

**AN INPUT-OUTPUT TABLE FOR THE UNREGISTERED  
MANUFACTURING SECTOR  
OF THE INDIAN ECONOMY FOR 1963**

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Miss Jani Kamath  
Gokhale Institute of Politics and Economics  
Poona-4

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## P R E F A C E

The need for an input-output table exclusively for the small scale sector of the manufacturing industries in the Indian economy, has been felt ever since a beginning was made in the preparation of input-output tables in this country. Except in the first three input-output tables of the Indian economy, no distinction has ever been made between the input structures of the large scale and the small scale manufacturing sectors mainly on the ground that data for the small scale sector were either not available or were inadequate for such a venture. The input structures of the small scale sector are very different from those of the large scale sector. This is primarily because, the scale of operation and the techniques of production are inter-related to a large extent. The present study can be rightly claimed to be the first ever effort in the collection of whatever statistics that are available for the small scale sector with a view of distinguishing the input structures of the small scale manufacturing industries from those of the large scale sector. The results have been presented in the pages that follow in the form of an input-output table for the small scale manufacturing sector of the Indian economy.

I wish to thank Professor P.N.Mathur (at present the Professor of Economics at the University College of Wales, U.K.) for suggesting this topic to me as the subject for my doctoral dissertation. I am indeed deeply indebted to him for the keen interest and valuable guidance and help he has always extended to me throughout the course of this study. This work was carried out at the Gokhale Institute of Politics and Economics, Poona-4. I wish to place on record my grateful thanks to Professor V.M.Dandekar, the Director of the Institute, for having permitted and encouraged me to prosecute this work while being on the staff of the Institute as a Research Assistant.

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through the initial draft of this thesis and for making useful suggestions. I take this opportunity to express my heartfelt thanks to both of them.

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Poona-4

*J. Jani*  
( Jani Kamath )

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## CHAPTER 1

### INTRODUCTION

" With the transformation of the mode of production from primitive self-contained to more elaborate processes leading to specialisation and exchange, the need to investigate the inter-woven web of economic inter-dependence, both in its theoretical and empirical aspects became increasingly important."<sup>1</sup> The tool developed for this purpose by Professor Wassily Leontief of Harvard, viz. the Input-Output technique, since its inception in the thirties stimulated empirical work on inter-industry analysis in a large number of countries.

An Input-Output Table describes the relationship of each industry with other industries. This is extremely useful in the context of continuous preoccupation with different aspects of economic growth and planning for development. To-day all the countries of the world pay more and more attention to the collection of statistics that are required for the preparation of input-output tables and much effort and energy are expended in the preparation and application of newer and newer input-output models.

In the preparation of an input-output table the economy is classified into different producing and consuming sectors.

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<sup>1</sup> Mathur P.N. and Bharadwaj R., "The Input-Output Economics- A Resume", Arthavijnana, Vol.9, No.3-4, Sept-Dec 1967, page 283.

The criteria for such a classification are similarity of outputs and similarity of input structures. The importance of the similarity of input structures is more for the underdeveloped countries than for the developed countries. This is so because in the underdeveloped countries there exists a dual structure of technology, i.e. production is carried on by the application of either the advanced technology imported from developed countries or the results of new inventions and innovations within the country, when the old technology is still very much in vogue. The two technologies are very different from each other and their input structures would also be dissimilar though the outputs are more or less similar, e.g. hand pounded and milled rice. For each producing sector, classified on the basis of similarity of outputs, there exists different input structures based on the size of firms, capital intensities, techniques of production, product-mix and so on. The input-output table for under-developed countries should therefore make a distinction between the different input coefficients existing for the different technologies or techniques of production in each producing sector.

The availability of data is a constraint in making such a distinction. It largely depends on the details that are given in the industrial statistics of each country.

In India, the industrial statistics are published in the Reports of the Annual Survey of Industries (formerly the Census of Manufacturing Industries and the Sample Survey of

Manufacturing Industries). Manufacturing establishments have been classified into two size-groups for the purposes of publishing the details for each industry. They are (i) the Large scale(Census) sector and (ii) the Small scale(Sample) sector. These statistics relate to factory units employing more than 10 workers with use of power and more than 20 workers without the use of power. Input-output tables for India are based on these data. The data relating to the manufacturing establishments smaller than these factory units have not been collected systematically and characteristics of the input-output structure of these units have not been taken into account in any of the input-output tables.

The present study is an attempt to prepare an input-output table for 1963 for the manufacturing establishments smaller than the factory units. Data relating to these units are scanty and scattered and require meticulous scrutiny. The table has been prepared by making a considerable number of adjustments with the available data.

The need for an input-output table for the unregistered manufacturing sector is not only to supplement the existing input-output tables but also to serve as an instrument in making policy decisions with regard to the planned allocation of resources between the large scale and the small scale manufacturing sectors. It would also help in the study of the choice of techniques for different industries. The unregistered manufacturing sector makes a significant contribution to the employment and the national income of the country.

It is seen from the Census of India, 1961, that there were 23.47 lakh manufacturing units of the size-group of employment of less than 10 workers with the use of power and less than 20 workers without the use of power compared to 0.37 lakh in the size of employment of 10-49 workers with use of power and 20-99 workers without the use of power and 0.09 lakh in the bigger size-group of employment. From the point of view of employment 'unregistered' manufacturing accounts for the bulk of employment which in 1961 was 14.17 million or 79% of the total employment in 'manufacturing' whereas the organised sector provided employment to 3.76 million workers or 21% only.

The contribution of the unregistered sector to the national income in 1961 is estimated as Rs. 785 crores or 5.8 % of the total national income, compared to 7.9 % from registered manufacturing; i.e. small scale manufacturing contributed 42.3% of the national income originating from the whole manufacturing activity. The gross output of the small scale sector has been estimated as Rs. 2256 crores or 30 % of the gross output of the whole manufacturing for 1963 compared to Rs. 5362 crores of the registered sector.

In Planning, a great debate has been going on about the role to be assigned to the small units. It is often argued that these industries, as they are labour intensive and capital saving, should be encouraged in the present context of availability of abundant labour supply and scarcity of capital. An

input-output table would enable one to judge the relative efficiency of the small scale sector compared to that of the large scale sector.

For making a choice of the technique of production for each industry and for an optimum allocation of capital and other resources, both the input-output transaction matrix and the capital matrix are necessary. The present study, it is hoped, will meet this requirement at least partially.

Chapter 2 gives a theoretical description of the technique of input-output analysis. A review of the work done in the preparation of input-output tables in India and how the unregistered manufacturing sector has been treated in each of these tables is discussed in Chapter 3. The different sources and the nature of data given in them and their usefulness is explained in Chapter 4. The adjustments made in the available data and the assumptions behind such adjustments are given in Chapter 5. Chapter 6 gives the estimates of employment in different industries in the unregistered manufacturing sector. Output per worker and from that the total output have been estimated for each industry and are presented in Chapter 7. Chapter 8 gives the coefficients of inputs for the different industries and the estimated values of material inputs and value added in these industries. These data have been put in the form of input-output tables, both the coefficient matrix and the transaction matrix, in Chapter 9. A comparison of the input structures in the unregistered manufact-

uring sector and the bigger manufacturing units has also been made in this chapter. In Chapter 10, the estimates of value added in the different industries have been compared with the gross national product originating from the small scale manufacturing given in the national income estimates. Chapter 11 concludes the present study.

## CHAPTER 2

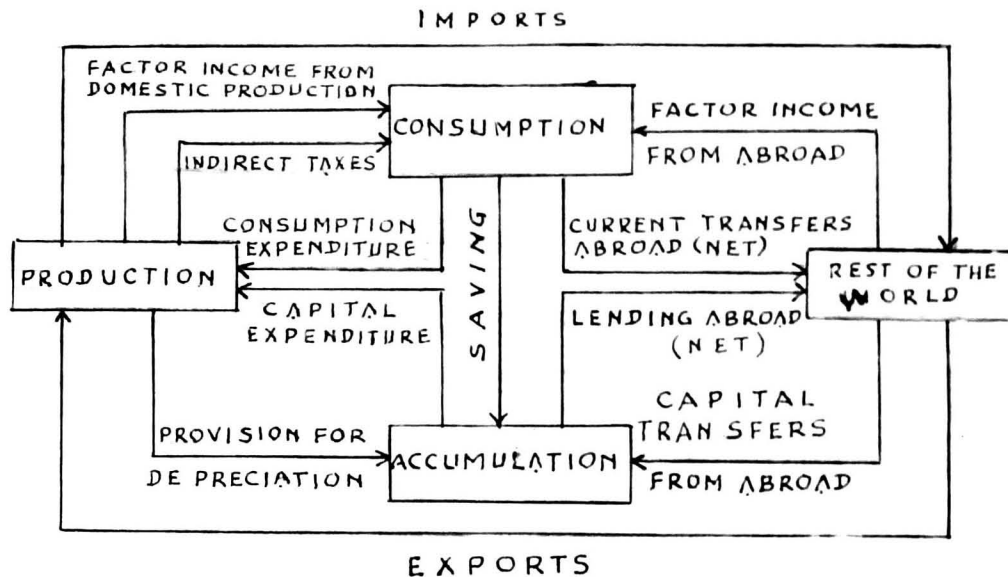
### TECHNIQUE OF INPUT-OUTPUT ANALYSIS

The different forms of economic activities distinguished for accounting purposes in the social accounting systems are: Production, Consumption, Accumulation, and Relation with the rest of the world. For each activity there are separate accounts which are the consolidated accounts of individuals in the economy for each of these activities. Every economic system is composed of a very large number of transactors and it would neither be possible nor much useful to collect or handle information for each transactor separately on each of these activities. Hence transactors are generally grouped into sectors such as households, Government, business etc. and within each sector accounts of a similar kind are grouped and it is these sets of sector accounts which constitute units in a system of social accounts.

The inter-relationship of different economic activities is known from the days of the Physiocrats. A diagrammatic representation would help understanding the inter-relationship of the economic activities. (See next page).

Accounts for each sector or activity are represented by boxes and the transactions between them expressed as flows of money are represented by arrows.

The sources of revenue for the productive activity are from (i) the sales of consumer goods to individuals and govern-



Diagram<sup>1</sup> - Inter-sectoral Relationships

ments, (ii) sales of capital goods to individuals and governments and (iii) export of goods and services (such as those rendered to foreigners by shipping companies, airlines and items such as sales to foreign tourists). The individual businesses in the production sector would buy and sell to one another, but in the consolidated accounts they may only be represented by an arrow starting from production and returning to it and hence are left out of account.

The whole proceeds from the sales of 'production' are paid out as (i) payments to factors of production in the form of wages, salaries, profits, rent or interest and as indirect taxes net of subsidies to the 'consumption' sector composed of households and Government, (ii) as amount set aside for depreciation to the 'accumulation' and (iii) payments for imports to 'rest of

<sup>1</sup> Richard Stone and Giovanna Croft-Murray, *Social Accounting and Economic Models*, Chapters I & II, pages 9-41.



the world'.

Income received by 'consumption' in the form of (i) factor payments and indirect taxes net of subsidies and (ii) as factor payments(net) from abroad are distributed on (i) consumption expenditure on goods and services to 'production', (ii) as savings to 'accumulation' where it forms a source of capital expenditure and (iii) current transactions (net) abroad in the form of gifts or otherwise.

In the 'accumulation' sector, the incomings are (i) savings, (ii) depreciation and (iii) capital transfers (net) from abroad in the form of foreign aid. The outgoings are (i) capital expenditures and (ii) net lending abroad.

All flows into and out of the 'rest of the world' have been accounted for in the accounts of 'production', 'consumption' and 'accumulation'.

When all these informations are expressed in a matrix form we get the so-called social accounting matrix. The rows of the matrix would represent the out-goings of goods and services from ( or the flows of money into) the sector into(from) the different sectors in the columns. The columns would give the incomings of goods and services into (flows of money from) the sector from (into) the different sectors in the rows.

The internal structure of, or the transactions within, the 'productive' activity has to be studied for solving a range of empirical problems for which the technique of social accounts is inadequate. For example, an increase in demand for

automobiles will have a different effect on specific sectors of an economy as compared to an increase in demand for housing or for clothing, but these differences are not distinguished in an aggregated analysis of social accounts.

For the study of the inter-relationships within, the 'production' sector is decomposed into its constituent parts, which are the different industries such as agriculture, mining, manufacturing and services, in as much detail as possible and desirable. When this is done, the inter-industry transactions would make their appearance as flows of raw materials and services among industries, called the flows of intermediate products. From such a table one can see how much more of iron and steel, rubber, chemicals etc. have to be produced for a given increase in the production of automobiles, and how the production in other industries would be affected by this. It would also help in deciding how much the total production of a commodity should be, so that after meeting the inter-industry demands, a given amount is left for final consumption.

The idea of inter-dependence among the different producing units and the consuming units was rooted in the General Equilibrium Theory of Leon Walras, later on developed by Pareto, Cassal and other economists. Walras explained the equilibrium in the economy by means of a set of production functions for the different producing units and a set of consumption functions for the consumers and the total supply and demand for commodities and the factors of production. But his model was too complicated to

be used in empirical studies and remained only in the books until Prof. Wassily Leontief invented the tool of Input-Output Analysis and applied it to the data available for the American economy during the nineteen thirties. It is a " compromise between unrestricted generalities of purely theoretical reasoning of Leon Walras and others, and the practical limitations of empirical fact-finding".<sup>1</sup> It is " a practical instrument for attacking some of the most complex and perplexing real problems of our modern industrial economic environment".<sup>2</sup>

The basic notion of the input-output analysis is to regard the economy as made up of a relatively large number of identifiable sectors, and then to establish and bring within the framework of analysis the structural inter-relationships among the sectors. While identifying the sectors, the 'Leontief Input-Output Model' assumes that a given product is supplied by only one sector and that there are no joint products. This implies that the number of industries and the number of commodities are equal and that there is a single process of producing each commodity. Once the sectors are identified a further assumption is made, to simplify the model, that the quantity of each input used in production by any sector is determined entirely by

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1 Leontief Wassily, Structure of American Economy, 1919-39, p 4.

2 Evans W. Duane & Marvin Hoffenberg, The Inter-industry Studies for 1947, Review of Economics and Statistics, Vol XXXIV, No. 2, May 1952, page 97.

the level of output of that sector.

Making these assumptions the input-output model can be described in terms of a set of simultaneous equations:

$$X_i = \sum_{j=1}^n X_{ij} + C_i \quad (i = 1, \dots, n)$$

where  $X_i$  stands for the gross output of the  $i^{\text{th}}$  industry,  $X_{ij}$  for the output of the  $i^{\text{th}}$  industry going into the production of the  $j^{\text{th}}$  industry and  $C_i$  the output of the  $i^{\text{th}}$  industry available for final use. From this the total gross output of an industry is equal to its intermediate demand (demand from all industries) and the final demand which comprises private and Government consumption, investment and exports.

Based on the assumption that the quantity of each input used in the production by any sector is determined entirely by the level of output of that sector, the above equation can be written

$$X_i = \sum_{j=1}^n a_{ij} X_j + C_i \quad (i = 1, \dots, n)$$

where  $a_{ij}$  stands for the amount of the  $i^{\text{th}}$  commodity used to produce one unit of the  $j^{\text{th}}$  commodity and is the 'coefficient of input' of the  $j^{\text{th}}$  industry.

Written in matrix form

$$X = AX + C \quad \text{or} \quad (1-A)X = C$$

where  $A$  is input coefficient matrix

$X$  is vector of gross outputs and

$C$  is vector of final demands.

Given the matrix  $A$  and vector  $C$ , we can obtain the required total output vector  $X$ .  $X$  for any other year than that for which  $A$  is available can be obtained for given  $C$ , if we assume that the input coefficients have not changed during that other year.

The  $a_{ij}$ 's as defined above denote the quantity of the  $i^{\text{th}}$  commodity used in the production of 1 unit of the  $j^{\text{th}}$  industry. The units used for measuring different commodities may be different. The units may be defined in such a way that they refer to the quantities of each commodity which would be worth 1 unit of money. When the units are so defined the coefficients would refer to the quantities of inputs measured in these units to produce 1 unit of output. As the units are defined as equivalent to 1 monetary unit's worth, these would refer to the values of the different inputs used in production of 1 monetary unit worth of output. Thus the  $a_{ij}$ 's expressed in value terms actually represent the physical quantities used in production.

The value of output of an industry is constituted of the values of the different material inputs that go in its production plus the payments made to the different factors of production which add to the value of the material inputs. The factor payments viz. wages, interest, rent, profit and taxes, are referred to as 'value added' in the input-output terminology and is defined as the difference between the value of output and the total of the values of the material inputs:

$$\text{i.e. } V_i = P_i X_i - \sum_{j=1}^n X_{ji} \cdot P_j$$

where  $V_i$  is the value added in the  $i^{\text{th}}$  industry,  $P_i$ , the price of the output of the  $i^{\text{th}}$  industry,  $X_i$ , the quantity of the output of the  $i^{\text{th}}$  industry and  $X_{ji}$ , the amount of  $j^{\text{th}}$  commodity consumed in the  $i^{\text{th}}$  industry.

The coefficient of value added is the difference between the price of the commodity and the material costs involved in production of 1 unit of that commodity; i.e.

$$v_i = P_i - \sum_{j=1}^n a_{ji} \cdot P_j$$

where  $v_i$  is value added coefficient of the  $i^{\text{th}}$  industry,  $P_i$ , the price of the  $i^{\text{th}}$  commodity, and  $a_{ji}$ , the amount of  $j^{\text{th}}$  commodity used in the production of 1 unit of the  $i^{\text{th}}$  industry.

In matrix notation, it would look as follows:

$$V = P(1-A)$$

where  $V$  is the vector of value added,  $P$  is the vector of prices, and  $A$ , the coefficient matrix.

The income and the product side of the national income analysis can be established in the input-output table also.

The value of final demand is equal to the value of total gross output minus the value of the intermediate demand.

$$P_i C_i = P_i X_i - \sum_{j=1}^n P_i X_{ij}$$

where  $P_i$  is the price of the  $i^{\text{th}}$  commodity.

Summing over the values of final demand in each industry:

$$\sum_{i=1}^n P_i C_i = \sum_{i=1}^n P_i X_i - \sum_{i=1}^n \sum_{j=1}^n P_i X_{ij} \dots\dots\dots(1)$$

Value added in an industry is equal to the value of its output minus the value of its inputs from other industries.

$$V_j X_j = P_j X_j - \sum_{i=1}^n P_i X_{ij}$$

Summing over the value added in each industry,

$$\sum_{j=1}^n V_j X_j = \sum_{j=1}^n P_j X_j - \sum_{j=1}^n \sum_{i=1}^n P_i X_{ij} \dots\dots\dots(2)$$

We can see that the right hand side of both the equations(1) and (2) are the same implying that the total income generated in all the industries is just equal to the total value of the various commodities available for final use. The identity confirms the accounting identity that national income generated is equal to national income spent.

The input-output model described above is Leontief's open input-output model, where the final demand vector is treated as autonomous and kept outside the model. When the labour employed in each industry is treated as any other material input and the final use column conceived as a vector showing the inputs of different commodities required to sustain that labour force, the resulting input-output system is called a closed Leontief system. The initial model developed by Leontief was a closed one. It was later on that the final use column was treated as autonomous and the latter model is more in vogue now.

The input-output matrix explained in the previous pages takes into account only the current flows of commodities

among industries. In order to get a complete picture of the productive process the stocks or capital in the form of buildings, machinery, and other fixed and working capital also should be incorporated in the system. The flows of stocks can also be expressed in matrix form and the coefficients of capital inputs can be calculated. These coefficients,  $b_{ij}$ 's would show the requirements of the  $i^{\text{th}}$  commodity as a stock in the production of 1 unit of the  $j^{\text{th}}$  industry. Though the A and B matrices appear similar and are obtained by similar operations, the capital coefficient matrix involves an additional time dimension. Since the relationship between different categories of stocks with output, unlike in the case of current flow inputs, is not one of uniform firmness, the stability of the coefficients would not be of the same order over time.

The input-output system defined above is a static one. It tells that for any given final use vector C, one can obtain the compatible gross output vector X. This assumes that the necessary capacity is available in the production system. The system does not take into account the requirements of additional capacity which might have to be created for the production of the compatible gross output, if the X vector needs more stocks than are available. For dealing with this problem the investment vector of the final use vector C, which is treated as autonomous in the static input-output model is included within the model.



By including the concept of investments required for creation of additional capacity, the original balance equation in the static system viz.  $(1-A)X = C$  would look like  $(1-A)X = F + B X$ , where  $B$  is the capital matrix,  $F$  is the final demand vector excluding investments, and  $X$  is a vector of additional capacity required.

$$\text{i.e. } X - AX - B \Delta X = F$$

If  $g_1$ , the rate of growth of the  $i^{\text{th}}$  commodity is given by

$$g_1 = \frac{\Delta X_1}{X_1}$$

then  $\Delta X = GX$  where  $G$  is a vector of growth rates or

$$(1-A-BG) X = F$$

$$\text{or } X = (1-A-BG)^{-1}F.$$

This model is called the Leontief's Dynamic System. Such a model enables one to get the estimates of the output vector necessary to sustain given final consumption and stipulated growth rate.

Many problems come up when the input-output model is transformed into an empirical tool. Aggregating all activities into different sectors is one of the problems that has assumed importance. Each sector should have a homogenous output and input structures. This becomes problematic when most of the industrial establishments produce a variety of products as is the case with many industries. Certain theoretical principles have been laid down to achieve aggregation which would correspond to reality as far as

possible.<sup>1</sup> But in practice the availability of data sets the limits of aggregation.

The essential purpose of an input-output table is to obtain the input coefficients which describe the relationship of each industry with other industries. The input coefficients can be obtained either from the data on the cost of production of the different industries or from the data of the flows of commodities from industry to industry. Most of the input-output tables are prepared from the former type of data as the industrial censuses give amounts of inputs going into the production of the industry's output but not the destination of the industry's output.

The input-output technique has been applied empirically in the investigation of problems concerning Planning and resource allocation, location, inter-regional flows of goods and services, factor contents in internationally traded commodities, factor requirements for specified final demand targets, historical analysis of structural changes in the economy and like problems in different countries of the world.

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<sup>1</sup> These have been discussed by Hollis B. Chenery and Paul G. Clark in 'Inter Industry Economics', pages 34-39.

### CHAPTER 3

#### INPUT-OUTPUT TABLES OF THE INDIAN ECONOMY - A REVIEW

The prime requisite of an input-output table is the availability of detailed information on the quantities and values of outputs of different industries and of the materials and services that go into them. Such information was not collected previously as it was not found necessary for any specific purpose. Statistics of production and distribution were available for the broad sectors of the economy such as agriculture, industries, trade, services and so on for purposes of national income computation. In course of time there was refinement in data collection and the sectoral classification became more detailed; the agricultural sector was split up into agriculture, plantation, forestry, animal husbandry, fishery etc; the industries sector into mining and manufacturing (in many cases into large scale and small scale manufacturing); services into transport and communications, banking, professions, trade and commerce etc. The production statistics of these were necessary for estimation of more details of national income. But data on inter-sectoral transactions were not necessary for this purpose. The introduction of the technique of input-output analysis necessitated collection of detailed data on inter-industry transactions i.e. quantities and values of outputs of different industries and of their consumption of the products of other industries.

In most of the countries, inter-industry studies developed as an extension of the national income computation giving a more disaggregated production and cost structure of the industries. An input-output table based on these figures could at best be only an experimental one until routinized and systematised data collection procedures are established.

In most of the input-output tables no distinction has been made between large scale and small scale manufacturing sectors. Statistics of production usually are available only for the large scale sector which is organized and the input-output tables in a large number of cases are based only on this data. A classification of industries into large scale and small scale is more important for preparation of input-output tables for underdeveloped countries where the small scale industries have to make an important contribution to national income and employment. In deciding the Plan targets and the allocation of resources it is essential to know the input coefficients of the large scale and small scale industries separately as well as the ratio of their outputs. Hence to arrive at more accurate estimates of plan requirements there must be separate input-output tables for these two sectors. The difficulty involved in making such a distinction is that it is not possible to distinguish the outputs of the two sectors clearly from each other for the purpose of the final demand column. But though the outputs themselves are not distinguishable it would be

helpful if it is possible to distinguish the cost structures of these two sectors and obtain the ratios of their outputs in the matter of making projections and taking policy decisions. Even in the context of sectoral classification for national income estimation, Prof. W. Malenbaum in his *India's Domestic Product* points out "to throw light upon the basic relationships in a country like India, the national accounts series need to be separated into more homogenous sectors. At the minimum a separate account is needed for the diverse economic activity carried on in household units which produce a large part of their own consumption"<sup>1</sup>. Katano H., in his "Inter-sectoral Transaction Table with Endogenous Foreign Trade Sector in the Indian Economy-1955-56", aggregated the 36 sectors of the input-output table prepared by the Indian Statistical Institute for 1955-56 into 10 sectors keeping the small scale sector separately and saying "the selected sectors have to reflect the actual situations in the Indian Economy"<sup>2</sup> and a broad classification therefore would be into primary production, large scale industries, small scale industries and other activities.

As in many other countries, in India also, the input-output studies had a beginning in the work of the national income units and the data collected for national income computation were

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1 Wilfred Malenbaum, "India's Domestic Product, 1951/52-1953/54", *Indian Economic Journal*, Vol II, No.3, Jan 1955, page 253.

2 Hikoji Katano, 'Inter-sectoral Transaction Table with Endogenous Foreign Trade Sector in the Indian Economy, 1955-56', *Kobe Economic and Business Review*, Vol 12, 1965, page 77.

utilised in making the earlier input-output tables. A few inter-sectoral transactions tables were prepared by the Indian Statistical Institute before the construction of the real input-output table for the year 1951-52. The salient characteristics of some of the earlier tables are given below.

In 1953 Dr. M. Mukherjee, in his paper 'The Technique of Social Accounting in a Pre-industrial Economy'<sup>1</sup>, gave a 4 x 4 table for 1949-50 distinguishing among agriculture, industry, trade and services sectors. In 1954, W. Malenbaum, in his paper 'India's Domestic Product, 1951/52-1953/54'<sup>2</sup>, gave a similar table with the only difference that in this table the 'industries' column was subdivided into large scale factories and mining, and small scale enterprises. No such distinction was however made in the rows. The primary source of data used in the preparation of these tables was the First Report of the National Income Committee<sup>3</sup> especially the Appendix 'Notes and Sources' and information available in the records of the national income units of the Indian Statistical Institute. W. Malenbaum extended the initial table of 1948-49 for the years up to 1953-54 with the help of production and price indices and prepared tables for the different years. T.P. Chowdhury worked out a 23 x 23 table for 1948-49 and later on

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1 Mukherjee M., 'The Technique of Social Accounting in a Pre-industrial Economy', Sankhya, Vol 14, Parts 1&2, Sept 1954, p 1-24

2 Malenbaum W., 'India's Domestic Product, 1951/52-1953/54', Indian Economic Journal, Vol II, No.3, Jan 1955, pages 247-53

3 First Report of the National Income Committee, April 1951, issued by the Dept. of Economic Affairs; Ministry of Finance, Govt of India.

another table of 12 x 12 in collaboration with R.M. Goodwin for the year 1950-51.<sup>1</sup> The Quarterly Economic Report of the Indian Institute of Public Opinion published a 19 x 19 table in their paper 'The Structure of Indian Economy' in 1954.<sup>2</sup> A 16 x 16 table for 1949-50 was attached to 'A Preliminary Study of Inter-industry Relations in India'<sup>3</sup> by Uma Datta.

By the latter half of the fifties, work on input-output analysis was put on a systematic basis. The first standard input-output table was prepared for the year 1951-52.<sup>4</sup> Real interest in the application of the input-output technique was sparked off in connection with studies in Planning and it is worth observing that the year 1951-52 was very important as the first year of the First Five Year Plan. In this table, the whole economy was divided into 36 sectors and the values of transactions were expressed in purchasers' prices. Of the 36 sectors, 23 were manufacturing sectors. These were distinguished into 16 large scale manufacturing sectors and 7 small scale manufacturing sectors. The large scale industries refer to establishments registered under the Indian Factories Act, 1948 and the small scale industries refer to manufacturing establishments which are not

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- 1 Goodwin R.M. & Chowdhury T.P., 'Transaction matrices for the Indian Union 1950-51', Studies Relating to Planning for National Development, Indian Statistical Institute, No.17, Jan 1955. (mimeo)
  - 2 The Structure of Indian Economy, The Quarterly Economic Report of the Indian Institute of Public Opinion, 1954.
  - 3 Datta Uma, 'A Preliminary Study of Inter-industry Relations in India', Studies Relating to Planning for National Development, Indian Statistical Institute, No.7, Dec 1954. (mimeo)
  - 4 'Inter-industry relations in the Indian Union-1951/52, Inter-industry Relations Section of the I.S.I. Published in Papers on National Income and Allied Topics, Vol 1, 1960, pages 259-71

registered under the factories act inclusive of household and non-household manufacturing units.

The classification of the small scale sector was into

- (i) Metalware and metal working
- (ii) Building materials and wood manufacturing
- (iii) Textiles and textile products
- (iv) Food, drink and tobacco
- (v) Glass and ceramics
- (vi) Leather and leather products
- (vii) Other production.

Industries that were included in both large scale and small scale manufacture were

- (i) Food, drink and tobacco
- (ii) Glass and ceramics
- (iii) Textiles
- (iv) Leather and
- (v) Building materials.

Thus only metalware and metal working were treated as exclusively a small scale industry.

In such cases, as was mentioned earlier, it is very difficult to distinguish the outputs of the large scale and small scale manufacturing. This leads to difficulties in identifying inter-industry transactions of products belonging to the large scale and small scale sectors. It is difficult " to guess how



much of which sort of outlay represented a draft on the product of large scale enterprises and how much on the products of the corresponding small scale enterprises."<sup>1</sup> The allocation of inputs into the different small scale enterprises was done primarily on 'common-sense considerations'.<sup>2</sup> The table does not reveal 'significant inter-linking between large scale and small scale forms of production'.<sup>3</sup>

Two more tables, one for the year 1953-54<sup>4</sup> and the other for the year 1955-56<sup>5</sup> were also prepared in the inter-industry unit of the Indian Statistical Institute. In both these tables also the same classification as of the table for 1951-52 was adopted.

In the subsequent input-output tables the distinction into large scale and small scale manufacturing industries was not made. After the 1955-56 table, the next one to be compiled was prepared by the Economic Division of the Planning Commission, Government of India.<sup>6</sup> This table refers to the year 1959 and is

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- 1 'Inter-industry Relations in the Indian Union, 1951-52', Inter-industry Relations Section, I.S.I., Papers on National Income and Allied Topics, Vol 1, 1960, page 270
  - 2 Ibid
  - 3 Ibid
  - 4 'Inter-industry Relations of the Indian Economy' (1953/54-at market price) Mimeographed, published in Formulating Industrial Development Programmes - with special reference to Asia and the Far East, Development Programming Techniques Series No.2, 1961, page 628.
  - 5 Released in 1961 in a mimeographed form by the I.S.I.
  - 6 This table was presented and discussed at the First Seminar of the Input-Output Research Association, India, held in Poona in 1965 and is published in Arthavijnana, Vol 9, Nos 3-4, Sept-Dec 1967, pages 309-15.

in producers' prices. In this table the economy is divided into 29 sectors of which 17 are 'manufacturing'. Though there is no provision for the division of the manufacturing sector into large scale and small scale in the table, account is taken of the large scale (Census sector of the A.S.I.), medium scale (Sample sector of the A.S.I.) and the small scale (Unregistered) manufacturing sectors in estimating the total output of each industry. For the large scale sector detailed data on inputs and outputs were taken from the A.S.I. Report of 1959. For the medium scale sector the classification of industries is at a more aggregated level in the A.S.I. In the table it was assumed that the industrial composition of each of the aggregated group of industries for the medium scale sector is the same as that of the large scale sector. Thus outputs of industries at a disaggregated level were obtained for the medium scale sector also. Again for the medium scale sector the inputs also are available at a more aggregated level. Here the break-up of the broad groups of inputs that are given in the A.S.I. were distributed in the same ratio as given for the large scale sector. For the small scale sector only the total outputs were obtained (the source and methodology for this is not stated) and the outputs of all the three sectors were additively used to arrive at the total production of each industry. How the inputs of the small scale sector were obtained is obscure from the 'Notes' of the table.

Alan S. Manne and Ashok Rudra of the I.S.I. have

prepared an input-output table for the year 1960-61 using producers' prices of 1959-60.<sup>1</sup> The table was prepared with the object of projecting the structure of the Indian Economy for 1970-71. In this table also no distinction was drawn between large scale and small scale manufacturing in the sectoral classification. However, account has been taken of the small scale production in the estimation of the coefficients and levels of outputs in the following industries:

- |                               |                                   |
|-------------------------------|-----------------------------------|
| i. Electrical equipment       | vii. Food grains milling          |
| ii. Non-electrical equipment  | viii. Cotton and other textiles   |
| iii. Transport equipment      | ix. Glass                         |
| iv. Iron and steel            | x. Wood                           |
| v. Leather & leather products | xi. Non-metallic mineral products |
| vi. Rubber products           | xii. Chemicals                    |

In this table the small scale sector consists of two categories:

- i. The sample sector of the A.S.I. and
- ii. The Un-registered manufacturing sector including the households.

Of category ii of the small scale sector, estimates of output were made only for the following industries:

- i. Leather and leather products
- ii. Non-electrical equipment
- iii. Transport equipment
- iv. Glass, wood and Non-metallic mineral products.

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<sup>1</sup> Alan S. Manne and Ashok Rudra, 'A Consistency Model of India's Fourth Plan', Sankhya, Series B, Parts I & II, Sept 1965, pages 57-144

Estimates of output for category(1) of the small scale sector and for the large scale sector were made from a number of sources.

For small scale category (ii) estimates of output were arrived at in the following manner.

In the case of (i) Leather and leather products and (ii) Glass, Wood and Non-metallic mineral products, the 'net value added' for the years 1959-60 and 1955-56 respectively were taken from the Blue Books and converted into Gross value of output on the basis of the approximate ratios of 'net value added' to 'gross value of output' from the Final Report of the National Income Committee.<sup>1</sup> In the case of (i) Non-electrical equipment and (ii) Transport equipment similar adjustments were made on the basis of 'net value added' for the group 'Metal manufacturing and General engineering' from the Blue Book of 1955-56. 17% of the gross value of output of these two sectors combined was attributed to transport equipment and the rest to non-electrical equipment.<sup>2</sup> Estimates for the year 1960-61 for these were obtained by extrapolation on the basis of the rates of growth of these industries over the given years in the sample sector of the A.S.I.

The input flows were estimated by multiplying the input coefficients by the corresponding levels of outputs of each industry. The coefficients were calculated for the large scale sector and for the small scale(category (1) ) sector based

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1 Final Report of the National Income Committee, 1954, issued by The Dept. of Economic Affairs, Ministry of Finance, Govt of India.

2 This distribution is based on the data given in the N.S.S. Draft Report No.21-Household Small Scale Manufacturing Establishments, 1955.

on data available in the A.S.I., Census of Manufacturing Industries and other sources. Except for non-electrical equipment separate coefficients for large scale and small scale industries were not made. For the non-electrical equipment coefficients were calculated for large scale (based on A.S.I. data - Census sector) and for small scale (category (i) and (ii) together) based on data given in N.S.S. Report No.42,<sup>1</sup> separately and these were combined by weighting them by their corresponding values of outputs in the year 1960-61. No other account is made of the small scale sector in the table.

Another, a more detailed, input-output table has been constructed for the year 1964-65 in the I.S.I. by M.R.Saluja in his study of 'Structure of Indian Economy: Inter-industry Flows and Pattern of Final Demand-1964-65'.<sup>2</sup> This table is prepared at 1960-61 producers' prices. The economy is divided into 77 sectors of which 57 are manufacturing industries. This table has been used for making projections for the years 1970-71 and 1975-76. In this table also there is no provision to show small scale sector separately. As in the case of the 1960-61 table, in this table also, a distinction has been made between the two categories of small scale sectors and large scale sector. But in this table, of the small scale category (ii), only that part of the sector

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1 N.S.S. Draft Report No. 42, Report on small scale manufacture: Household enterprises smaller than registered factories-1953/55.

2 Saluja M.R., 'Structure of Indian Economy: Inter-industry Flows and Pattern of Final Demand, 1964-65', Sankhya, Vol 30, Series B, 1968, pages 97-122.

is taken into account which is covered by the N.S.S. i.e. only the household establishments. The non-household establishments (unregistered) are left out of account, except in cases where estimates of output for large scale and small scale industries together are available from the various commodity reports like in the case of handloom cloth, gur and khandsari, vegetable oils etc.

First the coefficients for the different commodities of a sector are worked out and then their weighted average is calculated by giving the values of output of the corresponding commodities as weights. A.S.I. reports for 1960-63 are the main sources of data used to obtain the input coefficients. Coefficients for the small scale sector are calculated separately wherever data could be obtained. The A.S.I. sample reports 1959-63 and the N.S.S. reports which give data on inputs and outputs of the household sector of small scale category (ii) are used for this purpose. In cases where the small scale input data are not available large scale sector's data are used for the small scale sector also. The input flow into any given sector are obtained by multiplying the relevant input coefficients at producers' prices by the value of output of that sector at producers' prices. In cases where the quantities of inputs of different sectors are available directly from official sources the input entries in the table are made by multiplying these quantities by their producers' prices.

The Gokhale Institute of Politics and Economics prepared an input-output table for the year 1963, dividing the economy into 32 sectors.<sup>1</sup> The table is at purchasers' prices. Of the 32 sectors, 25 are manufacturing sectors. The values for manufacturing industries are based on data available in the A.S.I. Census sector reports of 1963. In this table first a coefficient matrix is prepared. For this purpose the total value of output of each sector was calculated in two different ways. Output 'A' refers to the total value of sales minus the value of sales of products in the same condition as purchased. Output 'B' is adjusted output 'A' for net work done for others. It is calculated as  $B_1 = A_1 V_1 / V_1 - W_1$ , where  $A_1$  and  $B_1$  are outputs 'A' and 'B',  $V_1$  and  $W_1$  are value added and net work done for others, all in industry  $i$ , assumption being that work done for others is only the value added portion of the value of output and therefore the gross output should be increased in the same proportion. Input coefficients of fuel and power, ancillary chemicals, packing materials and the unspecified item are obtained by dividing the values of these inputs by output 'B' and of the primary materials by dividing by output 'A'. Input flows are obtained by multiplying the input coefficients of each sector by that sector's output. Outputs of small scale (sample) sector and the unregistered sector are also added to the large scale sector's output in arriving at the total output. However, the coefficients relate only to the large scale sector.

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<sup>1</sup> Mathur P.N. in collaboration with Kulkarni A.R., Venkatramaiah P. and Narain Das, 'Input-output Flow Table (32 x 32) 1963 (at purchasers' prices)', Arthavijnana, Vol 11, No.2, June 1969, pages 181-99.



The 32 sector table has been recently expanded into a 65 sector table giving a more detailed classification of sectors, in which the sectors of manufacturing industries correspond to the A.S.I. 3-digit level of classification. Two tables have been separately prepared for the census sector and the sample sector of the A.S.I. for 1963. The input-output table for the sample sector has been prepared by disaggregating the broad items of inputs and outputs available for the sample sector in the A.S.I. reports, in the proportion of their constituents in the census sector. This procedure is the same as that adopted in the input-output table prepared by the Economic Division of the Planning Commission.

Flow coefficients for units in the sample sector of the A.S.I. have been estimated by P.Venkatramaiah for the year 1959.<sup>1</sup> The classification adopted is that of the Planning Commission which distinguishes 65 industries in the manufacturing sector. The coefficients have been estimated based on the data given for the model schemes published by the Office of the Development Commissioner, Small Scale Industries, New Delhi. These coefficients are stated to be somewhat over-estimates because the input values are given in purchasers' prices as are given in the model schemes and the output values are given in producers' prices. No adjustment has been made to make the two prices uniform. These data may be made use of in breaking-up the broad items of inputs available for the sample sector. This would be preferable to assuming the same pattern of distribution of the different inputs for the census sector and

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<sup>1</sup> Venkatramaiah P., 'Flow Coefficients for Small Scale Sector Industries', Arthavijnana, Vol 9, No. 3-4, Sept-Dec 1967, 322-35.



the sample sector.

The two tables prepared for the census and sample sectors separately leaves a gap for an input-output table for the unregistered manufacturing sector for 1963. The present study is an attempt to fill this gap, by presenting the input-output structures of a number of industries of this manufacturing sector.

## CHAPTER 4

### SOURCES OF DATA

For an input-output table of the unregistered manufacturing sector statistics of the values of outputs and the corresponding inputs are required for the various industries in this sector. As there is no systematic collection of statistics relating to the unregistered manufacturing sector, the present study is only an effort to make use of whatever data are available and based on these data to prepare an input-output table which would give only rough estimates relating to the different industries in this sector. In this chapter, the nature of data required for such a study, the different sources containing such information, the comparability between concepts and definitions used in these different sources, the usefulness or otherwise of these, and the sources that could actually be used in the preparation of the table are explained in detail.

The unregistered manufacturing sector in the present study is defined as consisting of manufacturing establishments which are not treated as factories for the purposes of the Indian Factories Act of 1948. A 'factory' as defined in the Factories Act should be registered under the Act. According to the Indian Factories Act, 1948, a 'factory' is defined as:

' any premises including precincts thereof (i)  
whereon 10 or more workers are working or were

working on any day of the preceding twelve months, and in any part of which the manufacturing process, is being carried on with the aid of power or is ordinarily so carried on, or (ii) whereon 20 or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power or is ordinarily so carried on, but does not include a mine, subject to the operations of the Mines Act, 1952, or a railway running shed'.<sup>1</sup>

The 'manufacturing process' is defined as:

'Any process for (i) making, altering, repairing, ornamenting, finishing, packing, oiling, washing, break-up, demolishing, or otherwise treating or adapting articles or substances with a view to its use, sale, transport, delivery or disposal; (ii) composing types for printing, printing by letter-press, lithography, photogravure or other similar process or book-binding; (iii) constructing, reconstructing, repairing, re-fitting, finishing, or break-up of ships or vessels.'<sup>2</sup>

Based on the above definition of a 'registered factory unit', the unregistered manufacturing sector can be defined as consisting of all manufacturing establishments employing less than 10 workers on any day during the last twelve months with the aid of power and employing less than 20 workers without the aid of power.

Industrial statistics were collected since 1946 for 29 industry groups on a complete enumeration basis up to 1958 under the Industrial Statistics Act, 1942, and the Census of Manufacturing Industries Rules, 1945, framed thereunder (C.M.I.). From 1950 onwards a Sample Survey of Manufacturing Industries (S.S.M.I.) of 63 industry

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1 & 2 The definitions are reproduced from the Papers on National Income Statistics, Department of Statistics, Central Statistical Organisation, Government of India.

groups(covering all industries) was also conducted. The Industrial Statistics Act,1942, was repealed by the Collection of Statistics Act,1953 and Collection of Statistics(Central) Rules,1959,thereunder provided for a comprehensive Annual Survey of Industries(A.S.I.) in India as from 1959. The A.S.I. replaced both the C.M.I. and the S.S.M.I. The A.S.I.'s coverage is the factory sector as defined by the Indian Factories Act, 1948, excluding factories under the control of the Ministry of Defence, oil storage depots and technical training institutes.

In the A.S.I. the factory sector, registered under the Factories Act, is divided into two for the purposes of Collection of data.

(i) Factories employing on any day during the last twelve months 50 or more workers with the use of power and 100 or more workers without the use of power are surveyed on a complete enumeration basis and are referred to as 'large scale' sector or the Census sector.

(ii) Factories employing 10 or more workers but less than 50 on any day during the last twelve months with the use of power and 20 or more workers but less than 100 without the use of power are surveyed on a sample basis and are referred to as 'small scale' sector or the Sample sector.

The A.S.I. Reports give more detailed information about the establishments in the Census sector than about those in the Sample sector. In the census sector, the industry classification is more detailed(about 200) while for the sample sector

it is more aggregated (about 60) for the purposes of the tabulation of data. Details of raw materials consumed, fuel and power used, wages, salaries and other remuneration paid, products and by-products, and capital invested are available for the census sector establishments at 7 digit level of industrial classification. For the sample sector, the details of these items are not available because the data is given at a 3 digit level of industrial classification.

Statistics available for the unregistered manufacturing sector are in the form of different case studies and survey reports referring to selected industries in some selected areas of the country. There is no uniformity in the data available either in the nature of contents or in the period of reference. Hence the study is bound to be based on a wide variety of sources of data and to compile these different data and to bring uniformity in them is the main work involved in the present study.

The sources used in the present work fall mainly into two types:

(i) Sources giving data on employment in the unregistered manufacturing sector and

(ii) Sources giving data on the cost structure and its relationship to the output of establishments in this sector.

The nature of data available from these two types of sources is discussed in the paragraphs that follow.

For employment in the unregistered manufacturing sector for the country as a whole, the only source of data is

the Census of India. Even from this source the figures of employment in the unregistered manufacturing sector are not directly obtainable. They have to be estimated based on certain assumptions and making use of the data available from the A.S.I. Reports. The following are the Census of India Tables which give data on employment in the manufacturing industries:

- (i) General Economic Tables - Census of India, 1951
- (ii) Housing and Establishment Tables -Part (IV)B, Census of India, 1961
- (iii) Report on Industrial Establishments, Census of India, 1961
- (iv) General Economic Tables - Part II B(1),(ii)&(iii), Census of India, 1961
- (v) Household Economic Tables - Part III(ii), Census of India, 1961

In the 1961 Census, workers engaged in the manufacturing activity are classified into two groups<sup>1</sup>, (i) those engaged in the household sector<sup>2</sup>, and (ii) those engaged in the non-household sector of manufacturing industries. Employment in the unregistered manufacturing sector is assumed to consist of the whole of the household sector and that part of the non-household sector which does not come under the Factories Act. Thus employment in the unregistered manufacturing sector is estimated by subtracting the employment in the census and sample sectors, which are given in the reports of the A.S.I., from the employment

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1 General Economic Tables-Part II(B)(i), Census of India, 1961; Table B IV, Part C, pages 359-371

2 An household industry is one 'conducted by the Head of the household himself and/or mainly members of the household at home or within the village in rural areas and only at home in urban areas'. General Economic Tables-Part II(B)(i), C of I, 1961, 'Notes', pp 1.

in the non-household sector.

The table classifying the census houses used as factories and workshops according to the size of employment and the use of power<sup>1</sup> could have been used to estimate employment in the unregistered manufacturing sector by identifying the relevant size groups of employment i.e. less than 10 workers with power and less than 20 without power, with the unregistered manufacturing units. But this has not been done because it gives inconsistent results when compared with other sources. This has been explained in Appendix 'A' to this chapter.

There are conceptual differences in the Census of India and the A.S.I. reports. In the Census, an individual is treated as a 'worker'<sup>2</sup> if he had had some regular work of more than 1 hour a day throughout the greater part of the working season in the case of seasonal work and if he was employed during any of the fifteen days preceding the day on which he was enumerated in the case of regular employment. Each worker is enumerated as employed in that industry in which he is principally employed, the principal work being the one on which most time was spent. The data refers to the period of enumeration i.e. February 1961.

In the case of the A.S.I., the survey is conducted for the manufacturing establishments and the number of persons employed are as reported by the establishments following the

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1 Housing and Establishment Tables-Part IV B, Census of India, 1961, Table E-III, pages 169-406.

2 General Economic Tables Part II(B)(1), Census of India, 1961, 'Notes', page 2.

definition given by the A.S.I. In the A.S.I. 'employment' includes workers and employees other than workers and refers to the average employment for the calendar year, except in the case of the sugar industry for which the year ending 30 June, and of cotton ginning, cleaning and pressing for which the year ending 31 August are adopted. The average employment is worked out by taking the total attendance of persons in all the shifts on all working days and dividing it by the number of working days. It includes persons holding positions of supervision or management or employed in confidential position and also those engaged in welfare activities. Persons attending and on leave with pay are also included.

In the estimation of employment in the unregistered manufacturing sector, the definition of 'employment' as given in the A.S.I. reports and that of 'workers' as given in the Census of India 1961 are considered identical despite the minor differences in concepts used in the two sources.

The classification of industries adopted in the A.S.I. and the Census of India, 1961, are different. A correspondence between the two has been made for making the two comparable.

The sources giving data on the values of output and the details of the costs of corresponding inputs are discussed below. Here also the definitional disparities regarding the coverage of the various surveys pose a problem.

The National Sample Surveys (N.S.S.) have collected a large amount of information about the small scale manufacturing



industries in their various rounds. They are the only sources which give some information relating to part of the unregistered manufacturing sector for the country as a whole. The 7th, 8th, 9th, 10th, and 14th rounds collected data on small scale manufacture and the results have been published in the N.S.S. Nos 19, 21, 42, 43 and 94.<sup>1</sup> N.S.S. Nos 19, 42, 43, and 94 cover household enterprises smaller than registered factories registered under the Indian Factories Act, 1948.

N.S.S. No. 19, containing the results of the 7th round, does not give industry-wise information as the number of sample households for each industry was not thought adequately large to justify the presentation of the estimates for each industry.

N.S.S. No. 42 contains the results of the 8th round along with some details of the 7th round. In this the following 7 industries from the rural areas:

- (i) Sugar and Gur,
- (ii) Cotton weaving in handlooms including Khadi,
- (iii) Tailoring,
- (iv) Wood industry including carpentry services,

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<sup>1</sup> N.S.S.No.19(Oct 1953-Mar 1954) Report on Small scale Manufacture (Household enterprises smaller than Registered Factories).

N.S.S.No.21(May 1955-Nov 1955) Household Small Scale Manufacturing Establishments smaller than those covered by Industries(development and regulations) Act, 1951.

N.S.S.No.42(Oct 1953-Apr 1955) Report on Small scale Manufacture (Household enterprises smaller than registered factories).

N.S.S.No.43(May 1955-May 1956) Tables with Notes on Small scale Manufacture(Household enterprises smaller than registered factories).

N.S.S.No.94(July 1958-June 1959) Tables with Notes on Small scale Manufacture: Rural & Urban(Household enterprises smaller than Registered Factories).

- (v) Manufacture of materials from bamboo, cane etc.,
- (vi) Manufacture of earthenwares, earthen pots, toys etc.,
- (vii) Manufacture of gold and silver wares, gold and silver smiths' services,

and the following six selected industries from the urban areas:

- (i) Cotton weaving in handloom including Khadi,
- (ii) Tailoring,
- (iii) Wood industry including carpentry services,
- (iv) Manufacture of shoes and other footwear, tanning of hides and skins, and cobblers' services,
- (v) Manufacture of gold and silver wares, gold and silver smiths' services, and
- (vi) Manufacture of iron and steel articles, blacksmiths' services, brass, bell-metal works,

were chosen for analysis on the basis of the number of sample households engaged in these industries.

N.S.S. No. 43 pertaining to the 9th and 10th rounds classified industries into the following 6 major groups:

- (i) Textile industry and tailoring,
- (ii) Leather, its products and footwear,
- (iii) Wood, glass, ceramics, building and construction,
- (iv) Metal manufacturing and engineering,
- (v) Food, drink and tobacco and
- (vi) Chemicals.

The remaining industries were lumped together and grouped as 'Miscellaneous'. This is the classification adopted in the final report of the National Income Committee, 1954.

N.S.S. No. 94 presented the results of the 14th round covering the period July 1958-June 1959. In this report the classification used in the 10th round and in the Final Report of the National Income Committee was disaggregated into the following 21 industries for the presentation of estimates on an All India basis. However for State tables the 7 industry group classification was adopted. The 21 industry groups are:

- (i) Textiles,
- (ii) Other wearing apparel and made-up textile goods,
- (iii) Leather and leather products,
- (iv) Rubber products,
- (v) Wood and cork products except furniture,
- (vi) Printing, publishing and allied industries,
- (vii) Furniture and fixtures,
- (viii) Non-metallic mineral products except products from petroleum and coal,
- (ix) Products of petroleum and coal,
- (x) Construction,
- (xi) Basic metal industry,
- (xii) Metal products except machinery and transport equipment,
- (xiii) Transport equipment,
- (xiv) Machinery except electrical,
- (xv) Electrical machinery, apparatus, appliances and supplies
- (xvi) Food,
- (xvii) Beverages,

- (xviii) Tobacco,
- (xix) Chemicals and chemical products,
- (xx) Paper and paper products and
- (xxi) Miscellaneous.

In all the four N.S.S. reports discussed above the investigation covers all the unregistered household manufacturing units. If a household, singly or jointly in co-operation with other households, was engaged in small scale manufacturing on any day during the last 365 days preceding the day of listing then it was regarded as a manufacturing household.<sup>1</sup> Also, a household was said to be 'manufacturing' if at least one of the members of the household was usually self-employed in manufacturing activity.<sup>2</sup> For this purpose a 'household' was defined as a group of persons taking principal meals from a common kitchen and usually living together<sup>3</sup> and 'manufacture' means all activities concerned with the transformation of material objects as well as all types of repair and constructional activities or services rendered on own account by artisans like carpenters, masons, cobblers etc.<sup>4</sup>

For each industry group estimates have been provided for the following items:

- (i) Number of manufacturing households
- (ii) Number of workers engaged per working day
- (iii) Working days in a month

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1 N.S.S. No. 94, page 4

2 N.S.S. No. 19, page 2

3 N.S.S. No. 94, page 4

4 N.S.S. No. 19, page 2

- (iv) Rent for all fixed capital items
  - (v) Hired labour charges
  - (vi) Output (products and by-products), and industrial servicing separately,
  - (vii) Material inputs (fuel, lubricants, raw materials, auxiliary materials, cattle feed, repair and maintenance and other expenses, all separately)
- and (viii) Value added.

The limitation of the usefulness of these sources of data for the present study is that its coverage is restricted to the household manufacturing only. The unregistered non-household establishments are not covered in these surveys. Moreover, the break-up of raw material inputs which is required for the present study is not available and the classification of industries is also very broad. The reliability of the data in the various rounds is also doubted as the figures of employment and value added show erratic movement from round to round.

The Research Programme Committee of the Planning Commission has sponsored a number of studies in the cottage and small scale industries sector in different parts of the country. There is no uniformity in the coverage of these surveys or in the presentation of the data collected or in the period of reference to which the data pertain. Some give details that are required for the present study while in others the information available is at a very broad level. In the present study those survey reports whose coverage corresponds to the definition of the unregistered manufacturing sector and which give the required information have been used.

State statistical bureaux of a number of States have also conducted sample surveys of the important cottage and small industries in the respective States. The results of the surveys of small industries in West Bengal have been widely used in the present study as it gives detailed information about the small industries. Other surveys as for Andhra Pradesh, Kerala, Assam, Gujarat, Bihar etc. do not provide all details required. All useful information given in these studies have been utilised in the present study.

The importance of the cottage and small industry sector was very much emphasised in the Second Five Year Plan and a Committee (Karve Committee) was appointed for making proposals for the development of these industries. As a result of this, six Boards were formed for the development of these industries. After the formation of these Boards considerable headway has been made in the collection of data for these industries. The six Boards are:

- (i) The Khadi and Village Industries Board
- (ii) The Handloom Board
- (iii) The Silk Board
- (iv) The Coir Board
- (v) The Handicrafts Board
- (vi) The Small Industries Board.

The All-India Handicrafts Board is conducting a large number of surveys of the areas which are well known for

some of the handicrafts. They collect detailed information about these industries regarding raw material, fuel and power, wages and profits, products and by-products, employment, capital investments, sources of finance, nature of organisation, marketing conditions and so on. These studies have been very much useful for the present work.

The Khadi and Village Industries Board, in its Annual Reports, gives information about the number of workers, production and sale, availability of credit and number of technical institutes. But the items of inputs are not given in these reports. This data have been used in estimating the output-labour ratios.

The Silk Board and the Coir Board publications have been used in the case of the respective industries.

The reports of the All India Handloom Board do not give data on the cost of production of handloom products which are required for the present study. For the handloom industry results of the surveys conducted by the Textile Enquiry Committee and published in its report of 1953-54 and reports of the Handicrafts Board have been used.

A number of surveys have been instituted in different regions of the country by the Small Industries Board through the Small Industries Service Institutes. The results of these surveys are published in the Small Industries Area Survey Reports, but the coverage of these surveys is limited to manufacturing units

employing 10-50 workers with use of power and 20-100 workers without the use of power. These units are outside the scope of the present study. A number of model schemes have been published in these reports as well as the Reports of the Office of the Development Commissioner, Small Scale Industries, New Delhi. But most of these model schemes also relate to units bigger than those to which this study is confined. In a few cases the size of the units conformed to the definition used in the present work and in a few other cases where there was a marginal difference in the definitions, these model schemes were found useful.

The cottage industries and handicrafts have been given special consideration in the Census of India, 1961 also. A special volume 'Handicrafts and Artisans' have been published for each State giving information on the items of cost, and the values of outputs of some important items of production, total value of output of the particular industry, number of persons employed in it etc. In these volumes, the size of the establishments is not specified. But it would not be much out of place to assume that these handicrafts are conducted on a small scale and these units would fall in the definition of the unregistered sector.

The Reserve Bank of India sponsored a survey of small engineering units in Howrah. The investigation was undertaken by the JadHAVpur University. The results of the



survey have been useful for the present study since they have presented data relating to establishments which employ less than 10 workers, separately from the data relating to bigger establishments.

A number of individual studies undertaken in the research field have also been used.

With the help of all these sources, an attempt has been made to compile all the scattered bits of information and based on certain assumptions bring them into a uniform pattern and present them in a systematic manner to give an idea of the structure of the manufacturing establishments in the unregistered manufacturing sector of the Indian economy.

Appendix 'A' to SOURCES OF DATA

Table E III of The Housing and Establishment Tables of the Census of India, 1961, Part (IV)B (reproduced overleaf as Table 4A.1 ) classifies the census houses used as factories and workshops according to the size of employment and use of power. Only those establishments engaged in manufacturing activity are reproduced here in Table 4A.1. The establishments in this table include census houses used exclusively as factories or workshops as well as those used as workshop-cum-dwellings. The table therefore covers household as well as non-household establishments.

'Employment' in these establishments refer to the average number of persons employed, including family workers, during the week preceding the date of enumeration and not the average for the whole year. Hence this table may not be of use in getting the picture of average employment for the year and more so in the case of seasonal industries.

Referring to Table 4A.1, on the basis of the definition of unregistered manufacturing units, the employment size groups of 1, 2-5, and 6-9 persons with power and 1, 2-5, 6-9 and 10-19 persons without power should be considered to arrive at 'employment' in the unregistered sector. The class of unspecified workers is included in the class of '1' person establishments. The reason for doing this is given in Census

TABLE 4A.1

CLASSIFICATION OF INDUSTRIAL ESTABLISHMENTS ACCORDING  
TO SIZE OF EMPLOYMENT AND USE OF POWER

Employment size	Number of Establishments						Grand Total
	With Power			Without Power			
	Rural	Urban	Total	Rural	Urban	Total	
1	179485	40461	219946	752252	198340	950592	1170538
2 - 5	138646	82981	221627	493939	257857	751796	973423
6 - 9	8175	20492	28667	24541	27434	51975	80642
10 - 19	4204	12948	17152	9270	12721	22001	39153
20 - 49	2765	7553	10318	4067	4271	8388	18656
50 - 99	1146	2464	3610	863	1151	2014	5624
100 and more	1160	3003	4163	373	634	1007	5170
Unspecified	1838	1716	3554	57566	39014	96580	100134
<b>Total</b>	<b>337419</b>	<b>171618</b>	<b>509037</b>	<b>1342881</b>	<b>541422</b>	<b>1884303</b>	<b>2393340</b>

of India, Part IV-A(ii), Report on Industrial Establishments:

'The allocation of the 'not stated' residue in Assam, Madras, West Bengal and Pondicherry and consequently in India is a simple proposition. It is quite obvious that this residue belongs almost entirely to the 1 person establishment, because as soon as the 'not stated' ratio is added to the 1 person ratio, the latter fits in well with the pattern exhibited by each of the other States, calling for no lateral adjustments'

This statement has not been checked to see if all the States show the same pattern of the distribution of establishments in the different size groups of employment.

The estimates of employment in the unregistered manufacturing units are obtained by multiplying the number of units by the midpoints of the above class intervals which are assumed to represent each class and adding up the products so obtained. The estimate thus arrived at is 5,601,482.

The above figure appeared to be an under-estimate, when it was compared with the industrial classification of workers given in the General Economic Tables, Part II B(1), presented here as Table 4A.2. The Table gives the classification of workers into 9 broad industrial categories. From this table, household industry employs 12,031,087 workers. Of these, it was found that 9,931,095 workers are engaged in household manufacturing. In addition to them, some of the workers engaged in non-household manufacturing industries will also be working in the unregistered manufacturing units. The difference in the two figures is too much to be explained by the error caused by taking midpoints of the class intervals to represent the class size or to the differences in the definitions

of employment in the two tables.

TABLE 4A.2

CLASSIFICATION OF WORKERS IN RURAL AND URBAN AREAS  
ACCORDING TO INDUSTRY

Category	Rural	Urban	Total
1 Cultivators	97,888,822	1,732,353	99,621,175
2 Agricultural labourers	30,602,861	918,780	31,521,651
3 Mining, Quarrying, Livestock Fishing, Hunting, Forestry	4,556,556	664,842	5,221,398
4 Household industries	9,942,670	2,088,417	12,031,087
5 Manufacturing non-house- hold industries	2,435,396	5,539,993	7,975,394
6 Construction	1,095,138	964,341	2,059,479
7 Trade and commerce	3,345,094	4,308,477	7,653,571
8 Transport, storage and communication	894,100	2,125,181	3,019,281
9 Other services	11,484,929	8,087,545	19,572,474
<b>Total</b>	<b>162,245,566</b>	<b>26,429,934</b>	<b>188,675,500</b>

The employment in the sample sector as given in the A.S.I. report of 1961 and that estimated from Table 4A.1 were compared. The estimate of employment in the sample sector is arrived at by multiplying the number of units in the employment classes 20-49 with power and 20-49, and 50-99 without power, by the midpoints of the respective class intervals and is calculated as 1,042,379. The sample sector employment as given in the A.S.I. report of 1961 is 664,353. This difference is also very considerable and cannot be ignored. The estimates of the census sector employment in the two sources could not be compared as

in table 4A.1 the last class '100 and above' is open and the midpoint cannot be located for this class.

From table 4A.1, total employment in the manufacturing activity as a whole is estimated to be 9,743,041 (putting the A.S.I. estimates for the census sector employment). From the table on industrial classification of workers (Table 4A.2) it is seen that 17,926,489 workers are employed in manufacturing industry, 9,931,095 as household workers and 7,975,394 as non-household workers. As such tables on industrial establishments presumably give an under-estimate of the total employment, they could not be utilised for arriving at the estimates of employment in the unregistered manufacturing sector. That there is some flaw in the table is also shown by a table in the Report on Industrial Establishments, which groups industrial establishments into Organised and Unorganised sectors and gives employment in each. Unorganised establishments are identified with household establishments and are said to have employment size '1-5'. In other words, household establishments are defined as having employment size '1-5' though there is no limit on the size of employment in the definition of a household industry.

In Table 4A.3 (see next page), the number of factories and workshops have been taken from the table on classification of industrial establishments according to size of employment and use of power (Table 4A.1) and the number of workers is taken from the table on industrial classification of workers (Table 4A.2). The inconsistency is obvious. There are 2,250,151 industrial

TABLE 4A.3

NUMBER OF FACTORIES AND WORKSHOPS IN THE ORGANISED  
AND UNORGANISED MANUFACTURING SECTOR AND EMPLOYMENT  
THEREIN

		Organised	Unorganised	Total
Workshops and Factories	Rural	56,906	1,629,289	1,686,195
	Urban	92,780	620,862	713,642
	Total	149,686	2,250,151	2,399,837
Workers	Rural	6,991,952	9,942,670	16,934,622
	Urban	6,204,840	2,088,417	8,293,257
	Total	13,196,792	12,031,087	25,227,879

establishments in the unorganised sector and they employ 12,031,087 workers. Of these establishments 1,272,704 are '1' person establishments and 977,447 are of the employment size '2-5'. The number of establishments with the given sizes cannot give employment to the given number of workers.

For all the above reasons, the table giving classification of Industrial Establishments according to size of employment and use of power has proved to be of no use for the purposes of getting the number of persons employed in the unregistered manufacturing units.

## CHAPTER 5

### METHODOLOGY

Because of the absence of any systematically collected data the construction of an input-output table for the unregistered manufacturing sector of the Indian economy involves making a number of assumptions and adjustments with the available data. The lack of uniformity in the data in the different sources have to be rectified even to get rough estimates of values of inputs, outputs and employment in the sector. In this chapter the various adjustments that have been made in the available data are explained.

The input-output table prepared in this study for the unregistered manufacturing sector refers to the year 1963. This year has been chosen for the specific reason that the two separate input-output tables, one for the census sector and the other for the sample sector of the A.S.I. have been prepared for the same year by the Gokhale Institute of Politics and Economics. The gap that has to be filled lies in an input-output table for the unregistered sector. Such a table would supplement and complement the other two tables.

Only the manufacturing activity of the small scale sector has been covered in the present study. Other industries such as poultry farming, bee-keeping, animal husbandry and fishery, and services like laundries, hotels, barber-shops etc. which are run to a large extent on a small scale are not included because of



lack of published material on these industries for the large scale and small scale sectors separately.

A classification of industries has to be adopted for the preparation of an input-output table. For the sake of convenience the standard industrial classification adopted for purposes of publication of industrial statistics is generally adopted in the input-output tables with minor changes if necessary. The Annual Survey of Industries is the main source which publishes industrial statistics for the country as a whole as well as for the States for each year in great details. Hence the classification of industries into different sectors for the preparation of input-output tables in India is generally based on the A.S.I. classification. For the input-output table for the unregistered manufacturing sector also the A.S.I. classification has been adopted. This would help in making comparisons between the registered and unregistered manufacturing sectors. Based on this classification the whole unregistered manufacturing activity has been classified into 49 sectors.

The following procedures have been adopted in the preparation of the input-output table for the unregistered manufacturing sector.

The input-output table of the unregistered manufacturing sector has been prepared on the basis of data available in different case studies or schemes. These schemes refer to different years. By applying the appropriate price indices these data given in the schemes have been made to correspond to the year

1963. The basic assumption involved in such a procedure is that the technology has not changed from the year for which the data is available to 1963. The coefficients have been obtained for each industry for 1963 after making the price adjustments to the data available in different schemes. The output of each industry has been estimated by multiplying the value of output per worker obtained from these schemes by the estimated employment in the industry. The actual inputs of the various industries have been calculated by multiplying the coefficients by the corresponding outputs.

Though the final classification of sectors adopted in this input-output table is that of the A.S.I. 3-digit one, the basic data collected is at a more disaggregated level. Hence the estimates have first been made at the most disaggregated level possible and then based on certain assumptions these have been aggregated into the A.S.I. classification.

The most disaggregated level at which employment estimates could be obtained is for the 'minor groups' of the Indian Standard Industrial Classification(I.S.I.C.) adopted in the Census of India, 1961. Therefore the different schemes in which the input-output data referring to manufacturing units which fall in the unregistered sector have been classified on the basis of this detailed classification. Data from these different schemes have been collected for 106 of such minor groups and based on these data projections are made for the other industries for which data are not available.

After making the price adjustments for the inputs and the outputs, input coefficients have been calculated for each of the 106 industries for 1963. These may be expressed as  $a_{ij}$ 's. It should be stressed here that no distinction has been made to the origin of the inputs i.e. whether they are products of the large scale or small scale sector. Therefore the inputs do not refer to those coming entirely from the unregistered manufacturing sector. The inputs have been classified according to the A.S.I. classification even for the most disaggregated industrial classification i.e. in the  $a_{ij}$ 's,  $i$  varies from 1-53 ( 49 manufacturing sectors and 1 sector each for agriculture, mining, Electricity and unspecified.) and  $j$  varies from 1 - 106.

From the different schemes again the value of output per worker has been estimated for 1963 for each of the 106 industries. This may be denoted as  $o_j$ 's where  $j$  varies from 1 - 106.

Employment estimated for each industry may be referred to as  $e_j$ 's ( $j = 1 - 106$ ). The value of output of each industry,  $x_j$ , is estimated as  $x_j = o_j e_j$  and the inputs of each industry,  $x_{ij}$ 's ( $i = 1 - 53, j = 1 - 106$ ) are estimated as  $a_{ij} \cdot x_j$ .

After obtaining the values of  $x_{ij}$ 's and  $x_j$ 's these have been aggregated into the A.S.I. classification in the following manner.

An A.S.I. industry consists of a number of minor groups of the I.S.I.C. Data collected may refer to all the minor groups that fall in that A.S.I. industry or to only a few of them.

When all the minor groups are not covered the aggregation is done on the basis of the available data.

Suppose A.S.I. industry I, consists of a number of minor groups, 2,3,4,5 and 6. But of these minor groups data are available only for 2,3 and 6. In the process of aggregation the first step is to obtain the input coefficients for the A.S.I. industry I. This is obtained by aggregating the estimated inputs and dividing them by the correspondingly aggregated outputs of the minor groups 2,3 and 6. Thus the input coefficients of the A.S.I. industry, I,  $A_{1I}$  are obtained as

$$A_{1I} = \frac{x_{12} + x_{13} + x_{16}}{x_2 + x_3 + x_6}$$

The output per worker estimated for the A.S.I. industry I,  $O_I$  is given by

$$O_I = \frac{x_2 + x_3 + x_6}{e_2 + e_3 + e_6}$$

The value of output of the A.S.I. industry I,  $X_I$  is estimated by multiplying the output per worker by the estimated employment of the industry, i.e.

$$X_I = O_I E_I$$

where  $E_I$  is separately estimated and includes  $e_2$ ,  $e_3$  and  $e_6$ , and also  $e_4$  and  $e_5$  for which data are not available.

The values of inputs of A.S.I. industry I,  $X_{1I}$  are obtained by multiplying the input coefficients by the corresponding output, i.e.  $X_{1I} = A_{1I} X_I$ .

In the subsequent paragraphs the adjustments made to the available data have been discussed in detail. Every estimate has been made for the disaggregated level and then aggregated for the A.S.I. classification. The industry, unless specified as A.S.I., refers to the disaggregated level.

Of the 49 sectors into which the whole manufacturing activity has been classified, the following industries have not been covered in the study as data could not be obtained for them.

- (i) Slaughtering, preparation and preservation of meat and canning and preservation of fish and other sea foods,
- (ii) Soft drinks,
- (iii) Repair of footwear,
- (iv) Petroleum refineries and products of petroleum and coal,
- (v) Basic non-ferrous metals,
- (vi) Railroad equipment,
- (vii) Photographic and optical goods.

Employment estimates in the last four industries are negligible in the unregistered sector and these industries can be treated as existing only in the registered sector. In the case of slaughtering, preparation and preservation of meat and canning and preservation of fish and other sea foods, the industry is more of a service-cum-trade nature than of manufacture in the small sector. Canning and preservation etc. are carried on on a large scale. In the small scale sector these industries do not

normally consume any raw material except salt. They buy the basic material viz. cattle and fish ( fish is more often obtained from the sea than from the market) and after a little work done on them sell them to the customer and this operation does not involve much processing and manufacture.

Estimates of Employment.

Employment in the unregistered manufacturing sector is estimated by subtracting the employment in the registered sector from the total employment in the manufacturing sector. This has been done for each industry to obtain estimates of employment in the unregistered sector of that industry.

The only sources that give total employment in the different industries are the Censuses of India which are conducted only once in 10 years. For any period in between two censuses, the census figures of employment have to be interpolated or extrapolated depending on the date of last census and the date for which the estimates have to be made. For arriving at the total employment in each industry for 1963 the 1961 employment figures have been extrapolated for 1963 on the basis of the rate of growth of employment in each industry during the period 1951-1961.

The industrial classifications adopted in the 1951 census and the 1961 census are different. In the 1951 census, the classification adopted is the 'Indian Census Economic Classification' (I.C.E.C.) which classifies all the manufacturing industries into 20 groups. In the 1961 census the classification was the 'Indian Standard Industrial Classification' (I.S.I.C.) which classifies

industries into 168 groups. In order to calculate the rates of growth of employment in the different industries during 1951-61, the I.S.I.C. of 1961 is made comparable to the I.C.E.C. of 1951. The two classifications are given in Tables 5.1 and 5.2 and the correspondance between them is given in Table 5.4.

In addition to the differences in the two classifications there are differences in the nature of data on employment presented in the two censuses. The 1951 census ascertained the economic status of each individual as 'self-supporting' persons 'earning dependents' and 'non-earning dependents'.<sup>1</sup> In the 1961 census no such distinction was made and to compare the number of workers in each industry between 1951 and 1961 the 1951 employment should include the self-supporting persons and the earning dependents. (The non-earning dependents are not economically active.) But in the 1951 census the industrial classification of workers relates to self-supporting persons only.<sup>2</sup> The number of earning dependents in each industry group for 1951 has been estimated in the following manner.

In the 1951 census a broad classification of the population according to the principal means of livelihood of persons in a household is given.<sup>3</sup> The livelihood classes number 8:

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- 1 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, page x.
  - 2 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, Table B-III, pages 187-387
  - 3 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, Table B-I, pages 1-23.

4 agricultural and 4 non-agricultural- and the number of persons in each livelihood class is given. One of the 4 non-agricultural livelihood classes is 'production other than cultivation'. This has 3 sub-classes, (i) primary industries not elsewhere classified, (ii) mining and quarrying and (iii) processing and manufacture. Number of persons in the livelihood sub-classes is not given. In the industrial classification of workers which refer to self-supporting persons only, the detailed break down of the livelihood sub-class 'processing and manufacture' is given. To arrive at the number of earning dependents in 'processing and manufacture' the ratio of the number of self-supporting persons in 'processing and manufacture' (total number of persons engaged in all manufacturing industries) to the number of self-supporting persons in 'production other than cultivation' is applied to the number of earning dependents in 'production other than cultivation'. The number of earning dependents in 'processing and manufacture' thus obtained has been distributed among the different industries in the same pattern as given for self-supporting persons.

The distribution of earning dependents among the various industries in the same pattern as given for self-supporting persons is only appropriate, because the livelihood class of earning dependents is the same as that of the self-supporting persons on whom the earning dependents are dependent, in the census.

Further, the 1951 census did not include the industrial classification of the population of Jammu and Kashmir and of another 0.2 million people whose schedules were destroyed



in an accidental fire in the tabulation office of Jullunder district. Account has been taken of these populations and the number of self-supporting persons and earning dependents engaged in 'processing and manufacture' has been estimated and further distributed among the different industries in the same pattern as for the rest of the country.

By the above adjustments the 1951 employment data have been made comparable with the 1961 employment figures.

For estimating growth rates for each industry, the 1961 employment data, given for the I.S.I.C., has been converted into the I.C.E.C. of 1951, using the correspondence between the two classifications. The compound rate was preferred to the simple rate of growth on the assumption that employment in each industry grows cumulatively because of the industrial development policies and higher consumption demand emanating from the growth of population. A simple rate of growth would assume that a fixed number of persons gets employment in an industry every year.

The growth rate of each industry group of the I.C.E.C. has been applied to all the relevant industries of the I.S.I.C. and employment for each industry of the I.S.I.C. has been obtained for 1963. The same rate of growth has been applied to both household and non-household employment given in the 1961 census.

To estimate the employment in the unregistered manufacturing sector, by subtracting the employment in the registered

factory sector from the non-household employment,<sup>1</sup> the I.S.I.C. employment has to be grouped to correspond to the A.S.I. classification. The A.S.I. classification<sup>2</sup> and the correspondence between the I.S.I.C. and the A.S.I. classification are given in Tables 5.3 and 5.5 respectively.

Employment in the manufacturing sector estimated for 1963 and given for the I.S.I.C. has been regrouped according to the A.S.I. classification. Employments in the household and non-household sectors have been obtained for the A.S.I. classification and employment in the unregistered manufacturing sector is obtained for 1963 by subtracting the census sector<sup>3</sup> and the sample sector employments given in A.S.I. reports of 1963, from the non-household employment for 1963 for each industry and adding this to the corresponding employment in the household sector.

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- 1 In the 1961 census employment has been distinguished between household and non-household sectors. It has been assumed that the whole of the household sector falls in the unregistered sector. Hence to arrive at estimates of employment in the unregistered sector, the census and sample sector employments have been deducted from the employment in the non-household sector and this was added to the employment in the household sector.
  - 2 For the census sector of the A.S.I. the industrial classification is at a 7-digit level. But for the sample sector data are available only for a 3-digit level of classification. Hence for estimation of employment in the unregistered sector the A.S.I. 3-digit level of classification has been adopted.
  - 3 Employment in each industry in the census sector given for 7-digit level of classification has been corrected to account for full coverage; i.e. employment in the non-reporting factories has also been accounted for. These corrected employment figures for the 7-digit classification have been aggregated to obtain employment in the census sector for 3-digit classification.

Data on input-output relationships in the unregistered manufacturing establishments have been collected for 106 industries. These industries fall in one or the other of the A.S.I. industries. Employment in the unregistered sector of each of these industries has to be estimated. For this purpose employment estimates made for the unregistered sector for the A.S.I. classification have been disaggregated. The procedure adopted for this disaggregation is explained below:

First, the I.S.I.C. industry to which the particular industry belongs is identified. The employment in the unregistered sector for this I.S.I.C. industry is estimated on the basis of the distribution of the household employment in the different I.S.I.C. industries that constitute the relevant A.S.I. industry for which the employment in the unregistered sector is estimated. In other words, the pattern of distribution of employment of the household sector has been adopted for the non-household unregistered manufacturing sector also. By this procedure employment in the unregistered sector of an industry is estimated if the industry corresponds to any one of the industries of the I.S.I.C.

When the particular industry forms part of an I.S.I.C. industry, the employment in the unregistered sector of that industry is estimated by breaking-up the estimated employment in the unregistered sector of the I.S.I.C. industry to which the particular industry belongs in the same pattern as of the distribution of the number of households in the household sector of

the I.S.I.C. industry.<sup>1</sup>

Thus estimates of employment in the unregistered sector have been made for the different industries for which the input-output data have been collected.

Estimates of Output-Labour ratios.

Almost all the sources giving data on small scale manufacture give the number of workers employed and the values of outputs in the different small scale industries. The data given in the different sources refer to different years. To standardise the data, the values of outputs given for different years have been adjusted for 1963 by applying the ratio of the price of the output in 1963 to its price in the year for which the data are given.<sup>2</sup> Thus the values of outputs given in the different sources have been made to refer to 1963. For each industry the values of output (adjusted for 1963) and the employment given in the different sources have been separately added up. Output per worker has been estimated for each industry by dividing the added-up value of output by the corresponding employment. Only those sources whose coverage corresponds to the definition of the unregistered manufacturing establishments have been used.

Estimates of Output.

The value of output of each industry has been

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1 Household Economic Tables, Part III(ii), Vol 1, Census of India, 1961, Table B XIV Part B, pages 26-31.

2 Wholesale prices Index Numbers - Revised Series, Base 1952-53=100, Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

estimated by multiplying the value of output per worker by the corresponding estimated employment in that industry. These values of outputs obtained for the 106 industries have been grouped to conform to the A.S.I. classification.

The industries for which output-labour ratios and values of output have been obtained do not cover the whole unregistered manufacturing sector. It has been assumed that the output per worker is the same for similar industries and hence the output-labour ratios estimated for an A.S.I. industry have been applied to the total employment in that industry. Except for a few almost all the industries of the A.S.I. classification have been covered for more than 90% of their employment.

#### Estimates of Input Coefficients.

From the different sources that give data on the outputs and the inputs that go into the production of that output, the coefficients of inputs have been estimated. As has already been mentioned these data refer to different years. In the case of inputs also the data have been standardised to refer to 1963 by applying the relevant price ratios for the different inputs. Apart from the differences in the years of reference, the input data differ from source to source in the details given for different inputs. To bring uniformity in the details of inputs, which would make the handling of the data easier, the inputs of all industries have been classified into the following items: (i) raw materials, (ii) fuel, (iii) lubricants, (iv) electricity, (v) packing materials, (vi) repair and replacements, (vii) work

done by others, (viii) wages and salaries, (ix) rent, interest, taxes etc., (x) depreciation and (xi) profits. Depending on availability of data these classes of inputs have been filled. The details of raw materials have been noted separately.

After making price adjustments for the inputs and the corresponding output, input coefficients have been estimated by dividing each input value by the value of the output, for each of the 106 industries for which such data have been collected.

The input coefficients of each industry have been multiplied by the estimated value of output of that industry to arrive at the estimates of the values of the different inputs of that industry.

As has been done in the case of values of outputs, values of similar inputs of the industries that fall in each A.S.I. industry have been added up. Thus the values of inputs and the corresponding outputs have been obtained for the group of industries which fall in each A.S.I. industry. The coefficients of inputs have been obtained for each group of industries by dividing the value of each input for the group by the corresponding value of output of that group. These are the input coefficients of each A.S.I. industry and they have been multiplied by the estimated value of output of that A.S.I. industry to arrive at the estimates of values of different inputs in the A.S.I. industry. The assumption is that the input coefficients of those industries which fall in the A.S.I. industry but for which data are not available, are the same as those of the industries for which data have been collected.

Producers' and Purchasers' Prices.

It is customary in an input-output table to specify whether the values given are in producers' prices or in purchasers' prices. Producers' price is the ex-factory value of the commodity. Purchasers' price is the ex-factory price plus the trade margin and transport, warehousing and selling expenses. From the data given in the different schemes, it looks that in reporting the output no distinction has been made between producers' price and purchasers' price. The schemes report only 'value of output'. The inputs, of course, are in purchasers' prices. But it would not be out of place to assume that in the case of small industries the commodity is directly sold to the customer and the producer - purchaser price differences are not significant. Such an assumption has been made in this study. As the input-output table of 1963 for the registered sector is in purchasers' prices, the values estimated for the unregistered sector have also been assumed to be in purchasers' prices to facilitate comparison between the two tables and the accuracy of the values would be limited by the validity of this assumption.

TABLE 5.1

INDIAN CENSUS ECONOMIC CLASSIFICATION(1951 CENSUS)

I.C.E.C. code No.	Description
(a)	(b)

**DIVISIONS 2,3 and 4 - Processing and manufacture.**

2.0	Food industries otherwise unclassified
2.1	Grains and pulses
2.2	Vegetable oil and dairy products
2.3	Sugar industries
2.4	Beverages
2.5	Tobacco
2.6	Cotton textiles
2.7	Wearing apparel(except footwear) and made-up textile goods
2.8	Textile industries otherwise unclassified
2.9	Leather,leather products and footwear
3.0	Manufacture of metal products otherwise unclassified
3.1	Iron and steel (Basic manufacture)
3.2	Non-ferrous metals (Basic Manufacture)
3.3	Transport equipment
3.4	Electrical machinery,apparatus,appliances and supplies
3.5	Machinery (other than electrical machinery) including Engineering workshops
3.6	Basic industrial chemicals, fertilizers and power alcohol
3.7	Medical and pharmaceutical preparations



Table 5.1 - contd.

(a)	(b)
3.8	Manufacture of chemical products otherwise unclassified
4.0	Manufacturing industries otherwise unclassified
4.1	Products of petroleum and coal
4.2	Bricks, tiles and other structural clay products
4.3	Cement - Cement pipes and other cement products
4.4	Non-metallic mineral products
4.5	Rubber products
4.6	Wood and wood products other than furniture and fixtures
4.7	Furniture and fixtures
4.8	Paper and paper products
4.9	Printing and allied industries

TABLE 5.2

INDIAN STANDARD INDUSTRIAL CLASSIFICATION (1961 CENSUS)

Major group code	Minor group code	Description
(a)	(b)	(c)
<b>DIVISION 2 &amp; 3 - Manufacturing.</b>		
<b>20</b>	<b><u>Foodstuffs</u></b>	
	200	Production of rice,atta,flour etc. by milling, de-husking and processing of crops and foodgrains.
	201	Production of sugar and syrup from sugarcane in mills.
	202	Production of indigenous sugar,gur from sugarcane or palm juice and production of candy.
	203	Production of fruit products such as jam,jelly, sauce and canning and preservation of fruits.
	204	Slaughtering,preservation of meat and fish,and canning of fish.
	205	Production of bread, biscuits, cake and other bakery products.
	206	Production of butter, ghee, cheese and other dairy products.
	207	Production of edible oils and fats(other than hydrogenated oil).
	208	Production of hydrogenated oils(vanaspati).
	209	Production of other food products such as sweetmeat, and condiments,muri,murki,chira,khoi,cocoa, chocolate,toffee and lozenge.
<b>21</b>	<b><u>Beverages</u></b>	
	210	Production of distilled spirits,wines,liquor from alcoholic malt,fruits and malts in distillery and brewery.
	211	Production of country liquor

contd...

Table 5.2 contd.

(a)	(b)	(c)
21	212	Production of indigenous liquor such as toddy, liquor from mahua, palm juice.
	213	Production of other liquors not covered above.
	214	Production of aerated and mineral water.
	215	Production of ice.
	216	Production of ice cream.
	217	Processing of tea in factories.
	218	Processing of coffee in curing works.
	219	Production of other beverages.
22	<u>Tobacco Products</u>	
	220	Manufacture of bidi.
	221	Manufacture of cigars and cheeroots.
	222	Manufacture of cigarette and cigarette tobacco.
	223	Manufacture of hookah tobacco.
	224	Manufacture of snuff.
	225	Manufacture of jerda and other chewing tobacco.
	226	Manufacture of other tobacco products.
23	<u>Textile - Cotton</u>	
	230	Cotton ginning, cleaning, pressing and baling.
	231	Cotton spinning (other than in mills).
	232	Cotton spinning and weaving in mills.
	233	Cotton dyeing and bleaching.
	234	Cotton weaving in powerlooms
	235	Cotton weaving in handlooms
	236	Manufacture of khadi textile in handlooms.

contd...

Table 5.2 contd.

(a)	(b)	(c)
23	237	Printing of cotton textiles.
	238	Manufacturing cotton nets.
	239	Manufacturing of cotton cordage, rope and twine.
24	<u>Textile - Jute</u>	
	240	Jute pressing and baling.
	241	Jute spinning and weaving.
	242	Dyeing and bleaching of jute.
	243	Printing of jute textiles.
	244	Manufacture of other products like rope, cordage from jute and similar fibre such as hemp, mesta.
25	<u>Textile - Wool</u>	
	250	Wool baling and pressing.
	251	Wool cleaning and processing (scouring).
	252	Wool spinning and weaving in mill.
	253	Wool spinning other than in mills.
	254	Wool weaving in power looms.
	255	Wool weaving in hand looms.
	256	Embroidery and art work in woollen textile.
26	<u>Textile - Silk</u>	
	260	Spinning and weaving of silk textile in mill.
	261	Dyeing and bleaching of silk.
	262	Spinning of silk other than in mills.
	263	Weaving of silk textile by powerloom.
	264	Weaving of silk textile by handloom.

contd...

Table 5.2 contd.

(a)	(b)	(c)
26	265	Printing of silk textile.
	266	Manufacture of silk cordage, rope and twine.
27	<u>Textile - Miscellaneous</u>	
	270	Manufacture of carpet and similar type of textile products.
	271	Manufacture of hosiery and other knitted fabrics and garments.
	272	Embroidery and making of crepe lace and fringes.
	273	Making of textile garments including rain-coats and headgear.
	274	Manufacture of made-up textile goods except wearing apparel such as curtains, pillow cases, bedding materials, mattresses, textile bags.
	275	Manufacture of water-proof textile products such as oil cloth, tarpaulin.
	276	Manufacture and recovery of all types of fibres for purposes of padding, wedding and upholstery filling.
	277	Manufacture of coir and coir products.
	278	Manufacture of Umbrellas.
	279	Processing and manufacture of textile products not covered above.
28	<u>Manufacture of Wood and Wooden products</u>	
	280	Sawing and planing of wood.
	281	Manufacture of wooden furniture and fixtures.
	282	Manufacture of structural wooden goods (including treated timber) such as beams, posts, doors, windows.
	283	Manufacture of wooden industrial goods other than transport equipment such as bobbin and similar equipment and fixtures.

contd...

Table 5.2 contd.

(a)	(b)	(c)
28	284	Manufacture of other wooden products such as utensils, toys and artwares.
	285	Manufacture of veneer and plywood.
	286	Manufacture of plywood products such as tea-chests.
	287	Manufacture of boxes and packing cases other than of plywood.
	288	Manufacture of materials from cork, bamboo, cane, leaves and other allied products.
	289	Manufacture of other wood and allied products not covered above.
29	<u>Paper and paper products</u>	
	290	Manufacture of pulp from wood, rags, waste paper and other fibres and the conversion of such pulp into any kind of paper and paper-board in mill.
	291	Manufacture of pulp from wood, rags, waste paper and other fibres and the conversion of such pulp into any kind of paper and paper-board handmade.
	292	Manufacture of products, such as paper-bags, boxes, cards, envelopes and moulded pulp goods from paper, paper-board and pulp.
30	<u>Printing and Publishing</u>	
	300	Printing and publishing of newspapers and periodicals.
	301	Printing and publishing of books.
	302	All other types of printing including lithography, engraving, etching, blockmaking, and other work connected with printing industry.
	303	All types of binding, stitching, sizing and allied work connected with binding industry.

contd...

Table 5.2 contd.

(a)	(b)	(c)
31	<u>Leather and leather products</u>	
310	Currying, tanning, and finishing of hides and skins and preparation of finished leather.	
311	Manufacture of shoes and other leather footwear.	
312	Manufacture of clothing and wearing apparel (except footwear) made of leather and fur.	
313	Manufacture of leather products (except those covered by code nos 311, 312), such as leather upholstery, suitcases, pocket books, cigarette and key cases, purses, saddlery, whip and other articles.	
314	Repair of shoes and other leather footwear.	
315	Repair of all other leather products except footwear.	
32	<u>Rubber, Petroleum and Coal products</u>	
320	Manufacture of tyres and tubes.	
321	Manufacture of rubber footwear.	
322	Manufacture of rubber goods used for industrial purposes.	
323	Manufacture of all kinds of other rubber products from natural and synthetic rubber including rubber rain coat.	
324	Production of petroleum, kerosene and other petroleum products in petroleum refineries.	
325	Production of coal tar and coke in coke oven.	
326	Manufacture of other coal and coal-tar products not covered elsewhere.	
33	<u>Chemicals and chemical products.</u>	
330	Manufacture of basic industrial chemicals such as acids, alkalis and other salts not elsewhere specified.	

contd...

Table 5.2 contd.

(a)	(b)	(c)
33	331	Manufacture of dyes, paints, colours and varnishes.
	332	Manufacture of fertilisers.
	333	Manufacture of ammunition, explosives and fire-works.
	334	Manufacture of matches.
	335	Manufacture of medicines, pharmaceutical preparations, perfumes, cosmetics and other toilet preparations except soap.
	336	Manufacture of soap and other washing and cleaning compounds.
	337	Manufacture of terpentine, synthetic resin and plastic products and materials (including synthetic rubber).
	338	Manufacture of common salt.
	339	Manufacture of other chemicals and chemical products not covered above (including inedible oils and fats).
34	<u>Non-metallic Mineral Products other than Petroleum &amp; Coal</u>	
	340	Manufacture of structural clay products such as bricks and tiles.
	341	Manufacture of cement and cement products.
	342	Manufacture of lime.
	343	Manufacture of structural stone goods, stone dressing and stone crushing.
	344	Manufacture of stonewares, other than images.
	345	Manufacture of stone images.
	346	Manufacture of plaster of Paris and its products.
	347	Manufacture of asbestos products.
	348	Manufacture of mica products.

contd...



Table 5.2 contd.

(a)	(b)	(c)
35	<u>Manufacture of Earthenware and Earthen Pottery</u>	
	350	Manufacture of Earthenware and Earthen pottery.
	351	Manufacture of chinaware and crockery.
	352	Manufacture of porcelain and its products.
	353	Manufacture of glass bangles and beads.
	354	Manufacture of glass apparatus.
	355	Manufacture of earthen image, busts and statues.
	356	Manufacture of earthen toys and artwares except those covered by code no. 355.
	357	Manufacture of glass and glass products except optical and photographic lenses and glass products covered above.
	359	Manufacture of other non-metallic mineral products not elsewhere specified.
36	<u>Basic Metals and their products except machinery and Transport Equipment.</u>	
	360	Manufacture of iron and steel including smelting, refining, rolling, conversion into basic forms such as billets, blooms, tubes, rods.
	361	Manufacture including smelting, refining of non-ferrous metals and alloys in basic forms.
	362	Manufacture of armaments.
	363	Manufacture of structural steel products such as joist, rail, sheet, plate.
	364	Manufacture of iron and steel furniture.
	365	Manufacture of brass and bellmetal products.
	366	Manufacture of aluminium products.
	367	Manufacture of metal products (other than of iron, brass, bellmetal & aluminium) such as tin can.

contd...

Table 5.2 contd.

(a)	(b)	(c)
36	368	Enamelling, galvanising, plating( including electro-plating),polishing and welding of metal products.
	369	Manufacture of sundry hardwarees such as G.I. pipes, wire net, bolt, screw, bucket, cutlery. ( This will also include the manufacture of ferrous engineering products done by jobbing engineering concerns which cannot be classified in major groups 36,37,38 and 39)
37	<u>Machinery(all kinds other than transport) and Electrical equipment.</u>	
	370	Manufacture and assembling of machinery (other than electrical) except textile machinery.
	371	Manufacture and assembling of prime mover and boilers,other than electrical equipment, such as diesel engines,road rollers,tractors.
	372	Manufacture of machine tools.
	373	Manufacture of textile machinery and accessories.
	374	Manufacture of heavy electrical machinery and equipment such as motors,generators, transformers.
	375	Manufacture of electric lamps and fans.
	376	Manufacture of insulated wires and cables.
	377	Manufacture of all kinds of battery.
	378	Manufacture of electronic equipment such as radio, microphone.
	379	Manufacture of electrical machinery and apparatus,appliances not specified above.
38	<u>Transport Equipment</u>	
	380	Manufacture,assembling and repairing of locomotives
	381	Manufacture of wagons,coaches,tramways and other railroad equipment other than that covered by code no. 363.

contd...

Table 5.2 contd.

(a)	(b)	(c)
38	382	Manufacture and assembling of motor vehicles of all types(except motor engines).
	383	Manufacture of motor vehicles,engine parts and accessories.
	384	Repairing and servicing of motor vehicles.
	385	Manufacture of bicycles and tricycles and accessories such as saddle,seat frame,gear.
	386	Building and repairing of water transport equipment such as ships,boats and manufacture of marine engines.
	387	Manufacture and repair of air transport equipment including aeroplanes,aeroengines.
	388	Repairing of bicycles and tricycles.
	389	Manufacture of other transport equipment not covered above such as animal drawn and hand drawn vehicles.
39	390	Manufacture of optical instruments and lenses, ophthalmic goods and photographic equipment and supplies.
	391	Manufacture of scientific,medical and surgical instruments,equipments and supplies.
	392	Assembling and repairing of watches and clocks.
	393	Manufacture of jewellery,silverware and wares using gold and other precious metals.
	394	Manufacture and tuning of musical instruments.
	395	Manufacture of stationary articles not covered elsewhere such as pencil,penholder,fountain pen.
	396	Manufacture of sports goods.
	399	Manufacture and repair work of goods not assignable to any other group.

TABLE 5.3

THE A.S.I. 3-DIGIT CLASSIFICATION OF INDIAN INDUSTRIES

S.No.	Group No.	Description
(a)	(b)	(c)
1	201	Slaughtering, preparation and preserving meat.
2	202	Manufacture of dairy products.
3	203	Canning and preserving of fruits & vegetables.
4	204	Canning and preserving of fish and other sea-foods.
5	205	Manufacture of grain mill products.
6	206	Manufacture of bakery products.
7	207	Sugar factories and refineries.
8	208	Manufacture of cocoa, chocolate and sugar confectionary.
9	209	Manufacture of miscellaneous food preparations.
10	211	Distilling, rectifying and blending of spirits.
11	212	Wine industries.
12	213	Breweries and manufacture of malt.
13	214	Soft drinks and carbonated water industries.
14	220	Tobacco manufactures.
15	231	Spinning, weaving and finishing of textiles.
16	232	Knitting mills.
17	233	Cordage, rope and twine industries.
18	239	Manufacture of textiles not elsewhere classified.
19	241	Manufacture of footwear.
20	242	Repair of footwear.
21	243	Manufacture of wearing apparel (except footwear).

contd...

Table 5.3 contd.

(a)	(b)	(c)
22	244	Manufacture of made-up textile goods except wearing apparel.
23	251	Saw mills, planing and other wood mills.
24	252	Wooden and cane containers and cane smallware.
25	259	Manufacture of cork and wood products not elsewhere classified.
26	260	Manufacture of furniture and fixtures.
27	271	Manufacture of pulp, paper and paperboard.
28	280	Printing, publishing and allied industries.
29	291	Tanneries and leather finishing plants.
30	292	Manufacture of fur products, except wearing apparel
31	293	Manufacture of leather products except footwear, and other wearing apparel.
32	300	Manufacture of rubber products.
33	311	Basic industrial chemicals including fertilizers.
34	312	Vegetable and animal oils and fats (except edible oils).
35	313	Manufacture of paints, varnishes and lacquers.
36	319	Manufacture of miscellaneous chemical products.
37	321	Petroleum refineries (motor and aviation spirit, diesel oil, kerosene oil, fuel oil, diverse hydrocarbon oils and other blends including synthetic fuels, lubricating oils etc.).
38	329	Manufacture of miscellaneous products of petroleum and coal.
39	331	Manufacture of structural clay products.
40	332	Manufacture of glass and glass products.

contd...

Table 5.3 contd.

(a)	(b)	(c)
41	333	Manufacture of pottery, china & earthenware.
42	334	Manufacture of cement(hydraulic).
43	339	Manufacture of non-metallic mineral products not elsewhere classified.
44	341	Iron and steel basic industries.
45	342	Non-ferrous basic metal industries.
46	350	Manufacture of metal products except machinery and transport equipment.
47	360	Manufacture of machinery except electrical machinery.
48	370	Manufacture of electrical machinery, apparatus, appliances and supplies.
49.	381	Shipbuilding and repairing.
50	382	Manufacture of railroad equipment.
51	383	Manufacture of motor vehicles.
52	384	Repair of motor vehicles.
53	385	Manufacture of motorcycles and bicycles.
54	386	Manufacture of aircraft.
55	389	Manufacture of transport equipment n.e.c.
56	391	Manufacture of professional and scientific measuring and controlling instruments.
57	392	Manufacture of photographic and optical goods.
58	393	Manufacture of watches and clocks.
59	394	Manufacture of jewellery and related articles.
60	395	Manufacture of musical instruments.
61	399	Manufacturing industries not elsewhere classified.

TABLE 5.4

CORRESPONDENCE BETWEEN  
THE 1951 INDUSTRIAL CLASSIFICATION ( I.C.E.C.)  
AND  
THE 1961 INDUSTRIAL CLASSIFICATION ( I.S.I.C.)

1951 (I.C.E.C.)		1961 (I.S.I.C.)
2.0	....	203,204,205,209.
2.1	....	200
2.2	....	206,207,208.
2.3	....	201,202.
2.4	....	210,211,212,213,214, 215,216,217,218,219.
2.5	....	220,221,222,223,224, 225,226.
2.6	....	230,231,232,233,234, 235,236,237,238,239.
2.7	....	270,271,272,273,274, 275,278.
2.8	....	240,241,242,243,244, 250,251,252,253,254, 255,256,260,261,262, 263,264,265,266,276, 277,279.
2.9	....	310,311,312,313,314, 315.
3.0	....	365,366,367,368,362, 369.
3.1	....	360,363.
3.2	....	361.
3.3	....	380,381,382,383,384, 385,386,387,388,389.
3.4	....	374,375,376,377,378, 379.

contd...

Table 5.4 contd.

1951 (I.C.E.C.)		1961 (I.S.I.C.)
3.5	....	370,371,372,373.
3.6	....	330,332,333,337.
3.7 & 3.8	....	331,334,335,336,338, 339.
4.0	....	390,391,392,393,394, 395,396,399.
4.1	....	324,325,326.
4.2	....	340.
4.3	....	341.
4.4	....	342,343,344,345,346, 347,348,350,351,352, 353,354,355,356,357, 359.
4.5	....	320,321,322,323.
4.6	....	280,282,283,284,285, 286,287,288,289.
4.7	....	281,364.
4.8	....	290,291,292.
4.9	....	300,301,302,303.

I.C.E.C. - Indian Census Economic Classification.

I.S.I.C. - Indian Standard Industrial Classification.



TABLE 5.5

CORRESPONDENCE BETWEEN  
THE A.S.I. CLASSIFICATION  
AND  
THE I.S.I.C. CLASSIFICATION

<u>A.S.I. Code</u> <u>number</u> <u>(a)</u>		<u>I.S.I.C. Code</u> <u>number</u> <u>(b)</u>
201 & 204	.....	204
202	.....	206
203	.....	203
205	.....	200
206	.....	205
207	.....	201, 202.
208	.....	207
209	.....	208, 209, 215, 216, 217, 218, 219, 338.
211	.....	210
212	.....	211
213	.....	212, 213.
214	.....	214
220	.....	220, 221, 222, 223, 224, 225, 226.
231	.....	231, 232, 233, 234, 235, 236, 237, 238, 241, 242, 243, 251, 252, 253, 254, 255, 256, 260, 261, 262, 263, 264, 265, 270, 272.
232	.....	271
233	.....	239, 244, 266.
239	.....	230, 240, 250, 275, 276, 277, 279.
241	.....	311
242	.....	314, 315.
243	.....	273, 278, 312.
244	.....	274
251	.....	280

contd...

Table 5.5 contd.

(a)	(b)
252	..... 284
259	..... 285, 286, 287, 288, 289.
260	..... 281, 282, 364.
271	..... 290, 291, 292.
280	..... 300, 301, 302, 303.
291	..... 310
293	..... 313
300	..... 320, 321, 322, 323.
311	..... 330, 332, 337.
313	..... 331
{ 319	..... { 334
{ 312	..... { 335, 336, 339.
321	..... 324
329	..... 325, 326.
331	..... 340
332	..... 353, 354, 357.
333	..... 350, 351, 352.
334	..... 341
339	..... 342, 343, 344, 345, 346, 347, 348, 355, 356, 359.
341	..... 360, 363.
342	..... 361
350	..... 365, 366, 367, 368, 369.
360	..... 370, 371, 372, 373, 283.
370	..... 374, 375, 376, 377, 378, 379.
381	..... 386
382	..... 380, 381.
383	..... 382
385	..... 383, 385, 388.
384	..... 384
386	..... 387

contd...

Table 5.5 contd.

(a)	(b)
389	389
391	391
392	390
393	392
394	393
292	394
395	395
399	396, 399.

## CHAPTER 6

### ESTIMATES OF EMPLOYMENT IN THE UNREGISTERED MANUFACTURING SECTOR-1963

The actual data used to arrive at the employment estimates for the different industries in the unregistered manufacturing sector along with the results obtained by applying the methodology explained in the last chapter have been presented in this chapter.

As has been explained in the last chapter, employment in the unregistered manufacturing sector for 1963 has been obtained by deducting the employment in the census and sample sectors of the A.S.I. for 1963 from the total non-household employment estimated for 1963 and adding it to the employment in the household sector also estimated for 1963. To estimate employment in 1963 for the whole of 'manufacturing' activity, the 1961 employment has been projected for 1963 on the basis of the rates of growth of employment during 1951-61. For estimating the rates of growth during 1951-61, the employment data given in the 1951 and 1961 censuses have been made comparable. This primarily involves adjustments on the employment data given in the 1951 census to (i) include the number of earning dependents in the employment in manufacturing industries and (ii) include employment in manufacturing industries of the population of Jammu and Kashmir and of the population of 0.2 million whose schedules were

lost in a fire. Firstly adjustments have been made for the inclusion of the earning dependents in the employment in manufacturing industries. Estimates of employment of the population that was not covered in the 1951 census have been made, by assuming the pattern of employment as was available for the rest of the country, for this population also.

Table 6.1 gives the industrial classification of self-supporting persons engaged in manufacturing industries in 1951.<sup>1</sup> The number of earning dependents engaged in these industries have been estimated by the following procedure.

The employment of self-supporting persons in the livelihood class 'production other than cultivation' was 12,135,714.<sup>2</sup> The employment of self-supporting persons in the livelihood subclass 'processing and manufacture' was 9,176,268.<sup>3</sup> i.e. 75.56% of the total employment of self-supporting persons in 'production other than cultivation'. This percentage has been applied to the number of earning dependents employed in 'production other than cultivation', which was 3,133,859<sup>4</sup> and employment of earning

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1 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, Table B III, pages 187-387.

2 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, Table B I, pages 1-23.

3 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, Table B III, pages 187-387.

4 Economic Tables (Gen. Population Tables), Census of India, 1951, Vol 1, Part II B, Table B I, pages 1-23.

dependents in 'processing and manufacture' obtained as 2,367,944.

The total employment in the manufacturing sector including both self-supporting persons and earning dependents in 1951 is thus estimated as 11,544,212 excluding the employment of the population not covered in the 1951 census employment data. Employment of the population not covered in the 1951 census has been estimated in the following manner.

The total population of Jammu and Kashmir in 1951 was 4.41 million. The number of schedules lost in fire was 0.2 million. The total population not covered in the 1951 census was thus 4.61 million. For the rest of the country it has been estimated that 3.24% of the total population was engaged in manufacturing in 1951.<sup>1</sup> Applying this percentage to the population which was not covered in the 1951 census data, the employment of this population in manufacturing industries is estimated as 151,019.

The total employment in the manufacturing sector for all India for 1951 has thus been estimated as 11,695,231. This employment has been distributed among the different manufacturing industries in the pattern of the distribution of employment of self-supporting persons in these industries and has been presented in Table 6.2.

To obtain the rates of growth of employment in each industry during 1951-61 in order to project the 1961 employment

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<sup>1</sup> This is obtained by taking the percentage of total employment in the manufacturing sector(11,544,212) to total population for all India excluding Jammu and Kashmir and Part B tribal areas of Assam(356,628,312).

to 1963, the 1961 industrial classification(I.S.I.C.) has been aggregated to conform to the 1951 classification(I.C.E.C.) and the rates of growth of each industry for the decade has been worked out by using the compound rate formula.<sup>1</sup> The employment figures for the I.C.E.C. for 1951 and for 1961 along with the corresponding rates of growth are given in Table 6.3.

For the industries (i) 3.2-Non-ferrous metals-basic manufacture, (ii) 3.5-Machinery other than electrical including engineering workshops and (iii) 2.4-Beverages, the rates of growth have been found to be negative. For the former two groups the rates have been corrected. The average rate of growth of (i) 3.2-Non-ferrous metals-basic manufacture, (ii) 3.5-Machinery other than electrical including engineering workshops, (iii) 3.0-Iron and Steel basic manufacture and (iv) 3.1-Manufacture of metal products not elsewhere classified, has been applied uniformly to all these 4 groups. This has been done on the assumption that the negative rates are caused because of some overlapping among the groups and the resultant difficulties in giving an exact correspondence between the 1951 and the 1961 classifications. In the case of beverages, there is no possibility of any such overlapping in the two classifications. The negative rate of growth might have been a result of the close down of establishments producing liquor as a consequence of prohibition or the production

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<sup>1</sup> The rate of growth has been estimated by using the formula  $E_n = E_0(1+r)^n$ , where  $E_0$  is the employment in the initial year,  $r$  is the rate of growth of employment,  $E_n$  is the employment in the nth year and  $n$  is the number of years.

of more illicit liquor which could not have been reported. For this group the 1961 employment has been adopted for 1963 also.

The growth rate of each industry group of the I.C.E.C. has been applied to all the industries of the I.S.I.C. that constitute the I.C.E.C. group. The same rate is applied for both household and non-household sectors. Employment in household and non-household sectors for the industries of the I.S.I.C. and the rates of growth applicable to each industry and the estimates of employment in the household and non-household sectors for 1963, worked out on the basis of these rates of growth, are given in Table 6.4.

Based on the correspondence between the A.S.I. classification and the I.S.I.C., the 1963 employment figures for household and non-household sectors, estimated for the I.S.I.C., have been grouped to conform to the A.S.I. classification. Employment in the unregistered manufacturing sector has been obtained by deducting the employment in the census and sample sectors from the employment in the non-household sector for each industry and adding the employment in the household sector to it. The classification of workers in the census sector, sample sector, household sector and the unregistered non-household sector for the A.S.I. classification is given in Table 6.5.

In this table the total non-household employment in (i) 341- Iron and Steel basic industries, (ii) 360- Manufacture of machinery, (iii) 381- Ship building and repairing and (iv) 391- Manufacture of professional and scientific measuring and controlling



instruments, are found to be less than the employment in the census and sample sectors and hence the employment in the unregistered manufacturing sector for these industries turns out to be negative. In the case of industry 341 and 360, the magnitude of the negative figures are 51,813 and 97,275 respectively. In their case, employments in the non-household sector of these two industries and of 350-Manufacture of metal products except machinery and transport equipment, have been redistributed in the pattern of their distribution for the registered sector. Estimates of employment in the non-household unregistered sector of these industries are based on the redistributed non-household employment. In the case of industry 381 and 391, the non-household employment is not much less than the census and sample sector employment. For these two industries the employment in both the household and the unregistered non-household sectors have been treated as 'nil' and the total of the census and sample sector employments is taken for the total employment. For industry 334-Manufacture of cement also the employment in the unregistered sector is treated as 'nil'.

The estimates of employment in the unregistered manufacturing sector, obtained for the A.S.I. classification, have been disaggregated to arrive at estimates of employment in the unregistered sector of the different industries for which input-output data have been compiled. If a particular industry, for which input-output data are available, corresponds to an I.S.I.C.

industry, which forms part of an A.S.I. industry, the proportion of employment of the I.S.I.C. industry to the employment in the A.S.I. industry has been calculated for the household sector and this proportion has been applied to the total unregistered employment of the A.S.I. industry to obtain the employment in the unregistered sector of the industry.

If the industry is a sub-group of an I.S.I.C. industry, employment in the unregistered sector has been estimated first for the I.S.I.C. industry and this estimated employment has been distributed among its sub-groups in the proportion of the number of households in each sub-group in the household sector.<sup>1</sup>

The estimates of employment for the unregistered sector of the different industries for which input-output data have been collected are given in Table 6.6.

When an industry does not exactly correspond to any sub-group of an I.S.I.C. industry, the estimated employment of the sub-group more or less similar to the industry, has been adopted for the industry. Thus employment in 'Sugar and Khandasari' refers to the estimated employment of the sub-group 'Gur and Khandasari making from sugarcane and palm'. Similarly employment in 'palmgur' refers to the estimated employment of the sub-group 'jaggery from coconut and palmyra trees'. Employment in 'rice products' refer to the estimated employment of the sub-group

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<sup>1</sup> The minor groups of the I.S.I.C. industries and the number of households in each minor group are given for the household sector in Household Economic Tables, Part III(ii), Vol 1, Census of India, 1961, Table BXIV, Part B, pages 26-31.

'parching of grains'.

When two industries fall in the same sub-group, the estimated employment of that sub-group has been equally distributed between the two industries. This has been done for (i) Locks and Keys, and Trunks, and (ii) Grassmats and Reedmats.

In the case of some industries the estimates of employment seem to be high under-estimates. The employment estimated for the sub-group 'himroo works and brocade' is 12,985. It has been found from one of the handicrafts survey reports that in Varanasi alone 46,785 persons are employed in the brocade industry<sup>1</sup> and from another handicrafts survey report that 166 persons are employed in himroo works in Aurangabad.<sup>2</sup> For the present study the employment in himroo works is taken as 166 and that in the brocade industry as 12,819 i.e. 12,985 minus 166. In the case of 'crochet work' the estimated employment is 794. From the census of Andhra Pradesh, it has been found that in Andhra Pradesh 80,500 persons are employed in that industry.<sup>3</sup> Employment in 'photo and mirror framing' is estimated as 88. This also is a gross under-estimate. For 'bidriware' also the estimated employment was much less and the employment in that industry, 57, as given in a survey of handicrafts in some districts

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- 1 All-India Handicrafts Board (Planning and Research Section), Ministry of Commerce and Industry, Govt. of India, Report on the Survey of the Brocade Industry at Varanasi.
  - 2 Census of India, 1961, Vol 10, Part VII A, Handicrafts of Maharashtra - Himroo works of Aurangabad.
  - 3 Census of India, 1961, Vol 2, Andhra Pradesh, Part VII A(2), Selected crafts of Andhra Pradesh.

of Mysore has been adopted.<sup>1</sup> For the 'wood carving' also the employment seems to have been under-estimated.

In the case of 'ivory' products the employment estimate is the total obtained by adding the employments given for ivory carving in the different surveys. The employment estimate for the 'gabba industry' refer to the employment as given in the survey of that industry in Anantanag.<sup>2</sup> For these two industries the sub-groups of the I.S.I.C. could not be identified.

In the case of 'oil seed crushing' the I.S.I.C. industry does not have any sub-group. In this case half of the employment in the non-household unregistered sector of the 'oil seeds crushing' has been assumed for the unregistered oil mill sector. The total employment in the household sector and the other half of the employment in the unregistered non-household sector of the industry has been assumed for the ghani sector. The distribution of employment between the ordinary and the improved ghani has been made on the basis of the number ofghanis proposed in the two sectors for 1960-61.<sup>3</sup> On this basis 25% of the employment in the ghani sector has been assumed for the improved ghani and 75% for the ordinary ghani sectors.

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1 Mensinkai S.S., A Survey of Handicrafts in 8 Districts of Mysore State.

2 Gabba Industry, Anantanag, All India Handicrafts Board, Ministry of Commerce and Industry, Government of India.

3 All-India Khadi and Village Industries Board - Village Oil Industry: Proposals for the Second Five Year Plan.

TABLE 6.1

NUMBER OF SELF-SUPPORTING PERSONS IN THE DIFFERENT  
INDUSTRY GROUPS FOR 1951

Industry No. I.C.E.C.	Number of persons	Percentage
(a)	(b)	(c)
2.0	184,239	2.01
2.1	403,603	4.40
2.2	267,100	2.91
2.3	135,270	1.47
2.4	164,858	1.80
2.5	355,702	3.88
2.6	2,061,751	22.47
2.7	648,671	7.07
2.8	711,201	7.75
2.9	577,679	6.29
3.0	620,545	6.76
3.1	112,373	1.22
3.2	10,874	0.12
3.3	216,274	2.36
3.4	42,770	0.47
3.5	124,968	1.36
3.6	21,478	0.23
3.7 & 3.8	87,765	0.96
4.0	509,309	5.55
4.1	11,798	0.13
4.2	184,155	2.01
4.3	25,852	0.28
4.4	445,161	4.85
4.5	19,241	0.21
4.6	1,041,289	11.35
4.7	34,495	0.37
4.8	31,211	0.34
4.9	126,636	1.38
Total	9,176,268	100.00

TABLE 6.2

ESTIMATED EMPLOYMENT OF SELF-SUPPORTING PERSONS AND EARNING DEPENDENTS FOR ALL INDIA (INCL. J & K) 1951

Industry No.	Self-supporting persons	%	Self-supporting persons plus earning dependents
(a)	(b)	(c)	(d)
2.0	184,239	2.01	235,074
2.1	403,603	4.40	514,590
2.2	267,100	2.91	340,331
2.3	135,270	1.47	171,920
2.4	164,858	1.80	210,514
2.5	355,702	3.88	453,775
2.6	2,061,751	22.47	2,627,918
2.7	648,671	7.07	826,853
2.8	711,201	7.75	906,380
2.9	577,679	6.29	735,630
3.0	620,545	6.76	790,598
3.1	112,373	1.22	142,682
3.2	10,874	0.12	14,034
3.3	216,274	2.36	276,007
3.4	42,770	0.47	54,969
3.5	124,968	1.36	159,055
3.6	21,478	0.23	26,899
3.7 & 3.8	87,765	0.96	112,274
4.0	509,309	5.55	649,085
4.1	11,798	0.13	15,204
4.2	184,155	2.01	235,074
4.3	25,852	0.28	32,747
4.4	445,161	4.85	567,219
4.5	19,241	0.21	24,560
4.6	1,041,289	11.35	1,327,409
4.7	34,495	0.37	43,272
4.8	31,211	0.34	39,764
4.9	126,636	1.38	161,394
<b>Total</b>	<b>9,176,268</b>	<b>100.00</b>	<b>11,695,231</b>

TABLE 6.3

EMPLOYMENT IN THE MANUFACTURING SECTOR IN 1951 & 1961  
AND THE RATES OF GROWTH

Industry No	Employment in 1951	Employment in 1961	Rates of growth
(a)	(b)	(c)	(d)
2.0	235,074	602,929	0.0988
2.1	514,590	635,376	0.0213
2.2	340,331	473,127	0.0335
2.3	171,920	347,771	0.0730
2.4	210,514	185,355	- 0.0128
2.5	453,775	973,765	0.0793
2.6	2,627,918	4,158,267	0.0470
2.7	826,853	1,301,549	0.0464
2.8	906,380	1,091,468	0.0198
2.9	735,630	809,440	0.0097
3.0	790,598	895,253	0.0137
3.1	142,682	265,938	do
3.2	14,034	9,455	do
3.3	276,007	577,764	0.0767
3.4	54,969	126,122	0.0866
3.5	159,055	96,964	0.0137
3.6	26,899	101,108	0.1416
3.7 & 3.8	112,274	221,122	0.0701
4.0	649,085	950,727	0.0389
4.1	15,204	24,639	0.0495
4.2	235,074	379,818	0.0491
4.3	32,747	64,067	0.0694
4.4	567,219	1,059,637	0.0645
4.5	24,560	47,605	0.0684
4.6	1,327,409	1,945,194	0.0390
4.7	43,272	262,925	0.1977
4.8	39,764	80,334	0.0729
4.9	161,394	218,770	0.0309
<b>Total</b>	<b>11,695,231</b>	<b>17,906,489</b>	<b>0.0435</b>

TABLE 6.4

EMPLOYMENT IN THE HOUSEHOLD AND NON-HOUSEHOLD SECTORS IN THE  
MANUFACTURING INDUSTRIES OBTAINED BY PROJECTING THE  
1961 EMPLOYMENT

Industry code No. (I.S.I.C)	Household employment	Non- household employment	Rate of growth	Household employment	Non- household employment
	1961			1963	
(a)	(b)	(c)	(d)	(e)	(f)
203	1,330	49,388	0.0988	1,606	59,631
204	19,959	31,620		24,098	38,178
205	15,536	52,315		18,758	63,165
209	278,560	154,221		336,333	186,206
200	294,271	341,105	0.0213	306,925	355,772
206	130,452	20,027	0.0335	139,336	21,391
207	232,302	78,926		248,122	84,301
208	nil	11,420		nil	12,198
201	nil	178,672	0.0730	nil	205,705
202	133,653	35,446		153,875	40,809
210	1,669	6,223	-0.0128	1,669	6,223
211	1,480	6,412		1,480	6,412
212	16,347	82,717		16,347	82,717
213	217	1,075		217	1,075
214	8,114	17,563		8,114	17,563
215	518	6,425		518	6,425
216	1,605	3,874		1,605	3,874
217	nil	16,397		nil	16,397
218	257	6,509		257	6,509
219	2,277	5,676		2,277	5,676
220	549,699	335,468	0.0793	640,344	390,787

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Table 6.4 contd.

(a)	(b)	(c)	(d)	(e)	(f)
221	4,597	11,288	0.0793	5,355	13,149
222	65	18,182		76	21,180
223	2,172	2,863		2,530	3,335
224	936	3,444		1,090	4,012
225	1,260	4,236		1,468	4,934
226	1,613	37,942		1,879	44,199
230	34,257	65,926	0.0470	37,552	72,268
231	563,427	35,826		617,629	39,272
232	nil	939,211		nil	1,029,563
233	70,346	30,257		77,113	33,168
234	27,364	70,525		29,996	77,309
235	2,000,413	134,203		2,192,853	147,113
236	63,682	12,597		69,808	13,809
237	15,314	21,258		16,787	23,303
238	34,524	4,972		37,845	5,450
239	26,516	7,649		29,067	8,385
240	2,357	20,472	0.0198	2,451	21,291
241	10,863	217,955		11,297	226,673
242	905	2,221		941	2,310
243	199	1,817		207	1,890
244	140,742	19,767		146,372	20,558
250	600	1,472		624	1,531
251	2,533	2,705		2,634	2,813
252	nil	16,090		nil	16,734
253	71,962	2,878		74,840	2,993
254	3,134	1,201		3,259	1,249
255	55,013	3,043		57,213	3,165
256	5,183	4,219		5,390	4,388
260	nil	48,942		nil	50,900
261	2,036	1,249		2,117	1,299

contd...

Table 6.4 contd.

(a)	(b)	(c)	(d)	(e)	(f)
262	19,381	4,846	0.0198	20,156	5,040
263	2,119	4,179		2,204	4,346
264	93,506	10,133		97,246	10,538
265	401	758		417	788
266	1,802	1,664		1,874	1,730
276	2,448	2,019		2,546	2,100
277	238,889	57,332		248,444	59,625
279	26,696	8,190		27,764	8,518
270	43,914	15,790	0.0464	48,081	17,288
271	20,690	36,570		22,653	40,040
272	49,996	26,870		54,741	29,420
273	520,880	516,910		570,311	565,965
274	18,193	13,106		19,919	14,350
275	1,120	2,624		1,226	2,873
278	2,578	9,855		2,823	10,790
280	24,174	112,911	0.0390	26,096	121,887
282	184,198	94,767		198,842	102,301
283	88,908	15,971		95,976	17,241
284	14,649	9,287		15,813	10,025
285	2,589	4,267		2,795	4,606
286	396	2,870		427	3,098
287	4,776	12,915		5,156	13,942
288	954,432	53,983		1,030,309	58,275
289	220,404	143,697		237,926	155,121
281	95,952	134,382	0.1977	137,643	192,771
364	5,340	27,251		7,660	39,091
290	nil	53,201	0.0729	nil	61,240
291	1,351	2,832		1,555	3,260
292	9,230	13,720		10,625	15,793

contd...

Table 6.4 contd.

(a)	(b)	(c)	(d)	(e)	(f)
300	264	36,531	0.0309	280	38,821
301	2,451	42,544		2,605	45,211
302	1,530	105,984		1,626	112,629
303	2,539	26,927		2,698	28,615
310	16,366	37,565	0.0097	16,685	38,297
311	421,821	114,364		430,046	116,594
312	1,729	2,504		1,763	2,553
313	21,750	13,926		22,174	14,197
314	43,593	51,547		44,443	52,552
315	5,877	3,286		5,992	3,350
320	781	21,871	0.0684	891	24,966
321	615	3,349		702	3,823
322	350	10,915		399	12,459
323	176	9,548		201	10,899
324	nil	18,311	0.0495	nil	20,168
325	5	2,927		5	3,224
326	218	3,178		240	3,500
330	241	18,944	0.1416	314	24,688
332	868	23,872		1,131	31,110
333	8,488	27,866		11,061	36,315
337	1,593	19,236		2,076	25,068
331	1,681	21,112	0.0701	1,925	24,175
334	11,541	29,657		13,215	33,960
335	14,085	62,617		16,129	71,703
336	3,499	23,266		4,007	26,642
338	1,941	30,166		2,223	34,543
339	3,198	18,359		3,662	21,023

contd...

Table 6.4 contd.

(a)	(b)	(c)	(d)	(e)	(f)
340	83,319	296,499	0.0491	91,701	326,327
341	2,317	61,750	0.0694	2,650	70,617
342	22,309	25,129	0.0645	25,280	28,476
343	21,593	97,423		24,469	110,400
344	5,775	6,772		6,544	7,674
345	1,926	4,115		2,182	4,663
346	176	584		199	662
347	98	2,145		111	2,431
348	9,547	17,686		10,819	20,042
350	673,619	40,295		763,345	45,662
351	880	14,596		997	16,540
352	319	2,700		361	3,060
353	7,270	28,846		8,238	32,688
354	416	7,675		471	8,697
355	7,774	3,610		8,809	4,091
356	8,466	3,011		9,594	3,412
357	607	31,029		688	35,162
359	1,809	10,437		2,050	11,827
360	33,448	216,071	0.0137	34,371	222,034
363	18	16,401		18	16,854
361	412	9,043	0.0137	423	9,292
362	3,725	32,154	0.0137	3,828	33,041
365	50,003	52,880		51,383	54,339
366	1,239	18,817		1,273	19,336
367	11,928	54,149		12,257	55,643
368	15,176	68,111		15,595	69,991
369	348,444	238,627		358,061	245,213

contd...

Table 6.4 contd.

(a)	(b)	(c)	(d)	(e)	(f)
370	1,709	38,914	0.0137	1,756	39,988
371	4	11,558		4	11,877
372	953	27,910		979	28,680
373	600	15,316		616	15,739
374	nil	18,295	0.0866	nil	21,601
375	288	21,757		340	25,688
376	50	11,958		59	14,119
377	125	9,182		147	10,841
378	755	22,597		891	26,680
379	896	40,219		1,058	47,485
380	nil	106,521	0.0767	nil	123,490
381	nil	71,422		nil	82,799
382	1,444	27,110		1,674	31,429
383	69	20,121		80	23,326
384	3,500	125,989		4,057	146,059
385	1,201	24,705		1,392	28,640
386	1,067	21,114		1,237	24,477
387	nil	14,656		nil	16,991
388	22,583	107,869		26,180	125,052
389	18,820	9,573		21,818	11,098
390	1,472	7,161	0.0389	1,589	7,729
391	709	7,288		765	7,866
392	5,054	28,843		5,455	31,130
393	337,795	200,941		364,582	216,876
394	8,583	9,923		9,264	10,710
395	2,367	15,022		2,555	16,213
396	1,396	5,552		1,507	5,992
399	84,459	234,162		91,156	252,731
<b>Total</b>	<b>9,931,095</b>	<b>7,975,394</b>		<b>10,782,873</b>	<b>8,784,916</b>

TABLE 6.5

CLASSIFICATION OF EMPLOYMENT IN THE MANUFACTURING ACTIVITY INTO CENSUS, SAMPLE, NON-HOUSEHOLD UNREGISTERED MANUFACTURING AND THE HOUSEHOLD MANUFACTURING SECTORS FOR THE YEAR 1963

Industry code No. A.S.I.	Census sector	Sample sector	Non-household unregistered mfg sector	Household mfg sector	Total employment in unreg mfg sector
(a)	(b)	(c)	(d)	(e)	(f)
201 )					
204 )	4,263	1,092	32,823	24,098	56,921
202	5,481	568	15,342	139,336	154,678
203	3,546	1,231	54,854	1,606	56,460
205	34,509	84,840	236,423	306,925	543,348
206	6,305	2,955	53,905	18,758	72,663
207	112,754	11,380	122,380	153,875	2,276,255
208 )					
209 )	228,091	71,279	56,759	591,335	648,094
211 )					
212 )	5,970	1,322	89,135	19,713	108,848
213 )					
214	1,093	1,442	15,028	8,114	23,142
220	88,374	51,222	342,000	652,742	994,742
231	1,184,606	57,697	508,518	3,422,774	3,931,292
232	2,333	7,076	30,631	22,653	53,284
233	4,044	1,700	24,929	177,313	202,242
239	85,318	43,585	39,303	320,607	359,910
241	6,450	1,632	108,512	430,046	538,558
242	n11	133	55,769	50,435	106,204
243	6,826	3,966	568,516	574,897	1,143,413
244	n11	328	14,022	19,919	33,941
251 )					
252 )	21,305	26,580	319,069	1,318,522	1,637,591
259 )					
260	20,178	6,274	307,711	344,145	651,856
271	60,095	5,229	14,969	12,180	27,149
280	91,726	45,288	88,262	7,209	95,471

contd...

Table 6.5 contd.

(a)	(b)	(c)	(d)	(e)	(f)
291	8,546	7,687	22,064	16,685	38,749
293	315	904	12,978	22,174	35,152
300	42,392	6,331	3,424	2,193	5,617
311	57,899	5,546	17,421	3,521	20,942
312 )					
313 )	80,873	24,304	72,326	38,938	111,264
319 )					
321 )					
329 )	11,525	239	15,128	245	15,373
331	50,556	20,089	255,682	91,701	347,383
332	41,740	2,826	31,981	9,397	41,378
333	19,259	1,824	44,179	764,703	808,882
334	31,673	97	nil	nil	nil
339	31,508	21,347	179,670	92,707	272,377
341	268,215	22,486	10,394	34,389	44,783
342	23,927	6,780	990	423	1,413
350	80,059	63,009	112,056	438,569	550,625
360	148,674	62,126	7,511	99,331	106,842
370	112,019	12,946	21,449	2,495	23,944
381	29,234	1,175	nil	nil	nil
382	191,689	790	13,810	nil	13,810
383 )					
385 )	84,422	1,505	122,520	29,326	151,846
384	50,781	24,970	70,308	4,057	74,365
386	5,250	348	11,393	nil	11,393
389	nil	3,291	7,807	21,818	29,625
391	10,798	2,511	nil	nil	nil
392	1,618	1,792	4,319	1,589	5,908
393	1,613	626	28,891	5,455	34,346
394	5,814	1,168	209,894	364,582	574,476
399	24,771	24,081	236,794	104,482	341,276

contd...

Table 6.5 contd.

(a)	(b)	(c)	(d)	(e)	(f)
a	nil	nil	33,041	3,828	36,869
b	nil	nil	36,315	11,061	47,376
<b>Total</b>	<b>3,388,437</b>	<b>747,617</b>	<b>4,681,205</b>	<b>10,780,871</b>	<b>15,462,076</b>

- \* 'a' is Manufacture of Ammunition, Explosives and fireworks.  
'b' is Manufacture of Armaments.

A.S.I. does not cover these industries and hence it is not possible to find out the employment in these two industries for the unregistered sector. In this Table they have been shown as 'unregistered' only for the sake of completing the Table. These two industries are not included for further analysis of the unregistered manufacturing sector.

- \*\* Total employment in the household sector in Table 6.5 (this table) does not tally with the total household sector employment as given in Table 6.4. Similarly the total of employment in the Census, Sample and Unregistered non-household sectors does not tally with the total non-household sector employment as given in Table 6.4. These disparities in the values are because of the adjustments made for the employments in 'Ship building and repairing' and 'Manufacture of professional and scientific measuring and controlling instruments' in both of which the total employment as given in the population census was less than the employment given for the Census and Sample sectors.



TABLE 6.6

EMPLOYMENT IN DIFFERENT INDUSTRIES OF THE  
UNREGISTERED MANUFACTURING SECTOR FOR 1963

S.No.	Industry	Employment
(a)	(b)	(c)
1	Flour milling	133,041
2	Hand pounding of rice	143,718
3	Rice products	251,810
4	Gur and Khandsari	108,513
5	Palagur	155,476
6	Canning of fruits and vegetables	367
7	Bakery products	72,663
8	Dairy products	154,678
9	Oil seed crushing: Improved ghani	65,008
	Ordinary ghani	195,024
	Oil mills	11,908
10	Confectionary	3,023
11	Sweets etc.	364,102
12	Distilleries and breweries	108,848
13	Beedi	994,742
14	Cotton carding	42,289
15	Textile printing	112,041
16	Cotton handlooms	2,518,779
17	Ropes and twine from jute, hemp and mesta	166,951
18	Woolen blankets and rugs	65,652
19	Woolen shawls	1,016
20	Silk spinning	23,195
21	Silk and art-silk weaving in powerlooms	2,359
22	Silk weaving in handlooms	98,664
23	Himroo work	166
24	Brocade	12,819
25	Carpets and druggets	31,392

contd...

Table 6.6 contd.

(a)	(b)	(c)
26	Hosiery	53,284
27	Embroidery and lace making	32,901
28	Jari thread	30,000
29	Tailoring	1,000,649 ✓
30	Caps,hats and other headgear	8,507
31	Crochet work	794
32	Gabba industry	535
33	Coir matting and other coir manufactures	90,961 ✓
34	Coir spinning	181,474 ✓
35	Saw milling	32,424
36	Wooden furniture	260,677 ✓
37	Lacquerware on wood	134
38	Pataras	165
39	Wooden toys	297
40	Sandalwood and other wood carving	557
41	Photo and mirror framing	88
42	Plywood and its products	491
43	Boxes and packing cases other than of wood	6,387
44	Grass mats	42,547
45	Reed mats	42,547
46	Palm leaf and palmyra products	264,240 ✓
47	Cane and bamboo products	534,111 ✓
48	Papier mache articles	1,191
49	Paper and cardboard products	6,195
50	Printing presses	21,529
51	Leather tanning	33,758
52	Leather footwear	538,558
53	Leather products other than footwear	35,152
54	Rubber products	5,617
55	Paints and varnishes	5,496

contd...

Table 6.6 contd.

(a)	(b)	(c)
56	Fertilisers	6,726
57	Agarbathi	11,844
58	Drugs and pharmaceuticals	20,051
59	Soap	11,449
60	Plastics	12,347
61	Wax products	1,053
62	Cement products	41,497
63	Bricks and tiles	347,383 ✓
64	Line	64,808 ✓
65	Stone carving	15,850
66	Marble carving	1,901
67	Granite carving	188
68	Stonewares	16,785
69	Plaster of Paris	254
70	Pottery	807,426 ✓
71	Clay toys and dolls	47,169
72	Glass bangles	36,272
73	Glass and glassware	5,102
74	Iron and steel smelting	44,778
75	Brassware	136,235 ✓
76	Aluminium ware	3,378
77	Tin smithy	11,846
78	Copper utensils	5,187
79	Electroplating	15,834
80	Agricultural implements	132,990 ✓
81	Engineering	1,455
82	Sheetmetal processing	3,267
83	Locks and keys	6,733
84	Trunks	6,733
85	Cutlery	3,194
86	Foundry	181,156 ✓

contd...

Table 6.6 contd.

(a)	(b)	(c)
87	Wire products	26,642
88	Machinery	1,891
89	Machine parts	1,047
90	Textile machinery and accessories	662
91	Electric fans	3,263
92	Automobile battery	1,410
93	Radio repair	8,550
94	Electrical goods	2,481
95	Electrical repair	7,670
96	Repair of automobiles	74,365
97	Bicycle repair	135,553
98	Carts and cartwheels	29,625
99	Watch repair	34,346
100	Silver filigree	1,896
101	Artmetal ware	2,470
102	Bidriware	57
103	Musical instruments	30,271
104	Rubber stamps	772
105	Conch shell products	1,264
106	Ivory	813

## CHAPTER 7

### OUTPUT-LABOUR RATIOS AND VALUES OF OUTPUT IN THE UNREGISTERED MANUFACTURING SECTOR - 1963

The values of outputs of the different industries in the unregistered manufacturing sector for the country as a whole are not available from any source. The values of outputs of the different industries in the household sector are given in the various N.S.S. reports referred to in the discussion of the sources of data. The non-household sector of the unregistered manufacturing establishments was not covered in these reports. The industrial classification adopted also was not very detailed. Hence the need for estimating the values of outputs of the different industries in the whole of the unregistered manufacturing sector in more details. The estimate of the value of output of each industry has been based on the value of the output-labour ratio, i.e. output per worker, of that industry. The value of output per worker multiplied by the number of workers gives the value of output for that industry.

The value of output per worker has been estimated for each industry on the basis of the different sources which give data on the value of output and employment in that industry for different areas surveyed. These data refer to different periods. The values of output given in different sources have been adjusted for price changes by applying the ratio of the relevant price indices

to refer to 1963.<sup>1</sup> If the price index of the exact commodity is not available, the index of a similar commodity, or the index of a commodity group in which the commodity falls, or the average of the indices of two or more commodities if the commodity is an intermediate between the commodities whose price indices are available, has been applied. In the case of service industries such as 'flour milling' and 'textile printing' where the output of the industry is not any commodity but in the nature of a service rendered to the customer, the values of output for 1963 have been estimated by first adjusting the values of inputs including material inputs, wages and salaries, rent, interest etc., and profit and then adding all these values to give the value of output for 1963. After making the price adjustments on the value of output of the industry given in all the sources, these adjusted values of output have been added up. The values of employment in the industry given in the same sources have also been added up. The output per worker has been obtained by dividing the total value of output by the total employment. The value of output here has been assumed to include products and by-products of the industry and the work done for other concerns by the industry. The values of work done for others have been adjusted for 1963 by applying the index of the money earnings of factory workers earning less than Rs.200 per month, of that industry or of the industry group

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<sup>1</sup> Wholesale Prices Index Numbers, Revised Series-Base 1952/53=100, Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

to which the industry belongs.<sup>1</sup>

Table 7.1 gives the output-labour ratios, employments, and the values of outputs estimated for the 106 industries in the unregistered manufacturing sector. The values of output are calculated by multiplying the values of output-labour ratios by the corresponding employments.

In the estimation of employment in the unregistered manufacturing sector, it has been found that the estimated employment in a few industries are underestimates as their employment in the surveys referred to were more than those estimated. For these industries the values of outputs have been taken as they are given in the specific sources referred to. This has been done for the following industries:

- (i) Brocade<sup>2</sup>
- (ii) Crochet work<sup>3</sup>
- (iii) Lacquerware, Pataras, Wooden toys, wood carving, ivory and conchshell products.
- (iv) Rimroo works<sup>4</sup>

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1 Indian Labour Statistics issued by Labour Bureau, Ministry of Labour and Employment, Government of India; Table 4.7, 1964-page 52-53; 1966-page 60-61.

2 All India Handicrafts Board (Planning and Research Section), Ministry of Commerce and Industry, Govt. of India, Report on the Survey of the Brocade Industry at Varanasi.

3 Census of India, 1961, Vol 2, Part VII A(2), Selected Crafts of Andhra Pradesh.

4 Census of India, 1961, Vol 10, Part VII A, Handicrafts of Maharashtra, Rimroo works of Aurangabad.

- (v) Gabba Industry,<sup>1</sup>  
and (vi) Bidriware.<sup>2</sup>

The outputs and employment of the different industries given in Table 7.1 have been grouped to conform to the A.S.I. classification and are presented in Table 7.2. The output-labour ratios have also been obtained for the A.S.I. classification by dividing the grouped output by the grouped employment. This table also gives employment covered by these industries as a percentage of the estimated employment for each A.S.I. industry.

Output-labour ratios could not be calculated for the following industries due to want of data.

- (i) 201 & 204 - Slaughtering, preparation and preservation of meat and canning and preservation of fish and other sea foods; employment- 56921.
- (ii) 214 - Soft drinks and carbonated water; employment-23142.
- (iii) 242 - Repair of shoes and other leather products; employment-106204.
- (iv) 321 & 329 - Petroleum refineries and manufacture of miscellaneous products of coal and petroleum; employment - 15373.
- (v) 342 - Manufacture of non-ferrous metals in basic forms; employment - 1413
- (vi) 382 - Manufacture of railroad equipment; employment - 13810

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1 All India Handicrafts Board(Planning and Research Section), Ministry of Commerce and Industry, Govt. of India, Gabba Industry, Anantanag.

2 Mensinkai S.S., A Survey of Handicrafts in 8 Districts of Mysore State.



- (vii) 386 - Manufacture of aircraft;  
employment - 11393
- and (viii) 392 - Manufacture of Photographic  
and optical goods; employment -5908.

From Table 7.2 it can be seen that the employment on which the output-labour ratios of the A.S.I. industry have been based covers more than 75% of the estimated employment in the unregistered manufacturing sector for 26 industries out of the 38 industries for which output-labour ratios have been calculated. By applying the output-labour ratios obtained for each A.S.I. industry to the total estimated employment in the unregistered sector of that industry, the values of output have been estimated for all the industries in the unregistered manufacturing sector for the A.S.I. classification. The values of output so estimated are given in Table 7.3. For the following industries, the values of outputs are estimated on the basis of the output-labour ratios which are calculated by including the values of output and the corresponding employment of some industries which fall in that A.S.I. industry, and for which the values of output and employment are available though their input data are not available.

- (1) 203 - Canning and preservation of fruits and vegetables.

The output-labour ratio of this industry given in Table 7.1 and 7.2 (Rs 9614.47) refers to 'Canning of fruits and vegetables' only. But the output-labour ratio used to estimate the total value of output of the industry is calculated by taking into account the values of output and employment in the production of

pickles, chutney, sauce, jam and jelly, making of dried fruits and vegetables. The average output-labour ratio of these industries and of canning of fruits and vegetables has been estimated as Rs 5975.64 and this value has been applied to the estimated employment in the unregistered sector of this A.S.I. industry.

(ii) 271 - Manufacture of Pulp, paper and paper board.

The output-labour ratio given for this industry (Rs 3445.84) is based only on the values of output and employment of 'papier mache articles' and 'paper and cardboard' products. The main sub-group of this industry is 'handmade paper'. By taking into account the employment and value of output of 'handmade paper' industry, the average output-labour ratio for this A.S.I. industry has been estimated as Rs 2561.88.

(iii) 280 - Printing, publishing and allied industries.

The output-labour ratio of this industry is given as Rs 2127.18 in Table 7.2. This refers to 'printing Press' industry only. The average output-labour ratio, Rs 1005.19, used to estimate the value of output of this A.S.I. industry is worked out by including the value of output and employment in 'book-binding', 'lithography' etc.

(iv) 312, 313, 319 - Manufacture of paints, varnishes and other chemicals.

The output-labour ratio of this industry is given as Rs 6392.62. This does not include manufacture of cottage matches. If the output and employment of cottage matches is also

included, the average output-labour ratio of the industry would be Rs 3871.83. This ratio has been used in estimating the value of output in the unregistered manufacturing sector of this A.S.I. industry.

For comparison the values of outputs and the output-labour ratios in the census, sample and the unregistered manufacturing sectors have been presented in Tables 7.4 and 7.5 respectively.

TABLE 7.1

OUTPUT-LABOUR RATIOS, EMPLOYMENT AND VALUES OF OUTPUT  
IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963

S.No.	Industry	Output-labour ratio	Employment	Output in Rs '000
(a)	(b)	(c)	(d)	(e)
1	Flour milling	1583.18	133,041	210628
2	Hand pounding of rice	1150.28	143,718	165316
3	Rice products	496.24	251,810	124958
4	Gur & Khandasari	838.35	108,513	90972
5	Palmgur	264.28	155,476	41090
6	Canning of fruits and vegetables	9614.47	367	3528
7	Bakery products	4720.60	72,663	343013
8	Dairy products	1477.79	154,678	228582
9	Oil seed crushing:			
	Improved ghani	6457.83	65,008	419810
	Ordinary ghani	3097.66	195,024	604117
	Oil Mills	20118.55	11,908	239572
10	Confectionary	5017.50	3,023	15168
11	Sweets etc.	1633.56	364,102	594782
12	Distilleries and Breweries	2999.17	108,848	326454
13	Beedi	1385.17	994,742	1377887
14	Cotton carding	3979.22	42,289	168277
15	Textile printing	1922.42	112,041	215390
16	Cotton handlooms	1041.99	2,518,779	2624542
17	Ropes and twine from jute, hemp and mesta	427.06	166,951	71298
18	Woolen blankets & rugs	1627.04	65,652	106818
19	Woolen shawls	4482.91	1,016	4555
20	Silk spinning	394.37	23,195	9147
21	Silk and artsilk weaving in powerlooms	11925.73	2,359	28133
22	Silk weaving in handlooms	1280.82	98,664	126371

contd...

Table 7.1 contd.

(a)	(b)	(c)	(d)	(e)
23	Himroo work	684.39	166	114
24	Brocade	3102.11	12,819	39766
25	Carpets and druggets	2961.85	31,392	92978
26	Hosiery	4891.63	53,284	260646
27	Embroidery and lace making	648.87	32,901	21348
28	Jari thread	2333.33	30,000	70000
29	Tailoring	1007.20	1,000,649	1007854
30	Caps, hats and other headgear	449.43	8,507	3823
31	Crochet work	3778.34	794	3000
32	Gabba industry	568.22	535	304
33	Coir matting and other coir manufactures	2395.36	90,961	217884
34	Coir spinning	612.42	181,474	111138
35	Saw milling	3807.66	32,424	123459
36	Wooden furniture	2868.60	260,677	747778
37	Lacquerware on wood	3537.31	134	474
38	Pataras	5690.91	165	939
39	Wooden toys	750.84	297	223
40	Sandalwood and other wood carving	1842.01	557	1026
41	Photo & mirror framing	3522.73	88	310
42	Plywood and its products	5979.63	491	2936
43	Boxes and packing cases other than of plywood	7138.25	6,387	45592
44	Grass mats	252.61	42,547	10748
45	Reed mats	173.17	42,547	7368
46	Palm leaf and palmyra products	222.88	264,240	58894
47	Cane and bamboo products	326.98	534,111	174644
48	Papier mache articles	901.76	1,191	1074

contd...

Table 7.1 contd.

(a)	(b)	(c)	(d)	(e)
49	Paper and cardboard products	3934.95	6,195	24377
50	Printing presses	2127.18	21,529	45796
51	Leather tanning	7561.08	33,758	255247
52	Leather footwear	2617.61	538,558	1409735
53	Leather products other than footwear	1285.76	35,152	45197
54	Rubber products	3742.21	5,617	21020
55	Paints and varnishes	8681.40	5,496	47713
56	Fertilizer	4440.97	6,726	29870
57	Agarbathi	3455.50	11,844	40927
58	Drugs and pharmaceuticals	2222.33	20,051	44560
59	Soap	16686.61	11,449	191045
60	Plastics	5221.02	12,347	64464
61	Wax products	6914.53	1,053	7281
62	Cement products	3065.74	41,497	127219
63	Bricks and tiles	1537.97	347,383	534265
64	Lime	5503.39	64,808	356664
65	Stone carving	1208.83	15,850	19160
66	Marble carving	1295.11	1,901	2462
67	Granite carving	1154.25	188	217
68	Stonewares	1156.15	16,785	19406
69	Plaster of Paris	1003.94	254	255
70	Pottery	462.81	807,426	373685
71	Clay toys and dolls	498.02	47,169	23491
72	Glass bangles	2661.80	36,272	96549
73	Glass and glasswares	2661.70	5,102	13580
74	Iron and steel smelting	376.01	44,778	16837
75	Brasswares	4230.54	136,235	576348
76	Aluminium wares	11886.32	3,378	40152
77	Tin smithy	1606.53	11,846	19031

contd...

Table 7.1 contd.

(a)	(b)	(c)	(d)	(e)
78	Copper utensils	6853.09	5,187	35547
79	Electroplating	2443.48	15,834	38690
80	Agricultural implements	983.07	132,990	130738
81	Engineering	5911.34	1,455	8601
82	Sheetmetal processing	5710.74	3,267	18657
83	Locks and keys	2169.46	6,733	14607
84	Trunks	4905.39	6,733	33028
85	Cutlery	1203.82	3,194	3845
86	Foundry	3740.28	181,156	677574
87	Wire products	7893.06	26,642	210287
88	Machinery	8531.46	1,891	16133
89	Machine parts	7413.56	1,047	7762
90	Textile machinery and accessories	10077.04	662	6671
91	Electric fans	3682.81	3,263	12017
92	Automobile battery	5660.28	1,410	7981
93	Radio repair	3113.33	8,550	26619
94	Electrical goods	12212.41	2,481	30299
95	Electrical repair	4317.60	7,670	33116
96	Repair of automobiles	3052.13	74,365	226972
97	Bicycle repair	1740.85	135,553	235977
98	Carts and cartwheels	756.79	29,626	2242
99	Watch repair	1665.49	34,346	57203
100	Silver filigree	3411.92	1,896	6469
101	Artmetal ware	12500.00	2,470	30873
102	Bidriware	2596.49	57	148
103	Musical instruments	1344.45	30,271	40697
104	Rubber stamps	2076.42	772	1603
105	Conch shell products	1278.48	1,264	1616
106	Ivory	2525.21	813	2053

TABLE 7.2

VALUES OF OUTPUT, EMPLOYMENT AND OUTPUT-LABOUR RATIOS  
AND PERCENTAGE OF EMPLOYMENT COVERED IN THE UNREGISTERED  
MANUFACTURING SECTOR FOR A.S.I. 3-DIGIT CLASSIFICATION

A.S.I. Code No.	Output Rs'000	Employment covered	Output-labour ratio	% coverage of employment
(a)	(b)	(c)	(d)	(e)
201 )				
204 )	N.A.	nil	N.A.	0.00
202	228582	154,678	1477.79	100.00
203	3528	367	9614.47	0.65
205	500902	528,569	947.66	97.28
206	343013	72,663	4720.60	100.00
207	132062	263,989	500.25	95.56
208 )				
209 )	1873449	639,065	2931.55	98.61
211 )				
212 )	326454	108,848	2999.17	100.00
213 )				
214	N.A.	nil	N.A.	0.00
220	1377887	994,742	1385.17	100.00
231	3342162	2,929,778	1140.76	74.52
232	260646	53,284	4891.63	100.00
233	71298	166,951	427.06	82.55
239	497299	314,724	1580.11	87.44
241	1409735	538,558	2617.61	100.00
242	N.A.	nil	N.A.	0.00
243	1011677	1,009,156	1002.50	88.26
244	304	535	568.22	1.58
251 )				
252 )	426613	923,988	461.71	56.42
259 )				
260	747778	260,677	2868.60	39.99
271	25451	7,386	3445.84	27.20
280	45296	21,529	2127.18	22.15
291	255247	33,758	7561.08	87.12

contd...



Table 7.2 contd.

(a)	(b)	(c)	(d)	(e)
293	45197	35,152	1285.76	100.00
300	21020	5,617	3742.21	100.00
311	94334	19,073	4945.94	91.07
312 )				
313 )	283813	44,397	6392.62	39.90
319 )				
321 )				
329 )	N.A.	nil	N.A.	0.00
331	534265	347,383	1537.97	100.00
332	110129	41,374	2661.79	99.99
333	373685	807,426	462.81	100.00
334	nil	nil	nil	100.00
339	548874	188,452	2912.54	69.19
341	16837	44,778	376.01	99.99
342	N.A.	nil	N.A.	0.00
350	1807105	534,650	3379.98	97.10
360	30566	3,600	8490.55	2.96
370	110032	23,374	4707.45	97.62
381	nil	nil	nil	100.00
382	N.A.	nil	N.A.	0.00
383 )				
385 )	235977	135,553	1740.85	89.27
384	226972	74,365	3052.13	100.00
386	N.A.	nil	N.A.	0.00
389	2242	29,625	756.79	100.00
391	nil	nil	nil	100.00
392	N.A.	nil	N.A.	0.00
393	57203	34,346	1665.49	100.00
394	37492	4,423	8476.60	0.77
395 )				
399 )	45969	33,120	1387.95	9.70

TABLE 7.3

VALUES OF OUTPUT IN THE UNREGISTERED MANUFACTURING  
SECTOR FOR 1963, FOR FULL COVERAGE OF EMPLOYMENT  
(A.S.I. 3-DIGIT LEVEL OF CLASSIFICATION)

A.S.I. Code Number	Values of Output Rs '000
(a)	(b)
201&204	N.A.
202	228582
203	337385
205	514909
206	343013
207	138196
208&209	1899920
211,212,213	326454
214	N.A.
220	1377887
231	4484661
232	260646
233	86369
239	568697
241	1409735
242	N.A.
243	1146271
244	19286
251,252,259	756092
260	1869914
271	69552
280	95966
291	292984
293	45197
300	21020
311	103578

contd...

Table 7.3 contd.

(a)	(b)
312,313,319	430795
321&329	N.A.
331	534265
332	110140
333	373685
334	nil
339	793309
341	16839
342	N.A.
350	1861101
360	907147
370	112715
381	nil
382	N.A.
383 & 385	264341
384	226972
386	N.A.
389	2242
391	nil
392	N.A.
393	57203
394	4869603
395 & 399	473674
<b>Total</b>	<b>22560742</b>

TABLE 7.4

VALUES OF OUTPUT IN THE CENSUS, SAMPLE & UNREGISTERED  
MANUFACTURING SECTORS FOR 1963 ACCORDING TO THE  
A.S.I. 3-DIGIT LEVEL OF CLASSIFICATION

A.S.I. Code number	V A L U E S O F O U T P U T		
	Census sector	Sample sector	Unregistered sector
(a)	(b)	(c)	(d)
201 & 204	76935	13385	N.A.
202	267390	23628	228582
203	38352	14822	337385
205	1195104	2053608	514909
206	132741	33216	343013
207	1757402	27905	138196
208 & 209	4136552	1827467	1899920
211,212,213	78516	24415	326454
214	33209	19637	N.A.
220	997730	404610	1377887
231	11118130	798394	4484661
232	31434	129622	260646
233	60626	22056	86369
239	580582	420051	568697
241	58787	19363	1409735
242	n11	802	N.A.
243	59912	53096	1146271
244	n11	14145	19286
251,252,259	188430	205432	756092
260	145677	37966	1869914
271	931503	72156	69552
280	536141	297622	95966
291	164026	162178	292984
293	4221	7950	45197
300	1025692	78899	21020
311	1603398	140688	103578

contd...

Table 7.4 contd.

(a)	(b)	(c)	(d)
312,313,319	2259262	411803	430795
321 & 329	736323	14755	N.A.
331	226386	52019	534265
332	233630	13856	110140
333	83755	6222	373685
334	784772	910	nil
339	341040	175440	793309
341	4932074	341764	16839
342	790075	156672	N.A.
350	1112479	698408	1861101
360	1568514	524195	907147
370	1706464	157186	112715
381	81206	12784	nil
382	882808	2712	N.A.
383 & 385	1820690	15244	264341
384	303876	165669	226972
389	nil	29683	2242
391	115286	40359	nil
392	15894	9208	N.A.
393	20193	4544	57203
394	58560	9707	4869603
395 & 399	204097	311330	473674
386	59163	1436	N.A.
<b>Total</b>	<b>43559037</b>	<b>10059019</b>	<b>22560742</b>

TABLE 7.5

**OUTPUT-LABOUR RATIOS (VALUE OF OUTPUT/WORKER) IN THE CENSUS,  
SAMPLE AND THE UNREGISTERED MANUFACTURING SECTORS FOR 1963.  
(A.S.I. 3-DIGIT LEVEL OF CLASSIFICATION)**

A.S.I. Code number of industry	Census sector	OUTPUT-LABOUR RATIOS	
		Sample sector	Unregistered sector
(a)	(b)	(c)	(d)
201 & 204	18047.15	12257.33	N.A.
202	50815.27	41598.59	1477.79
203	10815.57	12040.62	9614.47
205	35159.42	24205.65	947.66
206	21053.29	11240.61	4720.66
207	15897.33	2452.11	500.25
208 & 209	18357.83	25638.22	2931.55
211,212,213	13151.76	18468.23	2999.17
214	30383.35	13617.89	N.A.
220	11492.86	7899.14	1385.17
231	9663.76	13837.70	1140.76
232	13473.64	18318.54	4891.63
233	14991.59	12974.12	427.06
239	6863.08	9637.51	1580.11
241	10126.96	11864.58	2617.61
242	--	6030.07	N.A.
243	9083.08	13387.80	1002.50
244	--	43125.00	568.22
251,252,259	9255.82	7728.82	461.71
260	7781.06	6051.32	2868.60
271	16617.07	13799.20	3445.84
280	5976.71	6571.76	2127.18
291	19786.00	21097.69	7561.08
293	13400.00	8794.25	1285.76
300	25404.76	12462.33	3742.21
311	40320.82	25367.47	4945.94

contd...

Table 7.5 contd.

(a)	(b)	(c)	(d)
312,313,319	28748.91	16943.84	6392.62
321 & 329	67614.60	61736.40	N.A.
331	4572.99	2589.43	1537.97
332	5747.35	49030.43	2661.79
333	4399.82	3411.18	462.81
334	26358.51	9381.44	n11
339	11180.17	8218.48	2912.54
341	18581.52	15198.97	376.01
342	33353.38	23107.96	N.A.
350	14305.83	11084.26	3379.98
360	13336.34	8437.61	8490.55
370	15310.51	12141.66	4707.45
381	3039.37	10880.00	n11
382	5048.57	3432.91	N.A.
383 & 385	22401.32	10128.90	1740.85
384	6298.99	6634.72	3052.13
386	12382.38	4126.44	N.A.
389	--	9019.45	756.79
391	10925.51	16072.88	n11
392	9360.42	5138.39	N.A.
393	12518.91	7258.78	1665.49
394	10072.24	8310.79	8476.60
395 & 399	8665.80	12928.45	1387.95

## CHAPTER 8

### THE COEFFICIENTS AND VALUES OF INPUTS IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963.

The values of inputs of the different industries in the unregistered manufacturing sector have also to be estimated. For this, the values of the coefficients of inputs have been calculated for the different industries. By multiplying the values of coefficients of the industry by the estimated value of output of that industry the values of inputs that are consumed in that industry have been estimated.

The coefficients of inputs of an industry have been estimated from the various sources that give the different items of the cost of production that are incurred in the production of the output of the industry. As data from different sources refer to different years, price adjustments have to be made to the values of inputs also so that they refer to 1963 as has been done in the case of the values of outputs. The details of inputs given in the different sources are not uniform. Therefore, to bring uniformity in the data all the inputs have been classified into the following items: (i) Fuel, (ii) Lubricants, (iii) Electricity, (iv) Raw materials, (v) Packing materials, (vi) Repairs and maintenance, (vii) Work done by others, (viii) Depreciation, (ix) Rent, interest, taxes etc. (x) Wages and salaries, and (xi) Profits. The details of raw materials have been noted down separately.



For all the material inputs the wholesale price index numbers<sup>1</sup> of the different commodities have been applied.

In the case of raw material inputs, as has been done in the case of outputs, the index number of a similar commodity or that of a commodity group to which the particular raw material belongs, or the average of two or more indices when the raw material is an intermediate product of the commodities, has been applied when the price index of the exact commodity is not available. For raw materials which are unspecified the index number of all commodities has been applied.

For the item of 'fuel' inputs the type of fuel used is not specified in most of the cases. The price index of coal has been applied to the fuel input of all industries except that of 'flour milling' for which the index of fuel oil; that of 'bricks and tiles', 'Pottery', and 'manufacture of lime', for all of which the index of 'logs and timber' have been applied.

For 'lubricants' and 'electricity', the price indices are directly available in the wholesale price index numbers.

The commodity used for 'packing' has also not been specified in the sources. The price index of 'paper' has been applied to 'packing material' in all industries except for 'manufacture of ropes' and for 'coir manufactures' for which the price indices of 'jute manufactures' and 'coir' respectively have been applied.

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<sup>1</sup> Wholesale prices Index Numbers-Revised Series, Base 1952/53=100, Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

For values of 'repair and maintenance' the price index of 'tools and implements' has been applied.

For the values of 'work done by others' and of 'wages and salaries' the index numbers of 'money earnings of factory workers earning less than Rs 200 per month', which are given for 17 manufacturing industry groups, have been applied.<sup>1</sup> The index number of that industry group to which the particular industry belongs has been applied to the values of 'wages and salaries' and the index number of all industries has been applied to the item of 'work done by others'.

In the case of service industries like 'flour milling' and 'textile printing' where the values of output are estimated by adding the adjusted values of inputs, the values of 'profits' have been adjusted by the same index by which the values of 'wages and salaries' are adjusted. In other cases the values of 'profits' are derived as residual by deducting from the adjusted value of output the adjusted values of all inputs.

For 'rent, interest, and taxes etc.' the index of the per capita national income at current prices<sup>2</sup> has been applied on the assumption that changes in per capita national income would be reflected in changes in these and in the absence

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1 Indian Labour Statistics issued by Labour Bureau, Ministry of Labour and Employment, Government of India, Table 4.7, 1964-pages 52-53; 1966-pages 60-61.

2 Estimates of National Income, 1948/49-1961/62, issued in Jan 1963; and for 1963/64 issued in Apr 1965 by the Central Statistical Organisation, Department of Statistics, Government of India.

of a better index this procedure is justified.

The methods of calculating 'depreciation' are different in different sources. Wherever the replacement values of fixed assets( excluding land and buildings) were available, the price index of machinery has been applied to them and a 10% of the adjusted value of the fixed assets has been assigned for depreciation uniformly for all industries.

After making the price adjustments for all inputs and the corresponding output of the industry, given in different sources, these values of inputs have been added up. The corresponding values of outputs have also been similarly added up. In cases where the details of an input item was not given in some source or other, it has been broken into its constituents on the basis of data available in other sources. The input coefficient of each item has been obtained by dividing the value of the input by the corresponding value of output. Thus input coefficients have been obtained for the different items mentioned above for all the 106 industries. These values are given in Table 8.1. The last column 'value added' is the sum of 'depreciation', 'rent, interest, taxes etc.', 'wages and salaries' and 'profits'.

Details of material inputs other than raw materials are not available for 'hand pounding of rice', 'spinning of silk', 'cotton carding', 'cotton handlooms', 'hisaroo works', 'woolen shawls', 'brocade', 'jari thread', 'crochet work', 'gabba industry', 'coir spinning', 'wood carving', 'stone carving' and for 'cement products'.

For these industries, it is assumed that the costs other than of the raw materials are negligible and the total value of the material inputs is mainly constituted of the value of raw materials only.

The values of the input coefficients of each industry has been multiplied by the estimated value of output of that industry to obtain the values of the different inputs in the industry. These values are given in Table 8.2. In Table 8.2(a), the details of the values of raw material inputs estimated on the basis of their coefficients are given. The name of the raw material, its A.S.I. classification number and its value consumed in the industry are given in the table.

For a few industries the break-up of raw material inputs is not available. Thus for 'dairy products', 'rice products', 'sweetmeats', 'distilleries and breweries', 'embroidery', 'tailoring', 'saw milling', 'photo and mirror framing', 'plywood products', 'paper and cardboard products', 'printing and publishing', 'rubber products', 'paints and varnishes', 'plastics', 'wax products', 'glass and glassware', 'iron and steel smelting', 'electroplating', 'agricultural implements', 'light and general engineering', 'sheet-metal processing', 'trunks', 'foundry', 'wire products', 'machinery and machine parts', 'electric fans' and 'electric goods', 'electrical repair', 'repair of automobiles', 'repair of bicycles', 'repair of watches and clocks' and manufacture of 'carts and cartwheels', details of raw material break-up are not available.

The raw material value of 'dairy products' has been distributed on the basis of data available for the combined

group of 'dairy and bakery products'. For 'sweetmeats' the raw materials have been distributed on the basis of the distribution of the different raw materials in the production of 'dairy products' 'confectionary' and 'bakery products' together. In the case of 'tailoring', thread and cloth; thread for embroidery; rice for rice products; wood for saw milling and photo frames; plywood for plywood products; paper and cardboard for paper and cardboard products; wax for wax products; iron and steel for iron and steel smelting; have been considered as the only raw materials in these industries, others forming very negligible quantities. For glasswares the raw materials have been distributed in the same proportion as for glass bangles. For distilleries and breweries, printing and publishing, paints and varnishes, rubber products, electroplating, engineering, agricultural implements, trunks, foundry, machinery, machine parts, electric fans and for electrical goods the break-up of raw materials is based on the A.S.I. data. Only the important materials have been considered and grouped according to the A.S.I. classification. For all repair services, the raw materials are assumed to come from their respective manufacturing industry.

The values of output of the different industries have been grouped to conform to the A.S.I. classification. Each item of input of these industries has also been added up and these are given in Table 8.3. The details of raw materials of the grouped industries have been given in Table 8.3(a), in which the raw materials have also been grouped according to the A.S.I. classification.

Based on the values of inputs and outputs, obtained after grouping the industries to conform to the A.S.I. classification the coefficients of inputs have been calculated for each A.S.I. industry. These are given in Table 8.4. Table 8.4(a) gives the coefficients of the different raw materials classified according to the A.S.I. classification.

The total values of the different inputs used in each A.S.I. industry have been calculated by multiplying the values of the input coefficients of the industry by the value of output estimated for the unregistered manufacturing sector of the industry. These are given in Table 8.5. The estimated values of the different raw materials also classified according to the A.S.I. classification for the whole unregistered sector of the industry are given in Table 8.5(a) separately.

The above data have been put in the form of an input-output table for the unregistered manufacturing sector for the year 1963.

TABLE 8.1  
 INPUT COEFFICIENTS OF THE DIFFERENT INDUSTRIES IN THE UNREGISTERED  
 MANUFACTURING SECTOR FOR 1963

(Values corrected to the 4<sup>th</sup> decimal)

S.No.	Name of Industry	Fuel	Lubricant	Electricity	Raw Mate'ls	Packing mate'l	Repairs mainten	Work done by others	Depreciation	Rent & interest taxes	Wages Salaries	Profits	Value added
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(o)
1	Flour milling	0092	0058	2098	0118	0075	0500	0042	0713	1671	1873	2760	7017
2	Hand pounding of rice				8822						0419	0759	1178
3	Rice Products	0546		0079	6219	0087		0022		0405	0230	2412	3047
4	Gur and Khandasari	0324		0237	6169		0047		0427	1602	0451	0543	3223
5	Palangur	1179			0261				0020	0977	4017	3546	8560
6	Canning of fruits	0101			5467	0664	0095		0148	0458	2188	0879	3673
7	Bakery Products	0700	0008	0064	7408	0266	0036	0006		0114	0617	0781	1512
8	Dairy Products	0017	0003	0025	4993	0014	0030	0066		0283	0735	3834	4852
9	Oil Seed crushing: Improved ghani Ordinary ghani Mills				6465 6585 8730		1051 1376		0185 0213 0047	0149 0091 0187		2150 1735 0623	2484 2039 1108
10	Confectionary	0249	0001	0018	9107	0078	0010	0002		0040	0218	0277	0535
11	Sweetmeats	0171	0010	0238	4875	1300	0097			0329	0947	2033	3309
12	Distilleries & Breweries			0083	5702	0343		0700		0557	1669	0946	3172
13	Beedi	0162			3111	0003	0007	0006	0062	1474	2866	2307	6709
14	Cotton carding				8293							1707	1707
15	Textile printing	0138	0043	0002	4311	0113	0092	0518	0140	0691	2102	1850	4783
16	Cotton handlooms				6572			0047	0108	0071	1897	1305	3381
17	Ropes and twine from jute and mesta	0017			4182	0045	0042	0015	0022	0044	1470	4163	5699

contd...

Table 8.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
18	Woolen handlooms-Blankets	0040			7275								2685	2685
19	Woolen shawls				6273				0071				3656	3727
20	Spinning of silk				7847							1652	0501	2153
21	Silk weaving in powerlooms	0008		0114	5704	0123	0062	0328	0084	0440	1080	2057		3661
22	Silk weaving in handlooms	0106			2880	0001	0061	0283	0200	0015	0572	5882		6669
23	Hingoo work				2231							5306	2463	7769
24	Brocade				6200								3800	3800
25	Carpets and druggets	0087			7418								2495	2495
26	Hosiery	0046	0009	0020	5868	0211	0065	0285	0163	0237	1110	1986		3496
27	Embroidery	0114	0003	0099	2795	0060	0005	1108		0484	2118	3214		5816
28	Jari thread				7024								2976	2976
29	Tailoring	0012	0009	0133	2913	0028	0031	0038		0363	1023	5450		6836
30	Caps, hats, and other head gear	0074	0005	0054	4299	0015	0010	0471		0381	1925	2766		5072
31	Crochet work				4069								5931	5931
32	Gabba industry				4159				0131				5710	5841
33	Cair matting	0253			7200	0069						2350	0128	2478
34	Cair spinning				3973					0366	3417	2244		6027
35	Saw milling	0002	0040	0290	5934	0015	0071	0397		0656	1292	1303		3251
36	Wooden furniture	0060			4214	0031	0015	0222	0062	0783	1867	2746		5458
37	Lacquers	0127			3448		0022		0056				6347	6403
38	Pateras				6875						1875	1250		3125
39	Wooden toys				3674				0012			6126		6138
40	Wood carving				4255				0010			5735		5745



Table 8.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
41	Photoframing			0101	5275	0017	0007	0329		0626	0894	2751	4271
42	Plywood and its products		0008	0066	7437	0149	0069	0594		0266	0437	0974	1677
43	Bones & packing cases other than of plywood	0001			3993	0007	0020	0162	0004	0666	1258	1889	3817
44	Grassmats	0101			4326				0033	0011		5529	5573
45	Reed mats	0033	0001		3966		0013		0030	0014	0103	5840	5987
46	Palm leaf & palmyra products	0014			2955				0004			7027	7031
47	Cane and bamboo products	0020	0001	0092	3784	0002	0074	0040	0008	0233	0528	5218	5987
48	Papier mache articles				3160				0132			6708	6840
49	Paper & cardboard products	0121	0016	0205	6354	0004	0044	0112		0363	1227	1554	3144
50	Printing presses	0012	0048	0075	2349	0036	0132	0229	1000	0906	2742	2251	6899
51	Leather tanning	0032	0187	0205	4588	0016	0821	0011	0221	0398	2709	0812	4140
52	Leather footwear	0006	0302	0014	5466	0093	0050	0049	0139	0528	1101	2552	4320
53	Leather products other than footwear	0009	0003	0021	5139	0004	0030	0083	0097	0419	2033	2162	4711
54	Rubber products	0135	0034	0360	2427		0053	0721		0581	2098	3591	6270
55	Paints and Varnishes	0134		0022	7339	0060	0003	0240		0096	0461	1645	2202
56	Fertilisers			0046	8910	0046	0023		0008	0172	0166	0629	0975
57	Agarbathi				5040	1040			0024			3896	3920
58	Drugs & pharmaceuticals	0225	0013	0048	2446	1837	0074		0339	2041	1290	1687	5357
59	Soap	0103	0002	0001	7943	0124	0053		0022	0448	0309	0995	1774
60	Plastics	0194	0011	0194	5270	0019	0074	0787		0368	1153	1930	3451
61	Wax products	0105	0022	0023	7960	0219	0002			0127	0511	1031	1669
62	Cement products				4381						1428	4191	5619

contd...

Table 8.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
63	Bricks and tiles	2857			2857							2271	2015	4286
64	Lime	5143			2893		0143		0119	0268	0571	0863	1821	
65	Stone carving	0039			3803		0077						6081	6081
66	Marble & alabaster carving				4573								5627	5627
67	Granite carving				3974						4708	1318	6026	
68	Stonewares				0192					0185		9623	9808	
69	Plaster of Paris	0017	0004		1636	0431			0079	0397	4641	2755	7872	
70	Pottery	1271	0005		0796	0009	0031	0003	0049	0027	0153	7656	7885	
71	Clay toys and dolls				1449	0557			0071			7923	7994	
72	Glass bangles	2303			2627				0391	0169	3851	0659	3070	
73	Glass and glassware	0312	0016	0091	5333	0167	0141	0536		0510	1512	1362	3384	
74	Iron and steel smelting	0256	0047	0047	5812	0079				0379	1599	1781	3759	
75	Brasswares	0326		0008	7885		0023			0102	1012	0644	1758	
76	Aluminium wares	0045			8012		0021		0092	0099	0907	0824	1922	
77	Tin smithy	0755			3264						4880	1101	5981	
78	Copper utensils	0164			8040		0576		0014	0011		1195	1220	
79	Electroplating	0158	0035	0353	2751	0031	0151	0024	0513	0825	3425	1734	6497	
80	Agricultural implements	0458	0008	0047	5285		0010			0281	1254	2657	4192	
81	Engineering-Light & general	0099	0052	0829	5483	0073	0094	0303	0291	0288	1784	1404	3767	
82	Sheet metal processing		0004	0044	2988	0007	0020		0147	0232	3266	3292	6937	
83	Locks and keys	0153	0015		4575	0087	0041	1378	0051	0013	0500	3187	3751	
84	Trunks				7426	0021	0034	0430	0039	0253	0837	0960	2089	
85	Cutlery	1451			3185		0413			0392	4249	0310	4951	

contd...

Table 8.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
86	Foundry	1606	0025		4947	0007	0099	0134	0135	0230	0827	1990	3182
87	Wire products	0229	0014	0050	6788		0055		0132	0251	1543	0938	2864
88	Machinery	0013	0065	0134	2029	0079	0101		0495	0170	1520	5394	7579
89	Machine parts	0003	0053	0168	2889	0009	0091		0391	0239	1710	4447	6787
90	Textile machinery and accessories		0033	0333	3000			1333		0920		2381	3301
91	Electric fans	0018	0075	0322	1970							7615	7615
92	Automobile battery	0300	0020	0609	6099				0122	0348	1742	0760	2972
93	Radio repair	0140	0010	0336	4379						4830	0285	5135
94	Electrical goods	0058	0002	0010	6580	0061	0016	0244	0099	0309	0890	1731	3029
95	Electrical Repair	0020	0003	0038	3046	0026	0017	0341	0171	0575	1961	1802	4309
96	Repair of automobiles	(-----	0321-----	)	2850	0071	0118	0132	0453	1343	1980	2732	6308
97	Cycle repair	(-----	0164-----	)	2331	0016	2867	0165	0378	1132	2500	0447	4457
98	Carts and cartwheels	0082	0008	0048	3910	0051	0017	0531		0715	1243	3395	5353
99	Repair of watches & clocks	0013	0064	0264	3195	0263	0053	0733		0829	1699	2887	5415
100	Silver filigree	0131			5204	0006	0028	0137		0225		4269	4494
101	Artmetal ware	0131			4169	0006	0028	0137		0225		5304	5529
102	Bidriware	0317			3665				0252	0276	2909	2581	6018
103	Musical Instruments	0031	0019	0105	4079	0036	0036	0290		0802	1586	3016	5404
104	Rubber stamps	0104		0121	2892	0008	0002	0689		0585	1019	4580	6184
105	Conch-shell products	0060		0002	5628	0012	0022	0536	0021	0038	0413	3268	3740
106	Ivory				6214							3786	3786

TABLE 8.2

**VALUES OF OUTPUT AND INPUTS OF THE DIFFERENT INDUSTRIES IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963**  
(Values in Rs. '000)

S.No.	Name of industry	Values of output	Fuel	Lubricant	Electricity	Raw mate'ls	Packing mate'ls	Repairs maintainance	Work done by others	Depreciation	Rent & interest & taxes	Wages & salaries	Profits
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1	Flour Milling	210628	1938	1222	44190	2485	1590	10331	885	15018	35196	39450	58133
2	Hand Pounding of rice	165316				145842						6927	12947
3	Rice Products	124958	6823		987	77711	1057		275		5061	2874	30140
4	Gur and Khandsari	90972	2947		2156	56121		427		3885	14574	5922	4940
5	Palngur	41090	4845			1072				82	4014	16506	14571
6	Canning of Fruits	3528	36			1929	234	33		52	162	772	310
7	Bakery Products	343013	24011	274	2195	254104	9134	1235	206		3910	21164	26790
8	Dairy Products	228582	389	68	571	114131	320	686	1509		6469	16801	87638
9	Oil seeds crushing:												
	Improved ghani-	419810				271407		44122		7766	6255		90210
	Ordinary ghani-	604117				397811		83126		12868	5498		104814
	Mills-	239572		72	3354	209147	455			1126	4480	6013	14925
10	Confectionary	15168	378	2	27	13813	118	15	3		61	331	420
11	Sweetmeats etc.	594782	10171	595	14156	289956	77322	5769			19568	56326	120919
12	Distilleries and Breweries	326454			2710	186144	11197		22852		18183	54485	30883
13	Beedi	1377887	22322			428936	413	965	827	8543	203101	394902	317878
14	Cotton carding	168277				139552							28725
15	Textile Printing	215390	2972	926	43	92855	2434	1982	11157	3015	14883	45275	39848
16	Cotton handlooms	2624542				1724849			12335	28345	18634	497876	342303
17	Ropes and twine from jute and mesta	71298	121			29817	321	299	107	157	314	10481	29681

contd...

Table 8.2 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
18	Woolen handlooms-Blankets	106818	427			77710								28681
19	Woolen shawls	4555				2858				32				1665
20	Spinning of silk	9147				7148							1511	458
21	Silk weaving in powerlooms	28133	23		321	16047	346	174	923	236	1238	3038		5787
22	Silk weaving in handlooms	126371	1340			36395	13	771	3676	2527	190	7228		74331
23	Himroo works	114				25							61	28
24	Brocade	39766				24655								15111
25	Carpets and druggets	92978	809			68971								23198
26	Hosiery	260646	1199	235	521	152947	5500	1694	7428	4249	6177	28932		51764
27	Embroidery	21348	243	7	211	5967	128	11	2365		1033	4522		6861
28	Jari thread	70000				49168								20832
29	Tailoring	1007854	1210	907	13404	293588	2822	3124	3850		36585	103103		549281
30	Caps,hats & other headgear	3823	28	2	21	1643	6	4	180		146	736		1057
31	Crochet work	3000				1221								1779
32	Gabba industry	304				126				4				174
33	Coir matting	217886	5512			156877	1503						51203	2789
34	Coir spinning	111138				44155						4068	37976	24939
35	Saw milling	123459	25	494	3580	73261	185	876	4901		8099	15951		16087
36	Wooden furniture	747778	4487			315114	2318	1122	16600	4636	58551	139610		205340
37	Lacquersware	474	6			163		1		3				301
38	Pataras	939				646							176	117
39	Wooden toys	223				86								137

contd...

Table 8.2 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
40	Wood carving	1026				437					1			588
41	Photoframing	310			3	164	1		10			19	28	85
42	Plywood and its products	2936		2	20	2184	44	20	174			78	128	286
43	Boxes and packing cases other than of plywood	45592	5			27324	32	91	739	18		3036	5735	8612
44	Crassmats	10748	109			4650				35		12		5942
45	Reed mats	7368	24	1		2922		10		22		10	76	4303
46	Palm leaf & palmyra products	38894	82			12404				23				41385
47	Cane & bamboo products	174644	349	17	1607	66085	35	1292	699	140		4069	9221	91130
48	Paper mache articles	1074				339				14				721
49	Paper and cardboard products	24377	295	39	500	15489	10	107	273			885	2991	3788
50	Printing presses	45796	55	220	343	11673	256	604	1049	4580		4149	12557	10310
51	Leather tanning	255247	817	4773	5233	117107	408	20956	281	5641		10159	69146	20726
52	Leather footwear	1409735	846	282	1974	770560	13111	7049	6508	19595		74434	155212	359764
53	Leather products other than footwear	45197	41	13	95	23227	18	136	375	438		1894	9188	9772
54	Rubber products	21020	284	71	757	5102		111	1515			1221	4410	7549
55	Paints and varnishes	47713	639		105	35017	286	14	1145			458	2200	7849
56	Fertilisers	29870			137	26614	137	69		24		514	496	1879
57	Agarbathi	40927				20628	4256			98				15945
58	Drugs & Pharmaceuticals	44560	1003	58	214	10899	8186	330		1510		9095	5748	7517
59	Soap	191045	1968	38	19	151747	2369	1013		420		8539	5903	19009
60	Plastics	64464	1251	71	1251	33972	122	477	5073			2372	7433	12442
61	Wax Products	7281	76	16	17	5796	159	1				93	372	731
62	Cement Products	127219				55735							18167	53317

contd...

Table 8.2 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
63	Bricks and tiles	534265	152639			152640							121332	107654
64	Lime	356644	183432			103183		5100		4244	9559	20366		30780
65	Stone carving	19160	75			7286		148						11651
66	Marble and alabaster carving	2462				1077								1385
67	Granite carving	217				86							102	29
68	Stonemasons	19406				373						359		18674
69	Plaster of Paris	255	1			42	11			2	10	119		70
70	Pottery	373665	47496	187		29745	336	1158	112	1831	1009	5717		286094
71	Clay toys and dolls	23491				3404	1308			167				18612
72	Glass bangles	96549	22235			25363				3775	1632	37181		6363
73	Glass and glassware	13580	424	22	123	7269	227	191	728		693	2053		1850
74	Iron and steel smelting	14837	431	79	79	9786	133				638	2492		2999
75	Brassware	576348	18789			454450		1326			5879	58326		37117
76	Aluminium wares	40152	181			32170		84		369	397	3642		3309
77	Tinmithy	19031	1437			6212						9287		2095
78	Copper Utensils	35547	583			28580		2047		50	39			4248
79	Electroplating	38390	611	135	1366	10644	120	584	93	1985	3192	13251		6709
80	Agricultural implements	130738	5988	105	614	69095		131				3674	16394	34737
81	Engineering (Light & General)	8601	85	45	111	4716	63	81	261	230	248	1534		1307
82	Sheetmetal processing	18657		7	82	5575	13	37		275	433	6093		6142
83	Locks and keys	14607	223	22		6684	127	60	2013	74	19	730		4635
84	Trunks	33028				24527	69	112	1420	129	836	2764		3171
85	Outfory	3845	557			1225		159			151	1634		119

contd...

Table 8.2 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(o)
86	Foundry	677574	108818	1693		335197	474	6708	9079	9147	15584	56035	154837
87	Wire products	210287	4816	294	1051	142743		1157		2776	3278	32447	19725
88	Machinery	16133	21	103	216	3273	128	163		799	274	2452	8702
89	Machine parts	7762	2	41	130	2243	7	71		303	106	1327	3452
90	Textile machinery & accessories	6671		22	222	3336			889		614		1588
91	Electric fans	12017	22	90	387	2367							9151
92	Automobile battery	7981	239	16	486	4868				97	278	1390	607
93	Radio repairs	26613	373	27	894	11656						12910	759
94	Electrical Goods	30299	176	6	30	19937	183	48	739	300	936	2697	5243
95	Electrical repair	33116	66	10	126	16710	86	56	1129	566	1904	6493	3968
96	Repair of automobiles	226972	7285			64687	1612	2678	2996	10282	30482	44941	62009
97	Cycle repair	233977	3870			55006	377	67655	3894	8920	26713	38994	10348
98	Carts and cartwheels	2242	18	2	11	877	11	4	119		160	279	761
99	Repair of watches and clocks	57203	76	366	1310	18277	1504	303	4193		4742	9719	16515
100	Silver filigree	6469	85			3366	4	18	87		146		2763
101	Art metal ware	30375	404			12872	19	86	423		693		16376
102	Bedware	143	5			54				4	4	43	38
103	Musical instruments	40697	126	77	427	16600	146	146	1180		3284	6454	12274
104	Rubber stamps	1603	17		19	465	1		110		94	163	734
105	Conch-shell products	1616	10			909	2	4	87	3	6	67	520
106	Ivory	2053				1276							777



TABLE 8.2(a)

RAW MATERIALS CONSUMED IN THE DIFFERENT INDUSTRIES  
OF THE UNREGISTERED MANUFACTURING SECTOR FOR 1963

S.No.	Name of Industry	Details of Raw materials		
		Name	A.S.I. code No.	Value Rs '000
(a)	(b)	(c)	(d)	(e)
1	Flour milling	-	-	-
2	Hand pounding of rice	Paddy	0	145842
3	Rice products	Rice	205	77711
4	Gur and Khandsari	Sugarcane	0	54392
		Chemicals	312,313,319	1728
5	Palngur	Pots	333	403
		Ropes	233	357
		Superphosphate	311	238
		Lime	339	74
6	Canning of fruits	Fruits & Vegetables	0	745
		Sugar	207	668
		Bottles&cans:		
		Bottles	332	254
		cans	350	255
7	Bakery products	Wheat flour	205	24971
		Sugar	207	118545
		Oil	208 & 209	59238
		Baking powder	312,313,319	47096
		Groundnut cake	208 & 209	4253
8	Dairy products	Milk	0	40802
		Maida	205	40733
		Sugar	207	14401
		Miscellaneous	U	18195
9	Oil seeds crushing (1,2&3)	Oil seeds	0	877310
		Other material	U	1054
10	Confectionary	Sugar	207	13443
		Essences, colours & chemicals	313,312,319	370

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
11	Sweetmeats	Sugar	207	111111
		Flour, maida etc	205	49872
		Milk etc.	0	30967
		Oil	208 & 209	48191
		Chemicals	312, 313, 319	36013
		Others	U	13802
12	Distilleries & Breweries	Molasses and		
		Sugar	207	134075
		Mahua	0	14201
		Spirits	211, 212, 213	18575
		Chemicals	311	13646
		Spices, colours	312, 313, 319	3647
13	Beedi manufacture	Tobacco	0	308877
		Thread & beedi leaves	0	120059
		Cotton	0	139552
14	Cotton carding	Dyeing materials	311	62011
		chemicals	311	30844
16	Cotton handlooms	Cotton yarn	231	1505175
		Other materials	311	219674
17	Ropes and twine from jute and mesta	Jute & mesta	0	13910
		Bal	0	3301
		Hemp	0	10987
		Other materials	311	1618
18	Woolen handlooms	Wool	0	76759
		Oilkeet	312, 313, 319	566
		Sulphur	311	385
19	Woolen shawls	Wool	0	2819
		Other materials	311	39
20	Spinning of silk	Coccons	0	7178
21	Silk weaving in power-looms	Silk yarn	231	14984
		Colours & Chem.	311	48
		Gold thread	231	900
		Cloth for further processing	231	115
22	Silk weaving in hand-looms	Silk yarn	231	32970
		Rayon yarn	231	240
		Other materials	311	3185

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
23	Himroo works	Staple yarn	231	8
		Cotton yarn	231	6
		Rayon yarn	231	8
		Khadi & pure silk yarn	231	1
		Dyes & Chem.	311	2
24	Brocade	Jari thread	231	6618
		Silk yarn	231	17616
		Art silk yarn	231	258
		Cotton yarn	231	163
25	Carpets and druggets	Woolen yarn	231	46015
		Cotton yarn	231	13975
		Colours	311	8981
26	Hosiery	Cotton yarn	231	43815
		Silk yarn	231	39357
		Woolen yarn	231	39045
		Dyes	311	25908
		Needles	350	3232
		Leather	291	886
		Plastic	311	417
		Rings	350	287
27	Embroidery	Thread	231	5967
28	Jari thread	Gold	342	6482
		Silver	342	28798
		Copper	342	5999
		Silk yarn	231	3892
		Art silk yarn	231	3696
		Colours & Chem.	311	301
29	Tailoring	Cloth, thread etc	231	293588
30	Caps, hats, & other headgear	Cloth, thread etc	231	1643
31	Crochet work	Thread	231	1221
32	Gabba Industry	Blankets	231	46
		Cotton yarn	231	11
		Woolen yarn	231	5
		Lining cloth	231	33
		Colours & chem.	311	13
		Others	U	18

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
33	Coir matting	Coir fibre	0	12050
		Coir yarn	239	116786
		Jute yarn	233	13487
		Sisal yarn	233	6950
		Aloe yarn	233	2832
		Dyes and chem.	311	4772
34	Coir spinning	Raw husks	0	42820
		Coconut leaves	0	1335
35	Saw milling	Wood	0	73261
36	Wooden furniture	Wood	251,252,259	275332
		Screws,nails.	350	27369
		Polish, varnish	312,313,319	12413
37	Lacquerware	Wood	251,252,259	137
		Lac	312,313,319	10
		Rosin	312,313,319	2
		Lithopone		
		paper	312,313,319	3
		Colours	312,313,319	5
		Tin	350	2
		Miscellaneous	U	4
38	Pataras	Wood	251,252,259	212
		Iron sheets & strips	341	235
		Tin sheet	342	117
		Nails, rods etc.	350	82
39	Wooden toys	Wood	251,252,259	52
		Colours	312,313,319	25
		Others	U	9
40	Wood carving	Sandalwood	251,252,259	405
		Sandpaper	312,313,319	3
		Nails, screws	350	6
		Wax, gum.	312,313,319	10
		Polishes	312,313,319	13
41	Photo framing	Wood	251,252,259	164
42	Plywood products	Plywood	251,252,259	2184
43	Boxes, packing cases other than of plywood	Wood	251,252,259	24852
		Nails, screws	350	2472
44	Grass mats	Grass	0	2617
		Colours	312,313,319	750
		Thread	231	922

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
45	Reed mats	Mat sticks	0	2617
		Others	312,313,319	305
46	Palm-leaf & palmyra products	Palm & palmyra leaves	0	14012
		Colours	312,313,319	3274
		Thread	231	118
47	Cane and bamboo articles	Cane&bamboo	0	49267
		Nails etc.	350	2096
		Varnish, colours	312,313,319	14722
48	Papier mache articles	Paper cuttings	271	69
		Colours, gum	312,313,319	189
		Clay	1	10
		Chalk	339	49
		Others	U	22
49	Paper & cardboard products	Paper & cardboard	271	15489
50	Printing presses	Paper	271	11225
		Printing ink	312,313,319	275
		Copper & zinc sheets&plates	342	156
		Block mounting wood	251,252,259	17
		Hides & skins	201 & 204	74813
51	Leather tanning	Sodium sulphide	311	1353
		Calcium sulphide	311	2501
		Epsom salt	311	1251
		Hypo	311	1251
		Soda ash	311	842
		Sulphuric acid	311	306
		Lime	339	3676
		Babul bark	0	23585
		Myrabolan nuts	0	1251
		Cheap oil	312,313,319	6279
		52	Leather footwear	Leather
Others	U			254880
53	Leather products other than footwear	Leather	291	15539
		Others	U	7683
54	Rubber products	Rubber	300	3534
		Chemicals	311	1568
55	Paints & varnishes	Basic chemicals	311	13117
		Solvent oil etc	312,313,319	21900

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
56	Fertilisers	Groundnut cake	209	18669
		Superphosphate	311	4053
		Am. sulphate	311	3892
57	Agarbathi	Sticks	251,252,259	11459
		Aromatic chem	312,313,319	2619
		Butterpaper & gelatin	312,313,319	6548
58	Drugs & pharmaceuticals	Herbs & plants	0	1595
		Animal extracts	201 & 204	174
		Chemicals	312,313,319	9130
59	Soap	Oil	208 & 209	124428
		Caustic soda	311	19544
		Sod. silicate	311	2676
		Soap stone	1	4929
		Resin	311	172
60	Plastics	Chemicals	311	33972
61	Wax products	Wax	312,313,319	5796
62	Cement products	Cement	334	52503
		Reinforcements	350	3231
63	Bricks & Tiles	Clay	1	152639
		Limestone	1	103183
64	Stone carving	Stone	1	7241
		Wax & colours	312,313,319	42
		Lead	342	4
66	Marble carving	Marble stone	1	831
		Polishing matl.	312,313,319	153
		Paper	271	15
		Others	U	77
67	Granite carving	Granite	1	86
68	Stonewares	Stone	1	372
69	Plaster of Paris	Plaster of Paris	339	21
		Colours	312,313,319	19
		Rubber	300	1
70	Pottery	Earth & sand	1	20814
		Others	U	8931
71	Clay toys & dolls	Clay	1	486
		Paints	312,313,319	1835
		Wire	350	348
		Others	U	735

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
72	Glass bangles	Glass	332	23825
		Cobalt	311	126
		Colours	312,313,319	1412
73	Glassware	Glass	332	6829
		Chemicals	311	36
		Colours	312,313,319	404
74	Iron and steel smelting	Iron and steel	341	9786
75	Brassware	Brass	342	442578
		Other metals	342	6858
		Acids	311	2190
		Tamarind	0	2824
76	Aluminium ware	Aluminium	342	32170
77	Tinsmithy	Tin	342	6212
78	Copper utensils	Copper	342	20535
		Brass	342	6619
		Zinc	342	427
		Lead etc.	342	999
79	Electroplating	Ferrous metals	341	6183
		Non-ferrous	342	1935
		Basic chemicals	311	1729
		Other chem.	312,313,319	143
		Others	U	654
80	Agricultural implements	Iron	341	44882
		Non-ferrous metal	342	13963
		Nuts,bolts etc	350	8354
		Paints&varnish	312,313,319	1896
81	Engineering: Light and general	Iron & Steel	341	4246
		Non-ferrous metal	342	263
		Paints&Varnish	312,313,319	1
		Tools & tool materials	350	142
		Others	U	64
82	Sheetmetal processing	Iron and steel	341	5292
		Chemicals	311	124
		Tool and tool materials	350	160
83	Locks and keys	Iron rods&plates	341	660
		Brass	342	4173
		Nails& screws	350	1851

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
84	Trunks	Iron & steel & ferrous alloys	341	22043
		Non-ferrous metal	342	1493
		Nuts, bolts etc.	350	43
		Paints	312,313,319	948
85	Cutlery	Iron scraps	341	1225
86	Foundry	Iron and steel	341	293458
		Non-ferrous metal	342	5353
		Refractories	331	3930
		Sand & limestone	1	4608
		Timber	251,252,259	339
		Basic chem.	311	5285
		Paints	312,313,319	813
		Others	U	21411
87	Wire products	Iron & steel	341	141016
		Tool and tool materials	350	1728
88	Machinery	Iron and steel	341	2328
		Non-ferrous metal	342	377
		Metal products	350	106
		Machine parts	360	198
		Electrical equip	370	11
		Wood	251,252,259	35
		Acids etc.	311	16
		Paints, polish	312,313,319	40
		Others	U	161
		89	Machine parts	Iron and steel
Non-ferrous metal	342			259
Metal products	350			74
Machine parts	360			133
Electrical equip	370			8
Wood	251,252,259			24
Acids etc.	311			11
Paints, polish	312,313,319			27
Others	U			110
90	Textile machinery and accessories			Iron and steel
		Non-ferrous metal	342	386
		Metal products	350	109
		Machine parts	360	22
		Electrical equip	370	11
		Wood	251,252,259	36
		Acids etc.	311	17
		Paints, polish	312,313,319	39
Others	U	164		

contd...



Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)	
91	Electric fans	Ferrous metals			
		and alloys	341	710	
		Non-ferrous metal	342	464	
		Metal products	350	362	
		Electrical parts			
		and components	370	307	
		Paints etc.	312,313,319	119	
	Others	U	405		
92	Automobile battery	Lead	342	932	
		Litharge	311	676	
		Red lead	311	92	
		Antimony	311	247	
		Containers	350	1972	
		Fibre glass	332	282	
		Wood separators	251,252,259	479	
		Sulphuric acid	311	188	
93	Radio repair	Electrical parts			
		and components	370	11656	
94	Electrical goods	Iron and steel	341	697	
		Non-ferrous metal	342	8844	
		Electrical equip	370	579	
		Metal products	350	42	
		Porcelain	339	3893	
		Refractories	331	85	
		Acids etc.	311	182	
		Paints etc.	312,313,319	91	
			Others	U	5524
		95	Electrical repair	Electrical parts	
and components	370			16710	
96	Repair of automobiles	Spare parts	383 & 385	64687	
97	Bicycle repair	Spare parts	383 & 385	55006	
98	Carts & cartwheels	Iron and steel			
		products	350	438	
		Wood	251,252,259	438	
99	Watch repair	Spare parts	393	18277	
100	Silver filigree	Silver	342	3332	
		Copper	342	2	
		Zinc	342	1	
		Borax	311	4	
		Mica	339	9	
		Sulphuric acid	311	16	
		Miscellaneous	U	2	

contd...

Table 8.2(a) contd.

(a)	(b)	(c)	(d)	(e)
101	Artmetal ware	Silver	342	7188
		Copper	342	1695
		Brass	342	3866
		Steel	341	123
102	Bidriware	Zinc	342	26
		Silver	342	20
		Copper	342	2
		Miscellaneous	U	6
103	Musical instruments	Pumpkin	0	1580
		Wood	251,252,259	7342
		Celluloid	311	1530
		Lac, gum, sand- paper, polish	312,313,319	2010
		Deer horn	0	900
		Strings	350	1522
		Brass	342	582
		Reeds	0	321
		Leather	291	553
		Cardboard	271	260
104	Rubber stamps	Rubber	300	465
105	Conch shell products	Conch shells	0	888
		Others	U	21
106	Ivory work	Ivory	0	1254
		Rosewood and sandalwood	251,252,259	22

**TABLE 8.3**  
**VALUES OF OUTPUTS AND OF INPUTS CONSUMED IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963**  
**FOR EMPLOYMENT COVERED & A.S.I. 3-DIGIT CLASSIFICATION**  
 (Values in Rs. '000)

S.No.	A.S.I. Code number	Value of output	Fuel	Lubricant	Electricity	Raw mate'ls	Packing mate'l	Repairs Maintenance	Work done by others	Depreciation	Rent & interest & taxes	Wages & Salaries	Profits
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1	201 & 204	N.A.											
2	202	228582	389	68	571	114131	320	686	1509		6469	16801	87638
3	203	3528	36			1929	234	33		52	162	772	310
4	205	500902	8761	1222	45177	223553	2667	13016	1160	15018	40257	49251	100820
5	206	343013	24011	274	2195	294104	9124	1235	206		3910	21164	26790
6	207	132062	7792		2156	57193		427		3967	18588	22428	19511
7	208 & 209	1873449	10549	669	17537	1182134	77895	133032	3	21760	35862	62670	331288
8	211,212,213	326454			2710	186144	11197		22852		18183	54485	30883
9	214	N.A.											
10	220	1377857	22322			428936	413	965	827	8543	203101	394902	317878
11	231	3342162	5814	933	575	2107899	2921	2938	30356	34155	35978	559511	561082
12	232	260646	1199	235	521	152947	5500	1694	7428	4249	6177	28932	51764
13	233	71298	121			29817	321	299	107	157	314	10481	29681
14	239	497299	5512			340584	1503				4068	89176	56453
15	241	1409735	846	282	1974	770560	13111	7049	6908	19595	74434	155212	359764
16	242	N.A.											
17	243	1011677	1238	909	13425	295231	2828	3128	4010		36731	103839	550338
18	244	304				126				4			174
19	251,252,259	426613	600	514	5210	195326	297	2290	6523	242	15323	31315	168973

contd...

Table 8.3 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
20	260	747778	4487			315114	2318	1122	16600	4636	58551	139610	205340	
21	271	25451	295	39	500	15528	10	107	273	14	885	2991	4509	
22	280	45796	85	220	343	11673	256	604	1049	4580	4149	12557	10310	
23	291	255247	817	4773	5233	117107	408	20936	281	5641	10139	69146	20726	
24	293	45197	41	13	95	23227	18	136	375	438	1894	9188	9772	
25	300	21020	284	71	757	5102		111	1513		1221	4410	7549	
26	311	94334	1251	71	1388	60586	259	546	5073	24	2886	7929	14321	
27	312,313,319	331526	3686	112	353	224087	15256	1358	1145	2028	18205	14223	51071	
28	321 & 329	N.A.												
29	331	534265	152639			152640						121332	107654	
30	332	110129	22659	22	123	32632	227	191	728	3775	2325	39234	8213	
31	333	373685	47496	187		29745	336	1158	112	1831	1009	5717	286094	
32	334	nil												
33	339	548874	183508			171186	1319	5248		4413	9928	38754	134318	
34	341	16837	431	79	79	9786	133				638	2692	2999	
35	342	N.A.												
36	350	1807105	142088	2303	3685	1121818	866	12486	12866	15055	35730	202137	258071	
37	360	30566	23	168	568	8852	135	234	889	1102	1074	3779	13742	
38	370	110032	876	149	1923	55538	271	104	1868	963	3118	23492	21730	
39	381	nil												
40	382	N.A.												
41	383 & 385	235977	3870			55006	377	67655	3894	8920	26713	58994	10548	

contd...

Table 8.3 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
42	384	226972	7285			64687	1612	2678	2996	10282	30482	44941	62809
43	385	N.A.											
44	389	2242	18	2	11	877	11	4	119		160	279	761
45	391	nil											
46	392	N.A.											
47	393	57203	74	366	1310	18277	1304	303	4193		4742	9719	16515
48	394	37492	494			16292	23	104	310	4	845	43	19177
49	395 & 399	43969	133	77	446	19290	149	130	1377	3	3364	6684	14313

TABLE 8.3(a)

VALUES OF RAW MATERIAL CONSUMED IN THE UNREGISTERED  
MANUFACTURING SECTOR FOR 1963, FOR EMPLOYMENT COVERED.  
A.S.I. 3-DIGIT LEVEL OF CLASSIFICATION.

A.S.I. code no. of industry (a)	A.S.I. industry no for raw matl (b)	Value of raw material in Rs '000 (c)
201 & 204	N.A.	N.A.
202	0	40802
	205	40733
	207	14401
	399	18195
203	0	745
	207	668
	312,313,319	7
	332	254
	350	255
205	0	145842
	205	77711
206	205	24972
	207	118545
	209	63491
	312,313,319	47096
207	0	54393
	233	357
	311	238
	312,313,319	1728
	333	403
	339	74
208 & 209	0	908277
	205	49872
	207	124554
	209	48191
	312,313,319	36383
	399	14856
211,212,213	0	14201
	207	134075
	211,212,213	18575
	311	13646
	312,313,319	5647

contd...

Table 8.3(a) contd.

(a)	(b)	(c)
214	N.A.	N.A.
220	0	328936
231	0	316055
	231	1653828
	311	325470
	312,313,319	566
	342	41279
232	231	122217
	291	886
	311	26325
	350	3519
233	0	28199
	311	1618
239	0	195757
	233	23269
	239	116786
	311	4772
241	291	515680
	399	254880
242	N.A.	N.A.
243	231	295231
244	231	95
	311	13
	399	18
251,252,259	0	142137
	251,252,259	28006
	231	1040
	312,313,319	19122
	341	235
	342	117
	350	4658
	399	13
260	251,252,259	275332
	312,313,319	12413
	350	27369

contd...

Table 8.3(a) contd.

(a)	(b)	(c)
271	1 271 312,313,319 339 399	10 15558 189 49 22
280	251,252,259 271 312,313,319 342	17 11225 275 156
291	0 201 & 204 311 312,313,319 339	24836 74813 7504 6279 3675
293	291 399	15543 7684
300	300 311	3534 1568
311	209 311	18669 41917
312,313,319	0 1 201 & 204 209 251,252,259 311 312,313,319	1595 4929 174 124428 11459 35509 45993
321 & 329	N.A.	N.A.
331	1	152640
332	311 312,313,319 332	162 1816 30654
333	0 399	20814 8931
334	nil	nil

contd...



Table 8.3(a) contd.

(a)	(b)	(c)
339	0	112200
	271	15
	300	1
	312, 313, 319	2050
	334	52504
	339	21
	342	4
	350	3579
	399	812
	341	341
342	N.A.	N.A.
350	0	2824
	1	4608
	251, 252, 259	339
	311	9328
	312, 313, 319	3801
	331	3930
	341	519004
	342	543578
	350	12278
	399	22129
360	251, 252, 259	95
	311	43
	312, 313, 319	104
	341	6297
	342	1024
	350	290
	360	535
	370	30
	399	434
370	251, 252, 259	479
	311	1385
	312, 313, 319	210
	331	85
	332	282
	339	3893
	341	1407
	342	10240
	350	2376
	370	29252
399	5929	

contd...

Table 8.3(a) contd.

(a)	(b)	(c)
381	nil	nil
382	N.A.	N.A.
383 & 385	383 & 385	55006
384	383 & 385	64687
386	N.A.	N.A.
389	251,252,259 350	438 439
391	nil	nil
392	N.A.	N.A.
393	393	18277
394	311 339 341 342 399	20 9 123 16132 8
395 & 399	0 251,252,259 271 291 300 311 312,313,319 342 350 399	3368 8939 260 553 19250 1530 2010 582 1522 21

**TABLE B.4**  
**COEFFICIENTS OF INPUTS AND VALUE ADDED FOR THE UNREGISTERED MANUFACTURING SECTOR FOR 1963**  
**A.S.I. 3-DIGIT CLASSIFICATION**

(values corrected to the 4<sup>th</sup> Decimal)

S.No.	A.S.I.Code number	Fuel	Lubricant	Electricity	Raw mate'ls	Packing mate'ls	Repairs Mainten ance	Work done by others	Deprec iation	Rent & interest & taxes	Wages & Salaries	Profits	Value Added
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(o)
1	201 & 204												
2	202	0017	0003	0025	4993	0014	0030	0066		0283	0735	3834	4852
3	203	0101			5467	0664	0095		0148	0458	2188	0879	3673
4	205	0175	0024	0902	4463	0053	0260	0023	0300	0804	0983	2013	4100
5	206	0700	0008	0064	7408	0266	0036	0006		0114	0617	0781	1512
6	207	0590		0163	4331		0032		0300	1408	1698	1478	4884
7	208 & 209	0056	0004	0094	6310	0416	0710		0116	0191	0335	1768	2410
8	211, 212, 213			0083	5702	0343		0700		0557	1669	0946	3172
9	214												
10	220	0162			3113	0003	0007	0006	00062	1474	2866	2307	6709
11	231	0017	0003	0002	6307	0009	0009	0091	0102	0107	1674	1679	3562
12	232	0046	0009	0020	5868	0211	0065	0285	0163	0237	1110	1986	3496
13	233	0017			4182	0045	0042	0015	0022	0044	1470	4163	5699
14	239	0111			6849	0030				0082	1793	1135	3010
15	241	0006	0002	0014	5466	0093	0050	0049	0139	0528	1101	2552	4320
16	242												
17	243	0012	0009	0133	2918	0028	0031	0040		0363	1026	3440	6829
18	244				4159				0131			5710	5841
19	251, 252, 259	0014	0012	0122	4578	0007	0054	0153	0006	0359	0734	3961	5060

contd...

Table 8.4 contd.

666	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
20		260	0060			4214	0031	0015	0222	0062	0783	1867	2746	5458
21		271	0116	0015	0196	6219	0004	0042	0107	0006	0348	1175	1772	3301
22		280	0012	0048	0075	2549	0036	0132	0229	1000	0906	2742	2251	6899
23		291	0032	0187	0203	4588	0016	0821	0011	0221	0398	2709	0812	4140
24		293	0009	0003	0021	3139	0004	0030	0083	0097	0419	2033	2162	4711
25		300	0135	0034	0360	2427		0053	0721		0581	2098	3591	6270
26		311	0133	0007	0147	6422	0027	0058	0538	0003	0306	0841	1518	2668
27		312, 313, 319	0111	0003	0011	6759	0460	0041	0035	0061	0549	0429	1541	2580
28		321 & 329												
29		331	2857			2857						2271	2015	4286
30		332	2057	0002	0011	2963	0021	0017	0066	0343	0211	3563	0746	4863
31		333	1271	0005		0796	0009	0031	0003	0049	0027	0153	7656	7883
32		334												
33		339	3343			3119	0024	0096		0080	0181	0706	2451	3418
34		341	0256	0047	0047	5812	0079				0379	1999	1781	3759
35		342												
36		350	0786	0013	0020	6208	0005	0069	0071	0083	0198	1118	1428	2827
37		360	0007	0055	0186	2896	0044	0077	0291	0361	0351	1236	4496	6444
38		370	0080	0014	0175	3047	0025	0009	0170	0087	0283	2135	1975	4480
39		381												
40		382												
41		383 & 385	0164			2331	0016	2867	0165	0378	1132	2500	0447	4457

contd...

Table 8.4 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
42	384	0321			2850	0071	0118	0132	0453	1343	1980	2732	6508
43	386												
44	389	0082	0008	0048	3910	0051	0017	0531		0715	1243	3395	5353
45	391												
46	392												
47	393	0013	0064	0264	3195	0263	0053	0733		0829	1699	2887	5415
48	394	0132			4345	0006	0028	0136	0001	0225	0012	5115	5353
49	395&399	0033	0017	0097	4188	0032	0033	0299	0001	0732	1454	3114	5301

TABLE 8.4(a)

**COEFFICIENTS OF RAW MATERIALS CONSUMED IN**  
**THE UNREGISTERED MANUFACTURING SECTOR-1963**  
**A.S.I. 3-DIGIT LEVEL OF CLASSIFICATION**

(Values corrected to the 4<sup>th</sup> Decimal)

A.S.I. code no. of industry	A.S.I. industry no for raw matl	Coefficients of raw materials
(a)	(b)	(c)
201 & 204	N.A.	N.A.
202	0	1785
	205	1782
	207	0630
	399	0796
203	0	2112
	207	1893
	312	0020
	332	0720
	350	0722
205	0	2912
	205	1551
206	205	0728
	207	3456
	209	1851
	312,313,319	1373
207	0	4119
	311	0018
	312,313,319	0131
	233	0027
	333	0030
	339	0006
208 & 209	0	4848
	205	0266
	207	0665
	208 & 209	0257
	312,313,319	0194
	399	0080
211,212,213	0	0435
	207	4107
	211,212,213	0569
	311	0418
	312,313,319	0173

contd...

Table 8.4(a) contd.

(a)	(b)	(c)
214	N.A.	N.A.
220	0	3113
231	0	0259
	231	4948
	311	0974
	312,313,319	0002
	342	0124
232	231	4689
	291	0034
	311	1010
	350	0135
233	0	3955
	311	0227
239	0	3937
	233	0468
	239	2348
	311	0096
241	291	3658
	399	1808
242	N.A.	N.A.
243	231	2918
244	231	3118
	311	0444
	399	0597
251,252,259	0	3332
	231	0024
	251,252,259	0656
	312,313,319	0448
	341	0006
	342	0003
	350	0109
260	251,252,259	3682
	312,313,319	0166
	350	0366

contd...

Table 8.4(a) contd.

(a)	(b)	(c)
271	1 271 312, 13, 319 339 399	0004 6113 0074 0019 0009
280	271 251, 252, 259 312, 313, 319 342	2451 0004 0060 0034
291	0 201 & 204 311 312, 313, 319 339	0973 2931 0294 0246 0144
293	291 399	3439 1700
300	300 311	1681 0746
311	208 & 209 311	1979 4443
312, 313, 319	0 1 201 & 204 209 251, 252, 259 311 312, 313, 319	0048 0149 0005 3753 0346 1071 1387
321 & 329	N.A.	N.A.
331	1	2857
332	311 312, 313, 319 332	0015 0165 2783
333	1 399	0557 0239
334	nil	nil

contd...



Table 8.4(a) contd.

(a)	(b)	(c)
339	1	2044
	312,313,319	0037
	334	0956
	350	0065
	399	0017
341	341	5812
342	N.A.	N.A.
350	1	0025
	0	0016
	251,252,259	0002
	311	0052
	312,313,319	0021
	331	0022
	341	2872
	342	3008
	350	0068
	399	0122
360	251,252,259	0031
	311	0014
	312,313,319	0034
	341	2060
	342	0335
	350	0095
	360	0175
	370	0010
	399	0142
	370	251,252,259
311		0126
312,313,319		0019
331		0008
332		0025
339		0354
341		0128
342		0931
350		0216
370		2658
399	0539	

contd...

Table 8.4(a) contd.

(a)	(b)	(c)
381	nil	nil
382	N.A.	N.A.
383 & 385	383 & 385	2331
384	383 & 385	2850
386	N.A.	N.A.
389	251, 252, 259 350	1955 1955
391	nil	nil
392	N.A.	N.A.
393	393	3195
394	311 339 341 342 399	0005 0002 0033 4303 0002
395 & 399	0 251, 252, 259 271 291 300 311 312, 313, 319 342 350 399	0733 1945 0056 0120 0101 0333 0437 0127 0331 0005

**TABLE 8.5**  
**VALUES OF OUTPUTS AND OF INPUTS IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963**  
**FOR FULL COVERAGE OF EMPLOYMENT, A.S.I. 3-DIGIT CLASSIFICATION.**  
 (Values in Rs.'000)

S.No.	A.S.I.Code number	Value of output	Fuel	Lubricant	Electricity	Raw mate'ls	Packing mate'ls	Repairs maintenance	Work done by others	Depreciation	Rent & interest & taxes	Wages & Salaries	Profits
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(o)
1	201 & 204	N.A.											
2	202	228582	389	68	571	114131	320	686	1509		6469	16801	87638
3	203	337385	3408			184448	22402	3205		4993	15452	73820	29657
4	205	514909	9011	1236	46445	229804	2729	13388	1184	15447	41399	50615	103651
5	206	343013	24011	274	2195	254104	9124	1235	206		3910	21164	26790
6	207	138196	8153		2253	59853		442		4146	19458	23466	20425
7	208 & 209	1899920	10640	760	17859	1198850	79037	134894		22039	36288	63647	335906
8	211,212,213	326454			2710	186144	11197		22852		18183	54485	30883
9	214	N.A.											
10	220	1377887	22322			428936	413	965	827	8543	203101	394902	317878
11	231	4484661	7624	1345	897	2828476	4036	4036	40810	45744	47986	750732	752975
12	232	260646	1199	235	521	152947	5500	1694	7428	4249	6177	28932	51764
13	233	86369	147			36119	389	363	130	190	380	12696	35955
14	239	568697	6313			389501	1706				4663	101967	64547
15	241	1409735	846	282	1974	770560	13111	7049	6908	19595	74434	155212	359764
16	242	N.A.											
17	243	1146271	1376	1032	15245	334482	3210	3553	4585		41610	117607	623571
18	244	19286				8021				253			11012
19	251,252,259	756092	1059	907	9224	346139	529	4083	11568	454	27144	55497	299488

contd...

Table 8.5 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
20	260	1869914	11220			787982	5797	2805	41512	11593	146414	349113	513478	
21	271	69552	807	104	1363	43254	28	292	744	42	2421	8172	12325	
22	280	95966	115	460	720	24462	537	1267	2198	9597	8694	26314	21602	
23	291	292984	938	5479	6006	134421	469	24054	322	6475	11661	79369	23790	
24	293	45197	41	13	95	23227	18	136	375	438	1894	9188	9772	
25	300	21020	284	71	757	5102		111	1515		1221	4410	7549	
26	311	103578	1378	72	1523	66518	280	601	5572	31	3169	8711	15723	
27	312, 313, 319	430795	4782	129	474	291174	19817	1766	1508	2628	23651	18481	66385	
28	321 & 329	N.A.												
29	331	534265	152639			152640						121332	107634	
30	332	110140	22656	22	121	32634	231	187	727	3778	2324	39243	8217	
31	333	373685	47496	187		29745	336	1158	112	1831	1406	3717	286094	
32	334	nil												
33	339	793309	265203			247433	1904	7616		6346	14359	36008	194440	
34	341	16839	431	79	79	9787	133				638	2693	2999	
35	342	N.A.												
36	350	1861101	146282	2419	3722	1155371	930	12841	13214	15447	36830	208071	265765	
37	360	907147	635	4989	16873	262710	3992	6985	26398	32748	31841	112123	407853	
38	370	112715	902	158	1972	56887	282	101	1916	981	3190	24065	22261	
39	381	nil												
40	382	N.A.												
41	383 & 385	264341	4335			61618	423	75787	4362	9992	29923	66085	11816	

contd...

Table 8.5 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
42	384	226972	7285	64687	1612	2678	2996	10282	30482	44941	62009			
43	386	H.A.												
44	389	2242	18	877	11	4	119	160		279	761			
45	391	n11												
46	392	H.A.												
47	393	57203	74	1510	1504	303	4193	4742		9719	16515			
48	394	4869603	64279		2922	13635	66227	487	109566	5843	2490802			
49	395 & 399	473674	1563	4595	1516	1563	14163	47	34673	68872	147502			

TABLE 8.5(a)

VALUES OF OUTPUT & OF RAW MATERIAL INPUTS IN THE UN-REGISTERED MANUFACTURING SECTOR FOR 1963, FOR FULL COVERAGE OF EMPLOYMENT, A.S.I. 3-DIGIT CLASSIFICATION

A.S.I. code no. of industry	Value of output in Rs '000	A.S.I. industry no of raw matl	Value of raw material in Rs '000
(a)	(b)	(c)	(d)
201 & 204	N.A.	N.A.	N.A.
202	228582	0 205 207 399	40802 40733 14401 18195
203	337385	0 207 312,313,319 332 350	71256 63867 675 24292 24358
205	514909	0 205	149942 79862
206	343013	205 207 208 & 209 312,313,319	24971 118545 63492 47096
207	138196	0 233 311 312,313,319 333 339	56923 373 249 1810 415 83
208 & 209	1899920	0 205 207 208 & 209 312,313,319 399	921081 50538 126345 48828 36858 15199
211,212,213	326454	0 207 211,212,213 311 312,313,319	14201 134075 18575 13646 3647

Table 8.5(a) contd.

(a)	(b)	(c)	(d)
214	N.A.	N.A.	N.A.
220	1377887	0	428936
231	4484661	0	116153
		231	2219010
		311	436806
		312,313,319	897
		342	55610
232	260646	231	12 2217
		291	886
		311	26325
		350	3519
233	86369	0	34159
		311	1960
239	568697	0	223896
		233	26615
		239	133530
		311	5459
241	1409735	291	515681
		399	254880
242	N.A.	N.A.	N.A.
243	1146271	231	334482
244	19286	231	6013
		311	856
		399	1151
251,252,259	756092	0	251930
		231	1815
		251,252,259	49600
		312,313,319	33873
		341	454
		342	227
		350	8241
260	1869914	0	688502
		312,313,319	31041
		350	68439

contd...

Table 8.5(a) contd.

(a)	(b)	(c)	(d)
271	69552	1 271 312,313,319 339 399	28 42517 515 132 62
280	95966	251,252,259 271 312,313,319 342	39 23521 576 326
291	292984	0 201 & 204 311 312,313,319 339	28507 85874 8614 7207 4219
293	45197	291 399	15543 7683
300	21020	300 311	3534 1568
311	103578	208 & 209 311	20498 46020
312,313,319	430795	0 201 & 204 209 251,252,259 311 312,313,319	2068 215 161677 14906 46138 59731
321 & 329	N.A.	N.A.	N.A.
331	534265	1	152640
332	110140	311 312,313,319 332	165 1817 30652
333	373685	1 399	20814 8931
334	nil	nil	nil

contd...



Table 8.5(a) contd.

(a)	(b)	(c)	(d)
339	793309	1 312,313,319 334 330 399	162152 2935 75840 5156 1349
341	16839	341	9787
342	N.A.	N.A.	N.A.
350	1861101	0 1 311 312,313,319 331 341 342 350 399 251,252,259	2978 4653 9678 3908 4094 534508 559819 12655 22705 372
360	907147	251,252,259 311 312,313,319 341 342 350 360 370 399	2812 1271 3084 186872 30389 8618 15875 908 12881
370	112715	251,252,259 311 312,313,319 331 332 339 341 342 350 399 370	483 1420 214 90 282 3990 1443 10194 2434 6073 29960

contd...

Table 8.5(a) contd.

(a)	(b)	(c)	(d)
381	nil	nil	nil
382	N.A.	N.A.	N.A.
383 & 385	264341	383 & 385	66618
384	226972	383 & 385	64687
386	N.A.	N.A.	N.A.
389	2242	251,252,259 350	438 438
391	nil	nil	nil
392	N.A.	N.A.	N.A.
393	57203	393	10277
394	4869603	311 339 341 342 399	2435 974 16070 2095390 974
395 & 399	473674	0 251,252,259 291 271 300 311 312,313,319 342 350 399	34720 92130 5684 2653 4784 15773 20699 6016 15679 237

## CHAPTER 9

### THE INPUT-OUTPUT TABLE FOR THE UNREGISTERED MANUFACTURING SECTOR FOR 1963

For the preparation of the Input-Output table of the unregistered manufacturing sector, the economy has been classified into 53 sectors of which 49 are 'manufacturing', 1 is 'generation, transmission and distribution of electricity', 1 is 'agriculture', 1 is 'mining and quarrying' and 1 sector is for the 'unspecified' items. The classification of manufacturing activity has been based on the A.S.I. classification. The values of inputs have been estimated for 38 A.S.I. industries for the unregistered manufacturing sector. The rows in the table are the producing sectors and the columns are the consuming sectors. The Input-Output table of the unregistered manufacturing sector has thus 38 columns and 53 rows. The row sum gives the total demand for the output of the industry from all industries and the column sum gives the total value of inputs which come from the different industries and are used up in the manufacture of the particular industry. Both the input-output flow table and the coefficient table for the unregistered manufacturing sector are given as Table 9.1 and Table 9.2 respectively.

All the material inputs have been included in their respective sectors. As coal has been assumed as 'fuel' in almost

all the industries, the value of fuel has been included in the sector '1 - Mining and Quarrying'. The fuel value of 'flour milling' which is assumed to be of fuel oil, has been included in '321 & 329 - Petroleum refineries and products of petroleum and coal'. Fuel input of 'bricks and tiles, 'pottery' and 'manufacture of lime', which is taken as firewood has been included in '0 - Agriculture'. The break-up of 'fuel', 'lubricants', and 'electricity' is not available for 'repair of bicycles-383&385, 'repair of automobiles-384', and 'repair of watches and clocks-393'. The total of these input items of these industries has been assigned to '321 & 329 - Petroleum refineries and products of petroleum and coal'. The input of 'lubricants' has also been included in '321 & 329 - Petroleum refineries and products of petroleum and coal'. Values of 'packing materials' are included in '271 - manufacture of pulp, paper and paper board', for all industries except for 'manufacture of ropes, twine etc. -233' and for 'manufacture of textiles not elsewhere classified - 239', in the case of which packing materials are included in their respective industries themselves. The raw material break-up of the industries doing repair work is not available. It is assumed that the materials required in these industries come from their manufacturing industries. Thus for '383&385-Repair of Bicycles' and '384 - Repair of automobiles', the values of raw material inputs have been assumed to come from '383 & 385 - Manufacture of motor vehicles, motorcycles and bicycles' and for '393 - repair of watches and clocks' the raw material is included in '393 - manufacture of watches and clocks'.

The input values of 'repair and maintenance' of all industries have been included in '350 - manufacture of metal products'.

The input values of 'work done by others' have been included in the 'unspecified' sector.

From Tables 9.1 and 9.2, the industries in the un-registered manufacturing sector can be distinguished into two types: (i) those which are having a high industry demand i.e. outputs of which are highly demanded by other industries, and (ii) those the outputs of which are demanded only for final consumption. It can be seen that the following industries in the un-registered manufacturing sector produce only for final consumption:

- |  |   |
|--|---|
| 1. Dairy products <sup>1</sup>                                     | 2. Fruit and vegetable processing and preservation.   |
| 3. Bakery products   | 4. Soft drinks  |
| 5. Tobacco manufacture   | 6. Hosiery products                                   |
| 7. Leather footwear  | 8. Manufacture of wearing apparel other than footwear |
| 9. Manufacture of made up textile goods other than wearing apparel | 10. Furniture   |
| 11. Printing, publishing and allied industries                     | 12. Leather products other than footwear              |
| 13. Jewellery  |   |

Paper, chemicals and metal industries produce mostly for industry consumption.

It can be seen that in most of the industries which are producing for final consumption the estimated values of output are higher in the unregistered sector than those of the registered

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<sup>1</sup> These may be used in the Food industries and Bakery products. But as the inputs of food industries are estimated on the basis of the input structures of 'dairy products', 'bakery products' & 'confectionary' the dairy products do not form an input in the food industries.

sector <sup>1</sup> excepting for 'printing and publishing and allied industries', 'made-up textile goods other than wearing apparel' and 'dairy products'. This means that goods for final consumption are largely produced in the unregistered manufacturing sector.

A measure of the dependence of the unregistered sector on the registered sector can be obtained for each industry from its values of the intermediate demand in the unregistered sector for the products of the industry and its total production in the unregistered sector. If the intermediate demand in the unregistered sector is more than the production of the industry in the unregistered sector, the unregistered sector of the industry has to depend on the registered sector for the products of this industry. A very approximate index of this dependence can be calculated for each industry as a ratio of the value of total intermediate demand in the unregistered sector for the products of the industry to the value of the total production of the industry in the same sector. When there is dependence this ratio would be more than 1 and when there is no dependence it is either 1 or less than 1. The values of outputs and the intermediate demand of the different industries in the unregistered sector are given in Table 9.3.

It can be seen from Table 9.3, that only the following industries in the unregistered sector depend on the

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<sup>1</sup> The values of outputs of the different industries are given for census and sample sectors (registered) and the unregistered sector in Table 7.4 of the present study.

registered sector for their inputs. The actual values of their dependence and their indices are given below:

Name of Industry	Value of dependence Rs '000	Index of dependence
1. Basic chemicals	514805	5.97
2. Basic iron and steel	732295	4.45
3. Paper & paper products	182292	3.62
4. Sugar factories and refineries	319037	3.31
5. Leather tanning & finishing	244810	1.83
6. Wood sawing, planing and wood products	93191	1.12
7. Non-ferrous basic metals	2758271	N.A.
8. Petroleum and its products	38800	N.A.
9. Cement	75840	N.A.
10. Agriculture	2838754	N.A.
11. Electricity	182479	N.A.
12. Mining	651159	N.A.
13. Unspecified	636504	N.A.

Indices of dependence could not be estimated for those industries whose values of outputs are not estimated. Indices for all these industries have been denoted as Not Available(N.A.). For all the other industries the ratios are less than 1.

Based on this criterion of dependence it emerges that except for the above few industries the unregistered sector is self-sustaining and produces its own inputs. It has also been seen that there is no dependence of the registered sector on the unregistered sector. This is in conformity with the often stressed

characteristic existence of a dual economy in the developing countries, in which big factories producing on a large scale using up-to-date technology coexist with the small and household manufacturing units producing largely for local markets using the traditional technology.

A Comparison between the Input structures of the Registered and Unregistered Sectors for 1963.

A comparison of the input coefficients of the registered sector and of the unregistered sector has been made. For this, the input coefficients of the registered sector have been calculated from the Input-Output Flow Table for the Indian Economy for 1963 at purchasers' prices, prepared in the Gokhale Institute of Politics and Economics.<sup>1</sup> This table classifies the whole economy into 32 sectors of which 25 are manufacturing (including electricity), 1 is agriculture, 3 are mining, 2 are transport, and 1 sector is for construction. In addition to these 1 sector for unspecified items and 1 for trade and excise have also been added. An assumption made in this table is that the input coefficients of the census sector apply to the sample and unregistered manufacturing sectors also; i.e. the input-output transaction matrix was derived from the coefficient matrix of the census sector by multiplying it by the vector of total values of outputs of the different industries. The values of outputs of the unregistered sector were obtained from the Central Statistical Organisation for broad industry groups. These were added to the values of outputs of

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<sup>1</sup> Mathur P.N. in collaboration with Kulkarni A.R., Venkatramaiah P., and Narain Das, 'Input-Output Flow Table (32 x 32) 1963 (at purchasers' prices)', Arthavijnana, Vol 11, No.2, June 1969, pages 181-99.



the census and sample sectors of the respective industries to get the total values of outputs of each industry. Therefore an input-output coefficient table derived from this transaction table refers only to the registered sector.

For comparison the input coefficients for the unregistered sector prepared in the present study have also been classified into 32 sectors by grouping the relevant industries. To facilitate the comparison the values of input coefficients of both the registered and the unregistered sectors have been presented in the same table, Table 9.4. The coefficients of the unregistered sector are underlined in the table.

It is found from Table 9.4(a), that the coefficients of value added are more in the unregistered sector than in the registered sector for all industries except 'textiles', 'paper', 'leather tanning', 'chemicals', 'fertilisers', 'non-metallic mineral products' and 'basic metal industries'. One limitation to such a comparison is that in the unregistered manufacturing sector it has been assumed that trade and excise and transport expenses are insignificant. It has been found that these expenses are very significant in the case of the registered sector. The assumption that the input coefficients are the same for the registered and unregistered sectors, and obtaining the values of inputs on the basis of coefficients of the registered sector leads to an overestimation of the values of trade and excise and transport charges. If only the coefficients of material inputs are taken

in most of the industries, their values have been found to be smaller for the registered sector than for the unregistered sector.

For a given industry group at the 2-digit level of aggregation of industries, the differences in the input coefficients, it must be noted, are not due to the differences in technologies alone. The differences are due as much to the differences in the product-mix as they are due to differences in technology. Not only the relative proportions of products in a given group are different for the large scale and unregistered sectors, but the very nature of the products makes a difference in the input-output relations in a number of groups.

To illustrate the above points, the industry 'Non-metallic mineral products' at 2-digit level of aggregation, i.e. industry 33 in Table 9.4 consists of industries (i) 331-Manufacture of structural clay products, (ii) 332-Manufacture of Glass and glass products, (iii) 333-Manufacture of pottery, china and earthenware and (iv) 339-Manufacture of non-metallic mineral products n.e.c., at the 3-digit level of classification. While in the large scale sectors their proportions in the total production of the group are in the order of 339(39%), 331(26%), 332(26%) and 333(9%); in the unregistered sector they are in the order of 339(44%), 331(29%), 333(21%) and 332(6%). Even if at the 3-digit level of classification both the large scale and the unregistered sectors have the same input structures, because of the different weights in the two sectors the resultant input vectors at the 2-digit industry classification would be different. More important than this ,

even if the quality variations are ignored, the very nature of the products manufactured in the large scale and the unregistered sectors in a given industry are different, e.g. in the industry '370- Manufacture of electrical machinery, apparatus, appliances and supplies', the large scale sector produces mainly products like electrical cables and wires, electrical motors, generators and transformers etc; in the unregistered sector the industry mainly consists of repair work and manufacture of small domestic appliances.

Thus in any comparative study of the technologies of these two sectors, the fact that the product-mix of a given group of industries is different, should not be lost sight of.

The nature of the important products of both the large scale and the unregistered sectors are given at the end of this chapter as Appendix 'A' , for the A.S.I. 3-digit level of classification.

Two transaction matrices have been prepared for the registered and the unregistered sectors separately by multiplying the coefficient tables by the respective output values. These are given as Table 9.5 and Table 9.6. The values of outputs of the different industries in the registered sector have been obtained from the A.S.I. reports for 1963.<sup>1</sup> These values are in producers' prices. Hence the values of outputs of the registered sector

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† The values of output here refers to values of products & by-products and semi-finished products and do not include 'work done for others' and products sold in the same condition as purchased as has been adopted in the 32 x 32 original table. Sources: A.S.I. Reports 1963, Vols 1-10, and N.S.S. No. 168, 'Tables with Notes on Annual Survey of Industries-1963' - Sample sector - Detailed Results.

given in the A.S.I. reports have also been converted into purchasers' prices by multiplying them by the corresponding purchasers'/producers' price ratios. These are given in Table 9.7. The input-output transaction matrix of the registered sector has been prepared by multiplying the coefficient matrix by the values of outputs in purchasers' prices. In the input-output table for the unregistered sector no adjustments have been made for the differences between producers' prices and purchasers' prices, on the assumption that the trade margin is very insignificant and the producers' and purchasers' prices are not much different and the values estimated for the unregistered sector are considered as in purchasers' prices.

By adding the corresponding input values given in the above two tables, an input-output flow table for the whole manufacturing sector(excluding electricity) for 1963, has been prepared in which the assumption that the input coefficients are the same for the registered and unregistered manufacturing, has been eliminated. This table is presented as Table 9.8. In this table the values of inputs of the sector 'Petroleum refineries and products of petroleum and coal' refer to the registered sector only.

The values of inter/intra industry demands and total production are given for the registered and unregistered sectors separately in Table 9.9 and Table 9.10<sup>1</sup>

The magnitude of error involved by assuming the large

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1 For the registered sector the industries which do repair work such as cycle repair, automobile repair etc. are not included. These industries are included in the unregistered sector.

scale sector's coefficients to the small scale sector has been evaluated. For this the input values have been separately estimated by multiplying the input coefficients of the large scale sector by the output values of the corresponding sector in the unregistered manufacturing activity. The values of intermediate demand for each industry obtained from this procedure have been compared with those obtained from the input-output table for the unregistered sector. These together with the differences in the two values and the percentage of the former to the latter are given in Table 9.11.

From this table it can be seen that the value of total intermediate demand is underestimated to the extent of Rs. 54366 lakhs by assuming the large scale sector's coefficients for the unregistered sector. Looking at the individual values, it appears that the values of intermediate demand for the products of basic industries like petroleum, iron and steel, machinery including electrical, rubber and electricity are overestimated if the coefficients of the large scale sector are applied to the unregistered sector. This is explained by the fact that the coefficients of inputs for the products of these industries are very much likely to be higher in all industries of the large scale sector than in the unregistered sector.

Appendix 'A' to THE INPUT-OUTPUT TABLE FOR THE UN-  
REGISTERED MANUFACTURING SECTOR-1963

PRODUCTS MANUFACTURED IN THE UNREGISTERED AND LARGE SCALE  
SECTORS FOR THE 3-DIGIT LEVEL OF CLASSIFICATION

A.S.I. Code number	Products manufactured in the	
(a)	Unregistered sector	Large scale sector
(a)	(b)	(c)
201 & 204	Salted & dried fish	Canned meat, canned fish, frozen fish.
202	Butter, cheese, ghee etc	Pasteurised milk, tinned milk powder, butter and cream, toned milk.
203	Pickles, sauces, jam & jelly, cashew nuts, dry fruits, canned fruits, & vegetables	Canned and bottled fruits, juices, pulps & vegetables, jams, jellies & marmalades, squashes.
205	Hand pounded rice, flour, parched grains etc,	Flour, rice and dal
206	Bread, biscuits, cakes etc.	Bread, biscuits, cakes etc.
207	Cane gur, palm gur and khandsari	Sugar, raw sugar, khandsari, cane gur
208 & 209	Non-hydrogenated edible oils, sweetmeats, snacks, confectionary	Hydrogenated and non-hydrogenated edible oils, tea, coffee, cashew nuts, condensed milk, confectionary, preserved vegetables in cold storage, salt, decorticated groundnut seeds
211, 12, 13	Country liquor	Country spirit, denatured and rectified spirit, Indian made foreign liquor, beer, ale.
214	Soda water, lemonade	Soda water, bottled sweetwater
220	Beedi, snuff	Beedi, cigars, cigarettes, snuff

contd....

Contd.

(a)	(b)	(c)
231	Handspun charka yarn, Khadi & handloom cloth, carpets & druggets, jari thred, brocade, shawls, lace goods and embroidery products.	Cotton yarn, Woolen yarn, silk and artsilk yarn, silk, artificial silk and woolen piece goods, hessain cloth, sacking bags, embroidered cloth, belting for machinery transmission, thread balls, carpets and rugs etc.
232	Banians, socks, sweaters, mufflers etc.	Banians, socks, sweaters, mufflers etc.
233	Ropes and twine from jute, hemp and mesta	Ropes and cordage from jute, hemp etc. & nylon ropes.
239	Coir yarn, coir products ginned & carded cotton	Ginned and carded cotton, cleaned and pressed wool, coir yarn, coir mats, artificial leather, linoleum, oil cloth, gas mantles, tents, furfelt.
241	Leather shoes and chappals (indigenous type)	Leather shoes and chappals (western type).
242	Leather repair work	NIL
243	Traditional garments, repair of umbrellas	Mens' clothing (mostly readymade shirts and bushshirts), umbrellas.
244	Pillow cases, tablecloths, newar, mattresses, quilts, and razais etc.	NIL
251, 252, 259	Sawn and planed wood, lacquerware, wooden toys and utensils, wood carving and artware, wooden boxes and packing cases, grass and rope mats, palm leaf and palmyra craft, bamboo baskets, broomsticks, photoframes etc., structural wooden goods such as beams, posts, doors, windows etc, cart-wheels.	Sawn and planed wood, plywood, tea-chests, flush doors, black-board, cases and crates for packing, door shutters, picture frames, cork products, wooden vehicle stock (body parts, rims spokes, hubs etc.).

contd...



contd.

(a)	(b)	(c)
260	Wooden furniture,metal furniture.	Metal furniture,wooden furniture.
271	Handmade paper,paper envelopes, kites,flowers toys,papier mache articles.	Paper,paper board,straw board, Newsprint.
280	Bound books,printed invitation cards, etc.	Newspapers and periodicals Books,currency notes, securities,greeting cards, invitation cards, etc.
291	Leather.	Leather.
293	Leather suitcases, pocket books, purses, saddlery,whips etc.	Suitcases,saddles,pickers etc.
300	Rubber footwear, vulcanising tyres and tubes (service).	Tyres and tubes, bubber belting, rubberised fabrics, rubber hoses,rubber canvas shoes and rubber boots.
311	Bonemeal, plastic toys, and buttons,synthetic resins,turpentine etc.	Ammonium sulphate,calcium ammonium nitrate,viscose staple fibre, soda ash, super phosphate, caustic soda, sulphuric acid, etc.
312,313,319	Matches,dyes,paints and colours, agarbathi, ayurvedic medicines, soap, etc.	Drugs and pharmaceuticals like penicillin, vitamin and other tablets, soap, matches paints and varnishes,de-oiled cakes.
321 & 329	NIL	Petroleum products and by-products,washed coal.
331	Firebricks and tiles	Firebricks and tiles, refractories, furnace lining bricks.
332	Glass bangles and glass beads.	Sheet and plate glass,bottles and jars,tumblers,chimneys, glass bangles.

contd...



contd.

(a)	(b)	(c)
333	Earthenware (pottery) crockery.	Insulators, washbasins, closets, crockery etc.
334	NIL	Portland cement clinker.
339	Lime, stone carving, clay toys, clay models stone utensils, chakia and chakki made of stone Cement jalis, statues, door frames and sanitary fittings.	Asbestos-cement corrugated sheets, mica, lime, grinding wheels, cement and cement concrete posts, poles and pipes.
341	Smelting of iron and steel.	Pig iron, iron and steel billets and slabs, bars and rods, castings light and heavy rails, iron pipes and tubes, sheets, plates, structurals for buildings etc.
342	Smelting of non-ferrous metals and alloys.	Aluminium ingots, aluminium strips and sheets, coils, discs, and circles, brass sheets and strips, silver bars and rods, etc.
350	Brass and bell-metal utensils, aluminium utensils, tin utensils, copper utensils etc., ploughshares, khurpis, kudals, iron buckets & utensils, locks and keys, tunics, cutlery, foundry, etc.	Tin boxes and containers, aluminium utensils, drums, bolts and nuts, strappings, and laminations, brass utensils, welding electrodes, tools like twist drills, milling cutters, threading taps, and dies, steel file, etc.
360	Small machine tools and machine parts, like sewing machine parts, repair work of agricultural implements.	Internal combustion engines, spinning frames, textile machinery and accessories, lathes and other machine tools, boiler and steam generators, other machinery.
370	Repair and service work of electrical goods; fans, batteries etc.	Electrical cables and wires, Telephones, electrical motors, Transformers, lamps, fans, batteries, etc.

contd...

contd.

(a)	(b)	(c)
381	Boats and barges	Deep sea cargo vessels, motor launches, sailing vessels, pontoons and barges.
382	Repair work of railroad equipments	Steam and diesel and electric locomotives, railway wagons, etc.
383 & 385	Cycle parts and accessories, such as saddles, seats, frame etc., repair of bicycles.	Bicycles, motor cycles, scooters, trucks, vans, pick-ups, trailers, utility vehicles.
384	Repair of automobiles	Repair of automobiles
386	NIL	Repair of aircrafts.
389	Bullock carts, wheelbarrows, hand-barrows, etc.	NIL
391	Scientific instruments like thermometers, etc.	Electricity meters, water meters, Indicating and recording devices, for temperature, pressure etc.
392	Repair of spectacles,	Spectacle frames, photographic paper, projectors, lenses, etc.
393	Repair of watches and clocks	Wrist watches, clocks and time-pieces.
394	Jewellery	Jewellery, nickel, cupro-nickel and bronze coins.
395	Sitar, tabla, harmonium tampura, veena etc.	Drums, cornets, alto horns and trombones, trumpets etc.
399	Sports goods, cowdung cake, lac bangles, conch shell and horn products, ivory products, slates and pencils, fountain pen parts, rubber stamps.	Fountain pens, pencils, plastic moulded goods, like combs, spoons etc., sports goods, crushed bones, etc.

TABLE 9.1

INPUT-OUTPUT FLOW TABLE FOR THE UNREGISTERED MANUFACTURING SECTOR - 1963  
(Values in Rs. '000)

A.S.I. code number	202	203	205	206	207	208 209	211 212 213	220	231	232	233	239	241	243	244	251 252 259	260	271	280	291	A.S.I. number		
0	40802	71256	149942		56923	921081	14301	428936	116153		34159	223097				251930				28907	0		
1	389	1899	7018	24011	8153	10640		22322	7634	1199	147	6313	846	1376		1099	1061	833	115	938	1		
201&204																				85874	201&204		
202																					202		
203																					203		
205	40733		79862	24971		50538															205		
206																					206		
207	14401	63867		118545		126345	134075														207		
208 ) 209 )				63492		48828															( 208 ( 209		
211 ) 212 ) 213 )							18575														( 211 ( 212 ( 213		
214																					214		
220																					220		
231								2219010	122217				334482	6013	1813						231		
232																					232		
233					373					389	26613										233		
239											135236										239		
241																					241		
242																					242		
243																					243		
244																					244		
251 ) 252 ) 259 )																49399	688502		39		( 251 ( 252 ( 259		
260																					260		
271	320	23402	2729	9124		79037		413	4036	5900			13111	3210		529	5797	42543	24038	449	271		
280																					280		
291																				888	515681	291	
293																					293		
300																					300		
311					249		13646		436806	26383	1960	5459			896						8614	311	
312 ) 313 ) 319 )			675	47096	1810	36898	3647		897							33873	31041	313	576	7207	( 312 ( 313 ( 319		
31&329	6		3229	274		760			1345	235			282	1032		907	910	104	460	5479	321&329		
331																					331		
332		24292					11197														332		
333					415																333		
334																					334		
339					83																132	4219	339
341																454						341	
342									55610							227				326		342	
350	686	27363	13388	1235	442	134894		845	4036	5213	363		7049	3553		12324	71244	292	1267	24054	350		
360																						360	
370																						370	
381																						381	
382																						( 382	
383 ) 385 )																						( 383 ( 385	
386																						386	
388																						388	
389																						389	
391																						391	
392																						392	
393																						393	
394																						394	
399																						399	
51	571	1549	46445	2195	2253	17839	2710		897	321			1974	15245		9224	9249	1363	720	6006	51		
U	19704		1184	206		15200	22852	827	40810	7428	130		261788	4585	1151	11568	41512	806	2198	322	U		
V	110908	123922	211112	51864	67495	457880	103551	924434	1397437	91122	49221	171177	609004	782788	11266	382563	1020398	22960	66207	121295	V		
G.O.	228582	337385	514909	343013	138196	1899920	326434	1377887	4484661	280646	86369	568697	1409735	1146271	19286	756092	1869914	69552	93966	292984	G.O.		

0 - Agriculture. 1 - Mining. 51 - Electricity. U - Unspecified. V - Value Added. G.O. - Gross Output.

TABLE 9.1 contd.

A.S.I. code number	293	300	311	312 313 319	331	332	333	339	341	350	360	370	383 385	384	389	393	394	399	Total Industry demand	A.S.I. code number	
0				2068	148302		47496	263303		2978									34720	2838734	0
1	41	284	1378	11201	152640	22436	20814	162132	431	130833	633	902			18	74	29530	1563	651139	1	
201 & 204				213															86089	2014304	
202																					202
203																					203
205																					196104
206																					206
207																					457233
208 )																					457233
209 )			20498	161677																	294493
211 )																					294493
212 )																					18373
213 )																					18373
214																					214
220																					220
231																					2683343
232																					232
233																					64233
239																					133330
241																					241
242																					242
243																					243
244																					244
251 )																					251
252 )				14906						372	2812	485									252
259 )															438						259
260																					92130
260																					849283
271	18		280	19817		231	336	1904	133	930	3992	282	423	1612	11	1304	2922	4169		231844	271
280																					280
291	13343																				3684
291																					537794
293																					293
300		3334																			4784
300																					8318
311		1948	46020	46138		165				9678	1271	1420					3433	15773		618383	311
312 )																					312
313 )				39731		1817		2935		3908	3084	214									20699
319 )																					221743
321 )																					321
329 )	13	71	72	129		22	187		79	2419	4989	138	4335	7283	2	366	2783	805		38800	
331										4094		90									4184
332						30652						282									66423
333																					413
334								75840													75840
339												3990									9398
341									9787	334308	186872	1443					16070				749134
342										339819	30389	10494						2093390	6016		2734271
350	116	111	601	1766	4137	187	1138	12772		23496	15603	2335	75787	2678	442	303	13635	17242		483157	350
360											15875										15875
370												908	29960								30866
381																					381
382																					382
383 )																					383
385 )													61618	64687							126305
386																					386
388																					388
389																					389
391																					391
392																					392
393																			18277		18277
394																					394
399																					399
SI	95	757	1323	474		121			79	3722	16873	1972			11	1510	31966	4993		182479	SI
U	8038	1315	5572	1308		727	9043	1349		39919	39279	7991	4362	2996	120	4193	67201	14400		636304	U
V	21293	13180	27634	111145	228986	53562	294451	271153	6330	326133	584565	30497	117816	147714	1200	30976	2606697	231094		12321440	V
G.O.	43197	21020	103578	430795	534265	110840	373685	793309	16839	1881101	907147	112715	264341	226972	2242	37203	4869603	473874		27000774	G.O.

0 - Agriculture. 1 - Mining. SI - Electricity. V - Value Added. U - Unspecified. G.O. - Gross Output.

TABLE 9.2

INPUT-OUTPUT COEFFICIENT TABLE FOR THE UNREGISTERED MANUFACTURING SECTOR - 1963

(Values corrected to 4<sup>th</sup> decimal)

A.S.I. code number	202	203	205	206	207	208 209	211 212 213	220	231	232	233	239	241	243	244	251 252 259	260	271	280	A.S.I. code number
0	1783	2112	2912		4119	4848	0435	3113	0259		3955	3957				3332				0
1	0017	0055	0136	0700	0590	0056		0162	0017	0046	0017	0111	0006	0012		0014	0049	0120	0012	1
201 & 204																				201 & 204
202																				202
203																				203
205	1782		1551	0728		0266														205
206																				206
207	0630	1893		3456		0663	4107													207
208 & 209				1851		0257														208 & 209
211,212,213							0569													211,212,213
214																				214
220																				220
231								4948	4689					2918	3118	0024				231
232																				232
233					0027						0045	0468								233
239												2378								239
241																				241
242																				242
243																				243
244																				244
251,252,259																0496	3482		0004	251, 252,259
260																				260
271	0014	0664	0053	0266		0416	0343	0003	0009	0211			0093	0028		0007	0031	6117	2307	271
280																				280
291										0084			3658							291
293																				293
300																				300
311					0018		0418		0974	1010	0227	0095			0444					311
312,313,319		0020		1373	0131	0194	0173		0002							0448	0166	0074	0060	312,313,319
321 & 329	0003		0064	0008		0004			0003	0009			0002	0009		0012	0006	0015	0048	321 & 329
331																				331
332		0720																		332
333						0030														333
334																				334
339						0006												0019		339
341																0006				341
342									0124							0003			0034	342
350	0030	0817	0260	0036	0032	0710		0007	0009	0200	0042		0050	0031		0163	0381	0042	0132	350
360																				360
370																				370
381																				381
382																				382
383 & 385																				383 & 385
384																				384
386																				386
389																				389
391																				391
392																				392
393																				393
394																				394
399																				399
51	0025	0046	0902	0064	0163	0094	0083		0002	0020			0014	0133		0122	0005	0196	0075	51
U	0862		0023	0006		0080	0700	0004	0091	0285	0015		1857	0040	0597	0153	0222	0116	0229	U
V	4852	3673	4099	1512	4884	2410	3172	6709	3562	3496	3699	3010	4320	6829	5841	3060	3458	3301	6899	V

TABLE 9.2 contd.

A.S.I. code number	291	293	300	311	312 313 319	331	332	333	339	341	350	360	370	383 385	384	389	393	394	399	A.S.I. code number	
0	0973				0048	2779		1271	3343		0016								0733	0	
1	0032	0009	0135	0133	0260	2857	2057	0557	2044	0236	0811	0007	0080			0082		0061	0033	1	
201 & 204	2931				0005															201 & 204	
202																				202	
203																				203	
205																				205	
206																				206	
207																				207	
208 & 209				1979	3733															208 & 209	
211, 212, 213																				211, 212, 213	
214																				214	
220																				220	
231																				231	
232																				232	
233																				233	
239																				239	
241																				241	
242																				242	
243																				243	
244																				244	
251, 252, 259					0346						0002	0031	0043			1935		1945		251, 252, 259	
260																				260	
271	0016	0004		0027	0460		0021	0009	0024	0079	0005	0044	0025	0016	0071	0051	0263	0006	0088	271	
280																			0120	280	
291		3439																		291	
293																				293	
300			1681																0101	300	
311	0294		0746	4443	1071		0015				0052	0014	0126					0005	0333	311	
312, 313, 319	0246				1387		0165		0037		0021	0094	0019						0437	312, 313, 319	
321 & 329	0187	0003	0034	0007	0003		0002	0005		0047	0013	0055	0014	0164	0321	0008	0077	0005	0017	321 & 329	
331																				331	
332							2783						0025							332	
333																				333	
334									0936											334	
339	0144												0354					0002		339	
341										5812	28	2060	0128					0033		341	
342												0335	0931					4303	0127	342	
350	0821	0030	0053	0058	0041	0078	0017	0031	0161			0172	0225	2867	0118	1972	0053	0028	0364	350	
360												0175								360	
370												0010	2658							370	
381																				381	
382																				382	
383 & 385															2331	2830				383 & 385	
384																				384	
386																				386	
389																				389	
391																				391	
392																				392	
393																			3195	393	
394																				394	
399																				399	
SI	0205	0021	0360	0147	0011		0011			0047	0020	0186	0175				0048	0264	0066	0077	SI
U	0011	1783	0721	0538	0035		0066	0242	0017		0193	0433	0709	0165	0132	0531	0733	0138	0304	U	
V	4140	4711	6270	2668	2580	4286	4863	7885	3418	3739	2827	6444	4480	4457	6308	5353	5415	5353	5301	V	

0 - Agriculture. 1 - Mining. SI - Electricity. U - Unspecified. V - Value Added.

TABLE 9.3

INTER/INTRA INDUSTRY DEMANDS AND TOTAL PRODUCTION  
IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963

A.S.I. No. of industry.	Inter/Intra industry demands in Rs. '000	Total Production Rs. '000
(a)	(b)	(c)
201 & 204	86089	N.A.
202	nil	228582
203	nil	337385
205	196104	514909
206	nil	343013
207	457233	138196
208 & 209	294495	1899920
211,212,213	18573	326454
214	nil	N.A.
220	nil	1377887
231	2685243	4484661
232	nil	260646
233	64235	86369
239	133530	568697
241	nil	1409735
242	nil	N.A.
243	nil	1146271
244	nil	19286
251,252,259	849283	756092
260	nil	1869914
271	251844	69552
280	nil	95966
291	537794	292984
293	nil	45197
300	8318	21020
311	618383	103578

contd...

Table 9.3 contd.

(a)	(b)	(c)
312,313,319	221745	430795
321 & 329	38800	N.A.
331	4184	534265
332	66423	110140
333	415	373685
334	75840	nil
339	9398	793309
341	749134	16839
342	2758271	N.A.
350	483157	1861101
360	15875	907147
370	30868	112715
381	nil	nil
382	nil	N.A.
383 & 385	126305	264341
384	nil	226972
386	nil	N.A.
389	nil	2242
391	nil	nil
392	nil	N.A.
393	18277	57203
394	nil	4869603
395 & 399	nil	473674
Agriculture	2838754	Not covered
Mining	651159	Not covered
Electricity	182479	Not covered
Unspecified	636504	Not covered



TABLE 9.4  
 COEFFICIENTS OF INPUTS IN THE REGISTERED AND UNREGISTERED MANUFACTURING SECTORS FOR 1963  
 (Values rounded to 4th decimal)

A.S.I. code number	Name of Industry	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	311.01	334	341.01	342
0	Agriculture	<u>3839</u> <u>3582</u>	<u>0192</u> <u>0435</u>	<u>2646</u> <u>3113</u>	<u>0357</u> <u>0623</u>	<u>0053</u> <u>3332</u>	<u>2479</u> <u>0000</u>	<u>0121</u> <u>0634</u>			<u>0334</u> <u>0843</u>	<u>1468</u> <u>0061</u>	<u>0267</u> <u>0061</u>		<u>0060</u> <u>2346</u>	<u>0001</u> <u>0016</u>	<u>0001</u> <u>0016</u>	<u>0058</u> <u>0005</u>	<u>0005</u> <u>0073</u>	<u>0073</u> <u>0019</u>	<u>0019</u> <u>0022</u>			<u>0014</u> <u>0014</u>	<u>0003</u> <u>0003</u>
11*	Coal etc.	<u>0051</u> <u>0320</u>	<u>0215</u> <u>0162</u>	<u>0007</u> <u>0028</u>	<u>0067</u> <u>0028</u>	<u>0017</u> <u>0002</u>	<u>0550</u> <u>0014</u>	<u>0003</u> <u>0049</u>	<u>0297</u> <u>0120</u>	<u>0001</u> <u>0022</u>	<u>0008</u> <u>0029</u>	<u>0058</u> <u>0135</u>	<u>0184</u> <u>0249</u>	<u>0590</u> <u>0000</u>	<u>0667</u> <u>1979</u>	<u>0011</u> <u>0256</u>	<u>0012</u> <u>0811</u>	<u>0005</u> <u>0007</u>	<u>0006</u> <u>0080</u>	<u>0009</u> <u>0007</u>	<u>0007</u> <u>1484</u>	<u>1810</u> <u>0058</u>	<u>0849</u> <u>0058</u>	<u>0165</u> <u>0058</u>	
12*	Iron ore												<u>0018</u>		<u>0038</u>		<u>0002</u>	<u>0015</u>		<u>0017</u>			<u>0509</u>	<u>0223</u>	
13*	Crude oil											<u>0013</u>	<u>0893</u>								<u>0003</u>				
20	Food Industries	<u>1378</u> <u>1825</u>	<u>0680</u> <u>4107</u>	<u>0011</u>	<u>0033</u>	<u>1126</u>	<u>0021</u>		<u>0088</u>		<u>2447</u> <u>2332</u>	<u>0642</u> <u>3245</u>		<u>0003</u>			<u>0001</u>	<u>0001</u>			<u>0164</u> <u>6242</u>	<u>0581</u> <u>6242</u>	<u>0150</u>		
21	Beverages	<u>0004</u>	<u>0311</u> <u>0362</u>										<u>0035</u>												
22	Tobacco manufactures			<u>0353</u>																					
23	Textiles	<u>0073</u> <u>0001</u>	<u>0008</u>	<u>0008</u>	<u>1071</u> <u>4436</u>	<u>1902</u> <u>1322</u>	<u>0005</u> <u>0024</u>	<u>0002</u>	<u>0216</u>	<u>0022</u>	<u>0001</u>	<u>0439</u>	<u>0058</u>	<u>0001</u>	<u>0024</u>	<u>0001</u>	<u>0010</u>	<u>0018</u>	<u>0062</u>		<u>0034</u>	<u>0393</u>	<u>0849</u>	<u>0006</u>	<u>0004</u>
24	Apparel				<u>0002</u>	<u>0007</u>																			
25	Wood Products	<u>0078</u>	<u>0021</u>	<u>0039</u>	<u>0009</u>	<u>0078</u>	<u>0250</u> <u>0626</u>	<u>0169</u> <u>2682</u>	<u>0014</u>	<u>0010</u> <u>0004</u>	<u>0001</u>	<u>0023</u>	<u>0075</u> <u>0221</u>		<u>0015</u>	<u>0001</u>	<u>0016</u> <u>0002</u>	<u>0087</u> <u>0031</u>	<u>0099</u> <u>0043</u>	<u>0009</u> <u>0002</u>	<u>0060</u> <u>0171</u>			<u>0034</u>	<u>0004</u>
26	Furniture/Fixtures							<u>0009</u>											<u>0023</u>		<u>0002</u>				
27	Paper	<u>0008</u> <u>0328</u>	<u>0007</u>	<u>0468</u> <u>0003</u>	<u>0039</u> <u>0017</u>	<u>0106</u> <u>0063</u>	<u>0007</u>	<u>0015</u> <u>0031</u>	<u>0815</u> <u>8117</u>	<u>2759</u> <u>2807</u>		<u>0019</u>	<u>0167</u> <u>0386</u>		<u>0020</u> <u>0014</u>	<u>0079</u>	<u>0015</u> <u>0005</u>	<u>0029</u> <u>0044</u>	<u>0037</u> <u>0023</u>	<u>0001</u> <u>0051</u>	<u>0116</u> <u>0016</u>	<u>0004</u> <u>0046</u>		<u>0004</u>	<u>0057</u>
28	Printing								<u>0019</u>																
29	Leather Products				<u>0003</u> <u>0002</u>	<u>0608</u> <u>2002</u>		<u>0001</u>		<u>0002</u>	<u>0039</u> <u>0460</u>	<u>0070</u>	<u>0001</u>								<u>0005</u> <u>0010</u>				
30	Rubber Products				<u>0068</u>						<u>1095</u> <u>1681</u>							<u>0004</u>	<u>0045</u>	<u>0225</u>	<u>0002</u>				
31	Chemicals	<u>0113</u> <u>0240</u>	<u>0358</u> <u>0291</u>	<u>0027</u>	<u>0303</u> <u>0873</u>	<u>0018</u> <u>0003</u>	<u>0293</u> <u>0448</u>	<u>0380</u> <u>0184</u>	<u>0484</u> <u>0074</u>	<u>0097</u> <u>0060</u>	<u>0045</u> <u>0468</u>	<u>0922</u> <u>0756</u>	<u>1018</u> <u>2833</u>	<u>0001</u>	<u>0196</u> <u>0007</u>	<u>0009</u>	<u>0050</u> <u>0073</u>	<u>0054</u> <u>0048</u>	<u>0157</u> <u>0143</u>	<u>0065</u>	<u>0531</u> <u>0072</u>	<u>0278</u>		<u>0025</u>	<u>0078</u>
32	Petroleum Products	<u>0067</u> <u>0013</u>	<u>0081</u>	<u>0019</u>	<u>0058</u> <u>0003</u>	<u>0019</u> <u>0003</u>	<u>0068</u> <u>0012</u>	<u>0043</u> <u>0006</u>	<u>0079</u> <u>0013</u>	<u>0013</u> <u>0048</u>	<u>0004</u> <u>0162</u>	<u>0048</u> <u>0034</u>	<u>0127</u> <u>0006</u>	<u>0030</u>	<u>0134</u> <u>0001</u>	<u>0039</u> <u>0047</u>	<u>0054</u> <u>0013</u>	<u>0077</u> <u>0033</u>	<u>0066</u> <u>0014</u>	<u>0030</u> <u>0236</u>	<u>0026</u> <u>0007</u>	<u>0092</u>	<u>0120</u>	<u>0151</u>	<u>0193</u>
33	Non-metallic minerals	<u>0009</u> <u>0072</u>	<u>1024</u> <u>0343</u>					<u>0012</u>	<u>0082</u> <u>0019</u>		<u>0125</u>		<u>0118</u>		<u>0190</u> <u>0160</u>	<u>0004</u>	<u>0002</u>	<u>0002</u>	<u>0032</u> <u>0033</u>	<u>0007</u> <u>0002</u>			<u>0130</u>	<u>0010</u>	
34	Iron and Steel				<u>0006</u>		<u>0126</u>					<u>0003</u>			<u>0022</u>	<u>0139</u>	<u>0441</u>	<u>0058</u>	<u>0172</u>	<u>0007</u>			<u>0106</u>	<u>0003</u>	
35	Metal Products	<u>0120</u> <u>0313</u>	<u>0206</u>	<u>0017</u> <u>0007</u>	<u>0001</u> <u>0018</u>	<u>0025</u> <u>0061</u>	<u>0001</u> <u>0183</u>	<u>0006</u> <u>0081</u>	<u>0009</u> <u>0042</u>	<u>0009</u> <u>0132</u>	<u>0070</u> <u>0715</u>	<u>0108</u> <u>0023</u>	<u>0005</u> <u>0053</u>	<u>0004</u> <u>0101</u>	<u>0013</u>	<u>0001</u> <u>0137</u>	<u>0086</u> <u>0172</u>	<u>0048</u> <u>0223</u>	<u>0108</u> <u>1999</u>	<u>0078</u> <u>0058</u>	<u>0023</u>			<u>0022</u>	
36	Non-electrical machinery				<u>0037</u>	<u>0001</u>												<u>0191</u> <u>0173</u>	<u>0062</u>	<u>0081</u>					
37	Electrical machinery							<u>0021</u>										<u>0074</u> <u>0040</u>	<u>0385</u> <u>2658</u>	<u>0027</u>	<u>0068</u>				
38	Transport equipment							<u>0002</u>										<u>0036</u>		<u>0599</u> <u>2552</u>					
39	Misc. manufacturing				<u>0034</u>				<u>0003</u>				<u>0001</u>					<u>0002</u>	<u>0005</u>		<u>0443</u> <u>0034</u>	<u>0019</u>			
311.01	Fertilizers		<u>0006</u>																		<u>0004</u>	<u>0366</u> <u>2660</u>			
334	Cement				<u>0001</u>													<u>0167</u> <u>0412</u>							
341.01	Basic Iron and Steel	<u>0004</u>			<u>0014</u> <u>0103</u>	<u>0401</u>	<u>0062</u> <u>0005</u>	<u>1302</u>	<u>0003</u>	<u>0006</u>		<u>0033</u>		<u>0030</u>	<u>0452</u> <u>5812</u>	<u>2115</u> <u>2872</u>	<u>0776</u> <u>2060</u>	<u>0371</u> <u>0128</u>	<u>1015</u>	<u>0050</u> <u>0030</u>			<u>1088</u>	<u>0032</u>	
342	Non-ferrous metals	<u>0001</u>		<u>0075</u>		<u>0022</u>	<u>0004</u>	<u>0104</u>		<u>0036</u>		<u>0007</u>	<u>0032</u>		<u>0013</u>	<u>0030</u>	<u>0634</u> <u>3008</u>	<u>0185</u> <u>0231</u>	<u>1125</u> <u>0231</u>	<u>0181</u>	<u>0366</u> <u>3891</u>			<u>0067</u>	<u>2956</u>
41	Electricity	<u>0035</u> <u>0203</u>	<u>0088</u> <u>0083</u>	<u>0010</u>	<u>0135</u> <u>0003</u>	<u>0049</u> <u>0067</u>	<u>0046</u> <u>0122</u>	<u>0042</u> <u>0028</u>	<u>0182</u> <u>0126</u>	<u>0042</u> <u>0073</u>	<u>0019</u> <u>0181</u>	<u>0088</u> <u>0360</u>	<u>0120</u> <u>0037</u>	<u>0021</u>	<u>0065</u> <u>0001</u>	<u>0041</u> <u>0047</u>	<u>0045</u> <u>0020</u>	<u>0066</u> <u>0126</u>	<u>0053</u> <u>0173</u>	<u>0036</u>	<u>0044</u> <u>0070</u>	<u>0599</u> <u>0046</u>	<u>0284</u>	<u>0130</u>	<u>0237</u>
4 & 72	Railway & Road Transport	<u>0285</u>		<u>0136</u>	<u>0087</u>				<u>0070</u>				<u>0130</u>	<u>1084</u>	<u>0958</u>	<u>0421</u>		<u>0496</u>			<u>0190</u>	<u>1211</u>	<u>1036</u>	<u>0437</u>	
40	Construction																								
U	Unspecified	<u>0274</u> <u>0105</u>	<u>0419</u> <u>0700</u>	<u>0266</u> <u>0006</u>	<u>0279</u> <u>0082</u>	<u>0773</u> <u>1040</u>	<u>0421</u> <u>0153</u>	<u>0370</u> <u>0222</u>	<u>0399</u> <u>0116</u>	<u>0180</u> <u>0229</u>	<u>0045</u> <u>0248</u>	<u>0366</u> <u>0721</u>	<u>0675</u> <u>0140</u>	<u>0253</u>	<u>0229</u> <u>0061</u>	<u>0056</u>	<u>0287</u> <u>0192</u>	<u>1284</u> <u>0433</u>	<u>0514</u> <u>0709</u>	<u>0779</u> <u>0152</u>	<u>0665</u> <u>0152</u>	<u>0367</u>	<u>0346</u>	<u>0633</u>	<u>0231</u>
T	Trade and Service	<u>1903</u>	<u>3685</u>	<u>2724</u>	<u>3823</u>	<u>1718</u>	<u>2449</u>	<u>3830</u>	<u>3147</u>	<u>4559</u>	<u>0940</u>	<u>1484</u>	<u>1375</u>	<u>6019</u>	<u>1398</u>	<u>2721</u>	<u>3930</u>	<u>2058</u>	<u>3247</u>	<u>3511</u>	<u>4204</u>	<u>0194</u>	<u>1317</u>	<u>1791</u>	<u>2693</u>

\* Coefficients for the Unregistered manufacturing sector are underlined.

TABLE 9.4(a)

COEFFICIENTS OF VALUE ADDED IN THE REGISTERED  
AND UNREGISTERED MANUFACTURING SECTORS - 1963

*(Values corrected to 4<sup>th</sup> decimal)*

A.S.I. Code number	Coefficients of Value Added	
	Reg. sector	Un-reg. sector
20	1758	2955
21	2719	3172
22	3194	6709
23	3681	3535
24	2974	5448
25	3331	5060
26	3247	5458
27	3464	3301
28	2285	6899
29	6698	4216
30	3787	6270
31	4860	2695
32	1103	N.A.
33	5767	4682
34	6140	3759
35	2691	2828
36	3998	6444
37	3584	4480
38	3059	5404
39	3080	5349
311.01	5253	0976
334	3909	nil
341.01	3465	nil
342	2610	N.A.

TABLE 9.3  
INPUT-OUTPUT TABLE FOR THE REGISTERED MANUFACTURING SECTOR - 1963  
 (Values in Rs. '000)

A.S.I. code number	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	311.01	334	341.01	342
0	5860600	5133	540485	780317	1435	147664	3983	99824		12903	207184	133093		10044	240	325	17739	1501	33005	2816	1292		7524	419
11+	77836	5771	1430	146446	460	32806	99	45333	167	319	8186	76731	178889	111660	2642	3895	1529	1802	4316	1037	87139	210241	456272	23034
12+												8968			9128		612	4505		2519			273548	31130
13+												6477	270760							445				
20	2103649	18231	2247	72130	30490	1253		13432		97448		319878					306	300		24303	34116	17423		
21	6106	8347										17439												
22			72105																					
23	111441	215	1634	2340950	51502	298	66	32969	3668	40	64780	28899	303	4018	240	3246	5503	18619		5038	34938	98616	3224	558
24				4371	189																			
25	119074	564	7966	19672	2112	14912	5563	2137	1667	40	3246	37369		2311	240	5194	26609	29730	4316	8891				3350
26							296											6907		296				
27	12213	188	93396	83245	2870		494	124399	460070		2688	83208		3348		4869	8870	11111	479	17190		465		7957
28									3168															
29				6557	16463				333	1533	9879	498									741			
30					1841		33				134541						1223	13514	107893					
31	172505	9609	5515	662286	487	17476	12309	73876	16175	2588	130125	307221	303	32812	2162	16230	16516	47148	31169	78690	16324		13436	10889
32	102282	2174	3881	126774	514	4056	1415	12058	2168	199	6774	63278	9096	25781	9368	17528	23550	19820	23976	3853	3402	13939	81151	27222
33	13739	27485					395	12516				38794		31807	961		612	9610		1037			69865	1396
34					162		4148				423				3284	45120	134880	17418	82478	1037			56967	419
35	183191	5529	3472	2186		1491	33	916		358	9879	53811	1516	670	3123	325	26303	14415	51789	11359				3071
36				80873	27												58417	18619	38842					
37							691										22633	115619	12947	10077				
38							66											11011		287236				
39					1462				684			498					612	1501		65649	1116			
311.01		148										2989								593	21491			
334				2186										31305										
341.01	6106			30601	10858	3698	49443	458	1000		4657			8070	108772	686532	237339	111414	486719	7410			586717	4467
342	1527		15320		596		3423				988	15944		2176	7206	205797	56582	337847	86794	54238			36007	412651
51	53431	1823	2043	293078	1327	2744	1382	27780	7004	737	12420	59790	6367	10381	9848	14607	20186	15916	17263	6520	32824	32988	69865	33085
71 & 72	433080		27780	190161				10684				64773	328672	160375	101126		151701				11157	140664	556771	63796
40																								
U	418287	11246	54334	609827	20931	25111	12180	60902	30015	1792	51655	336320	76710	33336	13451	93161	383535	154359	373551	98547	21550	40190	340189	32247
T	2903111	98907	536417	8356166	46520	148074	129368	480347	750225	13540	209442	643097	1824977	234034	653595	1275684	629438	975102	1683616	622998	11391	152976	962525	375937



TABLE 9.7

OUTPUT AT PRODUCERS' PRICES, PURCHASERS' / PRODUCERS' PRICE RATIO,  
AND OUTPUT AT PURCHASERS' PRICES FOR THE REGISTERED SECTOR -1963

A.S.I.Code number	Output in producers prices.Rs '000	Price ratio	Output in purchasers prices.Rs '000
(a)	(b)	(c)	(d)
20	11598507	1.3162	15265955
21	155777	1.7230	268404
22	1402340	1.4566	2042648
23	13160895	1.6608	21857614
24	206105	1.3138	270781
25	393862	1.5144	596465
26	183643	1.7925	329180
27	1003659	1.5208	1526365
28	833763	2.0000	1667526
29	338375	1.1769	398233
30	1104591	1.2777	1411336
31	3949681	1.2615	4982523
32	751078	4.0369	3032027
33	1132348	1.4784	1674063
34	1629054	1.4745	2402040
35	1810887	1.7925	3246015
36	2092709	1.4615	3058494
37	1863650	1.6114	3003086
38	2859428	1.6770	4795261
39	789178	1.8778	1481918
311.01	465470	1.2615	587190
334	785682	1.4784	1161552
341.01	3644784	1.4745	5374234
342	946747	1.4745	1395978

TABLE 9.8  
 INPUT-OUTPUT TABLE FOR THE MANUFACTURING (REGISTERED AND UNREGISTERED) SECTOR -1963  
 (Values in Rs. '000)

A.S.I. code number	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	311.01	334	341.01	342
0	7100604	19354	969421	1154526	1435	399794	3983	99824		41410	207184	135101		471245	240	3303	17739	1501	35005	37536	1292		7524	419
11+	129926	5771	23752	161729	2682	33865	1160	46168	282	1298	8470	89310	178889	469922	3073	154830	2164	2704	4334	32204	87139	210241	456272	23094
12+												8968			9128		612	4305		2519			273548	31130
13+												6477	270760							445				
20	2735231	152326	2247	72130	30490	1253		13432		183322		483608		502			306	300		24308	52783	17423		
21	6106	26022										17439												
22			72105																					
23	111814	215	1634	4844417	391997	2113	66	32969	3668	40	64780	28899	303	4018	240	3246	5505	18619		5038	34938	98616	3224	558
24				4371	189																			
25	119074	564	7966	19672	2112	64471	694065	2137	1706	40	3246	52275		2511	240	5566	29421	30215	4754	101021				3350
26							296											6907		296				
27	125825	188	96009	94781	19191	529	6291	166944	484128	487	2681	103168		5819	133	5799	12862	11393	2525	25785	137	465		7957
28									3168															
29				7443	532144				333	17096	9879	498									6425			
30				1841		33					158075						1223	13514	107893	4784				
31	259193	28902	5515	1133733	1343	51349	43550	74391	16751	18409	131693	651183	303	37729	2162	29816	20871	48782	31169	117597	16324		13436	10889
32	106613	2174	3881	128354	1828	4963	2325	12162	2628	5651	6845	63479	9096	25990	9447	19947	28339	19978	35598	7807	5402	13939	81151	27222
33	38529	38682					395	12648		4219		58794		62459	961	4094	612	13972	82478	2011			69865	1396
34				162			4148				423				5284	45120	134880	17418		1037			56967	419
35	361399	5529	4437	11798	10602	12093	71277	1208	1267	24548	16835	56109	1516	18924	3123	25821	41906	16950	130696	42739	69			3071
36				80873	27												74292	18619	38842					
37							691										23541	143579	12947	10077				
38							66										11011		413541					
39					1462				884			498					612	1501		83926	1116			
311.01		148										2989								593	29438			
334				2186											107145									
341.01	6106			30601	10858	4152	49443	458	1000		4657			8370	118559	1221040	424211	112857	486719	23480			584717	4467
342	1527		15320	55610	596	227	3423		326		988	15944		2176	7206	765616	86977	348341	86794	2155644			36007	412651
51	124303	4535	2043	296496	18546	11968	10631	29143	7724	6854	13177	61630	6367	11002	9927	18329	37039	17888	17274	44391	32961	32988	69865	33085
71 & 72	433080		27780	190161				10684				64773	328672	160375	101126		151701				11157	140664	556771	63796
40																								
U	454581	34098	55161	658195	288455	36679	53692	61708	32213	10172	53170	343400	76710	49455	13451	129080	422814	162330	381029	184341	21550	40190	340189	32247
T	2905111	98907	556417	8356166	46520	146074	129368	480347	760225	13540	209442	685097	1824977	234034	653595	1275684	629438	975102	1683616	622998	11391	152976	962525	375937

TABLE 9.9

**INTER/INTRA INDUSTRY DEMANDS AND TOTAL PRODUCTION**  
**IN THE REGISTERED MANUFACTURING SECTOR FOR 1963**

A.S.I.Code number	Inter/Intra Industry Demands Rs. '000	Total Production Rs. '000
(a)	(b)	(c)
20	2735728	15265955
21	31892	268404
22	92105	2042648
23	2810464	21857614
24	4560	270781
25	295163	596465
26	7499	329180
27	921253	1526365
28	3168	1667526
29	36024	398233
30	279045	1411336
31	1875748	4982523
32	577123	3032027
33	228217	1674063
34	348336	2402040
35	372121	3246015
36	196778	3058494
37	161967	3003086
38	298313	4795261
39	71722	1481918
311.01	25221	587190
334	33491	1161552
341.01	2342561	5374234
342	1237096	1395978
51	1178057	Not covered
Agriculture	7869751	Not covered
Mining	2121827	Not covered
Unspecified	3448143	Not covered

TABLE 9.10

INTER/INTRA INDUSTRY DEMANDS AND TOTAL PRODUCTION  
IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963

A.S.I. Code number	Inter/Intra Industry Demands Rs. '000	Total Production Rs. '000
(a)	(b)	(c)
20	1033921	3462005
21	18575	326454
22	nil	1377887
23	2883008	5400373
24	nil	2575292
25	849283	756092
26	nil	1869914
27	251844	69552
28	nil	95966
29	537794	338181
30	8318	21020
31	840128	504503
32	38800	N.A.
33	80420	1811399
34	nil	16839
35	483157	1861101
36	15875	907147
37	30868	112715
38	126305	493555
39	18277	5400480
311.01	7947	29870
334	75840	nil
341.01	749134	nil
342	2758271	N.A.
51	182479	Not covered
Agriculture	2838754	Not covered
Mining	651159	Not covered
Unspecified	636504	Not covered



TABLE 9.11

THE INTER/INTRA INDUSTRY DEMANDS IN THE UNREGISTERED SECTOR  
COMPARED WITH THOSE OBTAINED BY APPLYING INPUT COEFFICIENTS  
OF THE LARGE SCALE SECTOR TO THE UNREGISTERED SECTOR.

A.S.I. code No.	Inter/Intra Industry Demands Rs. '000		Difference (b)-(c)	% $\frac{(c) \times 100}{(b)}$
	Actual	Based on large scale sector coefficients		
(a)	(b)	(c)	(d)	(e)
20	1033921	1018737	15184	98.53
21	18575	13304	5271	71.62
22	N11	48639	- 48639	---
23	2883008	1139968	1743040	39.54
24	N11	2883	- 2883	---
25	849283	160552	688731	18.90
26	N11	3022	- 3022	---
27	251844	234349	17495	93.05
28	N11	182	- 182	---
29	537794	162620	375174	30.24
30	8318	31789	- 23471	382.17
31	840128	717701	122427	85.43
32	38800	157777	-118977	406.64
33	80420	82314	- 1894	102.35
34	N11	94124	- 94124	---
35	483157	117407	365750	24.30
36	15875	42261	- 26386	266.21
37	30868	53034	- 22166	171.81
38	126305	33204	93101	26.29
39	18277	253541	-235264	1387.21
311.01	7947	3663	4284	46.09
334	75840	31966	43874	42.15
341.01	749134	801899	- 52765	107.04
342	2758271	551066	2207205	19.98
51	182479	192231	- 9752	105.34

CONTD...

Table 9.11 contd.

	(a)	(b)	(c)	(d)	(e)
Agriculture		2838754	2178155	660599	76.73
Mining		651159	305839	345320	46.97
Unspecified		636504	1247815	-611311	196.04
<b>Total</b>		<b>15116661</b>	<b>9680042</b>	<b>5436619</b>	<b>64.03</b>

## CHAPTER 10

### VALUE ADDED IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963 A COMPARISON WITH NATIONAL INCOME ESTIMATES

The input-output table for the unregistered manufacturing sector, as has been explained in the preceding chapters, is based on data available from various sources the reliability of which is not known. In the preparation of the table a number of assumptions have also been made. Hence it is necessary to examine as to what reliability can be placed on these estimates. The only official source with which these estimates can be compared is the National Income Estimates.

The estimates of value added obtained from an input-output table correspond to the national income. Hence the value added estimated for the unregistered manufacturing sector can be compared with the National Income Estimates given for the small scale manufacturing. The definition of small scale manufacturing adopted for purposes of national income estimates conforms to that of the unregistered sector. It may be stressed that the estimate of national income for the small scale manufacturing itself has been based on a number of individual studies and also a large number of assumptions are made. As such any deviation from these figures need not mean that the estimates obtained in the present study are wrong. However, as that is the only source with which a comparison can be made, it is thought necessary to

compare and contrast the two figures.

In the national income estimates, the small scale manufacturing has been divided into seven broad industry groups.<sup>1</sup>

They are:

- (i) Textiles, tailoring and leather footwear,
- (ii) Leather and leather products except leather footwear,
- (iii) Wood, glass, stone and ceramics,
- (iv) Metal manufacturing and engineering,
- (v) Chemicals and chemical products,
- (vi) Food, drink and tobacco,
- and (vii) Other industries.

The methodology adopted in the national income estimates to obtain the gross national product originating from these industry groups in small scale manufacturing is explained below.

Estimates were made of the number of persons employed in each of these industry groups. The employment was obtained for household and non-household sectors separately. The employment in the non-household sector of the small scale manufacturing was obtained by deducting the employment in the census and the sample sectors given in the A.S.I. reports of 1961 from the employment in the total non-household sector given in the Census of India, 1961. Employment in the household sector was also taken from the Census of India, 1961. Adjustments were made to make the employment given in the Census refer to first October 1960 by applying

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<sup>1</sup> Brochure on Revised Series of National Product for 1960-61 to 1964-65, Chapter VII, Small scale Manufacturing, pages 32-36; Central Statistical Organisation, Government of India.

the rate of growth of population during 1951-61. Adjustments were also made in the household sector employment to take into account the number of persons engaged in the household industry as secondary occupation.

Gross National Product per worker was also estimated for the 7 industry groups in the national income estimates. The estimate of gross product per worker for the household sector was worked out on the basis of data given in the National Sample Survey.<sup>1</sup> Values given in this survey were adjusted for 1960-61 by using the index numbers of average daily wages of rural skilled labour in the case of rural areas and by using the index number of earnings of factory employees for urban areas. Estimate of Gross product per worker in the non-household sector of small scale manufacturing was made on the basis of data given in a number of surveys undertaken by the Central Statistical Organisation, State Statistical Bureaus and the Reports of the Planning Commission as well as the estimates of gross product per worker engaged in household industries and small and large factory establishments covered under the census and sample sectors of the A.S.I.

Gross National Product originating from each of the 7 industry groups in the small scale manufacture was estimated by multiplying the estimated gross product per worker by the estimated employment in that industry group. Gross National Product was estimated for each industry group for the household and non-household

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<sup>1</sup> National Sample Survey, No.94, Tables with 'Notes' on Small scale Manufacture, Rural and Urban (Household enterprises smaller than Registered Factories), July 1958- June 1959.

sectors separately for the year 1960-61. These were the benchmark estimates which were carried forward for the future years on the basis of appropriate indicators of physical output or input.<sup>1</sup>

Estimates of employment and the Gross National Product made in the national income estimates for the 7 industry groups are compared with the estimates of employment and value added in the different industries in the unregistered manufacturing sector estimated in the present study. For this purpose the values of 'value added' estimated for the 106 industries in the unregistered manufacturing sector(given in Table 10.1) have been first grouped according to the A.S.I. classification(given in Table 10.2) and further grouped into the 7 industry groups adopted in the national income estimation. As has already been mentioned in the previous chapters,a few industries have not been covered in the present study for lack of data. But for purposes of making comparisons with the national income estimates,the value added per worker for each of the industries which are not covered in the study, has been assumed to be the same as the average of all the other industries in that group.

Data in the national income estimates refer to financial years. Estimates made in the present study refer to calendar year 1963. To make the two comparable the average of

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1 The basis on which physical indicators of each industry group have been estimated, is given in Chapter VII, Small scale Manufacturing, page 34, Brochure on Revised Series of National Product for 1960-61 - 1964-65.

the figures of 1962-63 and 1963-64 of the national income estimates has been taken for 1963. The estimates made in the National Income computation and those made in the present study are given side by side below:

Industry Group	Employment '000			Gross Product Rs lakhs		
	National income	Present study	%	National income	Present study	%
1. Textiles, tailoring & leather footwear	5772	6369	110.34	38860	34321	88.32
2. Leather & leather products other than footwear	159	74	46.54	892	1426	159.86
3. Wood, glass, stone & Ceramics	3425	3758	109.72	20375	22515	110.50
4. Metal manufacturing and engineering	1139	1009	88.59	14758	14731	99.82
5. Chemicals & chemical products	182	138	75.82	2747	1520	55.33
6. Food, drink & tobacco	1912	2935	153.50	15777	20979	132.97
7. Other industries	946	1094	115.64	10603	12764	120.38
<b>Total</b>	<b>13535</b>	<b>15378</b>	<b>113.62</b>	<b>104012</b>	<b>108256</b>	<b>104.08</b>

It can be seen from the above table that the estimates derived from the present input-output table are remarkably close to the National Income estimates. The estimate given in the national income is Rs. 1040 crores whereas that obtained from the present study is Rs. 1083 crores which is 4.08% higher than the national income estimates. There is a feeling prevalent that the national income estimates of the unregistered sector are under-estimates and in this context a slight increase in the present

estimates over the national income estimates is all the more gratifying.

The employment estimates that have been derived in the present study show 13.6% increase (over 18 lakhs) over the employment figures used in the national income estimates. However, the differences in the estimates both of employment and income from the two sources viz. National Income and the present study, show wider differences for individual sectors. The differences are very large for 'leather and leather products' and 'chemicals and chemical products'. But these two sectors' contribution to national income from the unregistered sector is very little, (36 crores out of 1040 crores). The two estimates are very close for 'wood glass and ceramics' and 'metal manufacturing and engineering'. For 'food drink and tobacco' the present estimates are 30% higher. This is so because in the national income estimates this group does not include 'hand pounding of rice', 'conversion of sugar cane into gur', 'slaughtering of animals for meat' and 'preparation of milk products' all of which are treated as ancillary activities in agriculture. In the case of the 'other industries', the present estimate is 20% higher than the national income estimate. Only for 'textiles, tailoring and leather footwear' the present estimates are 20% lower than the national income estimates.

On the whole this comparison shows that the estimates made from the input-output table compare favourably with those of the national income estimates.



The following are the details of the differences between the two estimates:

(i) In the National Income Estimates, employment figures of 1961 were adjusted for 1960-61 on the basis of the rate of growth of population during 1951-61. In the present study 1961 figures of employment have been adjusted for 1963 on the basis of the rate of growth of employment in each industry during 1951-61.

(ii) In the National Income Estimates, adjustments were not made to the employment figures for future years. The employment estimates in the national income refer to 1960-61. In the present study they refer to 1963.

(iii) In the National Income Estimates, the number of persons employed in the household industries as a secondary occupation were also included in the employment in the household industry. In the present study the employment in household as well as non-household sectors include only those who are principally employed in these industries.

(iv) In the National Income estimates, Gross Product per worker was estimated initially which was adjusted afterwards for 1960-61 by using the relevant wage indices. The Gross National Product estimated for 1960-61 is carried forward for later years on the basis of the estimated physical indicators. In the present study, the value added per worker has been estimated by (1) estimating the value of output per worker in 1963 obtained by making price adjustments, (2) estimating the input coefficients obtained by making price adjustments on both inputs and output, (3) estima-

ting the value added coefficient by adding the input coefficients of depreciation, rent, interest, taxes etc., wages and salaries, and profits, and (4) by multiplying this value added coefficient by the corresponding value of output per worker. Thus in the present study adjustments have been made not only for the wages but for all inputs and also for the output.

(v) Separate adjustments have been made for Gross Product per worker in the household and non-household sectors and in the household sector for rural and urban areas, in the National Income Estimates. Such adjustments have not been made in the present study.

For comparison the Gross Product per worker in the different industry groups in the National Income Estimates and as per the present study are given below:

Industry Group	Gross product per worker in 1963	
	National Income estimates	Present Study estimates
	Rs.	Rs.
1. Textiles, tailoring and leather footwear	673	539
2. Leather and leather products other than footwear	561	1927
3. Wood, glass, stone and Ceramics	595	599
4. Metal manufacturing and Engineering	1926	1460
5. Chemicals and chemical products	1509	1101
6. Food, drink, and tobacco	825	715
7. Other industries	1121	1167

It can be seen from the above table that the estimates of Gross Product per worker according to the National Income Estimates and the present study are very close in the case of 'Wood, glass stone and ceramics' and 'other industries', and are not much different in the case of 'textiles, tailoring, and leather footwear', and 'food, drink and tobacco'. In the case of 'metal manufacturing and engineering' though in the aggregate the two estimates of Gross Product are very close to each other, its average value per worker differs very much. For 'leather and leather products other than footwear' the difference is very large. For 'chemicals and chemical products' also the difference is quite large.

TABLE 10.1

VALUES OF OUTPUTS, VALUE ADDED COEFFICIENTS, TOTAL VALUE ADDED, EMPLOYMENT AND VALUE ADDED PER WORKER IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963

S.No.	Name of Industry	Value of output Rs '000	Value added coeff	Total value added Rs'000	Employment	Value added per worker
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Flour milling	210628	7017	1478	133041	1110.92
2	Hand pounding of rice	165316	1178	195	143718	135.50
3	Rice products	124958	3047	381	251810	151.20
4	Gur & Khandsari	90972	3223	29320	108513	270.20
5	Palagur	41090	8560	35173	155476	226.23
6	Canning of fruits and vegetables	3528	3673	1296	367	3531.39
7	Bakery products	343013	1512	51864	72663	713.75
8	Dairy products	228582	4852	110908	154678	717.02
9	Oil seeds crushing:					
	Improved ghani-	419810	2484	104281	65008	1604.12
	Ordinary ghani-	604117	2039	123180	195024	631.61
	Mills-	239572	1108	26545	11908	2229.13
10	Confectionary	15168	0535	811	3023	2684.36
11	Sweets etc.	594782	3309	196814	364102	540.54
12	Distilleries and Breweries	326454	3172	103551	108848	951.34
13	Beedi	1377887	6709	924424	994742	929.31
14	Cotton carding	168277	1707	28725	42289	679.25
15	Textile printing	215390	4783	103021	112041	919.49
16	Cotton handlooms	2624542	3381	887358	2518779	352.30
17	Ropes and twine from jute, mesta etc.	71298	5699	40633	166951	243.38
18	Woolen handloom-blanket	106818	2685	40010	65652	609.42
19	Woolen shawls	4555	3727	1698	1016	1670.78
20	Silk spinning	9147	2153	1969	23195	84.91

contd...

Table 10.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)
21	Silk weaving in powerlooms	28133	3661	10299	2359	4366.01
22	Silk weaving in handlooms	126371	6669	84277	98664	854.18
23	Himroo works	114	7769	88	166	531.70
24	Brocade	39766	3800	15111	12819	1178.80
25	Carpets&Druggets	92978	2495	23198	31392	738.98
26	Hosiery	260646	3496	91122	53284	1720.11
27	Embroidery	21348	5816	12416	32901	377.38
28	Jari thread	70000	2976	20832	30000	694.40
29	Tailoring	1007854	6836	688969	1000649	688.52
30	Caps,hats and other head gear	3823	5072	1939	8507	227.95
31	Crochet work	3000	5931	1779	794	2240.93
32	Gabba industry	304	5841	178	535	330.84
33	Coir matting	217884	2478	53992	90961	593.57
34	Coir spinning	111138	6027	66983	181474	369.10
35	Saw milling	123459	3251	40137	32424	1237.87
36	Wooden furniture	747778	5458	408137	260677	1565.68
37	Lacquerware	474	6403	304	134	2264.92
38	Pataras	939	3125	293	165	1778.65
39	Wooden toys	223	6138	137	297	461.83
40	Sandalwood carving	1026	5745	589	557	1057.88
41	Photo & mirror framing	310	4271	133	88	1506.98
42	Plywood & its products	2936	1677	492	491	1002.82
43	Wooden boxes and packing cases	45592	3817	17403	6387	2724.70
44	Grass mats	10748	5573	5990	42547	140.98
45	Reed mats	7368	5987	4411	42547	103.68
46	Palm leaf & palmyra products	58894	7031	41408	264240	156.71
47	Cane & bamboo products	174644	5987	104559	534111	195.76

contd...

Table 10.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)
48	Papier mache articles	1074	6840	735	1191	616.89
49	Paper and cardboard products	24377	3144	7664	6195	1237.16
50	Printing presses	45796	6899	31595	21529	1467.54
51	Leather tanning	255247	4140	105672	33758	3130.29
52	Leather footwear	1409735	4320	609005	538558	1130.81
53	Leather products other than footwear	45197	4711	21292	35152	650.72
54	Rubber products	21020	6270	13179	5617	2346.35
55	Paints and varnishes	47713	2202	10506	5496	1911.64
56	Fertilisers	29870	0975	2912	6726	433.00
57	Agarbathi	40927	3920	16043	11844	1354.56
58	Drugs and pharmaceuticals	44560	5357	23871	20051	1190.52
59	Soap	191045	1774	33891	11449	2960.21
60	Plastics	64464	3451	22247	12347	1801.77
61	Wax products	7281	1669	1215	1053	1154.00
62	Cement products	127219	5619	71485	41497	1722.64
63	Bricks and tiles	534265	4286	228986	347383	659.17
64	Lime	356664	1821	64949	64808	1002.17
65	Stone carving	19160	6081	11651	15850	735.08
66	Marble carving	2462	5627	1385	1901	728.76
67	Granite carving	217	6026	131	188	695.65
68	Stonewares	19406	9808	19033	16785	1133.95
69	Plaster of Paris	255	7872	201	254	790.18
70	Pottery	373685	7885	294650	807426	364.92
71	Clay toys & dolls	23491	7994	18779	47169	398.12
72	Glass bangles	96549	5070	48950	36272	1349.53
73	Glass & glasswares	13580	3384	4596	5102	900.75
74	Iron & steel smelting	16837	3759	6329	44778	141.34
75	Brasswares	576348	1758	101322	136235	743.73

contd...

Table 10.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)
76	Aluminium ware	40152	1922	7717	3378	2284.58
77	Tinsmithy	19031	5981	11383	11846	960.88
78	Copper utensils	35547	1220	4337	5187	836.07
79	Electroplating	38690	6497	25137	15834	1587.52
80	Agricultural implements	130738	4192	54806	132990	412.10
81	Engineering:light	8601	3767	3240	1455	2226.88
82	Sheetmetal processing	18657	6937	12942	3267	3961.48
83	Locks and keys	14607	3751	5479	6733	813.77
84	Trunks	33028	2089	6900	6733	1024.74
85	Cutlery	3845	4951	1904	3194	595.97
86	Foundry	677574	3182	215604	181156	1190.16
87	Wire products	210287	2864	60226	26642	2260.57
88	Machinery	16133	7579	12227	1891	6466.13
89	Machine parts	7762	6787	5268	1047	5031.60
90	Textile machinery & accessories	6671	3301	2202	662	3326.73
91	Electric fans	12017	7615	9151	3263	2804.45
92	Automobile battery	7981	2972	2372	1410	1682.15
93	Radio repairs	26619	5135	13669	8550	1598.69
94	Electrical goods	30299	3029	9178	2481	3699.17
95	Electrical repair	33116	4509	14932	7670	1872.98
96	Repair of automobiles	226972	6508	147713	74365	1986.33
97	Cycle repair	235977	4457	105175	135553	775.90
98	Carts & cartwheels	2242	5353	1200	29625	405.10
99	Watch repairs	57203	5415	30975	34346	901.86
100	Silver filigree	6469	4494	2907	1896	1533.42
101	Artmetal ware	30875	5529	17071	2470	6911.25
102	Bidriware	148	6018	89	57	1566.58

contd...

Table 10.1 contd.

(a)	(b)	(c)	(d)	(e)	(f)	(g)
103	Musical instruments	40697	5404	21993	30271	726.53
104	Rubber stamps	1603	6184	991	772	1283.80
105	Conch shell products	1616	3740	604	1264	478.19
106	Ivory	2053	3786	777	813	955.93



TABLE 10.2

**VALUE ADDED COEFFICIENTS, VALUE OF OUTPUT AND TOTAL VALUE  
ADDED IN THE UNREGISTERED MANUFACTURING SECTOR FOR 1963  
(A.S.I. 3-DIGIT CLASSIFICATION)**

A.S.I. Code number.	Value added coefft.	Value of output Rs'000	Total value added Rs'000
(a)	(b)	(c)	(d)
201 & 204	N.A.	N.A.	N.A.
202	4852	228582	110908
203	3673	337385	123921
205	4100	514909	211061
206	1512	343013	51863
207	4884	138196	67495
208 & 209	2410	1899920	457881
211,212,213	3172	326454	103551
214	N.A.	N.A.	N.A.
220	6709	1377887	924424
231	3562	4484661	1597436
232	3496	260646	91122
233	5699	86369	49233
239	3010	568697	171178
241	4320	1409735	609005
242	N.A.	N.A.	N.A.
243	6829	1146271	782788
244	5841	19286	11265
251,252,259	5060	756092	382582
260	5458	1869914	1020599
271	3301	69552	22959
280	6899	95966	66207
291	4140	282984	121295
293	4711	45197	21292

contd...

Table 10.2 contd.

(a)	(b)	(c)	(d)
300	6270	21020	13179
311	2668	103578	27635
312,313,319	2580	430795	111145
321 & 329	N.A.	N.A.	N.A.
331	4286	534265	228986
332	4863	110140	53561
333	7885	373685	294651
334	nil	nil	nil
339	3418	793309	271153
341	3759	16839	6330
342	N.A.	N.A.	N.A.
350	2827	1861101	526133
360	6444	907147	584565
370	4480	112715	50496
381	nil	nil	nil
382	N.A.	N.A.	N.A.
383 & 385	4457	264341	117817
384	6508	226972	147713
386	N.A.	N.A.	N.A.
389	5353	2242	1200
391	nil	nil	nil
392	N.A.	N.A.	N.A.
393	5415	57203	30973
394	5353	4869603	2606698
399	5301	473674	251094

## CHAPTER 11

### CONCLUSION

Initially, in the preparation of Input-Output tables of the Indian Economy, a distinction was drawn between the large scale manufacturing sector and the small scale manufacturing sector. The input-output tables, prepared by the Indian Statistical Institute for the years 1951-52, 1953-54 and 1955-56, adopted a classification of the economy in which 'small scale manufacturing' was separated from 'large scale manufacturing'. In the later tables such a distinction was avoided and these two sectors were treated as one sector on the ground that it is logical to treat the output of both the small scale and large scale sectors as homogenous as it is difficult to distinguish them in the Final Demand. Lack of adequate data on the input structure of the small scale manufacturing sector has been ascribed for not making a distinction in the input structures of the two sectors. This lacuna has been filled in the present study.

In the preparation of the input-output table for the unregistered manufacturing sector for 1963, the distinction between the large scale ( here referred to as 'registered') sector and the small scale ( referred to as 'unregistered') sector has been made only in the input structures. The outputs have been treated as homogenous. It has been found, from the results of the study, that the input structures of the different industries are different in the unregistered sector from those of the regis-

tered sector. For this reason although the end-product is not distinguishable, it would be analytically advantageous to treat these two sectors separately with regard to their input structures while making projections and taking alternate policy decisions about the proportion of outputs of the respective sectors.

From the present study the following statistical findings are observed.

Employment in the unregistered manufacturing sector is 15.5 million. This forms 79% of the total employment in the manufacturing activity, 21% being employed in the registered manufacturing sector. The values of output per worker have been found to be much higher in the registered sector than in the unregistered sector for all industries. Except for the following industries, employment has been found to be higher in the unregistered sector than in the registered sector:

- 271 Manufacture of pulp, paper and paper board.
- 280 Printing, publishing and allied industries.
- 300 Manufacture of rubber products.
- 311 Basic industrial chemicals including fertilisers.
- 332 Manufacture of glass and glass products.
- 341 Iron and steel basic industries.
- 360 Manufacture of machinery except electrical machinery.
- 370 Manufacture of electrical machinery, apparatus, appliances and supplies.
- 381 Shipbuilding and repairing.
- 382 Manufacture of railroad equipment.
- 384 Repair of motor vehicles.
- and 391 Manufacture of professional and scientific measuring and controlling instruments.

The output-labour ratios of the unregistered sector are so low that in spite of the higher values of employment the estimated values of output of the unregistered sector are found to be Rs. 22560.7 million which forms only about 30% of the total value of output in the whole manufacturing sector.

In respect of the input coefficients, it has been found that the value added coefficient is high for most of the industries in the unregistered sector( except for 'textiles', 'paper', 'leather', 'chemicals and fertilisers', 'non-metallic mineral products',and 'basic metal industries') when compared to those of the registered sector. But because of the high values of output per worker, the value added per worker is higher for the registered sector in spite of the smaller value added coefficient. The Gross National Product, originating from the unregistered sector, is found to be Rs. 10825.6 million in 1963. This forms 39% of the total Gross National Product originating from the whole manufacturing activity.

It has also been found that in spite of the low values of output per worker, because of the large values of employment, the values of output are more in the unregistered sector than in the registered sector in almost all the consumer goods industries; i.e. industries whose outputs are demanded only for final consumption and not for intermediate use. The industries in the unregistered sector depend on at least the following industries of the registered sector for their inputs, since their values of outputs are less

than the inter-industry demands for the products of these industries in the unregistered sector:

1. Basic Chemicals.
2. Basic Iron and Steel.
3. Non-ferrous basic metals.
4. Paper and paper products.
5. Sugar factories and refineries.
6. Leather tanning and finishing.
7. Wood sawing, planing, and wood products.
8. Petroleum and its products.
9. Cement.
10. Electricity.
11. Mining and quarrying.

On the same criterion it has been observed that none of the industries of the registered sector are dependent on the unregistered sector for their inputs.

Apart from the differences in the quality of outputs, product-mix, and in the techniques of production, the differences in the scale of production also cause variations in the input structures of the registered and unregistered manufacturing sectors. Even if the technique of production is similar for any industry in the registered and the unregistered sectors (it may not be identical in both the sectors since the technique and the scale of production are inter-related), the input coefficients in the two sectors would be different due to the economies of large scale production. In the input-output analysis one of the assumptions made is that of constant returns to scale. This assumption can be reduced to apply to the different size groups of manufacturing units. The error involved in assuming constant returns to scale within each size group would

be less than that in assuming the same for the whole manufacturing sector. Separate input-output tables for the different size groups would reduce this error and an input-output table prepared on the basis of such separate tables would be more realistic than the one where account is not taken of the differences in the input structures of manufacturing units of different sizes. However, it has not been possible to isolate the effects of the economies of scale from those of other variables on the input coefficients, because at an aggregated level of classification of manufacturing units according to size and based on similarity of output, this is not possible.

It has been found that in spite of the varied nature of data used and the assumptions made in the preparation of the input-output table for the unregistered manufacturing sector, the results obtained are very close to the official estimates of National Income. They are, in fact, only 4.08% higher than the official estimates. This shows that though the data are scattered and varied for the unregistered manufacturing sector, they still can form useful material to make an input-output table, approximate though, for this sector.

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