacturing thus implicitly assuming, as do the national accounts, that despite definitional differences, all industries are included.

Industries are grouped; for the purpose of the census, according to their major output, into Pakistan Standard Industrial Classification (PSIC) categories. Table 3.1 gives the correspondence between the PSIC groupings and the sectoral specifications used for the inter-industry table.

Analysis of past CMI's /25/, /26/, /27/, /28/, have shown that they consistently suffer from a downward bias. Aside from the problem of factories which may have been in operation but failed to register, two sources leading to a downward bias can be readily identified; non-response to the census questionnaire by firms both registered and in operation and deliberate falsification of submitted returns.^{6/}

To take the latter factor first. Given the suspicion by industrialists that the CMI returns will be used as a check on their tax returns, they have a built-in incentive to understate their output figures. At the same time, since most imports of industrial raw materials are severely licensed, there may be a tendency to overstate the cost of inputs if industrialists suspect that the information they supply may be used as a basis for granting import licenses. The result is therefore to introduce a tendency to understate the gross value of output and to overstate use of inputs. To some extent this can be checked by comparing the reported production data against similar

5a/ We have not subtracted bidi-making from the Small Scale Manufacturing Survey as such establishments were definitely omitted from the survey /18/.

6/ Although there are undoubtedly other errors in the returns, by respondents who failed to understand the questions or who do not have accurate records on which to base their replies, we cannot assume that such errors would introduce a consistently downward bias.

TABLE 3.1

Factories Classified According to PSIC Code and Input-
Output Classification

<u>I-O Sector No.</u>	<u>Input-Output Sector Name</u>	<u>PSIC No.</u>	<u>PSIC Description</u>
0301	Canning and preserving	2020 2030 2099	Manufacture of dairy products Canning and preserving of fruits and vegetables Miscellaneous food preparations, nec
0302	Grain milling	2051 2059	Grain milling (except rice) Grain mill products, nec
0303	Rice milling	2052	Rice milling
0304	Bakery and confectionery products	2060 2080	Manufacture of bakery products Manufacture of cocoa, choco- late and sugar confectionery
0305	Sugar refining	2070	Sugar factories and refineries
0306	Edible oils	2091	Edible oils and fats
0307	Tea blending and processing	2092	Tea blending and processing
0308	Salt refining	2095	Salt
0309	Alcoholic beverages	2110	Distilling, rectifying and blending of spirits'
0310	Non-alcoholic beverages	2140	Manufacture of soft drinks and carbonated water
0311	Cigarettes and tobacco products	2210	Cigarettes
0312	Bidi manufacture	2220	Cigars, cheroots and bidis
0401	Cotton textiles (mill made)	2311	Cotton textiles
0402	Woollen textiles	2316	Carpets and rugs
0403	Jute textiles	2313	Jute textiles
0404	Silk and art-silk products	2314	Silk and art-silk
0405	Finishing of textiles	2317	Dyeing, bleaching, finishing of textiles
0406	Knitted goods	2320	Knitting (hosiery)
0407	Thread and thread ball making	2318	Manufacture of narrow fabrics and other small ware
0408	Footwear (except rubber footwear)	2411	Manufacture of footwear (except rubber footwear)
0409	Wearing apparel (except footwear)	2440	Manufacture of wearing apparel (except footwear)
0410	Umbrella making	2430	Manufacture of made-up textiles (except wearing apparel)

-(17a):-

<u>I-O Sector No.</u>	<u>Input-Output Sector Name</u>	<u>PSIC No.</u>	<u>PSIC Description</u>
0411	Handloom products	-	
0500	Wood, cork and furniture	2510 2511 2611	Saw Milling Plywood and plywood products Wood furniture
0601	Paper and paper products	2710	Manufacture of pulp, paper board and articles of paper
0602	Printing and publishing	2810 2820	Printing and publishing of newspaper Printing and publishing of books, periodicals, maps, etc.
0701	Leather tanning and finishing	2910	Tanning and leather finishing
0702	Leather goods	2920	Manufacture of leather products
0800	Rubber and rubber products	3090	Miscellaneous rubber products
0901	Chemical fertilizer	3114	Manufacture of fertilizer
0902	Paints, varnishes and polishes	3131 3132	Paints, varnishes and lacquers Polishes
0903	Perfumes, cosmetics and soaps	3150 3160	Perfumes, cosmetics and toilet preparations Soaps; washing and cleaning compounds
0904	Matches	3191	Matches
0905	Pharmaceuticals	3140	Medicinal and pharmaceutical preparations
0906	Industrial chemicals, etc.	3119 3120 3192 3199	Basic industrial chemicals Non-edible vegetable and animal oils and fats Disinfectant and insecticides Miscellaneous chemical products nec
1000	Products of coal and petroleum refining	32	Manufacture of coal and petroleum products
1100	Non-metallic minerals	3310 3320 3340 3391	Manufacture of structural clay products Manufacture of glass and glass products Manufacture of cement Concrete, gypsum and plaster products

<u>I-O Sector No.</u>	<u>Input-Output Sector Name</u>	<u>PSIC No.</u>	<u>PSIC Description</u>
1200	Basic metals	3410	Iron and steel basic forms
1300	Metal products	3520	Metal stamping, printing, coating, electroplating
		3551	Cutlery
		3591	Utensils
		3592	Metal barrels, drums and pails
		3593	Tin cans and tinware
		3594	Safes, vaults and trunks
		3599	Miscellaneous fabricated metal products ^{a/}
		3645	Printing trades machinery
1400	Non-electrical machinery	36	Machinery, except electrical machinery ^{a/}
1500	Electrical machinery	3720	Electrical appliances
		3750	Communication equipment and accessories
1600	Transport equipment	3800	Manufacture of transport equipment
		3811	Ship building and repairs
		3850	Manufacture and repair of non-mechanized propelled vehicles
1701	Photographic and optical goods	3921	Photographic equipment
		3922	Optical goods
1702	Plastic products	3940	Manufacture of plastic products
1703	Sports goods	3971	Manufacture of sports and athletic goods
1704	Manufacture of ice	3991	Manufacture of ice
1705	Cotton ginning	3981	Cotton ginning and pressing
1706	Jute pressing	3982	Jute pressing
1707	Manufacture of pens, pencils, office equipment and miscellaneous industries	3960	Manufacture of musical instruments
		3992	Manufacture of pens, pencils, office and artists' material
		3990	Other miscellaneous manufacturing
2 2200	Electricity, gas, water and sanitation services	3995	Water purification Electric light and power generation

^{a/} Included in sector 1300 since output in 1962/63 consisted only of printing type and no printing machinery.

Source: /24/.

independent data supplied by the Central Board of Revenue (CBR). The CBR data, however, is limited in scope, referring only to excisable commodities. Additional sources of information are the reports of various trade organizations and the index of industrial product. (See Appendix C) However, the most important independent set of data is provided by the trade statistics as discussed in Section 3.3.

The question of a downward bias due to non-response was the subject of a special survey by the CSO relating to the CMI of 1959/60 /28/. Out of the total number of firms that had failed to respond to the original survey questionnaire, 95 (22%) were found to have been registered under Section 2(j) of the Factories Act and were firms that should have been included in the original CMI. The understatement of the value added in manufacturing in East Pakistan, due to non-responding firms, was 9.2%. Non-response alone thus seems to have been an important factor in contributing to the downward bias of the CMI results.

Pending a similar follow-up survey for the CMI 1962/63, we can make only a tentative analysis of the undercoverage. Appendix Table A.1 shows the number of factories registered and reporting to the CMI in 1962/63. The results are summarized below.

Out of the total number of factories registered, 2,300 were in operation and of these 16% failed to respond. We can tentatively conclude that non-response was again a major factor in any downward bias of the CMI results, although how serious it is in terms of value added or gross value of output will, of course, depend on the distribution of the non-responding firms, both by sectors and size of firms. Although we do know the distribution by sectors (see Appendix Table A.1) we have no information on the size of firms involved. Insofar as we have made use of the information on non-responding firms to estimate the actual production, we have assumed that these firms have the average characteristics of the responding firms in any particular sector.

TABLE 3.2

Number of Factories Registered and Reporting
to the CMI 1962/63.

1.	Number of Factories Registered	
	a. Section 2 (j)	993
	b. Section 5 (i)	<u>1,687</u>
	Total (a + b)	2,680
2.	Number of Returns Compiled	
	a. Section 2 (j)	814
	b. Section 5 (i)	<u>1,119</u>
	Total (a + b)	1,933
3.	Number of Factories <u>Not</u> Responding	
	of which:	
	a. Closed	380
	b. Non-Reporting	367

Source: See Appendix Table A.1.

A comparison of the number of firms in operation in 1959/60 and 1962/63 by PSIC groupings reveal another source of error in the CMI. (See Appendix Table A.2). According to the CMI, large shifts in the number of firms in operation occurred in certain sectors. For example, only 9 firms were classified as belonging to the "basic metal industry" in 1959/60 (Sector 1200) while 89 firms are so classified in 1962/63. On the other hand, 26 firms were classified as belonging to the "nonelectrical machinery sector" (Sector 1400) in 1959/60, whereas in 1962/63 this sector appears to have disappeared. On the face of it, such large shifts in the industrial structure of East Pakistan seem preposterous. A more likely explanation is that firms have

simply been misclassified, either in 1959/60 or in 1962/63, or that some firms now tabulated under Section 5(i) (medium scale industries) were tabulated as large scale industries Section 2(j), in 1959/60. This problem will be referred to again when the specific sectors where such large shifts occurred are discussed in Chapter V.

3.3. Foreign Trade Data

Given the obvious shortcomings of the CMI, we have relied heavily on the trade statistics of Pakistan to correct our estimates of both inputs and outputs. The trade statistics, both regional and foreign, as tabulated by the CSO, are perhaps the most comprehensive and accurate statistics available for Pakistan. Using an SITC-0 seven-digit commodity classification, more than 2,500 individual items can be identified. The fact that East Pakistan has a high ratio of imports to Gross Regional Product (11.1% in 1962/63 if we include regional imports), means that we can get a reasonably good indication of total availability by using the trade data.

The export and import statistics are tabulated separately for each region and cover all movements of goods by land and sea. Separate tabulations are also available for regional trade and in addition, foreign goods off-loaded in one region but whose ultimate destination is the other region are listed separately. Our first step, therefore, was to correct the foreign import data for transshipment of goods. Two corrections were made on the regional trade data.

Regional trade is only tabulated on the basis of the bills of lading filed in the importing region. This procedure ensures consistency between the exports of one region and the imports of another, but it also means that all regional trade is valued at its cif price. In order to show the exports from East Pakistan at their fob value, freight rates were obtained

for the major commodities moved and the estimated shipping cost subtracted from the cif value of exports.^{7/}

As noted above, the trade statistics refer only to sea and land borne trade. In 1962/63, East Pakistan exported 9.2 million lbs. of cargo and imported 7.7 million lbs. by air /69/.

Although a commodity breakdown of these movements was available, the commodity specification used is such that their valuation proved impossible. (See Appendix Table B.4). Most of the items involved were, however, consumer goods. It was only possible to take account of the shipment of betel leaves from East to West Pakistan and this item accounted for 75% of the air cargo exported from East Pakistan. The fob price for this commodity was calculated from the weekly price quotations for betel leaves in more than seventy markets /20/. In 1962/63, 61 million lbs. of betel leaves were shipped for a fob value of Rs. 2.895 million. This was taken as a delivery from the "agriculture, nes" sector (sector 0103) to regional exports in final demand.

On the basis of the "products and raw materials list" for the CMI /21/, all export commodities were assigned a sector of origin. The SITC numbers of the commodities and the sectors to which they were assigned is shown in Appendix Table B.3. Insofar as possible, imported commodities were assigned to their sectors of origin on the same basis. Where the CMI gave no indication of the possible sector of origin, other sources, especially /22/, were consulted.

A more difficult problem was encountered in trying to assign sectors of destination to each imported good. On the basis of the SITC seven digit classification a large proportion of the commodities could definitely be assigned to either the final demand column (investment or consumer good) or to the intermediate good category. For some items,

^{7/} In all cases the freight rates used were the official rate and do not take account of rebates or special charges. The freight rates were made available by the National Shipping Corporation of Pakistan.

notably fuels and rubber tires, it was impossible to use even this simple breakdown between intermediate and final products. For the imported commodities definitely counted as intermediate goods, sectors of destination were assigned on the basis of the raw materials list from the CMI /21/. Again for some items, such as industrial chemicals and some metal products, final allocation was not feasible at this stage. Nevertheless, as can be seen from Table 3.3, a large proportion, in value terms, of the total imports could be assigned to their sector of destination even at this stage. Items not directly allocable were assigned to their sectors of destination, at a latter stage, in the same proportion as the total deliveries of "like" commodities to each sector. The implicit assumption underlying this procedure is that the imported and the domestic commodity were substitutable commodities and that users were indifferent as to the source of their supply.

2.4 Transportation Costs

Output data, as derived from the CMI and other sources, is generally given at ex-factory cost. In order to valuate this

TABLE 3.3

<u>Allocation of Imports</u>		<u>Foreign</u>	<u>Domestic</u>
		<u>Imports</u>	
1.	Consumer goods	17%	29%
2.	Investment	22	2
3.	Intermediate goods	<u>48</u>	<u>67</u>
	Total directly allocated	87	98
4.	Not directly allocated	<u>13</u>	<u>2</u>
	TOTAL	<u>100%</u>	<u>100%</u>

at market prices it is necessary to add the trade margins, wholesale and retail, transportation costs and indirect taxes. Although the information on both these costs is very sketchy for Pakistan, some attempt at estimating them has been made for the present analysis. It should be clearly understood that these estimates are among the weakest in the table and certainly deserve further analysis.

The movement of goods between major regions or centers in East Pakistan is dominated by rail and mechanized water services. Road transport services of this type are still in their infancy and play a relatively minor role in the overall transport pattern /30/. Local transport demand, that is, the movement of goods over short distances, predominates, and is generally carried on by non-mechanized means, such as bullock carts, country boats and head-loads. Such types of transport services have been omitted from our table primarily because no information on their use and costs was available.

Of the arterial freight movements, approximately 70 per cent were carried by rail and 30 per cent by boat. Studies of these two modes of transportation show that, for a variety of reasons, the cost of moving goods either by rail or water are nearly equal /30/. The cost of moving a commodity by rail, for the average distance such a good moved during 1962/63, can be calculated from the Coaching and Goods Revenue Statistics of the East Pakistan railways /31/. It is obvious, of course, that this does not complete the picture since the same commodity can be carried both by rail and water. On the basis of a survey carried out by the Transport Planning Group /32/ a set of "multipliers" were developed for various commodities. These "multipliers" express the relationship between the ton/miles a commodity moves over one transport mode and the ton/miles the commodity is moved in total. Using these "multipliers", and keeping in view the fact that

the cost of moving a specific commodity is approximately equal for both rail and water transport, the average cost per ton/miles for moving a good by rail can be converted to a cost per ton/miles for the total distance a commodity is moved over both modes. Applying these factors to the total quantity of a good produced gives us the transport cost.^{8/} In addition, terminal and handling charges were added to the cost of moving the goods.

3.5 Distributive margins

Only fragmentary information is available for the estimation of wholesale and retail trade margins. A survey on retailing of consumer goods in East Pakistan /33/ provided some information but in order to use a consistent method in estimating the distributive margins, the following formula was used:

$$D_r - D_p = D_r (1 - 1/m_t); m_t = (P_3/P_2) (P_2/P_1) = m_w/m_r \quad (3.1)$$

where: D_r is the value of output at retail prices;

D_p is the value of output at producer's prices;

P_1 is producer's price;

P_2 is wholesale price;

P_3 is retail price;

m_w is the margin charged by wholesalers;

m_r is the margin charged by retailers; and

m_t is the total distributive margin.

For goods entering as inputs into producing sectors only, the wholesale margin was considered relevant, so that equation

^{8/} The CMI gives input and output data in quantity as well as value terms for many commodities. Where output figures were not given in quantity terms, the input figures were taken as an approximation of the weight equivalent of the output. In certain cases, matches, pens and pencils, an actual sample was weighted to obtain the required quantity equivalent of output in value terms.

(1) becomes:

$$D_w - D_p = D_w \left(1 - \frac{1}{m}\right) \quad (3.2)$$

where D_w is the value of output at wholesale prices.

From the total distributive margins thus obtained, transportation costs and indirect taxes were subtracted in order to arrive at the entries in the trade row.

Producers' prices were obtained from the CMI data by dividing the value of output by the quantity produced.

Wholesale and retail prices were available from /69/ and were taken as an unweighted average of the prices for available markets for the year 1962/63. For those commodities for which no prices, either producer, wholesale or retail, could be estimated, the trade margin applicable to a sector producing a similar commodity was used. Thus, for example, the same margin was used for cigarettes and bidis; for electrical and non-electrical machinery.

This method is, of course, open to criticism. Aside from the question of the accuracy and representativeness of the price data, which refers only to major cities, no adjustment was made for the volume of output passing through trade channels. This factor is usually considered essential for the estimation of total trade margins. A comparison of our results with those obtained by /33/ reveal that our estimates tend to be low. The survey on retailing of consumer goods in East Pakistan estimated that the average mark-up on consumer goods was of the order of 21 per cent. Our average was only 13 per cent. However, the survey also revealed a wide range in the margins both over commodities and cities, so that the comparison of any average is misleading. The survey also showed that the margins on imported consumer goods were lower than for domestically-produced goods, and we therefore use a slightly lower distributive margin for imported consumer goods. The wholesale margin on all other imported goods was taken to be the same as on like domestically produced goods.

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3.6 Indirect Taxes

The indirect taxes, net of subsidies, are shown separately for imports and domestic production in the table. The main categories included in our definition of indirect taxes are import and export duties, sales taxes, excise duties, business licenses, stamp duties, motor vehicle duties, and taxes on radio receivers.^{9/} Generally, indirect taxes are levied by the central government although there are a number of indirect taxes still collected by the provincial authorities /35/.

Customs duties are levied on imported goods at the time of clearance through customs. The specific tariff rates applicable in 1962/63 are available from the Pakistan Customs Tariff /36/. Aside from the statutory rate, a variety of special rates are shown reflecting special tariff agreements with other countries. In order to select the rate applicable to each commodity it would have been necessary to identify the country of origin of each good. Such a task was clearly beyond our capability and instead we applied an average of the rates applicable to each commodity, unless it was clear that one of the special rates applied because the commodity in question was primarily imported from a specific country or area. This was, for example, the case for coal imports, which are nearly exclusively imported from India and for which a special rate is applicable, or for vegetable oils imported from the United States under the P.L. 480 agreements, where again a lower than general duty is levied.

Exports of raw jute and cotton, tea and fish were subject to export duties in 1962/63. The total collections on raw jute and tea were allocated to East Pakistan since only that province exports these commodities. The collections of

^{9/} The United Nations' definition of indirect taxes includes real estate and land taxes /34/. Although in general we have tried to formulate our table in the light of the U.N. definitions, we have not included real estate or land taxes in our definition of indirect taxes.

export duties on cotton and fish were split in proportion to the exports of these commodities for each province. The implicit assumption is made therefore that the same rates were applicable in each province. Although this is the case for fish, it is not true for cotton, but the total exports of cotton from East Pakistan are relatively small so that an adjustment for differences in the rates would have had little effect on the total allocation of export duties. The collection of export duties are summarized below.

Sales taxes are levied on imports as well as on domestically produced goods. In the case of imports, sales taxes were levied on the cif plus duty paid price /37/, /38/. We have therefore multiplied the duty paid price by the specific commodity sales tax rate. The basic rate applicable in 1962/63 was 12.5 per cent but a number of exceptions to this rate were in existence. These are shown in Appendix Table C.1. Sales tax receipts for domestically produced commodities are given by the CMI. For major commodities these have been checked against data from the Central Board of Revenue /39/.

TABLE 3.4.

Customs Revenue Receipts on Exports, 1962/63.

(Rs. millions)

<u>Item</u>	<u>East Pakistan</u>	<u>West Pakistan</u>	<u>Pakistan</u>
Jute, raw	73.44	--	73.44
Cotton, raw	0.44	27.07	27.51
Fish	2.94	4.02	3.96
Tea	...	--	...
Total	76.82	28.09	104.91

... negligible

-- nil

Source: /29/

Excise duties are levied primarily by the central government although for some items there is also a provincial excise duty. Twenty-nine items were classified as excisable for the central excise tax and liquor, opium and other intoxicants were also subject to provincial excise duties /37/, /35/. Again the CMI provides data on excise duties paid but for some sectors, where the duties collected were large, these were checked against the reported collections by the Central Board of Revenue /39/.

In addition to the customs duties, sales taxes and excise duties, a number of less important taxes are collected by the central government. Some of these, such as the registration fees for tea dealers, are insignificant and have been omitted from consideration. A number of others are, however, important enough to warrant inclusion in the table.

a. Under the Import and Export Control Act, which empowers the government to control imports and exports, fees are collected for the issuance of licenses /41/. In 1962/63, these license fees amounted to Rs. 16.0 million. Out of the total value of commercial and industrial licenses issued in that year, East Pakistan received 32.0% /42/. We therefore assume that a proportionate amount, or Rs. 5.1 million, of the license fees were collected in East Pakistan. Approximately 60% of the licenses issued in that province were commercial licenses and the remainder industrial licenses. ^{10/} Rs. 3.1 million (60% x Rs. 5.1 million) are taken as an indirect tax on wholesale retail trade and Rs. 2.0 million as a tax on all industrial importers which is allocated to each sector in proportion to the imports used by the large scale manufacturing sectors.

b. A development surcharge on petroleum products has been levied since 1959 and collections for 1962/63 were Rs. 38.0 million. This surcharge is paid by the importers

of petroleum and we have allocated Rs. 13.30 to users of petroleum products in East Pakistan reflecting the share of petroleum imports into East Pakistan.

c. Radio license fees totalled Rs. 3.6 million in 1962/63. Sixteen per cent of the total radio licenses issued were issued in East Pakistan /89/ and we have therefore shown Rs. 0.6 million as an indirect tax on consumption.

In addition to the central taxes the following provincial excise taxes were collected. (see Table 3.5). These taxes have been allocated as follows; the shop and license fees are taken as an indirect tax on trade while the excise tax and duties are shown as an indirect tax on small scale manufacturing.

TABLE 3.5

Provincial Excise Taxes, 1962/63

(Rs. million)

<u>Item</u>	<u>Duty</u>	<u>Excise</u>	<u>Shop/License Fees</u>
1. Country spirits	0.4	5.4	0.3
2. Beer	-	0.2	-
3. Wine spirits	1.7	0.9	-
4. Commercial spirits	0.3	0.2	-
5. Opium	-	-	0.8
6. Gango, bhang and Charas	-	-	-
Total	2.4	6.7	1.1

Source: /44/

10/ Briefly, an industrial license is given directly to the owner of a factory for importing raw materials for his own use, whereas a commercial license is given to a wholesaler. For a fuller description, see /43/.

Court fees, stamp duties, and other fees for registering and copying documents amounted to Rs. 5.5 Million /44/ and were among the important sources of provincial revenue.

These have been split over the various large scale manufacturing sectors in proportion to their gross value of output.

The motor vehicle taxes yielded a revenue of Rs. 6.5 million in 1962/64 /44/. This tax covers both private cars and commercial carriers of all sorts. We have arbitrarily assigned one-third of this tax to consumption and two-thirds to transportation. In addition, various charges on inland water transport, in the amount of Rs. 3.0 million /44/ were allocated to transportation.

A number of minor provincial indirect taxes were also considered. The jute dealers registration tax (Rs. 1.3 million) and the urban immovable property tax (Rs. 1.5 million) were allocated to the trade sector. An electricity duty (Rs. 1.7 million) is shown as a tax on electricity production and a betting and entertainment tax (Rs. 11.5 million) as a tax on consumption. A shop tax (Rs. 0.2 million) is allocated to the trade sector, and a jute tax (Rs. 0.5 million) against jute manufacturing.

Subsidies on fertilizer use, water for agriculture, plant protection, cement and inter-wing air fares are discussed in Chapter IV.

Despite our efforts to include as many indirect taxes as possible we have omitted a number of local taxes levied by the union and district councils and other local government bodies. Although these taxes may be substantial it was ^{not} impossible to take note of them at this stage of the analysis. The consolidated position on all indirect taxes, central and provincial, as well as subsidies, is shown in Table 3.6.

3.7 . Outline of General Methodology

The procedures used to a reasonable and consistent set of estimates of the inputs and outputs is described here.

Only insofar as this procedure was not applicable to any specific sector will a reference to the methodology used be made in the succeeding sectoral chapters.

As a first step, output estimates for each sector were checked against a variety of other sources, most notably the production index, the CBR data on production of excisable commodities and various other sources. Where the CMI appeared to have understated output an estimate of the degree of such underestimation was prepared. This factor was then used to correct all inputs and outputs of that sector. Major input coefficients were checked and compared either to earlier estimates of the input structure for a sector or against other technological data. In those cases where such coefficients were found to be vastly different from the expected value, a further analysis was undertaken to see if there was any reason to change such coefficients.

TABLE 3.6

Indirect Taxes and Subsidies, 1962/63

(Rs. million)

1.	Sales taxes		133.9
	a. On imports	(110.3)	
	b. On domestic production	(23.6)	
2.	Central excise duties		124.8 ^{a/}
3.	Import duties		159.5
4.	Export duties		76.8
5.	Petroleum surcharge		13.3
6.	Provincial taxes		49.5
7.	Subsidies		-64.3
	a. Fertilizer	(-27.1)	
	b. Water	(- 2.1)	
	c. Plant protection	(-23.0)	
	d. Cement	(- 9.4)	
	e. Inter-wing air fares	(- 2.7)	
8.	Other miscellaneous taxes		<u>5.7</u>
	Total		<u><u>499.2</u></u>

a/ Central Board of Revenue reports a total collection of duties of Rs. 130.0 million

Source: /45/

As a next step, the total flow estimates were compared to the import flows, regional and foreign, as derived from our first round allocation of imports. In those cases where the deliveries of an imported commodity (m_{ij}) exceeded the total use of that commodity ($m_{ij} > x_{ij}$), but where the total import bill ($\sum_j m_{ij}$) did not exceed the total as given by the CMI, the "unallocated inputs" from the CMI were used to raise total flows sufficiently to cover the import flow.^{10a/} If, on the other hand, the total bill ($\sum_j m_{ij}$) for a sector was greater than that shown in the CMI, imports were reduced and the difference taken as an increase in stocks of imports. In such cases the "unallocated inputs" were distributed proportionally over the allocated inputs in that column and were assumed to be domestic flows.

The reverse procedure was followed in those cases where the imported flows were less than the total flows ($m_{ij} < x_{ij}$) and where the total import bill ($\sum_j m_{ij}$) in a sector was less than the total import bill as given in the CMI. Here imports were raised and the additional imports shown as a reduction of stocks of imported raw materials.^{10b/}

Following this procedure it was possible to derive our final import matrices and at the same time make allocations of imports to the "change in stocks" column. After adding our previously derived estimates of transportation costs, trade margins and indirect taxes, the difference between

^{10a/} Some part of the commodity inputs for each sector in the CMI are not specified by type. For some sectors these 'other inputs' form a small proportion of total purchases but for other sectors they tend to be uncomfortably large, at times as high as fifty per cent of total purchases. (Fei commented on this problem in his description of an attempt to construct an inter-industry table for Pakistan /90/). As noted in the text, we have assumed these 'other inputs' to be imports in those cases where import flows exceeded specified total flows or else distributed them in proportion to all specified purchases of intermediate goods.

^{10b/} One additional point deserves mention. The CMI data shows purchases of inputs and changes in stocks of intermediate goods. In order to convert the purchases of goods to actual use of goods during a year the purchases were adjusted for changes in stocks of raw materials and fuels. Thus use of a commodity is defined as purchases of that commodity plus or minus the change in stocks of that commodity held by the using sector.

the gross value of output and the sum of the total inputs and taxes was taken as value added. Table 3.7 compares our value added estimate with those of the Central Statistical Officer.

The input-output estimates of total provincial product differ only slightly (less than 2%) from that of the CSO. However, our distribution by sectors shows a considerable difference over those of the CSO. Although the specific causes that give rise to these differences can only become clear after a careful comparison of our method of estimating value added and that employed by the CSO^{11/} a brief explanation is in order.

TABLE 3.7
Value Added by Sectors, 1962/63

(Rs. million)

<u>Sector</u>	<u>Input-Output Table</u>	<u>C.S.O.</u>	<u>Difference</u>
1. Agriculture	10,715	11,187	+472
2. Mining	4	3	- 1
3. Manufacturing	1,429	1,263	-166
a. large and medium	(901) ^{a/}	(700)	(-201)
b. small scale	(528)	(563)	(+ 35)
4. Construction	691 ^{b/}	397 ^{b/}	-294
5. Electricity, etc.	55	55	--
6. Transport	1,062	1,131	+ 69
7. Trade	2,031	2,031	--
8. Banking and insurance	79	158 ^{c/}	+ 79
9. Government	504	660 ^{c/}	+ 79
10. Services	1,896	1,896	--
Total Gross Provincial Product	18,466	18,781	+315

Notes:

- a/ Bidi-making and handloom are included in small scale in order to achieve comparability to the definition used by the CSO.
- b/ The CSO construction estimate is generally held to be too low. Our estimate is based on that prepared by the Planning Commission /76/.
- c/ The CSO does not split these value added estimates by region, but following the procedure in /15/ the figures here reflect a 50:50 allocation over the regions.

Source: CSO estimates from /17/ modified as per note (c) above.

^{11/} A comprehensive of the estimating procedure used by CSO is given in /17/.

For the agriculture sector we have estimated the cost of a number of inputs not included by the CSO, such as dung, animal draught power, water and services. Although we have also taken account of certain outputs not included in CSO estimates of gross value of production for the agriculture sector (animal services, dung), on balance our estimates turn out to be lower.

No accurate data on the mining sector are available and the difference between the input-output estimate and that of the CSO reflects a mere "balancing" adjustment in the table rather than any independent estimate. The CSO, however, does not include unauthorized quarrying, which may be substantial, so that our higher estimate of value added can be taken as a reflection of some allowance for such mining.

The input-output estimates for manufacturing, especially large scale, reflect a sector by sector analysis of the CMI, and it is therefore not surprising that they differ from the CSO estimate which makes only minor adjustments on the CMI. As previously noted, we consider the CSO estimates of construction suspect and have therefore used those of the Planning Commission. The difference in the transport sector estimates is partly definitional: the CSO includes communication in this sector, whereas we have included this with government services.

The differences in the estimates for banking and insurance and government are due to a basic methodological difference. Insofar as these sectors have been split by regions in the past a simple 50:50 ratio between East and West Pakistan has been used. We have rejected such a native approach and have instead relied on a detailed analysis of the government budgets and banking statistics to achieve, what we believe, is a more accurate estimate of the value added originating in these sectors in East Pakistan.

A more detailed description of the sectoral estimates of outputs and inputs are reserved for the succeeding chapters,

CHAPTER IV.

AGRICULTURE AND MINING.

4.1 Agriculture

Agriculture in East Pakistan still dominates the economy, contributing about 58% to the gross provincial product /15/ and it is therefore of some importance to estimate the inputs and outputs of this sector with a reasonable degree of accuracy. Detailed information on this sector is only now becoming available and some of the data appears highly suspect. There is, however, a substantial body of material dealing with the structure of agriculture and we have tried to use the most reasonable estimates in those cases where alternative sources gave different sets of information.

According to the National Income Commission, gross value of output of agriculture in 1962/63 was Rs. 11,742.5 million /49/ and was split over the four sub-sectors of agriculture as shown in Table 4.1.

4.2 Internal Deliveries

A major internal delivery is seeds. Seed rates, as estimated by the CSO /18/ have been used, expressed as a percentage of gross value of output. These rates are as follows: rice growing, 4.7%; jute growing, 0.6%; cotton growing, 10.8%. For "agriculture nes.", we have taken the seed rates for the major crops included in this sector; tea, 2.8%; sugar cane, 10.0%, and for other crops, 4.5%. In addition wastage is taken as an additional one per cent of output net of seeds.

Estimate of feed grain inputs are extremely difficult to obtain. Norbye /50/ estimates feed grain requirements for East Pakistan as Rs. 87 million for 1964/65 which is equivalent to 12,100 million. Assuming no price change in feed grains, this gives a value of Rs. 84 million of feed grains, as an input into the livestock sub-sector in 1962/63. Of this total, Rs. 39.1 million comes from by-products of food-processing

(see para. 4.3) and Rs. 44.9 million from agriculture itself. We have arbitrarily taken Rs. 25.0 million as by-products of rice growing (stalks, straw, etc.) and Rs. 19.9 million as the value of pasture land, that is, as an internal delivery to the "agriculture, nes" sector. As the CSO does not take account of the value of by products from rice growing, we have added this amount (Rs. 25.0 million) to the gross value of output of the rice growing sector.

Dung is used both as a cooking fuel and as manure and the value of dung must therefore be calculated both as an output of the "agriculture; nes" sector, and as an input into the other agriculture sectors which use it as a fertilizer.

TABLE 4.1.
Gross Value of Output of Agriculture

<u>Sector No.</u>	<u>Sector Name</u>	<u>Gross Value of Output</u> ^{a/}	
		<u>Rs. Million</u>	<u>Percent</u>
0101	Jute growing	669.0	5.7
0102	Cotton growing	6.0	0.1
0103	Agriculture, nes.	4,752.5	40.5
0104	Rice growing	6,315.0	53.8
	Total agriculture	11,742.5	100.0

^{a/} Totals may not add due to rounding.

The total livestock population for 1960, as well as the projected growth rates, are given by Gotsch and Falcon /51/, and is shown in Table 4.2.

An evaluation rate of 50 to 60 lbs./day was reported for cattle kept on an experimental dairy in India /52/. Assuming that the average rate for oxen and buffaloes in East Pakistan is substantially lower than this rate because of inadequate food-intake, we take an evacuation rate of 30 lbs./day. Of the total output of dung, after wastage, 30%

TABLE 4.2.

Livestock Population in East Pakistan

(Millions)

<u>Name</u>	<u>Population 1960</u>	<u>Rate of Increase</u>	<u>Population 1962/63</u>
Oxen	19.166	+1.3%	19.667
Buffalo	0.475	-1.1	0.465
Sheep	0.476	+5.1	0.526
Goats	5.659	+1.5	5.830
Poultry	20.096	-0.4	19.936

Source: /51/.

is used as manure, and 70% as fuel with a dry dung content of 20% /52/. This gives us the following estimate of available dung:

1. Number of buffaloes and oxen	20.132 million
2. Evacuation rate	5 tons/year
3. Total dung	100 million tons
4. Wastage at 20%	20 million tons
5. Net availability	80 million tons
6. Used as manure (30%)	24 million tons
7. Price of manure at Rs. 0.25/mnd <u>a/</u>	Rs. 6.81/ton
8. Value of manure	Rs. 163 million
9. Used for fuel (70%)	56 million tons
10. Dry dung content (20%)	11 million tons
11. Price of dung as fuel at Rs. 0.15/mnd <u>a/</u>	Rs. 13.60/ton
12. Value of dung used as fuel	Rs. 149 million
13. Total value of dung (items 8 + 12)	Rs. 312 million

a/ Prices from /27/.

The value of dung in the national accounts was taken as five percent of the gross value of livestock products. For 1962/63 this was Rs. 46 million. We have therefore added the difference between this figure and our estimate (Rs. 266 million) to the gross value of output of the "agriculture, nes." sector.

The distribution of dung used as manure was done in proportion to the area sown under various crops. Total area available for cultivation in 1962/63^{1/} was 21.66 million acres. Allowing for double cropping total gross cultivatable area was 24.67 million acres /54/.

As a final internal delivery we allow for use of animal services. This item is omitted entirely by the national accounts /17/ and the value of animal services must therefore be taken as an additional output of the "agriculture, nes." sector, as well as an input into using sectors.

Various estimates for the value of animal power inputs into rice cultivation exist. These range from a low of Rs.31.40 per acre /55/ to a high of Rs. 50.00 per acre^{2/} /56/. As there is no possible way to decide between these estimates, we have taken the conservative figure of Rs.31.40 per acre of cultivated rice.

For jute growing, the East Pakistan Water and Power Development Authority Master Plan /56/ gives a figure for animal inputs of Rs. 30.08 per acre for capsularis jute and Rs. 29.67 per acre for olitorius jute, for a weighted average of Rs. 29.98/acre. Data from the Agricultural Planning Group and the Jute Enquiry Commission Report /57/ show substantially higher figures. We have again taken the most conservative estimate as all these figures must be considered highly suspect.

1/ Total cultivatable area is defined as total area less area under forest and uncultivable area.

2/ The Agriculture Planning Group (Dacca) has available some data on animal inputs by crops and by districts. Except for Dacca district, which shows an unusually high figure of Rs.79.48 per acre, the other estimates all fall within the range cited above.

Another major consumer of animal services is construction. The use of animal services for cartage by the construction sector is estimated at Rs. 5.00 million.

Omitting any deliveries of animal services to other sectors, which admittedly may be substantial but for which we have no data whatsoever, the total estimate of the value of animal services rendered is shown below in Table 4.3.

4.3 Deliveries from Food Processing

The major deliveries from the food processing industries to agriculture consist of by-products used as animal feed. Only two flows are considered here: oil cakes from the edible oil sector and molasses from sugar refining.

TABLE 4.3
Animal Services Used

Sector No.	Sector Name	Acreage cultivated (million acres)	Cost/Acre (Rs. Acre)	Total (Rs. milln.)
0101	Jute growing	2.06	29.98	61.76
0104	Rice growing	21.48	31.40	674.47
1800	Construction	--	--	5.00
Total				741.23

Total production of cotton seeds was 6,000 tons /54/. Allowing 10% for wastage and assuming an extraction rate for oil of 12.5% /53/ we are left with 4.725 tons of oil cake. Total production of other oil seeds, such as linseed, til, rape, groundnut and castor oil seeds, amounted to 207,072 tons /58/. Again taking wastage at 10% and an extraction rate of 33.3% /53/ there is an additional output of oil cakes of 124,305 tons. At an average price of Rs. 190/ton /20/ the total value of oil cakes is approximately Rs. 24.5 million. Exports of oil cakes were Rs. 4.93 million. Imports of cotton seeds, from West Pakistan and abroad, were Rs. 90.0 million (cif) which are assumed to have

yielded another Rs. 13.0 million of oil cakes. Total net availability of oil cakes for use as animal feed was therefore Rs. 32.57 million.

The delivery of molasses from sugar refining to the "agriculture, nes." sector is derived from CMI data on sugar refining industries. The ex-factory value of molasses was Rs. 5.7 million for a purchaser's price (market value) by the agricultural sector of Rs. 6.5 million.

4.4 Deliveries from the Textile Sectors

Only deliveries from the textile industries to the fishing sub-sector, included in the "agriculture, nes." sector, are considered. Total inputs into the fishing sector were Rs. 56.9 million /17/ in 1962/63. Of this total we estimate that Rs. 30.0 million were purchases from the trade and transport sectors, leaving the remainder for all other inputs. We estimated that approximately Rs. 5.0 million represent purchases of sails, fish nets and ropes produced by the cotton textile industry and that another Rs. 0.02 million were purchases of nylon and dacron fish lines from the art-silk sector.

4.5 Deliveries from the Chemical Industries

The most important delivery from the chemical sector to agriculture is, of course, the purchase of fertilizer by the agriculture sectors. The sale of fertilizer was heavily subsidized in 1962/63 and the subsidy applied to both domestically produced fertilizer and imports, albeit at different rates. The subsidy on domestically produced fertilizer is shown as a subsidy to fertilizer production. For imported fertilizer, the subsidy is allocated to agriculture sector purchasing such imports.

Total fertilizer production, at market prices, was Rs. 26.616 million in 1962/63, of which Rs. 1.157 million represented an increase of stocks. The remaining Rs. 25.459 million of fertilizer production was used by the various agriculture sectors. According to a study done by Hendry and Hpu /29/, 83.5% of the

available fertilizer is purchased for use in rice cultivation, 4.5% is used for jute and the remaining 12% are applied to other crops. On this basis we have split availability of domestic fertilizer.

Imports of fertilizer from West Pakistan in 1962/63 were Rs. 0.023 million. These have been allocated to the rice growing sector. Foreign imports of phosphatic fertilizer in 1962/63 were Rs. 1.907 million, at cif prices, and these too have been allocated to the rice growing sector. The subsidy applicable to the imports of fertilizer from abroad was taken at 25% rather than the subsidy of 50% applicable to the domestically produced fertilizer. Domestically produced fertilizer in 1962/63 was approximately 25% more costly than imported fertilizer. The subsidy on imported phosphatic fertilizer should therefore only reflect the difference in price between imported and domestically produced fertilizer. A subsidy of Rs.6.0 million is thus shown directly against the rice growing sector.

A second delivery from the chemical sectors to agriculture represents the outlay on pesticides. As the total cost of applying pesticides was borne by the government, the value of these purchases are also shown as a subsidy. Total imports of pesticides were Rs. 12.4 million at market prices and domestic purchases were Rs. 2.3 million for a total use of pesticides of Rs.14.7 million. This represents therefore both a purchase by the agriculture sectors and a subsidy to them. The allocation to sectors is proportional to area cultivated under different crops.

4.6 Other Inputs

The purchase of spare parts for agricultural machinery is extremely small as most cultivation is non-mechanized. From the trade statistics we can identify imports of spare parts for pumps and tractors. In addition, the CMI reports some production of spares for tractors. The total purchase of spare parts is allocated to the rice growing sector since whatever mechanical equipment is used is applied to rice cultivation.

The deliveries of spares for pumps is shown as coming from the non-electrical machinery sector and tractor spares from the transport equipment sector. Small scale industries also supplied spare parts to the agriculture sector as well as some "engineering services." The output of small scale metal producers and machinery manufacturers, as well as blacksmithies and producers of agricultural hand tools, was Rs. 39.46 million in 1961 /18/. Assuming a growth of output for such sectors of 6% between 1961 and 1962/63 and a 15% mark-up for transport costs and trade margins, the value of output in 1962/63 was Rs. (47.5 million. On the assumption that 20% of such output represented deliveries of current inputs to agriculture, we have allocated Rs. 9.5 million to the major agricultural sectors.

Insofar as water is used for irrigation in East Pakistan, it is applied to rice cultivation. East Pakistan Water and Power Development Authority (EWAPPDA) has never collected water charges /60/ so the cost of such water is shown as both an input into the rice growing sector and as a subsidy. The Agriculture Development Corporation (ADC), which also supplies irrigation water, charged Rs.27/acre but estimated that the cost of such water, based on the cost of running pumps, was actually Rs. 42.87/acre /61/. Again we have taken the difference between the actual cost and the charges collected from farmers as a subsidy.^{2/} On the basis of the total area irrigated, water costs were Rs. 7.0 million and charges collected were Rs. 4.9 million, leaving a subsidy of Rs.2.1 million.

The transport costs and trade margins on agricultural products were derived from the following equation:

$$T = sp_1t_1 + sp_2t_2 + sp_3(p_1t_1 + p_2t_2)/(t_1 + t_2) \quad (4.1)$$

where T = transport cost or trade mark-up;

s = proportion of total output sold commercially;

p₁ = proportion sold in primary markets, i.e., markets nearest area of production;

^{2/} A more accurate way of handling this would be to have a separate sector for irrigation water and show all subsidies against such a sector rather than against the water using sectors.

p_2 - proportion sold in secondary markets;

$p_3 = (1 - p_1 - p_2)$; and

t_1 = the transport cost or the trade mark-ups applicable to the primary or secondary market.

The proportion of output sold (s) is defined as the value of output of a crop less wastage and seeds, multiplied by the marketable surplus. The data for the parameters in equation 4.1 were taken from the Master Survey of Agriculture in East Pakistan (Rounds I, II, V) /55/.

Estimates of banking services provided to the agriculture sector were calculated on the basis of total indebtedness and the interest payments on such debts.^{3/}

Total non-banking indebtedness, calculated from the National Sample Survey /63/ was Rs. 1,190 million in 1962/63. Of this total debts only Rs. 20.23 was held by cooperative societies. In addition, the Agricultural Development Bank (ADB) provided Rs. 37.0 million in loans in 1962/63 and "taccavi" loans^{4/} were Rs. 42 million /54/, /65/. Advances and bills discounted for the agriculture sector by other banks were Rs. 242 million, of which we assume 40% was from East Pakistan /67/. Allowing for double counting as well as for old debts outstanding, we estimate total current debt as held by the banking system at Rs. 175 million. At a rate of interest of 15%, total interest charges are Rs. 26.3 million. This is allocated to the agriculture sectors in proportion to their gross value of output.

Payments of rents for rural houses used as farm buildings is estimated at Rs. 89.0 million. For 1960/61, the CSO reported total rentals in rural areas of Rs. 450 million for all Pakistan. This has been allocated between the provinces on the basis of population and one third of this was taken as rental payments

^{3/} The correct definition calls for the banking input to reflect the service charges levied by the banking system rather than the interest charges. As, however, no information on the latter cost is available, we have used the interest charges instead.

^{4/} Rural grants advanced by revenue officials.

for rural houses used as farm buildings /91/. The allocation to the agricultural sectors has been done again on the basis of their gross value of production.

4.7 Mining and Quarrying

Very little is known about the cost structure of this sector. As, however, this sector is relatively insignificant in the economic structure of East Pakistan the precise estimation of the input structure is not too important at this stage.

At best our present estimates represent educated guesses.

The primary information on the current inputs is taken from the trade statistics which show imports of pit-props (Rs. 0.020 million); nitro-glycerine (Rs. 0.007 million) and spare parts for mining machinery (Rs. 0.919 million). We have also allowed for some domestic deliveries of lumber and spares to mining.

Transport costs and trade margins were calculated, in accordance with the procedure outlined in Chapter III, on the basis of the total quantity of minerals mined. Finally, banking costs were estimated on the basis of loans made to the mining sector /65/ and an assumed rate of interest of 8%.

We have again used this procedure in the absence of any information on the service charges levied by banks on accounts for this sector. All other inputs shown in the sector reflect mere "guesstimates" based on the scanty information contained in /92/.

CHAPTER V.

MANUFACTURING INDUSTRIES

5.1 Manufacturing, large and small scale, which contributed nearly 8% to the gross provincial product in 1962/63, is disaggregated into sixteen major industry groups and fifty sectors. The sixteen major industry groups and their values added are shown in Table 5.1.

The data available for estimating the structure of the manufacturing sectors is relatively detailed and accurate. In general each sector was classified into one of three groups. The first represented those sectors which were not considered important enough to warrant further checking and for which the CMI results were accepted in toto. The second group constituted those sectors for which some independent checking was considered appropriate but where the CMI results were found to be relatively accurate and therefore accepted, while the third group consisted of those sectors where an independent set of estimates revealed a considerable undercoverage in the CMI and adjustments were made on the census results. For most sectors some adjustment in the CMI results was called for.

5.2 Food Processing Industries

The food processing industries are divided into twelve sub-sectors of which one, sector 0308, "salt manufacturing" is a dummy sector as no large scale salt processing is carried out in East Pakistan. Of the remaining sectors, two, "canning and preserving" (sector 0301) and "bakery products" (sector 0304) were considered too unimportant to warrant further analysis and the CMI results were used as given. For the remaining nine sectors further analysis was called for.

The output, as well as inputs, of both the grain and rice milling sectors, were apparently severely underestimated. According to the CMI only 19,000 tons of wheat

were milled in 1962/63. Adding to this the wheat milled in the small scale sector, 154,000 tons, /18/ the total wheat reported as milled comes to 173,000 tons. Total wheat milled as estimated on the basis of production and imports, less increase of stocks, was actually 651,000 tons /66/.^{1/}

Total installed wheat and grain milling capacity in East Pakistan was approximately 1.3 million tons per annum /68/, quite sufficient to have milled the estimated 651,000 tons. The CMI reports that no government owned mills responded to the survey and this seems to account for the undercoverage both in terms of wheat milled and flour produced. Of the total installed capacity, two-thirds was in large scale mills /68/. We assumed therefore that approximately 70% of the wheat milled was milled in the large scale sectors. Further, the CMI reports that of the total wheat milled, only 5,000 tons were milled by grain mills and the remainder

TABLE 5.1

Manufacturing Sectors

<u>Sector No.</u>	<u>Name</u>	<u>No. of sub-sectors</u>	<u>Value Added (rs. millions)</u>	<u>Percent</u>
03	Food processing	12	310.510	21.73
04	Textile manufacturing	11	341.168	23.88
05	Wood products	1	4.168	0.29
06	Paper and paper products	2	52.041	3.64
07	Leather products	2	6.169	0.43
08	Rubber products	1	2.372	0.17
09	Chemicals	6	80.139	5.61
10	Petroleum refining		--	--
11	Non-metallic mineral products	1	8.781	0.61
12	Basic metals	1	20.825	1.46
13	Metal products	1	15.381	1.07
14	Non-electrical machinery	1	10.753	0.75
15	Electrical machinery	1	1.018	0.07
16	Transport equipment	1	12.093	0.85
17	Miscellaneous industries	7	69.041	4.83
19	Small scale industries	1	494.390	34.60
		50	1,428.942	100.00

^{1/} The trade statistics for 1962/63 apparently omitted P.L. 480 wheat imports from their tabulation /17/ as these imports were first cleared through a suspense account and no adjustment was later made for these shipments. On the basis of the available data on P.L. 480 imports, as recorded by US/AID (Karachi), the undercoverage of wheat imports into East Pakistan was approximately 235.500 thousand tons in 1962/63.

by other mills such as oil mills and rice mills. On this basis the estimate of undercoverage for grain milling is 970 percent and this factor was used to adjust both inputs and outputs.

For rice milling a similar degree of undercoverage was discovered, primarily because the government mills are again excluded from the CMI. A comparison of the gross value of output over the period 1959/60 and 1962/63 shows a decrease of 41% in constant prices. As the production and consumption of rice undoubtedly increased over this period, the 1962/63 CMI obviously seriously under reports the quantity of rice milled. Again estimating the total quantity of rice available for milling from the production data, changes in stocks and imports, we derive a factor for undercoverage.

Total production of rice in 1962/63 was 8.73 million tons /46/ and allowing 6% for wastage and seeds, net output was 8.21 million tons. According to the National Income Commission Report /17/ 30% of this net output, or 2.46 million tons, was commercially milled. The CMI reports only 0.10 million tons milled in large scale mills and approximately another 0.12 million tons were milled in small scale mills /18/ for a total of 0.22 million tons. Installed rice milling capacity in 1962/63 was 2.6 million tons /68/, of which two-thirds was in large scale mills. Assuming therefore that of the total paddy output, ^{2/} two-thirds was milled in large scale mills the correction factor applicable to large scale milling is 16.54.

Before applying this factor to both the inputs and outputs as reported by the CMI one further check was made. Paddy inputs are generally taken to yield about 66% milled rice output. The CMI proportion between paddy inputs and milled rice output was 63.5%. This ratio was close to the expected paddy/rice ratio and therefore the correction factor was applied to both inputs and outputs.

2/ Paddy refers to unmilled rice.

As regards sugar refining, both the reported output and the major input, sugar cane, were checked. Hendry and Hsu /59/ report that 912,668 tons of sugar cane were crushed in 1962/63. The CMI shows 906,147 tons of sugar cane as crushed by the ten large scale sugar mills. The recovery rate in East Pakistan is extremely low, 8%, which implies a refined sugar yield of 72,492 tons. This expected output corresponds closely to the actual quantity reported by the CMI, 76,900 tons, and the quantity reported by the Central Board of Revenue /69/ of 74,099 tons. We therefore accept the CMI data on sugar refining.

Although there is a close correspondence between the output of edible oil as reported by the CMI (3,936 tons) and the CBR /69/ (4,097 tons), a small proportion of the available oil milling capacity was used for wheat milling. As the total amount of wheat milled was severely underestimated (see above), we have made some allowance for this in the oil-milling sector. The correction factor applied to the input and output structure of this sector was taken at 1.45.

Tea processing has been included in the 1962/63 CMI for the first time. Previously, blending and drying of tea, carried out primarily on the tea estates, was not considered as a separate manufacturing process. The 1962/63 CMI however reports on 108 tea processing plants regardless of whether these are located on tea estates or are separate enterprises. Nevertheless, some underreporting of output is still present. The CBR /69/ reports 53,650,000 lbs. of tea processed while the CMI only reports 48,804,000 lbs. We have therefore used a correction factor of 1.10

Although the value of output of the beverage industry, alcoholic and non-alcoholic, is extremely small, we have made some attempt to check the CMI data, primarily because the CMI did not give any separate production data on non-alcoholic beverages. Although the reported output of alcoholic beverages from the CMI corresponds closely to that of the Excise Directorate /69/, the increase in the gross value of output is less than that of the production index for alcoholic and non-alcoholic beverages.

We assume therefore that the difference in the gross value of output is due to the exclusion of non-alcoholic beverages. The difference between the reported gross value of output and that expected on the basis of the 1959/60 CMI extrapolated by the production index is assigned to the non-alcoholic beverages sector. The input proportions for the non-alcoholic beverages sector were assumed to have remained the same as those given in the earlier CMI.

Two independent checks on the cigarette production estimates were carried out which yield widely different results. The CMI reports an output of 3,536 million cigarettes and the CBR /69/ reports production of 3,729 million cigarettes, a difference of 5.5%. A comparison of the growth output over the period 1959/60 to 1962 /63 on the basis of the two censuses, show that the value of production increased by 135.2% in constant prices, while the industrial production index /70/ estimates an increase of output of 173.2%, a difference of 16.2%. Although both these checks provide a basis for assuming that the CMI in 1962/63 underestimates output, the magnitude of such an underestimate varies. We have taken a correction factor of 1.11 to be applied to the cigarette manufacturing sector, an average of our two estimates of undercoverage.

No check for any underreporting in bidi manufacturing was possible. Nevertheless, on the basis of the total availability of raw tobacco, domestic production plus all imports, and the absorption of raw tobacco by the cigarette manufacturing sector and small scale industries, it was apparent that there was some undercoverage of the bidi sector. Furthermore, the imports of biri leaves, used almost exclusively by the bidi sector, exceeded the total use of biri leaves as reported by the CMI. The correction factor of 1.5 applied to this sector was based on the proportion of the number of bidi manufacturers which did not respond to the CMI survey but were listed as bidi producers.

5.3 Textile Manufacturing

Eleven textile manufacturing sectors are identified in the input-output table. Nearly 24% of the value added in manufacturing originates in these sectors, with three of these sectors (cotton textiles, jute textiles and hand loom products) contributing 97% of the value added from all textiles and 23% of the total value added in manufacturing. The remaining eight textile sectors are therefore of relative insignificance in the industrial structure of East Pakistan. The CMI data on four of these sectors (woollen textiles; knitted goods; thread and threadball making and footwear) was accepted without further analysis. For the remaining seven sectors the reported CMI data was checked and adjustments made where necessary.

The output of the cotton textile industry was compared to the data provided by the Directorate of Textiles /69/ as shown in Table 5.2 below.

TABLE 5.2
Cotton Production Data, 1962/63.

<u>Source</u>	<u>No. of Firms</u>	<u>Production of Yarn</u> ('000 lbs.)	<u>Production of Cloth</u> ('000 yds.)
CMI	29	47,478	46,430
Directorate of Textiles	27	54,209	55,130

Despite the fact that the CMI covered two more firms than reported to the Directorate of Textiles, the CMI data apparently underreports output. Using the implicit price for yarn and cloth as calculated from the CMI (Rs. 2.67/lb for yarn and Rs. 0.94/sq. yd. of cloth), the total quantity figure as reported by the Directorate of Textiles is 15% greater than the value of output as given in the CMI. A correction factor of 1.15 is therefore applied to the CMI data.

Jute textiles represent the major part of the output of the textile sectors. The output of jute textiles as reported in the CMI can be checked against that reported in the yearbook of the Pakistan Jute Mill Association (PJMA) /71/.

The difference between the two sets of production figures is negligible and probably accounted for by the three items not included in the CMI total. The CMI production data is therefore accepted without change. On the input side, however, one change was made. The input coefficient for raw jute as calculated from the unadjusted CMI data was 18%, which appeared low in comparison to the input coefficient in the 1963/64 all-Pakistan input-output table /72/.^{3/} Further, the distribution of the available raw jute over the jute-using sectors, jute textiles, large and small scale, and jute pressing, also indicated that the absorption of raw jute by the jute textile sector was higher

TABLE 5.3
Jute Textile Production Data, 1962/63.
(Tons)

<u>Item</u>	<u>PJMA</u>	<u>CMI</u>
Hessian	85,540	88,614
Sacking	203,873	202,194
Other	9,748	7,212 ^{a/}
	298,161	298,020

a/ In addition the CMI reports the following outputs:

- i) carpets - 418,000 sq. yds.
- ii) webbing - 67,790 yds.
- iii) matting - 291,800 yds.

than that indicated by the CMI. The input of raw jute into jute textiles was, therefore, increased by Rs.109.0 million, raising the input coefficient to 37%, which is more nearly in line with input coefficient in the 1963/64 inter-industry table.

^{3/} The comparison between this sector in the regional table and in the all-Pakistan table is valid since jute textile manufacturing only takes place in East Pakistan.

The number of firms engaged in the production of art silk products apparently declined from five in 1959/60 to only two in 1962/63 (See Appendix Table A.2). However, seven firms are classified as medium scale industries, and, in part, these may well account for the rather sharp decline in the number of firms classified as large scale. The CMI reports a production of only 103 thousand yards of art silk, whereas the CBR /69/ reports 148 thousand yards. However, the CMI also gives production of a number of items (sarees, ladies' shirting) which are excluded from the above comparison. Inclusion of the production of these items would probably reduce the discrepancy between the two sets of production figures. The CMI data is therefore accepted without further adjustment.

Two adjustments were required for obtaining the corrected production structure for the dyeing and finishing of textiles sector. The first of these stems from the fact that this sector's output consists largely of services done for others; that is, nearly 82% of the gross value of production consists of the finishing of cloth owned by other textile sectors. As only a small amount of textile cloth is actually purchased by this sector for resale after dyeing and finishing, the input structure shows an imbalance between unfinished textile inputs and such other purchases as coal tar dyes, soaps, fuels, etc. The problem arises because the major portion of the products sold by this sector consist of cotton cloth supplied to it by other textile sectors which is then processed using dyes, soaps, fuels, etc. purchased by the dyeing and finishing sector, while the finished product is then returned to the other textile sectors, which has not been recorded as a purchase by this sector. The result is an increase in the total cost of inputs while at the same time giving a more balanced ratio between textile inputs and other inputs.

The gross value of production (X_j) can be thought of as consisting of two parts; that part of output which arises from work done for other sectors (X_j^*) and that arising from

production undertaken for sale to other sectors or final demand (X_j^*).

Thus,

$$X_j = X_j^* + X_j^{**} \quad (5.1)$$

The value of output which is undertaken for sale by the sector itself consists of the purchase of cotton (c_{ij}^*), the purchase of all other inputs (x_{ij}^*) required to process the purchased cotton and the value added (v_j^*) that arises from the finishing of this cotton cloth. Thus,

$$X_j^* = c_{ij}^* + x_{ij}^* + v_j^* \quad (5.2)$$

or

$$X_j^* - c_{ij}^* = x_{ij}^* + v_j^* \quad (5.2a)$$

The left hand side of equation (5.2a) represents the value of output which arises from the finishing of textiles when the cost of cotton is excluded. This is, in fact, then the value of output for the processing of textiles where the cotton input is not purchased but where the work of dyeing and finishing is done for other sectors. Assuming that the ratio of cotton inputs to value of output is the same in both processes, the proportion of cotton used when work is done for others is given by

$$\frac{c_{ij}^*}{X_j^* - c_{ij}^*} \quad (5.3)$$

Applying this ratio to the total value of output associated with work done for others (X_j^{**}), gives an estimate of the cotton supplied by other sectors and used by the dyeing and finishing sector. Thus the total cotton input (c_{ij}) into the dyeing and finishing sector is given by

$$c_{ij} = c_{ij}^* + \frac{c_{ij}^*}{(X_j^* - c_{ij}^*)} X_j^{**} \quad (5.4)$$

On this basis, the total cotton textile input into sector 0405 was raised from Rs.0.355 million, as given in the CMI, to Rs.2.591 million.

The second adjustment applied to this sector reflects the estimated degree of undercoverage. Although the output of this sector could not be checked against any other data, the number of firms engaged in textile finishing and responding to the CMI was only 82% of the total.

-(55):-

firms belonging to this sector and in operation in 1962/63. A correction factor of 1.18 was therefore applied to the input and output structure of this sector.

Although the ready made garments sector is relatively small, and any correction applied to it will have a negligible effect on the overall inter-industry structure, we have made some adjustment for the apparent undercoverage. Out of the total number of firms registered as belonging to this sector, only four were in operation in 1962/63. (See Appendix Table A.1) As only two firms responded to the survey, a correction factor of 2.0 was applied to the production structure of the ready-made garments sector.

A similar adjustment for non-response was made for the hand loom sector. Again on the basis of the number of firms in operation and the number of responding firms, a correction factor of 1.14 was used. In addition the input of cotton yarn was increased. East Pakistan is a heavy importer of yarn which is of a count required for hand looms, and is not produced in East Pakistan. In order to accommodate the regional and foreign imports of yarn, the total "unallocated raw materials," as given in the CMI, were assumed to consist of yarn, and an additional Rs.2.0 million of yarn were allocated to this sector.

5.4 Wood Products

A comparison of the number of firms included in this sector in the CMI 1959/60 and the CMI 1962/63 gives an immediate indication of the severe undercoverage. In 1959/60 twenty-two firms were included in this sector and only twelve firms in 1962/63. In addition, only eight medium scale firms, out of a total of fifteen responded to the CMI. (See Appendix Tables A.1 and A.2). Given the wide variety of products produced by this sector, no direct comparison of output as reported by the CMI was possible. The index of industrial production reports an increase of output of furniture and wood products of 56.7% over the three-year period 1959/60-1962/63, in constant prices. Comparing the gross value of production, as given in the CMI 1959/60 and the CMI 1962/63, shows a decrease of output, in current prices, of 70.6%. Although no price index is available for output of furniture or wood products, some increase in prices is to be expected, given the sharp increase in lumber prices /69/. Thus the divergence between the expected output as based on the industrial production index and the output as reported by the CMI is severe.

Fortunately we are dealing here with a sector whose contribution to the value added originating in manufacturing is less than one percent. As a first step we assumed that as a minimum all inputs and outputs should be doubled. These revised input figures we then compared to the import flows assigned to this sector. The major imports were saw logs, sawn wood, wood glues, varnishes, wood screws, saw blades and machine parts for wood cutting machinery. Rather than following the usual procedure of scaling down the imports in order to fit them into the total flows we allowed the import flows to remain and increased the total flows accordingly. In essence, therefore, the input structure was largely derived from the import data and as such bears only a slight relationship to the production structure as given in the CMI. Until further data on this sector becomes

available, this must be considered a best, although admittedly very rough, estimate.

5.5 Paper and Paper Products

Although seventeen of the nineteen firms engaged in paper manufacturing responded to the CMI, the value of production again appears to be under-reported. The index of industrial production shows a 60.8% increase in output, in constant prices, over the period 1959/60-1962/63. Deflating the output of this sector by the wholesale price index for paper and newsprint and comparing this output in constant prices with output as reported in the 1959/60 CMI only shows an increase of 31%. Output, in value terms, was therefore underreported by approximately 30%.

As a further check, the output of newsprint, the major product of this sector as given by the CMI in quantity terms was checked against the production figures as reported to the Central Statistical Office by the individual newsprint mills /69/. Both sources reported a production of 31,314 tons of newsprint.

Given this exact correspondence on the production of newsprint, it becomes somewhat problematic to assign any correction factor to this sector. The wholesale price index may overstate the increase in the ex-factory price if part of the increase is due to higher transport costs and or trade margins. On the assumption that increases in these inputs are responsible for some of the price increase, we reduce our estimate of under-reporting and apply a correction factor of 1.15.

Two adjustments are required on the printing and publishing sector. The first takes account of the fact that the Central Government Press, in Dacca, did not respond to the CMI. From the government budgets one can obtain the current expenditure on inputs into the Government Press and the payments of wages and salaries to employees of the press. This is shown in

Table 5.4. The value of output of the government press and the purchase of inputs are added to the data given in the CMI.

A comparison of the increase in gross value of output for the period 1959/60-1962/63 led to a second adjustment. Deflating the output, as reported by the CMI 1962/63, after inclusion of the government press, by the wholesale price index for paper, and comparing this to the reported output in 1959/60, also adjusted for undercoverage, shows an increase in output of about 54%. The industrial production index shows an increase in output by the printing and publishing sector of 61.7%. We therefore take 1.70 as the correction factor to be applied to this sector.

TABLE 5.4

Current Expenditures for Central Government Press

(Rs. Million)

<u>Item</u>	<u>Cost</u>
Paper	2.300
Spare parts	0.201
Electricity	0.040
Postage, telephone	0.012
Printing done by others	0.373
Miscellaneous	0.542
Wages and salaries	1.279
	<hr/>
Total	4.747
	<hr/> <hr/>

Note: The total expenditure is the revised budget figures given in /74/ and the breakdown by various items is in the same proportion as the breakdown given in the unrevised government budget /73/.

5.6 Leather Products

Two sectors are included in this group of industries: leather tanning and finishing and manufacture of leather products.

number of firms engaged in tanning and finishing of leather declined over the period 1959/60 to 1962/63 as did the value of output. This is, however, in line with the index of industrial production which shows output for this groups of industries declining since 1959/60. Although this decline in output of tanned leather is difficult to reconcile with the increase in the livestock population and slaughtering of animals we have accepted the CMI data without change.

On the basis of the index of industrial production we expect some decline in the output of leather goods. However, a comparison of the output of this sector based on the CMI 1962/63 and 1959/60, shows a decline of more than fifty percent, which seems excessive. A correction factor of 1.15 was applied to the inputs and outputs of this sector, based on the number of firms in operation in 1962/63 but not responding to the census.

5.7 Rubber and Rubber Products

The data as given by the CMI for this sector was accepted without change, except for an increase in the raw rubber input coefficient to allow for the absorption of raw rubber imports. The output of tires (excluding bicycle tires) as reported by the CMI was 24,563, and this is slightly higher than the production of 23,000 tires, as reported by the CBR/69/. Given this close correspondence on the output side, the CMI data was taken as basically correct.

5.8 Chemical Industries

Although six sub-sectors are specified as belonging to the chemical industries group, only two of these, fertilizer and matches, are of importance. Of the remaining four sectors, two, paints and varnishes and perfumes, cosmetics and soap, were taken from the CMI without change. A correction factor of 1.30, based on the number of non-responding firms, was applied to the medicinal and pharmaceutical products sector, while a

correction factor of 1.24 also based on the number of non-responding firms, was used to correct the production structure for the industrial chemicals sector.

Five fertilizer factories were in operation in 1962/63 and all responded to the census. Total production of urea was reported as 70,909 tons while the monthly production figures as given in /69/ show a total output of urea of 71,607 tons. As this discrepancy is less than one percent, the CMI data was accepted.

In order to arrive at the gross value of output at market prices account must be taken of the subsidy on fertilizer. The subsidy was equal to fifty percent of the cost of fertilizer. It is not clear, however, whether this implies fifty percent of the ex-factory price or the price after inclusion of transport costs and trade margins. We have assumed the latter to be the case. The value of fertilizer ex-factory was Rs.41.4 million. To this we add transport costs of Rs.3.6 million and trade margins of Rs.8.3 million, for a value of fertilizer at factor cost of Rs.53.3 million. A subsidy of fifty percent therefore reduces the market value of fertilizer to Rs.26.6 million.^{4/}

All seventeen match factories in operation in 1962/63 responded to the CMI. Nevertheless, output appears to have been under-reported. The CBR /69/ reports an output of matches of 10 million gross boxes as compared to the CMI output of 8.9 million gross boxes. As, however, matches are packaged in boxes of various sizes, the production of matches may have been underestimated by more than the difference implied by the

^{4/} The value of the subsidy can also be obtained from the government budgets. Half of the cost of the subsidy is borne by the central government and the remainder by the provincial government. On the basis of the budget documents /73/ and /74/ the total outlay for the fertilizer subsidy was Rs.36 million in 1962/63. This is considerably higher than our figure of Rs.26.6 million. However, the budget data is based on "revised" estimates rather than "actuals" and past experience has shown that the final "actuals" can vary widely even from the "revised" estimates.

comparison of the above figures. A better estimate of the degree of under-reporting is the payment of excise taxes. Excises vary according to the number of matches per box and a comparison of the actual excise taxes collected on production of matches with that reported in the CMI was used to derive a correction factor. The CBR reported a total collection of excise taxes on matches of Rs.20.0 million as against the CMI's figure of Rs.13.5 million. On this basis a correction factor of 1.48 was derived and applied to the CMI data.

5.9 Non-Metallic Mineral Products

Although only one sector is identified in this industry group, five industries, with rather different input structures and widely varying outputs, have been aggregated. These industries, ranging from chinaware and pottery making to cement production, should be disaggregated and shown separately in order to increase the stability of the input coefficients. As, however, at this stage of development in East Pakistan, the production of cement and cement products clearly dominates the non-metallic products sector, little is to be gained by further disaggregation and, in fact, the presently shown production structure for this sector nearly corresponds to that which we would have derived if the cement and related products industries had been used alone.

Of a total of thirty-two factories engaged in producing non-metallic mineral products, four failed to respond to the census. (See Appendix Table A.1) Three of these non-responding firms were medium scale factories engaged in the manufacture of glass products, and one was a medium scale factory producing gypsum and plaster. As, however, the output of cement, the major product of this sector, as reported by the CMI corresponded closely to the production as reported by the CBR /69/, no adjustment on the CMI data was deemed necessary.

5.10 Basic Metals and Metal Products

The analysis of the reported results for these two sectors present a number of problems which reflect, in part, the similarity in input structure and output mix of the firms included in each sector. Very few of the firms are producers solely of basic metal forms or metal products and in some sense our attempt to specify these activities separately is an artificial one. The problem is clearly seen if we compare the number of firms listed under each sector in the CMI for 1959/60 and 1962/63.

TABLE 5.5

Number of Firms Engaged in Producing
Basic Metal Forms and Metal Products

<u>Sector Name</u>	<u>Number of Firms</u>	
	<u>1959/60</u>	<u>1962/63</u>
Basic Metal Forms	9	89
Metal Products	<u>94</u>	<u>60</u>
Total	<u>103</u>	<u>149</u>

Source: Appendix Table A.2.

The very sharp increase in the number of firms considered as producers of basic metal forms and the decrease in metal products producing firms leads one to suspect that because of the similarity in product mix firms have been classified differently in the two surveys. Without such an explanation the addition of eighty firms engaged in producing basic metal forms seems rather startling. Insofar as it was considered desirable to specify these two sectors separately, it was necessary to check the degree of under-reporting of production for both sectors combined.

In 1959/60 the CMI reports a total value of output for these two sectors of Rs. 64.5 million and in 1962/63 of Rs.104.0 million for an increase of production of 61.2%, in current prices.

The index of industrial production shows an increase in output for these two sectors^{5/} of 60.6% in constant prices. Although price data on individual products produced by each sector are available, and these show some increases and some decreases in prices, no accurate deflator is available. Given the relative price stability which marked the economy during this period, we assume that the close correspondence between the increases in output in constant and current prices is indicative of no under-reporting of output in the 1962/63 CMI. We have therefore accepted the unadjusted CMI data for each sector without making any attempt to correct for possible mis-classification of firms in each sector.

5.11 Non-electrical and Electrical Machinery

These two sectors, which exhibited high growth rates over the past few years, are nevertheless still relatively unimportant in the overall economic structure of East Pakistan. Their combined contribution to the value added originating in industrial production was less than one percent in 1962/63.

The CMI listed twenty-six firms as producers of non-electrical machinery in 1959/60 but the returns to the CMI 1962/63 showed no firms in this sector. As it is rather difficult to believe that this sector has entirely disappeared, especially in view of the fact that the production statistics /69/ still show considerable output of machinery, we have based our production estimates on the data available from the 1959/60 CMI and extrapolated this to 1962/63 using the industrial production index for this sector.

The estimate of the under-reporting of output of electrical machinery is based on a comparison of the increase in output as reported by the CMIs of 1959/60 and 1962/63 and the industrial production index. According to the two

^{5/} Separate production indices are available for each sector. These have been aggregated by weighting each sector's increase in output by the value added of the sectors in 1959/60.

censuses, while the production index shows an increase of 128.6% in constant prices. The wholesale price index for electrical goods /69/ remained unchanged over the period 1959/60-1962/63. The close correspondence between these two figures leads us to accept the CMI data for the electrical goods sector without change.

5.12 Transport Equipment

Although only one sector is specified for the production of transport equipment, the aggregation over firms involved in producing products primarily meant for consumption (bicycles) and those producing heavy investment goods (ship building, trucks) will yield relatively unstable coefficients over time as the output mix of this sector is likely to undergo drastic shifts. Nevertheless, it was felt that the presently available data was so weak that little would be gained by any attempt at further disaggregation.

The industrial production index shows an increase of 50.7 percent in the value of output of transport equipment over the period 1959/60 - 1962/63, in constant prices. On the basis of a comparison of the CMI 1959/60 and 1962/63, output in current prices increased by 60.3%. If output has been measured correctly the implicit price increase in transport machinery was 6.4 percent. Although no price index is available for this sector, prices of certain transport products can be checked for a rough indication of the price trend. The price index for bicycles increased by nearly 3% and that for machinery in general by nearly 1%. These price changes would seem to indicate some error in reporting of output in the CMI. It is, however, more likely that the earlier censuses of 1959/60 understated production. Analysis of the 1959/60 CMI has shown that the operation of shipyards was excluded in 1959/60 whereas they are included in 1962/63.^{6/} If the earlier census omitted

^{6/}The East Pakistan Bureau of Statistics reports that the following shipyards were included in the CMI: Narayanganj Dockyard and Engineering Works and the Khulna Shipyard.

certain firms, whereas the 1962/63 census included these, then we would expect a comparison of the reported output figures to show a higher rate of growth for production than the industrial production index. We therefore accept the CMI results without change.

5.13 Miscellaneous Industries

The miscellaneous group of industries are divided into seven sectors. One of these, sector 1703, "sports goods," is a "dummy" sector in the East Pakistan but included in order to maintain comparability with the West Pakistan table. Of the remaining sectors only "jute pressing" is of major importance.

The CMI data on the "optical goods" and "ice-making" sectors was accepted as basically correct. For three sectors correction factors were developed on the basis of non-responding firms. For "plastic products" a correction factor of 1.10 was used, for "cotton ginning" 1.07 and for "pens, pencils and office equipment," a factor of 1.38.

The output of the "jute pressing" sector can be checked against the exports of jute as all exported jute is first baled. On the basis of the value of jute exports plus the change in stocks of baled jute /71/ a correction factor of 1.07 was derived. In addition, the input coefficient of raw jute was increased slightly to allow for the absorption of available raw jute.

5.14 Small Scale Industries

It is generally admitted that small scale industries are a major sector in the Pakistan economy although the estimates on how important this sector ~~is~~ vary widely. In the earlier national accounts estimates /17/ the value added in small scale manufacturing was based on a survey of the wage structure by size of firms and an estimate of the number of persons employed by small scale firms. Growth of value added was then assumed to be related to population growth. To quote the National Income

Commission, "the existing data on small scale manufacturing is neither accurate nor adequate. The ... information has no reliable basis and is often contradictory." /17/

Some information on small scale manufacturing in East Pakistan has become available since the gloomy diagnosis embodied in the preliminary report of the National Income Commission. A survey of small scale industries was completed in 1964 /18/. This data, whose quality it is difficult to judge, now forms the basis of the value added estimate of small scale manufacturing in the national accounts. For the sake of consistency, and admittedly because no other choice is open to us, we have used this same data.

The proper inclusion of the small scale sector into the overall structure of the economy is a difficult one. Undoubtedly the inter-relationships between large scale manufacturing and small scale manufacturing may be complex. That is, large scale producers may buy their inputs from the small scale sector and sell part of their output to this sector. As, however, the CMI data does not distinguish between sources of supply, that is, between purchases from, for example, large scale rubber manufacturers as opposed to small scale rubber manufacturers, we have assumed that the two sectors operate largely independent of each other. Thus, unless evidence to the contrary was available, all inputs into large scale manufacturing were assumed to come from large scale firms and all small scale firms were assumed to have purchased their inputs from other small scale firms.

In order to derive the production structure for small scale manufacturing we applied the following procedure to the survey data. First, all small scale firms were aggregated into sectors equivalent to those used in the large scale manufacturing part of the table. The survey on small scale industries only shows total current raw material inputs. Applying the input coefficients of each large scale sector to the equivalent small scale sector we obtained an estimate

of transport services into East Pakistan are therefore taken as Rs.91.60 million.

TABLE 7.2

Imports of Invisibles, 1962/63
(Rs. Million)

<u>Item</u>	<u>Amount</u>
Foreign Travel	43.60
Transport/insurance	290.80
Government expenditure	142.20
Miscellaneous	96.30
	<hr/>
	572.90
	<hr/>

All "miscellaneous" invisible imports (Rs. 96.30) and the remaining 10% of "transport and insurance" imports, are assumed to be expenditure on banking and insurance. This total expenditure (Rs.125.38) on banking and insurance is allocated on a 50:50 basis to each province. The "government expenditures" in the balance of payments consists of rent for government missions abroad, contribution to international agencies and other miscellaneous items. Again we have allocated 50% of this item to each province.

In addition, one item not included in the State Bank's balance of payments must be considered. This is the expenditure on technical assistance, estimated as Rs. 77.0 million in 1962/63 /76/. The exact breakdown of this item is not readily available and in part it may reflect non-service expenditure, although undoubtedly the major part of this is a service import. Without attempting any further analysis of the exact breakdown of this figure for technical assistance, we have taken Rs.30.0 million as an import of services in East Pakistan. Although the exact magnitude of the regional breakdown of this figure is not available, undoubtedly more, if not considerably more, than half was destined for West Pakistan which employed many advisers and consultants to the central government and the Indus Basin Replacement Works. If anything, our allocation of Rs.30.0 million to East Pakistan may have been an overestimate

of the breakdown of raw material inputs. These flows were then netted for production by small scale manufacturers. For example, inputs of jute textiles into all small scale manufacturing ~~proc~~ processes, were reduced by the amount of jute textiles produced by small scale jute textile mills. Only the purchase of jute textile inputs in excess of that produced by the small scale sector was shown as a purchase from large scale jute textile mills. In those cases where the production of a commodity by the small scale sector exceeded the use of that commodity by the small scale sector, the excess was taken either as a delivery to large scale manufacturing sectors or to final demand. This procedure accounts for the relatively high interval delivery in small scale manufacturing.

Two further adjustments on the survey data were carried out. "Handloom" industries have been shown separately elsewhere in the table. In order to avoid double counting, this sector had to be subtracted from the data shown in the "small scale manufacturing" part of the table. Finally, as the survey on small scale firms did not include the cost of such inputs as electricity, banking, or postage, these were estimated separately. The inclusion of these items in the production structure for small scale manufacturing reduced the value added of this sector accordingly. The cost of these inputs were derived on the basis of the input coefficients for the two sectors, "handlooms" and "bidi making" which are closely related to small scale manufacturing. As a result of these two adjustments our estimate of value added in small scale manufacturing is Rs.68.6 million less than that shown in the national accounts /17/.

5.15 Summary

It would be useful at this point to review some of the procedures employed to correct the CMI data and to compare our results with those of the CMI.

In the above paragraphs we have very briefly mentioned some of the procedures used to check the CMI results. The outcome of such checking was either to accept the CMI, or, if necessary, to develop some correction factor. The application of these correction factors to the CMI will not, in most cases, reproduce the input-output results. The reason for this is that further corrections were made, as outlined in Chapter III. To review these steps briefly, after the correction factors were developed and applied to the CMI data, the next step was to compare these total flows with the trade flows, foreign and regional. Unallocated inputs, that is, the purchase of inputs not specified by type in the CMI, were then distributed in such a manner as to cover the import flows. If, after the unallocated inputs had been distributed, a specific import flow was still in excess of a total flow, the usual procedure was to take the excess of imports as an addition to stocks. At times, but only where specifically mentioned, this was not done and total flows were increased to allow for the absorption of imports.

Although the CMI reported on payment of indirect taxes, this data varied considerably from the collection of indirect taxes by commodities as reported by the Central Board of Revenue. This latter source was considered the more reliable and thus the CMI data on indirect taxes was, in nearly all cases, discarded. Finally, for a very few sectors, the value added which was arrived at after these corrections were carried out seemed unusually low as a percentage of gross value of output. In those cases the value added was raised to bring the ratio of value added to gross value of output more in line with the coefficients found in the earlier Pakistan tables and in the Indian input-output table /75/. The only justification for this admittedly very arbitrary procedure is that it was done for only a very few sectors and these tended to be relatively unimportant.

Table 5.6 brings together the CMI estimates of value added and those used in the input-output table. Although the adjustments for some of the sectors are admittedly large, for nearly one-third of the sectors the difference between the CMI figure and our estimate of value added is less than ten percent. For most of the sectors where the differences are large, the cause is nearly always directly attributable to the failure of firms to respond to the CMI, rather than to any wholesale rejection of the CMI data.

We can also make a final comparison between our results and the national accounts data. In order to do so, certain definitional differences must be taken into account. To arrive at comparable definitions of large scale manufacturing, we subtract "bidi making" and "handloom products" from our large scale manufacturing total and add these industries to the small scale sector.^{7/} The resulting figures are compared below:

A. Large scale manufacturing		
1.	National accounts	Rs. 700.0 million
2.	Input-output table	Rs. 899.6 million
3.	Percentage difference	28.5%
B. Small scale manufacturing.		
1.	National accounts	Rs. 563.0 million
2.	Input-output table	Rs. 529.3 million
3.	Percentage difference	-6.4%
C. Total manufacturing.		
1.	National accounts	Rs. 1,263.0 million
2.	Input-output table	Rs. 1,428.9 million
3.	Percentage difference	13.1%

Without implying that our estimates are to be preferred over those of the national accounts, given the substantial differences that have arisen, a reappraisal of the value added in manufacturing as shown is called for. In fact, the Planning Commission, in its final evaluation report on the Second Five

^{7/}The Small Scale Industries Survey /18/ specifically mentions that "bidi making" is not included in its survey. At the same time we know that the national accounts exclude "bidi making" from large scale manufacturing while basing their small scale industry value added figure on those of the survey /17/. On the face of it therefore it would seem that "bidi making" has been entirely omitted from the national accounts.

Year Plan /76/, has developed a revised set of estimates for value added in manufacturing. Based in part on our results /87/ their estimate differs considerably from the official national accounts estimates and is, of course, much closer to our estimate of value added in manufacturing.

TABLE 5.6
Comparison of Gross Value Added.
(Rs. Million)

<u>Sector No.</u>	<u>Sector Name</u>	<u>CMI</u>	<u>I/O</u>	<u>% Diff.</u>
0301	Canning and preserving	1,421	1,421	0.0
0302	Grain milling	0.729	32,386	4,342.5
0303	Rice milling	3.975	65,806	1,555.5
0304	Bakery products	2.883	3,604	25.0
0305	Sugar refining	29.623	29.623	0.0
0306	Edible oils	5.166	7.970	54.3
0307	Tea blending and processing	96.469	109.632	13.7
0308	Salt	--	--	--
0309	Alcoholic beverages	1.052	1.021	- 3.0
0310	Non-alcoholic beverages	--	0.150	--
0311	Cigarettes	26.163	35.498	35.7
0312	Bidi manufacturing	15.599	23.399	50.0
03	Food Processing	183.080	310.510	69.0
0401	Cotton textiles	56.760	68.275	20.3
0402	Woollen textiles	0.225	0.775	244.4
0403	Jute textiles	251.386	251.386	--
0404	Silk and art-silk	0.675	0.825	22.2
0405	Finishing of textiles	2.240	2.643	18.0
0406	Knitted goods	1.431	1.789	25.0
0407	Thread and thread ball	0.356	0.356	--
0408	Footwear	1.826	1.826	--
0409	Wearing apparel	0.146	0.292	100.0
0410	Umbrella making	1.534	1.595	4.0
0411	Handloom products	10.087	11.499	14.0
04	Textile manufacturing	326.666	341.261	4.5
0500	Wood, cork, furniture	2.047	4.168	103.6
0601	Paper and paper products	27.059	38.411	42.0
0602	Printing and publishing	11.697	13.630	16.5
	Paper products	38.756	52.041	34.3
0701	Leather tanning	4.993	4.993	0.0
0702	Leather products	1.023	1.176	15.0
07	Leather processing	6.016	6.169	2.5
0800	Rubber and rubber products	2.372	2.372	0.0
0901	Fertilizers	25.921	25.939	0.1
0902	Paints, varnishes, polishes	0.608	0.609	0.2
0903	Perfumes, cosmetics, soap	8.355	8.336	-0.2
0904	Matches	13.739	29.936	117.9
0905	Pharmaceuticals	8.541	11.296	32.3
0906	Industrial chemicals	1.764	4.023	128.1
09	Chemical Products	58.928	80.139	36.0
1000	Petroleum products	--	--	--

Continued on next page.

<u>Sector No.</u>	<u>Sector Name</u>	<u>CMI</u>	<u>I/O</u>	<u>% Diff.</u>
1100	Non-metallic mineral products	8.781	8.781	0.0
1200	Basic metals	20.825	20.825	0.0
1300	Metal products	11.381	15.381	35.1
1400	Non-electrical machinery	--	10.753	--
1500	Electrical machinery	1.018	1.018	0.0
1600	Transport equipment	12.093	12.093	0.0
1701	Optical goods	0.308	0.308	0.0
1702	Plastic products	0.542	0.497	0.0
1703	Sports goods	--	--	--
1704	Ice making	1.574	1.574	0.0
1705	Cotton ginning	0.430	0.463	10.0
1706	Jute Pressing	58.132	62.436	7.4
1707	Pens, pencils and office equipt.	2.727	3.763	38.0
1700	Miscellaneous Industries	63.614	69.041	8.5
	Total Large Scale Manufacturing	735.577	934.552	27.1
1921	Small Scale Manufacturing	563.000	494.390	-12.2
	Total Manufacturing	1,298.577	1,428.942	10.0

Note: Value added from CMI adjusted for expenditure on banking rent, advertising, insurance and printing as well as taxes.

Source: CMI for large and medium scale manufacturing. Small scale manufacturing from national accounts /17/ and survey on small scale industries /18/.

CHAPTER VI.

Non-manufacturing Sectors

6.1 Introduction:

The remaining seven sectors of the input-output table deal with construction; electricity; gas, water and sanitation services; transport; trade; banking; government services and all other services. Very little is known in terms of the production structure of these sectors and a variety of sources of information were used to estimate current inputs. In most cases the value added figures from the national accounts were used. For three sectors, transportation, government services and banking, our regional estimates are a first attempt to allocate the value added originating in sub-sectors of these sectors to the respective regions of Pakistan.^{1/} Table 6.1 shows the value added contribution of each of the seven non-manufacturing sectors.

6.2 Construction

The national accounts /17/ estimate of construction is based on a technologically derived ratio of 10% as the value of cement to the total cost of construction in urban regions. For rural housing the value of construction is estimated on

TABLE 6.1

Non-manufacturing Sectors

Sector No.	Sector Name	Value Added	
		Rs. Million	Percent
1800	Construction	690.960	10.9
2200	Electricity, gas, etc.	55.000	0.9
2300	Transport services	1,061.610	16.8
2400	Wholesale and retail trade	2,031.000	32.1
2500	Banking and insurance	79.250	1.3
2600	Government services	503.950	8.0
2730	Services, nes.	1,896.000	30.0
	Total	6,317.770	100.0

^{1/}The national accounts /17/ do not show the regional breakdown of these sectors. Khan and Bergan /15/ who have done the most extensive work on national income estimation in Pakistan merely allocate the value added of these sectors on a 50:50 basis to East and West Pakistan respectively.

the assumption that the annual rent constitutes 8% of the total cost of construction and that the ratio of value added to total cost is 20% in East Pakistan. For the highly labor-intensive construction carried on under the Rural Works Programme, value added has been taken as 80% of the total expenditure under this program. Realizing the inherent weakness of a method that relied basically on a single input ratio, cement to value added, the Planning Commission prepared its own set of estimates for the final evaluation report of the Second Five Year Plan. The procedure used by the Planning Commission is described in some detail in /76/. Although these revised estimates show a value added in the construction sector substantially higher than those in the official national accounts, there is good reason to believe that the Planning Commission estimates are the better ones. The estimates are based on the availability of construction steel and cement and time lags were introduced between arrival of imported materials and their final use in order to allow for transport and storage between the port and construction sites and for the processing of imported raw materials. Further, the input ratios for cement and steel are allowed to change to reflect the relative scarcity of construction material and differ by Provinces on the basis of the types of construction prevalent in each region. In addition, the ratios for 1962/63 were checked against an earlier study on investment expenditures /77/. Even though the Planning Commission estimates must still be considered unsatisfactory, they do represent a major improvement over the official national accounts estimates.

The input of flows into construction were derived from a variety of sources. Our major guide was the input coefficients as shown in the Indian input-output table /75/ and these were checked against the input ratios of cement and steel from /77/ and /76/. Before incorporating these flows into our table, a further comparison was made with the data supplied by the East Pakistan Bureau of Statistics in their survey on construction /78/. Finally these total flows were

adjusted in light of the trade flows on imported construction material available and on the availability of bricks which are supplied primarily by small scale brick factories /18/.

As East Pakistan suffers from an acute shortage of cement and imports cement, both from abroad and from West Pakistan, a surcharge of Rs. 7.00/ton is levied on cement produced in West Pakistan and the proceeds of this surcharge are used to subsidize the cost of transporting cement to East Pakistan /41/. In 1962/63 this surcharge raised Rs. 9.44 million and this is taken as a subsidy to construction in East Pakistan.

The allocation of output of construction between investment and services (ownership of dwelling), i.e., repair and maintenance vs. new construction, was done on the basis of the allocation shown in the 1963/64 all-Pakistan input-output table /72/. Nearly 8% of construction was taken as a delivery to services and the remainder as investment.

6.3 Electricity, Gas, Water

The value added estimates for this sector are based on the budgets of the East Pakistan Water and Power Development Authority budgets, the budgets of the electricity supply companies, gas companies and budgets of municipal bodies supplying water and sanitary services /17/. The input proportions for electricity generation were taken from Electric Power Statistics /80/. This annual survey of electric power generating companies, public and private, gives a detailed breakdown of the cost structure of these companies.

Care must, however, be taken in interpreting the value of output of this sector. Only those companies whose primary function is the generation of electric power are included in this sector. Some of the larger manufacturing firms, especially textile mills and paper producers, generate their own electric power and may even sell part of this output. We have not tried to isolate such power production from other production and

therefore the total output of electricity in the present table is understated as is the use of electric power by those firms who generate their own electricity. This will be of crucial importance in projecting future power requirements by use of the present table but need be of little concern at this time.

The CMI collected some data on the cost structure of water purification firms. As the undercoverage of such firms was severe we have merely used the input ratios developed from the CMI data and applied these to the gross value of output generated in water purification. These inputs, primarily chemicals, were then added to the cost structure for electricity generation.

The gross value of output for gas, water and electricity transmission was assumed to consist only of value added. That is, no deductions were made for non-factor payments.

6.4 Transport services

The national accounts do not provide a full regional breakdown of the value added originating in this sector. Specifically they made no attempt to allocate the value added of the Pakistan International Airlines (PIA), the semi-public national carrier, which contributed nearly 28% of the total value added in transport services. Rather than adopt a structure for the table which would avoid the need to provide a regional breakdown for those sectors, or parts of sectors, whose services are truly national in character (central government, banking and PIA) we have made a rough allocation of the value added to each region. As the precise data required for such an allocation was only readily available for central government services (see section 6.7 below), the present regional breakdown for the other national sectors and sub-sectors is merely indicative of the true situation. Nevertheless, we feel this is still an improvement over no attempt to allocate such sectors or the use of a 50:50 ratio as was done by Khan and Bergan /15/.

Total value added contributed by PIA, taken as the sum of wages, salaries and depreciation, is Rs. 67.0 million^{2/}. The revenue earnings by routes, for cargo and passenger service is shown in Table 6.2.

Assuming that value added bears a constant proportional relationship to revenue earnings by routes, we have broken down value added by the percentage of earnings on each route and allocated 50 percent of international, regional and interwing earnings to East Pakistan. On this basis total value added from PIA services originating in East Pakistan was Rs. 32.7 million or 48.8% of total value added from PIA services.

Current expenditure for railways are given in /82/ and for PIA were supplied to us by the Manager, Department of Statistics, PIA, Karachi. For inland water transport we have taken the cost estimates as given in /30/. These three transport modes contributed nearly 80% of the value added in the transport sector, according to the Central Statistical Office, National Accounts Section. For the remaining transport modes, busses, trucks, taxis, trams, etc., we have assumed that the major current inputs are for fuels and spare parts. The calculation of expenditure on current inputs from these sources was higher, by Rs. 32.9 million, than the estimates which underlie the national accounts. In addition, we have subtracted value added originating in post and telegraph services, Rs. 62.9 million, which we include in our government services sector. The final contribution of value added by sub-sectors of transport sector is shown in Table 6.3.

Certain air fares in Pakistan are subsidized. The total subsidy in 1962/63 was Rs.13.0 million /79/. Of this, the subsidy on the Dacca-Katmandu flight and 50 percent of the subsidy on interwing flights, have been allocated to East Pakistan. The total subsidy to transport in East Pakistan in 1962/63 was Rs.7.0 million, while indirect taxes, mainly tolls, on transportation services were Rs.4.3 million for a net subsidy of Rs. 2.7 million.

TABLE 6.2

Breakdown of Revenue Earnings by PIA by Routes

	<u>Routes</u>	<u>Percent of Earnings</u>
1.	International	37.7
2.	Domestic	18.9
	of which in East Pakistan	(8.3)
	West Pakistan	(10.6)
3.	Regional ^{a/}	4.4
4.	Interwing	<u>39.0</u>
		<u>100.0</u>

^{a/} Regional routes refer to the air links between certain of the northern regions (Gilgit, Skardu, etc.) and cities in West Pakistan or flights from East Pakistan to Nepal.

Source: /81/

TABLE 6.3

Value Added in Transport by Sub-Sectors

(Rs. Million)

<u>Sub-Sector</u>	<u>Value Added</u>	<u>Percent</u>
Railways	131.70	12.4
Busses	61.70	5.8
Trucks	79.50	7.5
Motor rickshaws	22.06	2.1
Non-mechanized road vehicles	36.50	3.4
Water ways	<u>664.00</u>	<u>62.5</u>
Inland Water Transport Authority	1.54	0.2
Motor taxis	5.10	0.5
Parts	20.70	1.9
Interwing shipping	6.10	0.6
PIA	<u>32.71</u>	<u>3.1</u>
Total Transport	<u>1,061.61</u>	<u>100.0</u>

Source: PIA from /81/. For all other sectors, data supplied by National Accounts Division, Central Statistical Office, Karachi, adjusted as per text.

6.5 Wholesale and Retail Trade

The wholesale and retail trade sector covers all persons engaged in distributive trade, including self-employed persons. The expectation is that factor payments will form the largest part of the value of output although data on the precise cost structure of this sector are, for all practical purposes, not available in Pakistan. Accepting the value added estimate of the national accounts /17/, we have taken our input coefficients from the Indian study on inter-industry relations /75/ to derive our production structure for this sector.

6.6 Banking and Insurance

This sector comprises the value added originating in all commercial banks, credit societies, cooperative banks, the State Bank of Pakistan, all insurance companies and various other institutions, such as the development banks. The value added is estimated from budgets supplied by all banks and financial corporations to the State Bank and from budget data on insurance companies. The national accounts make no attempt to provide a regional breakdown of this sector as admittedly such a breakdown involves a number of difficult conceptual problems.

We have accepted the figure on total value added originating in this sector as given in /17/ but have made a regional split on the basis of the total value of bank deposits (21%) and the total number of accounts (23%) in East Pakistan /79/. A ratio of 25:75 for East and West Pakistan was taken and the total value added in banking and insurance in East Pakistan is therefore assumed to be Rs. 79.3 million.

This procedure greatly simplifies the real problem involved in making a regional estimate of these services. Although we are aware of the definitional and conceptual problems involved, it appears that the data required for a more sophisticated approach to this question is not readily available. The results, however, have a certain intuitive correctness. Not only is the industrial sector in West Pakistan

more developed, but it is also more diversified, and we would expect therefore a larger contribution of value added in banking and insurance to originate in that province. Even more revealing is the fact that all the head offices of banks, with one exception, and of most of the insurance companies are located in West Pakistan. Finally, given the physical size of West Pakistan as compared to East Pakistan, the provision of banking and insurance services, and inter-alia the number of persons employed by banks and insurance companies, is likely to be much greater in West Pakistan than in East Pakistan. Without trying to claim any undue precision for our estimate, they do not appear to be totally unreasonable but nevertheless should be taken merely as a first rough approximation.

For the cost structure of this sector we have, in the absence of any alternative set of data, relied once again on the input coefficients from the Indian input-output table /75/.

6.7 Government Services

The contribution of this sector to national product is measured by wages and salaries of government employees, including supplements in cash and kind. The coverage of this sector extends to central government, provincial government and municipal authorities. The national accounts do not provide a regional breakdown of central government services, valued at Rs. 796.0 million.

A regional breakdown of the central government is, however, possible on the basis of the detailed statistics on payments contained in the budget volume on Demands for Grants and Appropriations. /73/, /74/. This budget document lists, for each ministry and for each office within a ministry, the wage and salary payments by regions, as well as the payments for current inputs. Summing up all wages and salaries disbursed by the central government to employees in East Pakistan gives

us the value added of the central government in that region.^{3/}

On the basis of this budget data it appears that 22.5% of all wage and salary payments made by the central government are spent in East Pakistan. Thus Rs. 179.0 million of the value added contributed by the central government is allocated to East Pakistan. In addition, we include post and telegraph services, Rs. 62.9 million, in this sector rather than in the transportation sector, for total value added by government services in East Pakistan is Rs. 503.95 million.^{4/}

Expenditures on current inputs were also taken from /73/ and /74/, again excluding purchases for the government construction activities. The input ratios for the central government were also assumed applied to the provincial government.

6.8 Services, nes.

In this sector we have combined ownership of dwellings and services. According to the United Nations International Standard Industrial Classification of Economic Activities, the service sector covers community, business, recreation and personnel services. The Pakistan national accounts follow this definition except that all medical, health and educational institutions administered by the government are included in the government sector.

We have accepted the national accounts estimates of value added for these sectors /17/ as there seems to be little possibility of improving on these estimates at this time. As regards the estimation of current inputs we have again relied on the Indian input-output table /75/ except for the delivery from construction (repairs) to ownership of dwellings. The

^{3/}Such government activities as printing and construction are, of course, excluded from this sector as these have already been taken into account elsewhere.

^{4/}The low proportion of central government activities originating in East Pakistan is of course due to the fact that all central government head offices are located in West Pakistan, while only branches are maintained in the other province. This problem is referred to again in Chapter VII.

input of Rs. 194.5 million for repairs to dwellings was arrived at in our estimate of construction value added, discussed in Section 6.2 above.

6.8 Summary and Conclusion

As for all sectors, except construction, discussed in this chapter, we have relied on the official national accounts data, no purpose is served by comparing our estimates with those of the Central Statistical Office. The only major adjustment we have made was in accepting the Planning Commission's estimate of value added in construction.

What little innovation is embodied in our estimates of regional value added for the non-manufacturing sectors lies in our allocation by regions of such national services as central government, air transport and banking. Except for government services these attempts are undoubtedly no more than a first approximation. Before, however, too much attention is focussed on the reliability of these regional allocations it should be noted that these previously allocated residuals constitute only about three percent of total domestic product. It would thus seem unproductive to search for a more refined procedure for allocating the value added in these subsectors to regions, especially if we keep in mind the relative unreliability of the value added estimates for these sectors as a whole.

CHAPTER VII.

Final Demand and Conclusion.

7.1 Introduction

The "estimation" of the five autonomous sectors, consumption, investment, exports, competitive imports and changes in stock, basically represents no more than a distribution of the difference between total availability and intermediate demand. The only accuracy we would claim for these final demand estimates, aside from exports, is that they are non-negative. To read much more into the data contained in this part of the table would be to stretch the credulity of those familiar with Pakistan's statistical data to a point beyond belief. In short, the attempt to specify final demand by five sectors represents little more than a set of deviously arrived at guesses.

7.2 Exports

The data on exports, foreign and regional, is perhaps the only exception to the generally bleak picture on statistical data concerning expenditure on final demand, and as such we will discuss it first. From the unpublished tabulation on foreign trade, available from the Central Statistical Office, we have allocated the exported commodities to sectors of origin. (See Appendix Table B.3) Three adjustments, previously described, were then made on this data. For foreign exports, export duties were subtracted from the exports of raw cotton and jute and fish. The total collection of export duties was shown against the indirect tax row. For regional exports, i.e., exports to West Pakistan, the data was converted from a cif basis to a fob basis subtracting freight charges estimated by multiplying the tonnage shipped by the per ton shipping cost. Finally, the value of air-freighted exports of betel leaves was added to the sea-borne exports.

Exports of services to abroad were taken from the State Bank publication on the balance of payments /79/. Table 7.1 shows the total earnings of invisibles. These items have been allocated to regions and sectors as follows. Ninety per cent (Rs.64.98 million) of transport and insurance earnings are assumed to be for transport services. This is allocated to East and West Pakistan in the proportion 22:68 on the basis of shipping tonnage registered in each region. In addition, half of the earnings for "travel" are allocated to the transport sector in East Pakistan.

TABLE 7.1
Earnings of Invisible Exports.
(Rs. Million)

<u>Item</u>	<u>Amount</u>
1. Travel	9.00
2. Transport/insurance	72.20
3. Government expenditures	162.60
4. Miscellaneous	<u>215.10</u>
Total	<u>458.90</u>

Earnings classified as "government expenditure" are primarily rental payments by foreign mission for embassies, consulates, and chanceries. These are taken as arising in the "service" sector and are split equally over the two provinces. Earnings under the heading "miscellaneous" cover a variety of items. We have taken one-quarter (Rs. 53.75) as belonging to the service sector and have allocated this equally between East and West Pakistan. The remaining invisible credits, Rs. 168.54, are assumed to be for banking services and insurance and are allocated to the two regions on the basis of the gross value of product in the banking and insurance sector in each province.

As regards the earnings for invisible regional exports, only earnings from transport services are considered. Total freight on interwing sea-borne trade was calculated as Rs.65.27

million, of which Rs.16.32 were allocated to East Pakistan, again on the basis of shipping tonnage registered in that province. Earnings by PIA on interwing airborne trade was Rs.6.10 million, calculated on the basis of tonnage carried /69/ and applicable air freight rates. Of this total, 48 percent was allocated as earnings in East Pakistan on the basis of the regional allocation of PIA services. (See Chapter VI.) The total export of transport services from East Pakistan is therefore Rs.19.24 million. This, of course, represents West Pakistan's import of transport services. Similarly, the amount of transport services not allocated as an export in East Pakistan are West Pakistan's export of transport services and are shown as a regional import of transport services in our table.^{1/}

7.3 Investment

We have estimated total investment (fixed) as Rs.1,385.61 million, approximately 6% less than is shown in the evaluation report of the Second Five Year Plan /76/. Imports of investment goods, regional and foreign, were taken from the trade statistics (See Appendix Table B.2), and are shown at their cif value. Transport cost, trade margins and import duties were calculated separately. The entry for transport services and for trade margins in the investment column therefore reflects the difference between the landed cost and ex-site cost of imported investment goods.

Domestic production of investment goods was calculated as follows: from the CMI data on outputs by commodities for each sector, we identified those products likely to be investment goods. The value of these investment goods products were then expressed as a ratio of total output, and our estimate of gross value of production in each sector multiplied by this ratio gave an estimate of the total value of output destined for investment. This procedure embodies two assumptions which it

^{1/} Imports of invisibles are treated as "competitive" imports.

may be desirable to state explicitly. First, it is assumed that the difference between the ex-factory value and the market value of output is a constant for the entire output of a sector, regardless of the commodity involved, and second, that whatever adjustment was made for under-reporting of output is equally applicable for all products produced by a sector. Although the accuracy of these assumptions is open to question, this procedure seemed to be the most reasonable one, given the lack of any independent set of investment estimates by sectors. Finally, investment expenditure on construction was taken as the total value of construction less the delivery of maintenance construction to the service sector.

7.4 Consumption

The estimates of consumption expenditure by sector closely parallels the procedure used in estimating investment demand. For most sectors, the production mix clearly indicates that the output not used for intermediate demand is destined either for stocks or consumption. (Estimates of changes in stocks are described in Section 7.5) For the remaining sectors, i.e., those that deliver both to investment and to consumption, the previously estimated deliveries to investment were deducted from total output, as were intermediate deliveries, and the residual used as consumption demand.

Although some data on consumption demand is available it is not directly applicable to our table. On the basis of the national sample surveys /63/ some estimates on rural and urban consumption of major commodities can be derived. This data can be used as a rough check on our consumption estimates and in general the discrepancies are small. However, a number of factors mitigate against any direct comparison of the national sample survey data and our results. First, the most recent national sample survey is for the year 1961 and is for rural areas only. Urban areas were last covered in 1955-56. Second, a simple analysis of one year's data with the estimates

of another is sure to be influenced by a large number of transitory elements. Finally our classification of industries does not lend itself readily to a comparison of demand for individual products. Thus, for example, the estimates of rice consumption would have to take account of the fact that rice may be consumed in its unmilled form from sector 0104, or be either milled in large scale or small scale mills. Although it would not be impossible to take account of these differences between product and sector definitions, we feel that, given the inherent weaknesses of the data, such an attempt would not yield very conclusive results.^{2/}

Imports of consumer goods were again taken from the trade data. (See Appendix Table B.1) As this data is at cif prices, trade and transport margins, as well as import duties, were calculated separately as previously described. The consumption of wholesale and retail trade services represents therefore the total amount of such services spent on imported consumer goods. At the same time, the expenditure on transport services represents not only expenditure by consumers on transport services but also the transport margins on imported consumer goods.

7.5 Competitive Imports

Expenditure on imported invisibles has been estimated separately. Table 7.2 shows total imports of invisibles in 1962/63 as taken from the State Bank's balance of payments /79/. These items have been allocated as competitive imports to each region and sectors as follows. As expenditure on transport services we have taken 90% of transport and insurance item (Rs. 261.72 million) plus the expenditure on travel. Half of the expenditure on travel (Rs. 21.80) is allocated on the basis of the percentage of imports into each province in 1962/63, that is, West Pakistan 73%, East Pakistan 27%. Total imports

^{2/} Those interested in a thorough analysis of the budget data collected by the national sample surveys should see /84/.

As regards the expenditure on regional invisible imports, the estimate for imports of transport services from West Pakistan has already been dealt with. Only two items remain to be considered: imports of banking services and government services.

Our regional allocation of banking services output (see Chapter VI) gave the preponderance of banking output to West Pakistan. As a result, the total intermediate use of banking services exceeds total availability. The difference therefore was taken as an expenditure on imports of banking services from West Pakistan.^{2/}

The allocation by regions of consumption of central government services was done on a per capita basis. This reflects the assumption that the welfare satisfaction derived from government services is equal for any resident of a country regardless of location. Although we have estimated that nearly 77% of central government value added originates in West Pakistan we now assume that consumption of such central government services is proportionate to population of each region. The difference between the production of central government services and its consumption in East Pakistan is thus taken as an import of such services.

7.6 Changes in Stocks

The main source of data on stocks is from the CMI itself. This was checked, however, for the major sectors, against the data on stocks of excisable commodities maintained by the Central Board of Revenue /85/. Neither of these sources gives information on stocks of imported commodities or agricultural products.

For agricultural commodities, data on changes in stocks was available from /66/ and /86/ in terms of physical quantities.

^{2/}No attempt has been made to estimate consumption expenditure on banking. In any case, this item is probably small, given Pakistan's stage of development.

These were converted to value terms using the average wholesale price for major urban centers /69/ for each commodity. Stocks of imported commodities represent the difference between the availability of intermediate imported goods and their demand by producing sectors. As these imports are at their cif value, the trade and transport margins on such stocks are shown as a delivery of such services to the stock sector.

7.7 Summary

It needs only to be pointed out again that final demand, as presented here, is at best a very rough first estimate. Nevertheless, insofar as the attempt to present the structure of an economy in a simple inter-industry framework provides a check on the consistency of the more aggregative national accounts estimates, the structure of final demand as posited here can serve as a useful basis against which to check future work on final demand. It has at least the minimum qualification of being consistent with the estimates of inter-industry consumption and production.

Given our final demand we can easily derive a first estimate of the current account deficit for East Pakistan, both with the rest of the world and with West Pakistan. This is shown in Table 7.3. Aside from the weakness of the underlying statistics some additional care is required in interpreting these results. Although the deficit on the current account with the rest of the world is relatively small this result is, of course, dependent on the assumption that all foreign exchange earned by East Pakistan's exports are available for use by East Pakistan. In reality, this is not the case. Allocation of foreign exchange, in the form of import licenses, is done by the central government. The allocation of Pakistan's own foreign exchange earnings to East Pakistani importers may be considerably less than the value of its export earnings, while its inflow of foreign capital, largely foreign aid, thus will be larger than the presently shown deficit on its current

account. /See 88/.

It has been generally accepted that East Pakistan has a surplus on its foreign balance of trade while it has a deficit on its regional balance of trade. The deficit which is shown in Table 7.3, even for the foreign balance of trade of East Pakistan, deserves some comment. We should first recall two corrections made on the unpublished trade data, the source of the usual calculation of the balance of trade. Not only have we made an adjustment for the apparently unrecorded P.L. 480 wheat imports (see Chapter V) but we have also adjusted the published data for goods off-loaded and cleared through customs in West Pakistan but destined for East Pakistan.^{4/}

There is of course also the question of judging the representativeness of a single year's data. Compared to previous years, East Pakistan's surplus on its foreign balance of trade account, not including the adjustments mentioned above, reached one of its low points in 1962/63. Only in 1956/57 was its balance of trade surplus with the rest of the world lower /69/. This is an additional factor in explaining our results.

Even greater caution is called for in interpreting the deficit on the regional current account. Although it is well known that East Pakistan has a deficit on its balance of trade with West Pakistan, this deficit has been steadily worsening over time, and reached a high in 1962/63 /69/. Nevertheless, we must remember that over half of the deficit on the regional current account, as shown in Table 7.3, is due to invisible imports of which a major share consists of imports of government services. These imports are, of course, 'artificial' in the sense that they would not exist if the central government were

^{4/}The published data on imports are based on customs documents. A shipment cleared through customs in Karachi and then transshipped to East Pakistan will be shown as an import in the region where the customs papers were filed, in this case West Pakistan. The C.S.O. does, however, maintain a separate tabulation of such transshipments and one can therefore make the necessary adjustment on the published data.

TABLE 7.3

Deficit on the Current Account
(Rs. Million)

	<u>Foreign</u>	<u>Regional</u>	<u>Total</u>
A. Exports			
1. Goods	1,172.298	445.962	1,618.260
2. Services	<u>168.800</u>	<u>19.244</u>	<u>188.044</u>
Total	1,341.098	465.206	1,806.304
B. Imports			
1. Goods	1,249.860	908.679	2,158.539
of which			
inter-			
mediate	(652.353)	(547.076)	(1,199.429)
consumer	(345.229)	(283.548)	(628.777)
investment	(216.451)	(22.260)	(238.711)
Stocks ^{a/}	(35.827)	(55.795)	(91.622)
2. Services	<u>255.390</u>	<u>548.494</u>	<u>803.884</u>
Total	1,505.250	1,457.173	2,962.423
3. Deficit (1-2)	-164.152	-991.967	-1,156.119

N.B. ^{a/} Imports into stocks includes all types of imported goods but primarily intermediate goods.

physically located in the region which 'consumed' its services, as would be the case if we were dealing with national instead of regional units. More important, these imports of government services are paid for, to a very large degree, by a transfer of capital, in the form of tax receipts, from East to West Pakistan. It would, therefore, be misleading to take the definition of the current account deficit, foreign and regional, as given here in any attempt to estimate the rate of savings in East Pakistan.

Table 7.4 shows the regional resource balance. Again keeping in mind the underlying weaknesses of the data, some interesting results can nevertheless be gleaned from the table. Investment, as a percent of gross domestic regional product, was 10.0% in 1962/63. This compares poorly against a rate of 15.5% for all Pakistan /76/. Approximately 47% of the total national product originates in East Pakistan. Per capita income in East Pakistan (assuming a population in 1962/63 of 58.16 million) was Rs.326 compared to a national average of Rs. 362 /76/ or nearly 10% below the national average. Finally, only 35% of total investment, excluding Indus Basin Replacement Works, took place in East Pakistan in 1962/63.

TABLE 7.4

Regional Expenditure
(Rs. Million)

1. Gross Domestic Regional Product (factor cost)	18,466.313
2. Indirect taxes	563.587
3. Less: (subsectors) <i>subsidies</i> ✓	64.300
4. Gross Regional Domestic Product (market prices)	18,965.600
5. Imports	<u>2,962.423</u>
of which: foreign	(1,505.250)
: regional	(1,457.173)
6. Total Regional Resources	<u>21,928.023</u>
7. Consumption	<u>18,147.043</u>
8. Investment	<u>1,897.865</u>
of which: fixed	(1,583.611)
: stocks	(314.254)
9. Exports (market prices)	✓ <u>1,883.115</u>
of which: foreign ^{a/}	(1,417.909)
: regional	(465.206)
10. Total Expenditure on Regional Resources	<u>21,928.023</u>

^{a/} Includes export duties of Rs.76.811 million and therefore differs from balance of payments figures.

7.8 Conclusion

After all that has been said in the preceding chapters it would be repetitious to add yet another caveat for potential users of this table. We can only emphasize again that the present set of estimates are to be regarded as no more than a first attempt at specifying the inter-industry relations in East Pakistan.

The complete flow table is shown in Appendix Table D.1, and the coefficient matrix in Table D.2. The full import matrices, foreign and regional, as well as the inverse of the domestic coefficient matrix have not been shown here but are available from the author.^{4/}

Our expectation is that not only will this work form the beginning of a serious attempt at regional planning in Pakistan but that dissatisfaction with the present results will lead to greater emphasis on improving the statistical data available in Pakistan especially as regards a variety of regional problems.

^{4/}The bulk of the computations were performed at the Harvard University Computing Center using the HERP V, inversion program. Financial support for this work was obtained from the Yale University Pakistan Project and the Harvard University Development Advisory Service. This assistance is gratefully acknowledged.

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TABLE A.1

Number of Factories Registered and Reporting to the CMI, 1962/63

I/O No.	Name of Sector	Number of Factories				Number of Factories			
		Section 2(j)		Section 5(c)		Sections 2(j) and 5(i)		Non-Reporting	
		Listed	Compiled	Listed	Compiled	Listed	Compiled		Closed
0301	Canning and preserving	5	4	3	3	8	7	1	-
0302	Grain milling	10	7	-	-	10	7	1	2
0303	Rice milling	85	74	9	4	94	78	12	4
0304	Bakery products	17	15	44	26	61	41	6	14
0305	Sugar refining	11	10	-	-	11	10	1	-
0306	Edible oils	63	46	38	26	101	72	14	15
0307	Tea blending	115	108	-	-	115	108	2	5
0309	Alcoholic beverages	1	1	-	-	1	1	-	-
0310	Non-alcoholic beverages	-	-	8	-	8	-	-	8
0311	Tobacco products	3	3	-	-	3	3	-	-
0312	Bidi manufacturing ^{a/}	-	-	2200	1223	2200	1223	n.a.	n.a.
0401	Cotton textiles	32	29	-	-	32	29	-	3
0402	Woollen textiles	1	1	-	-	1	1	-	-
0403	Jute textiles	19	18	-	-	19	18	1	-
0404	Silk and art-silk	3	2	13	7	16	9	4	3
0405	Finishing of textiles	12	12	89	61	101	73	12	16
0406	Knitting	24	16	101	58	125	74	22	29
0407	Thread and threadball making	9	9	6	1	15	10	5	-
0408	Footwear	3	3	31	29	34	32	1	1
0409	Clothing	1	1	6	1	7	2	3	2
0410	Umbrella making	6	6	80	73	86	79	4	3
0411	Handloom products	-	-	568	403	568	403	100	65
0500	Wood, cork and furniture	20	12	15	8	35	20	6	9
0601	Paper and pulp manufacturing	8	8	13	9	21	17	2	2
0602	Printing and publishing	62	49	50	24	112	73	3	36
0701	Tanning and finishing of leather	45	32	21	10	66	42	9	15
0702	Leather goods	5	3	28	21	33	24	5	4
0800	Rubber products	13	9	3	1	16	10	3	3

Continued on next page.

Table A.1 (Cont.)

I/O No.	Name of Sector	Number of Factories				Listed	Number of Factories Sections 2(j) and 5(i)			
		Section 2(j)		Section 5(i)			Compiled	Closed	Non-Reporting	
		Listed	Compiled	Listed	Compiled		Compiled	Closed	Non-Reporting	
0901	Fertilizers	5	5	-	-	5	5	-	-	
0902	Paint and varnishes	6	4	2	2	8	6	2	-	
0903	Perfumes, cosmetics and soaps	16	16	174	94	190	110	34	46	
0904	Matches	18	17	-	-	18	17	1	-	
0905	Pharmaceuticals	12	12	55	31	67	43	11	13	
0906	Industrial chemicals, nes.	16	16	41	21	57	37	11	9	
1100	Non-metallic minerals	19	18	16	10	35	28	3	4	
1200	Basic metals	107	89	68	52	175	141	20	14	
1300	Metal products	73	60	92	74	165	134	19	12	
1500	Electrical machinery	6	4	5	4	11	4	1	2	
1600	Transport equipment	38	18	10	7	48	25	18	5	
1701	Optical goods	3	3	6	6	9	9	-	-	
1702	Plastic products	14	8	12	11	26	19	5	2	
1704	Ice making	8	6	4	4	12	10	-	2	
1705	Cotton ginning	6	3	-	-	6	3	3	-	
1706	Jute pressing	61	46	21	10	82	56	22	4	
1707	Pens, pencils and misc.	12	11	55	28	67	39	13	15	
	Total (ex: 0312, bidi mfg.)	993	814	1687	1119	2680	1933	380	367	

N.B. ^{a/} Bidi factories are not registered under either section 2(j) or 5(i) but form part of a special volume of the CMI.

Source: /16, Vols. I-V/

TABLE A.2

Comparison of Number of Firms in CMI, 1959/60 and 1962/63

I/O No.	Name of Sector	Number of Firms Compiled		Change
		1959/60	1962/63	
0301	Canning and preserving	3	4	1
0302	Grain Milling	16	7	-9
0303	Rice milling	85	74	-11
0304	Bakery products	30	15	-15
0305	Sugar refining	9	10	1
0306	Edible oils	41	46	5
0307	Tea blending	2	108	106
0309	Alcoholic beverages	1	1	-
0310	Non-alcoholic beverages	2	-	-2
0311	Tobacco products	3	3	-
0401	Cotton textiles	25	29	4
0402	Woolen textiles	1	1	-
0403	Jute textiles	14	18	4
0404	Silk and art-silk	5	2	-3
0405	Finishing of textiles	12	12	-
0406	Knitting	28	16	-12
0407	Thread and threadball making	5	9	4
0408	Footwear	8	3	-5
0409	Clothing	3	1	-2
0410	Umbrella making	14	6	-8
0500	Wood, cork and furniture	22	12	-10
0601	Paper and pulp manufacturing	8	8	-
0602	Printing and publishing	76	49	-27
0701	Tannin and leather finishing	43	32	-11
0702	Leather products	4	3	-1
0800	Rubber products	2	9	7
0901	Fertilizers	4	5	1
0902	Paints and varnishes	5	4	-1
0903	Perfumes, cosmetics, soaps	22	16	-6
0904	Matches	18	17	-1
0905	Pharmaceuticals	14	12	-2
0906	Industrial chemicals, nes.	13	16	3
1100	Non-metallic minerals	17	18	1
1200	Basic metals	9	89	80
1300	Metal products	94	60	-34
1400	Non-electrical machinery	26	-	-26
1500	Electrical machinery	7	4	-3
1600	Transport equipment	23	18	-5
1701	Optical goods	2	3	1
1702	Plastic products	8	8	-
1704	Ice making	6	6	-
1705	Cotton ginning	4	3	-1

TABLE A.2

<u>I/O</u> <u>No.</u>		<u>Number of Firms</u> <u>Compiled</u>		<u>Change</u>
		<u>1959/60</u>	<u>1962/63</u>	
1706	Jute pressing	58	46	-12
1707	Pens, pencils and misc.	<u>10</u>	<u>11</u>	<u>1</u>
	Total (ex: 0307 Tea blending	800	706	-94
	Total (all sectors)	802	814	12

Note a/ All tea blending processes carried out on tea estates were omitted from 1959/60 CMI

Source: 1959/60 from /28/
1962/63 from /16/

TABLE B.1

Number of Factories Registered and Reporting to the CMI, 1962/63

SITC-0 Number	Input-Output Sector Numbers		SITC-0 Number	Input-Output Sector Numbers	
	Origin	Destination		Origin	Destination
04101	0103	0302	27208-09	0200	1800
04401	0103	0302	27211	0200	1100
05401	0103	0103	27212	0200	0602
06104	0305	0304	27213	0200	1500
07101	0103	0301	27214	0200	1100
07202	0305	0304	27216	0200	1707
07203	0305	0304	27219-01	0200	0902
07401	0103	0307	-02	0200	0903
07402	0103	0307	-04	0200	0306
12101-09	0103	0311	-15	0200	0903
21105	0702	0702	-16	1704	2400
21109	0103	0701	-19	0200	1100
22102	0103	0306	28303-09	0200	1200
22109	1705	0306	28319-09	0200	1200
23101	0103	0800	28401-09	1200	1200
23102	0800	0800	29101	0103	0901
23104	0800	0800	29201-01	0103	0901
24202	0103	0500	-02	0103	0701
24203	0103	0500	-07	0103	0701
24204	0103	0200	-09	0103	0405
24209	0103	1800	29202-02	0103	0905/0800
24201-03	0500	1800	-03	0103	0500/0602
24302	0500	0500	-04	0103	0401
24303	0500	0500	-07	0103	0902
24401	0500	0500	-09	0103	0902
25101-03	0602	S	-19	0103	0403/0903
25102	0500	0601	29203	0103	0500
25103	0906	0601	29204-03	0103	0906
26101	0103	0404	-21	0103	0906
26103	0103	0404	-22	0103	0906
26201	0103	0402	-25	0103	0905
26301-09	1705	0401	-27	0103	0304/0301
26509-02	0103	0402	-29	0103	0905/0906
26601-01	0906	0404	29205	0104	0104
27201	0200	1800	29209-01	0103	0311
27202	0200	1100	-05	0103	0309
27203	0200	1800	-19	0103	0405
27204	0200	1100	31301-01	1000	2400
27205	0308	1704	-02	1000	S
27206	0200	0906	-09	1000	S
27207	0200	1100	31303	1000	S
31304-02	1000	0403	51209-91	0906	0905
-04	1000	2200	-95	0906	0401
-07	1000	S	Other	0906	S
-09	1000	S	52101	1000	1800
31305-01	1000	1921	53101-04	0906	0902
-02	1000	0905/0903	-08	0906	0902
-09	1000	0906	-21	0906	0902
41102-01	0906	0702	-22	0906	0405
-02	0306	1921/0903	-26	0906	0902
-03	0306	1921/0903	-29	1000	0405
-04	0906	0903	Other	0906	S
-09	0306	0903	53201-01	0906	0304
41201	0306	0902	-03	0906	0701
41202	0306	0306/C	-09	0906	0405
41205	0306	C	53202	0906	0701
41211	0306	0905	53301	0906	0902
41219	1705	0306	54103-11	0905	C
41301	0306	0902	Other	0905	0905
41302	0306	C	53302	0906	0602

Table B.1 (Cont.)

SITC-0 Number	Input-Output Sector Numbers		SITC-0 Number	Input-Output Sector Numbers	
	Origin	Destination		Origin	Destination
41304	0902	0500	54101	0905	0905
51101	0906	S	54102	0905	0905
51102	0906	S	54104	0906	-905
51103	0906	S	55101	0906	0903/0905
51104	0906	S	55102	0901	0104
51109-01	0906	2200	56102	0901	0104
-15	0906	0405	59101-04	1300	0906
-17	1100	1100	-05	0906	C
-27	0906	0902	-06	1300	0906
-33	0906	0902	-07	1300	0906
-34	0906	0902	-08	1300	0906
-64	0906	0800	-19	0906	C
-81	0906	0902	59901-03	0906	0200
-84	0906	0902	-05	0906	0311
Other	0906	S	-07	0906	0404
51201	0906	S	Other	0906	1702
51202	1000	S	59902	0906	0104
51203	0906	0311	59903	0906	0301/0304
51204	1000	S	59904	0906	0500
51205	0906	0902	59909-01	0906	0500
51209-32	0906	2730	-04	0906	S
-47	0906	0905	-05	0906	0902
-85	0905	C	-09	0906	S
-86	0906	0905	61101	0701	0702
61102	0702	0702	66601	0403	1100
61201-02	0702	1705	66602	0401	1600
Other	0702	S	66102	1100	1800
61202	0702	0702	66103	0200	1800
61203	0800	0408	66109	1100	1800
62101	0800	0800	66201	1100	1800
62901	0800	160/2300/C	66202	1100	1800
63101	0500	1800	66203	1100	1800
63102	0500	1800	66301	1100	0302/0303
63103	0500	1800	66302	1100	0500
63109	0906	1800	66303	1100	S
63201	0500	S	66305	1100	1500
63203	0500	1800	66306	1100	S
63301	0500	0500	66307	1100	S
64101	0601	0603	66401	1100	1100
64102-06	0601	C	66402	1100	1701
-08	0601	C	66403	1100	1800
Other	0601	0602	66404	1100	1800
64103-03	0601	C	66406	1100	1800
Other	0601	S	66407	1100	1600
64104	0601	0602	66408	1100	1701
64105	0601	1800	66409	1100	1800
64106	0601	S	66409	1100	1800
64107	0601	S	66501-01	1100	0310
64111	0601	0301	-02	1100	1300
64112	0601	C	-03	1100	C
64119	0601	C	-09	1100	0309/0310
65101	0404	0404	67102	1300	1300
65102	0402	04021	68101	1200	1200
65103	0401	0401	68102	1200	1200
65104	0405	0401	68103	1200	1200
65105	0407	0406	68104-04	1200	1300
65106	0906	0404	-07	1200	1400
65107	0404	0404	Other	1200	1800
65109	0403	0403	68105-01	1200	1800
65304	0403	0403	Other	1200	S
65403	0409	0409	68106-01	1300	1706
65501	0409	0409	-02	1300	1705

Table B.1 (Cont.)

SITC-0 Number	Input-Output Sector Numbers		SITC-0 Number	Input-Output Sector Numbers	
	Origin	Destination		Origin	Destination
65502	0409	0409	-03	1300	1706
65504-01	0403	0603	-04	1300	1705/1706
-09	0404	0409	68107-02	1200	1300
65506	0401	S	-03	1200	1800
65509	0401	S	-04	1200	1800
Other	1200	S	69918-09	1300	1800
68111	1200	1800	69921-02	1300	0301
68112	1200	1300	-03	1300	2400
68113	1200	1800	-05	1300	1800
68114	1200	1800	-09	1300	0301/1800/2300
68115	1200	1800	71614	1400	S
68207-01	1200	1200	71615-01	1400	1600
-02	1200	1200	-02	1400	1600
-03	1200	1500	-04	1400	S
-04	1300	S	-05	1400	1400
-05	1300	1800	-06	1400	1400
-06	1300	1800	-07	1400	S
-08	1300	S	-08	1400	1400
-09	1300	S	-09	1400	S
68301	1200	1200	72103-01	1500	1600
68302	1300	S	-02	1500	1500
68401	1200	1200	-03	1500	C
68402-04	1200	0311	-04	1500	I
Other	1200	S	-05	1500	2330
68501	1200	1200	-06	1500	C
68502	1200	S	-08	1500	2330
68601	1200	1200	-11	1500	C
68602	1200	S	-19	1500	I
68701-01	1200	S	72107	1500	1600
Other	1200	1200	72113	1300	1800/1500
68901	1200	S	72119-01	1500	I
68902	1200	1200	-02	1500	I
69901	1200	1800	-03	1500	1500
69902	1200	1800	-04	1500	I
69903	1200	S	-06	1500	1800
69904	1300	1300	-07	1500	1800
69905	1300	1800	-09	1500	S
69906	1300	1800	73107	1400	1600
69907-03	1300	0500/1800	73204	1600	1600
-05	1300	1400/1500/1600	73205	1600	1600
-06	1300	0500	73206	1600	1600
-07	1300	1400/1500	73207	1600	1600
-08	1300	0500	73309-01	1600	I
-09	1300	0500/1800	-09	1600	1600
Other	1300	1800	73403	1600	2300
69918-01	1300	1800	73509	1600	I
-03	1300	C	81101	0500	1800
-04	1300	1800	81201	1300	1800
-05	1300	0702	81203	1300	1800
81204-01	1300	C	86201-03	0906	C
-02	1100	1500	86202	0906	2330
-04	1100	1500	86401-02	1701	C
-05	1300	C	-03	1701	1701
-06	1300	C	86402-01	1701	C
-07	1100	I	-02	1500	C
-08	1300	C/I	-03	1701	1701
-09	1300	1500/1800	89905-01	1702	0409
86201-01	0906	C	-05	1300	0409
-02	0906	2330	-09	1702	0409

N.B.

S: Commodities not directly allocatable
C: Consumer goods
I: Investment goods

TABLE B.2

Import Commodities by Sector of Origin and Destination
(Primarily Final Demand Goods)

SITC-0 Number	Input-Output Sector Numbers		SITC-0 Number	Input-Output Sector Numbers	
	Origin	Destination		Origin	Destination
011	0301	C	54109-38	0409	2730
012	0301	C	-42	0906	0905
013	0301	C	-49	0905	C/0905
022	0301	C	Other	0905	C
024	0301	C	55201	0903	C
026	0305	C	55202	0903	C
029	0301	C	55203	0902	C
031	0301	C	59106	0906	C
04202	0303	C	62902	0800	C
04601	0302	C	62909-11	0800	S
04702	0302	C	Other	0800	C
04801	0302	C	63209	0500	C
04804	0304	C	63309-01	0500	0510
04809	0304	C	-09	0500	C
051	0103	C	64108	0602	C
052	0103	C	64201-01	0601	C
053	0304	C	-03	0601	S
05402	0103	C	64202	0601	C
05403	0103	C	64203	0602	C
05409	0103	C	64209	0601	C
055	0301	C	65201	0401	C
06102	0305	C	65202	0405	C
06109	0305	C	65302	0402	C
07102	0301	C	65305	0404	C
07301	0305	C	65309	0401	C
075	0103	C	65401	0404	C
09102	0306	C	65603	0409	C
09909	0301	C	65604	0409	C
111	0310	C	65605	0409	C
112	0309	C	65609	0409	C
122	0311	C	65703	0402	C
31302-01	1000	C/S	66309	1100	C
-09	1000	1800	66502	1100	C
53303	0906	0902	66509-01	1100	0905
54109-02	0906	0905	-02	1100	0905
-04	0906	0903	-04	1100	I
-06	0103	0905	-06	1100	C
-12	0103	0905	-07	1100	I
-14	0905	0905	-09	1100	C
-36	0905	2730	66602	1100	C
-37	0401	2730	66603	1100	C
67201	0200	C	71203	1400	I
67301	1921	C	71209	1400	I
69102	1300	C	71301-03	1600	0104
69103	0906	C	Other	1600	I/I
69908-02	1300	S	71502-06	1400	1200/1300
-09	1300	0409/1921	Other	1400	I
Other	1300	C	71601-04	1400	1400
69911	1300	I	Other	1400	I
69912	1921	I	71602-02	1600	1600
69913	1300	C	Other	1600	I
69915	1300	C	71603-05	1400	0200
69916	1300	C	-06	1600	I
69917	1300	C	Other	1400	I
69922	1300	C	71604-01	1300	0500
69929-01	1300	1600	Other	1400	I
-02	1300	1600	71401	1400	I
-03	0500	0310	71402	1400	I
-04	1300	1800	71501	1400	I

Table B.2 (Cont.)

SITC-0 Number	Input-Output Sector Numbers		SITC-0 Number	Input-Output Sector Numbers	
	Origin	Destination		Origin	Destination
-05	1300	0409	71605	1400	I
-06	1300	1500	71606-02	1400	0601
-12	1300	0500	Other	1400	I
-13	1300	1600	71607-01	1100	0602
-16	1300	0409	-02	1400	I
-18	1300	1500	-03	1300	0206
-21	1300	1800	-04	1300	0602
-24	1300	1500	-05	1400	I
-28	1300	1500	-06	1400	0602
-29	1300	S	-09	1400	I
Other	1300	C	71608-01	1500	0401
71101	1400	I	-02	0601	0401
71102	1400	I	-05	0601	0401
71103-06	1300	1400	-16	0500	0405
Other	1400	I	-18	1400	04
71104	1600	2400	-23	1400	0401/0403
71105-04	1600	1600	Other	1400	I
-05	1600	1600	71611-01	1400	C
Other	1600	I	-02	1400	I
71109-05	1600	1600	-03	1300	C
Other	1600	I	-04	1400	C/0409/1921
71201	1400	I	-05	1400	0409/1921
71202	1400	I	71612	1500	I
71613-18	1300	1702	82102	1300	I
-21	1300	1702	82109	0500	C
-27	1400	S	83101	0409	C
-33	1400	2800	84105	0409	C
Other	1400	I	84107	0409	C
72101-12	1500	1500	84111	0409	C
-15	1500	1500	84112	0409	C
-16	1500	1500	84119	0409	C
Other	1500	I	85104	0408	C
72102-03	1500	I	85109	0408	C
-05	1500	1500	86101-01	1701	C
-09	1500	I	-03	1701	C
Other	1500	C	-04	1701	C
72104-01	1500	C	-05	1702	1701
-02	1500	C	-06	1100	1701
-04	1500	1500	Other	1701	I
-05	1500	1500	86102	1701	I
-11	1500	1500	86103-02	1300	2730
-12	1500	2730	-03	1300	2730
-13	1500	1500	-05	1100	C/I
-19	1500	C	Other	1400	I
Other	1500	I	86109-03	1701	1800
72105	1500	I	-06	1701	C
72106-02	1500	I	-08	1400	1701
-06	1500	I	Other	1701	I
Other	1500	C	86203	0906	C
72108-09	1702	I	86301	1701	C
Other	1702	1800	89101-03	1500	1500
72111	1500	I	Other	1500	C
72112-02	1500	C	89102	1701	C
-09	1500	I	89109	1707	C
73103	1600	1600	89201	0602	C
73104	1600	I	89202	0602	C
73105	1600	I	89204	0602	C
73106	1600	I	89209	0603	C
73201	1600	C/I	89903-02	1300	0409
73202-04	1600	I	-05	0500	0409
Other	1600	C	Other	0409	C
73203	1600	I	89907	1702	C
73303	1600	C	89908	1500	C

Table B.2 (Cont.)

SITC-0 Number	Input-Output Sector Numbers		Number	Input-Output Sector Numbers	
	Origin	Destination		Origin	Destination
82101	0500	C	89911-02	1702	0311
89911-09	1702	C	Other	1707	C
89913	1707	C	89917-03	0902	0602
89914	1703	C	-07	1400	I
89915	1703	C	-09	1707	2730
89916-06	1300	1707	Other	0902	C
-07	1300	1707	89918	0500	C
			89999	1300/1921	C

N.B.: S = Items not directly allocatable

C = Consumer goods

I = Investment goods

TABLE B.3

Export Commodities by Sector of Origin

<u>SITC-0 Number</u>	<u>Sector of Origin</u>	<u>SITC-0 Number</u>	<u>Sector of Origin</u>
001	01 03	599	0906
011	03 01	611	0701
025	0103	632	0500
03101	03 01	641	0601
03102	03 01	65103	0401
03109	0103	65104	0405
044	0103	65304	0403
048	0304	65501	0409
051	0103	65506	0401
052	0103	65509	0406
053	03 01	656	0401
054	0103	65701	0402
074	0307	65702	0402
075	0103	64403	1100
081	0306	67203	0103
099	03 01	699	1300
112	0309	711	1400
211	0103	734	1600
211-05	0702	714	1400
221	0103	716	1400
262	0103	721	1500
26301	1705	731	1600
26303	1705	732	1600
26504	0401	733	1600
26401	1706	812	1300
265	1705	814	0406
267	0407	861	1701
291	0103	862	0602
29203	0103	863	2730
29204	0500	864	1701
29205	0103	891	2730
29209	0103	892	0603
53303	0902	899	1707
541	0905	920	0103
55202	0903		
55203	0902		

TABLE B.4

<u>Item</u>	<u>Imports</u>		<u>Exports</u>	
	(Lbs.)	(Per cent)	(Lbs.)	(Per cent)
Wearing apparel	29,518	0.4	-	-
Shoes	755,945	9.9	-	-
Books	14,116	0.2	-	-
Pharmaceuticals	354,625	4.6	289,169	3.1
Dyestuffs	42,600	0.6	6,139	0.1
Electrical goods	656,661	8.6	170,574	1.9
Fruits	1,217,054	15.9	-	-
Cutlery and hardware	296,428	3.9	-	-
Hosiery	470,585	6.1	18,005	0.2
Instruments, appliances	192,330	2.5	-	-
Jewelry	133,786	1.7	-	-
Leather goods	10,118	0.1	172,259	1.9
Machinery and parts	291,344	3.8	-	-
Newspapers	493,483	6.4	67,585	0.7
Plastic goods	118,331	1.5	6,497	0.1
Provisions	56,638	0.7	491,548	5.4
Stationery	106,156	1.4	28,043	0.3
Sports goods	114,474	1.5	-	-
Textiles	968,900	12.7	72,266	0.8
Telephone equipment	117,531	1.5	-	-
Toilet requisites	179,610	2.3	21,572	0.2
Betel leaves	-	-	6,910,543	75.2
Hides and skins	-	-	39,468	0.4
Tobacco and cigarettes	-	-	4,568	0.1
Mail and miscellaneous	<u>1,037,967</u>	<u>13.7</u>	<u>887,975</u>	<u>9.6</u>
Total	7,658,200	100.0	9,186,211	100.0

Source: /69/

TABLE C.1

Rates of Sales Taxes in Pakistan, 1962/63

<u>Item</u>	<u>Rate</u> <u>(Per Cent)</u>
1. <u>Basic Rate</u>	12.5
2. <u>Totally Exempted Goods</u>	
a) Chemical fertilizers	
b) Newsprint	
c) Bricks	
d) Medicine	
e) Raw wool and animal hair	
f) Concrete building components	
g) Furnace oil	
h) Ghee (ex. vanapati or vegetable ghee).	
i) Sewing needles	
j) Jute batching oil	
k) Seeds for planting (ex. cotton seeds)	
l) Dried milk	
3. <u>Domestic Goods only Exempted</u>	
a) Sports goods	
b) Metal utensils	
c) EPNS sport trophies	
d) Iron foundry products	
e) Tanned leather	
f) Jewelry	
g) Hosiery goods	
h) Mazri cloth	
i) Food articles for hotels	
j) Bakery products	
k) Clothing	
l) Pottery	
m) Edible oils	

Table C.1 (cont.)

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	<u>Item</u>	<u>Rate</u> <u>(Per Cent)</u>
3.	Domestic Goods <u>Only</u> Exempted (cont.)	
	n) Umbrellas	
	o) Embroidery	
	p) Photographic film	
	q) Bicycles	
	r) Sewing machines	
	s) Pesticides	
	t) Saltpetre	
	u) Locks, hurricane lamps	
	v) Hand water pumps	
	x) Saw mill products	
	y) Rubber footwear	
	z) Metal trunks	
	aa) Alkarta	
	ab) Lead pencils	
	ac) Art silk cloth	
4.	<u>Export Goods</u>	
	a) All exempted except ginned cotton	
5.	<u>Standard Rate Goods</u>	12.5
	a) Footwear	
	b) Cotton yarn exceeding 20 counts	
	c) Paper, other than newsprint	
6.	<u>Concessional Rates</u>	
	a) Canned fruits or vegetables (domestic origin)	6.25
	b) Cotton yard	6.25
	c) Cotton fabrics (coarse)	10.0
	d) Asbestos waste	6.25
7.	<u>High Rate Goods</u>	
	a) Hosiery yarn	15.0
	b) Leather goods (excluding footwear).	20.0

Source: /38/.

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