# A TECHNICAL NOTE <br> ON <br> THE SIXTH PLAN OF INDIA <br> (1980-85) 

Perspective Planning Division<br>Planning Commission<br>Government of India



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## PREFACE

The sixth five year plan (1980-85) document presents the strategy and major programmes and policy issues involved in the pursuit of specified objectives. In this note, we present, in more detail, the technical work that went behind the formulation of this plan document. This follows the precedent set earlier when, recognising the interest shown by economists and others in the detailed methodology of plan formulation, a technical note was prepared on the approach to the fifth plan of India. It is hoped that this document will show the many diverse inter-relationships of interests and actions that lie behind a national economic plan and prov:de a better idea of the various assumptions, techniques and analysis that formed the basis of the Sixth Plan projections. It would be the endeavour of the Perspective Planning Division to draw upon the criticisms that may be forthcoming so that technical limitations are eliminated in future.

The need for quantitative analysis in planning is not questioned. An appropriate model provides a simplified and convenient representation of the structure of the economy with its diversities and inter-linkages. It enables the planner to quantify the socio-economic objectives and work out the implications of the dimensional hypotheses of the plan. Results of sensitivity analysis provide a useful basis for discussing alternative hypotheses regarding crucial variables that figure in the plan.

This note does not aim at elaborating the actual institutional process of plan formulation. In this, apart from all Divisions in the Planning Commission, various central and state ministries were actively involved, exchanging and reviewing their plans and data base. A number of Working Groups were set up from time to time to examine specific details. Some idea of the extensive collaboration involved can be gleaned from the chapters that follow; however, this is a vast subject, fit for a separate note.

This technical note contains eight chapters. The introductory chapter (I) provides a summary of the development of planning models in India's official plan exercises. Chapter II presents the mathematical formulation and the computational procedures that were adopted. The model has been presented in the form of a number of exogenously estimated sub-models (discussed in detail in Chapter III) which enter as inputs into the core model. This core model, in turn, comprises of a number of blocks, the detailed elaboration of which forms the subject matter of Chapters IV, V \& VI. Material balances for 11 nonagricultural commodities are presented in Chapter VII and Chapter VIII explores some of the properties of the model through sensitivity analysis. 81-L/P(D)359PC Delhi-1(a)

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## CHAPTER I

## INT:RODIUCTION

This technical note presents a description of the quantitative model that has been used in the formulation of the Sixth Five Year Plan (198085) of India. The present five year plan is the sixth in a row covering a period of nearly 35 years. The quantitative model used in consecutive plans is continuously updated and amended to suit the changed socio-economic conditions, availability of new data and to take advantage of improved modelling methodology. The present model structure is an extension of what has been used during the Fifth Plan period. The new features built into this model have been intended partly for removing the model's earlier deficiencies in capturing few key developmental issues as experienced in the past and partly for tackling many of the recent changes that have taken place both within the country and outside in the international economic situation and which have crucial bearing on the success of our development efforts. The basic objectives of our plan have not changed since the formulation of the first plan. As Jawaharlal Nehru said in his introduction to the Third Five Year Plan "Planning is a continuous movement towards desired goals. While the precise formulation of the plan objectives have varied from plan to plan, essential goals of Indian planning have remained unchanged." These goals can be mainly described as (1) reduction in poverty and unemployment and improvement in the quality of life, (2) modernisation and building a self-reliant economy, and (3) removal of regional disparity and strengthening the redistribution bias of public policies and services in favour of the poor and weaker sections of the community. But the strategy needs reformulation from one plan to the other, with changed circumstances and experience. The strategy of the Sixth Plan accordingly has been defined as mainly to step up the rate of growth of the economy by removing the constraining elements in the growth process and to take measures so that the plan benefits will reach the section of the community which is the weakest. The structure of the Sixth Plan model has been so reformulated that the identification of the constraining elements in our growth process would be easy and specific policies thereby could be devised in order to make the best use of the economy's potentialities.

In addition to identifying the growth constraints that have been generated from the past, specific provisions in the Sixth Plan model were devised to deal with certain growth inhibiting factors which have presently gained significance. They are (I) high uncertainty in the inter-
national climate regarding trade and aid, (2) the ever increasing deterioration in the terms of trade mainly originating from high price of crude oil and (3) the domestic inflation or at least that part of it which cannot be explained by rising import prices.

All these complex issues can only be captured by the use of a detailed intersectoral, intertemporal analytical model which can simultaneously treat both supply and demand and their interactions between sectors and time. By the use of such a model the planners can get an early indication regarding the likely shortages or surpluses that may develop in any sector of the economy so that adequate measures can be taken to bridge these gaps. This is where the need for a new generation model in Indian planning was felt. The model used in the first and second plans concentrated mainly on the growth potentialities of the country, determined by the economy's savings potential and the incremental capital output ratio. This model belonged to the Harrod Domar and Feldman-Mahalanobis family. It comprised of a single sector and had no foreign trade. As a result its demand and supply equations were the same. Since the third plan and until the end of the fifth plan, the input output models of the different variants, basically belonging to the Leontief group, came into increasing use. These models focussed on the need for establishing intersectoral consistencies in building the production targets; these targets were mainly estimated from the demand side. The supply side was rather neglected in the sense that no sectoral supply constraints were formulated in these models, although in a limited and indirect way, they were checked for few specific sectors only by the use of material balances. These inputoutput models were increasingly articulated during the fourth and fifth plans by making them "closed", i.e., by endogenising imports and consumption in the final demand vector respectively. The Sixth Plan has attempted to integrate both the Harrod Domar and the input-output approaches of the earlier plans in a demandsupply frame. For this purpose an investment planning model has been developed and integrated to the existing input-output system. By this, the demand supply balances for all sectors are checked over time. Furthermore, the problems of balancing the demand and supply are tackled not only in the commodity and services market but also in the markets dealing with primary inputs like labour and capital and other important non-renewable resources of the country.

In brief, there are three salient features of the Sixth Plan model:
I. A system of supply equations, which in fact is an extended and modified version of the Harrod Domar equation, primarily meant to accommodate (a) sectoral disaggregations, (b) questions of investment lags, and (c) existence of a foreign trade sector. The Harrod Domar equation of the Ist and IInd Plans can be presented in a simplified form as follows:
$\mathrm{V}_{\mathrm{T}}=\mathrm{V}_{\mathrm{O}}+\sum_{\mathrm{t}=0}^{4} I_{\mathrm{t}} *$ ICOR $^{-1}$
$\& I_{\mathrm{t}}=V_{\mathrm{t}}(1-B)$
where $T=5$ th year (Terminal period)
$\mathrm{V}_{\mathrm{o}}=$ Value added, base year
$\mathrm{I}=\mathrm{New}$ investment
ICOR $=$ Incremental capital-value added ratio B=Average propensity to consume.
This equation is modified in the sixth plan and presented in simplified form as following ${ }^{1}$.

$$
\begin{align*}
& x=\boldsymbol{c} x \\
& \left.\mathrm{x}_{\mathrm{sit}}=\mathrm{CX} \mathrm{gij}_{\left(T-k_{i}\right.} L_{i}\right) \\
& +\sum_{i}^{k_{i}} I_{i\left(1-r L_{i}\right)}\left(v_{i T} * \operatorname{ICOR}\right) \\
& I_{i b}=\left(I_{i T} / I_{i v}\right)^{1 / 5}{ }^{6} I_{i t-1} \tag{4}
\end{align*}
$$

$\& I_{i T}=\dot{I}_{i T}$
when $\mathrm{X}_{\mathrm{si}}=$ Supply of $\mathrm{i}^{\text {th }}$ sector
$r=$ Capacity utilization factor
$L_{i}=$ Gestation lag for the $\mathrm{i}^{\text {th }}$ sector
$k_{i}=$ Any integer such that $T-k_{i} L_{i}$ is minimum negative
$\mathbf{v}_{\mathbf{i}}=$ Value added to output ratio
$\mathrm{I}_{\mathrm{i}} \boldsymbol{r}=$ Investment in the $\mathrm{i}^{\text {th }}$ sector in the last (5th) year of plan
$\mathbf{I}_{\mathbf{i}} T=$ Exogenously determined investment in $\mathrm{i}^{\text {th }}$ sector \& $\mathrm{T}^{\text {th }}$ period.
II. A system of demand equations which is again an extended version of Leontief's inputoutput system by endogenising not only consumption and imports (as was done in the Fifth Plan) but also investment.
The Leontief model used in the third, fourth and fifth Plans can be presented in a very simplified form as following:

$$
\begin{gather*}
\mathrm{x}_{T}=(\mathrm{I}-\mathrm{A})^{-1} \quad\{\mathrm{C}+\mathrm{I}+\mathrm{E}-\mathrm{M}+\mathrm{PC}\}: \text { The } \\
\text { Third Plan }  \tag{6}\\
\mathrm{x}_{T}=\mathrm{B}-1\{\mathrm{C}+\mathrm{I}+\mathrm{E}+\mathrm{PC}\}: \text { The Fourth Plan } \tag{7}
\end{gather*}
$$

$\mathrm{x}_{\mathrm{T}}=\mathrm{B}^{*-1}\{\mathrm{I}+\mathrm{E}+\mathrm{PC}\}:$ The Fifth Plan
where $(1-A)^{-1}=$ Leontief inverse.
$\mathbf{B}^{-1}=$ Extended Leontief inverse, with import endogenised.
$B^{*-1}=$ Further extended Leontief inverse, with import and consumption both endogenised.
$\mathbf{P C}=$ Pudic consumption.
Presented in this illustrative form, the Sixth Plan Input-Output Demand System is: ${ }^{1}$

$$
x_{T}=B^{* *-1}\{E+P C\} \quad \text { (9) where }
$$

$\mathrm{B}^{* *-1}=$ Extended Leontief inverse with consumption, imports \& investment endogenised.
III. A set of inequality relations with given upper bounds as $M x \leqslant R$ to ensure that the demand should not exceed the supply in any of the markets dealing with commodities, services, capital, labour, foreign exchange and nonrenewable resources. In the same way, a set of inequality relations with lower bounds given as $\mathbf{M}^{*} \mathbf{x}^{*} \geqslant \mathrm{R}^{*}$ are used to ensure the attainment of minimum welfare targets of the community. Here $\mathbf{R}$ and $\mathbf{R}^{*}$ refer to the resources availability and the welfare targets and $M$ are technical and hebavioural coefficients.

In order to cope with the uncertainties in international climate, provisions of contingency planning for import has been made. Also, alternative sensitivity analyses with different likely international situations have been worked out. In estimating the real value of foreign saving, appropriate calculations are made regarding the erosion in its value because of increasing deterioration in the terms of trade arising out of changes in the relative prices of exports and imports. Similarly, the effect of domestic inflation on domestic saving and plan's resources mobilisation has been taken care of by switching over from the concept of savings at constant price, used in all earlier plans, to the concept of saving at a given accounting price. The difference between the two approaches is very significant. The former calculates the estimates of saving assuming a zero rate of inflation over the plan period. The latter, on the other hand, estimates saving in response to certain assumed rate of inflation in the future and subsequently deflates this saving in order to derive "savings at constant accounting price". But by basing all plan programmes on resources calculated in this way, the planners can protect the real content of the plan if realised inflation does not exceed the assumed inflation rate. This new approach has been thought necessary because of the finding that the public sector's source of income is to some extent inflation inelastic, whereas its expenditure responds almost equally to a rise in price. The obvious result

[^0]under the circumstances will be to reduce the real size of public saving with every dose of inflation. Furthermore, as the public sector invests mainly in infrastructure and because the infrastructure investment in the economy has a very high forward or backward linkage, every dose of inflation which will reduce the real content of the public sector plan will also increase the infrastructure bottlenecks in the society and retard the real growth of the economy especially if there exists a significant parallel economy.

Furthermore, a new approach has been given to the employment and poverty blocks of the model which deal with the major public sector welfare programmes. Far more care has been taken to work out the employment generation capacity of each of the major projects and programmes mainly in the field of social service. There is another feature in the Sixth Plan model which differs significantly from the earlier ones. This is in the treatment of its "perspectives", i.e., the post plan long term development scenario. Because of the nature of long investment lags in major infrastructures, an integration of the long term perspective with a medium five year plan is thought to be highly imperative. In the past, perspective scenarios were always developed but were not technically and behaviourally integrated with the medium term investment and output decisions. Last but not the least, the present Plan has made significant improvement regarding estimations and updating of all technical and behavioural parameters in the light of availability of more reliable data.

It may be appropriate at this stage to explain the role of these models in the "plan formulation process" of India. Any planning process, in a mixed economy of the size of India with a federal structure and democratic planning organisation, is likely to be highly flexible and complex. This planning process operates in a decentralised form and at the same time the plan's overall resources allocation is done by a centralised decision making body. Thus the decision making regarding the plan structure ranges from a grass-root block level unit to a single centralised apex planning body-National Development Council (NDC). All these units in the end are integrated by a general consensus process. In this note we shall try to describe this process in a highly simplified form. Chart I presents the sequence of this decision making process in a simple diagram.
National Development Council (NDC) is the highest decision making body in planning. It is composed of Prime Minister as the Chairman of the Planning Commission, Deputy Chairman of the Planning Commission, Chief Ministers, Cabinet Ministers and Members of the Planning Comnission.
The NDC decides the broad objectives and goals of a plan. This is normally done with the
help of a plan outline prepared by the Planning Commission. Objectives and goals of the plan are then fed as inputs into the detailed planning model developed within the Planning Commission. The Planning Commission then requests the Central Ministries, given in box ( $\mathrm{M}_{1}$ ) in the chart, to send their plan outlays, sector and project wise, to the Planning Commission in the light of broad development directions prepared (with the instructions received from NDC) and sent by the Planning Commission. Arrows in the chart show the directions along which the information on the plan outlays and projection flow. " $\mathrm{M}_{1}$ " shows that there are two different flows (1) Those plan outlays which are to be adjusted by iterative process and (2) few other outlays which are unchangeable and branded as autonomous investments flowing from Ministries to the Planning Commission. The former category of plan outlays has arrows in both directions. This means these outlays are finalised by mutual agreement between the Ministries and the Planning Commission. The second type of outlays refer to flows which are one-sided only, i.e., they are regarded in the plan formulation process as exogenous.

From few Ministries, instructions regarding the targets of the plan come as one-way inputs to the Pl inning Commission (say, Ministry shown in $\mathrm{b} \times \mathrm{M}_{2}$ ). One simple example in the present Suxtia Plan exercise is the export targets which are fed by the Ministry of Commerce. Similarly, each State planning department consolidates the plan programmes and projects from block levels \& plant levels, in the light of broad signals regarding the size and priority of the plan rendered by the Planning Commission. Then they are transmitted to the Planning Commission in terms of detailed programmes, projects and sectoral investments. These proposals on plan outlay coming from the States in most cases pass through different working groups constituted by the Planning Commission comprising of experts drawn from other Ministries, Planning Commission itself and at times from the private sector. The proposals from the Central Ministries similarly, in many cases, pass through working groups.

On the resources side, initial resources calculations are done by the Ministry of Finance and Reserve Bank in the light of broad macro information regarding the future growth of the economy, again supplied by the Planning Commission. This exercise of resources estimates is done in close collaboration with the Planning Commission by forming a series of relevant working groups and committees. This is shown in box $\mathrm{M}_{8}$ of the diagram. Again this exercise after finalisation, feeds into the Planning Commission as a starting point determining the resources base of the plan. In addition to these inputs, on plan resources and outlays received from the different

Ministries and States, the Planning Commission independently undertakes an analysis of the economy, its past and present, in order to develop relevant behaviour, technology and policy parameters for the plan. All these inputs finally enter into a formalised model system as shown in the diagram as sectoral and general equilibrium model. These models are summarised in detail in subsequent chapters. This modelling exercise tries to check the feasibility and consistency of all the programmes and projects and resources estimates fed as inputs by the Ministries and States and assesses their contributions in attaining the goals and objectives set by the NDC. If the goals cannot be achieved or if the configuration of the programmes and projects provided by the Ministries and States are seen to be inconsistent or infeasible in the light of the behaviour and technical relations given in the model, then all the proposals on plan outlays will go back to respective Ministries and States asking for revision, shown by the dotted lines. On some occasions, after they have been considered by the Planning Commission meeting (PCM), which consists of Prime Minister,

Finance Minister, Deputy Chairman and members of the Planning Commission \& senior officials, these may even be referred back to the NDC for the reformulation of the plan objectives.

These to and fro movements will continue until a complete consensus between the states, Central ministries, Planning Commission and the NDC regarding the feasibility of the different plan programmes and attaining desired objectives is reached.

This is the stage when the Planning Commission brings out the draft plan, which after being approved by the NDC becomes a final plan document. This plan document ultimately is placed before the Parliament and the people for discussion. As for the private sector, the relevant macro plans are formulated by the Planning Commission, in complete tune with the general development strategy of the country and of the public sector. This part of the plan is regarded as indicative and subsequently appropriate measures are undertaken by different Ministries through fiscal, monetary and income policies, to ensure their fulfilment.

## PLAN FORMULATION PROCESS IN INDIA



B - block level
S - SECTOR
M - ministries / public SECTOR UNDERTAKINGS

| $P-P R O J E C T$ |  |
| :--- | :--- |
| $W G-$ | WORKING GROUP |
| $S G-$ | STATE GOVERNMENT/STATE |
|  | PUBLIGSECTOR UNDERTAKINGS |

SPM - State plans meetme
PCM - PLANMIMG COMUISSION MEETING

PC - PLANNING COMMISSION

## CHAPTEUR II

## STRUCTURE OF THE MODEL

The Sixth Plan modelling exercise comprises of a core model and several sub-models. The sub-models are primarily designed to process the inputs (as exogenous variables) for the core model.

The model system covers a 15 year period from 1980-81 to 1994-95, divided into two subperiods:
(1) Medium term span of 5 years from 1980-81 to 1984-85 coinciding with the Sixth Five Year Plan and .
(2) Long time span of 10 years covering 1985-86 to 1994-95 defined as the long term perspective plan.
Chart II gives the flow chart and components (or Blocks) of the Sixth Plan model system.
A. Core model is composed of the following blocks:

1. Input output
2. Investment
3. Private consumption
4. Financial resources (domestic saving, both private and public)
5. Import
6. Employment
7. Perspective planning.

These blocks are inter-dependent. The degree of inter-dependence differs between the different blocks.
B. Sub models

There are five major sub models. They are

1. Agriculture
2. Exports
3. Demography
4. Autonomous investment and public consumption
5. Long term objectives, with both cardinal and ordinal values.

The agricultural sub model provides estimates of capacity outputs in agriculture which are fed into the core model as exogenous variables. Alternative estimates are made for alternative weather scenarios.

The export sub model estimates export values, sector-wise and time-wise, by econometric, technical and other normative assumptions which again enter as exogenous values in the core model.

Similarly, the demographic model works out by relevant demographic relations, population, its rural and urban break up and the labour force, feeding these as inputs into the core model.

The last two sub-models try to quantify the social and economic goals of the plan as the planners perceive them. They appear as targets in the plan and would enter as exogenous variables into the core model.

There is a separate sub system on material balances, which is used to disaggregate the macro and sectoral dimensions into their detailed physical units and to check overall consistency.

## II. 1. Economics of the Model

The model tries to capture all the constraints in the form of equations. Each block of equations represents a class of constraints. They are as follows:-

| Block (system) of equations | Class of constraints |
| :---: | :---: |
| A | Demand constraint |
| C | Financial resources constraint |
| D | Supply/capacity constraint for activity sectors |
| E | Demand, supply balancing constraint |
| H | Foreiga exchange constraint |
| I | Land and natural resources constraint |
| J | Manpower constraint |
| K | Welfare programme constraint |
| L | Public sector financing constraint |
| N | Tax/fiscal constraint |
| 0 | Private sector investment financing constraint |
| Q | Long range perspective Plan ('Welfare" goal) constraint |

The remaining blocks of equations $\mathbf{B}, \mathbf{F}, \mathbf{G}$, $\mathrm{M}, \mathrm{P}$, etc., represent the plan assumptions and definitions used in the model.

All these constraints, when formulated as a system of equations, represent a typical case of a non-linear programming problem which can be solved conceptually in the light of an optimising function.

But because of the nature of the planning system in India, with its multistage decision process between central ministries, states and other
public and private bodies, a large number of endogenous variables of the above system are taken as given decisions (exogenous) in working out the resources allocation process, both intertemporal and intersectoral.

Besides, because of the high non-linearity of the different blocks of the system, a programming solution was found to be very complicated. Therefore, the above system is solved, uniquely, by giving alternative values to the remaining key policy variables until the system is reduced to a state with only one degree of freedom. This is shown in the equation system given in following sections.

By iteration with the imputed alternative values as referred, a maximum growth path is chosen which fulfils all the constraints; theoretically, the growth rate is dictated by the full utilisation of the most constraining sector. In this convergence position, at the minimum, one sector will have zero slack value (i.e. positive duality price). In the case of degenerate solution, more than one sector will have zero slack values.
Described in this form, the model becomes a hybrid of a dynamic inter-temporal inputoutput model, with effective supply constraints as seen in a programming solution. It runs at constant price in the accounting sense. It incorporates the effects of price changes in the foreign sector by calculating the impact of terms of trade changes on foreign saving. It adjusts domestic resources on the basis of actual (ex-post) price changes. If necessary, it could also accommodate (exante) price changes arising out of projected inffation based on cost considerations. It does not take into account relative price changes in the domestic sector although it is capable of doing so. The algebra of the model and its computation sequence will now be described.

## II. 2. Algebra of the Model

The following pages present the algebra of the Sixth Plan's model. The structure of the core model as explained in Chart II has been divided into 17 blocks of equations. Each block represents either a class of constraints or a set of definitional equations and identities. The economic logic behind the equations has already been described. Most of these blocks are selfexplanatory, given by their title heads. Few key blocks, however, need some elaboration.
Block A presents the extended Leontief system where output is determined by the exogenous
elements of demand and the extended "dynamic" Leontief inverse. The Leontief inverse is extended by endogenising the consumption vector and has been made dynamic by endogenising the investment vector through inter-temporal links. In the $B$ matrix the elements comprising of $a_{i j}$ 's belong to the conventional input-output matrix, the elements comprising of $\Psi, \theta_{\mathrm{i}}, \mathrm{t}$ and $\mathrm{T}^{*}$ refer to the consumption endogenisation and the elements comprising of $\mathrm{k}_{\mathrm{ij}}$ 's and rj 's refer to investment endogenisation. $a_{j}$ refers to the en dogenisation of imports. In actual use there are separate $a^{\prime}$ 's for intermediate consumption and investment demands. For simplicity of presentation they are represented,by only intermediate ones. ${ }^{1}$

By extending the order of the Leontief matrix, the gross output in the present system has been made dependent not only on the production technology and the exogenous element of the final demand, but also on the consumption propensity of the community, the tax/subsidy rates, the import propensities and import duties, and most important, on the rate of growth of the economy stipulated for the future. The system of equations in this block further demonstrates that once an economy reaches its limit to total saving, the post terminal growth rates and the plan growth rates pose a problem of trade off, which means that the post terminal growih rate can increase relative to the plan growth rate only by increasing the propensity to save of the community.

Block $D$ is the converse of block $A$. In this block attempt is made to estimate the maximum output possible at the end of the plan period in any sector, given the capacity available just before the Plan period and the additions to capacity in the form of investment made during the plan period. But for certain sectors exceptions are made. To give an example, in agriculture, output was made dependent on irrigation facilities, land productivity, availability of fertilizer and other important inputs. These sectors have been estimated separately in an agricultural sub-model. The capital to output relations are based on the hypothesis that investment in a project with a gestation lag of $L$ years would be spread by equal amounts over the L years.

Block H checks the foreign exchange constraints of the economy. If the total imports needed for a development strategy equals or tends to surpass the total export earnings and the aid inflow taken together, then the country's growth process is presumed to get restrained by the foreign exchange available. This is popularly known as a trade constraint phase.

$$
1 \text { In actual model formulation, the equation runs as } M_{i T}=\sum_{i=1}^{a}{ }_{i j}+c_{i T} C_{i T}^{m p}+g_{i} G_{; T}^{m p}+h_{i} G F I_{i T}^{m p}
$$

where $M=$ imports, $x=$ gross output, $C, G$, and GFI are private, Govt. consumption and fixed capital formation at market prices and $c_{i}, g_{i} \quad b_{i}$, are import 00 efficients

Block L deals with public sector resources constraints. The plan investment and a part of the plan current outlay which is associated by convention with investment programme up to the end of the current plan are financed by budgetary saving, saving of the public undertakings, borrowing from the public, foreign saving and plan deficit financing. Therefore, the right hand side of the equation (PUBR and FS*) gives maximum possible public sector outlay.

Block $O$ presents the maximum resources available in the private sector of the economy, once the need for public investment is mopped up from the total resources avarlable for investment in the country. If the intended investment of the private sector, based on some past behaviour, is more than the investment funds provided for the private sector, inflation is likely to creep in. Under these circumstances, either the public sector has to shrink or the incentives to invest in the private sector have to be tempered. Alternatively, if the intended investment in the private sector stands at a lower value than the resources available, deflationary tendencies might appear and the plan growth target in that case will not be reached unless either public sector investment expands or the private sector investors are given more incentives.

Block Q presents the demand supply relations of the last year of the perspective period, i.e., the year 1994-95. The post perspective period
growth rafes $\left(r_{\mathrm{PT}}\right)$ are exogenous. So also the total net factor income from abroad, import, public consumption, total indirect tax receipt and rates, direct fax rates etc. Thus judged from these features, the demand equations of perspective plan block are almost the same as that of the plan period. But the supply equations of the perspective plan block are different in the sense that they are much less restrictive. Indeed over a long period, most of the supplies can be maintained. It is indeed only in the case of non-renewable resources and supply of sectors with very long gestations that supply restriction may be binding. If the poverty target is not satisfied, even at the feasible maximum level of 'LO', then either the post sixth Plan growth rate of some of the sectors are to be increased by reducing consumption during the Sixth Plan, or the pattern of consumption has to be significantly changed by economising the use of the scarce resources sector. The feasibility of the extent of such changes are to be judged by many economic and non-economic factors.

## 'The Equations

A. Demand determined output. Total gross coutput (at factor cost) equals the sum of total iintermediate demands and final demands less imports (c.i.f.). In this relationship, the consumption and investment vectors, at factor cost, ias estimated by deflating the market price values 'by respective indirect taxes, will include the indirect taxes on intermediate goods:
where $B$ is an $n \times n$ matrix defined as below

$$
\mathbf{B}=\left\{\begin{array}{c}
\left\{1-a_{\mathrm{ij}}-\psi \theta_{\mathrm{i}}\left[v_{j T}\left(1-\mathrm{t}_{T}^{*}\right)\right] \epsilon_{\mathrm{i}}-k_{\mathrm{ij}} v_{j 2}\left[\left(1+r_{\mathrm{j}}\right)^{L_{j}}-1\right] \epsilon_{\mathrm{i}}+\alpha_{\mathrm{j} T}\right\} \\
- \text { diagonal elements } i=j \\
-\left\{a_{i j}+\psi \theta_{\mathrm{i}}\left[v_{j T}\left(1-t_{T}^{*}\right)\right] \epsilon_{\mathrm{i}}+k_{\mathrm{i} j} v_{j T}\left[\left(1+r_{j}\right)^{L_{j}}-1\right] \epsilon_{\mathrm{j}}\right\} \\
\text { such that } \epsilon_{\mathrm{i}}=\left(1+T_{\mathrm{i}}^{\bullet}\right)^{-1} \quad \begin{array}{c}
\text { off-diagonal elements } \mathrm{i} \neq \mathrm{j}
\end{array}
\end{array}\right\}
$$

Notations/Dimensions

|  | Equation | Endogenous variables | Lagged endogenouss variables and initiall values | Exogenous \& definitional variables | $\begin{array}{cc}\text { Policy } & \text { S } \\ \text { variables }\end{array}$ | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | . (4) | (5) | (6) |
|  | Equality | gross output, post terminal growth Linear operator on pr sity to consume, direct tax rate, value added to gross ratio, indirect tax allocation st year, | I | E $=$ Exports, <br> PC $=$ public consumption, <br> AI $=$ Autonomous investment, <br> NIT $=$ Factor incomes \& transfer <br> InT from abroad, <br> Total in-direct taxes  <br>  during plan period. | $\begin{aligned} & \mathbf{T}^{*}= \text { Indirect } \\ & \text { fax rate } \\ & \text { for cons- } \\ & \text { sumption } \\ & \text { and invest- } \\ & \text { ment } \\ & \text { goods. } \end{aligned}$ |  |
| Dimensions: | - | $3 n+3$ | - | - | I | - |

B. Intertemporal phasing of investment. Investment by destination in any sector is regarded to grow over the plan period in the following manner.

$$
\begin{aligned}
& \text { (i) } I_{i} T=\left[v _ { i } T x _ { i T } \left\{\left(1+r_{i}\right)^{\left.\left.L_{i}-1\right\} \delta_{i T} * I C O R_{i}\right]}\right.\right. \\
& \text { (ii) } F_{i}=\left(\frac{I_{i} T}{I_{i o}}\right)^{1 / T} \\
& \text { (iii) } I_{i T}=I_{i o}^{T} \prod_{t=1}\left(1+I_{r i t}\right) \\
& \text { (iv) } I_{r i t}=I_{r i o} * F_{i} * G_{i}^{l}
\end{aligned}
$$

where $\mathrm{t}=1, \ldots, \mathrm{~T}$ and $\mathrm{i}=1,2, \ldots, \mathrm{n}$.
Notations/Dimensions

|  | Equation | Endogenous variables | $\begin{gathered} \text { Lagged } \\ \text { endogenous } \\ \text { variable and } \\ \text { initial values } \end{gathered}$ | Exogenous and definitional variables | $\begin{aligned} & \text { Policy } \\ & \text { variables } \end{aligned}$ | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Equality | $I_{T}=$ Terminal year investment <br> F = growth factor for investment <br> $\mathrm{I}_{\mathrm{rit}}=$ growth rate of investment in sector $i$ in time $t$. <br> $\mathbf{G}=$ adjustment factors | - | - | - | - |
| $\overline{\text { Dimensions }}$ | $3 \mathrm{n}+\mathrm{nT}$ | $3 \mathrm{n}+\mathrm{nT}$ | - | - | - | - |

C. Aggregate resources constraint. Total in vestment over the plan period must not exceed total available resources:

$$
\sum_{i} \sum_{i} A I_{i t}+\sum_{i} \sum_{i} I_{i o} \Pi_{i}\left(1+I_{r i}\right) \leqslant T R
$$

where $i=1,2, \ldots, n, t=1,2, \ldots, T$ and $l=\cdot, 2, \ldots, t$.
Notations/Dimensions

| Equation | Endogenous <br> variables | Lagged endog- <br> enous variables <br> \& initial values | Exogenous \& definitional vari- <br> ables | Policy <br> variables | Slack variables |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |  |
| Inequality | - | - | $\mathrm{TR}=$Total availability of <br> resurces <br> $\mathrm{AI}=$ Autonomous investment | - | $\mathrm{SC}=$ unused resour- |  |
| Dimensions : | 1 | - | - |  | - | - |

D. Output consistency with capital capacity. Total feasible output at any point of time equals productivity of existing capital stock :
(i) For non-agricultural sectors, capacity output in terminal year equals capacity created during the plan period plus capacity already in existence before plan.

$$
x_{0 i} T=\sum_{r=1}^{k_{i}} I_{i}, T-r L_{i}\left(v_{i} T^{*} I \operatorname{COR}_{i}^{*} \delta_{i}\right)^{-1}+\widetilde{\sim} x_{B i}, T-k_{i} L_{i}
$$

for $\mathrm{i}=\mathrm{m}+1, \mathrm{~m}+-2, . ., \mathrm{n}$ and $\mathrm{k}_{\mathrm{i}}$ is an integer such that $\left(\mathrm{T}-\mathrm{k}_{i} \mathrm{~L}_{i}\right)$ is minimum negative.
(ii) For agriculture sectors, the potential supply of output is determined on the basis of inputs like land, labour, fertilizers in agriculture sub-model.

$$
x_{s i T}=\dot{x}_{s i T}, \text { where } \mathrm{i}=1,2, \ldots, \mathrm{~m}
$$

Notations/Dimensions

|  | Equation | Endogenous variables | Lagged endogenous variables \& initial values | Exogenous \& definitional variables | Policy variables | $\begin{aligned} & \text { Slack } \\ & \text { variables } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Equality | $x_{\mathrm{s}}=\underset{\substack{\text { Output by } \\ \text { capacity } \\ \text { constraint. }}}{\text { Maximum }}$ | - | $c=$ Correction factor for unused capacity | - | - |
| Dimensions : | n | n | - | - | - | - |

E. Demand-supply equilibrium for gross output. Gross output in any period must satisfy demand and must not excead productive capacity.
(i) $\mathrm{x}_{\mathrm{i} T} \leqslant \mathrm{X}_{\mathrm{Bi} i} ; \quad$ i $=1,2, \ldots, \mathrm{n}$ and $\mathrm{T}=$ Terminal year
(ii) $\sum_{i}\left[\sum_{j} a_{i j} x_{j} T_{i}{ }^{*}+\mathrm{C}_{\mathrm{i}} T \mathrm{~T}_{\mathrm{i}}{ }^{*}+\mathrm{I}_{\mathrm{i} T} \mathrm{~T}_{\mathrm{i}}{ }^{*}\right]=w$ INDT
where $I_{i T}=\sum_{j} k_{i j} X_{j} v_{j}\left\{\left(1+r_{j}\right)^{L_{j}}-1\right\} \epsilon_{j}$, and $i, j=1,2, \ldots n$.
Notations/Dimensions :

|  | Equation | Endogenous variables | Lagged endogenous variables and initial values | Exogenous and definitional variables | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | (i) Inequality | - | - | W phasing of INDT | - | $\begin{aligned} & \mathrm{S}_{\mathrm{E}}=\left(\mathrm{X}_{\mathrm{six}}-\mathrm{XiT}\right. \\ &=\text { Idle capa } \\ & \text { city } \end{aligned}$ |
|  | (ii) Equality | - | - | $\mathrm{w}=$ phasing of INDT in terminal year |  |  |
| Dimensions : | $(\mathrm{n}+1)$ | - | - | - | - | n |

F. Consistency between plan and post-plan growth rate (definitional)

The aggregate value added growth rate during plan period and post-plan period are made consistent when the relative sectoral growth rates are same in the two periods:

$$
\mathrm{r}_{\mathrm{i}}=\left[\frac{\left(1+\mathrm{R}_{\mathrm{i}}\right)^{\left.\mathrm{PT}\left(\Sigma_{i} \mathrm{v}_{\mathrm{i}} \mathrm{X}_{\mathrm{i}} T\right)(1+\mathrm{PR})\right)^{\mathrm{PT}}} \bar{\Sigma}_{\mathrm{i}} \mathrm{v}_{\mathrm{i} T} \mathrm{X}_{\mathrm{i}} T\left(1+\mathrm{R}_{\mathrm{i}}\right)^{\mathrm{PT}}}{}\right]^{1 / \mathrm{PT}}-\mathrm{l},
$$

where PT represents end of post-plan period.
Notations/Dimensions:

| Equation | Endogenous <br> variables | Lagged end- <br> ogenous <br> variables <br> and initial <br> values | Exogenous and <br> definitional <br> variables | Policy <br> variables | Slack <br> variables |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |
| Equality | $\mathrm{PR}=$Aggregate post-plan <br> value added growth <br> rate | - | - | - | - |
| Dimensions : | n | 1 |  | - | - |

G. Definitional relations. Gross domestic product equals weighted average of gross output by value added ratios :
(i) $R T=\left\{\frac{\sum_{i} v_{i T} x_{i T}}{\sum_{i} v_{i o} x_{i o}}\right\}^{1 / T}-1$,
(ii) $R_{i}=\left\{\frac{\eta_{I T} x_{i T}}{v_{i o} x_{i o}}\right\}^{1 / T} 1 ; T=$ Terminal period and $i=1,2 \ldots, n$.

Notations/Dimensions:


H- Aggregate trada constraint. Total imports must not exceed total foreign exchange availability (including withdrawal of reserves).
(i) $\left(\sum \alpha_{i T} * \mathbf{x}_{i T}\right)-A_{T} \leqslant \sum \mathrm{E}_{i T}+\operatorname{NIT}_{T}$
[This equation is a proxy for $\left.\sum_{i} \sum_{t} \alpha_{i T} * x_{i t} \leqslant \sum_{i} \sum_{t} E_{i t}+\sum_{i} A_{t}\right]$
(ii) $\mathbf{A}_{\mathbf{T}}=\underset{\mathbf{i}}{\Sigma} M_{\mathbf{i T}}-\underset{\mathrm{i}}{\Sigma} \mathrm{E}_{\mathbf{i T}}-\operatorname{NIT}_{\mathbf{T}}$

Notations/Dimensions :

| Equation | Endogenous variables | Lagged endogenous variables and initial values | Exogenous and definitional variables | Policy variable | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |
| (i) Inequality <br> (ii) Equality | AT $=$ net capital inflow in terminal year. | - | $\mathbf{E}_{\mathbf{T}}=$ Exports in terminal year. NIT = Factor incomes and transfer from abroad. | $-{ }_{\substack{\mathbf{S}_{1}}}$ | $\begin{aligned} & \text { nused foreign } \\ & e_{\text {in }} \text { in point } \mathbf{T} \\ & \left.\mathrm{m}_{\mathrm{T}}+\mathrm{NIT}_{\mathrm{T}}\right) \end{aligned}$ |


| Dimensions : | 2 | 1 | - | 1 |
| :--- | :--- | :--- | :--- | :--- |

I. Land balance. Total land used must not exceed land availability. (This is true for all major natural resources including crude petroleum) :

$$
\sum l a_{i T} * x_{i T} \leqslant T L A_{T}, i=1,2, \ldots, m ; T=\text { Terminal period }
$$

Notations/Dimensions :

| Equation | Endogenous variables | Lagged endogenous variables and initial values | Exogenous and definitional variables | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |
| Inequality | - | - | TLAT: = Total available land in the terminal year. | - | $\begin{gathered} \mathrm{SI}=\text { Unused land } \\ =\mathrm{TLA}_{\mathrm{T}} \mathrm{TA}_{\mathrm{T}} \\ -\Sigma \mathrm{a}_{i \mathrm{~T}} * \mathbf{x}_{\mathrm{iT}} \end{gathered}$ |


| Dimensions : | 1 | - | - | - | 1 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

J. Manpower balance. Total demand for labour as input; for production cannot exceed its total availability :

$$
\sum_{i} \operatorname{lab}_{\mathrm{iT}} * \mathrm{x}_{\mathrm{iT}} \leqslant \mathrm{TLAB} \mathbf{T}, \quad \text { where } \mathrm{i}=1,2, \ldots \ldots \ldots \mathrm{n} \text { and } \mathrm{T}=\text { Terminal year. }
$$

Notations/Dimensions :

|  | Equation | Endogenous variables | Lagged endogenous variables and initial values | Exogenous and definitional variables | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Inequality | - | - | TLABT $=$ Total labour force available in terminal year. | - | $\begin{aligned} & \text { SJ } \begin{array}{c} =\mathrm{U} \text { nemployed } \\ \text { labour force } \\ = \\ =\mathrm{TLAB} \\ -\Sigma \mathrm{lab}_{\mathrm{T}} * \end{array} \mathrm{x}_{\mathrm{it}} \end{aligned}$ |
| Dimensions: | 1 | - | - | - | - | 1 |

K. Minimum targeted welfare investment constraint. The time bound welfare programme of the plan must not exceedjplan's investment fund :
(i) $\sum_{i} \sum_{t} A I_{i t} \leqslant T I-\sum_{i} \sum_{t} \prod_{i} I_{i_{o}}\left(1+I_{r i l}\right), i=1,2, \ldots, n, t=1,2, \ldots, T$ and $1=1,2, \ldots, t$
(ii) $\mathrm{TI}=\mathrm{TR}$.

Notations/Dimensions:

|  | Equation | Endogenous variables | Lagged endogenous variables and initial values | Exogenous and definitional variables | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | (i) Inequality <br> (ii) Equality | TI $=$ Total invest ment made during plan period | - | AI $=$ Autonomous investment representing time bound investment | - | $\mathbf{S}_{\mathrm{K}}=$ Investment surplus available for induced and replace ment investment derived from equation K (i) |
| Dimensions : | 2 | 1 | - | - | - | 1 |

L. Public sector 'resources constraint. Total invesment in the public sector cannot exceed its savings (including borrowing from public) and foreign borrowing (including withdrawal of foreign exchange reserves) :

$$
\sum_{i} \sum_{i} \mathrm{~A}_{\mathrm{i} i}+\sum_{i} \sum_{t} \mathrm{PU}_{i t}^{*} \prod_{1} \mathrm{I}_{i o}\left(1+\mathrm{I}_{r i l}\right)+\mathrm{CURL} \leqslant \mathrm{PUBR}+\mathrm{FS}^{*}
$$

where $i=1,2, \ldots, n ; 1=1,2, \ldots \ldots, t$ and $t=1,2, \ldots \ldots T$.

Notations/Dimensions :

| Equation | Endogenous variables | Lagged endogenous variable and initial values | Exogenous and definitional variables | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |
| Inequality | PU=Public sector's share in investment | - | PUBR $=$ Total public sector savings +public borrowing+ agreed deficit financing. <br> FS* $=$ Total foreign saving accruing to public sector. <br> CURL = current plan outlay | - | $\mathrm{SL}_{\mathrm{L}}=$ Unused public sector savings derived as slack from eqn. L. |


| Dimensions : 1 | ${ }_{n T}$ | - | 1 |
| :--- | :--- | :--- | :--- | :--- |

81-L/P(D)359PCGewDelhi-2(a)
M. Public sector's minimum contribution as a policy variable. Public sector's contribution to sectoral investment must not fall below a floor :

$$
\begin{aligned}
& \mathrm{PU}_{i t} \geqslant \mathrm{PU}_{i t}, \text { for all } \mathrm{i} \text { 's and all } \mathrm{t} \text { 's, } \\
& \mathrm{i}=1,2, \ldots \ldots \mathrm{and} \mathrm{t}=1,2, \ldots \ldots, \mathrm{~T} .
\end{aligned}
$$

Notations/Dimensions :

| Equation | Endogenous varia- <br> bles | Lagged endoge- <br> genous variables <br> and initial values | Exogenous and <br> defnitional <br> variables | Policy variables | Slack variables |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |
| Inequality | - | - | - | PU = minimum <br> public investment <br> to total investment <br> ratio. | SM=Public invest- <br> ment ratio above the <br> stipulated norm, <br> derived as slack from <br> eqn. M. |
| Dimensions : nT | - | - | - | - | nT |

N. Maximum tax rate constraint. The direct tax rate must not exceed an upper limit.

$$
\mathbf{t}_{\mathbf{T}}^{*} \leqslant \mathbf{t}_{\mathbf{T}}^{*}
$$

Notations/Dimensions :

| Equation | Endogenous <br> variables | Lagged <br> genous variables <br> and initial values | Exogenous and <br> definitional varia- <br> bles | Policy variables |
| :---: | :---: | :---: | :---: | :---: | Slack variables

O. Private sector investment balance. The investible fund available to the private sector must equal or exceed the intended investment in the private sector:

$$
\sum_{i} \sum_{t}\left(1-P_{i t}\right) * \Pi I_{1}\left(1+I_{\text {ril }}\right) \leqslant P R I
$$

where $\mathrm{i}=1,2, \ldots \ldots, \mathrm{n} ; \mathrm{t}=1,2, \ldots \ldots, \mathrm{~T}$ and $\mathrm{l}=1,2, \ldots \mathrm{t}$.
Notations/Dimensions :

|  | Equation | Endogenous variables | Lagged endogenous variables and initial values | Exogenous and definitional variables | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Inequality | - | - | PRI =Total pvt. investment intended during the plan period | - | SO = unused private investment fund derived from eqn. 0. |
| Dimensions : |  | - | - | - | - | 1 |

P. Gross output at market price. It equates intermediate inputs at market price and value added at factor cost :
(i) $\mathrm{V}_{\mathrm{jT}} / \mathrm{X}_{\mathrm{jT}}=\mathrm{V}_{\mathrm{jT}}$,
(ii) $G x_{i T}=\sum_{j} d_{i j} X_{j T}$
where $\left\{\mathrm{d}_{\mathrm{ij}}\right\}$ is industry by commodity matrix, $\mathrm{i}=$ industry and $\mathrm{j}=$ commodity,

$$
\text { (iii) } V_{j \mathrm{~T}}=G \mathrm{x}_{\mathrm{jT}}-G \mathrm{x}_{\mathrm{j} \mathrm{~T}} \sum_{i}\left[\mathrm{~b}_{\mathrm{ijT}}\left(1+\mathrm{T}_{\mathrm{i}^{*}}\right)+\mathrm{b}^{\mathrm{m}_{\mathrm{ijT}}}\left(\mathrm{~T}^{\mathrm{i}}{ }^{\mathrm{m}}-\mathbf{T}_{\mathbf{i}^{*}}\right)\right]
$$

where $\left\{\mathrm{b}_{\mathrm{i} j}\right\}$ is commodity by industry matrix, $\mathrm{i}=$ commodity and $\mathrm{j}=$ industry.
Notatlons/Dimensions :

| Equation | Endogenous variables | Lagged endogenous <br> variables and initial <br> values | Exogenous and <br> definitional varia- <br> bles | Policy varia- <br> bles | Slack <br> variables |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) |  |
| Equality | V =value added, <br> Gx=Industry gross output | - | Tm=Import duties | - | - |  |
| Dimensions : | $3 n$ | $2 n$ | - | - | - | - |

Q. Perspective Plan. The requirement of output in 1994-95 should be consistent with the long term objectives of the economy and should match the growth potential developed in the sixth Plan.

where $\mathrm{LO}=$ linear operator
(ii) $\mathrm{X}_{\mathrm{siPT}}=\mathrm{X}_{\mathrm{iT}}\left(1+\mathrm{r}_{\mathrm{i}}\right)^{\mathrm{PT}-\mathrm{T}}, \mathrm{i}=1,2, \ldots, \mathrm{n}$.
(iii) $\mathrm{C}_{\mathrm{PT}}=\sum \Psi \theta_{\mathrm{i}}\left[\sum \mathrm{v}_{\mathrm{iPT}} \mathrm{x}_{\mathrm{iPT}}\left(1-\mathrm{t}_{\mathrm{PT}}\right)+{ }^{\Delta} \omega^{\prime} \mathrm{NDDT}^{\prime}\left(1-\mathrm{t}_{\mathrm{PT}}\right)+\mathrm{NIT}_{\mathrm{PT}}\right] \epsilon_{\mathrm{iPT}}$,
(iv) $\mathrm{C}_{\mathrm{PT}}=\mathrm{C}_{\mathrm{rPT}}+\mathrm{CuPT}_{\mathrm{aPT}}$,
(v) $\mathrm{V}_{\mathrm{rPT}}=\mathrm{C}_{\mathrm{rPT}} / 12 \mathrm{P}_{\mathrm{r}}$,
(vi) $\mathrm{V}_{\mathrm{uPT}}=\mathrm{C}_{\mathrm{uPT}} / 12 \mathrm{P}_{\mathrm{u}}$,
(vii) $V_{D P T}=b \quad V_{\text {rPT }}$
(viii) $\mathrm{PL}_{\mathrm{PT}}=\mathrm{p} \Phi\left(\mathrm{Z}^{\prime}\right)$,
(ix) $\mathrm{PL}_{\mathrm{PT}}<\mathrm{PL}^{*}{ }_{\mathrm{PT}}$
(x) $\mathrm{x}_{\mathrm{siPT}} \geqslant \mathrm{x}_{\mathrm{iPT}}, \mathrm{i}=$ power, several non-ferrous metals, etc.
(xi) $\sum 1 a_{i P T} * x_{\text {iPT }} \leqslant$ TLA $_{P T}$

Notations/Dimensions :

| Equation Endogenous variables | Lagged endo- Exogenous and genous variables definitional variables and initial values |  | Policy variables | Slack variables |
| :---: | :---: | :---: | :---: | :---: |
| (1) (2) | (3) | (4) | (5) | (6) |
|  | , |  | $\begin{aligned} & \text { PT =Max. popu- } \\ & \text { on below } \\ & \text { erty line in post } \\ & \text { ninal year } \end{aligned}$ | Slacks for Equations Q (ix), (x) and (xi) refer to the additional reduction in poverty over the objective for 1994-95, unused capacity and unused land respectively. |

N.B. It is possible that there results an excess capacity in some sectors and binding constraint in other sectors,

## Exogenous Variables

Exports of all sectors in terminal period
Public consumption for all sectors in terminal period
Autonomous investment for all sectors and all years
Total resources over the plan period $\quad 1$
Foreign savings in the terminal year
Total land available in terminal year 1
Total labour available in terminal year
Total public sector domestic saving during plan period
Total foreign savings accruing to public sector in plan period
Minimum sectoral public investment ratios for all sectors and all years
Maximum tax rate in terminal year
Private sector's intended investment over plan period
Indirect tax rates
Factor income and transfer from abroad

## Import duties

Total indirect taxes in plan period Rural and urban population for terminal and post terminal years

## Numbers

List of Parameters :

## Block

## Parameters

A. 1. $\mathrm{a}_{\mathrm{ij}}=$ input output co-efficient,
2. $\theta_{\mathrm{i}} \quad=$ consumption operator (consumption propensity of LES),
3. $\mathrm{K}_{\mathbf{1 j}}=$ element of capital co-efficient matrix with gestation and phasing built in,
4. $\mathrm{L}_{\mathrm{i}}=$ Investment gestation lag, and
5. $\alpha_{\mathrm{j} \mathbf{T}}=$ import co-efficient
B. $1 . \delta_{\mathrm{jt}}$ =investment phasing assumed as

$$
\delta_{i t}=L_{i}^{-i}
$$

2. $\mathrm{ICOR}_{\mathrm{i}}=$ incremental capital output ratio.
I. l.la $a_{i t}=$ land per unit of gross output.
J. 1.lab ${ }_{i t}=$ Labour per unit of gross output.

P 1. $\mathrm{d}_{\mathfrak{j}}=$ co-efficients of make matrix.
$2 . b_{i j}=$ co-efficients of commodity by industry matrix,
$3 . \mathrm{b}_{\mathrm{i} j}^{\mathrm{m}}=$ co-efficients of import commodity by industry matrix.
Q 1.b =Rural-urban per capita consumption ratio.
Number of Equations, Endogenous variables and Slack variables :

| Model Block | Number of Equations | Number of endogenons variables | Number of slack variables | Total slack \& endogenous variables |
| :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) |
| A | n |  | 0 | $3 \mathrm{n}+3$ |
| B | $3 \mathrm{n}+\mathrm{nT}$ | $3 \mathrm{n}+\mathrm{nT}\left(\mathrm{I}_{\mathrm{T}}, \mathrm{F}_{\mathrm{i}}, \mathrm{l}_{\text {rit }}, \mathrm{G}_{\mathrm{i}}\right)$ | 0 | $3 \mathrm{n}+\mathrm{nT}$ |
| C | 1 |  | 1(Sc) |  |
| D | n | $\mathrm{n}\left(\mathrm{x}_{\mathrm{s}} \mathrm{T}\right)$ | ${ }^{0}$ (SE) | n |
| $\underset{F}{\text { E }}$ | $\mathrm{n}_{\mathrm{n}}{ }^{\text {d }}$ | 1 (PR) | ${ }_{0}^{\mathrm{n}(\mathrm{Se})}$ | ${ }_{1}$ |
| G | $\mathrm{n}+1$ | $\mathrm{n}+1$ ( $\mathrm{RT}_{\mathbf{\prime}} \mathrm{R}_{\mathrm{i}}$ ) | - | n+1 |
| H | 2 | 1(AY) | ${ }_{1}(\mathbf{S H})$ | 2 |
| ${ }_{\text {I }}^{\text {I }}$ | 1 |  | ${ }_{1}^{1(S I)}$ | 1 |
| ${ }_{\mathbf{J}}^{\mathbf{J}}$ | 1 2 | $\stackrel{\circ}{1(T)}$ | ${ }_{1\left(S_{K}\right)}^{1\left(S_{J}\right)}$ | $\frac{1}{2}$ |
| L | 1 | nT ( $\mathrm{PU}_{\text {it }}$ ) | $1\left(\mathrm{SL}_{\text {L }}\right)$ | $\mathrm{nT}+1$ |
| M | nT | ${ }_{0}$ | nT (SM) | $n \mathrm{~T}$ |
| N | 1 | 0 | $1\left(S_{N}\right)$ | 1 |
| O | ${ }_{3}^{1}$ | 0 - | 1 (So) | ${ }_{2}^{1}$ |
| $\stackrel{\mathbf{P}}{\mathbf{Q}}$ | $3 n$ $3 n+7$ |  | $\mathrm{O}_{\mathrm{n}+1}(\mathrm{SQ})$ | 2n 3 +7 |
| Total | $14 \mathrm{n}+2 \mathrm{nT}+19$ |  | $2 \mathrm{n}+\mathrm{nT}+9$ | $14 \mathrm{n} 43 \mathrm{nT}+22$ |

When $\mathrm{PU}_{\mathrm{it}}, \mathrm{t}^{*}$ and $\psi$ are exogenous, then the number of equations reduces to $(14 \mathrm{n}+2 \mathrm{nT}+19-\mathrm{nT}-1)=14 \mathrm{n}+\mathrm{nT}+18$. The number of unknowns are $(14 n+3 n T+22-2 n T-3)=14 n+n T+19$.
II. 3. Solution sequence and some properties

The model starts its simulation with initialised values of the post-plan growth rates ( $\mathrm{r}_{i}$.)
(ii) By using equation system (A) and (G), it calculates the Plan's sectoral growth rates ( $\mathbf{R}_{i}$ ) and the GDP growth rate (PR).
(iii) By using equation system (F) and by further iteration, it arrives at a pair of $R_{i}$ 's and $r_{i}$ 's which satisfy the constraints given in the equation system (F). At this stage we attain a convergence position when there is a consistent set of plan and post-plan sectoral growth rates with their relative growth structure being the same, both during the plan period and in the post-plan period.
(iv) By using system of equation in (B), i.e. by assuming a given phasing of investment, the total investment need over the plan period is assessed.
(v) This total investment requirement is examined against equations given under (C) to assess the feasibility of the investment programme against resources availability.
(vi) A scalar operator (LO) is used to increase or decrease the post terminal growth rates so that the resources availability constraint given under (C) is satisfied.
(vii) But even at this stage, there is no guarantee that sufficient capacity will be available to fulfil the targets that have been developed,
(viii) Equation system (E) at this point is used in order to estimate the availability of the capacity output for the year 1984-85.
(ix) If all the slack variables of the equation system (E) (ii) are non-negative, then the feasibility in terms of capacity available is ensured. If some of the slack variables are negative, then the post-terminal growth rates are to be reduced by iteration method and a new convergence is reached when the non-negativity conditions in the equation system ( E ) are revived. This convergent position can be affected by two major decisions-(a) marginal propensity to consume can be changed which will affect the relation between plan and post-plan growth rates; and (b) the tax-subsidy/other income and consumption policies can be changed giving similar results.
(x) Within the agreed feasibility ranges, alternatives have been worked out and the one which provides the maximum growth rate for the Sixth Plan is chosen.
(xi) At this stage, it is clear that in order to utilise the total saving available (system C) and at the same time to satisfy the capacity consstraint, higher investment to GDP rates will be warranted. To put it in a different way, if there is a capacity constraint in the long gestation, higher ICOR sectors, more investment will be needed in those areas to release these constraints and therefore the society has to save more.
(xii) At this stage the estimated outputs are passed through the system of equations under $(\mathrm{H})$ in order to check the presence or absence of any trade constraint. If the slack variables of the equation system (H) are non-negative we have no problems and the economy has no trade constraints as binding. If they are, in some sectors, negative, then the whole iteration has to start from the beginning by adopting a much lower development and growth profile until the conditions given under ( H ) are satisfied.
(xiii) Subsequently, the model simulates the system of equation under $\mathbf{I}, \mathbf{J}, \mathbf{K}, \mathrm{L}, \mathrm{M}$ and N , when everyone of them checks the feasibility constraints of different forms of resources.
(xiv) Finally we come to the most important block of the system (Q) which mainly deals with long-term perspective. The growth scenario evolved so far projected by the post-terminal growth rates will provide the development profile for the year 1984-85. At this stage the implication of this level of development is assessed against the plan's long-term goals on poverty, unemployment and self-reliance. This is done by the use of the equation system (Q); if any of the equations are not fulfilled, the iteration will have to start from the beginning from equation system (A). An upward revision at this stage will be possible only if all slack variables in the system are non-negative. If non-negativity is
destroyed in any one case, then the Plan's longterm objectives are regarded to be too ambitious. At this stage, the planners have two optionseither to reduce the plan long-term goals or to reduce the Sixth Plan growth rates (i.e. Plan's short-term goals), by changing either the propensity to consume or the tax rates or by some other relevant policy measures. But in our present exercise, we have noticed that the degrees of freedom for making alternative choices are only few, given the existing resources constraint in our economy.

## II.4. Conclusion

The above presentation in many senses oversimplifies the actual exercises that have taken place behind every plan formulation. Indeed, more indepth feasibility tests are performed on individual projects and programmes. Demand supply balances in the market are examined in more detail, carefully assessing the implications of alternative policy packages. Financial flows and institutional credits are examined in a detailed fashion although sometimes in a partial equilibrium frame. Many of these exercises are performed outside the Planning Commission, in the ministries or in public sector institutions and in other Government bodies both under the centre and in the states including local bodies. But their results contribute considerably to the plan formulation at the Commission. In this note, only an analytical frame of the overall structure is presented. At this stage, it is appropriate to highlight some of the major existing analytical gaps. The treatment of private consumption in the present model (and so also in all earlier plans) is not strictly on a "closed loop" basis. The income distribution and the production structure of the economy are not explicitly functionally related. The model is run only for terminal years although it is well known that the feasibility of a production target and that of a demand supply balance in the market can be tested only when examined as a flow over time. Hence an exercise based on annual phasing is a minimum requirement for developing a true feasible planning structure. The work on annual phasing is in progress in the Commission. For the present model, in order to ensure a technical feasibility examined from capacity considerations at the terminal year of the Plan, a simplifying assumption of exponential spread of investment between the base and the terminal year of the plan has been assumed. This might create problems of input-output imbalances, when checked on an annual basis. Again, a rough check is done by assuming some selected sectors of the final demand as the balancing "item". This aspect needs more articulation during the annual plan phasing. Last but not least, more attention is to be paid to the role of the private sector, the impact from the changes in relative prices and problems of spatial allocation of resources.

## FLOW CHART



## CHAPTER III <br> THE SUBMODELS

## III. 1. Agriculture

The gross cropped area in 1979-80 has been estimated at 168 million hectares including 140 million hectares of net area sown and 28 million hectares of area sown more than once. Thus the cropping intensity in 1979-80 is estimated at 1.20 . Based on the land utilisation concept of irrigated area, the gross irrigated area in 197980 has been estimated at 50.00 million hectares. During the Sixth Plan period an additional irrigation potential of 15 million hectares is likely to be created. Utilisation of incremental irrigation potential is estimated at 13.8 million hectares. Thus the gross irrigated area in 198485 is likely to attain a level of about 64.00 million hectares. The additional irrigation is likely to increase the area under short duration high yielding varieties and is thus likely to promote cropping intensity which is projected to go up from 1.20 in 1979-80 to 1.25 in 1984-85.

It has been assumed that the increase in gross cropped area in the future years is likely to be based largely on the creation of additional irrigation facilities. Several functional relationships between gross cropped area and gross irrigated area as also between gross irrigated area and incremental area sown (more than once) with and without time lags were studied. ${ }^{1}$ Based on these relationships, gross cropped area in 1984-85 is estimated as 179.74 million hectares. It has been assumed that a substantial step-up in the creation of irrigation potential and its optimum utilisation is crucial for the attainment of output targets for various crops in the Sixth Plan period.

The gross cropped area estimated for the terminal year of the Sixth Plan has been allocated between different crops keeping in view the fact that lagging crop sectors like pulses and oilseeds have to be given critical importance. As a first approximation, gross cropped area has been allocated between different crops on the basis of trend growth rates of the percentage share of each crop in the gross cropped area. The area projected for each crop has again been allocated between different categories of land (HYV/Irrigated/Unirrigated) on the basis of respective estimated trend growth rates. Keeping in view the imbalances in the crop composition as prevalent at present, trend projections of area for each lagging crop sector like pulses and oilseeds have been revised upwards. Policy in-
struments, coupled with the undertaking of appropriate research involving high yielding varieties and intensification of lab-to-land movement are likely to help in inducing the acreage as well as yield shifts in favour of lagging crop sectors. Some downward adjustment in the projected acreage of wheat has been made while some minor adjustment has to be made in the projected acreage of a few other crops so that total gross cropped area equals that estimated independently as mentioned above. The cropping pattern thus estimated is presented in Table 3.1 (See under TABLES).

Per hectare yield rates as available from the reports of the crop cutting experiments of the National Sample Survey Organisation have been used in the case of foodgrain crops and cotton (for details see Table 3.1). For sugarcane, the highest unit area yield achieved so far has been used for the estimation of output in 1984-85. In case of jute and mesta, improvement in yield rates as warranted by the historical experience have been assumed. It may be clarified that while selecting the estimates of unit area yields for foodgrains, we have gone by the experience of the early seventies when the unit area yields were relatively high compared to their levels in the later years. The projected physical outputs (capacity) of major crops for the year 1984-85 as estimated on the basis of the above assumptions are indicated in Table 3.1.

The growth rates of the estimated capacity output of major crops in 1984-85 over 197980 are higher than those recorded during the period $1969-70$ to $1978-79$. This is mainly due to the fact that in 1979-80 which was a very bad year, production levels were very low. However, the growth rate of foodgrains as a whole will be about $3.2 \%$ per annum, using trend estimate for $1979-80$ as against an observed growth rate of $2.74 \%$ during $1969-70$ to 1978 79.

## III. 1.1. Perspective for the agriculture sector

It is extremely hazardous to attempt a broad perspective of the agriculture sector extending upto 1994-95. This is obvious because of the various constraints as being observed in the supply of inputs, availability of loans to the weaker sections of the society, capacity utilisation in case of fertilizers, manufacturing industries, irrigation etc., and problems of payment of
remunerative prices for various agriculture crops. In this context, it may be useful to highlight the scenario in respect of irrigation and fertilizers. Taking irrigation first, it may be pointed out that an ultimate irrigation potential of the order of 113 million hectares could be created by 2000 A.D., of which 58 million hectares would be through major and medium irrigation and 55 million hectares through minor irrigation including 40 million hectares from ground water sources. From the point of view of the agriculture sector, it is the utilisation of the irrigation potential for generation of necessary agriculture output which is more relevant. It has already been pointed out that the gross irrigated area is likely to attain a level of about 64 million hectares in 1984-85. Assuming an increment of 17 million hectares potential and 20 million hectares potential in the Seventh and Eighth Plans respectively, the gross irrigated area (in terms of utilisation) is likely to attain a level of 97.30 million hectares in 1994-95. This highlights the importance of the fact that the creation of irrigation potential has to be backed by its utilisation to its optimum capacity. Attainment of optimum irrigation potential would, in turn, depend upon satisfactory solution of a number of problems e.g., availability of necessary financial resources, building up of storage points depending on suitable locations, availability of well-designed and well-prepared profiles of irrigation projects, solution of inter-state river disputes etc.

In the case of fertilizers (NPK), the demand is expected to go up from 5.3 million tonnes in terms of nutrients in 1979-80 to 9.6 million tonnes by the end of Sixth Plan which implies a step-up of 4.3 million tonnes during the Sixth Plan period giving a per annum step-up of 8.6 lakh tonnes. While we are not yet clear about the impact of increases in fertilizer prices as announced in June 1980 on fertilizer consumption, it could be assumed that the per annum increase of consumption of fertilizers in physical terms may be of the order of 8 lakh tonnes in Seventh Plan and 9 lakh tonnes in Eighth Plan. Based on this, the demand for fertilizer is estimated at 18.1 million tonnes in 1994-95. It may be emphasised that this figure is only tentative and is of an indicative nature. Serious supply-demand imbalance in fertilizers will force us to adopt the approach of recycling of available sources like greater use of organic materials, soil conservation etc. for maintaining the fertility of the soil. This aspect will have to be carefully considered in consultation with agronomists, plant breeders and other disciplines of agriculture science. Similarly, availability of adequate energy for successful execution of various agricultural operations in the perspective period will be crucial to the attainment of
long-term output targets. The experiments in the field of bio-gas will have to be pushed forwardl with vigour and earnestness. Though the above limitations are important to consider, we have nevertheless attempted some broad profiles of growth for agricultural outputs. The output targets for 1994-95 for selected crops are given below:-

| Crop sectors | Unit | Output <br> level |
| :--- | :--- | ---: |
| Foodlgrains | mill. tonnes | 205 |
| Sugarcane | mill. tonnes | 300 |
| Cotton | lakh bales | 135 |
| Jute \& Mesta | lakh bales | 125 |
| Major oilseeds | lakh tonnes | $165-170$ |

In making these projections, it has been assumed that the existing ratio of area under foodgraims to gross cropped area (being $75 \%$ ) will be silightly reduced in favour of expansion of the coutput of commercial crops. Similarly, a signifficant proportion of the increment in the gross irrigated area will be utilised for pushing up the output of pulses, oilseeds, fruits and vegettables, green fodder etc.

Based on the irrigation perspective upto 1994 95, the gross cropped area is estimated at 188 million hectares in 1994-95 of which 51.76 per cent is likely to be irrigated.

## III. 2. Exports

Export projections adopted exogenously in the model were in the nature of feasible targets determined in the light of the following:
(i) the observed growth of exports in real terms in the recent past (1973-79);
(ii) the observed elasticity of export growth with respect to GDP growth;
(iii) the physical limits of sectoral/commo-dity-wise exports set in the light of material balances;
(iv) prospects of world trade in general and the bilateral trade expansion with respect to the East European countries; and
(v) the foreign exchange financing requirements of imports by export earnings given the prospects of other sources of foreign exchange flow.

There were additional factors which guided the export projections in the medium and the perspective period. For example, the export projection for the medium-term (1979-80 to 1984-85) were guided by the export surpluses
under capacity constraints and the need to restrain exports of essential items of domestic demand to contain inflationary impact of their scarcity.

While the export projections in the perspective period (1984-85 to 1994-95) took account of long-run export potential in the light of the country's comparative advantage in labour-intensive and natural product items and considered the possibilities of capacity expansion in those sectors, certain items of net imports were projected to become items of net exports in the perspective period. They included steel, aluminium, machinery and transport equipment.

The projections were made first at constant (1979-80) prices, converted at current prices for projections of balance of payments. Projections of certain items like iron ore, tea, coffee, jute manufactures and leather manufactures are, however, made taking into account the possibilities of higher unit value realisation which may be expected on account of change in the productmix.

The apparent elasticity of export growth with respect to GDP growth in major sectors was cross-checked by the observed values and the expected elasticity of foreign trade of the developing countries projected by the global models.

The sectoral and commodity-wise export projections could not be based on behaviouraleconometric relations as it was difficult to get reliable estimates of parameters with respect to any meaningful variables in many sectors/ commodities, notably textiles, engineering goods, chemicals and a number of miscellaneous items.

The major assumptions of export projections in the medium term are described below.

## Assumptions of Export Projections in the Medium-Term

1. Lower income elasticity of demand in case of traditional items like tea, coffee and jute-goods;
2. constrained exports of oilcakes due to the expected increase in domestic demand related to animal husbandry and rural development;
3. limited exports of food items on account of priority to domestic demand;
4. more than average growth prospects of exports of marine products and processed food items;
5. exports of iron and steel and coal derived from material balances;
6. exports of iron ore constrained by demand recession notably in Japan;
7. above average growth prospects of exports of engineering goods, textiles, and other manufactures (handicrafts, leather goods, chemical etc.) given (i) their projected apparent income elasticity and growth of the OECD countries, and (ii) India's marginal share in the world trade and corresponding advantages of a marginal exporter;
8. realisation of bilateral trade growth prospects with respect to the East European countries;
9. achievement of targets of infrastructure given in the Plan notably of transport; and
10. continuance of export support schemes including cash compensatory support and REP.

## III. 3. Demography

Assumptions and method of population projections as adopted by the Expert Committee
Population projections for 1971-96 were worked out with the following assumptions regarding fertility and mortality.

Fertility-It was felt that a birth rate of 30 would be reached by 1982-83 and further reduction in birth rate would be a slow process. A reduction of 1 point every two years was assumed upto the year 1991. The Registrar General extended the projections upto 1996 at the request of the Planning Commission. In this projection a still. slower reduction of 2 points every five years in birth rate was assumed. The rates assumed for various quinquennia were as follows:-

| Period | Birth rate (per thous- <br> and population) |
| :--- | :---: |
| 1971-76 | 36.6 |
| $1976-81$ | 32.9 |
| $1981-86$ | 29.5 |
| $1986-91$ | 27.0 |
| $1991-96$ | 25.0 |

Mortality-Starting with the life table for 1961-71, the annual increases in the expectation of life at birth were taken at 0.5 year per year for males and 0.55 year per year for females. This rate gave an expectation of life for males and females at 64.0 years in 2001.

## III 3.1 Method of projection.

The life table for the decade 1961-71 based on $10 \%$ rural and $20 \%$ urban sample of slips was taken for the year 1966.

It was assumed that the age specific mortality would conform to the West Model pattern (Coale and Demeny Regional Life Tables) associated with the assumed expectation of life at birth as 64.0 years by 2001.

Mortality levels for each age for the intervening quinquennia were determined linearly and the values of ${ }_{5} \mathrm{q}_{\mathrm{x}}{ }^{\text {'s }}$ (the probability of dying before attaining age $x$ ) for these levels were then obtained. From $q_{x}$ 's values, the values of expectation of life at birth were calculated which were very close to the assumed values of expectation of life at birth.

Survival ratios of each age were read off from the West Model Life tables corresponding to the associated mortality level.

The 0-4 age group for the terminal year was derived by using the given birth rate for the quinquennium, survival ratios from birth to $0-4$ for males and females separately and the sex ratio of 105 males to 100 females at birth. The method with notations can be written in the following mathematical equations.
$b=$ assumed birth rate for the quinquennium $\mathrm{S}_{b}^{M}$ and $\mathrm{S}_{\mathrm{b}}^{\mathrm{F}}$ are the survival ratios from birth to $0-4$ for males and females respectively for the quinquennium.

Sex ratio assumed at birth $=105: 100$
$K_{M}=b \frac{2.5 \times 105}{205}$ and $K_{F}=b \frac{2.5 \times 100}{205}$

P $\quad=$ total population relating to the initial year of the quinquennium.
$\mathbf{P}_{5+}=$ total population of age 5 and over for the terminal year of the quinquennium.

Number of female births during the quinquennium

$$
\begin{aligned}
& =\mathbf{K}_{\mathbf{F}}\left[\mathbf{P}_{0+}+\underset{0}{\mathbf{P}}\right]+\underset{F}{K_{F}}\left[{\underset{0}{\mathbf{M}}}_{\mathbf{P}_{0-1}}^{\mathbf{P}_{10-1}^{\mathbf{F}}}\right] \text { or }
\end{aligned}
$$

$$
\begin{aligned}
& \text { Similarly }
\end{aligned}
$$

## III. 3.2. Rural-urban projections

Urban population was projected by using urban-rural-growth-differential method (URGD). In this method, it is assumed that the percentage level of urbanisation rises in the manner of a logistic curve. It has been observed that the URGD was 1.29 and remained virtually constanit for the decades 1951-61 and 1961-71 and the same rate i.e. 1.29 was assumed for the future years alsb.

The rural/urban population was obtained by URGD method. To obtain the sex composition of rural and urban population, the size of the rural male population was first calculated. Here it was assumed that the trend in the rural sex ratio would be similar to that of total population whose projections by sex was already available. The formula used is as follows:-

$$
\left[\frac{R m}{R}\right]_{1971+5 r}=\left[\frac{R m}{R}\right]_{1971} \times\left\{\frac{\left[\frac{T m}{T}\right]_{1} 1971+5 r}{\left[\frac{T m}{T}\right]_{1971}}\right\}
$$

$$
\mathrm{r}=1,2,3 \text {, and so on. }
$$

$\mathbf{R} \quad=$ Rural population
$\mathrm{T}=$ Total population of all areas. Tm Tm Total male population of all areas.

Once rural male population was obtained by applying the above ratios to the corresponding projected rural population, other elements were worked out easily. Urban population beyond 1991 was estimated in the Division by the same method.

The age distribution of rural and urban population, sex-wise as reported by 1971 census for five broad age groups, was put in a $5 \times 2$ matrix form. The marginal totals were adjusted to correspond to 1971 smoothed age data by repeated iterations (by method of difference elimination). These five broad age groups are $0-14,15-29$, 30-44, 45-59 and 60+.

Estimates by age and sex for rural and urban areas for future years were tried by the same method (method of difference elimination) for the same broad groups: $0-14,15-29,30-44$, $45-59$ and $60+$ only. These were done for the years 1971, 1976, 1981, 1986 and 1991 by the Expert Committee and were extended to 1996 in the Division by the same method.

## III. 4. Autonomous investment and public consumption

There are many time-bound programmes in the public sector outlay which have important welfare dimensions for the economy but these are not necessarily directly measurable in terms of GPD growth. Also, they do not always contribute to the conventional concept of asset formation. All these investments are treated as autonomous investments, i.e., their levels are determined in terms of specific welfare criteria and not necessarily by the consideration of increasing the capital stock of the economy.

The aggregate Government consumption is estimated by the Working Group on Financial Resources ${ }^{1}$. The sectoral breakdown is achieved by the following methods:

The scalar value of public consumption in 1984-85 is converted to a vector by using the relative proportions of the elements of the corresponding public consumption vector in 197980. Later on, these are further adjusted on the basis of the trends in sectoral public consumption and selected elasticities of individual items or on a-priori information regarding projects on minimum needs, health, education etc. which are mainly designed to change the consumption pattern of the society through policy measures.

## III. 5. Long term objectives, with both cardinal and ordinal values

The major long term objectives are defined as reduction in the level of poverty and achievement of a self-reliant society. From the general ordinal guidelines given by the National Development Council and the planning body, cardinal measurements have been stipulated as goals in terms of reducing the number of people below the poverty line to a minimum for the year 199495. Similarly, a maximum cardinal limit has been worked out on foreign saving as percentage of our export earnings and import requirements, regarded as proxy for self-reliance for the year 1994-95. Besides, the implications of many specific sectoral targets on import substitution and of generating a minimum level of additional employment have been worked out in the model. All these estimates or goals are used as exogenous inputs into the core model.

## CHAPTER IV

## THE CORE MODEL: INPUT-OUTPUT, INVESTMENT, PRIVATE CONSUMPTION, IMPORT AND PERSPECTIVE PLAN BLOCKS

## IV. 1 Input-Output block

## IV. 1. 1. Current flow matrix and base year data

The year 1979-80 has been adopted as the base year for the purpose of projections for the Sixth Five Year Plan, 1980-85. In developing the projections of output levels, an input-output table for the Indian economy for the year 196869, which has been constructed by the Perspective Planning Division in collaboration with the Central Statistical Organisation, has been used. This table has 225 sectors representing the current flows in value terms at ex-factory prices. The base year (1979-80) table has been constructed in two stages. The 1968-69 table has been first aggregated to 89 sectors and the latter has been updated to 1979-80 at 1979-80 prices using the available information on input norms, commodity output levels, exports, imports, investment and public and private consumption and 1979-80 price indices. Care has been taken so that this updated table of 1979-80 balances with the sectoral estimates of outputs and final demand for 1979-80 as also with the Quick Estimates of national product, savings and capital formation for 1979-80 released by the Central Statistical Organisation (CSO). The details are discussed below :
IV. 1.2. Sectoral output levels and value added

The estimates of sectoral gross output levels for the manufacturing sector for 1979-80 have been based on about 300 commodity outputs of 1968-69 and 1979-80 in physical units and in values at 1979-80 prices. From these data sectoral growth rates have been derived between these two years. Applying these growth rates to 1968-69 sectoral output levels the same for 1979-80 have been estimated. For agriculture, the sectoral estimates have been based on data of output levels for 1979-80. In the case of sectors like construction and services for which output levels are not available, these have been derived applying the output value added ratios to figures of value added of 1968-69 input-output table, adjusted for 1979-80 prices using the sectoral price indices for 1979-80 with 196869 as base. This has been cross-checked by the value added to gross output ratios under broad aggregates available for 1979-80.

Estimates of gross value added for 1979-80 for 14 groups of sectors are available from CSO's Quick Estimates mentioned earlier. The sectoral estimates of gross value added as in 196869 input-output table have been aggregated into 14 groups to correspond to the above 14 groups of National Accounts Statistics. These estimates have been converted to $1979-80$ prices using GDP deflators by regressing the past series of deflators with wholesale price indices. For individual sectors, gross value added to output ratios as in 1968-69 input-output table have been used and adjusted so that they are consistent with the group controls of 1979-80. Estimates of gross value added for $1979-80$ for 89 sectors have been obtained using group totals as given in the Quick Estimates released by the Central Statistical Organisation for 1979-80 and estimates of value added proportions for 89 sectors for 1968-69 converted to 1979-80 prices. Whenever independent estimates are available on gross output or value added for any sector, care has been taken to incorporate this information before deriving final balances.

## IV. 1.3. Final demands

Final demand vectors for the year 1979-80 have been estimated as follows:

## Private consumption

The private consumption vector for 1979-80 at purchasers' price has been generated by the consumption sub-model using aggregate private consumption for 1979-80 at 1979-80 prices as given in the Quick Estimates. The total private consumption has been divided into rural and urban components by using the ratio of per capita consumption in urban areas to that in rural areas, which has been estimated on the basis of past behaviour of this ratio. The private consumption vectors, separately for people below and above the poverty line in rural and urban population, have been derived on the basis of a linear expenditure system (LES) for 13 groups of commodities and services and relevant demend functions for commodities within each LES group. The private consumption vector obtained by adding the above four vectors is in purchasers' prices and it has been converted into market prices using the trade and transport margin rates etc. estimated independently.

## Public consumption

Aggregate government consumption for 197980 at current prices, given in the Quick Estimates of CSO, has been disaggregated to 89 sectors of input-output table on the basis of trend analysis of different components of public consumption.

## Gross fixed investment and changes in stock

The total gross fixed investment and aggregate inventory changes have been taken trom the Quick Estimates for 1979-80. Estimates of gross fixed investment in various sectors have been obtained in broad aggregates from the CSO's estimates and further break-down to 89 sectors has been obtained using the sectoral proportion to the total as in 1968-69, adjusted for prices. Estimates of capital goods delivered by different sectors have also been computed separately by trend analysis of relevant data for the purpose of fixing up the gross fixed investment vector for 1979-80. Estimates of changes in stock held by different sectors in 1979-80 have been based on the sectoral inventory output coefficients observed in the past year. However, the changes for the level of inventories held in certain sectors like foodgrains and food products have also been taken into account in estimating changes in stock for 1979-80.

## Exports \& imports

Estimates of exports of different commodities and services have been based on DGCIS data and information obtained from the Ministry of Commerce and Reserve Bank of India as reported in the report of the Working Group of Balance of Payments. The commodity-wise estimates of exports and net exports of invisibles have been grouped to give sectoral exports of 1979-80 at f.o.b. prices which are later converted to market prices using trade and transport margin rates.

Sectoral imports for 1979-80 at 1979-80 prices have been estimated exogenously using similar information as in the case of exports.

IV 1.4. Updated table for 1979-80 at 197980 prices

The input-ouput table for 1968-69 represents the technology and product mix of 1968-69 in current prices. In order to update the input-ouput table for 1979-80 at 1979-80 prices, the input matrix as well as output matrix for 1968-69 for 225 sectors have been aggregated to 89 sectors. The input-output coefficients have been converted to $1979-80$ prices so that the basic inputoutput relationships are consistent with the price level corresponding to final demand estimates.

After final demand by sector and output by sector for 1979-80 at 1979-80 prices have been
estimated as discussed above, intermediate demands or row control totals of input flow matrix for 1979-80 have been obtained by subtracting the sectoral final demands from the corresponding gross output levels.

Assuming that industries preserve their observed share of production in 1968-69 for each domestically produced commodity irrespective of the levels of commodity production, the indus-try-wise output levels for 1979-80 are estimated using the output coefficient matrix (Make matrix) and commodity output levels for 89 sectors. The column control totals for the input matrix for 1979-80 at 1979-80 prices for each industry sector has been obtained as a difference between the gross output levels at factor cost of an industry and its gross value added.

A balanced input flow matrix for $1979-80$ is finally obtained on the basis of RAS method using the above mentioned row and column control totals. It may be mentioned that the inputoutput coefficients in certain cases such as nonferrous metals and electricity, which are known to have altered in 1979-80, have been estimated exogenously and excluded from the adjustment process of the matrix in RAS balance. The input matrix has been balanced at market prices and later converted to factor cost using appropriate indirect tax rates of each sector.

## IV 1.5. Import matrix

The import matrix has two parts. The first is a $89 \times 89$ technological matrix indicating the amount of import used as current input in production. The second corresponds to final use of a sector which is being met by imports. The two paris of the import matrix, relating to interindustry use and final use, have been obtained by allocating the import of each sector to the relevant input cells and final uses of the balanced input-output table for 1979-80 at market prices. It was not possible to distinguish between competitive and non-competitive imports.

## IV 1.6. Indirect tax matrix

The import matrix as obtained above alongwith import duty has been subtracted from the balanced input-output matrix to get the domestic matrix for 1979-80 at 1979-80 prices. In the indirect tax matrix, the components of import duties have been generated by applying the import duty rates, which are independently estimated, on the import matrix. Export duty rates have been applied to the export vector. The remaining indirect tax rates have been applied to the domestic matrix to get the rest of indirect taxes. The sum of these three components of taxes constitute the indirect tax matrix whose
column totals give the row of indirect taxes net of subsidies tor 1979-80. The indirect taxes mazrix thus arrived at has been subtracted from the balanced input-output table at market prices to give the input-output table for 1979-80 at 1979-80 ex-factory prices.

## IV 1.7. Projection of coefficients for 1984-

 85On the basis of independent information provided by the technical subject divisions in the Planning Commission and to take account of anticipated changes in product and technology mix, changes have been effected in the input-output coefticients for the base year inter-industry transactions. However, most of the coefficients of the base year are directly used for the terminal year 1984-85 as well.

Import requirements have been estimated separately for intermediate use, for private consumption, for government consumption and for investment. The intermediate import vector has been obtained by multiplying the gross output vector by the intermediate import coefficient matrix. The import proportion of private consumption of different sectors in the base year 1979-80 are applied to the projected private consumption vector for 1984-85 to give the import component of the private consumption vector in 1984-85. Similarly, import components of government consumption and gross fixed investment are derived by applying import proportion to the projected government consumption and gross fixed investment for 1984-85. On the basis of information provided in the report of Working Groups for different industries set up by the Planning Commission, the import coefficients and proportions have been reduced appropriately in case of import substitution. In such cases, a reduction in import coefficient has been added to the domestic part so that the technological coefficient remains the same.

## IV. 2. Investment block

An important aspect of the investment block is the estimation of sectoral incremental capital output ratios. Incremental capital output ratios have been commonly used in order to determine the investment required for generating a desired expansion of output. This is of course a simplification of the conventional production function, the implicit assumption being that capital is the binding constraint in the growth process.

Conceptually, capital stock should be related to capacity rather than output generation. Moreover, since capital stock is but one of the deter-
minants of capacity, an important question that arises is whether we will be measuring the partial derivatives, i.e. marginal productivity of capital when all other factors influencing capacity are kept constant, or total productivity. The customary approach has been to relate changes in capital stock to changes in output without reference to other inputs. The implicit assumption is that these other factors always maintain the optimal technical relations.

Even when the incremental capital output ratio is estimated in this limited sense, two important dimensions need to be incorporated:
(i) there is typically, a time lag between the investment made in any sector and the time when the capacity is ready for production. Moreover, this gestation lag varies from sector to sector. Indeed, if the gestation lag is ignored and the incremental capital output ratio is estimated assuming a zero gestation lag ${ }^{1}$ (hereafter referred to as the conventional method), then the estimated ICOR will show an upward bias and the bias will increase with increase in the rate of growth of income of that sector ${ }^{2}$.
(ii) the valuation of capital stock and output generated therefrom are also important. If the price index of capital goods, or to be more precise, the composite of construction and capital goods is higher than the price index of the corresponding outputs, then in every updating of the base, the estimated ICOR will increase in value, even though the technical relation between investment and changes in output remain unchanged. Besides, in an economy where welfare considerations determine to a large extent the investments to be made in some sectors irrespective of whether they contribute to any increase in GDP in a popular sense and charges low administered prices for a large number of public sector services, the incremental capital output ratios would tend to be higher than what would emerge from purely technical considerations. Care should therefore be taken in interpreting the estimated ICOR as an index of capital productivity.

## IV. 2.1. Estimation and use of sectoral incremental capital output ratios

ICORs have been estimated, most commonly, by taking the ratio of change in capital stock (investment) to change in output. This procedure suffers from the obvious difficalty that it takes no account of the gestation lag between investment and generation of output. As we have already mentioned, this procedure results in overestimation of the incremental capital output ratio.

[^1]In fact, the output generated from any project/ programme takes time, with investment spread over the period from the initiation of the project to its completion. Moreover, the investment distribution profile and the period of gestation varies from sector to sector. It is precisely for this reason that a single ICOR estimated for the economy as a whole has little economic meaning. ICORs estimated separately for different sectors, with care taken to keep each sector homogenous, would be more meaningful and precise.

For the Sixth Plan model exercises, incremental capital output ratios have been estimated, initially, for fourteen sectors for which suitable data was available.

Investments are classified into three categories: (i) replacement, (ii) induced fixed investment including inventories and (iii) autonomous investment. Replacement investment and induced fixed investments are estimated by coefficients derived from past time series data. Induced fixed investment is the desired level of investment needed for generating a given capacity target. The capacity utilisation coefficients, in their lurn, are estimated on the basis of technological and other policy considerations. The relationship between investment and capacity is based primarily on incremental capital output ratios with different distributive lags. These relations, as parameters, are derived on the basis of regression analysis using suitably adjusted time series data on investment and output. It has been assumed that investment is spread by equal amounts over the whole gestation lag, starting from initial investment and finally reaching the completion of the project when output is generated. The ICORs estimated for the fourteen sectors by these methods are then utilised to estimate ICORs for the 89 sectors of the input-output model, using the base period proportions of the investment basket for each of the fourteen sector sub-groups. It should be mentioned that the initial estimates of sectoral ICORs are based on investment data at market price and gross value added data at factor cost. This was done because the sectoral breakdown of GDP at market price is not available in a time series. However, in estimating the conventional ICOR, appropriate adjustments have been made by bringing both the numerator and denominator to market prices.

Investment in the private sector is treated differently from that in the public sector. Public sector level of investment is derived on the basis of certain targeted capacities the Plan stipulates for the future. On the other hand, private sector investment is dependent mainly on the past rate of growth of relevant sectors and the growth of public sector investment in the past ${ }^{1}$.

## IV.2.2. Estimation and use of capital co-efficient matrix

The investments by destinations are converted to inwestments by sources (i.e. industry of origin) by the use of a capital coefficient matrix preparedl by the Central Statistical Organisation in connection with the preparation of the sixth Plan. ${ }^{22}$

This is needed in order to test the interindusitry consistencies between sectors. This is an addded feature used in the Sixth Plan methodology. Conceptually the capital coefficients should differ not only between sectors but also betwaen different years within the investment gestattion horizon and also separate values for replaccements, extention and working capital needss. But for paucity of data we have used only one set of estimates for the fixed and replacement investments and other for the working capital requirements. No difference is made to talke account of their changes in the different yearss over gestation lag of investment.

## IV. 33. Private consumption block

The private consumption block has been develloped for estimating the effective consumption demands, separately for population below and above the poverty line in rural and urban areas, for various commodities and services constitutiing the 89 sector input-output model in the terminal year 1984-85.

The consumption model comprises of a linear expemditure system (LES) of 13 groups of commodiities and services and a set of engel curves/ demand functions within each LES group and coverring 89 sectors of the input-output model. The mathematical formulation of the model alongwith a brief discussion of various parameters of the function is given in Annexure II. The aggregate consumption derived from the core model is diivided into rural and urban components by using an independently estimated value of the ratio of per capita consumption in the urban areass to that in the rural areas. This ratio (termed as b in Annexure In) is based upon past data of NSS as well as on policy considerations that thei rural per capita income would grow faster than the urban per capita income. In addition, in orrder to reach a targeted percentage reduction in proverty, the inequality parameter of the consumption distribution (assumed to be lognormal) has lbeen reduced.

The consumption demand has been estimated in two stages. In the first stage the demand of these 13 LES groups has been estimated. In the ssecond stage, engel curves/demand functions have: been considered for estimating demand for differrent commodities and services included in

[^2]each of the 13 LES groups. Within each LES group, the total demand of various items in that group is adjusted to equal the LES estimate of the demand for the group. These LES andl engel curve/demand functions have been developed separately for people below the poverty lime and above the poverty line in rural and urban areas. These have been used, after adjustments, to project consumption demand separately for people below and above the poverty line in rural and urban areas. The consumption demand of people below and above poverty line in rural areias are added to get the total consumption in rural areas. The same procedure is repeated for urban areas. Finally adding up the sectoral consumption demand of the rural and urban areas we get the total consumption demand for all India. O)n application of trade and tränsport margin ratees etc. to the vector of consumption demand att purchasers' prices we get the consumption demand at market price which is used in the inpunt-output model.

## IV. 4. Import block

Imports have been estimated on the bansis of an import coefficient matrix derived from the past data and adjusted for future by information drawn from the report of the Sub-Group on Imports and the studies/papers prepared by' concerned agencies. Imports have been estimated separately for the intermediate uses, consumption and investment. No concept of non-compretitive imports could be built.

Since the changes in the structure of production in India have not been marked and smooth and the import policies of the Governmemt are adjusted annually primarily depending om the availability of foreign exchange, any econormetric estimation from the past data is difficult and sometimes dubious. Hence an independentt but totally different approach has been also adlopted to cross check the import estimates.

Imports have been divided, for projecitions, under two categories. The first category inclluded 13 canalised bulk items, viz. crude oil, petroleum products, chemical fertilizers, rock phosphate, sulphur, mild steel, aluminium, copper zinc, lead, cement, newsprint and edible oils. Imports of these items accounted for $63 \%$ of total in 1979-80. The second category comprised of the residual items and covered all other imports which are made under Open Geeneral Licence (OGL) as well as other miscellameous imports under licences.

## Bulk items imports

The imports of items of category one were estimated on the basis of demand and stupply projection, the methods differing from iterm to. item. They are described below:

In working out domestic supply of crudle oil. the continuing output levels and the possibilities of increased availability from indigenous sosurces
have been estimated. Demand for crude oil has been estimated from the projected level of production of refined products and losses resulting from refining.

Demand requirements of petroleum products have been worked out taking into account the production programme of the fertiliser and petro-chemical industries, expansion of road transport, fuel needs of the economy, energization of diesel pump sets, etc. The domestic supply has been estimated through analysis of the expansion plan of the industry.

While working out demand for chemical fertilisers, due weight has been given to possible increase in fertiliser dosage, expansion in irrigation facilities, spread of new farm technology etc. On supply side, the production possibilities of nitrogenous fertilisers in the medium-term have been considered. As there are no possibilities in the near future of producing potassic fertilisers, the entire requirements have to be imported. Import requirements of fertiliser raw materials like rock phosphate and sulphur have been worked out after considering the production profile of the fertiliser industry. Our country is not favourably placed in regard to production of these materials and hence dependence on imports will increase.

For estimating the demand of cement, account has been taken of the increased requirements of the commodity for meeting the demand expected to arise from the Minimum Needs Programme, large irrigation and power programmes and works to be undertaken under the National Rural Employment Programmes (NREP). Supply from domestic sources has been estimated taking into account the feasible plans of capacity expansion.

Demand for newsprint has been estimated taking into account the fact that expansion of elementary and adult education programmes will push up demand for newsprint.

In case of oilseeds, despite expected increase in the production corresponding to the projected demand, provision has been made for the import of some quantities of these oils which are items of essential mass consumption to prevent any scarcities in the market resulting in excessive price increase.

Demand for mild steel, aluminium, copper, zinc and lead has been estimated by end-use method as explained in the section on mgterial balances. Production levels of these commodities have been worked out on the basis of existing capacities, the likely additions to them and expected increase in capacity utilisation. These results have been cross checked from the findings of input-output analysis. Gap $\bar{s}$ between the domestic demand for the above items and their production are taken as import requirements. The categories which are in excess are assumed to be available for export.

## Residual items

The second category of residual items consists of heterogenous items. It is difficult to estimate their import requirements on the basis of demand supply balances. For this reason, import requirements for this group have been worked out on the basis of assumed share of these imports in total imports which is assumed to increase marginally over the 1979-80 level. The projected levels take into account, as for example in case of machinery and equipment, the special needs in off-shore drilling, telecommunications, space and other tecthnology-intensive sectors. The general assumptions behind the Sixth Plan import projections are the following:
(i) There will be a difficult balance of payments position in future and a considerable restraint on imports will be inevitable.
(ii) Keeping in view the objective of selfreliance in industrial plans, adequate stress has to be laid on promoting import substitution in areas where the country has a distinct long-term comparative advantage.
(iii) All possible measures will be taken to reduce the growth rate of consumption of oil and its products.
(iv) The country will do without any sizeable imported foodgrains. However, sufficient provision must be made for the import of edible oils to prevent market shortages leading to excessive price increases.
(v) Imports under OGL will be limited to those which support the overall infrastructure and productive system, export production and potential areas of import substitution.
(vi) Imports of machinery and equipment items will be made under licences and it will be possible to restrict their needs to the minimum towards utilising the domestic capacities and technology.
(vii) Imports of bulk items will continue to be mostly canalised by the earmarked state agencies and they will adequately dovetail their plans with the development in the economy and help prevent excessive imports at a particular time leading to expensive inventories.
(viii) Import of the various miscellaneous items will be in the near-limits of the levels indicated by the past share in total.

## IV. 5. Perspective plan block

The total production capacities available for the year 1994-95, for all sectors, are estimated
on the basis of the gross output levels for 198485 and the post terminal growths (beyond 198485) which were estimated to match with the Sixth IPlan sectoral growth rates, computed within the carre model.
Siimultaneously, from the demand side, the sectorral production levels are estimated by an inputt-output model, given exogenously the post 1994 sectoral growths, exports, public consumption,, zautonomous investment and net income and transffers from abroad. The production and consumpition parameters are kept at the base level. or allternatively, sometimes changed exogenously wherrever suitable information existed. If the sectorral outputs calculated by the demand approacth (x) for sectors like power, steel, railways and cother long gestation sectors are lower than the ccapacities estimated by the supply approach ( $\mathrm{X}_{\mathrm{s}}$ ),, and the demand for land, petroleum, nonferrous metals and other non-renewable resources also do not exceed their feasible supply, them the scenario has been regarded as feasible and consistent. But at this stage there is no guaranntee that the poverty (or employment) targetts; are satisfied.

Sulbsequently, total employment generated, and the inumber of poor that would be shifted across the poverty line are estimated (block $\mathbf{Q}$ in the systeem of equations). If the poverty targets stipulatted in the Plan are higher than the one estimatteed, then in that case all the exogenous variabless; of the intial run are increased by $/ 0$ This proceess is repeated until: (1) poverty target is reacched or surpassed and (2) capacity constraints are protected. If at the convergence stage the slack: values are very high, the plan poverty targettss are to be raised. If the plan poverty targets are mot reached when outputs and resources from dermand side ( x ) surpass the outputs and resourrces from the supply side ( $\mathrm{x}_{\mathrm{s}}$ ), then the plam poverty targets are to be regarded as too ammbiltious. Several alternatives are opened at this stagge:: either the propensities to consume during the Sixth Plan and the post plan period are to be rreduced or the consumption structure and tecthmology need to be drastically changed or the plam poverty targets are to be lowered. The same lomic: applies to unemployment targets. 'Any one of the two targets will be binding when the preferreed scenario will be reached.

TThe above analysis thus shows thāt in the lomge range perspective, supolies are less constrainedi iim most sectors where their necessary capacity coulld be developed and therefore, demand shoovild be the guiding indicator for resources alllooc:ation. ${ }^{1}$ whereas in the short range perspectives iit is the capacity that sets the upper limit of growwth and it is demand management which acts as. tthe adjusting factor.

[^3]
## CHAPTER V

## THE CORE MODDEL : FINANCIAL RESOURCES BLOCK ${ }^{1}$

In this block, an attempt is made to estimate the domestic savings generated in the ecconomy. both in the public and private sectors. Private saving is separated into (a) household sector, (b) corporate sector, and (c) cooperativee sector. Similarly, government saving is dividded into (a) government budgetary saving, (b) public enterprises (non-financial), and (c) public enterprises (financial).

Household saving at the estimation stage is further subdivided into increase in (1) currency, (2) household deposits (in scheduled banks, cooperatives and non-banking companies), (3) life fund of Life Insurance Corpoorations, (4) contribution to provident funds (Cenitral and State government employees and otherr provident funds), (5) private corporate and crooperative shares, (6) net claim on government (small savings, debts, deposits, etc.), (7) less ffinancial liabilities, (8) gross physical assets. Private corporate savings for non-financial entterprises are estimated by calculating their net retained earnings and depreciation. Private ffinancial corporate enterprises are private sector sctheduled commercial banks and private financial and investment companies. Their gross savring includes depreciation and net profit.

## V.1. Household sector

The household sector comprises of indiividluals, non-government non-corporate private enterprises in agriculture, trade, transport, manufacturing and other economic activities as we:ll as non-profit making organisations like trusts/ charitable institutions. The gross saving of this sector have been estimated in the formı off net additions to financial assets and physicall assets including provision for depreciation.
V.1.1. Physical Assets-It covers acquissition of productive assets and construction aactiwities like residential and non-residential buildings as well as creation of physical assets througgh own account labour input which are practically dilirect capital formation of the households.

The estimation has been done in two stages:
(i) $\mathrm{Y}_{\mathrm{d}}=-270+.9081 \mathrm{Y}$
$\mathbf{R}^{2}=.997$, where
$\mathbf{Y}=\mathrm{GDP}$ at factor cost and $\mathrm{Y}_{\mathrm{d}}=$ disppossable income
(ii) $\mathrm{A}=-1062+.1355 \mathrm{Y}_{\mathrm{d}}$
(25.7)

$$
\mathbf{R}^{2}=.9763
$$

where $A=$ Gross household physical assets.
$Y_{d}=$ Personal disposable income and
$\mathbf{Y}=$ GDP at factor cost, all at current prices.
The figures in the brackets are corresponding ' $t$ ' values, and $R^{2}$ represents the correlation coefficient square.
The sample period : 1960-61 to 1977-78

## V.1.2. Financial Assets

(i) Currency : The estimated equation is as follows:

$$
\begin{gather*}
\log C=-4.1736+\underset{(3.23)}{.8051} \log \mathrm{WP}  \tag{3.23}\\
\underset{(1.56)}{0.4278} \log \mathrm{RLT}+\underset{(3.39)}{1.4876} \log \mathrm{YR}
\end{gather*}
$$

$\mathbf{R}^{\mathbf{2}}=.960$
$C=$ currency with the public
$Y R=$ Real national income
WP $=$ Wholesale price index and
RLT $=$ Weighted average of interest rates on time deposits with the scheduled commercial banks.
Sample period : 1968-69 to 1977-78.
Therefore, the elasticity of currency with respect to real income comes to 1.4876 .

## (ii) Deposits of the scheduled banks

Since nationalisation, deposits of the scheduled banks have had a record growth. The rapid expansion of bank branches has largely contributed to this growth. Further, it is observed that the shares of agriculture and non-agriculture in the national income as well as the terms of trade between these two sectors have a significant impact on the growth of bank deposits. All these factors were taken into consideration in building appropriate specifications. From several alternatives the following specifications are chosen.

[^4](a) Demand deposits (DD)

The following equation has been used for demand deposits:
$\log \mathrm{DD}=-6.3115+1.0576 \log \mathrm{YR}$
$+(2.37)$
$+.9654 \log \mathrm{YNA} / \mathrm{Y}-.4734 \log \mathrm{RLT}$
$(1.6)$
$+.7067 \log \mathrm{NB}_{-1}+0.4946 \log \mathrm{WP}$
$\mathbf{R}^{\mathbf{2}}=.99$ where
$\mathrm{DD}=$ Demand deposits,
$Y R=$ Rea! GDP at factor cost.
YNA/Y = Share of non -agricultural income
RLT $=\quad$ Weighted average of interest rates on demand deposits,
$\mathrm{NB}_{-1}=$ Total number of bank branches in the earlier year
and WP $=$ Wholesale price index
Sample period : 1968-69 to 1977-78.
The equation gives a moderately good fit although the degree of freedom is very narrow.
(b) Time deposits (TD)

The following equation has been used.
$\log T D=-18.00+2.1768 \log Y R+0.5926 \log P_{d}$ (3.464)
$+.3341 \log \mathrm{NB}_{-1}+1.2876 \log$ YNAR/YAR+ (1.987) (3.705)
$.08302 \log$ PNAD/PAD
(.382)
$\mathbf{R}^{2}=0.997$
TD = Time deposits
$Y R=$ Real GDP at factor cost,
$\mathbf{P}_{\mathbf{d}}=\quad$ GDP deflator.
$\mathrm{NB}_{-1}=$ Number of bank branches in previous year,
YNAR/YAR = Ratio of non-agricultural/ agricultural GDP at constant prices,
and $\mathrm{PNAD} / \mathrm{PAD}=$ Terms of trade between non-agriculture and agriculture in terms of their GDP deflators.
Sample period : 1967-68 to 1977-78.
It may be pointed out that observations for 1978-79 and 1979-80 have not been used in the sample. This has been done due to problems in classification of demand and time deposits of scheduled commercial banks. The reason for this is that on various dates starting from January, 1978, a number of scheduled commercial banks have classified a larger proportion of their saving deposits as time liabilities and a lower proportion as demand liabilities and as such are not strictly comparable with those of the earlier years,

For the Sixth Plan projection $\mathbf{P}_{\mathrm{d}}$ has been assumed to be zero initially. Regarding bank branches, it is assumed that they will increase by 3000 per year from a base of 34,945 in March 1980. (This implies $8.1 \%$ growth over the period). The relation between the non-agricultural to agricultural GDP has been estimated with the help of another equation as following:

$$
\begin{equation*}
\log \mathrm{YNAR}=-3.41+1.2654 \log \mathrm{YR} \tag{16.644}
\end{equation*}
$$

$R^{2}=0.968$
Sample period: 1960-61 to 1978-79. The share of household in aggregate deposits of the scheduled commercial banks has been assumed at $79 \%$ based on the results of the "Survey on the Ownership of Bank Deposits. 1975-76" conducted by RBI.
(iii) Deposits of cooperative bank \& credit societies

The trend values of past deposits have been used for projecting future estimates. However, the trend is slightly adjusted downward, taking into consideration a faster expansion of rural commercial banks and regional banks.

## (iv) Deposits of non-banking companies

For projection of deposits with non-banking companies, it has been assumed that such deposits would continue to increase by Rs. 250 crores per annum over the plan period as observed during 1970-71 to 1978-79. Households share has been taken as $94 \%$ based on past observation.

## (v) Increase in life fund

The household saving in the form of life insurance premia gets reflected in life-fund. This fund is maintained mainly by LIC and a small portion by postal authorities. Hence it suffices to estimate only the annual increase in the life fund of the LIC. The accretion to this fund in 1979-80 has been estimated at Rs. 740 crores. The growth in this accretion has been projected at $14 \%$ per annum over the Plan period, based on the trend growth observed during the period 1970-71 to 1978-79.
(vi) Contribution to provident funds
(a) State provident funds:

The net accretions to these funds are projected on the basis of the observed growth in the past, expected increase in employment and the existing rates of contribution
(b) Employees provident fund (EPF):

The accretion to the investible resources of the EPF represents the net comtribution to the fund and also the interest income accruing to the fund on its investment and redemption proceeds.

The net contribution to the EPF has increased from Rs. 380 crores in 1974-75 to Rs. 646 crores estimated for 1979-80, providing an average annual growth rate of around $11 \%$ over this period. However, the coverage under EPF has reached more or less a saturation point. The entire organised sector of the industry stands almost covered and the scope for further extension of coverage is extremelly limited, unless the provisions of the Act are modified to cover establishments employing 10 to 19 persons. as recommended by the National Labour Commission. Therefore, it is assumed that the net contribution would grow at an average of $7 \%$ in keeping with the rate of industrial growth envisaged in the Plan. The average rate of return on investment has been assumed at $7 \%$ p.a. Thus the total accretion to the EPF has been projected at $14 \%$ p.a. over the Plan. In addition, some fixed money (Rs. 136 crores) has been assumed to come from a new scheme known as Emploplowees Deposits Linked Insurance (EDLI) introduced with effect from 1-8-1976.
(c) Other provident funds :

Other provident funds mainly relate to coal mines, Assam tea plantations, docik labour, educational institutions, RBII, commercial banks etc. The net contribution to provident fund of all types are given in National Accounts Statistics of Central Statistical Organisation. From there, by residual method, the growth of other provident fund contributions is calculated. On this basiis an annual increase of $12 \%$ p.a. has been taken.
(vii) Private corporate and cooperative shares, debentures and units:
(a) The saving of the household sector in the form of corporate and cooperative shares, debentures, etc. has been projected on the basis of the recent trends in the new capital raised in the capitai market. On an average the trend showed a net increase of about 10 per cent per annum. This trend has been pro-
jected for the Plan period also. The share of the household in the new capital raised has been assumed at 85 per cent.
(b) The saving of the household sector in 'units' of the Unit Trust of India (UTI) has been projected mainly on the past trend in the net sales of the units by the UTI. The net sales of units during the Plan period has been estimated at Rs. 100 crores. Thus, the total saving of the household sector in corporate and cooperative shares, debentures as well as units has been projected at Rs. 1400 crores over the Plan period.

## (viii) Net claims on Government:

The net claims of the household sector on government consists of items like small savings, compulsory deposits for income-tax payers, etc. on the one hand and the loans and advances which have been made by the various central and state government departments to individuals. including government employees. On the basis of available data with the central and state governments on the schedules of repayment, instalments etc. as well as the projections of collections of small savings, the net claims of the household sector on central and state governments have been estimated.

## V.2. Private corporate sector

The private corporate sector consists of both non-financial and financial enterprises. The gross saving of these enterprises comprises of their retained profits and depreciation funds. The methodology adopted for estimating the gross saving of these enterprises is discussed below:

## Private non-financial corporate sector

This sector covers public and private limited companies. The saving estimates in the form of retained profits and depreciation have been separately worked out for the Plan period on the basis of relationship of profits to sales and depreciation to gross fixed assets. The projections are mainly based on the selected versions of the equations estimated from time series data covering the period from 1958-59 to 1977-72. The studies on company finances published by the Reserve Bank of India from time to time have been made use of. Globai estimates have been obtained using the information on industry-wise coverage by paid-up capital. The estimation procedure in respect of the individual items is briefly discussed below:

## Gross fixed assets

The outstanding gross fixed assets at the close of the year ( $\mathrm{K}_{\mathrm{t}}$ ) has been related with current

year sales ( $\mathrm{S}_{\mathrm{t}}$ ), sales in the previous year $\left(\mathrm{S}_{\mathrm{t}-1}\right)$, borrowing other than from banks $\left(\mathrm{OB}_{t}\right)$, and gross fixed assets outstanding at the beginning of the year ( $\mathrm{K}_{\mathrm{t}-1}$ ).

## Profits before tax

Profits before tax (PBT) is related to current year sales ( $\mathrm{S}_{\mathrm{t}}$ ) and the cost of living index ( $\mathrm{CPI}_{\mathrm{t}}$ ).

## Depreciation

Depreciation (DEP) has been related to gross fixed assets at the beginning of the year ( $\mathrm{K}_{\mathrm{t}-1}$ ) and investment in the current year ( $\mathrm{I}_{\mathrm{t}}$ ).

## Tax provision and dividends

Tax provision (TP) is related to profits before tax (PBT) while dividends (DIV) has been related to the dividends declared in the previous year and total funds available, viz. profits after tax (PAT) and provisions for depreciation in the current year (DEP).

All the explanatory variables used in the above set of equations have the correct signs and are statistically significant. The Durbin-Watson statistics however, is low in a few cases indicating the presence of autocorrelation.

The pivotal variable in using the above set of equations for the estimation of gross saving of the private non-financial corporate enterprises is the projections of their sale. This has been obtained by using an elasticity of 1.3 with respect to national income. Secondly, borrowing other than from commercial banks are assumed to increase at an average rate of 7 per cent per annum.

## Private financial corporate enterprises

The private financial corporate enterprises are private sector scheduled commercial banks and private financial and investment companies. The gross saving of the former has been estimated at Rs. 108 crores for the Plan period, while that of the latter has been placed at Rs. 75 crores. These projections have been obtained on the basis of the past trends of the net profits and depreciation provision in respect of these enterprises.

## V.3. Cooperative institutions

The gross saving of the cooperative institutions over the Plan period has been proiected at Rs. 1535 crores. This consists of Rs. 910 crores in respect of cooperative banks and societies and Rs. 625 crores in respect of cooperative noncredit enterprises. The gross saving of the cooperative banks and societies comprises of depre-
ciation provisions and net saving in the form of general and other reserves. The net saving has been projected to grow at around 13 per cent per annum while provision for depreciation has been assumed to increase at around 14 per cent per annum over the Plan period. These assumptions have been made in the light of the past trends. On this basis, the net saving has been estimated at Rs. 685 crores and depreciation provision has been placed at Rs. 225 crores. Thus, the gross saving of cooperative banks and societies over the Plan period works out to Rs. 910 crores.
The past data on the finances of the cooperative non-credit institutions published by the Reserve Bank of India reveal that these institutions generally incur losses. However, these institutions set apart funds for depreciation which are mainly a function of their gross fixed assets. In the light of the past data, the depreciation reserves of these institutions have been projected to grow at an annual rate of 12 to 13 per cent over the Plan period. Thus, the saving of this sector has been estimated at Rs. 625 crores over the Plan period.

## V.4. Public saving

The estimation of the public sector saving covering both central and state governments has been divided into three parts: (a) budgetary saving of the government, (b) public enterprises (non-financial), and (c) public enterprises (financial).

## V.4.1. Budgetary saving

Balance from current revenues: Central government
The balance from current revenues (BCR) of the Central government represents the saving out of the total revenue receipts after meeting its current non-Plan expenditure. It has been assumed that the recommendations of the Seventh Finance Commission relating to statutorv transfer of resources to the state, valid upto 1983-84, would be valid also for the terminal year (1984-85) of the Sixth Plan, 1980-85.

## Tax revenues

The tax revenues of the Centre consist of the receipts from income-tax, corporation tax, union excise duties, customs and others like estate duty, wealth tax, gift tax etc.

## Income tax

The projections of yield from income tax for the Plan period are based on partial tax elasticities estimated by using a multiple regression model. The tax elasticities have been estimated
with respect to the growth in real GDP of the non-agricultural sector as well as the relevant GDP deflator for this sector. The elasticities have been estimated at 1979-80 rates of taxation, i.e. adjusting the time series data for additional resources mobilisation and tax concessions granted during the different years from 1966-67 to 197980, the period considered for the regression. This, in other words, involves the estimation of hypothetical yield in different years at the rates of taxes prevailing in 1979-80. For this purpose, the "proportional adjustment" method was used. The estimated regression equation provided an "income elasticity" of 1.08 and "price elasticity" of 0.92 for income tax. The estimated double log multiple regression equation used for projecting the income tax revenues is given below:

$$
\begin{gathered}
\log \quad Y_{1}=\left(0.0002+1.0803 \log X_{1}+0.9219 \log X_{2}\right. \\
(+6.8789)(6.167)(9.1969) \\
R^{2}=0.997
\end{gathered}
$$

where $Y_{1}=$ Income tax at 1979-80 rates
$\mathbf{X}_{1}=$ Non-agricultural income (GDP at 1970-71 prices)
$\mathrm{X}_{2}=$ Price deflators of non-agricultural income ( $1970-71=100$ )

The terms in brackets give the $t$ values and $R^{2}$ is the correlation coefficient square.

## Corporation tax

The yield from corporation tax over the Plan period has been projected on the basis of the tax elasticities estimated by using a multiple regression equation relating corporation tax with GDP in the non-agricultural sector and the relevant price deflator. However, the tax base for corporation tax consisted of the combined income from manufacturing (organised sector only), mining and quarrying, banking and insurance, trade, hotels and restaurants, transport, storage and communications. Like income tax, the constant rate yield has been regressed on the tax base at constant prices, while the income and price effects have been decomposed by using the relevant implicit GDP deflator. The estimated equation for corporation tax is as follows:

$$
\begin{align*}
& \log Y_{2}=2.81519+0.858521 \log Z_{1}+1.029358 \log Z_{2} \\
& \text { (0.3510) (1.997) }  \tag{4.092}\\
& \mathbf{R}^{\mathbf{2}}=\mathbf{0 . 9 7 3} \text {; } \\
& \text { where } \mathrm{Y}_{\mathbf{2}}=\text { corporation tax at 1979-80 rates, } \\
& \mathrm{Z}_{1}=\text { Income from the relevant tax- } \\
& \text { base at 1970-71 prices and } \\
& Z_{2}=\text { Price deflator of income }(1970-71=100)
\end{align*}
$$

The elasticity estimated from the above equation has been used alongwith the estimated growth in non-agricultural income ( 7 per cent) to obtain the growth rate in corporation tax of 6 per cent.

## Union excise duties

The projections of yield from union excise duties are based on the estimated levels of domestic output/clearance for domestic consumption in the different industries during each year of the Plan period at the effective rates of duties in the base year 1979-80. The Central Board of Excise and Customs carried out detailed projections in respect of 33 commodities which accounted for nearly 80 per cent of the gross yield in 1979-80. The Planning Commission has estimated the production levels in respect of these commodities. For the remaining commodities, a growth rate of 7 per cent has been used.

## Customs

Revenue from this source has been estimated by the Central Board of Excise and Customs on the basis of the data of projected levels of imports and exports made by the Planning Commission. The import data has been adjusted for international inflation at the rate of 7.5 per cent in 1980-81 declining to 5 per cent in 1984-85. However, the duty rates applied were those of the base year, 1979-80. Detailed exercises were carried out in respect of 22 commodities which accounted for nearly 87 per cent of the total revenue from customs duties. In respect of the remaining commodities, the import duties have been calculated by using the same growth rate as implicit in the case of the twenty two commodities.

For exports, a uniform growth rate of 9 per cent has been used. This, alongwith the estimated growth rate of 9.8 per cent in the case of import duties, provided an aggregate growth rate of 9.7 per cent for customs duties as a whole.

## Wealth tax

A modest growth rate of 2 per cent per annum has been adopted to project the yield from wealth tax.

## Sales tax

The growth rate of 9.7 per cent in sales tax has been adopted on the basis of the elasticity of states' sales tax with respect to GDP (estimated by the Sub-Group on States' Resources).

## Other taxes \& duties

The estimates for miscellaneous taxes and duties have been worked out on the basis of past trends.

## States share in Central taxes

The sbare of the states in Central taxes rave been worked out on the basis of the recommendation of the Seventh Finance Commission for all the five years of the Plan period. Out of the total tax revenues of the Centre estimated at Rs. 72,192 crores, the states' share accounhed for Rs. 20,705 crores. The net tax revenues of the Centre has thus been placed at Rs. 51,487 crores for the Plan.

## Non-tax revenues of the Centre

The total non-tax revenues of the Centre over the Plan period has been projected at Rs. 17,096 crores. Out of this, the major item is interest receipts on loans given to State governments, Union Territories, Railways, Post and Telegraphs and other enterprises. Interest receipts over the Plan period have been estimated at Rs. 11,096 crores. This has been worked out on the basis of certain assumptions. Firstly, it has been assumed that the Central assistance for state plans is likely to be of the order of Rs. 15,000 crores over the Plan period, of which 70 per cent would be in the form of loans. Secondly, the collection from small savings has been provisionally projected at Rs. 6,335 crores, of which the states' share would be two thirds, amounting to Rs. 4,225 crores to be given to the states as loans. Further, non-Plan loans to states has been projected at Rs. 2,21; crores. Based on the current pattern of interest rates, the interest obligations of the states have been calculated for the five years of the Plan period. The interest receipts in respect of loans given to Railways and Posts \& Telegraphs have been separately estimated. In the case of other interest receipts, a growth rate of 10 per cent has been used.

The other items of non-tax revenues of the Centre consist of the receipts of profits/dividends from Reserve Bank of India, Life Insurance Corporation of India, public sector banks, departmental and non-departmental enterprises, etc. These have been estimated individually for some items, while the remaining ones have been estimated by adopting a uniform growth rate of 5 per cent.

## Non-plan expenditure of the Centre

Of the total non-plan expenditure the major items are interest payments, subsidies and other non-developmental, non-plan expenditure. The interest payment over the Plan period has been worked out on the basis of all categories of outstanding loans/credits during the Plan period. This includes fresh market borrowings, small savings collections, accretion to provident funds, external loans and other interest bearing obligations. The current rates of interest have been applied to different categories of loans in work-
ing out the interest obligations of the Central government.

Subsidies account for a large proportion of the Centre's non-plan expenditure. Three major subsidies, viz., food subsidy, fertiliser subsidy and export subsidy account for 90 per cent of the total subsidies of the Central government. A part of the fertilizer subsidy appears on the capital account on account of imported fertilisers.

Food subsidy has been worked out separately for buffer stock operations and public distribution. The buffer stocks at various points of time in the past have varied between 8 and 12 million tonnes. Assuming an average level of 10 million tonnes for 1980-81, an average annual increase of 4 per cent has been postulated in order to build up a level of 11.7 million tonnes in the buffer stocks by 1984-85. An average carrying cost of Rs. 25.77 per quintal estimated for 197980 has been applied to the level of buffer stocks projected for each year of the Plan period. For determining the quantity of foodgrains for the public distribution system, a figure of 11.3 million tonnes has been adopted for 1980-81, while for the subsequent four years of the Plan period, an annual growth rate of 4 per cent has been adopted. This figure of 4 per cent has been derived allowing for two per cent for population growth, one per cent for urbanisation and another one per cent for the increased coverage of the public distribution system. The rates of subsidies and the proportion of wheat and rice in the total have been adopted from the details of the budget documents. The total food subsidies over the Plan period has been estimated at Rs. 3,250 crores.

Fertilizer subsidy has been worked out separately for domestic production and imported fertilizers. The subsidy on account of domestic production has been projected at an annual average of 14 per cent in the light of the proiected growth of domestic production of fertilisers postulated over the Sixth plan period. For imported fertilisers, the value of imports has been calculated on the basis of about 5 per cent annual rate of growth in the quantum of imports, adjusted for international inflation rate of 7.5 per cent in 1980-81 declining to 5 per cent in 198485. The rate of subsidy on imported fertilisers in 1979-80 at 36 per cent of the value of imports is based on the budget estimates of subsidy of Rs. 320 crores and the estimated value of imports of Rs. 888 crores. This rate of subsidy has been applied to the projected value of imports over the Plan period.

Export subsidies have been estimated to grow at an annual rate of 7 per cent on the basis of the projected growth in quantum of exports over the Plan period and also taking into account the growth of exports of major commodities which are being given cash compensatory support.

A growth rate of 4 per cent per annum has been assumed for subsidy on controlled cloth, the rationale being the same as in the case of food subsidy. In the case of the remaining subsidies (viz., Railways, Coal India, etc.), ad-hoc judgement has been used in projecting the same over the Plan period.

## Other non-Plan expenditure of the Centre

The expenditure on tax collection, police, external affairs and capital outlay on border roads have been projected to grow at an annual rate of 8 per cent, 7 per cent, 7 per cent and 6 per cent respectively. In respect of the remaining items of non-Plan expenditure, an annual growth rate of 5 per cent has been assumed in the light of the past trends to take care of the normal growth in staff, annual increments in their pay etc. The revised budget estimates for 1979-80 have been taken as the base for all these projections. However, in the case of expenditure on police, the base year estimates have been adjusted to take into account concessions granted to the police personnel in the course of 1979-80. Similarly, the payments to Oil Industry Development Board have been based on the increased collections of cess from crude oil. Further, the projections also take into account the instalments of dearness allowance to the employees which had fallen due in the course of 1979-80, but which are not reflected in the revised budget estimates of 1979-80.

## Statutory grants to States and other grants

The projections of statutory grants, upgradation grants, net interest liability grants as well as grants in lieu of passenger fares to states are based on the recommendations of the Seventh Finance Commission.

Natural calamities have become a recurrent feature of the Indian economy. Adequate provision has to be made for grants-in-aid to the states on this account. A provision of Rs. 500 crores has, therefore, been made for this purpose for the Plan period as a whole, subject to the condition that the advance Plan assistance given to the states for natural calamities will be adjusted as recommended by the Seventh Finance Commission.

## Other grants

The remaining grants have been projected on the basis of the trends noticed in the past as well as commitments that are likely to arise in the next five years, particularly so in the case of grants to foreign governments, etc.

## Miscellaneous capital receipts: Central government.

Miscellaneous capital receipts (MCR) of the Central government represent the net result of a number of transactions on the receipts and pay-
ments side of the capital account of the Central government. On the receipts side, the most important item is the recovery of loans and advances from State and Union Territory governments and public enterprises. The estimates of loan recoveries from states are based on the recommendations of the Seventh Finance Commission, according to which most of the past loans have been consolidated into two types of loans, 15 year and 30 year loans. Account has also been taken of the fresh Plan and non-Plan loans that would be advanced to the states in the five years of the Sixth Plan period, 198085. The repayment liabilities in respect of these fresh loans have been worked out on the basis of the existing terms.

In the case of public enterprises, full provision has been made for their repayment obligations without making any allowance for the deficiency in their cash position, which has been taken care of by the provision of non-Plan loans on the disbursement side. This is a departure from the practice in the earlier plans when the repayment obligations of public enterprises were not included in the MCR of the Centre, but were shown under the "contribution of public enterprises" for financing the Plan.

The projections in respect of technical credits/ loans to foreign governments and other parties and the recoveries from them are based on their likely requirements/repayments. The projections of subsidy on imported fertilisers, which are shown in the capital account of the Central budget, have already been discussed in an earlier section.

Special deposits of non-government provident funds during the Plan period have been assumed, based on the trends noticed in the recent part. The borrowing from the Reserve Bank of Inda against compulsory deposits have been projected at the existing rates on the assumption that the compulsory deposits (Income-Tax Payers) Act would continue over the Plan period. The reparment liability against this item is based on the repayment schedule provided by the Resere Bank of India.

The provision for non-Plan loans to Stae governments include ways and means advancrs at the rate of Rs. 300 crores per annum and for agricultural inputs at about Rs. 125 crores a year. These are the types of loans which ae normally recovered within the same year. Hovever, it has been observed that there has always been a short-fall in the recoveries of fertilisir loans which are advanced by the State governments to the cooperatives. In view of this, the states also are unable to repay in time such loars received by them from the Centre. The projeltions of recoveries from State governments previde for such short-fall, assumed at Rs. 10 crores over the entire plan period.

## Balance from current revenues: State \& Union territories

The BCR of the States and Union territory governments represent their budgetary saving out of their total revenue receipts after meeting their non-Plan revenue expenditure.

The projections of tax and non-tax revenue have been carried out initially on the basis of the information provided by the State and Union territory governments for the Annual Plan, 1980-81 along with the growth rates assumed by the Seventh Finance Commission. These projections have been subsequently cross-checked with the estimates obtained on the basis of elasticity coefficients emerging from econometric studies. The two sets of estimates have been found to be very close to each other. Since the estimates based on elasticity coefficients have been considered to be more scientific, these estimates have been adopted. However, the elasticity coefficient estimated and the projections obtained on that basis happened to be an aggregate one, covering all the states and union territories. Hence these estimates have been subsequently modified on the basis of detailed discussions with the individual States/Union territory governments.

Projections using elasticity coefficients have been carried out in respect of major taxes of the states, namely sales tax stamp duty and registration fees, taxes on transport/motor vehicles and passenger and goods tax, states excise duty, entertainment tax and electricity duty as well as for one non-tax revenue item, viz., "forest". The use of elasticity coefficients has been considered to be better than the growth rate approach usually adopted because the latter assumes that the conditions that existed in the past would merely replicate in the future. Conceptually, the method of making projections on the basis of elasticities seeks to relate the different taxes to their relevant or appropriate tax base.

However, most of the taxes in the states are functionally related to income. Hence, income serves as an adequate proxy for the tax bases of the different taxes. The price and income effects of the various taxes have been separated by estimating the partial elasticities with respect to real income and prices. For this purpose, the estimated hypothetical yield of various taxes of the states as a whole have been regressed on the GDP deflator in a log linear multiple regression equation. The results of this exercise are given ip table 5.1 (see under TABLES).

The projections of electricity duty have been made by employing a different method. The effective tax rate of electricity duty in 1979-80 has been estimated first using the yield from electricity duty and the operation of generation of electricity in 1979-80.

As regards revenue from "forests", the projections have been made using the methodology adopted by the Seventh Finance Commission, which takes into account not only the past trend, but also the area under forest in each state and institutional differences between the states in husbanding forest operations. In some states, there are States Forest Development Corporation looking after forest operations, while in the remaining states, such work is done departmentally. An annual growth rate of eight per cent in Andhra Pradesh, Assam, Bihar, Jammu \& Kashmir, Karnataka, Kerala, Madhya Pradesh, Orissa, Tripura, and Maharashtra, while in the case of Manipur, Meghalaya, Nagaland, Tamil Nadu and West Bengal a seven per cent growth rate has been assumed. In respect of the remaining states, the assumed growth rate is six per cent.

The projections of states' receipts in respect of share in central taxes and grants-in-aid from the Centre have been taken from the projections of these items in respect of the Central government.

Another important item of non-tax revenue of the states is interest receipts. This has been projected at the rate of 5 per cent per annum.

Yet another important item in the non-tax revenue of the states is commercial irrigation net receipts. This item has continued to be a drain on the resources of the states, because the working expenses and interest payments are much higher than the gross receipts. Thus, the net receipts from commercial irrigation estimated at Rs. (-) 355 crores in 1979-80 have been projected to increase to Rs. (-) 2,088 crores over the Plan period.

## Non-Plan revenue expenditure: States

The non-Plan revenue expenditure of the states comprises of debt services, other non-plan nondevelopmental expenditure and non-plan developmental expenditure. Debt servicing includes interest payments to the Central government, subscribers of market loans, LIC, RBI etc. The interest payments to the Centre have been projected on the basis of the projections assumed on the receipts side of the Central government. In respect of the remaining loans, an annual growth rate of ten per cent has been assumed to cover the outstanding loans as well as the fresh borrowings by the states during the Plan period.

The major items of non-Plan non-developmental expenditure of the states are police and public works, while those of non-Plan developmental expenditure are education, medical and public health services, maintenance expenditure in respect of minor irrigation, roads and bridges, etc. The expenditure on police has been projected to grow at the rate of 6.5 per cent per annum. This has been considered to be adequate, in view
of the fact that the grant for upgradation of nonPlan services as recommended by the Seventh Finance Commission will also be available to meet the expenditure on police. It has been assumed that the expenditure on education, medical and public health, roads and bridges and maintenance of public works, including irrigation, will grow at the rate of 6 per cent per annum. In respect of the remaining nonPlan developmental as well as non-Plan nondevelopmental items of expenditure, a growth rate of 5 per cent has been used. It has also been assumed that on average the states will spend in each year of the Plan period the entire margin money of Rs. 100 crores on relief of natural calamities. Further, a non-Plan grant from the Centre of Rs. 100 crores for each of the five years of the Plan period has been provided on the receipts side for relief of natural calamities on the presumption that advance Plan assistance given to the states for drought relief will be adjusted as recommended by the Seventh Finance Commission. However, it has been felt that the above grant would cover only 75 per cent of the total relief expenditure. Hence, it has been assumed that the states would spend on relief of natural calamities an amount of Rs. 133 crores in each year of the Plan period.

Adequate provision has been made for proper maintenance of irrigation works, roads and bridges, building and other public works. This has been done taking into account the norms recommended by the Seventh Finance Commission.

The projections carried out on the above lines covered all the states and union territories taken together. However, these were slightly modified in the light of detailed discussions with the States and Union territory governments.

## Miscellaneous capital receipts (net) of the states

The main items on the receipts side are recovery of loans and advances, short-term loans for agricultural inputs and deposits/advances. A step-up of 5 per cent per annum has been assumed in respect of loans and advances, as well as deposits/advances. The short-term loans
for agricultural inputs have been assumed at the level observed in 1979-80. Remittances (net), sinking funds, compensation and other receipts have also been kept at the 1979-80 level for each year of the Plan period.

On the disbursement side, the main items are repayments of loans to the Centre, repayment of loans to other institutions and loans and advances to agriculturists, cooperative societies and government servants. While the repayments of loans to the Centre have been projected on the basis of the assumptions made in working out the MCR of the Centre a ten per cent step-up has been assumed on repayment of loans to other institutions. It has been assumed that the nonPlan loans and advances by the State governments would grow at the rate of 5 per cent per annum. Other items on the disbursement side like non-Plan capital outlay, state trading etc. have been kept at the level of 1979-80 in each year of the Plan period. Credits from the State Bank of India and ways and means advances from the Central government have been excluded from both the receipts and disbursements sides, because such amounts are to be paid back in the same financial year.

## V. 4.2. Public Sector enterprises (non-financial)

The gross surplus (i.e., contribution) of public sector enterprises represents their retained profits, depreciation provision and additional resources mobilisation through revision of prices, tariffs, etc. On the basis of the existing pricing policies of public enterprises, this surplus for the Plan period has been estimated at Rs. 9,395 crores. However, the public enterprises are expected to contribute Rs. 18,245 crores during the Plan period after taking into account the measures envisaged in the Plan for the revision of prices, tariffs, freight rates etc.

The gross surplus of public enterprises indicated above is not identical with the contribution of public enterprises as adopted in the Fifth Plan, which was calculated then without deducting repayment of loans to the Centre and State governments by the public enterprises. However,
for the Sixth Plan, the loan payments have been deducted to arrive at the gross surplus of public enterprises, following commercial principles. The estimates of gross surplus of important public enterprises are discussed below:-

## Railways

The gross surplus of the railways during the Plan period has been estimated at Rs. 1698 crores at 1979-80 level of freight rates and passenger fares. The details are as follows:-

| Item |  |  | Rs. crores |
| :---: | :---: | :---: | :---: |
| 1. Appropriation to Depreciation |  |  |  |
|  | Reserve Fund | . | 1500 |
| 2. | Open line works (revenue) | . | 85 |
| 3. | Net accretion to fund | -• | 63 |
|  | Net interest accruals to fund | . | 50 |
|  | Total (1 to 4) | $\cdots$ | 1698 |

The major source of internal resources of the railways is provision for depreciation. This has been worked out assuming an outlay of around Rs. 5000 crores on railways during the Plan period. Further, the gross traffic receipts of the railways over the Plan period have been worked out on the basis of the projections in the Plan relating to freight and passenger traffic. The surplus has been estimated after allowing for working expenses and dividends to the Central government.

## Posts and Telegraphs

The gross internal resources of the Posts and Telegraphs department for the Plan period have been estimated at Rs. 2365 crores at 1979-80 level of tariffs. This has been worked out on the basis of the following assumptions. An annual increase of 8 per cent in the case of postal receipts and 12 per cent in the case of telecommunication receipts have been assumed. This is based on the trend growth of revenue receipts observed in the recent past. The internal resources have been calculated from the total
receipts after allowing for working expenses and dividends to the Central government. The details of the gross surplus over the Plan period at 197980 level of tariffs are given below:

Item Rs. crores

1. Retained profit (surplus) .. 1171
2. Depreciation .. .. 488
3. Other funds .. .. 706
4. Total (1 to 3) .. .. 2365

## Other central public enterprises

The gross internal resources of the remaining central public enterprises over the Plan period have been estimated at Rs. 5,848 crores. This comprises of depreciation, deferred revenue expenditure and retained profits after making provision for the interest on loans, bonus to employees, income tax, loan repayments to Central government and other institutions, nonPlan capital outlay as well as dividends to Central government. On the revenue side, receipts from sources like dividend receivable from investments in other undertakings have been taken into account. Further, detailed examination of the working capital requirements of the public enterprises has also been carried out. The expenditure visualised on replacement and renewals which are of a capital nature has not been set off before computing the internal resources, because investment is being taken in "gross" terms in the Plan.

## State government enterprises

The major state government enterprises are State Electricity Boards and State Road Transport Corporations which mostly continue to be losing concerns. The contribution of the other state enterprises are not significaut. The overall gross surplus of these State enterprises have been estimated as (-) 516 crores.

## V.4.3. Public Sector Enterprises (Financial)

The financial enterprises in the public sector are Reserve Bank of India (RBI), nationalised
commercial banks and other financial enterprises such as Industrial Development Bank of India, Industrial Finance Corporation of India, State Financial Corporations etc. The saving in respect of the RBI represents the retained profit after payment of dividend to the Central government. RBI invests its retained profit in (i) National Agriculture Credit (long-term operations) Fund, (ii) National Agricultural Credit (Stabilisation), and (iii) National Industrial Credit (long-term operations) Fund. On the basis of the trend of the RBI investment in these funds over the recent past it has been estimated that the saving of the RBI would be, on an average, Rs. 440 crores in each year of the Plan period. The saving of the nationalised commercial banks is measured by their retained profits after the transfer of dividends to the Central government. Taking into account the trends of the net profit of these nationalised banks in the past, new nationalised banks since April 1980 and the expected growth in bank deposits, the gross saving has been projected at Rs. 175 crores over the plan period, the annual average saving being Rs. 35 crores. The gross saving of the other financial enterprises has been placed at Rs. 150 crores over the plan period on the basis of the past trend in the growth of their internal resources. The aggregate savings of the public sector financial enterprises over the plan period have thus been estimated at Rs. 2525 crores.

## V.5. Financing of plan investment

The investment requirement of the economy and needs for public and private sectors are estimated separately in the core model. The financing scheme of investment is attempted in this section. The feasibility of certain investment schemes is assessed by consultations and discussions between technicians, and is finally approved at the political level by social and political criteria. Public sector partly covers investment costs by its own saving and partly by borrowing. The same is true for the private corporate sector. The household sector on the other hand uses part of its saving for its own investment (physical assets) and the remaining part of the saving it lends to financial institutions or to corporate and government sectors directly. Table 5.2 gives the inter-sectoral transfers.

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As is evident from the table, a large part of public sector investment (of Rs. 84000 crores over the five year Plan period) is financed by a transfer from the private sector mainly in the nature of public sector borrowings. Also, a sizeable part is financed by borrowings from abroad (Rs. 10929 crores). The current outlay of the public sector is included in the current account budget. Table 5.3 gives the estimates of financial resources of the public sector. As is evident from this table, public sector's borrowings from the private sector consists of small savings, state provident funds, terms loans from financial institutions, miscellaneous capital receipts and deficit financing. The details of each of the items are given in the following paragraphs:

The main subscribers to the securities of the Central and State governments and their enterprises as well as local bodies are commercial banks, the Life Insurance Corporation, Employees Provident Fund and other provident funds in the private sector. These agencies are expected to invest a certain proportion of their resources in government and other approved securities, the proportion being stipulated through statutory provisions or executive orders. The additional resources which would be available with these agencies during the plan period have been estimated as discussed earlier in the section dealing with household saving. On the basis of these estimates, the resources available for market borrowing have been estimated as shown in Table 5.4.

The Plan envisages additional market borrowings of the order of Rs. 1000 crores, as a result of new policy measures proposed to be undertaken during the plan period. Thus, the aggregate market borrowings over the plan period has been estimated at Rs. 22500 crores. Out of this, the public sector plan envisages market borrowing of the order of Rs. 19500 crores, comprising of Rs. 15000 crores for financing the central plan and the balance of Rs. 4500 crores are to be raised by the State governments and their enterprises. The remaining amount of Rs. 3500 crores of market borrowing is expected to cater to the financial requirements like the Industrial Development Bank of India, Industrial Financial Corporation of India, etc.

## Small savings

The contribution to small savings are made by households as well as other agencies like the Employees Provident Fund and other provident funds in the private sector. There has been a substantial rise in small savings collections in recent years rising from Rs. 393 crores in 197576 to an estimated figure of Rs. 925 crores in 1979-80. Though the above performance provides an annual growth rate of over 20 per cent in the recent period, the Plan has assumed only a modest growth rate of around 10 per cent per annum over the Plan period. On this basis, the small savings collections have been estimated at Rs. 6463 crores, which would be shared between the Centre and the states on the basis of the existing formula of one third going to the Centre and two thirds being made available to the states.

## Term loans from financial institutions

The state plans envisage loans from the Life Insurance Corporation to State governments,
local bodies, as well as state enterprises like State Electricity Boards, State Road Transport Corporation, etc. for financing their developmental activities. The Reserve Bank of India would also provide loans to the State governments for participation in the share capital of cooperative institutions. The Rural Electrification Corporation is also expected to provide loans to the State Electricity Boards for expansion of rural electrification. These negotiated loans under state plans have been estimated at Rs. 2722 crores, taking into account the resources available with these agencies to provide the loans. The details of negotiated loans are given in Table 5.5.

## Deficit financing

In view of the large increase in money supply in the last two years, the resulting excess liquidity in the economy and the inflation that has already taken place, there is not much scope for deficit financing during the entire Sixth Plan period. Net borrowing from the Reserve Bank of India against the issue of treasury bills is proposed to be limited to Rs. 5000 crores.

## CHAPTER VI

## THE CORE MODEL: EMPLOYMENT BLOCK

An attempt has been made to indicate how individual labour coefficients for each sector of the economy have been worked out. This section is divided into three parts for the sake of convenience. The first part deals with the agricultural sector including fisheries, forestry and animal husbandry; the second part deals with manufacturing sector, both organised and unorganised, and the third part deals with services sector, minerals, transport and communication, plantation and others. Since the details of the methodology used differ from part to part, an attempt has been made to cover the situation separately for different economic sectors.

## VI.1. Agricultural sector

The basic source of data on employment for the crops sector consist of (a) Farm Management studies; (b) Report of the Working Group on Agriculture; (c) Committee on Unemployment (1972); and (d) Comprehensive scheme for the cost of cultivation of principal crops.

After detailed scrutiny of the data available from these sources, it was found that the data of the Comprehensive Scheme (d), which was introduced in 1970-71, is the most representative and up-to-date. The self weighting design of this scheme which automatically gives weightage to varied relationships between the size of holdings and labour inputs is itself a great advantage. Since the samples for the study were based on stratification with reference to cropping pattern, rainfall pattern, soil types etc., these also enhanced the reliability of the estimates of labour inputs. However, the data does not allow for disaggregation for HYV, local irrigated and unirrigated cultivation practices. Therefore, in the Commission, though the Comprehensive Scheme data formed the basis for getting a composite labour coefficient for each principal crop separately, the disaggregation for irrigated and unirrigated areas was done on the basis of data made available from earlier Farm Management studies. It was assumed that the relationship between labour inputs in irrigated areas and unirrigated areas as observed in the FMS would remain stable.

The data under the Comprehensive Scheme had very good coverage for main crops like wheat, paddy, jute etc. but it was relatively poor for "other cereals" sector. Wherever data for later years was available e.g., for 1975-76 and

1976-77, as in the case of paddy and wheat respectively, the more recent data was used to the exclusion of earlier data to take note of technological changes which might have already taken place. After the labour input data was related to the crop areas, the same was carried forward to the base year 1979-80 separately for irrigated and unirrigated cultivation. It is unfortunate, however, that the estimates in the "other cereals" sector covered only maize while in the case of residual crop sector "other crops", data only for groundnut, tobacco and potato could be utilised. Since the standard person year (SPY) of employment has been defined to be 8 hours of work for 273 days, the labour input per hectare for each crop was computed in these terms. The methodology for the disaggregation of composite coefficient for different crops is given below:-

Paddy-The basic data for irrigated and dry area was taken from the Report of the Working Group on Agriculture, 1972 Committee on Unemployment (hereafter referred as the Report) The coefficient for irrigated area was further broken up for HYV irrigated and local irrigated on the basis of Farm Management Studies relating to Ferozepur district for the three year period 1967-68 to 1969-70 and the area break-up by HYV irrigated and local irrigated as obtained from Economic Survey of Indian Agriculture 1968-69, published by the Directorate of Economics and Statistics. The norm for unirrigated area is taken to be the same as in the Report. The category-wise labour coefficients were suitably (mainly prorata) adjusted such that estimates of employment based on these norms add up to the same estimate given by the composite norm mentioned above.

Wheat-As for paddy above.
Jowar-The norm as given in the Report for irrigated areas is assumed to apply for local irrigated and the same for HYV irrigated has been taken to be $10 \%$ higher than this keeping in view the estimate of employment based on composite norm. It may be mentioned that in case of paddy it is $16 \%$ higher, while for wheat it is $31 \%$ higher. The norm for unirrigated areas is the same as that given in the Report.

Bajra-As for jowar above.
Other cereals-The coefficients are weighted averages of the labour coefficients (irrigated and

[^5]unirrigated) for maize, ragi and as given in the Report, weights being the irrigated and unirrigated areas respectively under these crops in the year 1975-76 (the latest year for which data is so far available). However, these are suitably adjusted so that employment based on composite norm is maintained.

Pulses-The coefficients have been taken from the Report and adjusted for the composite norm in the same way as for paddy and wheat.

Sugarcane-The coefficients have been taken from the Report. It is assumed that in 1984-85 entire area under sugarcane would be irrigated and as such the norm relates to only irrigated area.

Jute \& Mesta-The Report gives the labour absorption coefficients only for irrigated area. The coefficient for unirrigated areas has been estimated as a residue, so that composite norm is satisfied.

Cotton-As for jute and mesta.
Other crops-The coefficients are weighted averages of the respective coefficients (irrigated and unirrigated) for oilseeds and tobacco, given in the Report, weights being the irrigated and unirrigated areas respectively under those crops in 1975-76, as done in the case of 'other cereals'. The area under tea, coffee and rubber plantation has been excluded from the resultant area under 'other crops', as the employment norm for tea, coffee and rubber plantations have been estimated from independent sources.

Sectors of paddy, wheat and pulses include milling part also. It has not been possible to estimate labour coefficients for milling part separately and the labour coefficient of the sector "miscellaneous food preparation" has been adopted for estimating employment due to the milling portion of these sectors. For this purpose the gross value of output of milling part is estimated by using their share in the total as in 1968-69 for which such information is available.

We estimated employment under other crops together with tobacco and coconut from area and employment per hectare. An implicit labour coefficient per gross value of output was derived. The coefficient was then applied to the gross value of output of tobacco and coconut to estimate the employment due to these two crops. The gross
value of output of these two crops is estimated by using their share in the total gross value of outpunt in the plantation sector as a whole as in 1968.-69. The resultant employment of these two crops was subtracted from the other crops sector and added to the plantation sector.

In the case of fisheries, estimates of employmentt were worked out separately for marine and inlamd fisheries. The estimate for marine fisheries was based on the estimate of the National Commissiion on Agriculture for 1970, which was 10 lakh person years (of 300 days each). Since the work force in the primary sector as a whole grew only by $2 \%$ annually between 1961 and 1971 Censuses and since more mechanised crafts have beem operating with better technology, it was felt that the estimated growth of output of roughly $5 \%$ would not all be reflected in the employment growth. After detailed checking, it was felt that a more realistic growth rate of employmentt from 1970 would be $2 \%$ annually. The same growth rate was assumed for the plan period.

Im regard to inland fishing, the base estimate was obtained from the live stock census, 1972 which showed 3.8 lakh persons engaged on fulltime and 2.85 lakh persons on part-time basis. Comverting the part-time workers to $50 \%$, the base year employment was worked out and a growth rate of employment of $3 \%$ was taken upto 1980. This was justified on the basis of much higher labour intensity of inland fishing operations. For the plan years 1980-85, the employment growth was in fact increased to $4 \%$ per annum in wiew of higher production growth targets enviisaged.

In the animal husbandry sector note has been taken of both cows and buffaloes on one side andl other livestock like sheep, goats, etc. on the other. The component of human labour utilised for the maintenance of drought animals has been exclliuded since it is part of crop husbandry. The basiic data utilised for obtaining labour inputs was from the Farm Management Studies and the Liviestock Census. The FMS were unfortunately not covering all the states of the country but since this was the best available data, it was userd. Separate estimates were made for cows/ bufffaloes in milk, dry not calved even once/ working and other etc., and the same were aggregated with proper weights. For sheep, pigs, horses, etc. for which no data from FMS were

[^6]available, the norms worked out for the National Commission on Agriculture were scrutinised and adjusted downwards on consideration of improvement in management practices.

The above estimates of labour input did not include labour employed in milk processing etc. since such activities were expected to be included in the manufacturing sectors, namely, misciellaneous food products etc. It was also assumed that during the Sixth Plan period, there would be further improvement in management practices so that overall labour utilisation will not rise significantly.

In the case of forestry and logging sector, difficulties were noticed regarding reliable data specially on self-employment which was the dominant part of such employment. The soources scrutinised for reliable data included the Census 1971, National Commission on Agriculture (NCA) and a micro-study conducted by the Forest Research Institute (FRI), Dehra Dun. The census estimates could not be utilised because employment in forestry varies from season to season and is of subsidiary nature. The NCA estimates for 1970 could not also be used because it was patently too low. The FRI data was disaggregated into direct employment, selfemployment and secondary employment and was considered by far the most reliable, subject however to downward adjustments for taking note of intensity of work. Most direct employment being of service type, especially public sector service was excluded to avoid double counting with the services sector employment. Similarly, the secondary employment on account of activities which process the various forest products etc. was excluded since these were expected to be part of the mamufacturing sector.

Self employment in forestry included labour input in such activities as removal of head loads of fire-wood and fodder, grazing and logging, availing of rights and concessions, collection of minor forest products, some food crops thrrough agricultural practices, social and farm forestry programmes for forest development etc. Even here grazing activity was excluded because it is implicitly covered under animal husbandry. Labour input in removal of firewood etc.. was deflated by 25 per cent and labour estimattes in logging and grass-cutting deflated by 60 per cent from the FRI original estimates to take note of low intensity of work and possible improvements in forestry practices.

## VI.2. Manufacturing sector

There are 59 manufacturing sectors in the input-output table which include, practically/ with-
in each sector, both organised and informal economic activity. The sources of data for the organised sector and informal sector naturally differ. The data on employment and output on a uniform basis has been available as a time series for the organised sector only through the Annual Survey of Industries while for the unorganised sector data available from the following sources had to be scrutinised for possible use :-
(a) Self-employed in non-agricultural enter-prises-29th round of NSS-1974-75,
(b) Census of Small Scale Industries-DGSSI-1972; and
(c) Centrally sponsored schemes-CSO1972.

The National Sample Survey data for 1974 75, though the most comprehensive out of the three, had still some gaps regarding the units employing 5 or more hired workers. On the other hand, the Census of Small Scale Industries 1972, which was fairy close to the time period 1974 75 , was quite comprehensive, specially in the urban areas for the size group 5 and above. Therefore, taking the NSS and the Census 1972 data together, there was some over-lapping but it was felt that combining the two would not basically affect the relationships between total output from the two sources and the total employment to derive the labour coefficients.

Since the unorganised sector data was available only at 16 broad sectors level, it became necessary to aggregate the 59 manufacturing sector data of the organised sector into the same number of broad sectors. The projection of the 1972 Census of Small Scale Industries data (so as to carry it to the same period as of the NSS survey (1972-75)) was done with the help of the growth rate between the Census work force from 1961 to 1971 and the ratios of sectoral value added in the unregistered sector in 1974-75 to the corresponding figures in 1972-73, wherever possible.

It also became necessary to correct for varying levels of intensities of work in the different categories of the workers in the unorganised sector, namely, the following:-
(a) self-employed workers having manufacturing as their principal activities;
(b) Self-employed workers having manufacturing as their subsidiary activities;
(c) Hired workers working full time; and
(d) Hired workers working part-time.

After making downward adjustments for selfemployed workers in subsidiary activities and hired workers working part-time, a total of employment on a standard person year basis from the NSSO data was computed. To this was added the respective projected employment of the non-factory units under the Census of Small Scale Industries, 1972 for each of the 16 broad sectors. Similarly the values of output of the two sources were added to get the total figure for the year 1974-75. Consequently, labour coefficients for the 16 broad sectors can be derived. These were combined with the organised sector coefficients worked out on the basis of Annual Survey of Industries data for the year 1974-75 for the sàme 16 sectors at $1974-75$ prices.

Since the organised sector data from the ASI for the same 16 sectors was available in a time series from 1972 onwards and since it was possible to correct for the year to year prices of the gross value of output on the basis of sectoral price deflators, it was decided for the Sixth Plan, 1980- 85 that the earlier exercise for building up composite co-efficients for 1974-75 at 1974 75 prices should be extended to at least take note of increase in labour productivity, technological improvements etc., specially in the organised sector. Therefore, the labour co-efficients for the organised sector were re-worked at 1979-80 prices over the entire series of data available and various modes of trend analysis were undertaken to obtain relationships of the labour co-efficients on time. This was done by fitting a semi-log equation and also a double log regression equation. Though the time series data was not very long, it was discovered that the regression equation did provide a good fit in many cases. For example, the double-log equation fitted well in 10 out of the 16 sectors whereas the exponential growth curye, namely, semi-log equation fitted well in six sectors. Even the simple linear trend equation fitted well in six of the 16 sectors, but in the case of 4 sectors, i.e. wood, leather, non-metallic minerals and transport equipment, none of the regression equations provided a good fit. Therefore, while the best fits were picked by using alternative specifications from sector to sector for the 12 sectors, the labour co-efficients in respect of the remaining 4 had to be projected for 1979-80 on the basis of graphical representation after ignoring the abnormal values etc.

The labour co-efficients for the base year 1979-80 for the organised sector based on the trend analysis as mentioned earlier, can, therefore, be considered fairly firm, but their amalgamation with the corresponding informal sector coefficients proved a challenge. After detailed checking, it was decided that the best way
would be to take the share of the informal sector output to total output as observed in 1974-75, study its variations over time based on the National Account Statistics data and estimate the gross value of output for the informal sector for each of the 16 sectors for 1979-80. The base year employment for the informal economic activity was thereafter worked out by multiplying the above-mentioned projections of gross value of output with the unchanged labour co-efficients computed for 1974-75. The corresponding employment figures for the organised sector were based on the projections of labour co-efficients to 1979-80, based on the trend analysis mentioned earlier, and the projections of gross value of output of the organised sector. The two employment figures were finally combined to give estimates for each of the 16 sectors.

The estimates of employment for the organised and the unorganised sector at the same disaggregated level were worked out separately for the terminal year 1984-85:-(i) for the organised sector, by using implied elasticities of 1979-80 and (ii) for the informal sector, by using projected elasticities based on the best understanding of the targets of coverage of beneficiaries under the Village and Small Industry programmes and corresponding projections of gross values of output. Therefore, it can be stated that continuing technological changes and increases in labour productivity have been taken into account while estimating the total employment for the terminal year 1984-85.

## VI.3. Services and other sectors

Apart from the agricultural and manufacturing sectors, there are 16 other sectors in the 89 sector input-output table, half of whom are largely in the organised sector and the other half are largely unorganised. There is no regular timeseries of data on many of these sectors and the data from various rounds of the NSSO, the Returns under various Acts and the Employment Market Information (EMI) of the Ministry of Labour as well as Census data all have been utilised to the extent possible. The sectors for which relatively more dependable data had been available in the recent past include plantations, coal and lignite, crude petroleum and natural gas, iron ore, other minerals, electricity, gas etc., railways and communication.

The sectors where there are genuine difficulties of getting reliable data include construction, other transport and other services. The data gaps in these areas have been filled up through available studies on the subject, e.g., Working Group Report on "Employment Intensity of Different

Modes of Transport", the 29th Round of the NSSO (Survey of Self-Employed Households in Non-Agricultural Sector). There were also difficulties about lack of up-to-date data in many of these sectors. However, after detailed checking the available information has been utilised in the best possible manner.

In the case of the following three sectors, two of which are more or less organised, it was found after checking from the past series of data that only simple relationships between gross value of output and employment could be worked out:
(1) plantations.
(2) electricity, gas and water supply.
(3) real estate and ownership of dwelling.

Since labour co-efficients could be built up only for the four years 1974-75 to 1977-78 after necessary adjustments to correct the price changes, it was decided to project them for 1979-80 base year on the basis of graphical presentation. The labour co-efficients for the terminal year 198485 were then projected on the assumption that there would be no real change in technology or productivity.

In the case of 9 other sectors, it was found that point elasticity of employment with respect to gross value added would be relatively stable. These sectors are construction, railways, other transport, communications, storage and warehouses, banking and insurance, education, medical and health and other services. The data series on employment and gross value added consist of only three observations 1974-75, 1975-76 and 1976-77 for these 9 sectors. After conversion of gross value added to $1979-80$ prices, the elasticities of labour input to gross value added between 1976-77 and 1974-75 were worked out and it was assumed that the same elasticities will remain valid for 1979-80 base year as well as for the terminal year 1984-85. In two of these sectors, namely, railways and communications which are relatively more organised, the employment data was obtained from the Working Group Report on Employment Intensity of Different Modes of Transport and annual reports and a study of P \& T Department.

In respect of the other 7 sectors, the employment data had to be obtained partly from the EMI (for the organised sector), the National Sample Survey rounds, Working Group on Employment Intensity of Different Modes of Transport, adjusted 1971 Census figures etc. The employment in respect of these 7 sectors from the unorganised part had to be adjusted downwards to take note of part-time employment and subsi-
diary household workers as revealed by the NSSO rounds. The 1976-77 figures for the unorganised sector employment being not directly available, the same had to be built up on the basis of the NSSO round figures, duly adjusted for employment intensity and growth of net value added in the unorganised sector at constant, 1979-80 prices etc. This was on the assumption that the unorganised sector employment, atter correction for employment intensity, will grow at the same rate as net value added in the sector. For the component of employment of these 7 sectors belonging to the organised part, the EMI data, which was readily available, formed the basis. The projection of the total employment in these 7 sectors for the terminal year 1984-85 was based upon growth rate of value added.

There were 3 other sectors where it was found that employment from year to year could be related better to physical output rather than gross value of output or value added. These are the mining sectors, namely, coal and lignite, petroleum and natural gas and iron ore. Since all these 3 are organised sectors and employment data is available as a time series, it was possible to do some trend analysis. A double-log regression of employment on physical output was fitted in the petroleum and iron ore sectors. The projection for these two sectors for the base year 1979-80 was done on the basis of the elasticities obtained by these equations. In respect of the third sector, namely coal and lignite, a dummy variable had to be introduced to eliminate the effect of nationalisation in 1973 and it was assumed that 2 tonnes of lignite was equal to 1 tonne of coal due to price and quality differentials. The estimate of elasticity worked out for this sector was assumed to remain constant both for the base year 1979-80 and for the terminal year 1984-85.

As regards the residual sector 'other minerals' which is a heterogenous group of minerals, it was not possible to use physical output as an explanatory variable in the regression equation. In this case, it was found that the relationship between employment per million rupees of gross value of output at factor cost at constant prices and time provided a good fit. On this basis, estimate of elasticity of employment with respect to gross value added of output was worked out and assumed to remain stable through 1979-80 base year as well as for the terminal year 1984 85. Here employment data was taken from the Returns under the Mines Act, 1952 which had better coverage than the Census or the EMI. In case of crude petroleum and natural gas, employment figures as per "Indian Petroleum and Petrochemical Statistics" were taken because of greater reliability.

As would be noticed, the detailed methodology for these 16 sectors differs a great deal from sector to sector and adjustments based on various related sources of data like the National Income Accounts of the CSO, the Mines Act, the Plantations Act, the EMI etc. had to be made in each sector differently. The coverage under many of the existing series of data on employment leaves a lot to be desired. The assumptions about the growth in employment from the employ-
ment data last available (say 1974-75 or 1976-77 or even 1977-78 in some cases) to the base year 1979-80 are also based on a judgement of the situation which varies from sector to sector. The unorganised components of employment even though based on NSS rounds are not fully comprehensive. However, in the absence of anything better, this formed the basis in most of the sectors with predominance of unorganised activity.

## CHAPTER VII <br> THE MATERIAL BALANCE SUBSYSTEM

## Introduction

In this chapter we present the demand-supply balances for the following minerals and industries; 1. Coal, 2. Iron-ore, 3. Finished steel (plain carbon), 4. Electricity, 5. Petroleum products, 6. Crude oil, 7. Cotton fibres, 8. Jute manufactures, 9. Jute fibres, 10. Manmade fibres, 11. Railways.

The material balance technique has been extensively used since Third Plan. With the help of this technique, attempts are made to assess the capacity and output to be generated in a specific sector belonging either to a commodity or a service at a very disaggregated level, sometimes attempted even at the level of individual projects, and the likely absorption of the commodity in the economy in terms of major consuming units for any projected year. As these estimates are done in physical units, the sector composition needs to be very homogenous.

The material balance approach has become an essential part of our planning structure. It has helped in assessing the feasibility of production targets, stipulated mainly from the demand side by the input-output model of the Leontief type which was used exclusively until the Fifth Plan. The limitations of the material balance approach are that they can be used only for a few homogenous sectors. Therefore for giving a general coverage for assessing the supply constraints in all sectors, the Sixth Plan developed a separate investment planning model.

But there are certain special features for which the material balance approach would justify its continuance by its own right. In the input output accounting, in however great details we go, it is very difficult to reach at a commodity or project level, whereas there are many occasions where the planners need information on this micro level.

The need for commodity level exercise increases as the number of commodities comprising a sector increase. Even in case of single commodity sector such as iron ore, sugar, rice, machine tools, cement, etc. the commodity level studies of material balances serve as an important crosscheck for the results given by the input-output model. This is so, because :-
(i) No commodity is strictly homogenous and differences amongst various grades of a commodity have to be taken into consideration, particularly if the unit
prices differ significantly, e.g., iron ore, a single commodity sector, comprises of lumps, fines and concentrates and the prices of these three items differ substantially. Moreover the consumption of the three items is influenced by technological linkages. Thus, fines can be consumed only at those steel plants where sintering facilities are available. These aspects would not emerge if the relationship is studied only between the sectors, i.e., iron ore with steel.
(ii) To conform to certain macro-economic aggregates (such as taxes, gross investments, stocks, etc.) in making sectoral allocations, the input-output model has to rely on certain assumptions/procedures. Material balances/commodity level studies help in cross-checking the impact of these assumptions on sectoral projections.

Other advantages of supplementing I-O model by material balance approach are :
(i) Capacity constraints in both the consuming sectors of the commodity as also for the commodity in question can be readily built into the projection process. Capacity constraints assume greater importance when planning horizon is less than the gestation period of the projects which produce the commodity. (This is elaborated subsequently.)
(ii) There is flexibility to subdivide/increase the number of consuming sectors depending upon technological considerations, e.g., as input coefficient of electricity into steel produced at integrated steel plant differs widely from steel produced at electric arc furnaces, the electricity balance subdivides steel into two sub-heads :
(a) integrated steel plants, and (b) electric arc furnaces.
(iii) At the commodity level, the information on end-use-wise consumption pattern becomes available much earlier than at the sector level. Material balances can, therefore, be based on more recent accurate information for the base year. Thus, for example, the steel
balance, the coal balance and the electricity balance for the 1980-85 Plan are based on the actual sector-wise despatches data for 1979-80 furnished by the respective departments/canalising agencies. Detailed data from the Annual Survey of Industries for 197980 will become available only after a few years.
(iv) Material balances are constructed largely in physical units rather than in monetary values. Operational decisions on capacity, production, trade and stocks of commodities are mostly taken in terms of physical units data. Loss of precision associated with the use of average prices in arriving at physical magnitudes can be easily avoided if the exercise is done directly in physical units.
The material balance approach is based on simple mathematical relationships, and is expressed in algebra as follows:
$\mathrm{O}=$ Output vector of consuming industries.
$\mathrm{N}=$ Vector of norms (input coefficients) of commodity into the consuming industries.
$S=\quad$ Change in the stocks of the commodity in the economy during the year under study.
$\mathbf{P}=\quad$ Production of commodity in the year.
I $=$ Imports of the commodity in the year.
$E=$ Exports of the commodity in the year.
$F=$ Final demand.
$\mathrm{n}=$ Number of industries consuming the commodity.
' 0 ' and ' $t$ ' are suffixed on top of symbol to denote base year and terminal year values, respectively.
$\mathrm{P}=\sum_{\mathrm{i}=1}^{\mathrm{n}} \mathrm{O}_{\mathrm{i}} \mathrm{N}_{\mathrm{i}}+\mathrm{F}+\mathrm{S}+\mathrm{E}-\mathrm{I}$
Capacity constraints
$\mathrm{C}_{\mathrm{j}}=$ Capacity of j th plant producing the commodity.
$\mathbf{U}_{\mathbf{j}}=$ Feasible level of capacity utilisation of the jth plant in the year under study.
$\mathbf{P}_{\mathrm{F}}=$ Feasible production level of the commodity in the year under study.
$\mathrm{M}=$ Number of plants producing the commodity.
$P_{F}=\sum_{j=1}^{M} C_{i} U_{j}$

The Plan projection for any future year should ensure that,

$$
\begin{equation*}
P=P_{F}=\sum_{i=1}^{n} O_{i} N_{i}+F+S+E-I \tag{3}
\end{equation*}
$$

## Parameter Estimation

Commodity-wise details are given under the respective commodity discussions. The following is a general discussion on the estimation procedure applicable to all commodities.
(a) Output vector

Let

$$
\mathrm{O}^{\mathrm{t}}=\underset{\text { consuming the commodity. }}{\text { Terminal }} \text { year output of industry }
$$

$\mathbf{O}_{\mathbf{i}}^{\mathbf{O}}=$ Actual output in the base year of industry $i$ consuming the commodity. This is obtained from the concerned technical department/agency of the government.
Then $\mathrm{O}^{\mathrm{t}}{ }^{\mathrm{t}}$ is estimated by the following indicators:
(i) $\mathrm{O}_{\mathrm{i}}{ }^{\mathrm{t}}=\mathrm{O}_{\mathrm{i}}{ }^{\circ}\left(1+\mathrm{r}_{\mathrm{i}}\right)^{\mathrm{t}}$
where $r_{i}$ is rate of growth of gross output of the sector to which the consuming industry $i$ relates, derived from the input output model.

where $\mathrm{C}_{5}{ }^{t}$ ' s are capacities of the industrial plants in the consuming industry in the terminal year and $U_{j}{ }^{t}$ 's are the feasible levels of utilisation thereof and ' m ' is number of plants in consuming industry. $\mathrm{O}_{i}{ }^{t}$ as an independent estimate is also available from the Planning Working Group or other independent studies on the industry.

## (b) Vector of Norms (Input Coefficients)

The Perspective Planning Division of the Planning Commission has estimated a large number of input coefficients for various commodities during the past two decades. These norms were published earlier in the publication on "Material and Financial Balances", P.P. Division, Planning Commission, in 1966. These norms have been revised, where the technology changes warrant, based on the information from (1) The Annual Survey of Industries (2) The Reports of the planning Working Groups (3) The Special studies conducted for the industry such as Annual Power Surveys and other studies under consultancy arrangements organised by various departments. The principal cross-check of the base year values of norms is through the equation

$$
P_{0}=\sum_{i=1}^{n} O_{i}^{0} N_{1}{ }^{0}+F^{\bullet}+S^{\bullet}+E^{\circ}-I^{\circ}
$$

in which all the values for the base year are known from the actual data. Terminal year vector of norms ( $\mathrm{N}_{\mathrm{i}}{ }^{\mathrm{t}}$ ) is the same as in the base year, except
for industries where technological changes/material substitution are likely to change the commodity input norms. For such industries, new norms are estimated from industry level information.
(c) For imports (I) and exports (E) of each commodity, base year information is obtained from DGCIS and cross-checked from respective canalising agencies. Terminal year estimates are made on the basis of commodity level studies and reports of the Working Group on Balance of Payments. In case of long gestation commodities, level of imports in the terminal year is estimated from equation (3) using the feasible level of production $\left(P_{F}\right)$ obtained from equation (2).
(d) Change in stocks ( S ) for each commodity in the base year is estimated from the data given by the respective technical organisations. Change in stocks in the terminal year, if any, is estimated on the basis of policy guidelines on buffer stocks, etc.
(e) For ["final demand" (F) which includes all the requirements of the commodity uncovered by (a) to (d) above, a first estimate for the base year (Fo ) is obtained as a residual from equation (1), using the base year values available for the remaining variables. This estimate is cross-checked with the data independently available from the respective technical agencies (C.E.A., SAIL, Coal Controller etc.). For the terminal year, final demand ( $F_{T}$ ) is estimated generally by one of the following methods depending upon the commodity under study. (i) Either by regressing the past year observations of ' $F$ ' against relevent micro variables or against selected macro variables such as investment. (ii) The estimates given by other technic a agencies are also utilised.

## Few selected material balances

The material balances for 11 non-agricultural commodities are presented in the following section. It was found difficult to have a standardised presentation because of the nature of data availability and sometimes depending on the nature of the commodity.

## VII. 2. Coal

## Estimate of coal demand

In the country's fuel policy, coal has been accepted as the principal source of energy in our development programme. Since life of high quality coking coal reserves is strikingly short, it is necessary to try to slow down depletion. The life of the non-coking coal reserves, especially
low grade varieties, however, gives sufficient margin to use them even as substitutes for oil, whose known reserves are very low, and noncommercial fuels to the extent feasible. Expansion of coal production and demand is thus intimately connected with the country's fuel policy, with conservation and substitution objectives.

Coal is utilized in a very large number of sectors in our economy. It is the resource-base for coal-based thermal power generation and fertilizer as well as domestic consumption. It is a major input for iron and steel, and provides the main energy source for cement, textile, edible oil, fertilizer and brick manufacture. Railways continue as one of the major consumers in spite of dieselisation and electrification. Coal is also a valuable item for exports.

The large number of coal consumers can be broadly categorised as follows.
(i) Power sector.
(ii) Steel and matallurgical sector.
(iii) Major industry sector.
(iv) Transport sector.
(v) Domestic secor.
(vi) Construction sector.
(vii) Export sector.
(viii) Miscellaneous sector.

Because of large inherent differences in behaviour of the above sectors, a uniform method cannot be applied to work out the coal demand for all the sectors. For power, steel and major industries, where targets are fixed in advance, coal demand can be reliably worked out by applying appropriate norms of coal consumption per unit of production. In the transport sector also the norm of coal consumption can be worked out in relation to the steam locomotives in operation. In the domestic (soft coke) and construction sectors (brick), coal demand is linked to availability, marketing, infrastructure (including transport ability) and substitution for and by other forms of fuels. In the export sector, demand forecasting is somewhat speculative, depending on indigenous supplies and market availability. For a large number of consumers grouped together in miscellaneous sector, many of which are not properly identified, demand forecasting can only be based on past trends, parameters of economic growth and social objectives. A material balance of coal thus embodies the sum total of demand worked out differently for different sectors. It is, however, basically a methodology of 'norms' as demand estimates of most of the important sectors, accounting for about 80 per cent of total demand, can be worked out by application of norms.

Given the target of output of consuming sectors, the accuracy of demand forecast depends on reliability of norms. Attempts are thus made to continuously review and update norms in the light of the actual trends of past consumption, future technological and process changes and substitution factors. Some difficulties in arriving at appropriate coefficients are briefly discussed below :
(i) Even for a single sector, there may be a large number of consuming units which have divergent norms depending on geographical source, quality of coal (calorific values), process and technology.
(ii) Coal being a natural resource of variegated character, standard specifications cannot be maintained in supply even when mined from a single seam of identified grade. Unpredictable nature of coal in future supply affects the norm over time.
(iii) In the steel sector, no constant ratio can be maintained between sized coke and mined coal because of a number of processes involved like mining, washing, blending and sizing. These result in great fluctuations even annually in the norms for a single plant.

The methodology for arriving at demands for the various sectors are briefly discussed below :

Power sector: This is the largest consumer of coal and because of large availability of low grade coal suitable for power generation, thermal generation in future will be mostly from coal based power stations. With increased efficiency of large sized power stations, coal consumption norm per unit generation has been and would be further lowered. In arriving at net coal demand, substitution by middlings, a byproduct low grade coal from washing of coking coal, is also accounted for.

Steel and metallurgy sector: Demand for coking and blendable coal are almost exclusively confined to this sector. Steel industry being by far the main consumer, demand estimates are related to targets of hot metal output. Because of the high ash content of Indian coking coal, most of the mined coals are washed and blended and dry coal is converted to sized coke for use in blast furnaces. Because of variations in quality of mined coal, consumption norms cannot be built up from ratios of hot metal output to raw coal input. Norms based on dry coal are also showing
less reliability in demand forrecasting, as seen in the sharp differences in estimates by Chari Committee (1966), SAIL (Working Group on Iron and Steel) and actual for 1976-77. This is because of variations of ratios of sized coke to dry coal even annually betause of quality of coal. But coke consumption norms as seen from the performance of last five years and that projected by the Chari Committee have closer resemblance. Thus in our exercise it has been considered appropriate to work out coke demand first, and convert sized coke in terms of dry coal by adopting the actual ratios for 1976-77, the latest year for which data are available. The coke norms adopted for steel plants are as follows:
(kg. par tonne of hot metal)

| Steel plant |  | $\begin{array}{c}\text { Chari } \\ \text { Commit- } \\ \text { tee }\end{array}$ | Actuals |  | $\begin{array}{c}\text { Adopted } \\ \text { Range }\end{array}$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | Average |  |  |  |$)$

To work out raw coal to be mined to meet the coke demand, ratios of blending of various grades of coal (prime coking, medium coking and blendable coal), ratios of washed and unwashed coal, recovery of washed coal from unwashed coal in washeries, and stock changes have been taken into account.

It has been observed in our Plan that import of coking coal is necessary to slow down depletion of our high quality coking coal. Accordingly, coking coal production is adjusted vis-a-vis demand for envisaged import of around 1.0 million tonnes in 1984-85. Imports will also be helpful in improving performance of those steel plants where productivity is low due to poor quality of domestic coal. It is anticipated that proper blending of imported coal with indigenous coal will limit the variation in norm as observed now.

Major industry sector: There are some twenty identified consumers in this sector, important ones being cement, paper \& paper board, newsprint, cotton, textiles, refractory, fertilizer, jute manufacture, tea gardens and vanaspati. In the fertilizer industry, a substantial increase in demand is envisaged with the commissioning of coal
based fertilizer plants. In the cement industry, with the policy to switch over exclusively to dry process in new plants, coal norms would go down.

Transport sector: Railways are the main consumer. This is the only sector where coal demand will be progressively going down with reduction in number of steam locomotives because of electrification and dieselisation programmes.

Domestic sector: Following the recommendation of the Fuel Policy Committee (1974), efforts are necessary to popularise soft coke to curb the unwanted demands of firewood and kerosene. Soft coke, on the other hand, may get substituted by LPG if made available adequately especially in urban centres. Demand of soft coke thus projected is related to the scope for substitution and production and marketing possibilities.

Construction sectors: Brick manufactures are the main identified consumers. It is observed that demand for coal in brick kilns has not been fully met in recent years because of low priority given to its rail movement. Production of bricks being mostly in the unorganised sector, precise information on production of bricks and requirement of coal are not available. Attempt to forecast coal demand is thus made in relation to construction index.

Export sector : Demand in international market is yet to be properly explored for our grades of coal. As a result, exports are not showing a very favourable trend as yet. With conservation aspects also taken in view it is unlikely that any massive effort would be possible to export coal. It may be reasonable to assume that only surpluses produced during mining of required grades for indigenous consumption will be exported.

Miscellaneous sector: A very large number of consumers, many of which are uncategorised because of low levels of demand, are included in this sector. Most of the consumers in his sector have low priorities so far. However, demands are projected to ensure supply with social objective because of importance now attached to small scale industries.

Table 7.1 presents the Material balance of coal for 1979-80 and 1984-85 ${ }^{1}$.

Correspondence with input-output model projections: Table 7.2 present the comparison between physical projections by material balance and financial projections by I-O model. The two distributions broadly correspond with each other.

## VII. 3. Iron Ore

Iron ore has two principal roles in our economy :
(i) As the main raw material for steel production, and
(ii) As an important item in the country's export basket.
Apart from steel production, it is also required for manufacture of sponge iron and pellets. The latter are emerging as users of this material; sponge iron for supplementing steel scrap as a raw material in electric furnace based steel production, and pellets as a higher value added item for exports.

Demand supply balance for iron ore for 197980 and $1984-85$ is presented in Table 7.3.

Domestic demand for iron ore has been projected on the basis of the hot metal production target of the steel plants and the requirements for sponge iron and pellet production. Exports of iron ore have been projected on the basis of the contribution to be made by this mineral towards the balance of payments position of the economy. Projections have been made, separately, for lumps and fines taking into consideration the requirement for the two forms of the ore. Fines are utilised where sintering facilities are available. With the installation of the sintering facilities at the steel plants and facilities for manufacture of pellets, the consumption of fines is expected to increase at a higher rate than the lumps.

In addition to the targeted output of 55 million tonnes of iron ore, Kudremukh iron project will produce 5 million tonnes of iron ore concentrates which shall be exported.

## Correspondence with input-output model projections

Table 7.4 presents the comparison between the projections made by input-output model with those obtained from the material balance exercise for the year 1984-85. The distribution of total demand between inter-industry use and final use (mainly exports) differs in the two exercises because the Iron Ore Sector of the model includes , besides iron ore, pellets and concentrates, which have a higher unit price than that of iron ore. The latter are intended mainly for exports.

## VII. 4. Finished steel (Plain carbon)

In the strategy of development adopted in the Plan, steel is one of the critical materials required for sustaining the pace of investment envisaged. At the stage of development which has been reached over the past plans, the country has the production capability to produce most of the capital goods required by the sectors such as power, transport, irrigation etc. to

[^7]which the thrust of development is directed in the Plan. However, the capital goods manufacturing programme depends largely on the timely availability of its material needs-steel being the basic item in this list. Apart from capital goods manufacture, the construction programme undertaken in different sectors also requires steel as a reinforcement material. The experience shows that inadequate availability of steel acts as a general drag on the development effort in almost all sectors of the economy.

Steel belongs to sector 57 of the input output table. The commodities covered by this sector are :-
(i) Finished steel (Plain Carbon);
(ii) Pig iron;
(iii) Alloy and special steels; and
(iv) Ferro-alloys.

Commodities other than plain carbon steel have a significant share in the sector's output and would have a different growth rate depending upon their end use pattern. The composite growth rate of the sector can, therefore, not be used for planning capacity for the plain carbon steel as such and a more precise estimate of growth in demand is necessary. Steel demand is, therefore, projected by the method of material balance to fulfil the targets for manufacture of capital goods and metal products as also to meet the growth in the construction sector's requirement.

## Flow of steel into the economy

Before reaching the final end users, steel is processed in a number of stages. This is schematically illustrated in the enclosed flow chart III. Steel, as produced by the intergrated steel plants, is generally processed into finished products at various steel processing centres and the finished products are finally consumed by the end using sectors. Steel demand projections, therefore, refer to the interface (marked X-X in the chart) between the finished steel producers and the end using sectors. This is another important refinement over the input-output approach where the demand proiections are made at the inter-face (marked Y-Y in the flow chart) between the primary steel producers and the rest of the economy. Steel is consumed finally in a number of shapes such as bars and rods, plates, sheets, tin plates. wires etc.. Fulfilment of the requirements of various end uses can be planned more precisely at the inter-face (X-X) which is studied in the material balance approach.

## Base year balance

Broad sector-wise consumption of saleable steel in the year 1979-80 has been worked out by

Steel Distribution Authorities (See Table 7.5). 8309 thousand tonnes of saleable steel was consumed in the economy in 1979-80. Finished steel consumption, after making corrections for the loss of steel in processing semi-finished steel supplied by steel plants into finished steel by the rerollers, is estimated at 8000 thousand tonnes. Broad sectoral distribution of this is-

000 tonnes

| Sector using steel mainly for cons- 000 tonnes |  |  |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
| Small scale industries |  | 1394 |
| Defence |  | 91 |
| Manufacture of machinery and metal products (excluding small |  |  |
| scale sector) . . | -• | 3015 |
| Tota | .. | 8000 |

While the growth projections are generally made for specific engineering industries/construction sectors, the classification of actual steel consumption as available from steel despatch records is customer oriented. It is difficult to classify the customer-wise despatch data strictly according to the specific engineering industries. The break-up of steel consumption at the level of specific engineering industries in the base year 1979-80 has, therefore, been done by estimating consumption as a product of the industry's output and its norm of steel consumption per unit of output. Table 7.6 (col. 2) gives the distribution of steel consumption in 1979-80 at the industrial group level. Table 7.7, col (6) givei the industry-wise steel consumption in the organised sector in 1979-80.

## Projections for 1984-85

Projections of steel demand have been made for the year 1984-85 for the following sectors/ sub-sectors :-
I. Manufacture of machinery and metal products
(i) Principal steel consuming industries in the organised sector covering
-Transport equipment
-Electric power equipment
-Industrial machinéry
-Other metal manufactures
(ii) Other miscellaneous industries in organised sector.
(iii) Small scale indus̄tries̄.
(iv) Defence.

II Construction gector.

The projection of steel requirements in 198485 in the organised sector have been made on the basis of the estimate of growth in the output of the respective industries. The projections of output are also cross checked for consistency with the allocation of plan investments amongst different sectors and the consequent demand for the various capital goods/consumer durables. For example, the final targets of railway rolling stock (locomotives, wagons and coaches) is consistent with the size of the railway Plant. Similarly, the projections of coal and other mining machinery, cement machinery, sugar machinery and paper machinery are based on the plan targets. Table 7.7 indicates projections of output for the various engineering industries and corresponding steel requirements in 1984-85.

Based on these projections the following growth rates in steel requirements emerge for the different groups of industries :-

| Industrial group | Annual <br> compound <br> growth <br> $1984-85$ |  |
| :--- | :--- | :--- |
|  |  | $1979-80$ |
| Transport equipment .. | .. | $11.1 \%$ |
| Electric power equipment | $\cdots$ | $12.0 \%$ |
| Industrial machinery .. | $\cdots$ | $10.0 \%$ |
| Other metal manufactures | $\cdots$ | $10.4 \%$ |

Total organised sector principal steel consuming industries
$10.7 \%$

In respect of miscellaneous steel consuming industries, small scale sector and defence, suitable indicators of growth are not available. It has been assumed that the growth in steel requirements of these sub-sectors will follow the trend in principal steel consuming industries in the organised sector.

The growth in requirements of steel in construction sector is estimated to be in proportion to the rise in the annual gross investment during the plan period. Investments are expected to grow at about $9 \%$ per annum during 198085. Steel consumption in construction activities is accordingly projected to rise from 3.5 million tonnes in 1979-80 to 5.4 million tonnes in 1984-85.

Total steel consumption in the economy is projected to increase from 8 million tonnes in 1979-80 to 12.87 million tonnes in 1984-85 representing a $10 \%$ annual compound growth during the five year period. The actual growth
rate in steel consumption during the seventies has been in the range 5 to $6 \%$.

A broad cross-check of the valadity of this method of projecting steel consumption against the actual growth in steel consumption in the past has been made. Overall steel consumption in 1978-79 increased by $7.5 \%$ over 1977-78 (after making corrections for the estimated variation in steel stocks at the consumer end). The growth in the level of output/activities of the various consuming sectors in the corresponding period and their respective weightage in overall steel consumption are as follows:-
 recorded in 1978-79.

## Correspondence with input-output model projec-

 tions:Table 7.8 compares sectoral projections of steel consumption made by material balance method with the projections generated by input output model. Steel has high weightage in the composition of the relevant input output sector. It would be seen that the sectoral distribution of projections given by material balance approach is broadly the same as given by the input-output model. The table also illustrates the supply linkages of steel at project level to fulfil the 198485 requirements.

## VII.5. Electricity

Sector 80 of the input output model is composed of the following services/industries:-
(i) Generation, transmission and distribution of electricity;
(ii) Collection, purification and distribution of water;
(iii) Manufacture and distribution of coal gas, water gas, etc.

Material balance approach is used for determining the demand for the principal item in this list, viz., electricity generation and supply.

The overall electricity demand is considered an aggregate of the demands of the following eight categories of consumption, past data for which are compiled by the various electricity authorities :-

1. Major industrial consumption
2. Other industrial consumption
3. Domestic consumption
4. Commercial consumption
5. Irrigation
6. Railway traction
7. Public lighting
8. Public water works, sewage and miscellaneous.

Table 7.9 presents the electricity balance for 1978-79, 1979-80 and 1984-85 using this classification. While the data as regularly collected and published refers only to the electric utilities, the material balance for electricity also includes the captive power plants. Thus, an economy wide coverage on electricity generation and consumption is ensured.

## Methodology adopted in determining categorywise demand

(i) Major industrial consumption: (Table 7.10)

Electrical energy requirements for the targeted output growth of major industries is determined by the end use method. Seventy eight major industries have been identified. For the principal power intensive industries like steel, fertilizers, aluminium, cement, coal, petroleum, sugar, textiles, caustic soda, sulphuric acid, paper and paper board, newsprint, etc. the Plan lays down the target for 1984-85. For others, growth rate of the relevant input-output sector as given by the input-output model has been used in projecting 1984-85 output. The requirements of electricity have been worked out by using the norm of electricity consumption per unit output of the consuming industry. These norms have been developed over the plans in the Perspective Planning Division and refined by using project level data collected during the annual power surveys. As these norms are applied directly to the output of the consuming industries, only the energy needs of the industrial production process are covered by the norms. Other requirements of the industrial complex are considered separately. The norms take into consideration the variation in the technology within an industry. For instance, electrical energy requirement for the dry
process of manufacture of cement differs considerably from the wet process. The units based on the different processes of cement manufacture have been identified and their energy requirements have been estimated separately. The norm used is a weighted average of such requirements. Wherever feasible, the norms take into account the influence of capacity utilisation, e.g. electricity requirements of fertiliser plants have been estimated at $80 \%$ utilization.

## Other industrial consumption

Other industrial consumption by small industries etc. is worked out as a percentage of the major industrial consumption considered above. This category includes all small registered and unregistered manufacturing industries as well as electricity requirements for other purposes like household consumption in major industrial complexes.

An average multiplying factor is worked out by making usie of the past 4-5 years data for the purpose of estimating power demand for this category of industries. The past information is estimated after deducting the major industrial consumption from the total industrial consumption given in the General Review of All India Public Electricity Supply Statistics.

## Domestic and commercial consumption

The domestic and commercial consumption of electricity has been worked out separately on a state-wise basis by considering time trend growth rates. (Table 7.11). Past data on state-wise consumption of electriciy in this category were collected for the period 1961-62 to 1975-76 for estimating the growth rates over past 15 years.

## Consumption by irrigation pumpsets

,Agriculture being the most important sector of the economy, a liberal amount of electricity should be provided for irrigation pumpsets. The provision of power for the pumpsets is made on the basis of the average amount of electricity required per pumpset. The average norm of electricity requirement per pumpset was worked out by taking an average of the electricity consumed per pumpset for the five year period pre-
ceding 1979-80. The total number of pumps to be energised by the end of Sixth Plan was taken according to the number programmed by the Central Ground Water Board, Ministry of Irrigation and provided for in the Plan.

## Railway traction

The requirement of electricity for railway traction was obtained from the actual route-kilometres electrified and the growth in passenger and goods traffic on such routes. This involves a detailed analysis of the electricity requirement in each traction. This work is carried out by the Railway Board and their estimate of electricity requirement for traction is adopted after checking the consistency of the envisaged electrification programme with the Plan as finally approved.
Public lighting, public water works, sewage \& misc.
Requirements of electricity for each of these other sectors were worked out on the basis of average trend growth rates observed in the past.

## Demand estimates using regression analysis

The sectoral and all India electrical energy consumption estimated above have been cross checked by regression analysis as discussed below :

Regression analysis techniques are used in order to establish the relationships between the total or sectoral consumption of electricity with the relevant indicators of economic growth. These relationships are then made use of in forecasting the demand for power. Different forms of equations could be fitted to explain the changes in the consumption of electricity over a period of time. Following are the functional relationships considered for estimating the electricity requirement during the terminal year of the Sixth Plan 1980-85:

$$
\begin{align*}
& \log \mathrm{Y}=\mathrm{A}+\alpha \mathrm{t}  \tag{1}\\
& \log \mathrm{Y}=\mathrm{A}+\beta \log \mathrm{X} \\
& \log \mathrm{Y}=\mathrm{A}+\alpha \mathrm{t}+\beta \log \mathrm{X}
\end{align*}
$$

Equation (1) gives the past behaviour in the growth of electricity consumption over time.

Equation (2) relates the electricity consumption Y with the economic variable X which could be gross value added, aggregate or sectoral private final consumption expenditure, etc.
Equation (3) is similar to equation (2) but has time t as an additional variable, $\mathbf{A}, \alpha$ and $\beta$ are the parameters determined from regression analysis.
Functional relationships have been worked out for the cases of total consumption requirements of electricity and the requirement by the industrial, domestic and commercial sectors.

## Total demand estimates

For working out the total consumption requirements of electricity, the consumption data (billion kwh) for the period 1960-61 to 1979-80 has been regressed against GDP at constant 1970-71 prices in Rs. crores. The relationships obtained are:

$$
\begin{gathered}
\log \mathrm{Y}=\underset{(4.532)}{2.872+0.0843 \mathrm{X}}(32.384) \\
\overline{\mathbf{R}}^{2}=0.9831
\end{gathered}
$$

where figures in brackets show the Student $t$ values of the coefficients determined. An estimation by this equation gives the consumption requirements to be 145.47 billion kwh in 198485. The growth rate in consumption so obtained was 11.37 per cent per annum during the Plan period. This equation also leads to the conclusion that there may not be very marked deviations from the trends in consumption growth as observed in the past 20 years.

## Industrial consumption requirements

For estimating the demand for industrial sector, the electricity consumption by industries over the period 1960-1980 was regressed against time and value added of the mining and manufacturing sector at 1970-71 prices. The relationship obtained is as follows :

$$
\begin{aligned}
\log Y_{I} & =-1.145+0.0511 \\
& (0.4) \\
\frac{2}{\mathrm{R}} & =0.9 .5 \log \mathrm{X} \\
& 0.9687
\end{aligned}
$$

where

$$
\begin{aligned}
& \mathrm{Y}_{1}=\text { Electricity consumption by industrial sec- } \\
& \text { tor in billion kwh. } \\
& \mathrm{X}= \text { Value added in mining and manufacturing } \\
& \text { sector in Rs. crores at } 1970-71 \text { prices. }
\end{aligned}
$$

An estimation by this equation for 1984-85, by substituting the projected rate of growth of value added for the mining and manufacturing sector during the 1980-85 Plan gives the requirement of electricity for industrial consumption as 91953.18 million kwh. The end-use method gives a requirement of 91865 million kwh for industrial consumption during 198485.

Estimates of domestic consumption requirements
The projections for domestic sector consumption of electricity are made by correlating it with private final consumption expenditure at $1970-$ 71 prices. The relationship observed is

$$
\begin{aligned}
\log Y_{H} & =-26.824+2.742 \log X_{1} \\
\frac{2}{R} & =0.9763
\end{aligned}
$$

where
$Y_{H}=$ Domestic consumption of electricity in billion kwh.
$\mathrm{X}_{\mathrm{I}}=$ Private final consumption expenditure in Rs. crores at 1970-71 prices.

An estimation of the domestic consumption requirement during 1984-85 was made using the observed relationship. The requirement comes out to be 13803.75 m . kwh. A state-wise analysis indicates a requirement of 13822 m . kwh.

## Commercial consumption requirements

The projection for the commercial consumption of electricity can be made by correlating it with the value added in the mining and manufacturing sector. The relationship obtained by using the past 20 years data is:

$$
\begin{gathered}
\log Y_{c}=-9.1916+1.9611 \log X \\
(0.1) \quad(17.858) \\
\frac{2}{R}=0.9442
\end{gathered}
$$

where
$Y_{0}=$ Commercial consumption of electricity in m. kwh.
$\mathrm{X}=$ Value added in mining and manufac turing sector in Rs. crores at 1970-71 prices.
An estimation of this equation yields a requirement of $9988.2 \mathrm{~m} . \mathrm{kwh}$. for 1984-85. A statewise analysis, however, places the requirement at 9971.2 m . kwh.

## Generation target

The all India consumption projected above and the losses which take place in the process of generation and supplying electricity to the consumers are added. These losses are considered under two heads-(i) Auxiliary losses within the power plant, (ii) losses in transmission \& distribution of electricity from the power plant to the final consumer. Allowance for these losses is based on past quantitative relationships and improvement therein as a result of system improvement investments envisaged in the plan. As hardly any transmission is involved when power is generated on a captive basis, i.e. in the nonutilities, T\&D losses have not been separately considered for non-utilities. Auxiliary loss in this case accounts for the entire loss between generation and consumption. Table 7.9 illustrates the balance between electricity generation and consumption for the year 1978-79, 1979-80 (base year) and the projections for 1984-85.
Correspondence with input-output model projections
Correspondence between input-output model and the material balance projections at the sectoral level in 1984-85 is presented in the Table 7.12. The relationship of output with installed capacity is also presented in the table.

## VII.6. Petroleum products

Petroleum products are consumed in the economy for broadly two technological applications (i) as a source of energy such as in transportation, power generation and in households;
(ii) as material input for industrial products such as fertilisers, petro-chemicals, etc. Although petroleum products are a sector by themselves in the input output table i.e. sector 43, the group comprises of a large number of individual products which have distinct technical linkages depending upon their energy content or suitability for a specific application. These products are:-

## A. Light distillates

1. LPG
2. Naphtha
3. Mogas
4. Other Light distillates
B. Middle distillates
5. Kerosene
6. Aviation turbine fuels
7. LDO/MDO
8. High speed diesel
9. Other middle distillates

## C. Heavy Ends

10. Fuel oil
11. Other heavies
(a) Luber greases
(b) Bitumen/asphalt
(c) Petroleum coke
(d) Others

In the material balance approach it is possible to identify linkage between a sub-set of these products with the specific consuming sector.

Demand for petroleum products has been considered under the following sectors :
(i) Road transport
(ii) Air transport
(iii) Rail transport
(iv) Water transport
(v) Fertilisers and chemicals
(vi) Household consumption
(vii) Agriculture
(viii) Industries
(ix) Power generation
(x) Others

The consumption of petroleum products in road transport is a function of the population of automobiles and the intensity of their usage. In making projections, firstly the stock of automobiles has been projected using the annual production of different types of automobiles and the normal scrappage out of the existing stock. The growth in consumption of petroleum products has been estimated after allowing for the response of the usage intensity to the relative increase in the petroleum prices. The intensity of the response is considered separately for personalised transport and public transport.

Air transport requirements of petroleum products are projected on the basis of the projected fleet strength of the airlines and increased usage of aircraft for activities such as agricultural spraying, ærial survey, etc. Requirements of petroleum products for fertiliser and petro-chemical complexes are based on a plant-wise assessment and the expected shift in technologies. Thus naphtha based fertiliser production has been considered distinct from fuel oil based production having regard to the commissioning schedule of the fertiliser plants using these technologies.

Petroleum product requirements for rail transport are based on the addition to the stock of diesel locomotives during the Plan period. Requirements of petroleum products for water transport has been rather stagnant in the recent years. These requirements have been projected to grow at a moderate rate of about $5.2 \%$ per annum.

Naphtha and fuel oil requirements for fertilisers production are based on the commissioning schedule of fertilizer plants during the plan period. Requirements for petro-chemicals have also been projected after a plant-wise analysis.

The households consume petroleum products in two forms (i) Kerosene; and (ii) LPG. A large scale expansion of LPG production and distribution system is envisaged during the Plan to fulfil the large unspecified demand for this product. It has been assumed that the $27 \%$ annual compound growth in LPG production during 1980-85 will be consumed by the household sector. This high growth would substitute a part of the kerosene demand in the households. Industrial use of petroleum products, other than in the production of fertilizers and petro-chemicals is in the form of lubricants, greases and furnace oil for generating heat energy for the industrial processes. Largely as a result of improved efficiency in utilisation of petroleum products and the use of substitutes, wherever feasible, the growth in industrial requirements of petnpleum products would be about $5 \%$ per annum as against $8.8 \%$ during 1978-80.

The principal components of demand considered under the head 'others' are bitumen for construction and maintenance, lubricants and greases and wax. Consistent with the "Autonomous component" of investment for the employment generation programme which would include rural link roads, the requirements of bitumen are expected to grow at about $12.2 \%$ per annum as against $8.7 \%$ in the last two years (1978-80). The overall growth in demand for other sectors is projected to be $11 \%$ during $1980-85$ as against 8.3\% during 1978-80.

## Overall petroleum products demand.

The sector-wise demand for petroleum products presented in Table 7.13 yields a total estimate of 45.5 million tonnes in 1984-85 as against the estimated consumption of 29.5 million tonnes in 1979-80 representing a growth rate of $9 \%$ per annum compound. Given the capital stock that exists in the economy for consuming petroleum products and rendering various services to the economy such as transportation and power generation, and also the production facilities that exist for manufacture of such capital goods, it would be necessary to provide for such a growth in consumption to sustain economic growth in the related sectors.

Product-wise pattern of demand in 1984-85 is presented in Table 7.14 alongwith the anticipated production of these products. Growth rate of different groups of products during 1980-85 is as follows :
(Percent per annum compound)

| Product Group |  | Growth rate <br> 1984-85 |  |
| :--- | :--- | :--- | :--- |
|  |  | 1979-80 |  |
| Light distillates | . | . | 9.61 |
| Middle distillates | . | . | 9.87 |
| Heavy Ends | .. | . | . |
|  |  | Total | . |
|  |  |  | 9.13 |

Middle distillates are used mainly for public transportation. The expected growth in this sector indicates a high growth rate of $9.87 \%$ during the Plan period. Light distillates are used for fertilisers and petro-chemicals production, household energy needs and personalised transport. The high growth in the consumption of LPG coupled with the capacity being created for fertiliser and petro-chemicals yields a growth rate of $9.61 \%$ for this group of products. Heavy ends are used mainly in industries and for power generation. It is feasible to moderate growth in their con-
sumption by (i) using other fuels and (ii) changes in technology. Efficiency in their utilisation by upgrading the capital equipment consuming these types of products is also feasible. Accordingly a moderate growth of $7.13 \%$ is envisaged during the Plan period for the heavy ends.

## Correspondence with input-output projections:

Table 7.15 compares the sectoral distribution of petroleum products consumption and supply as given by the input-output model with the projections made by material balance approach. The two distributions are not identical, although petroleum products are a sector by themselves, because of the heterogenous composition of the group, with the unit prices of different types of petroleum products having a wide dispersion. The linkage of the required level of output with the plant-wise capacity available by the end of the plan is also illustrated in Table 7.15.

## VII.7. Crude oil

The only use of crude oil in the economy is in the manufacture of petroleum products. Demand for this has been projected on the basis of the targeted production of petroleum products in the different refineries. In 1984-85, the refineries will be able to process 38 million tonnes of crude. Domestic production from various fields/regions will be 21.6 million tonnes based upon the development programme in this sector. 16.4 million tonnes of crude will, therefore, need to be imported. Table 7.16 gives the supply demand balance for crude petroleum in 1979-80 and 1984-85.

Correspondence with input-output model projections

Table 7.17 presents the comparison between the projections made by input-output model and the material balance approach for 1984-85. The value-wise distribution given by the input-output model is weighted in favour of imports because of the higher unit price of this commodity in the international market. The Table also illustrates the field-wise/region-wise supply linkages for the envisaged level of domestic production.

## Fibre balances

Fibres are one of the basic materials which fulfil a variety of consumption and industrial needs of any economy. Fibres that originate as an agricultural crop are called natural fibres. These are :

|  | Fibre |  | Principal application |
| :--- | :--- | :--- | :--- |
| (i) Cotton | $\ldots$ | Cotton textiles |  |
| (ii) Jute \& Hessian | . | Jute \& Hessian Goods |  |
| (iii) Vis cose (Rayon) | .. | Textiles and tyre cord |  |

The constraints in the availability of natural fibres, as also consumer preference, require that natural fibres should be supplemented by manmade fibres. These are :

| Fibre |  |
| :--- | :--- |
| \left.(i) Nylon Principal application  <br> (ii) Polyester .  <br> Textiles \& tyre cord   <br> (iii) Acrylic .. $\right\}$ Woollens |  |

Apart from the principal varieties of fibres listed above, there are a number of special varieties which are used for special applications.

The fibre based materials are characterised by their agro-industrial linkages. Their availability fluctuates with the crop performance and the demand is influenced largely by consumption behaviour. In India, the industries based on natural fibres have a long history. Presently, the processing capacity for natural fibres is not a constraint and the output is determined largely by demand. In contrast to developed economies, the overall consumption of fibres in our country has not reached a stage where large scale supplementation by man-made fibres would be necessary. Moreover, social considerations such as employment per unit of output in agriculture and industry also require that natural fibres should be promoted to the maximum feasible extent. Manmade fibres production, apart from being capital intensive is also constrained by the availability of petroleum products, which are their principal raw material base. Therefore, in the medium term the role of man-made fibres would be mainly of a supplementary nature and in applications where their specific properties are essential to usage.

Demand-supply balances for principal fibres are discussed below:

## VII. 8. Cotton

The starting point in the estimation of cotton fibre demand is targeted output of cotton textiles which in turn is estimated as equal to demand originating from private consumption, industrial usage and export requirements as follows :

1984-85
Mill. Metres

| 1. Household sector | . | 10900 |
| :---: | :---: | :---: |
| 2. Non-household sector | $\cdots$ | 1150 |
| 3. Exports | . | 1150 |
| 4. Industrial | . | 130 |
| Total Tex+iles | , | 13330 |

Less Khadi, Pure Silk \& Woollen textiles 300
Cotton Textiles .. .. 13030

The break up of cotton textiles output in terms of different varieties is estimated to be:
(Mill. metres)

| 1. Pure cotton, of which | - | 8640 |
| :---: | :---: | :---: |
| -mill sector | . | 3300 |
| -decentralised sector | . | 5340 |
| 2. Blended/mixed | . | 2490 |
| 3. Pure art silk | . | 1900 |

Cotton yarn requirement for this pattern of production has been estimated using the norms of yarn consumption for the different types of cloth. Within the blended/mixed type, the norm for different varieties differ depending upon the percentage of man-made fibre therein. The norms used for different varieties of cloth and yarn, allowing for wastage, are indicated in Table 7.18.

Estimate of cotton yarn requirement for this pattern of output is worked out in Table 7.19 for the years 1979-80 and 1984-85.

Cotton fibre (Raw cotton) demand to provide for the estimated production of cotton yarn and to meet the requirements for export, Khadi and Ambar Charkha and extra factory consumption are estimated in Table 7.20.

The requirements of cotton in 1984-85 works out to 92 lakhs bales. This level of production is considered feasible on the basis of land balance illustrated in the agricultural sub-model.

Correspondence between input-output model projections and the material balance exercise is presented in Table 7.21 for the cotton crop.

## VII.9. Jute fibres

The demand for jute fibres originates from the requirement of jute manufactures, which in turn are required as packaging materials for commodities. They are used in two forms (i) sacking and (ii) hessian. Production targets of the following commodities have been considered in assessing their packaging needs:
(i) Cement
(ii) Sugar
(iii) Flour
(iv) Salt
(v) Fertilizer materials
(vi) Foodgrains
(vii) Cloth

The norms of jute manufactures required for packaging of unit quantity of the commodities have been estimated by the Working Group on jute manufactures.

Allowance for the commodities other than those specified above has been made on the basis of the behaviour of the residual sector observed in the past. Substitution of jute manufacture by synthetic materials and influence of bulk handling on the demand for jute manufacture has been taken into consideration in arriving at the domestic demand.

Jute manufactures have been traditionally an important export item. The buoyancy in such exports observed in the previous plans is not anticipated to continue in the present plan because of competition in the world market from packaging materials and changes in bulk material handling practices. The estimate of export demand made by the Working Group on Balance of Payments has been used as the basis for export projection in 1984-85.

Table 7.22 gives the supply-demand balance for jute manufactures.

## Correspondence with input-output model projections

The sectoral projections made by the inputoutput model have been compared with those arrived at by the material balance exercise in Table 7.23. To make the material balance classifications conceptually comparable with the inputoutput classification, aggregation of certain sectors had to be carried out in presenting this table. It would be observed that the sectoral distribution as given by the input-output model broadly corresponds to that given by the material balance exercise. Marginal variations that are exhibited between the two distributions are due to the composition effect in the input-output sectors i.e., while the material balance projection refers to a specific commodity, input-output projection refers to all the commodities falling in the relevant sector(s).

## VII.10. Jute

Table 7.24 presents the supply-demand balance for jute in 1979-80 and 1984-85, in terms of the requirements for manufacture of jute goods, village consumption and fibre exports.

The output target of 91 lakh bales of raw jute indicated by the material balance has been found to be feasible through the land balance exercise illustrated in the agricultural sub-model.

Correspondence between I-O model and material balance projections is illustrated in Table 7.25 for jute crop.

## VII.11. Man-made fibres

The demand for man-made fibres arises mainly to supplement the availability of natural fibres for textiles production due to the constraint in the availability of the natural fibres and also due to consumer preferences for varieties of textiles produced from man-made fibres. Man-made fibres are also required for industrial applications such as in the manufacture of tyre cords. Viscose fibres, though they are not synthesised by industrial processing, are classified as man-made fibres because they are produced by industrial processing of wood to obtain fibres in a useable form.

The break-up of cotton textile in terms of pure cotton, blended/mixed and pure art silk varieties has already been indicated under cotton. The blended/mixed and pure art silk varieties have been further sub-divided on the basis of the specific fibres required by them. Table 7.26 presents the fibre-wise break-up of blended/ mixed and art silk varieties of cloth. Fibre demand for the respective types of cloth has been arrived at after using the norms of yarn/textile conversion. Overall fibre demand estimate is broken up into different fibres depending upon the type of cloth for which it is required (columns 6 to 12 of Table 7.26).

The non-textiles fibre requirements such as in hosiery and other uses have also been considered in arriving at the total man-made fibre demand.

Demand-supply balance for different varieties of man-made fibres is presented in Table 7.27.

## Correspondence with input-output model projections

Table 7.28 presents the correspondence between sectoral projections made by input-output model with those arrived through the material balance exercise. Supply linkages with the installed capacity at the overall industry level are also presented in the table.

## VII. 12. Railways-Freight traffic

Sector 81 of the input-output table covers transportation activity of railways, which can be classified into-
(i) Freight traffic
(ii) Passenger traffic

While passenger traffic can be projected with a reasonable degree of accuracy on the basis of the behavioural trends as observed in the past, such techniques would not give accurate results for freight traffic projections. This is so because the production targets of principal commodities and their transportation needs are intimately connected with the development strategy adopted in the Plan. Another reason for adopting a more detailed approach to projections of freight traffic is that the principal source of railways' earnings is from freight traffic and associated with this is the deployment of a large percentage of rolling stock and other assets for freight carriage. The projections made by input-output model for the rail transport sector include the passenger transport component and, therefore, an independent estimate for the freight component alone needs to be attempted to attain the desired degree of precision. Another reason for supplementing the input-output approach is thāt the model in its present form is not able to discern spatial aspects of production and consumption pattern, which primarily determine the need or otherwise for transport, e.g. the location of a super thermal power station at a coal pithead site obviates the need for any transportation of coal. Such aspects can be readily taken into consideration in an independent commodity-wise approach. It is, therefore, necessary that in the development planning of this crucial infra-structural sector, the input-output approach should be reinforced by detailed sector level studies.

The materials approach to railway freight traffic planning identifies, specifically, the transportation needs of the following commodities :-

## - Foodgrains <br> - Coal <br> - Iron ore <br> - Steel plant raw materials <br> - Steel <br> - Cement <br> - Fertilisers <br> - Petroleum products

These commodities account for about $80 \%$ of the originating tonnage for the railways. Their targets of consumption, production, imports and exports have been determined in the formulation of the Sixth Five Year Plan.

For estimating the tonnage to be carried by the railways, rail transport co-efficients are used. This co-efficient is defined as the ratio (per cent) of the movement of the tonnage of the commodity
moved by rail to the total tonnage of the commodity moved by all means of transport. Rail transport co-efficients for the above mentioned commodities are available in the form of a time series based on actuals in the past. Except for the abnormal years on account of the commodity's supply fluctuations or general transportation constraint, the commodity-wise co-efficients have exhibited a reasonable degree of stability or a uniform trend which is associated with the process of development.

Projections of rail transport co-efficients in the future take into consideration the locational infuence of demand and supply centres of a commodity, e.g., location of fertilizer and super thermal power plants at coal pit head sites. Inbuilt into the locational considerations is the economic lead for transportation of a commodity by rail transport. With the evolution of the road net-work during the previous plans, the distance between production and consumption centres has narrowed down bringing the lead for a larger percentage of a commodity's total tonnage within the economic limit of surface transportation by modes other than rail. Another aspect that has been taken into consideration for 1984-85 is the feasibility of expanding the capacity of railways to handle the increased volume of traffic in a span of about 3 to 4 years that is available after finalisation of the Plan. The Plan document notes, "It may be necessary for the railways to leave, in the interim period, not only piecemeal short distance traffic but piecemeal medium distance traffic also to road transport and concentrate on the other categories".

Commodity-wise projections are discussed below:-

## Steel:

Traffic for this commodity has been considered in respect of main steel plants both for transporting the finished steel products as also principal raw materials consumed in steel production other than coal, viz., iron ore, lime stone, dolomite, manganese ore etc., coal movements having been considered under that commodity. Transportation of steel and its raw materials in respect of mini steel plants is included under 'Other goods' category. Inward movement of raw materials to the integrated steel plants has been estimated in relation to the targeted hot metal production. Rail transport co-efficient has been taken as hundred per cent. In the past this coefficient has sometimes been higher because of inter-plant movement of semi-finished steel from one plant for processing into finished steel at another plant, as also due to transportation of stocks built up at the plants in the previous years. It is envisaged that with better planning
of production and infrastructure, the annual output of a plant will be despatched during the year and inter-plant movement would be negligible.

## Coal :

Rail transport co-efficient for coal is taken at $74.6 \%$ in 1984-85 as compared to the observed value of $78.9 \%$ in 1978-79, and $74.2 \%$ observed in 1979-80. The coefficient has been much higher in the past. The cost studies made by National Transport Policy Committee have shown that movement by road, for short distances, is economical as compared to rail. Coastal shipping of coal is likely to increase due to the setting up of a number of power plants in the southern and western regions. As already stated, with the pit head location of super thermal power stations at Singrauli, Korba and Ramagundam and fertiliser plants at Talcher and Ramagundam during the Plan, a part of the increase in coal consumption will need no rail transportation.

## Iron ore (for export)

Transportation requirements for iron ore as raw material for steel production have been considered under steel. Here, only the transportation needs for exports have been provided for. Rail transport co-efficient is projected to increase from $38.6 \%$ in 1979-80 to $50 \%$ in 1984-85. Exports from Kudremukh project and from Goa mines do not need surface transportation by rail.

## Cement

Rail transport co-efficient is projected to increase from $52.4 \%$ in $1979-80$ to $58.4 \%$ in 1984-85. There has been a decline in transport co-efficient for cement from $76.4 \%$ in 1970-71 to $58.4 \%$ in 1978-79. The share of road transport has increased with wider dispersal of cement production and consumption bringing a number of consumption and production centres within the lead distance considered economical for movement of this material by modes other than rail.

## Foodgrains

Rail transport co-efficient of foodgrains has shown a declining trend in the past. A large part of foodgrains produced in the country is consumed locally. Marketable surplus is moved by carts, motor transport and water ways, besides railways. Rail movement being mainly in respect of imports and inter-state bulk transport, with no imports envisaged in the Plan and production tending to match the consumption pattern on a regional basis, the declining trend in rail transport co-efficient of this commodity is expected to continue.

## Fertiliser

Due to rail transport constraints, the co-efficient for this commodity declined from $92 \%$ in 1976 to $69 \%$ in 1979-80, the traffic having been diverted to other modes of transport. It is envisaged that the trend would be reversed during the Plan with about $74.2 \%$ of the fertiliser material tonnage moving by rail in $1984-85$. As a number of fertiliser plants will be on stream by the end of the Plan near consuming sectors, reducing the average lead for this commodity, rail transport co-efficient is not expected to reach the previous high levels.

## Petroleum products

No rail transport is required for crude oil as indigenous oil moves to the refineries by pipe lines and the imported crude is refined in the refineries located at the ports. As regards POL products, a part of these are carried by product pipe lines. Besides, road transport meets the requirements of the areas in the vicinity of the refineries.

The rail transport co-efficient during the last decade has been around 44 to 51 per cent. The setting up of a refinery at Mathura would reduce the average lead of this commodity's traffic and hence larger tonnages may move by road. With product pipelines coming in future, the decline in rail transport co-efficient may be substantial. The co-efficient has been estimated at 43.4 per cent in 1984-85 as against 47.1 per cent in 1979-80.

## Other goods

Rail traffic in bulk goods other than those specified above accounted for nearly 44 to 49 million tonnes during the last decade. This included movement of stones, gypsum, steel manufactures, oil seeds, sugar, sand, timber, salt, jute, rubber, wool, silk, coir products, tobacco, limestone, electrical goods, glassware, aluminium, forest produce, rock phosphate, paper and paper board, dairy products, etc. Looking to the past trends, the expected growth rate of other gcods is taken at around 1 per cent per annum for the Plan period (1980-85).

## Railway materials and stores

The volume of traffic under this head depends mainly on the size of programmes relating to construction of new lines, line capacity works and track renewals. The projections of railway materials (diesel, general stores, railway stores etc.) carried by railways for $1984-85$ are as given by the Railway Board.

## Overall freight traffic

Commodity-wise production, rail transport coefficient and railway freight traffic projections for $1984-85$ are presented in Table 7.29 alongwith the actuals for 1979-80. In the absence of availability of region-wise demand projections, it has not been possible to determine the transportation of commodities in terms of distances. For the purpose of capacity planning, the tonnages estimated above can be converted in terms of tonne kilometres using the expected average lead for these commodities in the light of the past actuals and expected variations due to the locational effect of new plants during the Plan period.

## Correspondence with input-output model projections

In the present structure of the input-output model, the transportation needs of commodities are considered in terms of inputs for a particular industry, whereas the projections made above are oriented towards the output pattern of industries. Thus, for example, the transportation needs of finished steel would be considered in the inputoutput model not as a separate item but as a part of all industries which consume steel. And steel would be a part of all the commodities that are grouped in its sector that flow as input to the respective industries. Thus, it is difficult to work out separately the transportation of steel alone from the input-output model. Moreover, the tonnage of a commodity that are moved by rail for export purposes are considered nct under the commodity but as a part of the overall exports in the 'railways' row. This also makes the identification of rail transport on a commo-dity-wise basis from the I-O model rather impossible. However, the aggregated tonnage of railway freight traffic in 1984-85 projected by I-O model does not differ significantly from that obtained from the independent commodity-wise exercise.

CHART III
flow of steel into the economy
FINAL CONSUAPERS OF STEEI


## CHAPTER VIII

ALTERNATIVE SCENARIOS AND SENSITIVITY ANALYSIS


#### Abstract

(a) Scenarios (Intertemporal choices, plan and post plan).


This model has been used in projecting sectoral consumption, investment, income, employment, exports and imports for 89 sectors of the economy over the Sixth Plan (1980-81 to 1984-85) and over a much longer horizon (1980-81 to 1994-95). The final choice of the scenario given in the Plan has been made after considering several feasible alternatives. But the feasibility range between all the alternatives was found to be rather narrow. The upper limit is constrained principally by resources availability and not so much by lack of demand. The lower limit is mainly set by the considerations of fulfilling the minimum requirement or goals stipulated in the Plan. This comparative inflexibility in choosing alternative development strategies is further understood in the light of the working of our investment planning model. A large part, nearly 60 per cent, of the public sector investment falls in the category of "ongoing", i.e., continuing projects. The gestation lags on the continuing projects are shorter in the sense that the benefits of investments will be realised quicker in continuing projects as against new projects of similar kind. On the other hand, the presence of the ongoing projects reduces the degree of freedom of the planners in resources allocation. Furthermore, nearly 40 per cent of the investments will not bear any fruit over the Sixth Plan period, because of the long investment gestation involved. 'At the same time, they are essential for complying with the long term planning goals. They include mainly so called core sectors like steel, fertilizer, cement, power, transport, irrigation and coal, all of which have a long gestation lag. Among the social service sectors they include family planning, education and other major rural works programmes.

Furthermore, two major infrastructure sectors in this group like power and railway are essenti-
ally non-tradables and at the same time they have a long gestation lag. Therefore, they literally provide the upper limits to growth in the short and medium term period. The only way their constraining effects can be eased is by increasing the capacity utilisation. Many other tradable sectors of the economy need to be treated as non-tradables over a short/medium time horizon mainly because of bottlenecks in port facilities and transport. Therefore, the shortages in the supply of these sectors cannot be released even with additional foreign exchange available. At the same time, they have equally long gestation lags in production and therefore, like transport and railway, act as major con-straints in an attempt to expedite GDP growth in the short and medium term period.

The range of choice is seen to be as narrow as only 5.5 per cent of GDP growth in the upper limit and 4.8 per cent at the lower limit over the Sixth Plan period with corresponding figures 4.5 and 6.0 over the post plan period. The final choice is made by considering various economic and socio-political considerations when the Sixth Plan growth rate has been placed at 5.2 per cent and the post Sixth Plan at 5.5 per cent per annum.

In this selection process a trade off between the plan and the post plan growth rate became very visible. Assuming a comparatively higher marginal propensity to save of 35 per cent (more than the 30 per cent that has been realised in the past) and given the total stipulated financial resources available for plan investment, the model generated a comparatively lower growth during the Sixth Plan (much less than 5.2 per cent as has been assumed in the plan document) and a higher growth rate over the post plan period. This is because lower demand for consumption would require less consumption goods in the market. As a result, comparatively higher funds can be diverted towards the investment on capital goods
sector, including infrastructure, all of which in general have a longer gestation period. This will lead to a higher growth in the post plan period. Alternatively, if consumption propensities are increased (above the historical rates), say because of major welfare considerations like basic needs and removal of poverty, the Sixth Plan growth rate would accelerate above 5.5 per cent but will leave comparatively smaller investible fund for generation of capacity in the future. The choice between the two alternatives is very much a socio-political decision. Given the fact that the benefits of planning over the last 30 years have not significantly percolated to the poor people, the need for higher investment in the mass consumption goods with shorter gestation lags was felt in all its urgency. From these considerations, finally a choice has been made in the present Plan regarding its Sixth Plan and post Plan growth rates, which is defined as the preferred scenario.
(b) Scenarios: Alternative exogenous assumptions.

All the programmes and projects of the Sixth Plan are based against this preferred development scenario. However, this preferred scenario is not an absolute concept. It is again based on certain major assumptions and judgement regarding the future movements of four major variables:
(1) Expectation regarding weather,
(2) Exports,
(3) Population and,
(4) Changed terms of trade through a rise in the price of oil.

These variables, in our model terminology are defined as exogenous variables. From the point of view of economic analysis it will be of real interest to study the impact of likely changes in these exogenous variables on the macro economic dimensions of the economy. This is what we call as sensitivity analysis in this chapter. From the point of view of econometric techniques such an exercise is very useful since they give an insight into the property of the model used and its robustness,

A large number of sensitivities have been attempted in this connection. Only a few have been presented here as illustrations.
(1) Changed weather conditions. The plan's preferred scenario assumes a normal weather condition. Therefore, if the weather is bad, the adverse effect on agriculture will be recorded. Evidently, therefore, a change in the assumption regarding weather will result in a revision in the plan targets. However, the shock can be absorbed in several alternative ways depending on what policy measures are adopted by the economy.

In order to explore the above sensitivity with the help of the Sixth Plan model, several simplifying assumptions were made. In the present model there is no explicit variable representing weather. It is presumed, therefore, that bad weather will mean a poor agricultural performance. Starting from this premise, attempts are made to explore the impact of a bad agricultural year on the rest of the economy. To simplify the matter further, it is assumed that the agricultural growth rate will decline from 5.5 to 4.8 percent over the Sixth Plan, starting from 1979-80 as the base. As a result, it is expected that the total GDP will decline more than what the share of agriculture alone can explain. This is becapuse agriculture in India has a heavy forward and backward linkage. Moreover, a shortage in food in the agriculture sector might result in larger import of foodgrains and therefore this scenario might cause a balance of payment problem.

The results of the simulation are given in Tables 8.1 and 8.2. This result shows that by freezing the growth rate of post plan period, the plan GDP will decline from 5.2 percent to nearly 4.8 percent because of bad agricultural year. Furthermore, the imports will go up from Rs. 12.8 thousand crores to nearly Rs. 13 thousand crores in the year 1984-85. This will also result in a lower savings as the agriculture sector's saving potentiality is rather
high when majority of households are in the rural sector. The position indeed can be further aggravated when exports of agricultural goods may decline thereby making the foreign exchange constraint more severe.
(2) Export scenario. The growth rate of exports over the plan period has been based on certain assumptions on international climate and domestic production surplus. In our view any assessment of the international climate these days is likely to have a very large standard error since the world capital and trade markets are facing high degree of uncertainties with impending depression, inflation and oil price hike. Hence in this section, an attempt is made to catch the effect on growth and development resulting from a shortfall in the export targets. It is assumed that the targets will be falling behind by nearly 2 percentage points per annum over the plan period. As exports contribute to the economy by generating additional income, earning additional foreign exchange and helping to reduce the cost by exploiting the benefits of large scale production, any decrease in exports will have adverse effects on all the three counts. Besides, the multiplier may be significantly large in those sectors of export which have a large forward and backward linkage. The exact impact on the economy will depend on the details in which the export targets are unfulfilled. In general, the decline in the demand for import is likely to be less than the decline in export since the import component of exports is likely to be less than one. But leaving this direct impact, the economy may experience a lower growth because of the trade constraint, which in its turn may reduce import further. The resultant effect on the economy will very much depend on the policy packages used by the Government. In our present exercise, assuming a broad neutral policy, a decline in export from 9 per cent to 7 per cent is seen to reduce the plan growth rate from 5.2 per cent to 5 per cent. Thus, in terms of growth rates, the declire seems to be not very heavy. But this is based on the assumption that the country is
technologically in a comfortable position for undertaking marginal import substitution.
(3) Changes in population. Demographic information is treated as exogenous in this model. This is obviously a rather heroic assumption. But endogenising the effects of economic development on the birth and death rates of a community is very difficult and almost non-existent in the contemporary growth models. This plan assumed a likely configuration of population and certain given birth rates and death rates from past experiences in projecting the Sixth Plan population variables. The birth rate chosen was largely normative since it is estimated keeping in view that the plan would reach net reproduction rate of unity in the year 1996 as a goal. But this assumption may not come true. Hence an attempt is made to study the impact on the plan dimensions if the population growth is different.

For this purpose it is assumed that the birth rates used in the Sixth Plan will be 32.3 in lieu of 29.5 per thousand population and the growth rate of population will change from 1.79 to 2.04 percent over the period. The immediate effect of this will be reflected in achieving a lower per capita income, consumption, social services investments including education and health care. On the other hand, demand for food, education, health services, sanitation, water etc. and also demand for jobs for employment (not until the increased births enter into labour force) will go on increasing. The results of our assumption show that the plan and post-plan growth rates will come down from 5.2 to 5.0 per cent and 5.5 to 5.0 per cent respectively. Like the other alternative sensitivities, if we freeze the post-plan growth rate, it means that the plan growth rate will come down to somewhere near 4.8. The socioeconomic implication of this scenraio is very grave since if the birth rates are inversely related to the rate of growth of economic prosperity, then in that case even the above assumptions of birth rates may prove to be too ambitious.
(4) Changes in terms of trade because of increase in the price of imported crude oil. Given the exogenously determined net capital inflow, its contribution to the total savings (and investment) and imports of an economy will depend largely on the import prices and the changes in the terms of trade index. Table 8.3, column 2, 3 and 4 give the imports at constant and current prices for all the years of the plan as assumed by the Working Group on Balance of Payments. Assuming the crude oil price will increase from $\$ 46.34$ per barrel in 1984-85, as assumed in the Plan, to $\$ 60$ per barrel, the total estimated increase in import bill will be nearly Rs. 5783 crores at current prices (see col. 3, Table 8.3). This estimate is based on the assumption that the price elasticity of crude oil import is zero and that an extra capital inflow (net) of this amount will be available. Given the uncertainties of international capital situation, the second assumption may not hold. Hence an attempt is made to assess, by the use of a sensitivity analysis,
the impact on GDP if the net capital inflow remains unchanged. In this case it is assumed that the economy will reduce its non-oil import by more than Rs. 5783 crores at current prices or Rs. 3000 crores over the whole plan period and by nearly 1000 crores in the final year of the plan. Table 8.1, column $7-8$ show that the decline in the growth rate over the Sixth Plan and the post plan period will be from 5.2 and 5.5 to 4.9 and 4.9 percent respectively. The average savings propensity of the community will go down because of the erosion in the foreign saving from a loss in the terms of trade.

Of the above four sensitivities, it seems that the immediate damage to the economy will be highest if the weather is bad and agricultural production is low. But over a long period a higher price of oil and reduction in the volume of import will be comparatively more damaging, when the pqst plan growth rate will fall by more than 0.6 percentage point.

## ANNEXURE I

## ESTIMATION OF INCREMENTAL CAPITAL OUTPUT RATIOS FOR SIXTH PLAN

Capital output ratios have been extensively used in India's economic planning to estimate the amount of investment needed to achieve certain rates of growth of the economy. The relationship between investment and incremental output has been used popularly in many growth models as a simplification of the conventional production function, assuming capital to be the binding constraint in the growth process. But in actual use the problem of measurement comes very much on the way. Conceptually, the capital stock should be related to capacity rather than output generation. Also when capacity is a function of a number of variables of which capital stock is one of the determinants, the important question is whether we will be measuring partial derivatives, i.e., marginal productivity of capital, when other factors are remaining constant, or a total derivative. Popularly in growth models the attempt is made to relate changes in capital stock and changes in output without any reference to other inputs thereby assuming implicitly that the other factors al ways maintain the optimum technical relations. But even when capital output ratio is measured in this limited sense, two very important dimensions are to be taken care of : (i) The gestation lag between the beginning of the investments in a sector and the time when the capacity is ready for production. This gestation varies very much from sector to sector, sometimes being as high as 7 to 8 years. Indeed if the gestation lag is ignored and the incremental capital output ratio is estimated by the conventional method (with zero gestation lag) then the estimated ICOR will always show an upward bias and the bias will increase with the increase in the rate of growth of income of that sector ${ }^{1}$. (ii) Secondly, the valuation of the capital stock and the output generated therefrom are also very important. If the price index of capital goods, or to be more precise, the composite of construction and capital goods, is higher than the price index of the corresponding output then in every updating of the base the estimated ICOR will increase in its value. Besides, in any economy where a large part of the capital investment is made in sectors mainly on welfare considerations, where either a low administered price is charged or the output is largely free, the incremental capital output ratio would tend to be higher than one based purely on technical considerations. Thus, the incremental capital output ratio that is estimated conventionally from observable series should not be taken as an index of capital productivity purely unconditionally.
In this annex we try to estimate the incremental
capital output ratios, hence written as ICOR, for fourteen different sectors using observations from 1950-51 to 1979-80, incorporating relevant gestation lags. In a number of sectors it is possible that the whole capital investment made during the five years of the plan may not have any effect on the changes in output during that period. The capital expenditure made during that period may be devoted to the creation of capacity beyond that period and therefore the incremental capital output ratio conceptually would come to infinity. Similarly, the concept (of ICOR) gets less economic significance as the sector becomes more and more heterogenous. This is precisely the reason why the aggregate incremental capital output ratio, estimated on a conventional basis, might change because the sector compositions change or because the rate of growth of the economy may have changed.
An Analysis of Past Incremental Capital Output Ratios
In the past planning literature, the ICOR is computed, in the conventional method, by taking the ratio of gross domestic capital formation to change in gross domestic product during different plan periods. In some contemporary studies, the gross domestic product is taken at factor cost and capital formation is taken at market prices. Therefore, one should be careful in comparing the different estimates of ICOR computed by different methods.
The conventionally estimated ICOR assumes that the total output generated during the plan period is solely due to the total investment made during that period, i.e., it is independent of investment made before the considered plan period.
When ICOR, estimated by this method, is used as a parameter for projecting the investment needs for future years, it, as a result, would ignore the impact of any changes in the composition of sectoral investments and their proportion between ongoing and new projects, the sectoral output proportion and likely utilization of capital stock in future. Table A1.1 presents estimated ICORs by the above conventional method, plan-wise, including the Sixth Plan. Two sets of estimates are given, one at 1970-71 prices and the other at 1979-80 prices. Column 4 presents ICORs when GDP is calculated at factor cost and gross capital formation at market price (1970-71 prices). This is a specification error. But this is given as a reference point to compare with ICORs calculated commonly in some contemporary writings on the subject ${ }^{2}$. The table shows that the

[^8]aggregate ICOR is always higher in column 4 as against column 3, thereby pointing out the inherent upward bias in many of the contemporary estimates. Furthermore, it shows that it reached a peak during the Fourth Plan and then experienced a decline in the Fifth Plan. In the Sixth Plan, however, it is estimated to rise again using the conventional method. Thus although in the table it is placed at 4.2 , which is the same as in the Fifth Plan, corrected for the very low base (i.e., the depressed year of 1979-80) the aggregated ICOR of the Sixth Plan works out to nearly 4.7. When we study each sector separately, this point becomes evident. Table A1.2 shows that the sectoral ICORs of the Sixth Plan in agriculture, in energy and in transport sectors are much higher than in the Fifth Plan. Only for two sectors, manufacturing and construction, the sectoral ICORs in the Sixth Plan have been assumed to be lower than in the Fifth Plan. They are mainly because of the special programme content of the Sixth Plan investment outlay. The construction in the Sixth Plan has a large weightage in the rural sector with a heavy emphasis on two major programmes, IRDP and NREP. In the manufacturing sector a very high weightage is given to the small and medium scale unorganised part mainly for the purpose of generating comparatively higher employment.

The comparatively higher ICOR for agriculture may be partly explained by more intensive cultivation methods, for energy by more expensive energy mix and for transport, by a higher drive for modernisation, computerisation and electrification. All these, directly or indirectly, are related to energy shortage and higher energy costs. On the other hand, the declining trend in the aggregate incremental capital output ratio from Fourth Plan to the Fifth Plan can be explained largely by (i) a reduction in all the major sectoral ICORs (see Table A.1.2) and (ii) the percentage share in total investment/output of sectors with comparatively lower ICORs increasing mostly in the later plan. The sectoral ICORs went down mainly because (i) the proportion of investment on ongoing projects to total (which has logically a lower ICOR) increased over time and (ii) the utilization rates also did improve during the Fifth Plan. But any under-utilization of capacity in a sector should not be regarded purely to reflect inefficiency in production in that sector. In many instances it might have a macro explanation. It may be due to transport bottleneck, energy shortages, executive delay and cost escalation due to lack of timely supply of basic intermediate inputs. Taking all these into consideration, one should not try to read much from macro ICORs or their intertemporal or intersectoral comparisons.

Further, we would like to pgint out another important feature explaining the movement of capital output ratios in India. Because the prices of the capital goods sectors in India are closer to competitive international prices, they move
faster, in general, compared to the GDP deflator of the country. The GDP deflator comprises of many prices administered purely on welfare considerations and largely insulated from the general inflation rate. As a result, every updating of capital output ratios have given an artificial sense of increasing their value. Lastly, the capital output ratios of countries with a large volume of investments incurred on welfare considerations should not be compared per se with capital output ratios of those countries where they are mainly governed by considerations of new capacity generation on a competitive basis.

## The Model Specifications

The incremental capital output ratio may be estimated by different techniques. As mentioned earlier, the most common procedure is to take the ratio of change in capital stock (or investment) to change in output. A ratio of the change in capital stock to change in output may not give the estimate of appropriate average gestation lag required for a particular sector. In case the lag distribution structure is not taken, the value of estimated ICOR will generally be higher than actual.

In fact the output generated from any project/ scheme takes time and investment is spread over time from the initiation of the project to its actual completion. Furthermore, the investment distribution profile over time and the total period of gestation will change from activity to activity. This economic relationship can be presented either in the form of output as a function of a series of investment made in the past or the aggregate investment in any period, comprising of investments of individual projects/programmes at different time phases, contributing to a stream of future income when each project reaches completion.

In the following pages we have formulated the specification of a model to estimate incremental capital output ratios, taking into account the points discussed above.

## Distributed Lag Model

In this specification, it is assumed that each sector has an investment to output gestation lag of $L^{2}$. Furthermore, it is assumed that investment is spread over the gestation period by a given phasing according as the need for construction and instalation. Thus in any period, the total extension investment in a sector will be composed of some ongoing investment initiated in the past ranging from -1 to $(-\mathrm{L}+1)$ year and the first year disbursement of the new activity where the decision is made today. Output in the year $t$ will be the result of all investments made in projects which are completed now.

But the econometric estimation of this model has its difficulties as sectoral investment (net) and

[^9]replacement investments are available in aggregate without giving a breakdown between new and ongoing ones. Hence the estimates of "investment lags" and ICORs are done under certain heroic assumptions regarding the intertemporal disbursement of investment outlays.

## Let

$\mathrm{TI}_{\mathrm{t}}=$ Extension investment outlay in a sector in period $t$,
$I_{t}\left(S_{t-1}\right)=$ Disbursed investment outlay in year $t$ of an investment activity started in

$$
(\mathrm{t}-\mathrm{l}) \text { th year, } 1=0,1, \ldots(\mathrm{~L}-1), \mathrm{t}=1,2, \ldots, \mathrm{~T}
$$

$O(t)=$ Sectoral output in period $t$, and
$\mathrm{L}=$ Investment lag in a sector.
Then for $t=1,2, \quad . \quad T$,

$$
\begin{aligned}
& \mathrm{TI}_{\mathrm{t}}=\mathrm{I}_{\mathbf{t}}\left(\mathrm{S}_{\mathrm{t}-\mathrm{L}+\mathbf{1}}\right)+\mathrm{I}_{\mathrm{t}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+\mathbf{2}}\right)+\ldots+\mathrm{I}_{\mathrm{t}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+\mathrm{L}}\right) \\
& \triangle \mathrm{O}^{(\mathrm{t})}=\mathrm{O}(\mathrm{t})-\mathrm{O}(\mathrm{t}-1) \\
& \text { and } \Delta \mathrm{O}(\mathrm{t})=\underset{\left.\mathbf{I}_{\mathrm{t}-\mathrm{L}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}}\right)\right\}}{\beta\left\{\mathbf{I}_{\mathrm{t}-1}\left(\mathrm{~S}_{\mathrm{t}}\right)+\mathrm{I}_{\mathrm{t} \cdots 2}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}}\right)+\ldots+(3)\right.}+
\end{aligned}
$$

Equation (3) could be used for the estimation of $\beta$ which is nearest to the concept of inverse of incremental capital output ratio. The value of gestation lag $L$ can be chosen by iteration where the equation will give the best fit. In practice, the statistics of $I_{t-k}\left(S_{t-l}\right)$ for any value of $k$ or 1 , is not available, but one can get a long time-series of $\mathbf{T I}_{t}$. The equation (3) representing incremental output for the years $(t+1)$ to $(t+L)$ can be written as

$$
\begin{align*}
& \Delta \mathbf{O}(\mathbf{t}+\dot{\mathrm{L}})=\beta\left\{\begin{array}{l}
\left.\mathrm{I}_{\mathrm{t}+\mathrm{L}-1}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+\mathrm{L}}\right)+\mathrm{I}_{\mathrm{t}+\mathrm{L}-2}\right) \\
\left.+\cdots+\mathrm{I}_{\mathrm{t}-\mathrm{L}+\mathrm{L}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+\mathrm{L}}\right)\right\} \\
\left(\mathrm{S}_{\mathrm{t}-\mathrm{L}+\mathrm{L}}\right) \\
(4)
\end{array}\right. \\
& \text { Adding } \triangle \mathbf{O}(\mathrm{t}+1) \text {, such that } 1=1,2, \ldots, \mathrm{~L} \text {, } \\
& \text { we have from (4) } \\
& \{\Delta \mathbf{O}(\mathbf{t}+1)+\ldots+\Delta \mathbf{O}(\mathbf{t}+\mathrm{L})\} \\
& =\left[\left\{\mathrm{I}_{\mathrm{t}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+1}\right)+\mathrm{I}_{\mathrm{t}-1}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+1}\right)+\ldots+\right.\right. \\
& \left.\mathbf{I}_{\mathbf{t}-\mathrm{L}+\mathbf{1}}\left(\mathbf{S}_{\mathrm{t}-\mathrm{L}+\mathbf{1}}\right)\right\}+\left\{\mathbf{I}_{\mathbf{t}+\mathbf{1}}\left(\mathbf{S}_{\mathrm{t}-\mathrm{L}+\dot{2}}\right)+\mathbf{I}_{\mathbf{t}}\left(\mathbf{S}_{\mathrm{t}-\mathrm{L}+2}\right)\right. \\
& \left.+\ldots+\mathrm{I}_{\mathrm{t}-\mathrm{L}+2}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+2}\right)\right\}+\ldots \ldots \ldots . . \\
& \left.+\left\{\mathbf{I}_{\mathrm{t}+\mathrm{L}-1}\left(\mathrm{~S}_{\mathrm{t}}\right)+\mathrm{I}_{\mathrm{t}+\mathrm{L}-\mathrm{n}}\left(\mathrm{~S}_{\mathrm{t}}\right)+\ldots \mathrm{I}_{\mathrm{t}}\left(\mathbf{S}_{\mathrm{t}}\right)\right\}\right] \beta \tag{5}
\end{align*}
$$

Now if we assume that the total investment made in any project is distributed equally over its gestation period, that is,

$$
\begin{equation*}
I_{t}\left(S_{t}\right)=I_{t+1}!\left(S_{t}\right)=. .=I_{t+L-2}\left(S_{t}\right)=I_{t+L-1}\left(S_{t}\right) \tag{6}
\end{equation*}
$$

for different values of $t$, the system represented by equation (5) can be rewritten as

$$
\begin{aligned}
& \{\Delta \mathrm{O}(\mathrm{t}+\mathrm{l})+\ldots \Delta \mathrm{O}(\mathrm{t}+\mathrm{L})\} \\
& =\beta\left\{\mathrm{L} \cdot \mathrm{I}_{\mathrm{t}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+1}\right)+\mathrm{L} \cdot \mathrm{I}_{\mathrm{t}}\left(\mathrm{~S}_{\mathrm{t}-\mathrm{L}+2}\right)+\ldots+\mathrm{L} \cdot \mathrm{I}_{\mathrm{t}}\left(\mathrm{~S}_{\mathrm{t}}\right)\right\} \\
& \text { or }\{\mathrm{O}(\mathrm{t}+\mathrm{L})-\mathrm{O}(\mathrm{t})\}=\beta . \mathrm{L} \cdot \mathrm{TI}_{\mathrm{t}}(\text { using eqn }(\mathrm{l}) \text { and }(2)) \\
& \text { or } \quad \mathrm{TI}_{\mathrm{t}}=\beta^{-1}\{\{\mathrm{O}(\mathrm{t}+\mathrm{L})-\mathrm{O}(\mathrm{t})\} / \mathrm{L}\}
\end{aligned}
$$

Equation (7) can now be estimated econometrically by assuming different values of gestation lag (L). The estimated $\beta^{-1}$ will be the ICOR of the respective sector.

## Varying Parameter Moded

In this specification, we relax the assumption of 'stable' ICOR over time. If $\beta^{*}(\mathrm{t})$ is ICOR at time, then following the same argument as in the last model, equation (7) can be written as

$$
\begin{equation*}
\mathrm{TI}_{4}=\beta^{*}(\mathrm{t})\left\{\frac{\{\mathrm{O}(\mathrm{t}+\mathrm{L})-\mathrm{O}(\mathrm{t})}{\mathrm{L}}\right\} \tag{8}
\end{equation*}
$$

There are several rationales of using the varying parameter models. It is becoming clear that to assume that the capital output relationships are stable over time in many sectors is heroic and not always supported by econometric estimation. This class of models also permits forecasting ICORs for future periods with adjustment provision.

Since it is not feasible to estimate equation (8), therefore we assume that ICOR, $\beta^{*}(t)$ varies linearly with time $t$; e.g.

$$
\begin{equation*}
\beta^{*}(\mathrm{t})=\beta_{1}+\beta_{2} \mathrm{t} \tag{9}
\end{equation*}
$$

Substituting (9) in (8), we have the final regression form as

$$
\begin{align*}
& \mathrm{TI}_{\mathrm{t}}=\beta_{1}[\{\mathrm{O}(\mathrm{~T}+\mathrm{L})-\mathrm{O}(\mathrm{t})\} / \mathrm{L}] \\
& \quad+\beta_{2}[\mathrm{t}\{\mathrm{O}(\mathrm{~T}+\mathrm{L})-\mathrm{O}(\mathrm{~T})\} / \mathrm{L}] \tag{10}
\end{align*}
$$

One can easily check that the distributed lag model is a special case of this model. If in equation (10), the coefficient $\beta_{2}$ is significantly not different from zero, then equation (10) reduces to (7).

Of the alternative specifications, the first 'distributed' lag model has been adopted in the present Sixth Plan exercise. This selection was done mainly on the basis of goodness of fit of regression exercise. The second specification, to some extent, tells the behaviour of ICORs over time.

## The Data

It is clear, from above discussion, that the estimate of ICOR will require time-series observations on investment and change in output. Economic theory suggests that incremental output capacity depends on net investment (gross invest-ment-capital consumption) outlay. The Central

[^10]Statistical Organisation publishes every year for fourteen particular sectors annual observations on-
(i) Gross value added at factor cost at constant prices;
(ii) Net value added at factor cost at constant prices; and
(iii) Gross domestic capital formation (market prices) at constant prices.
The observations on these variables are computed by CSO collecting detailed information using appropriate techniques. In case of gross value added, first the figures at current prices for a particular year are computed by either of the following three approaches-(i) production approach, (ii) income approach and (iii) expenditure approach. The constant price estimates are prepared after deflating the current price estimates using suitable deflator. Net value added is arrived at after deducting consumption of capital (depreciation) from gross value added of the corresponding sector. Consumption of capital is estimated on the basis of surveys conducted at a point of time, book depreciation etc.
The gross capital formation at sector level is computed initially at current prices by expenditure and/or commodity flow approach. The gross capital formation includes expenditure on construction and machinery equipment, changes in stock etc. This current price series is converted to constant prices using suitable deflator. One should note here that capital formation figures are at market prices, i.e., it includes taxes, transportation cost etc.
The estimates of gross value added and gross capital formation arrived at by different appropriate methods employed by CSO can be considered dependable. But the estimates of consumption of capital (or net value added or net capital formation) suffer from various limitations. Only in two sectors, i.e., agriculture and ownership of dwelling, the wealth estimates have been used to compute consumption of capital. For the rest of the sectors, only rough norms have been used to estimate it. For example, consumption of capital is assumed as (a) identical to depreciation provisions made, (b) a fixed proportion of total output or value added of that sector, or (c) actual expenditure made on renewal and replacement ${ }^{1}$.

The information on gross value added at factor cost at constant prices of 1970-71, net value added at factor cost at constant prices of 197071, gross capital formation at market prices at 1970-71 prices have been collected from different issues of 'White Paper'. The observations are collected for these variables for the last 30 years, i.e., from 1950-51 to 1979-80. The time series figures on gross value added, net value
added, gross capital formation are then converted to constant prices of year 1979-80 by using suitable deflators. The series of capital consumption is arrived at by subtracting the net value added from corresponding gross value added observation. Finally, the observation on net capital formation is computed by subtracting the value of consumption of capital from gross capital formation.
Since capital consumption figures do not represent real capital loss, i.e. cost of wear and tear, maintenance etc. over time, the consumption of capital figures provided by 'White Paper' may not be appropriate in the estimation of ICOR. Most of the figures on consumption of capital will be biased toward higher side. Since the ICOR estimated on the basis of net capital formation and gross value added may not be realistic (i.e. downward biased), two sets of estimates have been computed separately using gross capital formation as well as net capital formation.

## The Results

The various combinations of functional forms with different gestation lags, with and without stable regression coefficients for each sector were tried. The estimated regression equations of a specification of investment given by equation (7), worked out using gross capital formation as function of gross value added at 1970-71 prices with appropriate gestation lags are given in Table A1.3. For agriculture sector an appropriate variable was used to adjust the effect of fluctuations due to weather etc. The regression fit is not insignificant for most of the sectors, viz., agriculture, forestry, fishing, manufacturing, mining and quarrying, electricity etc., other transport, communication, trade etc., banking and insurance, real estates etc., and public administration etc.

However, because sectoral gross value added at market price are not available, the regression in the model uses investment series at market prices and the sectoral value added at factor cost. This would render an upward bias in the estimated ICORs. Ad hoc corrections have been made by pro-rata distribution of indirect taxes net of subsidies, to arrive at sectoral gross value added at market price and accordingly ICORs have been adjusted. For the Sixth Plan exercise, an average of ICORs estimated over last few years has been adopted, with initialisation for the base year. In Table A1.4 these average ICORs adjusted for replacement investment in separate sectors (in the plan) have been presented. In few cases, they have been further adjusted based on a priori information, mainly from project reports. Furthermore, minor adjustments in few sectors were needed for a change in sectoral classification from 'National Income' to 'Input-output' sectors.

[^11]
## ANNEXURE II

## MATHEMATICAL FORMULATION OF PRIVATE CONSUMPTION BLOCK

(a) Estimation of rural-urban consumption level. The estimate of rural-urban consumption level is obtained from the total private consumption as follows:

$$
\begin{align*}
& C=C_{r}+C_{u}  \tag{1}\\
& V_{r}=C_{r} / 12 P_{r}  \tag{2}\\
& V_{u}=C_{u} / 12 P_{u} \tag{3}
\end{align*}
$$

and

$$
\begin{equation*}
\mathrm{V}_{\mathrm{u}}=\mathrm{b} \quad \mathrm{~V}_{\mathrm{r}} \tag{4}
\end{equation*}
$$

where
$\mathbf{C}=$ Total private consumption
$\mathrm{C}_{\mathrm{i}}=$ Total private consumption in rural area s
$C_{0}=$ Total private consumption in urban areas,
$\mathrm{V}_{\mathrm{r}}=$ monthly per capita total private consumption in rural areas,
$V_{13}=$ monthly per capita total private consumption in urban areas,
$P_{r}=$ Population in rural areas,
$P_{u}=$ Population in urban areas, and
$b=$ ratio of per capita consumption in urban areas to that in rural areas.
(b) Estimation of percentage of people below poverty line

The consumption model comprises four consumption classes from the point of their consumption behaviour. The division between rural and urban has been explained in the earlier paragraph. There is a further division between people
below and above the poverty line reflecting their different consumption habits. This necessitated the identification of a poverty line. Details regarding poverty line are discussed in Annexure III. The mathematics of percentage of people below the poverty line is explained below.

$$
\begin{equation*}
\mathbf{P}_{\mathbf{L}}=\mathrm{pg}\left(\mathrm{Z}^{*}\right) \tag{5}
\end{equation*}
$$

Where
$P_{L}=$ population below the poverty line,
$p=$ total population, and
$g\left(\mathbf{Z}^{*}\right)=$ area under standard normal curve up to $Z^{*}$, such that

$$
\begin{equation*}
Z^{*}=\left(\log C^{*}, \mu\right) / \lambda \tag{6}
\end{equation*}
$$

with the symbols defined as
$C^{*}=$ poverty line,
$\lambda=$ inequality parameter of lognormal distribution function,

$$
\begin{equation*}
\mu=\log \bar{C}-\lambda^{2} / 2 \tag{7}
\end{equation*}
$$

and $\overline{\mathrm{C}}=$ mean monthly per capita consumption which is $V_{r}$ in the case of rural areas and $V_{u}$ in urban areas.

The inequality parameter $\lambda$ for $1979-80$ has been assumed as the same as that for 1977. 78 estimated using N.S.S. consumer expenditure data of 32 nd round.

For a targeted reduction in poverty the parameter for redistribution has been calculated using the relations :

$$
\begin{equation*}
\mathrm{PR}=\mathrm{g}\left(\mathrm{Z}^{*}\right) \tag{8}
\end{equation*}
$$

or $Z^{*}=g^{-1}$ (PR)
Substituting (7) and (8) in (6), we have

$$
\begin{equation*}
\log C^{*}-\left(\log \bar{C}-\lambda^{2} / 2\right)=\lambda g^{-1}(P R) \tag{9}
\end{equation*}
$$

or $\lambda^{2} / 2-\lambda g^{-1}(P R)+\log C^{*}-\log \bar{C}=0$
Solving for $\lambda$ we get

$$
\begin{align*}
\lambda & =g^{-1}(P R) \\
& \pm\left[\left\{g^{-1}(P R)\right\}^{2}-2\left(\log C^{*}-\log \bar{C}\right)\right]^{\frac{1}{2}} \tag{10}
\end{align*}
$$

where
$P R=$ proportion of population below the poverty line to be attained at the end of plan.
(c) Linear Expenditure System (LES). Linear expenditure system is a complete demand system which is derived from an additive utility function for commodities $q_{1}, q_{2}, \ldots, q_{n}$ given by

$$
\begin{equation*}
U\left(q_{1} \cdots \cdots \cdots q_{n}\right)={ }_{\Sigma}^{\sum_{j}} b_{i} \log \left(q_{i}-a_{i}\right) \tag{11}
\end{equation*}
$$

where

$$
\begin{equation*}
\sum_{i}^{n} b_{i}=1 \text { and } q_{i}>a_{i} \ldots \tag{12}
\end{equation*}
$$

Maximising (11) subject to budget constraint given by

$$
\begin{equation*}
\sum_{i}^{n} p_{i} q_{i}=C, \quad \ldots \tag{13}
\end{equation*}
$$

we obtain the complete demand system

$$
\begin{equation*}
\mathrm{C}_{\mathrm{i}}=\mathrm{p}_{\mathrm{i}} \mathrm{q}_{\mathrm{i}}=\mathrm{a}_{\mathrm{i}} \mathrm{p}_{\mathrm{i}}+\mathrm{b}_{\mathrm{i}}\left(\mathrm{C}-\sum_{1}^{n} \mathrm{a}_{\mathrm{i}} \mathrm{p}_{\mathrm{i}}\right) \ldots \tag{14}
\end{equation*}
$$

The fulfilment of the second order condition of equilibrium requires

$$
\mathbf{b}_{\mathbf{i}}>0
$$

(ie. no inferior commodities or group) and

$$
C>\sum_{i}^{n} p_{i} a_{i}
$$

where
$\mathrm{C}_{\mathrm{i}}=$ monthly pet capita expenditure on $\boldsymbol{i}$-th commodity,
$p_{i}=$ price of ${ }^{1}$-th commodity or equivalently index number for ${ }_{i}$-th commodity group as the case may be,
$C=$ monthly per capita total expenditure incurred on various commodities (or commodity groups),
$a_{i} p_{i}=$ some sort of committed expenditure on commodity $i$ and
$b_{i}=$ proportion of the $i t h$ group in the remaining aggregate consumption (i.e., after accounting for the committed consumption).
(d) Consumer Demand Functions-Engel Curves

The following Engel curves have been fitted by applying the single equation weighted least squares method, weights being proportion of people in each expenditure class, for commodities or commodity groups for which cross section monthly household consumption data are available in the 28th Round of the NSS (1973-74) :
(a) Double $\log (D L): \log C_{i}=a+b \log C$
(b) Semi $\log (S L): C=a+b \log C$
(c) $\log \log$ inverse (LLI) $: \log C_{i}=a+b \log C$ $+d / C$
(d) $\log$ inverse (LI) $: \log C_{i}=a+b / C$
(e) Linear ( L ) : $\mathrm{C}_{\mathrm{i}}=\mathrm{a}+\mathrm{bC}$
(f) hyperbola (HYP) : $\mathrm{C}_{\mathrm{i}}=\mathrm{a}+\mathrm{b} / \mathrm{C}$
where
$\mathrm{C}_{\mathrm{i}}=$ monthly per capita household expenditure on the i-th commodity
and
C=total monthly per capita household expenditure for all the commodities.

The best fitting Engel curves among these are chosen separately for each commodity on the basis of highest value of $\overrightarrow{\mathbf{R}}^{\mathbf{2}}$ i.e. coefficient of determination corrected for degrees of freedom and form of the function. In the case of such commodities where data were too inadequate to fit a demand function, aggregate consumption proportions were used so that in such cases the demand is estimated by $\mathrm{C}_{\mathrm{i}}=\mathrm{b}_{\mathrm{i}} \mathrm{C}$.

## Estimation of parameters

(i) Engel curves have been fitted by applying the single equation weighted least squares method,
weights being proportion of people in each expenditure class, to each of the 56 commodities or commodity groups for which cross section monthly household consumption data are available in the 28th Round of the NSS (1973-74).
(ii) The LES parameters are estimated by applying the Newton Raphson method to time series of cross section data obtained from the 17th through 28th Rounds of the NSS (excluding the 18th, 26th and 27th Rounds) on household consumption expenditure, first for sixteen broad commodity groups at 1976-77 prices. To be compatible with the 89 sector input-output classification, these sixteen LES groups had to be collapsed into thirteen groups.

## Adjustment of parameters of LES and Engel/ Demand functions

Parameters of the LES and also of Engel/ Demand functions had to be adjusted in such a way that the private consumption vector for the 89 sector input-output table of the base year 1979-80 (at 1979-80 prices) generated by these functions agree with the one independently estimated by commodity flow approach. The procedure adopted is briefly as follows:
(i) The aggregate private consumption of the base year i.e. 1979-80 is first broken up into rural and urban components and then into two parts, for people below poverty line and people above poverty line, by assuming that monthly per capita private consumption in 1979-80 is lognormally distributed with the same inequality parameter as given by the NSS data for 1977-78.
(ii) Using the monthly per capita total consumption obtained as in (i) and the appropriate LES demand function, the LES estimate of the total private consumption for the thirteen groups is estimated.

The estimates of private consumption of various commodities and services belonging to
each LES group are then estimated by their respective demand functions and these estimates have been pro-rata adjusted to the corresponding LES total. The commodity-wise estimates of private consumption have then been grouped into 89 sectors of the input-output table. These sectoral estimates of private consumption are compared with those estimated by the commodityflow method and suitably adjusted in such a way that the percentage difference of the two sets of estimates does not generally exceed 10 to 15 per cent. The private consumption vector of the 89 sectors thus obtained is used for the base year input-output table and also for adjusting the parameters of the LES and demand functions. For this purpose, the private consumption of the 89 sectors are first aggregated to 13 LES groups. Taking these final estimates of LES groups as row controls and the given rural and urban aggregated private consumption as column controls, estimates of the 13 LES groups into rural and urban consumption have been adjusted by RAS method. ${ }^{1}$ Using these rural and urban estimates, their breakdown separately into lower and upper classes (i.e. for the people below and above the poverty line) has been obtained in a similar way.
The parameter $a_{i}$ is then adjusted to :

$$
\overline{a_{i}}=a_{i} \overline{\mathbf{C}_{i}} / C_{i}
$$

where $\mathrm{C}_{\mathrm{i}}=$ original estimates by LES used and $\overline{\mathrm{C}_{1}}=$ adjusted $\mathrm{C}_{\mathrm{i}}$.
The parameter $b_{1}$ is then adjusted to

$$
\overline{\mathrm{b}_{\mathrm{i}}}=\left(\overline{\mathrm{C}_{\mathrm{i}}}-\overline{\mathrm{a}_{\mathrm{i}}}\right) /{ }_{\mathrm{i}}^{\mathrm{i}}\left(\overline{\mathrm{C}_{\mathrm{i}}}-\overline{\mathrm{a}_{\mathrm{i}}}\right)
$$

where $\sum_{i}^{n} \bar{C}_{i}=\sum_{i}^{n} C_{i}=C$
$\bar{a}_{i}$ and $\bar{b}_{i}$ are the adjusted $a_{i}$ and $b_{i}$ respectively.
(iii) Within each LES group, parameter estimates of the demand functions for rural and urban areas respectively have been adjusted at the first instance. For this purpose, estimates of demand for the rural and urban areas obtained by the respective demand functions for the different sectors comprising each LES

[^12]group have been first adjusted by RAS method, taking the sectoral private consumption as row control totals and rural-urban totals of the particular LES group as column control totals. RAS method has been used to ensure the consistency in the aggregate private consumption obtained through LES with that obtained independently through commodity flow approach. A similar approach has been followed to work out sectoral demand estimates within a LES group for people below and above the poverty line, separately for rural and urban areas.

Using this adjusted demand for each commodity, the corresponding parameters of the
engel curves of the commodity have been adjusted as follows:

Let $C_{i}$ be the original estimates and $C_{j}$ be the adjusted estimate of demand of the commodity. Then parameters are adjusted as follows :
(a) Double $\log , \log$ inverse and $\log { }^{\text {' }} \log$ inverse
$\overline{\mathbf{a}}=\mathbf{a}+\log \left(\bar{C}_{i} / C_{i}\right)$.
$\overline{\mathrm{b}}=\mathrm{b}$,
and $\mathrm{d}=\mathrm{d}$ in case of $\log \log$ inverse.
(b) Other functions :

$$
\bar{a}=a\left(\overline{C_{i}} / C_{i}\right)
$$

and $\left.\bar{b}=b \overline{(C)} / C_{i}\right)$
where $\overline{\mathrm{a}}, \overline{\mathrm{b}}$ and $\overline{\mathrm{d}}$ are adjusted parameters.

## ANNEXURE III

## POVERTY ESTIMATES IN THE SIXTH PLAN

One of the main objectives of the Sixth Plan is to reduce poverty. For this purpose, the measurement of poverty, and the identification of the poors (as the target group) is necessary. A Task Force on Projections of Minimum Needs and Effective Consumption Demand, set up by the Planning Commission in 1977, defined the poors as those whose per capita consumption expenditure lies below the midpoint of the monthly per capita expenditure class having a per capita daily calorie intake of 2400 in rural areas and 2100 in urban areas. The estimate of calorie intake is derived from food consumption pattern of the corresponding classes and the calorie content of the food items. (see Statement A). This per capita consumption expenditure is then named as the poverty line. Calorie norms as chosen above are estimated after taking into consideration the age, sex and occupational differentials in the total population (for details of weighting diagram see Statement B). They are, therefore, by definition, subjective concepts, which are guided by the opinion of the nutritionists based on their experiences. The poverty line for these calorie norms (as estimated from per capita monthly expenditure and the associated calorie content of food items from NSS data on consumer expenditure of 1973-74) works out to be Rs. 49.09 and Rs. 56.64 per capita per month in rural and urban areas respectively in the year 1973-74. Poverty cut-off points defined in this way mean that an individual with that per capita expenditure (on an average), when left to himself, will spend an amount of his total consumption on food which will meet the abovementioned calorie requirement. Thus the concept of poverty line used here is partly normative and partly behavioural. These norms are therefore the "average" concept signifying a minimum average energy need.

## Methodology

The identification of the poors and their estimates by numbers based on the above concept, however, may create several problems. (1) In counting the number of people lying below the poverty line is it legitimate to refer to the average level of calorie intake in a given expenditure class or is it more meaningful to take that per capita expenditure (as cut-off point) which will correspond to the lowest limit of calorie need from which the aforementioned "average" has been derived. This latter alternative is suggested
by Prof. Sukhatme. (2) The method of estimation that has been described for calculating the "poverty" cut off points needs updating over time for use in later years. But the updating can be done by two alternative ways: (a) one can inflate the existing per capita consumption expenditure, shown as the poverty line, by the relevant price deflators, derived from some appropriate consumption basket in order to get the "revised" updated poverty line; (b) alternatively, one can calculate the revised per capita consumption class from the survey of recent years, which will correspond to the minimum or the average minimum calorie requirements for the poor people. A choice between the two is very important because conceptually, the latter emphasises on "that definition" of poverty which relates more directly to the calorie requirements whereas the former relates more directly to a certain real money expenditure on consumption which initially, however, is related to the calorie requirement in the base year (1973-74). But it should be emphasised here that any definition of poverty, directly or indirectly related to calorie intake, will have an interpretation problem if there is no functional relationship between level of expenditure and calorie intake by individuals.

But before making a choice between the different alternative methods for estimating poverty it will be interesting to examine whether all the alternative approaches presented here give more or less the same result or totally different poverty profiles, both at a point of time and as "changes" over time.

## Results

Table A 3.1 gives the poverty profile for the years 1972-73, 1977-78, 1979-80 and 1984-85 assuming that poverty line corresponds to the average mean value of calorie requirement or its lower limit; the same table, column 4 and 5 gives the poverty percentage if the lower limit of the average mean value is adopted. The latter one almost corresponds to 75 per cent of the level of per capita consumption expenditure which is selected as the poverty cut off point "on an average minimum" calorie requirement basis. The difference in the estimates of poverty are very significant. On the other hand, a choice between the two alternative "updating techniques" becomes rather easy since both the methods give almost identical result.

But whichever approach is taken, the index of poverty, measuging the changes in the percentage composition of poor to the total, remains almost identical, demonstrating that the percentage of people below the poverty line, whichever way defined and computed, has reduced (although rather slowly) over the different observed points.

In the plan document, the average minimum concept is used for reporting poverty. The other alternative is defined in the Task Force Report as a modest poverty line which, although estimated, is not reported in the Sixth Plan document where only the concept of "poverty line" is used.

It is interesting also to analyse the causes which have resulted in the improvement in the poverty index over time. One obvious cause is the increase in the per capita consumption in real terms in the growith process of the economy. But there is also a contribution from the distributional angle. To be specific, the share of consumption for bottom half of the population (see Table A 3.2 and Statement C) has been observed to increase by $0.28 \%$ per annum in rural areas and $0.44 \%$ per annum in urban areas between 1960-61 to 1977-78, while the same for top $50 \%$ of the population has been observed to decline by 0.12 per cent per annum and $0.17 \%$ per annum in rural and urban areas respectively, during the same period. The Lorenz coefficient of the consumption expenditure pattern (Table A3.3) shows that concentration has reduced over time although marginally and the poor people achieved a higher proportion of the consumption share over time. For the same period (i.e. 1960-61 to 1977-78) it is found that the Lorenz ratio has declined by $0.38 \%$ per annum in rural and $0.59 \%$ per annum in urban areas.

But all this analysis on poverty only takes into consideration the consumption expenditure of the people. But in real life individuals get many other benefits in kind from the infrastructure growth of the economy and many other public expenditures of the Government as on education, health, sanitation, entertainment, road, etc. The incidence of these expenditures on consumption class is difficult to estimate, although their influence on reduction of poverty cannot be ignored.

## Statement A

Calorie Content Per Unit Quantity of Food
(Edible Portion Only)

| Food item |  | Unit | No. of <br> calories <br> per unit |
| :--- | :---: | :---: | :---: |
|  |  | 2 | 3 |
| Cereals |  |  |  |
| Rice and its products | . | Kg. | 3400 |
| Wheat and its products | .. | Kg. | 3460 |
| Jowar and its products | .. | Kg. | 3490 |
| Bajra and its products | .- | Kg. | 3032 |


| 1 | 2 | 3 |
| :---: | :---: | :---: |
| Maize and its products | Kg. | 3420 |
| Ragi and its products | Kg. | 3280 |
| Barley and its products | Kg. | 3360 |
| Small millets and its products | Kg. | 2615 |
| Gram and its products | Kg. | 3600 |
| Cereal substitutes | Kg. | 1100 |
| Pulses |  |  |
| Arhar | Kg. | 3350 |
| Gram (split grain) | Kg. | 3720 |
| Moong .. .. | Kg. | 3480 |
| Masur . . | Kg. | 3430 |
| Urd | Kg. | 3470 |
| Khesari | Kg. | 3450 |
| Pea | $\mathbf{K g}$. | 3200 |
| Soyabean . . . | Kg. | 4320 |
| Pulse products .. | Kg. | 3400 |
| Milk and Products |  |  |
| Milk (liquid) | Kg. | 1000 |
| Baby food .. | Kg. | 3570 |
| Milk (condensed, powdered) | Kg. | 4960 |
| Ghee . . | Kg. | 8750 |
| Butter . . | Kg. | 7290 |
| Curd . . | Kg. | 600 |
| Other milk products | Re. | 607 |
| Edible Oils |  |  |
| Vanaspati | Kg. | 9000 |
| Mustard oil | Kg. | 9000 |
| Coconut oil | Kg. | 9000 |
| Ginegelly oil | Kg. | 9000 |
| Groundnut oil . . | Kg. | 9000 |
| Linseed oil .. | Kg. | 9000 |
| Refined oil | Kg. | 9000 |
| Edible oil (others) | Kg. | 9000 |
| Oil seed .. | $\mathbf{K g}$. | 5410 |
| Meat, Egg \& Fish |  |  |
| Goat meat . . | Kg. | 1180 |
| Mutton . . . | Kg. | 1940 |
| Beef | Kg. | 1140 |
| Pork | Kg. | 1140 |
| Buffalo meat | Kg. | 860 |
| Other meat | Kg. | 900 |
| Poultry ${ }^{\text {a }}$ | No. | 709 |
| Other birds | No. | 709 |
| Egg | No. | 100 |
| Fish (fresh) | Kg. | 1050 |
| Fish (dry) .. | $\mathbf{K g}$. | 3000 |
| Vegetables |  |  |
| Potato | Kg. | 970 |
| Onion | Kg. | 540 |
| Tomato .. | Kg. | 200 |
| Brinjal .. | Kg. | 218 |
| Cabbage . . | Kg. | 238 |
| Cauliflower | Kg. | 210 |
| Root vegetables | $\mathbf{K g}$. | 600 |
| Leafy vegetables | Kg. | 550 |
| Other vegetables .. | Re. | 469 |
| Fresh Fruits |  |  |
| Banana | No. | 84 |
| Orange, Lemon | No. | 50 |
| Mango | No. | 135 |
| Coconut | No. | 888 |
| Guava | No. | 53 |
| Pineapple | No. | 460 |
| Grapes | Kg. | 600 |
| Other fresh fruits | Re. | 1000 |


| 1 | 2 | 3 |
| :---: | :---: | :---: |
| Dry Fruits and Nuts |  |  |
| Coconut Copra | Kg. | 6620 |
| Ground nut | Kg. | 5490 |
| Cashew nut | Kg. | 5960 |
| Dates | Kg. | 1440 |
| Raisin (kismis, manaka) | Kg. | 3050 |
| Other dry fruits and nuts | Kg. | 2500 |
| Sugar |  |  |
| Sugar .. | Kg. | 3980 |
| Gur (cane) | Kg. | 3830 |
| Khandsari | Kg. | 3980 |
| Sugar candy | Kg. | 3980 |
| Sugar (others) | Kg. | 3500 |
| Spices |  |  |
| Turmeric .. | Gm. | 3.49 |
| Black pepper | Gm. | 3.04 |
| Pepper, dry chillies | Gm. | 2.46 |
| Green chillies | Gm. | 0.29 |
| Garlic .. | Gm. | 1.23 |
| Tamarind .. | Gm. | 1.98 |
| Ginger | Gım. | 0.54 |
| Curry powder | Gm. | 0.80 |
| Other spices | Gm. | 0.60 |
| Beverages, Refreshments |  |  |
| Tea .. | Cups | 27 |
| Coffee | Cups | 40 |
| Biscuits, onfectionaries | Kg. | 2450 |
| Bread | Kg. | 2450 |
| Salted refreshments | Re. | 382 |
| Prepared sweets | Re. | 315 |
| Cooked meals | No. | 1200 |
| Pickles | Gm. | 4.00 |
| Sauce | Gm. | 0.60 |
| Jam, Jelly | Gm. | 2.50 |
| Processed food (others) | Re. | 382 |

Extracts from NSS 26th Round (July 1971—June 1972) Report No. 258 A.

## Statement B

## Weighting Diagram

To allow for differentials in calorie needs of the population, the Nutrition Expert Group (1968) distinguishes fourteen relatively homogeneous person categories comprising fiye for children formed on the basis of age (aged less than one year, $1-4$ years, 4-7 years, 7-10 years and 10-13 years), three for adolescents in terms of sex and age (boys aged 13-16 years and $16-19$ years and girls aged 13-19 years), and six for nineteen years or more men/women workers-three each for men and women engaged in heavy, moderate and sedentary work respectively. To these fourteen. another two-one each for non-working men and women-were added to account for the whole of the population. In constructing the weighting diagram for these sixteen mutually exclusive and exhaustive person categories, estimated age-sex structure of the population derived from the population estimates (III projection) of the Expert Committee on Population (1977) coupled with 1971 census
occupational structure and participation rates based on usual activity status gleaned from the NSS employment data contained in the 27th Round (1972-73) is used.

Non-adult (i.e., less than fifteen years old) estimated population given by the conventional five year age groups is, of course, suitably regrouped to conform to non-conventional age groupings for different calorie allowances as have been recommended by the Expert Group. To this end, the following intra-group proportions based on single year smoothed age distribution of 1971 census, consistent with the assumption of gradual declining fertility in the future, have been adopted.
$\left.\begin{array}{llc} & \text { Intra } & \\ \hline \begin{array}{l}\text { Age Group } \\ \text { (conventional) }\end{array} & \begin{array}{c}\text { Sub-group } \\ \text { (non-conventional) }\end{array} & \begin{array}{l}\text { Intra group } \\ \text { pro portion }\end{array} \\ \hline \text { Less than five years } & \begin{array}{l}\text { Less than one year. } \\ \text { One year but less } \\ \text { than four years. } \\ \text { Four years but less } \\ \text { than five years. }\end{array} & 0.200 \\ \begin{array}{l}\text { Five years but less } \\ \text { than ten years }\end{array} & \begin{array}{l}\text { Five years but less } \\ \text { than seven years. } \\ \text { Seven years but less }\end{array} & 0.605 \\ \text { than ten years. }\end{array}\right] 0.195$

In addition, the following assumptions have also been made :
(i) Calorie requirements for workers aged fifteen but less than nineteen years is the same for men/women workers. Accordingly, the worker's weight in the weighting diagram relates to adult workers, i.e. those aged fifteen years or more. Similar remarks apply to adult non-workers also.
(ii) Heavy workers include persons engaged as cultivators, agricultural labourers, and in mining and in quarrying and construction;
(iii) Moderate workers include persons engaged in live-stock, forestry, fishing, hunting, plantations, orchards and allied activities, manufacturing, servicing and repairing (household and other non-household);
(iv) Sedentary workers include persons engaged in trade and commerce, transport, storage, communication and other allied services;
(v) Calorie requirements for adult nonworkers are the same as for sedentary workers.

Applying the weighting diagram worked out within the above frame-work to the categoryspecific calorie norms as recommended by the Nutrition Expert Group and allowing for additional daily requirement of 300 calories on the average for a period of six months out of about nine months of pregnancy in the case of a pregnant woman, the daily calorie requirements per person work out, on the average, to around 2400 in rural areas and to about 2100 in the urban areas. These are only average requirements. The actual requirements will vary from person to person depending on factors such as age, sex, weight, height etc. and also for a person over time depending on physiological and physical needs.

Calorie norms worked outt above may be subject to bias attributable to a number of factors, some tending to push it upwards and other downwards. These estimates understate the 'true' calorie requirements to the extent additional allowances are actually needed by workers among children and adolescents below the age of fifteen years. On the contrary, to the extent workers do not work with full intensity, these estimates will tend to overstate the true calorie requiremens, more so in rural areas where underemployment and disguised employment preponderate. With increased emphasis on spread of education on the one hand and big thrust on employment generation, both horizontally and vertically, envisaged in the new plan, it may not be wrong to assume that the net pias resulting from the above mentioned conflicting factors would be negligible. Similar remarks in varying degrees may apply to the bias, if any, arising on account of misclassification of workers in the three broad occupation categories referred to above. Needless to say these issues call for further research and investigation.

Statemint $C$
Estimate of changes in share of consumption and lorenz ratio for 1960-61 to 1977-78

| S. No. | Variable | Regression Coefficient (Time) |
| :---: | :---: | :---: |
| (0) | (1) | (3) |
|  | Share of consumption of bottom 50 per cent of the population in rural areas. | $\begin{gathered} .0028^{*} \\ (2.126) \end{gathered}$ |
|  | Share of consum ption of bottom 50 per cent of the population in urban areas. | $(3.027)^{.004 *}$ |
|  | Share of consumption of top 50 per cent of the population in rural areas. | $\overline{(2.147)}$ |
| 4 | Share of consumption of top 50 per cent of the population in urban areas. | $\overline{(3.083)}^{.0017^{* *}}$ |
| 5 | Lorenz Ratio in rural areas | $-.0038^{\star}$ |
| 6 | Lorenz Ratio in urban areas | $-.0059^{* *}$ |

N.B. (a) Form of the function is Exponential $\mathbf{Y}_{\mathbf{t}}=\mathbf{a e} \mathrm{bt}_{\mathrm{t}}$
$Y_{t}=$ Dependent Variables
$t=$ time
(b) Figures in the parentheses indicate $t$-values
(c) *denotes statistically significant at 10\% level, and
** at $5 \%$ level.

## ANNEXURE IV

## THE MODEL OF THE PRIVATE SECTOR INVESTMENT AND SAVING

Roughly 80 per cent of production in the economy takes place in the private sector. Remaining 20 per cent is in the public sector and is mostly confined to infrastructure. Domestic savings of the economy are mainly confined in the private household sector (nearly 70 per cent during the Sixth Plan). This demonstrates that growth of the private sector largely depends on the growth of the infrastructure in the public sector (as inputs in their production process) whereas the investments in the public sector would require mobilisation of resources largely from the private household sector.

This very simple aggregative relationship demonstrates the nature of complementarity in the production activities of the private and public sectors and emphasises the need for a balanced consistent growth between the two sectors. This can be achieved only by proper allocation of total investible resources and sharing of the investment responsibilities between the public and private sectors in a consistent manner, with the help of appropriate fiscal, monetary, banking and other economic policies.

These policy measures would range from, on the one hand, direct participation in the investment activities as is done in the public sector undertakings to, on the other hand, indirect broad policy signals given by the public sector through budgets or economic policy declarations to affect investments in the private sector. The term 'indicative planning' will mainly apply to those policy signals and policy instruments which are given only in aggregative terms, like an increase in the interest rate, strict control on credit expansion or even a general appeal for conserving energy.

Table A4.1 presents the investment profile of the public and the private sector over the Sixth Plan. In the public sector the sectoral investments are supported by specific programmes and projects examined and selected by the State and Central Governments and public sector undertakings. The estimates of the private sector investment, initially however, are based on a requirement or desirability concept. The private sector investments and their patterns are calculated on the basis of their desirability, to ensure their conformity with the overall investment and output targets of the Sixth Plan. Now the basic
question is whether these investments are feasible. Feasibility has broadly two dimensions, (1) technical feasibility, and (2) behavioural feasibility. The former is defined as whether this level of investment, given the technology, will be able to produce required level of capacity; whereas the latter is defined as whether the private sector, on the basis of their behaviour, will undertake the desired level of investment stipulated in the plan. The technical feasibility of the private investment programmes have been tested independently by estimating their capability for generating additional capactiy, with the help of historical ICORs, to match with the output targets of the Plan. The private sector output targets are derived on the basis of past trends and the requirements for fulfilling sixth Plan objectives. Table A. 4.2 compares the private sector contribution from the investment allocated in the Plan (col. 4) as against their historical proportions. (col. 5).As they are very close to each other, the general inference is that the private sector investment estimates in the Sixth Plan are technically feasible and consistent with the contribution expected from the private sector in the Plan. This checking at the marco level has been further supplemented at micro and project level for few specific sectors within the Planning Commission. This is particularly so in the case of private corporate and cooperative sector.

But any testing of the behavioural feasibility is extremely difficult, specially in an economy where there are large unorganised segments and where information is very scanty. With all these limitations of data, econometric estimations have been attempted to forecast the likely investments in the private sector, given the level of investment in the public sector and other growth indicators.

The following econometric relation has been used ${ }^{1}$ :-

```
Log PRIt \(=1.2307+0.8765\) LogPUJ
                            (14.97) \(\quad t-1\)
                \(\overline{\mathbf{R}}^{\mathbf{2}}=.90\)
Where
    PRI \(=\) Private investment
    PUI \(=\) Public investment
```

The estimated private sector investment, at 1979-80 prices over the plan period came to Rs. 83,478 crores, which is marginally higher by nearly $12 \%$ from the plan provision for private sector investment. The small difference can be

[^13]explained partly by estimation error. This emphasises the need for active fiscal, monetary and other economic policies differentiating between sectors and activities, to remove the gaps between the desirable level of investment and the anticipated level in the private sector.

## The Resources for the Private Sector Investment

The total real domestic resources of an economy are defined as the surplus net of all current consumption from the total output produced at any point of time. They can be broadly spread in three groups; (1) savings of the public sector, (2) savings of the private corporate and cooperative sectors, and (3) savings of the household sector. All these have been elaborated in chapter 5 of the Sixth Plan document. Table A4.3 presents, broadly, the sector-wise investment and its financing. The public sector investment is financed in supplement to its own saving, by public sector borrowings. Public sector's borrowings tap resources primarily from the household sector. Besides, it receives additional resources from the rest of the world (Table A4.4). Private sector's total investment, which in the Sixth Plan has been estimated at Rs. 74,710 crores, is divided into investments in the household sector, including non-corporate enterprises and invesiments in the corporate and cooperative sectors. This estimate is done as a residual of the total investment needed in the Sixth Plan and the investment provisions made in the public sector. Investment in physical assets in the household sector is estimated by the working group on savings on the basis of past experience. The financial assets are assigned as the investment in the corporate sector.

Household sector total saving, both physical and financial, have been estimated at

Rs. $1,04,859$. This is an independent estimate made by the working group on savings. The transfer from the public sector to the private sector amounts to Rs. 2,525 crores. This latter estimate is made on the basis of the transfer policy of the Government during the Sixth Plan. Investment in physical assets of Rs. 55,128 crores is subtracted from the total investible resources of the household sector to derive the total financial assets of the household sector. The total financial assets of the household sector are partly siphoned off by the public sector in the form of public borrowing, net claims on the Government, net of the transfer back to the private sector of Rs. 2,525 crores (see Table A4.5). The remaining savings of the household sector, net of loss due to terms of trade deterioration (see Table A4.6) amount to Rs. 8,994 crores. Net of the loss due to terms of trade deterioration, the remaining amount of resources is available and can be borrowed by the private corporate sector for financing their investment. Proper fiscal, banking and monetary policies are needed so that the corporate sector can mobilise these resources either directly by investment in equity shares or indirectly through the financing and banking system.

The above analysis clearly demonstrates that the financing of the plan, both in the public and the private sector, should be looked at in totality because of their inherent interdependence, and should be made consistent and feasible by prudent fiscal, banking, monetary and other economic measures. Above all, the inter-relationship between the different sectors of the economy would call for an acceptance of the Plan objectives and targets and a constant dialogue would be needed between the different producers, investors and consumers in the economy.

## ANNEXURE V

## AdJUSTMENT FOR CHANGES IN THE TERMS OF TRADE

The estimates of the balance of payments for the Sixth Plan period 1980-85 have been worked out at constant (1979-80) prices. These estimates have been prepared taking into account the deterioration in the terms of trade anticipated during the plan period. This has been done in order to arrive at a more realistic picture about the importing capacity out of the export earnings over the plan period. The deterioration in the terms of trade has been calculated for each year of the Plan period using the projections of annual exports and imports (including non-factor services) on current account along with the esti-
mated annual import and export price indices, as shown below :-
$\left.\begin{array}{c}\text { Deteroration in } \\ \text { terms of trade }\end{array}\right\}=\left\{\mathrm{Ec}_{\mathrm{c}}-\mathrm{E}_{\mathrm{c}} \times \frac{\mathrm{P}_{\mathrm{o}}}{\mathrm{P}_{\mathrm{m}}}\right\}$
Where $\mathrm{E}_{\mathrm{c}}=$ annual exports of goods and nonfactor services at 1979-80 prices
$P_{e}=$ aggregate export price index (Base : $1979-80=1.0$ )
$\mathbf{P}_{\mathbf{m}}=$ aggregate import price index (Base : 1979-80=1.0)
The depletion of resources on account of deterioration in terms of trade over the entire plan period has thus been estimated at Rs. 2,913 crores.

## ANNEXURE VI

## SECTOR CLASSIFICATION OF INPUT-OUTPUT TABLE

Sector Name of Sector
No. Composition of Sectors
(0)
(1)
(2)

| Rice and products |  |  |  | Paddy, rice milling. |
| :---: | :---: | :---: | :---: | :---: |
| Wheat and products |  | -. |  | Wheat, flour milling. |
| Jowar and products |  |  |  | Jowar, products. |
| Bajra and products | . |  | . | Bajra, products. |
| Other cereals |  |  | . | Maize, Gram and other cereals. |
| Pulses |  | . | . | Milled \& unmilled tur, urad, moong, matar, masur \& black gram dal and flour. |
| Sugarcane | . | - | .. | Sugarcane. |
| Jute | . | . | . | Raw jute. |
| Cotton |  |  | $\cdots$ | Raw cotton. |
| Plantations |  |  | - | Tea plantation, coffee plantation, rubber plantation, coconut, copra, tobacco plantation. |
| Other crops | $\cdots$ | . | $\cdots$ | Groundnut, potato, sesamum, rape and mustard, linseed, castor, mesta, san hemp, dry chillies, black pepper, dry ginger, turmeric, indigo, opium, sweet potato, tapioca, banana, cashewnut, arecanut, cardamom, citrus fruits, grapes, mangoes, other fibres, other oilseeds, other sugars, other dyes and tanning materials, other drugs and narcotics, other condiments and spices, other fruits and vegetables, fodder, miscellaneous food and non-food crops. |
| Milk and milk products | $\cdots$ | - | . | Milk consumed as such, ghee, butter, lassi. |
| Other animal husbandry | .. | . | $\cdots$ | Agricultural \& animal transport services by bullocks, camels, horses, donkeys and ponies etc. <br> Production of raw hides and skins, hair, wood, eggs, honey, raw-silk, bones, horns and hoop, dung, increment in livestock, hunting and trapping. |
| Forestry and logging | -. | ** | $\cdots$ | Planting, replanting, conservation of forests, production of fuel including charcoal, felling and cutting of trees and preparation of rough, hewing, shaping of poles, blocks etc. and transportation of logs up to the permanent lines of transport, industrial wood (timber, match and pulp-wood, bamboo, sandal wood, gathering of uncultivated materials such as gums lacs, resins, forest grown, fruits, nuts, herbs, barks, grass, cane. |
| Fishing | -• | -• |  | Rearing and catching of fish, see weeds, shells, pearls, sponges etc. fish curing viz. salting and sundrying of fish. |
| Coal and lignite | - | - | $\cdots$ | Coal and lignite mining. |
| Petroleum and natural | gas | - | $\cdots$ | Crude petroleum, natural gas. |
| Iron ore | .. | - | .. | Iron ore mining. |
| Other minerals | - | -• |  | Manganese ore mining, Bauxite mining, Copper ore mining, Chromite mining, Lead \& Zinc ores, gold ores, silver orea, mining, Apatite, asbestos, barytes, chinaclay, gypsum, Kyanite, magnesite, diamond calcite, ochre, gamet, graphite, feldspar, fireclay, flourite, quartz and silica, sillimanite, stratite, minor minerals, salt mining and quarrying, chemical stone quarrying, clay and sand pits and chemical and fertiliser, |
| Miscellaneous food produ | ducts | -• |  | Slaughtering, preparation, preservation of meat, milk foods and manufacture of diary products. Manufacture of fruit juice. jams, jellies, pickles etc., canning and bottling of fruits and vegetables. Canning, preserving \& processing of fish, crustacean and similar foods. Grinding \& processing of cereals manually Manufacture of bread, biscuits, cakes etc. Common salt, cocoa, chocolate and sugar confectionary etc. |

## SECTOR CLASSIFICATION OF INPUT-OUTPUT TABLE-contd.

| Sector <br> No. | Name of Sector | Composition of sectors |
| :---: | :---: | :---: |
| $(0)$ | $(1)$ | (2) |

Cashewnut drying, shelling, roasting etc. Ice, starch processed from maize, tapioca, tamarind etc. Malted food, corn, wheat and oat flakes, multi purpose food, frying of rice, dal and gram, edible cornflour, curry powder, animal food, instant coffee, scented and processed supari, papads, sago and sago products etc.

## Sugar

Gur and Khandsari .. .. .. Boora, candy and cane gur, Khandsari.
Vanaspati .. .. .. Hydrogenated oils, Vanaspati ghee.
Edible oils .. .. .. Edible oils such as linseed oil, mustard oil, sesamum oil, coconut oil, groundnut oil, cotton seed oil, mowrah oil etc.
Tea and Coffee .. .. .. Blended and unblended black tea leaf grade dust and waste, coffee curing, roasting and grinding.
Other Beverages
. Distilling, rectifying and blending of spirits, still wines, beer malt liquor, country liquor etc. Soft drinks and carbonated beverages, soda water, bottled sweet water.
Tobacco manufactures
.- Bidi, cigarette, cigars and cheroots, smoking tobacco, Zarda, chewing tobacco, snuff, graded, redried, undried, stripped and packed tobacco, scraps and stems.

## Cotton textiles

Cotton textiles (handloom \& Khadi)
Woollen \& Silk textiles
Art silk fabrics .. .. .. Fabrics of art silk and synthetic fibres.
Jute textiles ... .. .. Jute pressing and jute textiles.
Readymade garments .. .. .. Cotton, woollen and synthetic fibres knitting in mills. Ready made garments, clothing and tailoring (tailoring job works) made-up textile goods.
Miscellaneous textile products
. . Thread \& thread ball making, Jute, cotton, hemp, sisal, nylon rope, cordage and twines, webbing, narrow fabrics, embroidery work and laces, umbrella manufacture, artificial leather and oil cloth, tarpaulins, tents, sails and other made-up canvas goods. Coir yarn and coir products, linoleum and similar products, gas mantles and other textiles viz. bandage, gauge, dressing cloth etc.

| 35 | Carpet weaving | .. |
| :--- | :--- | :--- |
| 36 | Wood products | .. |

37 Paper, paper products and newsprint

Printing \& publishing

Leather \& leather products
40 Leather footwear
41 Rubber products
. Carpet Weaving.
Plywood and their products, Sawing \& planing of wood, containers made of wood, cane, bamboo, reed, jourery and general wood working, Cork and Cork products and miscellaneous wood, bamboo grass products, wooden furniture and fixtures, bamboo, cane furniture and fixtures.
. Pulp-wood pulp, mechanical, chemical including dissolving pulp, paper writing printing and wrapping, paper board and straw board, hard board including fibre board and chip board, paper for packaging including corrugated paper, kraft paper, paper bags, paper containers etc. newsprint.
. . Letter press and lithographic printing and book binding, other printing and including photography (maps, greeting cards, calenders, photo mounts etc.)
. . Tannery \& leather finishing, hide leather products except footwear and other wearing apparel, fur products.
.. Manufacture and repair of Leather footwear.
.. Rubber tyres and tubes for motor vehicles, tractors, craft, scootters, motor cycles and cycles, manufacture of rubber footwear. Rubber surgical and medical equipment including prophylacties, baloons, miscellaneous industrial and domestic goods.
42 Plastics
43 Petroleum products

Synthetic resins and plastic materials, plastic products manufacture celluloid and its articles.
. . Products of petroleum refineries.

## SECTOR CLASSIFICATION OF INPUT-OUTTPUT TABLE-contd.

| Sector Name of Sector | Composition of Sectors |
| :--- | :--- |
| No. |  |

(0)

## (1)

(2)
 and plumbing fixtures and fittings of metal, stoves, hurricane, lanterns, welded products, enamelling japanning and acquering, galvanising, plating and polishing metal products, structural metal products, weights, other metal products, repair of general non-electric machinery, repair of miscellaneous enterprises, metal furniture and fixtures, hand tools and small tools, bolts, nuts, hails screws springs, chains etc. and other metal fittings for shoes, leather, wearing apparel etc. cutlery, locks, type founding, razor blades.
62 Tractors \& agricultural implements
.. Tractors and other agricultural machinery, equipments and implements.
Machine tools
Office, domestc \& commercial equipments
Other non-electrical machinery
.. Machine tools.
Computing and accounting machines, calculating machines, typewriters and duplicators.
Construction and earth moving machinery, prime movers, boilers and steam generating plants such as diesel engines. Rice, dal and flour mill machinery, oil mill machinery, sugar machinery, tea machinery, exttile machinery (such as spinning frames, carding machines, powerlooms, etc. including textiles accessories) jute machinery, paper machinery, chemical machinery, mining machinery, cement machinery, refrigeration plants for industrial use, air conditioners and refrigerators, fire fighting equipment and appliances including fire engines, conveying equipment and bucket elevators, derricks etc. and size reduction equipment, centrifugal etc. air and gas comporessors and vacuum pumps (excluding electrical furnaces) ball, roller and tapered bearings, speed and reduction units, weighing machines-

## SECTOR CLASSIFICATION OF INPUT-OUTPUT TABLE—contd.



## SECTOR CLASSIFICATION OF INPUT-OUTPUT TABLE-contd.

| Sector No |  | Name of Sector | Composition of Sectors |
| :---: | :---: | :---: | :---: |
| (0) |  | (1) | (2) |
|  | Real estate \& ownership of dwellings |  | .. Activities of all types of dealers such as operators, developers and agents connected with real estate, residential houses. |
| 87 | Education | . $\cdot$ | Education and research. |
| 88 | Medical health | ,. .. | Medical and health services. |
| 89 | Other services |  | Services rendered by hotels, boarding houses, eating houses, cafes, restaurants, canteens etc., religious, legal recreation and entertainment, domestic laundry, cleaning and dyeing, barbers and beauty shops and other personal services, sanitary services etc., wrapping, packing and filling of articles and repair of wooden furniture, public administration and defence. |

TABLES



[^14]Table 3.1
Area, yield level and output of princlpal crops in 1984-85

| Crops |  |  | Land category |  |  |  |  | Area (mill. hect) | $\begin{array}{r} \text { Yield } \\ (\mathrm{kg} / \mathrm{hec} .) \end{array}$ | Production (mill, tonne) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | 2 |  |  |  |  | 3 | 4 | 5 |
| Rice |  | HYV irrigated Other irrigated Unirrigated | $\cdots$ | . | $\cdots$ | $\cdots$ | $\cdots$ | 19.89 | 2231 | 44.37 |
|  |  |  |  | .. |  |  |  | 0.80 | 1293 | 1.03 |
|  |  |  |  | .. | . |  | $\cdots$ | 20.58 | 863 | 17.76 |
|  |  |  | . | Total | .. | . | . | 41.27 | 1524 | 63.16 |
| Wheat |  | HYV irrigated Other irrigated Unirrigated | - | - | . | $\cdots$ | . | 18.00 | 2101 | 37.82 |
|  |  |  | .. | .. |  |  | . | 0.80 | 1290 | 1.03 |
|  |  |  | . | , | .. | .. | . | 6.20 | 790 | 4.90 |
|  |  |  |  | Total | -• |  | . | 25.00 | 1750 | 43.75 |
| Other | .. | Irrigated | - | . | - | .. | $\cdots$ | 6.00 | 1394 | 8.3620.06 |
| Cereals |  | Unirrigated | .. | . |  |  |  | 32.00 | 627 |  |
|  |  |  | Total |  | .. | .. | . | 38.00 | 748 | 28.42 |
| Pulses |  | Irrigated <br> Unirrigated |  |  | - |  | 3.4023.40 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Irrigated <br> Unirrigated |  | Total | .. | . | .. | 26.80 | 560 | 15.00 |
| Total Food- |  |  | .. |  | $\cdots$ | - | - | $\begin{aligned} & 48.89 \\ & 82.18 \end{aligned}$ | 1147 | 150.33 |
| grains |  |  |  |  |  |  | . |  |  |  |
|  |  |  |  |  | . |  | - | 131.07 |  |  |
| Sugarcane | . | Irrigated Unirrigated | .. |  | .. |  | -• | $\begin{aligned} & 3.48 \\ & 0.00 \end{aligned}$ |  |  |
|  |  |  |  |  | . |  | . |  |  |  |  |
|  |  |  |  |  | .. | - | .. | 3.48 | 57.5 <br> (Tonne/hec) | c) 200.10 |
| Cotton | . | Irrigated <br> Unirrigated | $\cdots$ |  | $\cdots$ | $\cdots$ | $\cdots$ | $\begin{aligned} & 4.10 \\ & 4.36 \end{aligned}$ | 31075 | 74.76 <br> 19.24 <br> (Lakh bales) |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Total | . | - | . | 8.46 | 1189 |  |
| Jute \& Mesta . . |  | Irrigated Unirrigated | - |  | $\cdots$ |  | .. | 0.061.28 |  |  |
|  |  | .. |  | . |  | . |  |  |  |  |
|  |  |  |  |  | Total | . | -. | . | 1.34 | 1250 | $\begin{array}{r} 93.06 \\ \text { (Lakh bales) } \end{array}$ |
| Other |  | Irrigated <br> Unirrigated | $\cdots$ | . | . | $\cdots$ | -• | 7.4727.92 |  |  |
| Crops |  |  |  | $\cdots$ | - | - | $\cdots$ |  |  |  |
|  |  |  |  | Total | . | $\cdots$ | - | 35.39 |  |  |
| All crops | .. | Irrigated <br> Unirrigated | -. |  | $\cdots$ | $\cdot$ | . | $\begin{array}{r} 64.00 \\ 115.74 \end{array}$ |  |  |
|  |  |  |  |  |  |  | .. |  |  |  |
|  |  |  | Total |  | . | . | $\cdots$ | 179.74 |  |  |

TABLE 41

INTERNEDIATE USE AND FIMAL DEMANDS FOR THE InDTAM ECONONY 1979aAs (Rs. MILLION AT FACTOR COST AT 19z9-ald PRICES'

COMMODITY OY INOUSTRT TABLE
-ant 1






|  |  |  |  |  |  |  |  | Qam1 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| －NO commanity | PVy cons pit cons |  | G．F．1NV | chin ${ }^{\text {cim }}$ | －8ponTS | 1月P0日is | T．F．USE | G．0U10u1 |
| 1 Aghiculthar． | 299519.0 | 2121．0 | 1692．0 | －5062．0 | 9892.7 | 1701.9 | 302420.3 | 436479．3 |
| 2 Faftifay anc log6ing． | 7017.0 | 14.1 | C． 0 | 124．1 | 114＊99 | 10.0 | 1889．9 | 14432.0 |
| 3 flSHINF | 7972.0 | 0.0 | 0.0 | 0.0 | 61.7 | 14．0 | 7999．7 | 5504．0 |
| －MIMINA ang ouehinving． | 731.6 | 191.9 | 0.0 | 1020．0 | 186 Em 3 | 29170.0 | －25499．3 | 20901.6 |
| 9 namufacturims． | 209341．6 | 19070.1 | 63000.0 | 29128.0 | －9940．2 | 96933．0 | 301152.9 | ¢27093，9 |
| 6 Eomstauctian． | 0.0. | 7474．0 | 112300．0 | 0.0 | 0.0 | 0.0 | 120174．0 | 154463．1 |
| 7 ELEC，cas，Mafen supply | 4100.0 | 613.7 | 0.0 | 0.0 | 0.0 | 0.0 | －758．7 | 30306． 7 |
| a miluava | 6751．4 | 2629.2 | 273.4 | 1.0 | 996.5 | 0.0 | 1064．s | 20163．9 |
| g ather thamapory． | 2396.5 | 9394．4 | 2212.2 | 0.0 | －1341．0 | 0.0 | 32920.5 | 19124．9 |
|  | 3967.3 | 10.3 .7 | 0.0 | 0.0 | 0.0 | 0.0 | 4621.1 | 671A，9 |
|  | 45271.0 | 1859．0 | 1741．5 | $0 \times 0$ | 9563.9 | 0.0 | 70930．2 | 20日ran．4 |
| 12 Gameing amg insumance． | E207．0 | 117．0 | 0.0 | 0.0 | 100.0 | 0.0 | 1024．0 | 31343． 1 |
| 13 REAL，Cst amb alm．DMEL | gisod． 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 36500.0 | 3asae．0 |
| 14 PPU，ALME，OEEF ，OTM，SERVICE | 12447．0 | 74704．0 | 0.0 | 0,0 | 4780.0 | 0.0 | 135936 | 202913.2 |
| 18 70Tala | 719040.2 | 1111076.0 | 197766.6 | 29410.0 | 67129.6 | 47900．a | 1036314．4 | 1435082．0 |
| 14 INDinett tax | 31490.0 | 8494．0 | 12603．9 | 0.0 | 1599．0 | 0.0 | \＄9142．4 | 114950.0 |
| 11 enate value monto | 0.0 | 1.0 | 0．0 | 0.0 | 0.0 | 0.0 | 0． 0 | 570510．0 |
| 18 chasi ouypuy | 790139．0 | 137970．0 | 210310．0 | 29610.0 | c9asa．0 | a1900，0 | 1095660．0 |  |

INTEAMLOIATE USE AND FINAL DEMANOS FOR THE INOIAN ECONOMY $1984-35$
(AS. MILLION AT FACTOR COST AT 1919-80 PKICES)


INTEREEDATE USE ANO FINAL OEFANOS FOR THE INDIAN ECONOMY $1984-65$ IRS. MILLION AT FACYOR COST AT 1979-80 PRICES'

| TY at industry tgalc |  |  |  |  |  | PART | 2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Inoustaies |  |  |  |  |  |  |
| nodity | 11 | 12 | 13 | 14 | 1.4 |  |  |
| IELLTURE. | 0.0 | 0.0 | 0.0 | 7719.4 | 177507.9 |  |  |
| thery and lobsing. | 0.1 | 0.0 | 0.0 | 0.4 | 7657.6 |  |  |
| Itwe. | 0.0 | 0.0 | 0.0 | 334.2 | 1815.3 |  |  |
| ITI AND OUERRYING. | 0.0 | 0.0 | 0.0 | 209.6 | 65675.6 |  |  |
| mactunime. | 5359.5 | 434.7 | 20.3 | 52475.0 | 493157.7 |  |  |
| Matction. | 22.5 | 288.8 | 5693.3 | 8822.6 | 48487.7 |  |  |
| yrosas. Mater supply | 4904.2 | 213.0 | 20.9 | 7570.0 | \$4427.8 |  |  |
| 4Murs | 2675.1 | 134.9 | 31.0 | 873.4 | 13824.6 |  |  |
| BTALAMSPORT. | 13063.6 | 419.0 | 1.9 | 12136.4 | 55745.3 |  |  |
| mancation. | 3621.1 | 599,0 | 0.8 | 884.1 | 5664.1 |  |  |
| matiaponace + H, HOUSING | 6211.1 | 427.3 | 4.4 | 16854.5 | 190639.1 |  |  |
| mIME NHO INSURANEE. | 6301.9 | 3316.8 | 35.6 | 1751.6 | 38634.6 |  |  |
| S ESt AMD OUN.DUEL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| HDNW, DEF, OTM. EEPVICE | 22832.3 | 769.6 | 145.5 | 13790.6 | 60638.2 |  |  |
|  | 69077.3 | 6395.3 | 5953.3 | 123837.0 | 1232056.0 |  |  |
| Inect tax | 3750.3 | 219.7 | 17.5 | 13083.6 | 121676.2 |  |  |
| 19 vALUE mode | 205007.0 | 38937.0 | 42152.0 | 127796.9 | 1250508.0 |  |  |
| CR OUTPUT | 278835.0 | - 5248.0 | 46193.0 | 264716.0 | 2604235.0 |  |  |





|  <br>  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CONH00ITY BY INDUSTAT TABLE |  |  |  |  |  |  |  |  |  |  |
| industircs |  |  |  |  |  |  |  |  |  |  |
| 8.NO. COMmeoity | 1 | 2 | 8 | 4 | 5 | 6 | 7 | - | g | 19 |
| 1 matory | 020.4 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| 2 MHEAT | 6.5 | 4097.9 | 0.0 | 0.0 | $-0.0$ | 0.0 | a, 0 | 8.0 | 0.0 | $04$ |
| 3 soyab | 0.0 | 0.0 | 378.6 | 0.0 | -0,0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 |
| B4. 日明 | 0.0 | 0.0 | 0.0 | 209.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 5 Othen ceamats | 0.0 | 13.1 | 0.0 | - 0.0 | 282.0 | 12.2 | 0.1 | $0 \cdot$ | $0 \cdot 0$ | $0 \cdot 1$ |
| © Ptuses | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1069.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 sufancine | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.8 | 309.8 | 0.0 | 0.10 | 0.0 |
| a Hute | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | . 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ${ }^{1}$ Catron | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 90.4 |
| 10 PLANTAIION 11 oluen chaps | 0.0 | 26.0 | 0.0 | 0.0 | 0.0 | 04.7 | 0.0 | 0.0 | 0.0 | 10.4 0.0 |
|  | 3.3 | 26.6 | 0.0 | 0.0 | 0.18 | 04.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 MILA ANO MILK Pgopucis | 924.0 | 477.2 | 10200 | 167.0 | 751.9 | 1030.3 | 204.5 | 9.0 | 255.6 | $2 \mathrm{ma}$. . |
| 19 porestay and logeing | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13 FISNIMG | 0.0 | 0.0 | 0.0 | 0.0. | 0.0. | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
|  | 2.4 | 0.2 | 0.0 | $0.0{ }^{\circ}$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 oftroletg ana nat,gas | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 10 janm ort | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | a, 0 | 0.0 | 0.0 | 1.0 |
| 19 atmen minerals | 0.0 | 0.0 | 0.6 | 0.0 | 0.1 | 0.0 | 0.1 | 0.4 | 0.0 | $0 \cdot 0$ |
| 20 misc. foon pronucts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 21 sugan | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 |
| 22 gut amo khandsamı | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2, caibicail eyclivanaspati | 0.2 | 0.5 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25 TEA ang coffer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 26 O1Meh meverates | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| 27 10Bnceo mantraciune | 0.0 | 0.1 | 0.0 | 0.0 | $\bigcirc 0.0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 C COTTON TEMTILESIEXCL, H, ${ }^{\text {a }}$ | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | O. 0 | 45.0 | 0.0 |
| 29 COT, TEMT- ${ }^{\text {a }}$ LOOM +KHADI | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0. | 0.0 |
| go voillen ing silk fabeics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 ant silk fabaics | 0.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 32 JuTE 1EMIILES | 18.9 | 4.2 | 0.0 | 0.0 | 0.0 | 2,7 1,4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 33 aEARYMADE GARMENTS, IEXT. | 2.3 | 1.2 | 0.1 | 0.2 0.0 | 0.8 | 1,4 0.0 | 0.4 | 0.0 | 0.3 | 0.0 |
|  | 0.1 0.0 | 0.2 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 wath prqoucts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 37 papeni Paptapaiud.NEWSPRIN | 0.9 | 0.4 | 0.1 | 0.1 | 0.3 | 0.5 | 0.2 | 0.0 | 0.1 | 0.0 |
| Id PAINTING ANG PLILISHING | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | Ot |
| By Lenthen ang leather ohan | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0.0{ }^{0 .}$ |
|  | 0.0 | 0.0 | 0.0 | 0.6 | 0,0 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 |
| 41 wuagem mrourcis | *. ${ }^{\text {a }}$ | 6.0 | 0.6 | - 0 | 4.6 | 6.6 | -0 | 0.0 | 0.0 | 0.0 |
|  | Te3.0 | -94.0. | 8.5 .0 | -0.0 | 301.3 | 720.7 | 131.0 | 0.6 | 106.0 | 123.8 |

HABLE 4.3 (CONTA)

|  | 1.0 | 4.6 | 0.0 | 0.0 | 0.0. | 0.0 | 0.9 | 0,0 | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 INGRGMIIC HEAVY CHELCAICAL | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 |
| 96 ORGANIC HEAVT. ChEnECALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 CHEAICAL FERTILISERS | 7935.9 | 9264.8 | 124.9 | 242.9 | 3050.9 | -503.1 | 1925.9 | 60.0 | 909.2 | 3621.0 |
| 4b INSECTICIOE, FUWSICIDE ET | 63.7 | 2.1 | 4.2 | -0.0 | 2.7 | 0.0 | 0.0 | 0.0 | 26.0 | 1443.1 |
| 49 gRUES AMD PHARTAACEUTICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 soaps and gltchrine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| Si conmetics | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 man made fiples | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53 QTHEA CHFRICALS | 0.2 | 0.3 | 0.00 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| SHaterfipictarics | 0.0 | 0.0 | $0 \cdot 1$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| \$6 OTHE, MONMETLE PRODUCTS | 0.0 | 0.0 | 6. 0 | 0.0 | 0.0 | D. 0 | 0.1 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| Ss f, \& CASt yegs and matime | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 |
|  | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.1 |
| 60 mighferous hetal 1makullo | 0.8 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Ca meftal pheoucts . | 6.3 | 8.7 | 0.11 | 0.0 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 51.8 | 20.0 | 6.5 | 9.1 | 72.6 | 56.4 | 9,6 | 0.2 | 11.1 | 14.0 |
| 63 MAEMINL TOULS | 0.0 | 0.4 | 0. | - 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64, Gip oon.anu com. cpuipam | -0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0.0 | 0.0 |
| $65^{\prime}$ OtF , MOMEEECY. HACHINERY | 4.8 | 18.2 | 0,0 | 0.0 | 0.1 | 2.3 | 0.0 | 0.0 | $\mathrm{O}_{2} \mathrm{O}$ | 0.0 |
| G6 ELComaytat hotors | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.6 | 0.0 | 1,0 | 0.0 | 0.0 | 0.0 | $0 \cdot 1$ | 0.0 |
| ce atukerim | 0.0 | 0.0 | 0.6 | 0.0 | 6.0 | 0.0 | 0.1 | 0.0 |  | 1.0 |
| © ExComecal hohoci gbads | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \%$ | 0.0 |
|  | 0.0 | 0.1 | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0. ${ }^{1}$ | 0.3 | C.tit | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0{ }^{0}$ | 0.0 |
| 78 cines andxgats | 0.1 | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0 0. | 0.0 | 0.0 | \$.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6 | 1.0 |
| TY eyto vericlus | 0.6 | 2.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.9 |
| ts are cracte ana bicycus | M.E | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73 mavphes andoracis | 0.1 | 18.0 .0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.18 | 0.0 | 0.0 | 0.0 |
|  | 0.8 | 0.2 | \%000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| T\% \% muction | 103.2 | 500.1 | 121.0 | 114.1 | 7 ${ }^{\text {a }}$, ${ }^{\text {c }}$ | 597.6 | 131.2 | 2.1 | 111.7 | $30 \%$ - |
|  | 231.a | 146.1 | 4.1 | A. 0 | 14.2 | 14.0 | 40.4 | 6.6 | 8.4 | 29.1 |
| s. Mativars | 23.1 | 31.2 | 1.4 | 1.9 | 14.4 | 17.7 | 4.0 | 0.1 | 4. | 48.4 |
|  | 47.9 | 40.6 | 3.7 | 3.6 | 95.1 | 59.3 | 17.0 | 0.1 | 04.9 | 112.7 |
| - Ecpmicaria | 2. ${ }^{\circ}$ | 1.1 | 0.0 | 0.1 | 1. ${ }^{\circ}$ | 0.5 | 0.3 | 1.1 | 0.2 | 0.0 |
| TSTOMAEE ANM. M. HOUS | 462. 5 | alat | 24.6 | 30.2 | 247,0 | 311.9 | 285.4 | 1.0 | 112.t | 945.8 |
| time tou zomenames | 476.3 |  | 12.8 | 11.3 | 118.1 | 249.4 | 170.4 | 7.2 | 22. 2 | 1210.t |
|  | - 10 | $0 \cdot 4$ | 0.0 | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | d.0 |
| CArIan | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 , | 0.1 | 0.0 | 0.8 | 0.0 | 0.0 |
| CAL HEMETH | $255.4$ | $22100$ | 90.0 | 9.1. | $420_{0}^{0} \cdot \frac{0}{3}$ | 920.1 | $98.0$ | 0.0 |  | ast. |
| - 6 tor ${ }^{\text {d }}$ | 17460. | 14019.0 | 04.9 | 1021. ${ }^{\text {a }}$ | -274. | 4210.6 | inata | 21.3 | 2918. | 14120.3 |
| - Hect 7ax | 1599.9 | 08950 | 56.1 | 19.9 | 374. | 520.7 | 330.8 | 10.7 | 242.6 | aッม. 2 |
| Fin vatue amozo | 7004.7 | 2926. 7 | 401.0 | 14.9.4 | 0700.2 | 124.4 | S220.7 | 107.7 | 12320.7 | seseng |
| If anx mutpur | 0 pras.0 | 1197, | 1el.0 | 672.0 | 13194.0 | 3943.6 | 0173.8 | 2997.0 | 14227.6 |  |

TABLE 43 (com:o.)
jnteamediate use and final demanos for ihe indian economy $1979-00$
IRS. MILLION OF OUTPUT AT FACTOA COST AT 1979-á ERICEAI


INTERMEDIATE USE ANO FINAL DEHANUS FOR THE INDIAN ECONOMY 1979-80 IRS. HILLION OF DUTPUT AT FACTOR COST AT 1979-80 PAICESI


TAME 4 (camp)


TABLE 43 (GONTD.)




TABLE 4.3 (comme)


IWTEANEDIATE USE ANO FINAL DEMANDS FOR THE INOIAN ECONONY 1979-BO (AS. HILLION OF OUTPUT AT FACTER COAT AT 1979-80 PRICES)


TABLE 4. (CONTA.)


INTEAMEDIATE USE ANO FINAL OEMANOS FOR THE IHOIAN ECCNOHY 1979-80 IAS. MILLION OF OUTAUT ATEACTOA COSTAT1979-80 PRICES'

| commodity it inelustay fable |  |  |  |  |  | PARI |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | UStries |  |  |  |  |  |  |
| S.NO. COMmentir | J | 52 | 53 | 54 | 55 | 36 | 91 | 5 d | 59 | -0 |
| 1 panoy | 102.0 | 0.0 | 0.0 | n. 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0.0 |
| 2 Uncil | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| a jduar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - bajal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 1.0 | 0.0 |
| 5 Othen cereals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 Putses | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | d. ${ }^{0}$ | 0.0 | 0.0 |
| 1 sugarcane | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| - Jute | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | a. 0 | 0.0 | 0.0 | 0.0 |
| 9 COTTON | 2.4 | 24.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 plantation | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 वTHEM CROPs | 509.0 | 0.0 | 19.9 | 14.3 | 0.0 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 milk ano milk PaOducts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13 OTHER ANIMAL HUSBAMCAY | 0.1 | 0.0 | 10.4 | 12.9 | 0.6 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 EGAESTAY ANG LOGGING | 20.4 | 3.1 | 69.7 | 79.5 | 0.0 | 76.9 | 6.3 | 0.7 | 0.5 | 9.6 |
| 15 FISNING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 coal and lignite | 15.0 | 131.7 | 46.4 | 894.3 | 450.6 | 280.2 | 1065.4 | 9.9 | 2.5 | 161.1 |
| 17 detanlelim AnD Nat.gas | 0.0 | 0.0 | 2.7 | 0.5 | 0.0 | 1140.2 | 0.0 | 0.6 | 2.4 | 56.2 |
| 16 IGON OAE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 271.1 | 0.2 | 0.0 | 0.0 |
| 19 othea minerals | 1.0 | 54.9 | 17.4 | 1113.3 | 264.1 | -63.7 | 950.5 | 1. ${ }^{\text {a }}$ | 1.0 | 1162.5 |
| 20 misc. Fact aromucts | 0.0 | 0.0 | 29.4 | 0.0 | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 sugar | 0.7 | 0.0 | 65.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.3 | 0.1 | 0.0 |
| 22 gut amb mhaidosahi | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 HYBRCEENATEO OIL VANASPa | 0.0 | 0.0 | 50.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 4.0 |
| 24 EOIBLEOTL ExCL. YaNASPati | 4.7 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25 TEA ANO COFFEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 OTHEA GEVERaGES | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 I明ACCO mamuFacture | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| $2 \mathrm{Acalton} \mathrm{TExTILESIEXCL} \mathrm{.H.K}$ | 187.9 | 3.4 | 0.1 | 0.0 | 0.0 | 13.9 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 3 mbOOLLEN anc Siln fabrics | 0.0 | 2.6 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 ant Siln fanilics | 0.0 | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 32 JUTE TEYYILEE | 55.7 | 23.3 | 84.6 | 6.2 | 514.4 | 24.9 | 25.8 | 1.1 | 9.0 | 9.5 |
| 35 REAOYFADE GAMMENYS.TEXT. | 0.9 | 10.3 | 0.0 | 0.6 | 0.0 | 13.1 | 45.1 | 3.4 | 9.8 | 3.2 |
| 34 MISC. TEXT, Pronucts | 3.6 | 0.0 | 11.0 | 1.4 | 0.0 | 1.1 | 0.0 | 0.0 | 4.0 | 0.4 |
| 35 Calmpt ueaving | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 yoon phooucis | 9.7 | 3.4 | 84.2 | 10.7 | 0.1 | 24.3 | 1.7 | 0.1 | 1.1 | $0 \cdot 1$ |
| 31 PAPER, PAFERPROD. JEUSPRIN | 20.8 | 633.1 | 74.5 | 9.3 | 6.3 | 4 H .4 | 12.4 | 1.2 | 1.2 | 0.3 |
| 30 PhINTINT ANH MUBLISHING | 0.3 | 0.2 | 6.1 | 0.4 | 0.3 | 1.4 | 1.6 | 0.1 | 0.4 | 0.5 |
| 39 LEATAER ANO LEATHEA PROD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 |
| -0 LEATHEA foctucam | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 . |
| 41 ruaber prooucis | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 0.0 | 0.0 | 0.0 |  |
| 42 PLASIICS ANO SYNTH. PUER | 1.9 | 11.0 | A4. 8 | 34.5 | 23.9 | 60.3 | 31.2 | 2.4 3 | 2.6 | 6.4 |
| 43 PETACLELM Frocucts | 10.1 | 12.9 | 131.2 | 75.0 | 237.2 | 454.4 | 1224.4 | 17.7 | 31.6 | 343.9 |

ricle \& 3 (comra)


TASLE 4.3 (Cowno.)

INTEMELOIATE USE AND FINAL DEMANOS FOR THE INDIAN ECOMONY 1979-80 iRg. MILLION OF OUTPUT AT FACTOR COST AT 1979-80 RRICESJ
CONHODITT BY INDUSTRT TABLE

| tmoustarcs |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S.MC. | comancolty | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 7 |
| 1 | padyy | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 1.1 | 0.1 | 0.0 | 0.1 | 0.0 |
| 2 | Hifat | D. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 |
| 3 | jovan | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 日atala | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 1.0 | 4.0 | 0.0 | 0.0 | 0.0 |
| 3 | OTHEM CEAEALS | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 | pulats | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.0 | 0.0 |
| 7 | suanmiane | 4.0 | 0.0 | 0.1 | 0.0 | 0.0 | 9.9 | 0.1 | 0.0 | 10 | 0.0 |
| - | HTE | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0 | 0.0 |
| g | cotion | 0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.9 | 0.1 | 0.0 | 0.0 |
| 10 | phemitian | 010 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 12 | Othimat cages | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 19 | NILM amg nglk producia | 0.0 | 0.1 | 0.0 | 0.6 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| 13 | Cthen animal husamman | 00.6 | 1.0 | 0.1 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | ganesamy ano logeine | 17.14 | 1.5 | 2.9 | 0.1 | 19.0 | 0.1 | 0.0 | 0.6 | 0.0 | 0.0 |
| 19 | E1SNING | 0.0 | 1.1 | 0.0 | 0.0 | 12.0 | 0.0 | 0.1 | 0.1 | 1.1 | 8.0 |
| 16 | COAL ANO LIGNITE | 17.1 | 2.4 | 0.5 | 0.9 | 12.3 | 0.3 | 32.5 | \$1.2 | 1.7 | 0.3 |
| 17 | aEtadelm and natagas | 99.2 | 1.6 | 0.10 | 0.0 | 79.9 | 0.3 | 32.9 | 1.6 0.6 | 7.19 | 0.1 0.0 |
| 18 | 1ROn ORE | 120.5 | 0.0 | 0.9 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 7.0 |
| 19 |  | 124.5 | 0.10 | 0.0 | 0.0 | 0.0 0.0 | 0.6 | 0.3 | 2.0 | 0.0 | 7.0 |
| 20 | Misc. FOCD mandicts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 |
| 21 | suasa | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 12 | ELIC Amo Khandosahi | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 | hycilogematec olc vanaga | 0.0 | 0.1 | 0.0 | 0.1 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| \% | EDIBLEAL ExClivanasparz | 0.0 | 0.1 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 |
| 4 | TEA AND COFFEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.8 | 0.0 | 0.8 |
| 26 | OfNEA BEvEA」EES | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 |
| 21 | 10Aacco manutac fuat | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | a. ${ }^{\text {a }}$ | 0.0 | $0 \cdot 1$ | 0.0 | 0.8 |
| 28 | COTTON TEMTILESIEXELAHAM | 2.0 | 0.1 | 0.0 | 0.0 | 10.2 | 0.0 | 5.6 | a, ${ }^{\text {a }}$ | 0.1 | 0.6 |
| 19 |  | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | C, ${ }^{0}$ | 0.0 | O. ${ }^{8}$ |
| 30 | Hodlen and silk faglics | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | ARI SILK Fammics | 1.1 | 0.1 | 0.1 | 0.1 | 2. ${ }^{0.9}$ | 0.0 | 11.7 | 0.0 | 0.0 | 0.3 |
| 38 |  | 117.0 132.9 | 0.3 | 2.4 | 0.15 | 13.9 | 9.0 | 11.7 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | misc. TEXT, monucis | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 5.9 | 9.1 | 0.0 | 4.9 |
| 3. | capery HEAvine | 1.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 |
| 16 | yoog pmomicts | 58.0 | 1.9 | 7.5 | 2.1 | 41.7 | -6.6 | 10.8 | 6.1 | 9.7 | 65.6 |
| 17 | gapen, papeaphodanEusprin | 30.3 | 1.1 | 1.9 | 17.7 | 22.9 | 0.2 | 10.1 | 5.3 | 9.2 | 29.4 |
| 18 | PHINTINA ANG PUILISSHINS | 1.5 | 0.1 | 0.4 | 0.0 | 1.2 | 0.1 | 0.2 | 0.1 | 0.10 | 0.4 |
| 39 | LEATHEA ANG LEATHEN PROD | 43.9 | 0.1 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 |
| 40 | LEATMER FaOtyEan | 0.1 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0. | 0.4 | 0.0 |
|  | magez plooucts | 0.0 | 4.6 | 9.1 | 0.0 | 8a. 2 | 11.4 | 10.9 | 9.1 | 0.0 | 2.5 39.7 |
| 4 | platilcs and stmik. Futa | 34.1 .99 .1 | 14.9 | 1.19 | 9.0 | 56.7 170.6 | 11.7 | 191.2 81.9 | 4.15 | 11.9 | 14.0 |
|  | aETMALELA Mraducts | 199,1 | 19.9 | 14.3 | 40.4 | 170.6 | 9.7 | 11.9 | 4.5 |  |  |




THBLE 43 (CONTO)


TARE 43 (CONTA)

INTEAMEDIATE USE ANC FIMAL DEGAMLS FON TIME INOIAN ECOHOIAY 1979-BC



ThBLE \& 3 (Conta)


1NTEAMEGIATE USE AME FINAL OERANOS FOA TME IMDYAN ECONOMY ITP9－6A

tiat Ia

| B．NO COMMODIT | pvy tons | PLIf CONS | S．F．7 ${ }^{\text {d }}$ | CH．1N STM | Exponfin | 1 mpR | T．F．USI | $\begin{aligned} & \text { Hant 1a } \\ & \text { onatront } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 paday | 12001.0 | 024.0 | － 0.0 | －3600．0 | 940.3 | 0.1 | 包168．8 | teratai |
| 2 UHEAT | 35067.0 | 296.0 | 0.0 | －2000．0 | 183.0 | 180.4 | Evetria | nrate． |
| 3 Jdara | 13646.0 | 0.0 | 0.0 | －300．0 | 0.0 | 0.0 | 15940．0 | cutat |
| 4 balpa | 6199.0 | 0.0 | 0.0 | －340．0 | 0.0 | 0.0 | seisg． |  |
| 5 Offer cereals | 11400.0 | 90.0 | 0.0 | －300．0 | 17.9 | 0.8 | 11207． | 1smene |
| 4 pulats | 12115．0 | 19.0 | 0.0 | －1000．0 | 0.0 | 136.0 | 189590 | 1408\％${ }^{\text {a }}$ |
| 7 sugahc ane | 2435.7 | 0.0 | 0.0 | 4.1 | 6.0 | 0.4 |  | sa77n． |
| a chute | 0.10 | 0.0 | 0.0 | 163.0 | 9.2 | 0.1 | 112.8 | tifita |
| c cotion | 0.0 | 0.0 | 0.0 | 548.0 | 424．4 | 0，0 | 1212．0 | 108pl．${ }^{\text {a }}$ |
| 10 mlamiation | 266.1 | 0.0 | 0.0 | 937.0 | 84.7 | 220.0 | 10939．0 | 1781. |
| 11 OTHER CROPS | 61040．0 | 072.0 | 0.0 | 697.0 | 7099．a | 730.1 | 70960．a | 117864 |
| 12 MILA ANG MILK PROCUCTS | 542taga | 23.0 | 0.0 | 0.0 | 14.1 | 198．0 | 541007.2 | matelct |
| 13 OThIER ANIMAL musbandiy | 14487．0 | 1.0 | 1492.0 | 53．0 | 823．6 | 321.0 | 1ctay | 20－3e． 6 |
| 14 Fonesiay amo cosging | 1017．0 | 14.0 | 0.0 | 124．0 | 1144．9 | 00.0 | 淘要， 9 | 20 |
|  | 7972.0 | 0.0 | 0.0 | 0.0 | 41.7 | 14．0 | 79997 | －1 |
| is coal and lignite | 733.6 | 151.9 | 0.0 | 617.0 | 128．0 | 7950 | 9259 | 14090． |
| 17 metroleum and nat．gas | 0.0 | 0.0 | 0.0 | 141.0 | 0.0 | 22946.0 | －taxpe | 45.5 |
| 18 IRON ORE | 0.0 | 0.0 | 0.0 | 144.0 | 691.0 | 1.0 | 8atiol | Lisun．${ }^{\text {a }}$ |
| 19 OTMEA MINERALS | 9．0 | \％．0 | 0.0 | 112.0 | 546．2 | 5818.0 | －6ase | Hets． |
| 20 milc．food producis | 19651.5 | 29.3 | 0.0 | 12000 | 5800.6 | 81.0 | 26374.4 | rgeta． 9 |
| 21 sugar | 13610.9 | 0.9 | 0.0 | －294．0 | 1876.5 | 0.0 | 14694．a | 156AE． 2 |
| 22 GUR Amo mhandsari | 10940．0 | 0.0 | 0.0 | 19.0 | 14.6 | 0.0 | 1417.6 | 1xamer 0 |
| 23 HYDROGENATEO OIL VANASPA | 6461.0 | 18.0 | 0.0 | －31．0 | 0.0 | 0.0 | 6448．9 | 12014．0 |
| 24 COIBLEOIL EXCL．VANASPATI | 16550.7 | 23.3 | 0.0 | －1166．0 | 256. | 6071.0 | 9581．9 | 1093m． 2 |
| 29 TEA ANG CDFFEE | 6766.3 | 10．9 | 0.0 | 235.0 | masa．s | 0.0 | 11104.7 | 11956．？ |
| 26 OTHEA EEVEREGES | 2754.7 | 7.6 | 0.0 | 249.0 | 6.5 | 4.0 | 3094．a | 3159.4 |
| 27 TOEACCO MANIFACTURE | 10104.9 | 9.9 | 0.1 | 1465.0 | 62.2 | 0.0 | 11842.0 | 13213.5 |
| 20 COT10m TExTILESIExCL．H．K | 24503.6 | 655.9 | 0.0 | 3422.0 | 1716.3 | 0.0 | 30297.6 | पeatis． 3 |
| 29 COT．TEXT－H．L COM，KHANI | 15639．9 | 1791.1 | 0.0 | 137.0 | 425.6 | 0.0 | 18498.6 | 20xam． 0 |
| ga MOOLLEN AND SILK FABRICS | 2949.0 | 0.0 | 6.0 | 496.0 | 104．9 | 15.0 | 3008.9 | Syenet |
| 3 aft Silk fatilics | 3777.6 | 6.0 | 0.0 | 74.8 | 317.7 | 230.0 | 4700.3 | chan． |
| 32 JUTE TEXTILES | 276.3 | 0.0 | 0.0 | 923.0 | 2436.4 | 0．0 | 1657．7 | 93949．6 |
| 33 AEADYMAOE GARMENTS，TEXT． | 5300.0 | 97.0 604.2 | 20.0 | 1602.0 | 4392． 6 | 64.0 | 11327.0 | 13494．0 |
| 34 WISC．TEXT．PRODUCTS | 1009.7 490.7 | 604.2 | 246.7 | 168.0 160.0 | 665.4 906.6 | 42.0 | 14357．4 | 7429．5 |
| 36 woon pheoucis | 3143.3 | 41.6 | 394.5 | 1393.0 | 191．4 | 13.0 | 51 ¢1．a | 1aran． |
| 37 PAPER，PAPERPROL，NETSPRIN | 764．2 | 706.8 | 0.0 | ． 602.0 | 71.3 | 1840.0 | 310.3 | mats． 1 |
| ga phinilng ant puelishing | 520.0 | 522.0 | 0.0 | 376.0 | 69.6 | 163.0 | 1922.1 | ange． 1 |
| 39 leather ant leather prot | 310.0 | 0.0 | 12.0 | 566.0 | 1514．3 | 2.0 | 4 4igit | CR97．0 |
| 4a deather fogtyeah | 8461．9 | 26.8 | 0.0 | 190．0 | 187.1 | 6.4 | 4278.0 | 4812．3 |
| 41 mubatr prooucts | 823．0 | 0.0 | －002．9 | 579.0 | 234.0 | 00.0 | 9470．7 | 198404．9 |
| Y2 PLAETICS AND SYNTH．RUER | 645.9 | 312．2 | 0.0 | 647.0 | 329.1 | 1027.0 | 907.2 | 1275．5 |
| ${ }^{1} 3$ PETroleum phoducis | 10952．0 | 1825.1 | 0.0 | 123.0 | 0.0 | 10122.0 | 2314.9 | 14314． 1 |


 iRs. MILLIGM OF OUTPUT at Racton cont at L9T9-10 PhICEs





44 M. Cgan, MCTA日L. PAODUCIS
-5 pointmid HEayy chemical
46 OAPHAC MEAVY CHIMICMLS
47 ETMICAL FERTILIAEHS 96 pitiog amp PHMPacEuTICAL


53 ginn tivicms





## RM

- 



thteamediate usf and final demanos fog the ihoinn economy igay-ds IMS. MILLION of dupput at facton cosi ap 1979-00 paicesi

| J NOLSTHES |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| a, mo. commality | 21 | 22 | 23 | 24 | 25 | 26. | 27 | $2{ }^{28}$ | 29 | 30 |
| 1 raboy | 0.0 | 19.4 | 0.0 | 24.6 | 0.0 | 0.6 | 0.0 | 7.5 | 4.10 | 0.0 |
| 2 uheat | 0.0 | 203.3 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 4.0 | 0.0 | 0.0 |
| 3 دewan | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 manha | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 |
| 5 OTHEA CEREALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 0.0 | 0.0 |
| 6 PILSES | 0.1 | 122.5 | 0.0 | 0.2 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 |
| 7 qugancalue | 11102.2 | 13274.5 | 0.0 | c. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| JUTE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | $0: 0$ | 0.0 | 0.0 |
| corjow | 0.0 | 0.6 | 0.0 | 43.2 | 0.0 | 0.0 | 0.6 | 13938.7 | 2437.8 | 0.0 |
| 10 PLANTATION | n. 0 | 0.0 | 0.5 | 7419.3 | 6124.1 | 0.0 | 3487.4 | 0.0 | 0.1 | 0.0 |
| 11 athea CMops | 1.0 | 126.0 | 5615.4 | 1327.8 | 2.2 | 34.a | 255.2 | 313.2 | 0. 0 | 6.0 |
| 12 vilk arti milk prooucts | 0.0 | 4.9 | 0.1 | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.1 |
| 13 OTMEM ANIMAL HUSBANDAY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 711.3 |
| 14 fodestry ano logging | $0 \cdot 5$ | 44.6 | 0.2 | 8.0 | 3.0 | 0.5 | S.E | 1.3 | 46 | 8.2 |
| 15 FISHING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0. | 0.0 |
| 16 COAL AND LIGNITE | 06.1 | 95.5 | 95.5 | 9.9 | 4.7 | 16.1 | 18.8 | 75.6 | 8.6 | 60.6 |
| 17 pepmalehm and Mat.gas | 0.0 | 0.0 | 0.0 | 0.0 | 514.0 | 0.0 | 0.0 | 314.9 | 0.0 | 6.7 |
| 1H 1RON ORE | 0.0 | B. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 OfHEA MInEHALS | 77.5 | 1109 | 0.18 | 0.0 | 0.0 | 478 | 0.0 | 190.d | 0.0 | 134.4 |
| 20 MISC. Feod froducts | 173.1 | 1107.9 | 2.0 | 0.5 | 0.0 | 477.2 | 0.0 | 159.4 | 0.0 | 134.6 |
| 21 sugar | 27.0 | 001.9 | 0.0 | 0.0 | 0.0 | 197.0 | 0.4 | 0.0 | 0.0 | 0.0 |
|  | 33.6 | 644.9 | 0.0 | 0.0 | 0.0 | 2.1 | 4.2 | 0.0 | 0.0 | 0.0 |
| 23 hyumogenated oil vanaspa | 0.0. | 3179.7 | 1982.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | a 0 |
| 24 EUTALEOIL EXCL.VANASPATI | 1.3 | 25.2 | 1043.1 | 27.4 | 0.0 | 0.1 | 0.0 | 0.0 | 0.8 | 0.0 |
| 25 TEA ANC COFFEE | 0.0 | 34.3 | 0.0 | 0.0 | 1484.7 | 0.1 | 0.0 | 0.0 | 4.6 | 30 |
| 26 OTHEA GEVERAGEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 1.2 | 0.0 | 0.1 | 0.0 | 0.0 |
| 27 Todacco mandFacture | 0.0 | A.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1204.3 | 0.0 | 0.6 | 0 |
|  | 0.0 | 0.0 | 144.? | 53.0 | 0.10 | 0.0 | 0.0 | 4974.4 |  | 8.1 |
| 29 COT. PEXT-H.LEOM S KHADI | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1470.7 | 0.0 |
| 30 NOCLLEN INH SILK FABRICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | E.0 | 46.7 972.0 | 71.1 | 1484.3 |
| 32 Jute textiles | 700.8 | 17.9 | 29.9 | 11.3 | 1.7 | 0.0 | 12.8 | 204.6 | 13.4 | 17.6 |
| 3 GEADYMADE GAMMEATS, TEXT. | 0.0 | 0.0 | 0.8 | 0.9 | 0.0 | 0.0 | 6.0 | 6.3 | 0.7 | s. |
| 30 MISC. TEXT. PROOUCTS | 9.1 | 0.1 | 0.7 | 1.7 | 0.5 | 0.0 | 5.6 | 102, | 2380.8 | 9. |
| 35 CAAPET 7 FAving | 0.10 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 |
| 36 Hato Prandis | 1.0 | 2.7 | 16.2 | 5.9 | 24.3 | 3.9 | 21.6 | 66.7 | 0.1 | 11.80 |
| 37 Paper, PAPERPM OD. NEWSPRIN | 54.8 | 1.6 | 0.4 | 0.1 | 0.5 | 6.1 | 314.2 | 126.1 | 6.1 | 18.4 |
| SH PRINTING AND PUALISHING | 13.3 | 0.1 | 0.7 | 0.2 | $0 \cdot 0$ | 0.1 | 6.0 | 11.4 | 0.0 | 2.2 |
| 39 LEATHEA AND LEATHER PROD GO LEATHER EOOTHEAA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 11.4 0 | 5.6 | 0.1 |
| 41 muderen pfooucis | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 |
| 42 PLISTICS ANG SYNTH. ALHE | 0.0 | 0.0 | 2.7 9 | 0.0 | 0.0 | 4.3 | 4.15 | 146.4 | 0.9 | 20] |

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INTERMEDIATE USE AND FINAL OEMANDS FOR THE IHOIAN ECOHOHY 1984-oS RHEDIATE USE AND FINAL OEMANPS FOR THE IHOIGN ECOFFOHY 19
(RS. HILLION OF OUTPUT AT FACTOR COST AT I9T9-60 PRICES)


|  | M.COAL , PEYROL , PRODUCTS | 210.0 | 43.7 | 0.3 | 8 cos | 281.1 | 24.4 | 712.0 | 21.4 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | INORGANIC MEAVT CHEMICAL | 218.8 | 376.2 1697 | 0.0 | 64.1 | 328.5 | 26.9 | 2301.9 | 205.4 |  |  |
|  | ORGANIC HEAVY CHENICALS | 67.5 | 169.7 | 0.0 | 6.9 | 28.8 | :41.8 | 127.1 | 110.9 |  | 8 |
| 47 | CHEMICAL FERTILISERS | 0.0 | 63.2 | 0.0 | 0.0 | 0.0 | 0.0 | 6603.3 | 3.4 | ${ }^{3}$ | $4{ }^{4}$ |
| ${ }^{48}$ | INSECTIC10E, FUNGICIDE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 15.5 | 551.3 |  | 19, |
| 49 | druss amd pmarmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |  |  |
| 50 | 30APS AnP 6LYCERINE | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 2.9 | ${ }^{69} 81$ | 0 |
| 41 | cosmetics | 0.0 | 1.8 | 0.1 | 0.1 | 0.0 | 0.0 | 51.1 | 0.0 | ${ }^{4}$ | 0.1 |
| 52 | Man made fieres | 0.8 | 716.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ${ }^{1}$ | 0 |
| 55 | OTHER CHERICALS | 2007.7 | 312.3 | 0.5 | 198.7 | 73.1 | 14.1 | 302.4 | 480.0 |  |  |
| 54 | REFRACTORIES | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | ${ }^{3} 4$ | 23.0 |
| 55 | CEMENT | 0.0 | 0.0 | 0.0 | 0.4 | 14.6 | 0.0 | 2.4 | 0.0 |  | 20.0 |
| 56 | OTHR NONMETLC. PRODUCTS | 0.0 | 7.0 | 0.0 | 4.2 | 0.2 | 0.0 | 0.2 | 0.0 |  |  |
| 57 | IRON AND STEEL, FERROALLO | 67.8 | 2.0 | 0.0 | 0.0 | 26.6 | 0.0 | 0.8 | 56.5 | 55. | 0.0 |
| 58 | I S CASTINGS AND FORGING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | - 0 | 0.7 |
| 39 | IRON AND STEEL STRUCTURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | - 0.0 | 0.0 | 0.0 |  | 0.7 |
| 50 | NONFEROUS MEIAL INCLALLO | 1.3 | 5.8 | 0.0 | 1.0 | 10.9 | 0.0 | 1.8 | 2.5 |  | 0.0 |
| 61 | METAL PRDDUCTS | \$96.0 | 244.3 | 12.6 | 112.3 | 216.4 | 34.5 | 506.4 | 256.1 |  | 0.8 |
| 62 | TRACTORS AND OTH.AGRI IM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 9 | 16.5 |
| 63 | MACAINE TOOLS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 |  | 279.2 |
| 64 | OFF.DOM.ANO COMM.EOUIPRN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |  | ${ }^{-} \cdot 0$ | 0.8 |
| 65 | OTMR NONELECT. MACHINERY | 0.0 | 0.4 | 0.1 | 0.0 | 4.6 | 0.2 | 238.0 | 0.0 |  | 0.0 |
| 66 | Eltctaical motors | 0.0 | e. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 238.3 | 1.5 | 0 | 0.0 |
| 67 | ELECTAICAL CABLES, UIRES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | 2.1 |
| 60 | batteaies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $n \cdot 0$ | 0.0 |
| 69 | ELECTRICAL Hehoto goods | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | 0.0 |
| 70 | COMHUNIC. TLLECTRONIC EQU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9:0 | 0.0 |
| 71 | OTHA ELECTRICAL MACMINER | 0.0 | 18. 7 | 0.0 | 0.0 | 73.6 | 15.1 | 16.1 .4 | O. 3 | $0 \cdot 0$ | 0.0 |
| 72 | ShIPS AND BDATS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | B. ${ }^{\text {c }}$ | 16.0 | 54.3 | $2 \cdot 0$ | 0.0 |
| 73 | rail cquiphents * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.8 | 0 - | 0.1 |
| 74 | MOTOR VEHICLES | 16.2 | 5.6 | 1.1 | 12.5 | 10.9 | 2.4 | 76.4 | 5.0 | $0 \cdot 0$ | 0.0 |
| 75 | MOTOR CYCLES ANO BIEYE.LE | 0.0 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 | 76.4 | 3.2 | 1):0 | 0.0 |
| 76 | OTMA YRANSPORT EQUIPMENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.18 | $0 \cdot 2$ | 1.9 |
| 77 | WATCHES AND CLOCKS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | $0 \cdot 0$ | 0.0 |
| 78 | MISC, MFG INOUSTRIES | 0.9 | 11.3 | 0.0 | 1.1 | 6.3 | 4.1 | 141.4 | 0.0 |  | 0.0 |
| 79 | CONSTRuction | 875.0 | 288.: | 4.3 | 199.5 | 402.4 | 145.8 | 1382.4 | 89.9 | $610 \% 0$ | 0.0 |
| 80 | Gas, ELECTR.WATER SUPFLy | 251.0 | 178.2 | 190.9 | 144.4 | 515.4 | 14.8 | 13688.0 | 59.3 | 67 A. ${ }^{\text {a }}$ | 1,0 |
|  | RAILWAYS | 59.6 | 12.8 | 1.3 | 795.2 | 83.0 | 3.2 | 3686.0 320.3 | 56.3 | 4.39 .9 | 59.7 |
| ${ }^{4} 2$ | OTMER TRANSPORT | 370.0 | 137.8 | 5.9 | 102.6 | 200.0 | 21.4 | 1228.7 | 280.6 |  | 57.4 |
| 83 | COMMUNICATION | 3.3 | 2.3 | 0.0 | 4.1 | 1.1 | 0.2 | 3.7 | 2.0 | A 5 | 29.3 |
| 84 | TRADE, STORAGE AND w.hous | 2177.9 | 315.5 | 1290.1 | 395.7 | 867.7 |  | 5035.5 |  |  | 1.7 |
| 45 | EANKING ANO INSURANCS | 437.5 | 33\%.9 | 9.8 | 106.3 | 143.9 | 75.4 | 774.0 |  | 2610.4 |  |
|  | REAL ESTATE AND OWN. OUE. | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | $\bigcirc$ | 152.4 0.0 |  | 1347.9 |
|  | EDUCATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | $0_{0} \cdot 0$ | "1.3 |
|  | MEDICAL HEALTH | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0_{0}=0$ | 0,0 |
| ${ }^{\text {as }}$ | other services | 661.5 | 409.5 | 79.4 | 677.0 | 53.7 | 21.2 | 258.7 | 84.7 | ${ }^{7}+0$ | 0.0 |
|  | total | 13996.4 | 6617.4 | 32339.6 | 6490.3 | 4074.1 | 799.6 | 28831.6 | 2916.1 | 2020 | 2a.? |
| 91 | Intimect Tax | 1719.1 | 192.0 | 978.1 | 620.2 | 576.9 | 242.4 | 3621 |  |  | 6314.4 |
|  | gross value modeo | 3542.0 | 2260.0 | 4989.0 | 1192.0 | 4324.0 | 857.0 | 14042.0 |  |  |  |
|  | EROSS OUTPUT | 19248.0 | 10800.0 | 38307.0 | 8307.0 | 8975.0 | 1899.0 | 46495.0 | 4330.0 | 6300 29009 | 5A7.9 |
|  |  |  |  |  |  |  |  |  |  | - 1 | 8057.0 |

INTERMEDIATE USE AND FINAL DEMANDS FOR TIAE INOIAN ECONDMY 1984-85 * (RS. MILIION OF OUTPUT AT FACTOR COSTAT 1979-80 PRICES).



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comionsty at I wouspat Tatuc


| $\begin{aligned} & 44 \\ & 45 \end{aligned}$ | M. COAL, PETROL, PROOUCTS | 104.4 | 9.0 | 15.6 | 3.5 | 97.2 | 6.6 | 14.0 | 5.3 | 11.3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 | INORGANIC HEAVY CHEMICAL | 300.9 | 1.1 | 11.8 | 13.0 | 38.8 | 5.2 | 18.1 | 3n.2 | 23.1 | 12.7 |
| 46 | ORGANIC HEAVY CHEHICALS | 17.1 | 0.2 | 1.6 | 2.4 | 7.6 | 1.1 | 9.3 | 18.5 | 1.2 | 2.6 |
| 47 | CHEMICAL FERTILISERS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 0.0 |
| 48 | INSECYICIDE,FUNGICIDE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 49 | DRUGS AND PHARMACEUTICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | SOAPS AND GLYCERINE COSMETICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 52 | man made fibres | 5.1 -0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 1.6 | 0.5 | 0.0 | 0.0 | 0.0 |
| 53 | OTHER CHEMICALS | 298.4 | 9.9 | 21.6 | 59.8 | 174.9 | 39.0 | 0.0 | 0.10 | 0.0 | 0.5 |
| 54 | REFRAGTORIES | 0.0 | 0.2 | 3.6 | 0.0 | 5.3 | 9.4 | 04.0 | 2.0 | 29.5 | 28.8 |
| 55 | CEMENT | 0.0 | 0.0 | 0:0 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 9.1 | 0.6 |
| 56 | OTYR.NONMETLC. PRODUETS* | 13,1 | 0.0 | 2.3 | 1.4 | 5.1 | 16.6 | 0.0 | 0.0 | 0.6 | 0.0 |
| 57 | IROA AND STEEL,FERROALLO | 5497.4 | 326.2 | 198.8 | 31.2 | 216.8 | 412.6 | 4.2 | 7.7 | 43.8 | 111.5 |
| 53 | I S CASTINGS and forging | 252.8 | 107.3 | 150.7 | 13.5 | 715.2 | $4{ }^{35}$ | 34.2 | 16.2 | 5.0 | 73, 2 |
| 59 | Iron and syekl structure | 62.7 | 39.6 | 100.3 | 1.5 | 2069.0 | 5.9 | 0.2 | 0.0 | 15.0 | 0.1 |
| 60 | nonferous metal inclallo | 3722.0 | 24.7 | 103.2 | 39.8 | 9850.2 | $4{ }^{3} 20$ | 0.0 | 0.0 | 0 | 0.0 |
| 61 | METAL PRGDUCIS | 1063.7 | 94.8 | 190.3 | 25.9 | 1067.3 | 266.2 | 2092.09 | 160.9 | 179.6 | 219.3 |
| 62 | TRACTORS AND OTH.AGRI IM | 0.0 | 1090.7 | 0.0 | 0.0 | 0.0 | 0.0 | 21.9 | 26.0 | 25.0 | 128.3 |
| 63 | machine tools | 7.6 | 0.0 | 514.3 | 10.8 | 143.6 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0 |
| 64 | OFF. OOM. AND COMM.EQUIPAN | 0.0 | 0.0 | 0.0 | 50.2 | 0.3 | 0.0 | 0.0 | 0.0 |  |  |
| 65 | Othr nonelect. machinery | 15.5 | 186.0 | 182.3 | 94.3 | 3909.3 | 1022.4 | 2.4 | 0.0 | 51.9 | 114.0 |
| 66 | ELECTAICAL MOTORS | 0.2 | 0.6 | 137.9 | 0.0 | 328.3 | 67.1 | 0.0 | 0.0 | 0.5 | 114.3 |
| 67 | electaical cables,wires | 0.0 | 1.9 | 16.3 | 0.0 | 53.4 | 318.9 | 11.6 | 0.0 | 42.4 | 48.0 |
| 68 | BATtERIES | 0.8 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 8.6 |
| 69 | ELECTRICAL H.hold gooos | 1.5 | 0.0 | 0.8 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 90.6 | 19.7 |
| 70 | COMMUNIC., ELECTRONIC EOU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 364.4 | 0.0 | 0.0 | 9.3 | 718.8 |
| 71 | dTHA ELECTRICAL MACHINER | 3.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.0 | 0.0 | 6.3 | 3.9 | 42.5 |
| 72 | SHIPS ANS BCATS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73 | RA:L EGUSPMENTS | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | Motof vehicles | 38.5 | 88.5 | 5.9 | 0.3 | 44,3 | 1.6 | 5.2 | 2.4 | 2.0 | 19.0 |
| 75 | Mator crcles and bicycle | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 76 | OTHR TRANSPORT EQUIPAENT | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77 | WATCHES AND ClOCKS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 78 | MISC.mFG. INDUSTRIES | 10.4 | 0.1 | 0.6 | 0.1 | 6.6 | 5.9 | 14.2 | 1.7 | 4.6 | 0.3 |
| 89 | CONSTRUCTION | 331:0 | 43.0 | 113.0 | 11.7 | 753.4 | 84.2 | 56.4 | 10.6 | 29.8 | 108.5 |
| 80 | GaS,ELECTR.WATER SUPPLY | 401.3 | 20.8 | 109.0 | 29.4 | 375.3 | 40.9 | 65.3 | 10.2 | 17.3 | 42.8 |
| 81 | HAILWAYS | 103.1 | 7.1 | 11.9 | 3.2 | 59.3 | 8.0 | 12.9 | 2.0 | 4.4 | 12.5 |
| 62 | OTHEA TRANSPORT | 1664.0 | 130,6 | 120.7 | 47.7 | 674.0 | 143.0 | 201.3 | 83.2 | 30.4 | 110.5 |
| 83 | communication | 7.0 | 0.3 | 2.1 | 0.1 | 6.6 | 0.5 | 1.0 | 0.2 | 0.6 | 1.8 |
| 84 | TRADE,STORAGE AND W.HOUS | 3717.1 | 385.6 | 393.1 | 179.3 | 5383.5 | 311.0 | 876.0 | 97. 3 | 188.5 | 46.2 |
| 85 | BANKING AND INSURANCE | 625.6 | 75.9 | 221.5 | 13.8 | 987.1 | 104.4 | 167.8 | 27.3 | 17.1 | 166.9 |
| 86 | AEAL ESTATE AND OHN. ${ }^{\text {awel }}$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87 | coucation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88 | medical health | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 89 | OTHER SERVICES | 40.7 | 19.3 | 87.7 | 3.6 | 126.2 | 40.3 | 63.5 | 10.6 | 18.8 | 72.7 |
| 90 | TOTAL | 19724.0 | 2798.7 | 2827.8 | 131.1 | 27239.0 | 4216.1 | 4702.4 | 388. 6 | 1015.6 | 2897. 3 |
| 91 | indirect tax | 3579.3 | 331.7 | 375.8 | 91.2 | 6031.9 | 579.4 | 724.7 |  |  |  |
| 92 | Gross value adoted | 23761.0 | 4063.0 | 2115.0 | 1054.0 | 14473.0 | 1328.0 | 100\%.0 | 590.0 | 691.0 | 2095.0 |
| 93 | gross ourput | 37064.0 | 7193.0 | 4319.0 | 1076.0 | 47744.0 | 5924.0 | 6514.0 | 1285.0 | 1868.0 | 49A\%.0 |

INTEAMEDIATE USE AND FINAL DEMANOS FOR THE INDIAN ECONOMY 1984-85 IRS. MILLIDN OF OUTPUT AT FACTOR COST AT 1979-80 PRICES


|  | H. COAL, PETROL.PRODUCTS | 21.5 | 6.0 | 78.9 | 56.7 | 24.1 | 0.9 | 0.0 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 | INOREANIC HEAVY CHERICAL | 31.9 | 0.6 | 13.3 | 509.8 | 22,0 | 2.5 | 1.3 | 316.2 | 1336,2 |  |
| 46 | OREANIC HEAVY CHEMICALS | 61.0 | 4.8 | 6.7 | 53.5 | 2.1 | 0.3 | 0.2 | 316.5 | 0.0 | 20,y |
| 41 | CHEMICAL FERTILIBERS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 49.5 | 0.0 |  |
| 48 | INSECTICIOE FUNGICIDE ET | 0.0 | 0.0 | C. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 0.0 | 0.0 |  |
| 49 | ORUES ANO PHARHACEUTICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |  |
| 30 | SOAPS AND OLYCERINE. | 0.0 | 0.0 | 0.0 | 345.7 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 |  |
| 51 | Cosmetics | 3.5 | 0.0 | 0.0 | 0.1 | 12.1 | 0.0 | 1.2 | 16.0 | 0.0 |  |
| 52 | Man made fibres | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3411.7 | 0.0 | 17 |
| 53 | OTHER CHEMICALS | 61.8 | 4.5 | 71.3 | 397.6 | 55.1 | 5.4 | 4.0 | 457.7 | 41397 |  |
| 54 | REFRACTORIES | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10005.9 | 4. |
| 55 | CEMENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 10005.9 9054 | 4. |
| 56 | DTHR, NONRE TLC.PRODUCTS | 119.3 | 0.1 | 0.2 | 8.2 | 0.3 | 0.0 | 1.0 | 130.0 | 24065.5 | 0.1 |
| 57 | IRON ANO STEEL, FERROALLO | 432.2 | 111.8 | 1037.8 | 999.5 | 227.9 | 74.4 | 5.5 | 147.4 | 24065.0 | 4 |
| 38 | 1 S CASTINGS ANO FORGING | 592.2 | 2.5 | 6,5 | 2535.3 | 0.2 | 2.4 | 0.0 | 12.3 | 19305.9 0.0 | 4.5 |
| 59 | IRON ANO STEEL STRUCTURE | 1.4 | 0.2 | 19.3 | 504.2 | 171.8 | 0.3 | 0.0 | 13.9 | 0.0 | 0 |
| 60 | nonferous metal inclallo | 953.3 | 24.1 | 598.9 | 758.4 | 82.5 | 73.9 | 4.3 | 996.3 | 0.0 75.8 | 4 |
| 51 | metal prooucts | 101.6 | 112.0 | 1436.0 | 938.4 | 537.1 | 75.5 | 2.2 | 414.4 | 75.8 431.6 | 1.1 |
| 62 | TRACTORS AND OTH.AGRI IM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 0.0 | 0.0 |
| 63 | machine tools | 12.2 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.1 |
| 64 | OFF. DOM.AND COMR.EQUIPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 65 | OTHR NONELECT. Machinery | 2.9 | 93.0 | 78.5 | 1286.7 | 838.2 | 52.1 | 0.0 | 105.8 | 0.0 | 1.1 |
| 66 | ELECTRICAL MOTORS | 20.8 | 0.0 | 115.7 | 52.1 | 0.0 | 0.0 | 0.0 | 5.9 | 0.0 | 3 mb . 5 |
| 67 | ELECTRICAL CAELES, WIRES | 536.9 | 6.4 | 15.2 | 0.0 | 0.0 | 4.4 | 0.0 | 29.8 | 168.2 | 1,0 |
| 68 | BATTERIES | 0.5 | 0.0 | 0.0 | 25.6 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1s. 5 |
| 69 | ELECTRICAL H. HOLD GOODS | 121.8 | 22.6 | 35.6 | 67.2 | 0.0 | 0.0 | 0.0 | 7.0 | 0.0 | 1.1. |
| 70 | COMALIIIC., ELECTRONIC EQU | 562.2 | 0.0 | 0.0 | 211.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1) |
| 71 | OTHR ELECTAICAL MACHINEA | 179,3 | 10.6 | 0.0 | 60.8 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 |  |
| 72 | SHIPS AND BOATS | 0.0 | 49.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |
| 73 | RAIL EQUIPMENTS | 0.0 | 0.0 | 1663.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |
| 74 | MOTOR VEHICLES | 9.4 | 1.5 | 23.4 | 851.2 | 7.3 | 3.2 | 0.1 | 37.3 | 0.0 |  |
| 75 | MGYOR CYCLES AND BICYCLE | 0.0 | 0.0 | 0.0 | 0.0 | 1039.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |
| 76 | OTHR TRANSPORT EQUIPHENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 266.5 | 0.0 | 0.0 | 0.0 | 0.1.18 |
| 77 | WATCHES AND CLOCKS | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 493.6 | 98.6 | 0.0 |  |
| 78 | MISC.MFG. INDUSTRIES | 42.3 | 10.9 | 23.2 | 124.0 | 0.2 | 4.4 | 4.5 | A68.1 | 19.9 |  |
| 79 | CONS YRUCTION | 142.0 | 172.7 | 242.6 | 749.8 | 75.4 | 7.9 | 2.1 | 417.3 | 0.0 | 41.14 |
| - 0 | GAS.ELECTR.WATER SUPPLY | 112.9 | 14.2 | 233.5 | 395.3 | 75.7 | 22.7 | 4.5 | 310.4 | 16.05 .7 | 14993.3 |
| 81 | RAILWAYS | 21.1 | 3.2 | 34.0 | 67.1 | 12.0 | 2.7 | 0.8 | 405.5 | 1442.4 | 1304.6 |
| 82 | OTHER TRANSPORT | 263.4 | 52.6 | 489.6 | 730.5 | 153.2 | 49.5 | 4.9 | 1013.5 | 7795.3 | 1561, |
| $\mathrm{B}_{3}$ | COMMUNICATION | 1.9 | 0.3 | 3.2 | 10.2 | 0.4 | 0.5 | 0.1 | 2.7 | 0.0 | \%.1 |
| 84 | TRADE, STORAGE AND W. Hous | 907.3 | 155.6 | 1327.5 | 1396.1 | $58_{1.2} 2$ | 126.6 | 14.8 | 3873.5 | 55502.2 | 2501, ${ }^{\text {\% }}$ |
| 85 | BARIKING ANO INSUR ANCE | 342.7 | 51.4 | 152:0 | 948.8 | 141.2 | 25.1 | 4.4 | 647.0 | 1777.2 | 1290.* |
| 65 | REAL ESTATE ANO OUN.OWEL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87 | egucarion | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88 | REDICAL HEALTH | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.20 |
| 89 | OThER SERVICES | 125.3 | 16.3 | 77.4 | 1970.5 | 50.7 | 10.0 | 2.0 | 128.7 | 0.0 | 2602.5 |
| 90 | TOTAL | 6104.1 | 987.3 | 8033.1 | 18862.0 | 4787.1 | 848.5 | 566.8 | 16842.9 | 147901.4 | 36272,2 |
| 91 | INDIRECT TAX | 1013.0 | 83.9 | 442.9 | 2241.8 | 749.1 | 54.6 | 120.3 | 1729.7 | 6675.3 | 5503.4 |
| 92 | Gross value adoed | 3079.0 | 1017.0 | 1887.0 | 8611.0 | 3433.0 | 369.0 | B16.0 | 23697.0 | 63080.0 | 23513.0 |
| 93 | GROSS OUTPUT | 10196.0 | 2088.0 | 10363.0 | 29715.0 | 8969.0 | 1272.0 | 1503.0 | 42270.0 | 217657.0 | 65279\% |

INTERMEDIAFE USE AND FIMAL DERANDS FOR THE INDIAN ECONONY 1984-BS
CRS. WILLIDN OF OUTPVIV. AT. FACTOR COST AT 1979-80 PRICESI


|  | M, COAL, PEYROL PGODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | INORGANIC HEAVY CHEMICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 408.3 |  |
|  | CHEAICAL FERTIUSSERS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 161.0 | 12 |
| 48 | IMSECYICIOE, FUNGICIOE ET | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 |  |
| 49 | drugs and pharmaceutical | 0.0 | 0.9 | 4.1 | 26.2 0.0 | 0.0 | 0.0 | 0.0 | 20.6 | 0.0 | $49+72$ |
| 50 | SOAPS AND GLrcealat | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16321.0 | 0.0 |  |
| 51 | cosnetics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 |  |
| 52 | man made fighes | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |
| 53 | OfHER CHEMICALS | 0.0 | 0.0 | 0.0 | 21.4 | 0.0 | 0.0 | 0.0 | 8.0 | 0.0 | 130 |
| 54 | REFRACTORIES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.1 0.0 | 6.5 |  |
| 35 | CEMENT | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2091 |
| 56 | OTMR. NONMETLC PROEUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 201 |
| 57 | IRON AND STEEL, FERROMLLO | 13.1 | 320.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.0 | 1 ct |
| 58 | i S CASTINGS and forging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.6 | 1420.0 | 8\% |
| 59 | IRON ANO STEEL. STRUCTURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| 60 | NONFEROUS AETAL INCLALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | 43 |
| 61 | METAL PRODUETS | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 39.8 | 29484 |
| 62 | TRACTORS ANO OTH.AGRI It | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 3190.9 | 12192, |
| 63 | machine rools | 0.0 | 0.0 | C. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1438. |
| 54 | OFF DOH.ANO COMN. EOUIPMAN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 426.3 |  |  | , ${ }^{\text {d }}$ |
| 65 | Othr nonelect. machinery | 0.0 | 835.1 | 0.0 | 40.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 476. |
| 66 | Electrical morors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 496.9 | 14 gen. ${ }^{\text {a }}$ |
| 67 | ELECTAICAL CAELES, wires | 121.0 | 0.0 | 232.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 74.a |
| 68 | EATTERIES | 0.0 | 60.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.5 | lase. |
| 69 | ElECTRICAL H.holo goocs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 160.1 |
| 70 | COMAUNIC.. ELECTRONIC EOU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | c. | 0.0 | 0.0 |  |
| 12 | OHHR ELECTRICAL MACHINER | 496.1 | 0.0 | 0.0 | 0.0 | 9.0 | 1.2 | 0.0 | 0.0 | E. 0 | 1899. |
| 72 | SHIPS ANO SCATS | T. 5 | 79fi.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | i12.6 | 2551.3 |
| 73 | rail eoutpments | 8030.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1207.14 |
| 74 | MOTOR VEMICLES | 0.0 | 3490.0 | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 3698.1 |
| 73 | motor cteless ano bicycle | 0.0 | 2543.3 | 0.0 | 0.5 | 0.0 | 1.3 | 279.5 0.0 | 10.8 | 345.2 | 6i ${ }^{\text {a }}$ 。 |
| 76 | OTHR TRANSPORT EQUIPAENT | 0.0 | 041.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2515.0 |
| 77 | Watches and clocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 |  |
| 76 |  | 3.2 | 39.3 | 7.3 | 414.1 | 46.0 |  | 470.0 | 0.0 | 0.0 | 59n, ${ }^{\text {and }}$ |
| 79 | CONSTRUCTION | $2^{36} 3_{1}$, ${ }^{\text {a }}$ | 204.3 | 43.9 | 22.5 | 268.8 | 5693.3 | 6780.9 | 10.0 | 8398.0 | 1722: ${ }^{\text {a }}$ |
| 80 | Gas.filettr.water supply | 507. 8 | 579,0 | 84.5 | 4908.2 |  | 5690.3 | 1873.7 $12: 0.3$ | 8,5 | 6939.6 | 46487.1 |
| 31 |  | 379.8 | 270.8 | 94. 9 | 2675.1 | 134.9 |  |  | 45.6 | 6322.7 | 4487, |
| 82 | OTHEP TRANSPORT | 290.9 | 1503.8 | 25A. 2 | 18065.6 | 435.9 | 1.9 | 741.2 4595.3 | $4{ }^{16.8}$ | 117.3 | 13824. ${ }^{10}$ |
| 03 | COMmunication | 7.6 | 326.2 | 0.0 | 5621.1 | 599.0 | 1.8 0.8 | 4595.3 | 4051.8 | 3491.2 | 65795.5 |
| 64 | TRAOC , \#TSRAGE AHO W.HOUS | 509.g | 8154.7 | 116.6 | 6211.1 | 227.8 |  |  |  |  |  |
| 85 | BANKIWg ano Idssurance | 56.9 | 1326.9 | 12.6 | 8381.9 | 3516.8 | 35.6 | 2006.3 |  | 4651.1 | 190635.11 |
| 86 | REA ESTATE ANO OWN.DWE: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.80 | 0.0 | 2731.8 | 38634, ${ }^{\text {a }}$ |
| 4 | CDUCATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 0.0 | 0.8 |
| 88 | hedical health | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.11 |
| 89 | ather Services | 81.5 | 6831:9 | 20.3 | 22832.5 | 769.8 | 145.3 | 2361.1 | 637.0 | 10792.1 | 64630.1 |
| 90 | fotal | 10907.2 | 5221a, 7 | Ba7. 6 | 55077.3 | 6594. 3 | 5955.3 | 5643B. 5 | 26533.3 | \$1025. 2 | 1232036,0 |
| 41 | Indigect tax | 1275.8 | 11386.0 | 103.6 | 3\% 50.8 |  |  |  |  |  |  |
| 92 | sross yalue adoneo | 16824.0 | 4 F 159.0 | 10740, 6 | 206007.0 | 38487.0 | 42162.0 |  | 4884.0 | 106681.0 | 121676.2 |
| 93 | crosg oupput | 26697.0 | 168724.0 | 11739.6 | 27E835.0 | +3248.0 | 48133.0 | 54056.0 | 33041.0 | 106581.0 | 1230380. |

 ins. million at facton cosi at ratioac-prices


| 45 | M. COAL. PETROL.PRODUCTS | 45.3 | 22.0 | 0.0 | 651.0 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 | INORGANIC HEAVY CHEMICAL ORGANIC HEAYY CHEMICALS | 0.0 | 0.0 | 0.0 | 297.0 | 247.5 | 2500.0 | 805.3 -1960.5 | 11472.2 |
| 46 | ORGANIC HEAVY CHEMICALS | 0.0 | 0.0 | 0.0 | 449.0 | 221.0 | 2429.0 | -1960.5 -1759.0 | 11029.7 |
| 47 | CHEMICAL FERTILISERS | 0.0 | 101.3 | 0.0 | 5355.0 | 0.0 | 10697.0 | -5240.7 | $2827.3$ |
| 48 | INSECTICIOE, FUNGICIOE ET | 901.0 | 0.0 | 0.0 | 204.0 | 14.0 | 300.0 | S19.7 | 44231.3 |
| 49 | drugs and pharmaceutical Soaps and giycerine | 760.0 | 0.0 | 0.0 | 3608.0 | 961.0 | 1015.0 | 3554.0 | 4283.0 |
| 50 | SOAPS ANO GLYCERINE COSMETICS | 7605.9 | 26.1 | 0.0 | 22.0 | 88.0 | 13.0 | 7717.0 | 28685,9 |
| 52 | man haoe fighes | 3681.0 0.0 | 15.3 | 0.0 | 12.0 | 281.0 | 243.0 | 3746.3 | 6412.2 |
| 35 | OTher chemicals | 388.1 | 1255.6 | 0.0 | 196.0 | 9.0 | 910.0 | $-705.0$ | 12580.9 |
| 54 | REFRACIORIES | 0.0 | 0,0 | 0.0 | 229.6 | 363.6 42.0 | 858.0 128.0 | 2770.4 | 17726. |
| 55 | CEMENT | 0.0 | 0.0 | 0.0 | 374.0 | 25.0 | 1620.0 | 143.0 -1225.0 | 1035s. |
| 56 | OTHR, NONAETLC. PROOUCTS | 5574.4 | 71.6 | 1021.0 | 594.0 | $76 \% .0$ | 141.0 | -1223.0 7882.1 | 6965 |
| 57 | IRON AND STEEL, FERROALLO | 0.0 | 0.0 | 1476.9 | 1197.0 | 728.0 | 8500.0 | -5108.1 | 24736. |
| 58 | I S CASTINGS ANO FORGING | 0.0 | 0.0 | 95.0 | 93.0 | 492.0 | 144.0 | 536.0 | 54684.5 |
| 59 | IRON AND STEEL STRUCTURE | 0.0 | 0.0 | 6934.0 | 154.0 | 889.0 | 903.0 | 7374.0 | 5311.4 |
| 60 | NONFEROUS METAL INCLALLO | 0.0 | 0.0 | 29.0 | 321.0 | 464.0 | 6070.0 | -5256.0 | 11464.4 |
| 62 | HETAL PRODUCTS | 5945.7 | 1139.4 | 5948.4 | 1366.0 | 2834.0 | 1142.0 | 16091. | 24200.6 |
| 62 | TRACTORS ANU OTH.AGRI IM | 0.0 | 0.0 | 5705.4 | 374.0 | 46.0 | 523.0 | 5602.4 | 38284.6 |
| 63 | machine tools | 0.0 | 0.0 | 4545.1 | 92.0 | 119.0 | 1547.4 | 3249.1 | 7035.4 4088.4 |
| 64 | OFF.DOM. AND COMA, EQUSPMN | 283.3 | 366.7 | 529.0 | 92.0 | 32.0 | 44.0 |  |  |
| 65 | OTHR NONELECT, MACHINERY | 2942.9 | 97.2 | 31297.9 | 4291.0 | 2628.0 | 7970.0 | 33107.0 | 4735.7 , |
| 66 | ELECTRICAL MDTORS | 0.0 | 0.0 | 4.227 .5 | 528.0 | 50.0 | 102.0 | 5023.j | 47489.7 5752. |
| 67. | ELECTAICAL CABLES.WIRES | 624.9 | 414.4 | 1976.5 | 636,0 | 298.0 | 34.0 | 5995.9 |  |
| 68 | gatteries | 628.5 | 292.6 | 86.4 | 20,0 | 165.0 | 24.0 | 1188.3 | 5744.9 1288.7 |
| 69 | ELECTRICAL H.HOLO GOOOS | 690.4 | 12.5 | 487.5 | 41.0 | <37.0 | 22.0 | 1446.5 | 1080.7 |
| 71 | COMMUNIC.*ELECTRONIC EQU | 1430.8 | 0.0 | 2743.2 | e7.0 | 225.0 | 2261.0 | 2225.1 | 4124.8 |
| 72 | OTHR ELECTRICAL MACHINER SHIPS ANO BCATS | 560.6 | 24.7 | 10228.3 | 675.0 | 517.0 | 2759.4 | 9266.5 | 11703.6 |
| 73 | RAIt EQUIPAENTS | 0.0 | 0.0 | 1098.4 | 84.0 | 87.0 | 335.4 | 956.4 | 2083.6 |
| 74 | notor vehicles | 2030.7 | 4816.3 | 8000.5 | 493.0 | 4 E 4.0 | 137.0 | 8328.5 | 12022.3 |
| 75 | motok creles and bicyele | 2311.0 | 532.0 | 2253.0 | 265.0 | 444.0 | 3.0 | 20766.8 | 26924.4 |
| 76 | OTHR TRANSPCRT EQUIPMENT | 0.0 | 311.6 | 2772.5 | 44.0 | 4.0 | S089.0 | S832.0 | 8365 -9 |
| 77 | Watches ano clocks | 885.5 | 60,0 | 2..0 | 34.0 | 14.0 | 148.0 | 409 | 1169.2 |
| 78 | misc, mFg. industries | 10325.9 | 4703.9 | 3312.3 | 951.0 | 8331.7 | 3032.u | 24592.6 | 1461.8 41814.7 |
| 79 | CONS PRUETION | 0.0 | 13222.0 | 156047.0 | 0.0 | 0.4 | 0.0 | 169169.0 | 41814.7 217656.7 |
| 40 | GAS,ELECTM. WATER SUPPLY | 9219.9 | 1631.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10050.9 | 217656.7 65278.7 |
| 81 | railuats | 7948.6 | 3667.5 | 437.9 | 0.0 | 2828.0 | 0.0 | 14781.3 | 20006.6 |
| 02 | OTHER TRANSPORT | 28990.7 | 1549.2 | 3702.0 | 0.0 | 2737.0 | 0.0 | 42978.0 | 108724. |
| 83 | COMMLINICATION | 4577.7 | 1497.3 | 0,0 | 0.0 | 0.0 | 0.0 | 6475.0 | 11739.1 |
| 84 | trade.storage ano hahous | 51815.0 | 1418.0 | 26727.0 | 0.0 | 8232.0 | 0.0 | $8819 \% .3$ |  |
| 85 | BANKING ANO INSURANCE | 5302.0 | 1030.0 | 0.0 | 0.0 | 201.0 | 0.4 | 6613.0 | 45247 |
| 86 | REAL ESTATE ANO OHN. DUEL | 48133.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44133.0 | 48153. |
|  | EOUCATION | 32524.0 | 25582.0 | 0.0 | 0.0 | 0.0 | 0.0 | 34056.0 | 58056.0 |
|  | MEDICAL HEALTH | 20719.0 | 12322.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35041.0 | 33041.0 |
| 89 | Other services | 29547.0 | 64363.0 | 0.0 | 0.0 | 10495.0 | U.U | 1043050 | 173443,5 |
|  | total | 885836.3 | 161060.0 | 298469.5 | 44835.0 | 110470.3 | 128500. | 1572177.0 | 2604<35, |
| 91 | Indirect tax | 58023.6 | 7729.8 | 24665.4 | 0.0 | 2803.7 | 0.0 | 93222.5 |  |
| 92 | GROSS Value adoto | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0.0 | 1250500.0 |
|  | GROSS OUTPUT | 943850.0 | 160790.0 | 325135.0 | 44835.0 | $113<80.0$ | 128500.0 | 1465400.4 | 1250500. |

OUTPUT COEFFICIENTS FOR INOIAN ECONOAY FOR YEAR 1979-d.
IPER RUPEE OF OUTPUT AT FACTOR COST AT 19才9-80 PRICES)

| cmmodity Tablein | E matmix |  |  |  |  |  |  |  | PART 1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | OMm00IT |  |  |  |  |  |  |
| V17 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|  | 0.999877 | 0.000000 | 0.000000 | 0.000000 | 0.000972 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| IV AND LODGING. | 0.000000 | 1.000000 | C.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
|  | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Wha queraying. | 0.000000 | 0.000000 | 0.000000 | 1,000000 | 0.000000 | 0.000000 | 0.000000 | 0.000008 | 0.000000 | 0.000000 |
| DuntMc. | 0.000128 | 0.000000 | 0.000000 | 0.009000 | 0.998879 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| dian. | 0.000080 | 0.000000 | 0.000000 | 0.009600 | 0.000000 | 1.006000 | 0,000000 | 0.000000 | 0.000000 | 0.000000 |
| 1. MATER SUPPLY | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 |
|  | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 |
| SHMMAPORT. | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 |
| ESIEOM. | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 |
| TEMAEEAW, HOUSING | 0.000000 | 0.000000 | $0.00 n 000$ | 0,000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.003900 |
| $\because$ alig Imsurance. | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| $I$ AND OUN. DWEL | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| , beF, OTH.SERVICE | 0.000000 | 0,000000 | 0.000000 | 0,000000 | 0.000148 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000800 |
|  | 1.000000 | 1.000000 | 1,000000 | 1.000000 | 0.999999 | 1.000000 | 1.000000 | $1.00000 n$ | 1.000000 | 1.000000 |

OUTPUT COEFFICIENTSFOR INOIAN ECONOMY FGR YEAR/ 2979-00 (PER RUPEE OF OUTPITT AT FACTOR COST AT 19T9-BO PRICES)

|  | COMAnOITY |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| S. Fo O. industry | 11 | 12 | 13 | 14 | total |
| 2 AgRICULTURE. | 3,000000 | 0.000000 | 0.000000 | 0.000000 | 2.006849 |
| 2 Forestar and logeine. | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 |
| 3 FISHING. | 0.000000 | 0.000000 | 3.000000 | ¢.000000 | 1.000000 |
| 4 MINING ANO QUERRYING. | 0.000000 | 0.000000 | 0.080000 | 0.000000 | 1.000000 |
| 5 MANUFACTUAINA. | 0.000000 | 0.008000 | 0.000000 | 0.000000 | 0.999092 |
| 6 CONSTR:JCTYON. | 0.000000 | 0.000000 | 0.000000 | 6.000860 | 1.000900 |
| 7 ELEC.gAS, WATER SUPPLY | 0.000060 | 0.000000 | 0.000000 | 0.000000 | 1.000020 |
| - RAILHAYS | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 |
| 9 Other transport. | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 |
| 10 COMmUnICATICN. | 0.007000 | 0.900000 | 0.000000 | 0.000000 | 1.000000 |
| 1: TRADE STPRAGE+W MOUSING | 1.000000 | 0,00000e | 0.000000 | 0.000000 | 1.000000 |
| 12 GANKINS AND INSURANCE. | 0.000090 | 1.000000 | 0.000000 | 0.000000 | 1.000000 |
| 13 aEML.EST AND OHN, DWEL | 0.000000 | 0,000000 | 1.000000 | 0.000000 | 1.000000 |
| 1* FUG. AOMN. DEF oth, SERVICE | 0.000000 | 0.000000 | 0.030000 | 0.999999 | 1.000148 |
| 15 TOTALS | 1.000000 | 1.000000 | 1.300000 | 0.999997 | 13.999998 |





| 62 | TRACTOMS AND OTH.AGRI In | 0.00 .431 (58) | $0.004912(62)$ | 0.9789661621 | 0.0010171631 | 0.00:320(71) | 0.009447 (76) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 63 | Machine rools | $0.035295(56)$ | $0.975726(63)$ | $0.003001(65)$ |  |  |  |  |
| 64 | OFF.OOR. ANO COMW.EQUIPAN | $0.002116(53)$ | $0.301723(62)$ | $0.997626(64)$ | $0.000116(65)$ | C. $028158(691$ |  |  |
| 65 | OTHR NONELECT. MACHINERY | $0.000683(28)$ <br> $0.000446(63)$ <br> $0.000369(74)$ | $\begin{aligned} & 0.013142(37) \\ & 0.001851(641 \\ & 0.000887(78) \end{aligned}$ | $\begin{aligned} & 0.012492(55) \\ & 0.959918(65) \end{aligned}$ | $\begin{aligned} & 0.036884(50) \\ & 0.012856(66) \end{aligned}$ | $\begin{aligned} & 0.099162(59) \\ & 0.036359(69) \end{aligned}$ | $\begin{aligned} & 0.000754(61) \\ & 0.003513(71) \end{aligned}$ | $\begin{aligned} & 0.017468162) \\ & 0.001068(78) \end{aligned}$ |
| 66 | Electrical motors | $0.000864(58)$ | $0.005887(65)$ | 0.829531(66) | 0,073185(69) | $0.062799171)$ |  |  |
| 67 | Electrical cables.uires | $0.000027(37)$ | $0.000285(60)$ | 0.001151(61) | $0.000124(66)$ | $0.995349(67)$ | $0.063579(71)$ |  |
| 68 | batteries | 0.952481 (68) | 0.000668(71) |  |  |  |  |  |
| 69 | ELECTRICAL H.HOLO GOODS | 0.000481(36) | $0.000085(61)$ | 0.003395(66) | $0.070327(69)$ | 0.0018311701 | 0.0208361711 | $0.000020(78)$ |
| 70 | COMAUNIC., ELECTRONIC EOU | $\begin{aligned} & 0.029623(34) \\ & 0.977907(70) \end{aligned}$ | $\begin{aligned} & 0.030686(36) \\ & 0.001283(71) \end{aligned}$ | $\begin{aligned} & 0.000667(371 \\ & 0.003309178 i \end{aligned}$ | 0.904615(61) | $0.000011(65)$ | 0,000037(66) | $0.000464(67)$ |
| 71 | OTHR ELECTMICAL MACHINER | $\begin{aligned} & 0.000202(56) \\ & 0.047519(68) \end{aligned}$ | $\begin{aligned} & 0.001234(58) \\ & 0.001012(69) \end{aligned}$ | $\begin{aligned} & 0.012632(59) \\ & 0.008046(70) \end{aligned}$ | $\begin{aligned} & 0.000205(60) \\ & 0.744668171) \end{aligned}$ | $\begin{aligned} & 0.000642(61) \\ & 0.002237(78) \end{aligned}$ | 0.004688(65) | 0.153343 (66) |
| 72 | SHIPS ANO BOATS | $0.000019(36)$ | 0.002300(59) | 0.0000004611 | $0.000015(71)$ | 0.989228(72) |  |  |
| 73 | RAIL EOUIPAENTS | 0.0012621651 | 0.857006(73) |  |  |  |  |  |
| 74 | motor vehicles | $\begin{aligned} & 0.002709(41) \\ & 0.025808(65) \end{aligned}$ | $\begin{aligned} & 0.000000(42) \\ & 0.017841(72) \end{aligned}$ | $\begin{aligned} & 0.000000(561 \\ & 0.141926(73) \end{aligned}$ | $\begin{aligned} & 0.000009(58) \\ & 0.998277(74) \end{aligned}$ | $\begin{aligned} & 0.003874(59) \\ & 0.000193(76) \end{aligned}$ | $0.000001(60)$ | 0.0019821611 |
| 75 | MOTOR CYCLES ANO BICYCLE | 0.000108(59) | $0.015462(61)$ | $0.000003(63)$ | 0.0000011741 | $0.998943 ; 75\}$ |  |  |
| 76 | OYMR TRANSPORT EOUIPAENT | $0.001411(36)$ | 0.003565(62) | 0.006016(63) | $0.000050(65)$ | 0.0008481741 | $0.001056(75)$ | $0.990149(76)$ |
| 77 | Watches and clocks | $0.000640(34)$ | 0,000008(56) | $0.000006(61)$ | $0.989586(77)$ | 0.0012331781 |  |  |
| 78 | MISC.mFG. INDUSTAIES | $\begin{aligned} & 0.000049(20) \\ & 0.027479(42) \\ & 0.000611(56) \\ & 0.004052(67) \end{aligned}$ | $\begin{gathered} 0.002808(50) \\ 0.006623(44) \\ 0.000350(58) \\ 0.011642(70) \end{gathered}$ | 0.000203134 <br> $0.000080(471$ <br> $0.003350(50)$ <br> $0.006114(75)$ | $\begin{aligned} & 0.001594(36) \\ & 0.000771(52) \\ & 0.000797(61) \\ & 0.000210(76) \end{aligned}$ | $\begin{aligned} & 0.001313(37) \\ & 0.000008(52) \\ & 0.000010(63) \\ & 0.010413(77) \end{aligned}$ | $\begin{aligned} & 0.000396(39) \\ & 0.025036(53) \\ & 0.000006(64) \\ & 0.983251(78) \end{aligned}$ | $0.000105(41)$ <br> $0.001212(55)$ <br> $0.0001 .09(65)$ |
|  | CONSTRUCTION | 1.000900179) |  |  |  |  |  |  |


A1 marluays 1 aceoceola1
as athen transpont J.ogecoilaz)
03 COMMNEICAIION 1.0000001831
84 THADE, STaRagE ANG H. HoUs $1.000000(841$


41 EDUCATION $1.000000(87)$
as meical mealim 2.0000001081
0.00000413610 .0006713710 .0004119210 .01629810410 .00013216110 .9999991691

FIGUAE IN THE GRACKET FOLLDHING THE VALUE INDICATE ME TOMMODTY SECTOR OF THE


IMPORT TRANSACTIONS AND FIMAL USE FOR THE TEAR 1979-ED (RS. MILLION 1979-80 C.I.F)

| COMAODITY BY INDUSTRY TABLE |  |  |  |  |  |  |  | Part |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INuUSTRIES |  |  |  |  |  |  |  |  |  |
| S.NO. COMMODITY | : | 2 | 3 | 4 | 5 | 6 | 7 | 6 |  |
| 2 AgRICULTURE, | 0.0 | 0.0 | 0.0 |  | 919.2 |  |  |  |  |
| 2 FORESTRY ANO LOGGING. | 0.0 | 0.0 | 0.0 | 0.0 | 919.2 60.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 |
| E ETSHING. | c. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 MINING AND OUERRYING. | 0.0 | 0.0 | 0.0 | 0.0 | 27808.0 | 1862.0 | 0.0 0.0 | 0.0 0.0 | 0.0 |
| 5 COMSSTRUCTION. | 6750.0 | 0.0 | 0.0 | 14.5 | 18467.1 | 794.2 | 68.0 | 459.0 | 4973.5 |
| 7 ELEC.EAS. WATER SUPPLY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - RAILHAYS ** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9 OTMER TRANSPOHT. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 |
| 10 COMMUNICATION. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 12 TRADE, STORAGE+W. HOUSING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.00 | 0.0 0.0 | 0.0 |
| 12 BANKING 13 REAL.EST ANE OUN.OWEL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| 14 PUG, AOMN, DEF, OTH, SERVICE | 0.0 | 0.0 | 0.0 0.0 | 0.6 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 TOTALS |  |  |  |  |  |  | 0.0 | 0.0 | 0.0 |
|  | 6750.0 | 0.0 | 0.0 | 14.5 | 46774.3 | 2656.2 | 68.0 | 459.0 | 4973.5 |

 (fS. MILLIOM 2979-A日 C.I.F)


IMPORT TRANSACTIONS ANO FINAL USE FON THE YEAN 1979-bO
IRS. MILLION 1979-8U C.1.F

FORESTRY ANO LOGgiNg.
3 FISHING
mANUFAC TURING
CONSTRUCTION.
ELEC.GAS. WATER SUPPLY
a RAILWAYS
9 OTHER TRANSPORT.
- COMMUNICATION
1 TRADE, STORAGE+H. HOUSING
2 banking ano insurante
13 REAL.EST ANO OWN.DHEL
4 PUS. ADMN. DEF, OTH. SERVICE
11:10:48 .BG:END OF TAS
2N1/09/81 11:10:48

(AS. MILLION 197g-8C C.I.F)


TABLE 4.8 (CONTD)
IMPORT TRANSACTIONS ANIT FINAL USC FOR THE YEAH 19RG-B.
(RS. MILLION 1979-80 C.I.F)

| COMHODITY GY INOUSTRY TABLE PLikt |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INOUSTAIES |  |  |  |  |  |  |  |
| S.NO. COMmODITY | 11 | 12 | 13 | 14 | $1 . \mathrm{US}$ |  |  |
| 1 AGRICULTUAE. | 0.0 | 0.0 | 0.0 | 90.7 | 1105.9 |  |  |
| 2 FORESTRY ANO LOGGING. | 0.0 | 0.0 | 0.0 | 0.0 | 102.0 |  |  |
| 3 FISHING. | 0.0 | 0.0 | 0.0 | 17.0 | 17.0 |  |  |
| 4 MINING AND OUERRYING. | 0.0 | 0.0 | 0.0 | 0.0 | 35372.0 |  |  |
| 5 mheuf acturing. | 11.7 | 0.0 | 0.0 | 2822.3 | $52 \mathrm{B43.3}$ |  |  |
| 6 CONSTRUCTION. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 7 ELEC.GAS. Hater supply | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| - Railnays | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 9 OTHER TRANSPORT. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 10 COMmunication. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 11 TRADE, STORAEE + W. HOUSING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 12 BANKING AND INSURANCE. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 15 REAL.EST AND OWN. OWEL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 14 PUB.ADAN, DEF , OTH.SERVICE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 15 TOTALS | 11.7 | 0.0 | 0.0 | 2930.2 | 89440.2 |  |  |
| 11:12:12 .BG:END OF TASK O |  |  |  |  |  |  |  |
| FORX:HATYAB2 END OF EXECSTION* N 21/09/81 11:12:1:3 |  |  |  |  |  |  |  |





IMPORT TRANSACTIONS AN GINAL, USC FOH THE WAN $1974-80$
(HSS. MILLION $1979-80$ C.I.F)
COMHDOITY AY INDUSTRY TGBLE

| 1\%UUSTHIES |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S. NO. COMMODITY | 1 | 2 | 3 | 4 | $\checkmark$ | 6 | 7 | $\underline{\square}$ |  |  |
| 1 pager | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  | 14 |
| 2 WHEAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 . |
| 3 jowar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |
| 4 anjua | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - gTher cereals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| \% PULSES | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0 | 0.0 | 0.6 0.0 | 0.0 0.0 | $0 \cdot 0$ |
| 7 sugarcame a Jute | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 |
| 9 9 cotiton | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 9.8 |
| 29 PLANTATION | 0.0 | 0.0 | 0.0 | 0.0 $\therefore .0$ | 0.3 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 0.0 |
| 11 OTHER CROPS | 0.0 | 0.6 | 0.3 | 0.0 | 0.0 | 0.4 |  | 0.0 | 9.0 | 0.0 |
| 12 Yilk and milk prodicts | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 6.0 0.0 | 0.0 |
| 13 OTHER ANIMAL IUSBAJITRY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 |
| 14 FORESTIY RANT LOGGIUF- 15 fiShIng | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| 16 coal agio lignite | 0.0 0.0 | 0.c | 0.0 | 190 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 fetroleum ano nat.gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IB TRON OHE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 OTHER :ANEHALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 . \mathrm{c}$ | 0.0 | 4.0 | 0.0 | 0.0 |
| 20 MISC. FOOO PRODLCTS | 0.0 | 0.0 | 0.0 | c. 0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 0.0 |
| 21 3USAR | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 3.0 |  |  |  |
| 22 GUN AND KHANDSARI | 0.0 | 0.0 | 0,0 | 0.0 | 0.19 | 0.0 | 0.0 | 0.0 | 3.0 | 0.1 |
| 23 HYORROGENATEO OIL VAT, ASPA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 EDIBALEOIL EXCL.VAHASFATI | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 1.0 | 0.8 |
| 25 TEA AND COFFEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 26 3THER SEVERAGES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 |  |
| 27 TOHACCO MANLFACTUAE 28 COTTON TEXTILES (EXCL.H.K | 0.0 | 0.0 0.0 | 0.0 0.0 | 1.0 1.0 | 0.6 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.8 |
| 29 COT. TEXT-H.LOOM + K WAiII | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 1.0 | 3.6 0.0 | 0.0 | 0.1 |
| 30 WOOLLEN: AND SILK FATHICS | 0.0 | 3.0 | 0.0 | 0.10 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 |
| S1 ART SILK FASRICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.8 |
| 32 JUTE TEXTILES | 0.0 | 0.0 | 3.0 | C. 0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.8 |
| 35 heaghmade larments, ikxt. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 +0.0 |
| 34 MISC. TEXT. Products | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 |
| 35 CAHPEY WEAVINS 36 WOOD PKDDUCTS | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.8 |
| 36 YOOD PRODVCTS <br> 37 Paper, PAPERPKOD.NEWSPKIN | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| 37 PaPER, PAPERPhOL. NEWSPKIN 30 PRINTING AND PUBLISHING. | 0.0 | 0.0 | 0.0 | ¢. 0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 33 PRINTING aND PUBLISHING 3. LEATHER ANO LEATHER PFOO | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.8 |
| 39 Leather ano leather phoo 40 Leather foot weah | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| 40 LEATHER FOOTWEAR | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| 41 RUPBER PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 42 PLASTICS ANO SYMTIA. RUAF | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 43 PETHOLEUM Products | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


|  | M.COAL.PETROL . PRQDUETS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | INOMganic heavy chemical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | organic heauy chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | cheilical feniilisers | 2011.1 | 131.2 | 31.5 | 74.1 | 265.7 | 127.2 | 486.9 | 17.2 | 147.0 | 1421.2 |
|  | INAECTICIDE, FUNGICIDE ET | 6.8 | 0.2 | 0.4 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 2.8 | 194.7 |
| 49 | dites and phasmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | Soaps and glycerine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | coametics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 | man rane fithes | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53 | cthea chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54 | aEFRactoates | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55. | CEHEAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 56 | OTHR . NONME TLC.PRODUS IS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57 | IRON AND STEEL,FERROALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 58 | I S Castings amt forging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 59 | IRON ANO STEEL Structuat | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | nowferous metal inclallo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61 | metal phoducts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | thaciors and oth.agri tm | 2.3 | 1.5 | 0.5 | 0.7 | 5.2 | 4.0 | 0.6 | 0.0 | 0.8 | 1.1 |
| 63 | machine tools | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64 | OFF. OOM.ANG COAM, EQUIPAN | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| cs | OTHM MOMELECT. Hachinery | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.6 |
| 61 | electrical motoms | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67 | electrical carles,hires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 68 | 昭TEAEA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | ELECTMICAL Hohot ${ }^{\text {a coens }}$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 | ctammilic.aElECTRONIC EOU | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | Offr Electaical machinem | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0.0{ }^{-}$ |
| 72 | Shipg and boats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 73 | HaJL Eaujpments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | matar vemicles | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75 | mator cricles and aicycle | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| 36 | OTH TRANSPDh1 EOUIPHENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.8 |
| 77 | Hatches ant Clocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | midc, mif. industries | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0. | 0.0 |
| 71 | conathuction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 0 | gas,ilectrayaten Supply | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.8 |
| 11 | fafluays | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82 | OTHEA TRANSPOAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83 | COMAUNICATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ${ }^{4}$ | TRADE, STGAAGE ANO y.hous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | sut | 0.0 |
| as | BaNKINg ant Imsurance | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 6 | REAL ESTATE AND OHN.DUEL | 0.0 | n. 0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.8 | 4.1 |
| 47 | EDUCATION | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.6 |
| * | Hedical heal in | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 95 | OTHER SEAVIEES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| 90 | 107AL | 2020.2 | 1332.9 | 12.4 | 74. 7 | 271.2 | 131.2 | 414.4 | 17.2 | 152.6 | 197\%.0 |

IMPORT TRANSKETIONS AND FINAL USE FOR THE YEAR 1979-B0 (RS. MILLION 1979-80 C.I.F)

| 1NOUSTRIES |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S.NO. COHMODITY | 11 | 12 | 13 | 14 | 15 | 16 | 17 | $1{ }^{\text {e }}$ |  |  |
| 1 pador | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  | \% |
| 2 WHEAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 |  |
| 3 Jowar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | c. 0 | 0.0 0.0 | 0.0 | - |
| - gajra | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3 |
| 5 OTHER CEREALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 6 PULSE3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 7 SUEARCANE | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.8 |  |
| 9 cotion | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.6 | 0.0 |
| 10 PLANTATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.1 | 0.1 |
| $1:$ OTHER CROPS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 12 Milk ano Milk prooucts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0 |
| 15 OTHER AN:MAL HUSEANDRY | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 |
| 13 FISHING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 |  |
| 16 COAL ANO LISNITE | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 |
| 17 PETROLEUM AND NAT.gAS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 |
| 18 IRON ORE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20 MISC, FOOD PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 6.0 | 0.0 0.0 |  | 0.0 0.0 | 0.0 0.0 | 0.0 |
| 21 SUEAR | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |
| 22 GUR AND KHANDSARI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.8 |
| 23 HYOROGENA YEO OIL VANASPA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 23 EDEA ANOIL EXCL, VANASPATI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 OTHER SEVERAGES | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.6 |
| 27 TOBACCO MANUFACTURC | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 COTTON TEXTILESIEXCL.H.K | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 |  |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 WOOLLEN ANO SILK FAURICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 ART SILK FABAICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 32 HUTE TEXTILES | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 34 M1SC. TEXT. PhODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 |
| 35 CARPET WEAVING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 WOOO PRODUETS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57. PAPER, PAPERPRCD. NE USPRIT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 38 PRINTING ANO PUBLISHING | 0.0 | 0.0 | - 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 39 LEATHEK ANO LEATHER PROO 40 LEATHER FOOTHEAR | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 40 Leather footweam | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 41 RUBGER PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 42 PLASTICS ANO SYNTH. RUBB | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 43 PEYROLEUM PAODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |


| TABLE 49 (CONTD) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | micaal. Petral. Prooucts | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | $0.0$ | 0.0 | 0.0 | 0.0 |
|  | Impananic heavy chimical | 0.0 | 0.1 | 0.0 | 0.0 |  | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | OMGAMIC Heavy chemicals | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 |
|  | CMEMICAL FEATJLISERS | 438.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | INSECTICIDE, FUNGICIUE EY | 14.7 | 0.0 | 0.0 | 0.0 | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| 19 | Ligugs ang pharmacevilcal | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | Soaps and glyceaime | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | cosmepics | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | man mane fimmas | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
|  | athea chemicals | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 3.6 | 0.1 | 0.0 | 2.1 | 0.4 |
|  | refanctonits | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | cencwr | 0.0 | 0.0 | 0.0 | 0.0 |  | A. 0 | 1. 0 | 0.0 | 0.0 | 0.0 | 0.8 |
|  | OTh . Wommertc. Paoducts | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | IRON AND ETECL, FERROMLLO | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | I a casilmas amo fouling | 0.1 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | IROM AND ATEEL STRLC TAME | 0.1 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | nganfenous metal imclallo | 0.0 | n. 0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
|  | metal mhoductb | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  |  | 0.6 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | MACHINE IOOLS | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 1.0 |  | 0.0 | 0.0 | 0.0 |
|  | OFF.COM.ANO COMH.CQAIPMN | 0.10 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 |
|  | OTHM NONELECT. Machineny | 0.0 | 0.0 | 0.0 | 0.0. |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 - | 4.0 |
|  | clectaical morans | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 | 0.0 |
|  | clectaical cablesiutacs | 0.0 | 0.0 | 0.0 | 0.0 |  | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| $6_{4}$ | eatrenies | 0.0 | 0.0 | 0.0 | 0.1 |  | 0.1 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | 0.0 |
|  | ELECTMICAL M.halo gaods | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 |
|  | COMMUN1C, - ELECTRONIC EOU | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | отthr clectrical machiner | 0.0 | 0.0 | 0.0 | 1.0 |  | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | ShIPs And goats | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | Rail EaUsPments | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 |
|  | matos yemicles | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | c) |
|  | Malon crcles and bicicle | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 |
|  | OTHA TAAMSPOHT EQULP AENT | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 |
|  | datcres min Clucks | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | MISC, MF G INDUSTRIES | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | A. 0 | 0.0 |
|  | constmuction | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | $0_{1.0}$ |
| 40 | GAR, ELECTE.HATEM SLPPLY | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | -Allvay | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10 0 |
|  | Other thanapont | 0.0 | 0.0 | 0.0 | 0.0 |  | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | communication | 9.3 | 9.2 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
|  | thadicticame and w. hous | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.10 | 0.0 | 0.0 | 0.0 | 0.0 | 0. 0 |
|  | Gamking and insurance | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.1 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 |
|  | real estate mil Oum.ouEl | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | - 0 |
|  | EDUCATION | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | e. ${ }^{\text {a }}$ |
|  | hedical healith | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.1 | 0.0 | 8.0 | 0.0 | 0.0 | 0 |
|  | OTHER SEAVICES | 0.0 | 0.0 | 0.0 | n. 0 |  | 0.0 | 0.0 | 2.0 |  | 0.0 | Pil |
| 90 | rotal | 653.1 | 0.0 | 0.0 | 0.0 |  | 0.0 | 3.6 | 3.1 | 0.0 | 2. 0 | 41, ${ }^{\text {B }}$ |

TABLE 4.9 (COMTD.)

IMPORT TKANSACTIONS AND FINAL USE FOR THE YEAR 1979-80
(HS. HILLION 1979-80 C.I.F)


|  | M, Coal , PETEAL, products | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 05 | INORGAMIC HEAVY ChEMICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0. | . | 0. | 0.0 |
| 46 | CRGANIC HESVY ChEmicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 34.4 | 0. | 0. | 0.0 | 0.0 |
| 41 | chemical Fertilisers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9. 1 | 0.0 | 0.0 |
| 4 | INSECTICIDE, FUNGICIDE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 49 | dates and fharmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | Soaps ang glycerine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | cosmetics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 | man maoe figres | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0.6{ }^{-}$ | 241.0 |
| 53 | OfMEa chemicils | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.8 | 85.3 | 0.0 |
| 59 | hefractories | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | cement | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 56 | OTHR. NONHETLC, PRODUC TS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | IRGN ANS STEEL, FERACALIO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 58 | 1 S CASTINGS aND forging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | IRON ANE StEEL SYRUC TURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | monferous metal inclallo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | mefal preduris | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | Tracturs and othagri im | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6. | machine tools | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64 | OFF.00m.and Eamm.EQUJPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | O1H NaNELECT. Machinery | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 66 | Electhical hotors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 67 | Electaical cables,uires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | Hattenies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | ELECTMICAL matholu goods | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 | communic.relectannic eau | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | othr Electrical machiner | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72 | SHIPS IND ECAIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73 | Hall Equipment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | mator vehicles | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.06 |
| 1. | motor cycles and bicrele | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 76 | OTHR TAANSPORI EGUIPAENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77 | yaiches and ciocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | visc, mFg. INDUSTRIES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 79. | CONSThuction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90 | GASIELECTA.WAIER SUPPLY | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ${ }^{1} 1$ | hatlvars | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0. |
| 12 | ofnen thansport | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 43 | COMAUNICSIION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| $4{ }^{4}$ | trace, stohage ant u.mous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | ganking anu insurance | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 46 | heal estaye and oun.owel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 | coucation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88 | medical healin | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | OTHER SERVICES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | ralal | 27.6 | 0.0 | 59.9 | 1.6 | 0.0 | 9.4 | 9.4 | 69.1 | 15.3 | 244.6 |

Kile 49 (Con\% 2$)$
IMPORY THAMSACTIONS ANE PINAL USE FOA THE VEAR 2979-80 (RS. MILLION 1979-80 C.I.F)


TABLE 49 (CONTA)


TABLE 4.9 (CONTO.)

IAPORT TRANSACTIONS ANO FINAL USE FOR THE YEAR 1979-B0
(RS. MILLION 1979-80 C.I.F)

| Commodity by industay rable |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INDUSTRIES |  |  |  |  |  |  |  |  |  |  |
| S.NO. CONMOOITY | 41 | 42 | 43 | 44 | 45 | *6 | 47 | 园 |  |  |
| 4 PADOT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |  | 31 |
| 2 WHEAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9,0 |  |
| 3 Jowar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.8 |
| 4 GAJRA | 0.0 | c. 0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 5 OTHER CEREALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.1 |
| 6 PULSES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 7 Sutarcane | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \times 1$ |
| - JUTE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 8.4 |
| 9 COTTON | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | B.0 | 0.0 | 8.1 |
| 10 PLANTATION | 75.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 11 ather crops | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 12 MILK ANG MILK PRODUCYS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 4 |
| 14 FORESTRY AND LOGGING | 0.0 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 15 FISHING | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 0.0 |
| 16 COAL ANO LIGNITE | 0.0 | 0.0 | 0.0 | 443.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 PETROLEUM AND NAT.GAS | 0.0 | 0.0 | 22946.0 | 44.0 | 0.0 | 0.0 | 0.0 0.0 | 0.3 0.0 | 0.0 | 0.0 |
| 1 A IRON ORE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.8 | 0.0 |
| 19 OTHER MINERALS | 5.0 | 0.0 | 0.0 | 0.0 | 106.1 | 0.0 | 803.0 | 0.0 | 0.0 | 0.0 |
| $20 \mathrm{MISC}$. FOOD PROOUCIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 0.0 | 0.0 |
| 21 Sugar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |  |  | 0.0 |
| 22 GUK AND KHANDSARI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 |
| 23 HYOROGENATED OIL VANASPA | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 1.0 0.0 | 0.0 | 0.0 | 0.8 |
| 24 EDIBLEOIL EXCL. VANASPATI | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.18 | 0.0 | 0.1 |
| 25 TEA AND COFFEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 4.0 | 0.0 |
| 26 OTHER EEVERAGES | 0.0 | 0.0 | 0.0 | 7.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 TOBACCO MANLFAC TURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 0.0 | 0.0 | 0.0 |
| 25 COITON TEXTILES(EXCL.W.K | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 29 COT.TEXT-H.LOOM\& KNJOI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 WOOLLEN AND SILK FARRICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 ART SILK FAgRICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |  |  | 2.0 | 0.0 |
| 32 JUYE TEX:ILES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.12 | 0 |
| 33 READYMADE GARMENTS.TEXT. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  | 0.0 | 0 |
| 314 MISC, YEXT. PROOUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0 |
| 35 CARPET WEAVING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | c ${ }^{4}$ |
| 36 WOOD PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | . $0^{0}$ | 94* |
| 37 PAPEG.PAPEAPROD.NEWSPRIN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $\stackrel{-2}{ }$ | 0 |
| 3B PRINTING ANE PUBLISHING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \%. | 0 |
| 39 LEATHER ANO LEATHER PROD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 10 | 0 |
| 40 Leather foginear | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 8, | 0 |
| 41 rubger products | 15.10 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |  |  |  |
| 42 PLASTIES AND SYNTH. RUPG | 374,7 | 552.0 | 0.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 |
| 43 PETROLEUM Products | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.6 | 0.8 |

TABLE 49 (CONID)

| that erooucts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| a mesuy chemical | 64.0 | 0.0 | 0.0 | 0.0 | 76.0 | 5.8 | 0.0 | 47.8 | 103.8 | 191.0 |
| Whyy Chemicals | 0.2 | 105.4 | 0.0 | 0.0 | 15.3 | 63.6 | 61.0 | 53.3 | 1011.8 | 11.3 |
| THILISERS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fengicide ey | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| P Fibmhaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 160.9 | 0.0 |
| \% MrEEAINE | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.6 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 4.1 | 35.3 |
| CFIRPizs | 0.0 | 128.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| thrcals | 64.7 | 0.0 | 0.0 | 0.0 | 4.3 | 0.7 | 0.0 | 25.7 | 21.5 | 0.0 |
| ires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| AHLC.PROOUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - Mrcl ferroallo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -Hem AMO FORGING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HTELL STRUCTUAE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Wus metal inclal.lo | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 |
| macts | 0.0 | 0.0 | 0.3 | 0.0 | 3.6 | 0.5 | 0.0 | 3.8 | 7.9 | 0.0 |
| TME OTH.AGRI IM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 baces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| W, WMO COMHLEQUIPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -3ECT. MACHINEAY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.7 | 0.0 | 0.0 | 0.0 |
| TIT MOTORS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| (3) CRELES,WIRES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| F1. H.MOLD GOOOS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | B.0 | 0.0 | 0.0 |
| B-IELECTRONIC EOU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Grintcal hachiner | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - agars | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MIFHENTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Hazces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - Weles and bicycle | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TMUPPAT EDUIPRENT | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ana clocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| FS. Industries | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| frumution | 0.0 | 0.0 | 0.0 | B.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| thatehathter SUpply | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - Eansport | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.6 |
| amachtion | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| l.stanage ano vihous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| We atio ImSURANCE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Ctate and Own.DUEL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Thion | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IVI MEALIH | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Th mavices | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| (4. | 602.5 | 789.9 | 22946.3 | 443.0 | 206.7 | 70.6 | 945.6 | 130.6 | 2329.7 | 168.9 |

IMPORT TRANSACTIONS ANO FINAL USE FOR THE YEAR 1979-BO
fRS. MILLICN 1979-80 E.T.FI


TABI.E 49 (CONTD)

|  | m.Ctal, peinal. pagoucts | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | INOGGANIC HEAVY CHEMICAL | 0.0 | 0.0 | 270.6 | 0.0 | 0.0 | $10_{6} 6$ | 0.0 | 3.6 | 0.0 | 0.0 |
|  | onganic heavy chentcals | 0.0 | 0.0 | 103.6 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 | ChEmICAL FE日tilisems | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4. | INSECTICIDE, FUWGICIOE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 49 | cones anc pharmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.1 |
| 50 | goaps anc alyeEaine | 0.0 | 0.0 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | cosmetics | 24.6 | 0.0 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 | man made fiemes | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53 | OTHEA CHEMICALS | 7.2 | 0.0 | 69.6 | 0.0 | 0.0 | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 34 | refractonics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 71.6 | 2.0 | 0.4 | 0.0 |
| 39 | CEMENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 99.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 56 | Otha, NONMETLC, Prodicts | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 7.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 91 | IGON ANT STEEL, FERROALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1413.6 | 112.6 | 433.6 | 0.0 |
|  | I S CASIINGS AND FORGINE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 59 | IRON ANC STEEL STRUCTUAE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 78.1 | 0.0 | 62.7 | 0.0 |
| 60 | nomferous metal inclallo | 0.0 | 0.0 | 10.3 | 0.0 | 0.0 | 0.2 | 333.2 | 3.0 | 0.9 | 594.0 |
| 61 | metal procucts | 0.0 | 0.0 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | tmactors anc Cthareni Im | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 63 | machine toals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64 | CFF. COM.ANO COMM. EGUIPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | CTHA NONELECT. Machineay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 66 | electarcal matoms | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61 | ELECTAICAL CABLES.WIAES | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | batteates | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | ELECTAICAL H.hALO G000S | 0.0 | 0.0 | 0.0. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 | COMmUNIC. © ELECTAONIC EOU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 |
| 11 | ofta Eetetaical macminer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 |
| 12 | Shles and eoals | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 00 | -0.0 |
| 73 | FAIL EQUIPMENTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | moion vehicies | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75 | MaTon CrCLES AND EICYCLE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 76 | OfHe TGANSPOAt EQUIPMENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77 | Hatches ane clochs | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | misc.mpg. industhies | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 79 | consimuction | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80 | GAS,ELECTR.HATEA SUDPLY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 41 | mailuays | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ${ }^{1} 2$ | cthea taanspory | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 03 | communicaiton | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| ${ }^{4} 4$ | TRADE, STOAAGE AND W.hows | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 05 | BaNKIMg and INSURANCE | 0.0 | 0.1 | 0.8 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86 | heal Estate and oungovel | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67 | ERUCATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | medical healih | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 09 | OTHEF SERVICES | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | 107al | 35.1 | 194.2 | 943.2 | 173.4 | 103.5 | 762.1 | 2409.0 | 122.7 | 496.7 | 1406.0 |

IMPORT TRANSACTIONS AMD FINAL USE FOR THE YEAR 1979-80 (RS. HILLION 1979-80 C.I.F)


TABLE 4 (COWTA)

thpont thansactions ano fimal use Fon The yean 1979-ac
(RA. NILLIOM 1979-68 C.I.FI


TABLE 49(CONTO)

|  | m.coal, pethal. products | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.7 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 | INCRGANIC HEAVY ChEmICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 114.7 | 0.0 | 0.0 |
| 46 | ORGANIC HEAVY ChEmICALS | 0.0 | 0.0 | 0.0 | 29.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41 | ChEMICAL fertilisers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ${ }^{*}$ | INSECTICIDE, FUNGICIDE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 49 | DRLAg ant pharmaceutical | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | soaps and glycerine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | COSMETICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 | man mane fibres | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53 | CTHEA CHEMICALS | 0.0 | 0.3 | 4.2 | 23.8 | 0.0 | 0.4 | 0.0 | 38.3 | 0.0 | 2.7 |
| 54 | hefractories | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | cEMEN1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 499.3 | 0.0 |
| 51 | OTHR, NONMETLC. PRODULTS | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 62.4 | 0.0 |
| 57 | IROM AND STEEL,FERROALLO | 145.6 | 0.0 | 0.0 | 377.3 | 105.6 | 0.0 | 2.6 | 77.7 | 0.0 | 0.0 |
| 54 | I S CASIINGS AND FORGING | 0.0 | 0.1 | 0.3 | 36.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | IPON ANE STEEL STRUCTURE | 0.0 | 0.0 | 2.3 | 66.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | monferdus metal inclallo | 108.1 | 0.0 | 0.0 | 96.4 | 12.9 | 0.0 | 0.7 | 176.7 | 0.0 | 0.0 |
| 61 | metal products | 0.0 | 4.0 | 21.9 | 0.0 | 11.0 | 1.6 | 0.0 | 9.7 | 0.6 | 0.0 |
| 62 | TAACTARS AND OTH.AGRI IM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 63 | machine tcols | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64 | OFF, DOM, AND COMM.ECJIPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | OTHA NONELECT. MACHINERY | 0.0 | 14.4 | 0.0 | 0.0 | 148.9 | 0.0 | 0.1 | 21.4 | 0.0 | 0.0 |
| 66 | Eetctrical mators | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67 | ELECTAICAL CABLES.HIAES | 3.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| 64 | 日成1EriES | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | ELECTAICAL h.hole goods | 0.9 | 0.0 | 0.0 | J.c | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 70 | COMMUNIC. -ELECTRONIC EOU | 86.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | OTHA ELECTAICAL Machinet | 17.2 | 0.0 | 0.0 | 6.5 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 65.3 |
| 12 | ShIPS AND EOATS | 0.0 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13 | hail equipments | 0.0 | 0.0 | 34.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | mator vehicles | 0.0 | 0.0 | 0.0 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 | maton cycess anio micyele | 0.0 | 0,0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | Otha tasmsport equipment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 134.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77 | Hatches and clocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.8 | 0.0 | 0.0 | 0.0 |
| 78 | misc.mFg. industaies | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 84.3 | 0.0 | 0.0 |
| 79 | CONSTAUCTION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | GAS.ELECTR.UATER SUPfLT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | hallyays | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | OTHEA TAANSPOAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83 | COMmUNICATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 84 | TRACE, SYORAGE ANE H.hous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65 | banking ang insurance | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ${ }^{6} 6$ | aEAl Estate and own. DuEl | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | EDUCATIOE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88 | menicai healim | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 |
| 89 | dimer Senvices | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9 | 107al | 372.1 | 29.9 | 42.9 | 664.3 | 280.2 | 136.2 | 39.1 | 581.8 | 2656.2 | 68.0 |

IMPORT TRANSACTIONS ANO FINAL USE FOR THE YEAK 1979-BO (RS. MILLION 1979-80 C.I.F)

|  | thoustaies |  |  |  |  |  |  |  | 9 | $\cdots$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S.NO. COKmODIT | 81 | 82 | 83 | 84 | 85 | 86 | 67 | 88 | 89 | . |
| 1 PADOY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0.0=$ |
| 2 UHEAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 Jowar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 |
| 4 日AJRA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 0.0 |
| 3 OTHER CEREALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 Pulats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7 SUgARCANE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 JUTE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9 COTTON 10 PLANTATIOM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 PLANTATION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 278.0 |
| 11 OTHER CROPS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 85.3 | 788.0 |
| 12 milk and milk products 13 OTHER ANIMAL HUSBANDRY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 |
| 13 OTHER ANIMAL HUSBANDRY 14 Fortstay ano zogging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 8.9 |
| 14 Fortstay ano logging <br> 15 FISHING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 |  |
| 15 FISHING | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.0 | 14.0 |
| 16 COAL AND LIGNITE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 705.0 |
| 17 PETROLEUH LNO NAT.GAS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22946.0 |
| 18 IRON ORE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 1.0 |
| 19 OTHER HINERALS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5518.0 |
| 20 MISC. FOOO PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.2 |
| 21 sugar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 GUR ANO KHANOSARI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 |
| 23 HYOROSENATEO OIL VANASPA | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 EDIELEOIL EXCL.VANASPAYI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 294.8 |
| 25 EEA AND COFFEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 other beverages <br> 27 TJBACCO MANUFACTURE | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 | $\bigcirc{ }_{0}^{0} 0$ | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 TUEACCO MANUFACTURE 28 COTTOM TEXTILESIEXCL.H.K | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.0 |
| 29 CCT. TEXT-H.LOUM+KHLOI | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.9 | 0.0 |
| 30 YOOLLEN AND SILK FABRICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.6 |
| \$1 ART STLK FAERICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 93.5 |
| 3 SU SEAOYMADE GARMENTS,TEXT. | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 34 MISC. TEXY. PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.2 11.5 |
| 35 CARPET WEAVING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 WOOD PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 11.3 |
| 37 PAPER,PAPERPROD, NEWSPRIN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 647.0 | 0.0 | 55.7 | 1465.6 |
| 3A PRINTING AND PUELISHING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 39 IEATHER ANO LEATHER PROD Ho LEATHER COOY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 |
| 40 Leather cootuear | 0.0 | $0 \rightarrow 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41 RUBEER PRODUCTS | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.3 |
| 42 PLASTITCS ANG SYNTH, RUBB | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1037.0 |
| 43 PETROLEUM PRODUCTS | 459.0 | 4518.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5043.1 |



TASIE $\rightarrow$ (COMTE)
impont Thansactiong amo fimal UEE for The vEan 1979-a
(A8. MILLION 1979-BO C.I.F

| B,Wb tamnoelty | Pyt cons | Put Cans | F.1Ny | total |
| :---: | :---: | :---: | :---: | :---: |
| 1 andor | 0.0 | 0.9 | 0.0 | 0.0 |
| 2 Mreay | 160.0 | 0.0 | 0.0 | 160.0 |
| 3 Jutima | 0.0 | 0.0 | 0.0 | 0.0 |
| - Buydz | 0.0 | 0.0 | 0.0 | 0.0 |
| - oftelt cemeals | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 Putises | 1380 | 0.0 | 0.0 | 136.0 |
| 7 Suphategne | 0.1 | 0.0 | 0.0 | 0.0 |
| 8 Jite | 0.0 | 0.0 | 0.0 | -0.0 |
| - cutron | 0.0 | 0.0 | 0.1 | 0.0 |
| 10 FLenthrsgn | 0.0 | 0.0 | 9.0 | 220.0 |
| 11 ottre ciols | 0.0 | 0.0 | 0.0 | 134.0 |
|  | 131.1 | 0.0 | 0.0 | 120.0 |
|  | 181.3 | 0.0 | 0.0 | 321.0 |
|  | 0.0 | 0.0 | 0.0 | 00.0 |
| 1s Trethain | 0.0 | 0.0 | 0.0 | 14.0 |
| 16 Eent Aug tienite | 0.0 | 0.0 | 0.0 | 708.0 |
| 17 METROLECH AMD MAT.tas | 0.1 | 0.1 | 0.0 | 229460 |
| 18 Incas ent | 0.0 | 0.0 | 0.0 | 1.0 |
| 19 OTHER MIMERACS | 0.0 | 0.0 | 0.0 | 5914.0 |
| 20 mrsc, Foeo phooucts | 269.4 | 0.4 | 0.0 | 301.0 |
| at suent | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 Eun Anb RMamgsari | 0,0 | 0.0 | 0.0 | 0.0 |
| 28 Whrimoetantie OIL VAMASPA | 0.0 | 0.0 | 0.0 | 0.4 |
| 24 ehtrlectit Exth. VAMAPATI | 5916.2 | 0.0 | 0.0 | 6071.0 |
| 25 tetame conret | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 0574y | 4.0 | 0.0 | 0.0 | 4.0 |
| 2\% Tosmite maluFacture | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.10 | 0.0 | 0.0 |
| 30 mevticn mid ilM Fagrics | 10.9 | 0.0 | 0.0 | 15.0 |
|  | 206.3 | 0.0 | 0.0 | 250.0 |
|  | 0.0 | 0.1 | 0.0 | 0.0 |
|  | 62.7 | 1.1 | 0.0 | 64.0 |
| 3n Mrec. TExT. \#nobucts | 30.5 | 0.0 | 0.0 | 42.0 |
| 35 Candet Meavims | 0.0 | 0.0 | 0.0 | 0.0 |
| 36 rueg matodets | 3.6 | 0.1 | 0.1 | 19.9 |
| 3t martaparthphoo.neusppin | 204.8 | 109.6 | 0.0 | 1640.0 |
|  | 19.3 | 75.5 | 0.0 | 168.0 |
| 3 ceminex ant leathren Pmod | 0.8 | 0.0 | 0.0 | 2.0 |
| 40 LEWTHER FOPTNEAR | 0.0 | 0.0 | 0.0 | 0.0 |
| 42 mumaja pmonocts | 12.1 | 0.0 | 12.6 | 80.0 |
|  | 0.0 | 0.0 | 0.0 | 1017.0 |
| -8 PETMOLEUM Phoouctis | 3ant.0 | 1294.9 | 0.0 | 10122.0 |



IRPORT TRANSACTIONS ANO FINAL USE FER THE YEAR 1DE4-BS
RS. MILLION 1979-80 C.I.FI


TAgiE +10 (GOnta)

|  | 0.0 | 0.0 | 0.0 | 0.3 | 0,0 | 0.0 | 6.4 | 4.6 | 4.0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - Eie meavy chemical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 3.0 | . 0 | 0.0 |
| the weavy chemicais | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.13 | 4.0 | 0.0 |
| -5 FERTILISERS | 3500.4 | 2208.4 | 35.3 | 125.1 | 342.0 | 233.8 | 913.0 | 23.4 | 213.6 | 2139.0 |
| Fegrbe fungicioe ep | 9.8 | 0.3 | 0.4 | 0.4 | 0.3 | 0.0 | 0. | 0.0 | 3.5 | cos.t |
| mab pharmace tuy ICal | 0.0 | 0.0 | 0.0 | 0.3 | リ. | 0.6 | 4.0 | 6.4 | 1.4 | 4.0 |
| tos glycerine | 3.6 | 0.0 | 9.0 | 0.0 | 2.0 | 0.0 | 4.0 | 0.6 | 0.0 | $\bigcirc .0$ |
| 11] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - . 0 | 4.0 | ¢. | 0.0 |
| -tymes | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| fremenicals | 0.0 | 0.0 | 0.0 | 0.0 | 6.1 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 |
| 5ndenIES | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 6.3 | 9.0 | 0.0 | 9.0 |
|  | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 0.3 | 0.0 | 9.0 | 0.0 |
| 2-mpmetcherolut ts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| - ANO STEEL,FERROALLO | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 |
| CHETINGS AND FORGIIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - SNE STEEL STRUCTURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | C. 0 | 0.0 |
| Cterous metal inclallo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | U. 4 | U.0 |
| \% Probucts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | u.b | U. 0 | 0.0 |
| thitas amd oth.agri im | 3.3 | 2.0 | 0.5 | 0.8 | 6.2 | 7. ? | 1.0 | 4.0 | 1.0 | 1.3 |
| cillit Tools | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | U. 0 |
| 1.EOH.AND CORM.EDUTFAN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 4.0 | 4.4 | 0.0 |
| Q MOnELECY. Machinery | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 6.0 |
| cearical motors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| cemical cablicsalires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TERES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TECREEAL H.HOLC gOCOS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0. 0 |
| WHunIC. ELECTRONIC EQU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 |
| Ith secctrical machiner | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 |
| tes and boate | 0.0 | 0.0 | a. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 |
| - EDUIPMENTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| W vehicles | 0.0 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 |
| IOP CYCLES AND AICYCLE | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| TRANSPORT EQUIPAENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | ¢. 0 | 0.0 |
| ETHEMEE ANO CLOCKS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.0 | 0.0 |
| TE,MFE. INDUSTRIES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| EIRUCTION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.6 | 13. 0 |
| QhELECPR=WATE S SUPPLY | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TLum5 | 0,0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0.0 | 1.0 | 0.0 | 0.0 |
| -INER TRANSPOAT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 1.0 | 0.0 | 0.0 |
| HManumication | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Henesistorage ano w.hous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| maxims and insurancl | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| Chl Ebtate and omincouel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cticaston | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | B. 6 | 0.0 |
| modical heat th | 0.0 | 0.0 | \%.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HINER SEMVICES | 0.0 | 0.0 | *.0 | 0.0 | 0.0 | Q. 0 | 0.0 | 0.0 | 0.0 | 0,0 |
| TeTal | 4508.0 | 3114.3 | 36.2 | 116.0 | 36a.: | 281.0 | 914.0 | 23.4 | 217.9 | 2409.7 |

Impont thamacisams amu fimal use fan the tan isan-as



| 44 | M. COAL, PETROL PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $0 \cdot$ | INORGAMIC HEAYY CHEMICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 46 | OAgANIC HEavy Chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 | CHEMICAL FERTILISERS | 892.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 46 | IMSECTICIDE,FUNGICIDE ET | 17.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 49 | GRUGS ANO PHARAACEUTICAL. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | SCAPS AND GLICEAINE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | cosmetics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ${ }^{\circ}$ |
| 52 | man mane pirats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| 5. | OTMEA Chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 12.9 | 0.0 | 5.1 | A. 6 |
| 54 | nefracionies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | cement | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 56 | OYM. MONAETLC. Produtis | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0 |
| 57 | IRON AMES STEEL,FERROALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | I S castings ang forging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | Ifan and steel structure | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0 | NGNFEREUS METAL iNCLALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61 | metal phoaucts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | 1ractors anc oth.aghi Im | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 |
| 63 | machine tocls | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45 | OThn nomelect. machinery | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 66 | ELECTRICAL moidiss | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0, ${ }^{10}$ |
| 67 | Electaical cables.uires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 68 | batteries | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 |
| 69 | electaical hihold goods | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 | communic.aElectronic zau | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | otha electrical machiner | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72 | SHIPS AND ROAIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | hail equjphents | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | mation Vehicles | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | matag creles ind eicycle | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 76 | OTHP TRAMSPDA1 EQUIPMENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77 | Haiches ano Clocrs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 78 | misc.mpg. INDUSTRIES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 79 | CONSTRUCTION | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | GASIELECTK.vater supply | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | failyars | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0 0 |
| 82 | dimer thansport | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 43 | commenication | 0.0 | 0.0 | -0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| $0 \cdot$ | thadesstorage ant mohous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85 | GANKINL ANE INSURANCE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86 | heal estate and oun, owel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87 | EQucation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 00 | menical health | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | OTHER SERVICES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 9 | total | 760.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | 12.5 | 0.0 | 5.1 | 10.12 |

IMPORT TRANSACTIONS AND FINAL USE FOR THE YEAR 1984-05 (RS. MILLION 1979-80 C.I.F)


TABLE 410 (CONTD.).

|  | M. COAL PPEIROL.PROCUICTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0 0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4. | INGAGANIC MEAWY ChEMICAL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ |
| 46 | ORganic heayt chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 53.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 | chenical gertiliseas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40 | IASECTICIOE,FUNGICIDE Et | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45 | doues ano Pharmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | Soaps and glycerine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | cosmeircs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 | man madf flbats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 197.3 |
| 53 | other chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 46.3 | 95.3 | 0.0 |
| 54 | REFRACTURIES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | CEMENT | 0.0 | 0.0 | b. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. 0 |
| 56 | OTHA M MONAE TLC. Ph ODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | . 0 |
| 57 | IGON ANG STEEL, FERROALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54 | I S CASTINGS AND FORGING | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | IRON ANU STEEL STRUCTURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | monfercus metal inelallo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| 61 | metal products | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | TRACIORE ANO OTH.aGRI IM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| 63 | machine rools | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64 | OFF. DOM.ANL COMA.EQUIPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | Olh nonelect. machinery | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 66 | ELECTRICAL moiohs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67 | ELECTRICAL Cables,uifes | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | batienies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | Electrical hamald goods | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 | COMAUNIC., ELECTRONIC EGU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | OTHA ELECTRICAL MACHINER | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | SHIPS AND ECAIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73 | HaIL EOUIPMENTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 74 | mgtar vehicles | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0 | 0.0 | 0.0 |
| 75 | MOIDA CrCLES AND BICYCLE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0. ${ }^{\text {d }}$ |
| 16 | OJth Thanspoti EaUIPMENY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 | Matches anc clocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 79 | cansinuction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 00 | castelectratiter sumply | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41 | Ragluas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 02 | OThem 1manssogy | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 03 | commuricatiom | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -.t |
| 84 | Thade, storage and tohous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| As | HANMIME ANO INSUPAHEE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - | REAL Esjate amb oum.ovel | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| a) | coucation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -1a | megical mealit | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 45 | other jeavices | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Ta | jatal | 9. 5 | 0.0 | 9.5 | 1.1 | 0.0 | 34.1 | 1.4 | 03.3 | 95.3 | 201. 0 |




TABLE 4 IO(CONTD)

IMPORT TRANSACTIONE ANG FINAL USE FOA THE YEAR IGA4-A5 IRE. MILLION 1979-80 C.I.FI


table a io (conto)

IMPORT TRANSACTIONS ANL FINAL USE FOR THE YEAR 1984-85
(RS: RILLION 1979-BU C.I.F)


TABLE 4 Io (CONTD.)

| 44 | H.COAL PPETROL. PRODUCIS | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 | INORGANIC HEAVT CHEMICAL | 0.0 | 0.0 | 643.0 | 0.0 | 0.0 | 392.2 | 0.0 | 10.3 | 0.0 | 0.0 |
|  | onganic heauy chemicals | 0.0 | 0.0 | 704.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 | CHEMICAL FERTILISERS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 48 | INSECIICIUE, FUNGICIDE Et | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 49 | gaugs and pharmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | SCAPS and glycerine | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 51 | cosmetics | 43.5 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52 | man made fibues | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 53 | OTHEA ChEmicals | 9.9 | 0.0 | 56.7 | 0.0 | 0.0 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 54 | REfRactories | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 121.0 | 9.9 | 1.0 | 0.0 |
| 55 | CEMENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 157.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 56 | OTHE.NONMETLC. PRUDUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57 | IRON ANG STEEL, FERROALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2005.2 | 107.2 | 99.0 | 0.0 |
| 58 | I S CAStings and forging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| 59 | IRON ANU StEEL StRUCTUAE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 31.9 | 0.0 | 40.1 | 0.0 |
| 60 | nonferous metal inclallo | 0.0 | 0.0 | 164.2 | 0.0 | 0.0 | 0.2 | 506.6 | 15.8 | 0.0 | 1018.2 |
| 61 | MEIAL Prooucts | 0.0 | 0.0 | 23.9 | 0.0 | d. 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | TRACIOAS ING OTH.AGRI IM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 63 | machine tools | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | D. 0 | 0.0 |
| 64 | OFF. OGM.ANO COMM.EQUIPMR | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65 | OTHM NONELECT. MaChinert | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 |
| 66 | Electaical motons | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67 | ELECTRICAL CAbles.dires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 68 | hatieries | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 69 | ELECtRICAL H.hold gonds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70 | COMmLnic.-ELECTRONIC EQU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | OThr ELECTRICAL Maciiner | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | Ships and boats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 73 | fail edulpments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 71 | mator vehicles | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75 | matos cycles and bicycle | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 76 | OTh Than\#poat coulpment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77 | WAICHES AND CLOCMS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | hisc.mpg. industaies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 79 | construction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 40 | GaS, ELECTR.Water Supplt | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ¢ 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61 | Rallyays | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | OTHEE Thansport | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 83 | communicaition | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 44 | THADE, STOAAGE AND W. HOUS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Ag | GANMINE ANM INSURANCE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | Q. 0 | 0.0 |
| 36 | heal egtate and oundduEl | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 | EDUCATIEN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88 | medical health | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | ather services | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| so | total | 59.1 | 7.6 | 850.0 | 2.2 | 24.6 | 045.0 | 3892.4 | 149.3 | 040.3 | 2237.9 |

IMPOAT TRANSACTIONS AND FINAL USE FOR THE YEAR 1984-83
(RS. MILLION 1979-89 CaI.F)


TASLE A IO (CONTD)

| - M. COAL P PETMOL. PRODUCTA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4s imonomalc meavi chenical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.1 | 0.0 | 0.0 | 9.0 |
| -6 onsanic meavt chinicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 chemical femiliyacas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| as anma man pmanmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| 59 goaba amo eltcenine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GI cusmitice | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gt man mame fibats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ga athen chemichls | 23.1 | 0.0 | 0.0 | 5.1 | 14.7 | 0.0 | 8.4 | 0.0 | 0.0 | 0.0 |
| St Repractonies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| g OTHA, MONRETLC. PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | -. |
|  | 1092.6 | 105.1 | 109. | 0.0 | 690.4 | 0.0 | 0.0 | 9.2 | 12.3 | 4.0 |
|  | 2.1 | 4.5 | 11.6 | 0.0 | 61.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. ${ }^{\text {a }}$ |
| En inow men stecl stmuctune | 5.5 | 3.9 | 0.0 | 0.0 | 136.3 | 0.0 | 0.1 | 0.0 | 0.0 | -. ${ }^{\text {c }}$ |
|  | 740.6 | 5.5 | 23.0 | 0.9 | 2281.3 | 141.0 | 466.2 | 45.9 | 40.0 | -4.7 |
|  | 29.7 | 0.0 | 0.0 | 0.0 | 29.6 | 0.0 | 0.6 | 0.0 | 0.0 | 0.8 |
|  | 0.0 | 70.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 |
| ag macnime lota | 0.0 | 0.0 | 193.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 1.6 | $0.0{ }^{\circ}$ | 0.0 | 0.0 | 0.0 | 0.0 | - ${ }^{-1}$ |
|  | 3.6 | 0.0 | 0.6 | 0.0 | 1248.0 | 0.0 | 0.0 | 0.0 | 0.0 | 17. 1 |
| 0 cfelectaicat matona | 0.0 | 0.0 | 0.0 | -0 | 0.0 | 5.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47 curcturcm cablea,mincs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.1 | 0.0 | 0.0 | - 0 |
| Ge matreica | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0. | - ${ }^{*}$ |
| 6 Electinical mamold 0 eodo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | - ${ }^{\circ}$ |
| Ta commmicarturctanic cou | 0.0 | 0.0 | 0.0 | $0 \times 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 127.0 |
|  | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.7 | -0 |
| 73 anlea amy aomis | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | c.0 |
| TI Bail emipuemid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | - 0 |
| 74 natem venrclet | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0 |
| Ta moven cucles amb mettele | 0.0 | 0.0 | 0.6 | 0.1 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | - 0 |
|  | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. 0 |
| T1 wateren and CLucxi | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 | -6 |
|  | 1.2 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0. ${ }^{\text {- }}$ |
| 19 comatminilea | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. 8 |
| - caltictin.vatem muply | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. 0 |
| 01 hallmata | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0 | 0.0 | 0.4 |
| as oiven 1 mamapeat | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ |
| at commonratiom | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - 0 |
| at maname sug loutumace | 0.0 | 6.6 | $0 \cdot 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.1 |
|  | 0.0 | $0 \cdot 0$ | 0.6 | 0.0 | 6.8 | 0.0 | 0.0 | 0.0 | 0.6 | -. 0 |
| 07 erueatian | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.6 | 0.3 | 0.0 | 0.1 |
| ea mercat realim | 0.0 | 0.6 | \%.0 | 8.0 | *. | $0 \cdot 0$ | 0.0 | 0.6 | 0.8 | 4 |
| 0 efing manuleza | 0.0 | 0.0 | -0 | 0.0 | $0 \cdot 3$ | 0.0 | 0.1 | 0. | 0.6 | $6 \cdot 6$ |
| 91 TOFAL | 1017.0 | 29.3 | 297. ${ }^{\circ}$ | 10.1 | -897.s | 104.1 | nell | Elat | 74.7 |  |

MAPORT TRANSACTIONS ANU FINAL USE FOR THE YEAR 1984-AS
(BS. MILLION 1979-80 C.I.F)


TABLE 4 10 (CONTD)

| 44 | M-COAL, PETMOL .PRODUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.9 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $4 \cdot$ | INORGANIC HEAVY chenical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 137.1 | 0.0 | 0.0 |
| 46 | ORGANIC HEAYY CHEMICALS | 0.0 | 0.0 | 0.0 | 44.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41 | CHEMICAL FERTILISEAS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40 | INSECPICIDE,FUNGIEIDE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0 0 |
| 15 | thegs and pharmaceutical | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | 0.0 | -6 |
| 50 | SCaps and giycenime | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. 0 |
| 51 | cosmetics | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 52 | gan mage fibres | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 6$ |
| 53 | Other Chimicals | 0.0 | 0.4 | 6.9 | 33.4 | 0.0 | 0.3 | 0.0 | 36.5 | 0.0 | 3.7 |
| 5 | hefmactonies | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 55 | CEMEN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1442.9 | 0.0 |
| 56 | OTHR . NENMETLC. PRODACTS | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 49.3 | -0 0 |
| 57 | IRON Amg sterliferroallo | 24.2 | 0.0 | 0.0 | 567.2 | 129.3 | 0.0 | 3.1 | 83.7 | 0.0 | -. 0 |
| 59 | I s castimgs ang forging | 0.0 | 0.2 | 0.9 | 61.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| 99 | IRON AND STEEL STRUCTURE | 0.0 | 0.0 | 1.3 | 33.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | C. |
| 60 | nonferous metal inclallo | 212.4 | 0.0 | 0.0 | 169.0 | 15.4 | 0.0 | 0.1 | 921.9 | 0.0 | - 0 |
| 61 | metal products | 0.0 | 6.2 | 0.0 .1 | 0.0 | 15.0 | 2.1 | 0.1 | 11.6 | 12.1 | 0.0 |
| 62 | TRactors anc othangri Im | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6. ${ }^{5}$ |
| 4.3 | machine toals | 0.0 | 0.0 | 0.0 | 000 | $10.0$ | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 |
| $44^{4}$ | OFF. OOM.ANI COEM, EQUYPAN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69 | OTHA NONELECT. MACHINERT | 0.0 | 22.9 | 0.0 | 0.0 | 326.6 | 0.0 | 0.0 | 20.6 | 0.0 | $0 \cdot 6$ |
| 66 | Electrical motons | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0,0 | 0.0 | 0.0 |
| 67 | ELECIAIEAL Cables.wires | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60 | gatteries | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | $0 \cdot 0$ | 0.0 | 0.0 | -6. |
| 69 | ELECIRICAL H. HOLO 6000s | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 70 | COMMUNIC. ELECTROMIC EQU | 242.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 9$ |
| 11 | OTh ELECTRICAL MACHINER | 32.2 | 0.0 | 0.0 | 10.9 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 114.3 |
| 12 | Ships And moats | 0.0 | 17.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 6$ |
| 73 | fail equiphents | 0.0 | 0.0 | 25.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 010 | - 0 |
| 74 | mator vehicles | 0.0 | 0.0 | 0.0 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 010 | 9.6 |
| 19 | mator crcles and bicycle | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6. |
| 76 | OTHA TRANSPOAT EQUIPMEMT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 142.6 | 0.0 | 0.0 | 0.0 | $0 \cdot 6$ |
| 17 | Hatches amb Clocks | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 47.0 | 0.0 | $0 \cdot 1$ | 0.6 |
| 18 | misc,mpe. innustaics | 0.0 | 0.0 | 0.1 | 14.4 | 0.0 | 0.0 | 0.1 | 100.0 | 0.0 | 0.6 |
| 19 | constauction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 0.9 | 0.0 | 9.0 | $0 \cdot$ |
| 80 | GAS, ELECTR. WATER SUPPLY | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 6$ | $0 \cdot 6$ |
| 11 | hailuays | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | - |
| 12 | OTHEA TAAMSPOR 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 0$ | $0 \cdot 6$ |
| 41 | communicalign | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|  | TRADE - MTORAGE and W.hous | 0.0 | 0.0 | $\cdots 0$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | $0 \cdot 6$ |
| 4 d | EAMKIME ANO INSUAANCE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| ${ }_{6}$ | REAL EGTATE ANO OUN.ONEL | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.6 |
| 4 | Enenical health | 0.0 | 0.0 | 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 0.0 | 0.0 | 0.0 0.0 | 0.0 | 0.0 |
| 89 | Other services | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.1 | 0.0 | 0.0 | 4.6 |
| 9 d | jatal | 796.4 | 46.4 | 74.4 | 46. 2 | 491.7 | 189.1 | 51.5 | 14.2 | 4164.9 | 115.1 |

ymPORT TRANSACTIONS AND FINRL USE FOM THE VEAK IOEA-GS
(RS. MILLION 1979-60 C.I.F)


| 44 | M.CDAL, PETRQL. PROCUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4 | INCRGANIC HEAVY Chemical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2300.0 |
| 46 | organic heavy Chemicals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2429.0 |
| 47 | chinical fertilisers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10697.0 |
| 41 | INSECTICIDE, FUNGICIDE ET | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| 49 | datgs and pharmaceutical | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 109.3 | 0.0 | 1013.0 |
| 90 | Soaps ang glycerine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 |
| 51 | COSPETICS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 119.0 |
| 51 | man mane fighes | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 110.0 |
| 51 | OTHEA CHERICALS | 0.0 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 649.3 |
| 54 | hefractories | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 123.0 |
| 55 | CERENT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1620.0 |
| 56 | OThR. NONRETLC.PAQDUCTS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.9 |
| 57 | IRON AND STEEL, FERAOALLO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9900.0 |
| 50 | I s castings ano forging | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 144.0 |
| 59 | IRCN AND STEEL STRUCTURE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 262.1 |
| 60 | nonferdus hetal inclallo | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6070.0 |
| 61 | metal panducts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 220.0 | $4 \mathrm{Al1.7}$ |
| 62 | Thactors and Ctha AGRI In | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 101.5 |
| 6.3 | machine toals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 153.5 |
| 69 | OFF.OAR.AND COMR.EQUIPMN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50 | 0.0 | 1.0 |
| 69 | -the nonelect. machinery | 0.0 | 0.0 | 0.0 | 9.9 | 0.0 | 0.0 | 0.0 | 0.0 | 216.3 | 1934.9 |
| 66 | ELECTAICAL motors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.2 |
| 67 | electrical cables.vires | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.8 |
| 60 | Eatienies | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 |
| 65 | electrical h.halo goons | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.2 |
| 70 | COMMUNIC., ELECTRONIC EQU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0. | 570.2 |
| 71 | OThn ELECIMICAL machiner | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1317.2 |
| 72 | Ships and toats | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 17.1 |
| 73 | hail equiphents | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24, |
| 74 | matan vehicles | 0.0 | 6.t | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 88.2 |
| 78 | motam cycles and bicrele | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 00 | 0.0 | 0.0 | 0.8 |
| 76 | dthe thanspart Eeuiphent | 0.0 | 938. 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 78.5 |
| 77 | hatches amp clocks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.3 |
| 70 | HISC.RFG. INDUSTRIES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 882.3 | 1.2 | 0.0 | 574.9 |
| 79 | CONSTALCTION | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 00 | casielecta.yaten Supply | 0.0 | 0.0 | -0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 81 | RAILWAYs | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| a | OTHEA TAANSPORT | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 03 | COMMUNICATICN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 84 | 7rade, Stonage amo nehous | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 89 | GankING Mmi Insurance | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| 46 | REAL EState and onm. ${ }^{\text {duEl }}$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87 | EDUCATIom | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| $0 \cdot$ | medical mealim | 0.0 | 6.4 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| as | OTHEA SERYICES | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -. 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50 | 107 AL | 1. ${ }^{\text {a }}$ | 402.4 | 0.0 | 11.7 | 0.0 | 0.0 | 184.4 | 71.1 | 191.4 | 09400.8 |

TABLE 4 (CONTD)

fHS. MILLIom 1979-ad C.I.F)



## TABLE 44 (cowto.)

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## 






Table 4.13
Import projections for the Stxth Plan period : 1980-85
(Rs. crores at 1979-80 prices)

*Provisional estimates.
$\dagger$ Aluminium, copper, zinc and lead.
$\ddagger$ The DGCI\&S have revised the total figure to Rs. 8888 crores in March 1981. Details are not available.

Table 4.14
Export projections for the Sixth Plan period: 1980-85
(Rs. crores at 1979-80 Prices)


[^15]Tabile 4.15
Capital coefficient matrix 1979-80.


Table 4.16

## Parameters of the invesstment function

| \$1.No. | Sector Name |  |  |  | Intercept and adjustment parameter | Replacement fraction | ICOR | Gestation lag |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 1 |  |  |  | 2 | 3 | 4 | 5 |
|  | Agriculture | . | . | ... | -30 | 0.0309 | 3.6092 | 1 |
|  | Forestry and logging | . | . | " | 60 | 0.1000 | 0.9652 | 4 |
|  | Fishing | - | $\cdots$ | ." | 379 | 0.0840 | 8.8322 | 2 |
|  | Mining and quarrying | - | . | -• | 2181 | 0.1355 | 4.8220 | 4 |
|  | Manufacturing | - | . | -• | 9308 | 0.0940 | 4.2921 | 3 |
|  | Construction | . | - | -" | -585 | 0.0454 | 0.2046 | 3 |
|  | Electricity, gas \& water supply. | .. | . | - | 3393 | 0.2150 | 25.9968 | 6 |
|  | Railway | . | . | $\cdots$ | 940 | 0.0850 | 6.1566 | 3 |
|  | Other Transport | . | . | ... | 2792 | 0.1925 | 8.2730 | 2 |
|  | Communications | . | . | . | 548 | 0.0754 | 6.4119 | 3 |
| 11 | Trade, etc. | - | - | - | 2605 | 0.0395 | 1.1992 | 2 |
| 12 | Banking and insurance | . | . | . | -953 | 0.0100 | 0.0482 | 2 |
| 13 | Real Estate etc. | $\cdots$ | . | . | 922 | 0.3025 | 5.4600 | 2 |
| 14 | Otherseruice | . | . | . | -13329 | 0.0086 | 1.3009 | 1 |

Table 4.17
Investment by destination 1979-80
(Rs. Million)


Table 4.18
Investment by destination 1984-85
(Rs. Million)

| $\begin{aligned} & \text { Sl. } \\ & \text { No. } \end{aligned}$ | Sector |  |  | Net Fixed Capital | Inventories | Replacement | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 1 |  |  | 2 | 3 | 4 | 5 |
| 1 | Agriculture | . | . | 15862.11 | 1155.52 | 11140.37 | 28158.00 |
| 2 | Forestry and logging | . | . | 160.59 | 0.00 | 151.99 | 312.58 |
| 3 | Fishing | .. | $\cdots$ | 3340.77 | 0.00 | 739.81 | 4080.58 |
| 4 | Mining and Quarrying | . | . | 23877.05 | 1045.13 | 3487.40 | 28409.58 |
| 5 | Manufacturing | . | . | 51657.20 | 16728.24 | 21344.86 | 89730.31 |
| 6 | Construction | . | . | 153.41 | 396.43 | 2860.10 | 3103.11 |
| 7 | Electricity, gas \& water supply | . | . | 70670.94 | 5275.11 | 5027.65 | 80973.69 |
| 8 | Railway | $\cdots$ | . | 8430.19 | 1785.09 | 1418.76 | 11634.05 |
| 9 | Other Transport | . | . | 35954.52 | 3212.39 | 8252.68 | 47419.60 |
| 10 | Communications | . | . | 4883.03 | 0.00 | 771.41 | 5654.44 |
| 11 | Trade, storage and ware houses |  | . | 13826.80 | 14336.69 | 7655.48 | 35818.97 |
| 12 | Banking and insurance | . | . | 172.51 | 0.00 | 418.91 | 591.42 |
| 13 | Real estate and ownership of dwellings |  | . | 63.71 | 22.44 | 12352.86 | 12439.01 |
| 14 | Public administration, defence and other services |  |  | 8699.71 | 481.41 | 1462.89 | 10644.00 |
|  | Total |  | - | 237445.56 | 44438.46 | 77085.19 | 358969.44 |

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Table 4.19
Investment requirement for Sixth and Perspective Plans (Seventh and Eighth Plan)
(Rs. Million.)


Table 4.20
Value added growth rates (sectoral) from capacity availabilties


Table 4.21
Average monthly consumption expenditure
(Rs. at 1979-80 prices)

| S.No. | Area |  |  |  |  | For people below poverty line |  |  | Entire population |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | 1979-80 | 1984-85 |  | 1979-80 | 1984-85 |
|  |  |  |  |  |  |  | Without redistribution | With redistribution |  |  |
| (0) | (1) |  |  |  |  | (2) | (3) | (4) | (5) | (6) |
| 1 | Rural | * | $\cdots$ | - | $\cdots$ | $\begin{array}{r} 51.27 \\ (.55502) \end{array}$ | $\begin{gathered} 53.44 \\ (.55502) \end{gathered}$ | $\begin{array}{r} 60.31 \\ (.397948) \end{array}$ | 87.97 | 101.55 |
| 2 | Urban | - | -• | -• | .. | $\begin{array}{r} 59.75 \\ (.61221) \end{array}$ | $\begin{gathered} 61.37 \\ (.61221) \end{gathered}$ | $\begin{array}{r} 64.09 \\ (.554779) \end{array}$ | 123.16 | 137.10 |
| 3 | All India | - | - | . | - | 52.80 | 55.01 | 61.17 | 95.62 | 109.67 |

@Figures in brackets are the inequality parameters of the Log-normal distribution.

TABLE 4.22
Estimated share (per cent) in total private consumption expenditure by deciles : 1977-78


Table 4.23
Percentage of people below poverty line


Table 5.1
Partial elastictties of major taxes of the states

| $\begin{aligned} & \text { S1. } \\ & \text { No. } \end{aligned}$ | Dependent variable |  |  |  |  | Constant | $\begin{gathered} \text { GDP } \\ \text { (Constant } \\ \text { prices) } \end{gathered}$ | Implicit GDP deflator | $\overline{\mathbf{R}}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (0) | (1) |  |  |  |  | (2) | (3) | (4) | (5) |
| 1 | Sales | * | - | -• | - | 0.00 | $\begin{array}{r} 1.9450 \\ (6.2886) \end{array}$ | $\begin{array}{r} 1.1325 \\ (6.6898) \end{array}$ | 0.989 |
| 2 | Stamp duty | $\bullet$ | - | . | $\cdots$ | 0.0014 | $\begin{array}{r} 1.2513 \\ (5.7191) \end{array}$ | $\begin{array}{r} 0.6321 \\ (5.2539) \end{array}$ | 0.985 |
| 3 | Motor vehicles tax and passengers and goods tax |  |  |  |  | 0.0 | $\begin{array}{r} 2.4167 \\ (4.9879) \end{array}$ | 0.7012 | 0.969 |
| 4 | State excise duties | $\cdots$ | $\cdots$ | $\cdots$ | $\cdots$ | 0.001 | $\begin{array}{r} 1.1300 \\ (2.8583) \end{array}$ | $\begin{array}{r} 1.1071 \\ (5.1173) \end{array}$ | 0.971 |
| . 5 | Entertainment tax |  | - | - | - | 0.0 | $\begin{array}{r} 1.4542 \\ (3.8759) \end{array}$ | $\begin{array}{r} 1.3076 \\ (6.3692) \end{array}$ | 0.983 |

Note : Figures in parantheses represent values of the respective $t$ - regression coefficients. $\bar{R}$ gives correlation coefficient corrected for degrees of freedom.

Table 5.2
Financing of aggregate outlay 1980-85


Table 5.3
Estimates of financial resources for the public sector plan 1980-85
Rs. crores


Table 5.4
Market borrowing : 1980-85
(at 1979-80 prices)
(Rs. crores)


Table 5.5
Term loans under state Plan

| Sl. No. Agency |  |  |  |  |  |  |  |  | $\frac{\text { Rs. crores }}{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 1 |  |  |  |  |  |  |  |  |
|  | Life Insurance Corporation | $\cdots$ | $\cdots$ | * | $\cdots$ | -• | - | - | 1908 |
| 2 | Reserve Bank of India | - | - | - | . | -• | - | - | 185 |
|  | Rural Electrification Corporation | - | - | - | - | -• | - | . | 602 |
| 4 | Others | - | - | - | -• | $\cdots$ | $\cdots$ | $\cdots$ | 27 |
| 5 | Total | $\cdots$ | -• | . | $\cdots$ | -• | - | $\cdots$ | 2722 |

Table 6.1
Employment, output and employment elasticity by broad groups of sectors

| $\begin{aligned} & \text { Sl. } \\ & \text { No. } \end{aligned}$ | Sector | Employment ${ }^{1}$ |  |  | Industry | output ${ }^{2}$ | Growth Rates 1984-85/1979-80 |  | Elasticity |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1979-80 | 1984-85 | 1979-80 | 1984-85 | Employment | Industry Output |  |
| (0) | (1) |  | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 1 | Agriculture ${ }^{4}$ | . | 80.331 | 95.251 | 460957.63 | 593954.00 | 3.47 | 5.20 | 0.67204 |
| 2 | Mining \& Quarrying | - | 0.724 | 0.894 | 20901.50 | 36020.00 | 4.31 | 11.50 | 0.38753 |
| 3 | Manufacturing |  | 22.012 | 27.759 | 626403.94 | 905323.00 | 4.75 | 7.64 | 0.62985 |
| 4 | Construction |  | 9.286 | 11.321 | 154463.00 | 219657.00 | 4.04 | 7.10 | 0.57776 |
| 5 | Elec., gas \& water Supply. |  | 0.723 | 0.927 | 38306.57 | 65279.00 | 5.10 | 11.25 | 0.46627 |
| 6 | Railways . |  | 1.662 | 1.704 | 20163.85 | 28607.00 | 0.50 | 7.25 | 0.07136 |
| 7 | Other Transport |  | 7.109 | 8.677 | 79128.75 | 108724.00 | 4.07 | 6.56 | 0.62730 |
| 8 | Communication |  | 0.800 | 0.917 | 8738.83 | 11739.00 | 2.77 | 6.08 | 0.46248 |
| 9 | Trade, storage \& warehouses |  | 13.278 | 16.640 | 203138.00 | 272835.00 | 4.62 | 6.54 | 0.71259 |
| 10 | Banking \& insurance |  | 1.038 | 1.225 | 33343.00 | 45248.00 | 3.37 | 6.30 | 0.54255 |
| 11 | Real Estate and ownership dwellings .. |  | 0.028 | 0.032 | 36500.00 | 48133.00 | 2.71 | 5.69 | 0.48266 |
| 12 | Public Admn., defence and oth services |  | 14.119 | 16.042 | 203005.94 | 264716.00 | 2.59 | 5.45 | 0.48108 |
| 13 | Total .. .. | . | 151.11 | 181.39 | 1885052.00 | 2604235.00 | 3.72 | 6.68 |  |

1 in million standard person years.
${ }^{2}$ Rs. million
s Annual average (compound)
4 Including forestry \& logging and Ifishing.

Table 6.2
Incremental employment capital ratio

| $\begin{aligned} & \text { Sl. } \\ & \text { No. } \end{aligned}$ | Sector |  |  | Employment |  | Investment | Employment Investment ratio (person years per million rupees) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\begin{aligned} & \text { (in Million } \\ & \text { person } \\ & 1979-80 \end{aligned}$ | $\begin{aligned} & \text { standard } \\ & \text { years) } \\ & 1984-85 \end{aligned}$ | (in Rs. crores) 1980 to 1985 |  |
| 0 | 1 |  |  | 2 | 3 | 4 | 5 |
| 1 | Agriculture $\quad$ - | - . | $\ldots$ | 80.331 | 95.251 | 29982 | 44.730 |
| 2 | Mining \& Quarrying | -• $\quad$ - | $\cdots$ | 0.724 | 0.894 | 6575 | 2.585 |
| 3 | Manufacturing .. | -. | - | 22.012 | 27.759 | 45515 | 12.626 |
| 4 | Construction | - ${ }^{\text {- }}$ | - | 9.286 | 11.321 | 1760 | 115.625 |
| 5 | Elec., gas and water supply | - | -* | 0.723 | 0.927 | 23554 | 0.866 |
| 6 | Railways .. | . . . | . | 1.662 | 1.704 | 4724 | 0.889 |
| 7 | Other transport | -. . | . | 7.109 | 8.677 | 11330 | 13.839 |
| 8 | Communication | .. . | - | 0.800 | 0.917 | 2902 | 4.031 |
| 9 | Trade, storage and warehous | ing | $\cdots$ | 13.278 | 16.640 | 7299 | 46.061 |
| 10 | Banking and insurance | .. .. | - | 1.038 | 1.225 | 260 | 77.927 |
| 11 | Real estate and ownership of | f dwel. | - | 0.028 | 0.032 | 16437 | . 024 |
| 12 | Public Admn., Defence and | ther services | -• | 14.119 | 16.042 | 4886 | 39.357 |
| 13 | Investment in IRDP and NR | EP | . | 0.000 | 4.000 | 3486 | 11.5 |
|  | Total | .. .. | -• | 151.11 | 185.39 | 158710 | 21.599 |

Table 7.1
Material Balance for Coal, 1979-80 and 1984-85


[^16]
## Coal-Correspondence between Material Balance and Input-Output sectoral projection



## Notes:- ${ }^{1}$. Figures in brackets indicate middlings.

${ }^{2}$. Indigenous raw coal equivalent of 0.94 million tonnes of imported coal.
${ }^{3}$. Commodities covered by the Input Output sector are coal and lignite.

Table 7.3
Demand Supply Balance: Iron Ore : 1979-80 and 1984-85.
(Million tonnes)

S.No Item $\quad$\begin{tabular}{l}
Type of <br>
ore

 

Production of <br>
consuming item

$\quad$

Requirement of iron <br>
ore
\end{tabular}

I. DEMAND
A. Domestic demand

1. Steel

2. In addition about one million tonnes of pellets will be exported, iron ore requirements for which are included as domestic demand

TAble 7.4
Iron Ore-Correspondence between Input-Output and Material Balance projections.

|  | Unit | Inter Industry use |  |  | Final use |  |  |  | Output (Actual Target) $(5+9)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Iron and Steel including Pellets of sponge Iron | Iron Casting and Forgings | Total | consumption investment changes in stocks | Export | Import | Final use (net of Imports) $(6+7-8)$ |  |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| $\begin{gathered} \text { 1979-80 } \\ \text { Actual } \end{gathered}$ | Million tonnes | 15.06 | negligible | 15.06 |  | 23.96 |  | 2396 | 39.02 |
| 1984-85 |  |  |  |  |  |  |  |  |  |
| Material Balance Projections | Mill Tonnes | 23.3 | negligible | 23.3 | 0.7 | 31 | negli. | 31.7 | 55 |
| I.O. Model Projections | Rs. Million | 4283 | 0.5 | 4288 | 28 | 1245 | 2 | 1271 | 1700 |

Table 7.5
Sector-wise consumption of saleable steel-1979-80


Source : Steel Authority of India Limited.

Table 7.6
Consumption of steel 1979-80 (Estimated) and 1984-85 (prolected)


Notr : ${ }^{1}$ Based on Gross Investment

Table 7.7
Steel consumption in principal industries in organised sector 1979-80 (estimated) and 1984-85 (projected)

| $\begin{gathered} \text { Serial } \\ \text { No. } \end{gathered}$ | Consuming Industry |  |  | Unit Output |  | Output |  | Consum- <br> ption <br> Norm <br> (Tons/ <br> unit) | Consumption (Tonnes) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | 1979-80 | 1984-85 |  |  |  |
|  |  |  |  |  |  |  |  |  | 1979-80 | 1984-85 |
| (0) | (1) |  |  | (2) |  | (3) | (4) | (5) | (6) | (7) |
| 1 | Diesel Locomotives | . |  | .. | Nos. | 150 | 260 | 100 | 15000 | 26000 |
| 2 | Electric Locomotives | - |  |  | Nos. | 58 | 90 | 85.9 | 4982 | 7731 |
| 3 | Wagons | . |  | .. | Thou.Nos | 12.1 | 21 | 11270 | 136367 | 236670 |
| 4 | Commercial Vehicles | .. |  | .. | Thou. Nos. | . 57.4 | 105 | 2693 | 154578 | 282765 |
| 5 | Coaches | . |  | . | Nos. | 1250 | 1870 | 34.7 | 43375 | 64889 |
| 6 | Auto Ancilliaries \& parts | . |  | .. | Rs. Mill. | 2750 | 4400 | 55 | 151250 | 242000 |
| 7 | Two Wheelers | . |  | . | Thou. Nos | s. 317.2 | 500 | 114.5 | 36319 | 57250 |
| 8 | Cycle Parts \& accessories |  |  | . | Rs. Mill. | 360 | 510 | 120 | 43200 | 64800 |
| 9 | Bicycles complete | * |  | , | Thou. Nos. | s. 3837 | 6000 | 18.7 | 71752 | 112200 |
| 10 | Cars, Jeeps | - |  | . | Thou. Nos. | s. 47.2 | 66 | 850.3 | 40134 | 56120 |
| 11 | Ship Building | .. |  | . | Thou. DWT | T 70* | 210 | 334.5 | 23415 | 70245 |
| 12 | Three-Wheelers | . |  | - | Thou. Nos. | S. 17.49 | 28 | 331.5 | 5798726170 | 9282 |
|  | Sub-total (Transport Equipment) |  |  | - |  |  |  |  |  | 1229958 |
| 13 | Turbo Generators | -. |  | . | Mill.KW | 3.23 | 4.7 | 8866 | 28637 | 41670 |
| 14 | Electric Motors | - | - | - | Mill. HP | 3.8 | 7.2 | 4885 | 18563 | 35172 |
| 15 | Transformers | - | . | . | Mill. KVA | 18.7 | 35 | 2494 | 46638 | 87290 |
| 16 | ACSR Conductors | - | - | . | Th.Tonnes | - 69.09 | 121 | 346 | 23905 | 41866 |
| 17 | Electric Fans | .. |  | . | Th.Nos. | 3850 | 6200 | 4 | 15400 | 24800 |
| 18 | Refrigerators | . |  | . | Th.Nos. | 222.46 | 390 | 61.4 | 13659 | 23946 |
| 19 | Airconditioners | .. |  | .. | Th. Nos. | 29.5 | 45 | 38.3 | 1130 | 1724 |
| 20 | PVC Cables LT .. | - |  | . | Th. Kms. | 496.6 | 850 | 29.3 | 14550 | 24905 |
| 21 | PVC Cables Power | . | .. | . | Th. Kms. | 15* | 24 | 700 | 10500 | 16800 |
| 22 | Paper Insulated Cables | . |  | . | Th. Kms. | 3.27 | 5.3 | 1500 | 4905 | 795 |
| 23 | Coaxial Cables | . | . | - | Th. Tube Kms. 2.50* |  | 4.0 | 234 | 585 | 936 |
| 24 | House Service Metres | . |  | - | Th. Nos. | 3652 | 8363 | 3.4 | 12417 | 28434 |
| 25 | Insulators | . | - | .. | Th. Tonnes | S 27.0 * | 48 | 235.8 | 6367 | 11318 |
|  | Sub-total (Electrical Equipment): |  |  | .. |  |  |  |  | 197256 | 346811 |
| 26 | Cranes | $\cdots$ | - | - | Th. Tonnes | s 16.7 | 30 | 1053 | 17585 | 31590 |
| 27 | Machine Tools | . | - | $\cdots$ | Rs. Mill. | 1900 | 2400 | 15.3 | 29070 | 35190 |
| 28 | Diesel Engines (Stationary).. |  | . | , | Th.Nos. | 142.3 | 200 | 66.8 | 9506 | 13360 |
| 29 | Petrol Engines .. |  | - | - | Th. Nos. | 50* | 70 | 28.2 | 1410 | 1974 |
| 30 | Power Driven Pumps |  | . | . | Th. Nos. | 346.8 | 550 | 4.3 | 1491 | 2365 |
| 31 | Compressors |  |  | . | Th. Nos. | 13.32 | 27 | 770 | 10256 | 20790 |
| 32 | Boilers (Power \& Industries) |  |  | . | Rs. Mill. | 2210 | 3460 | 37.8 | 83538 | 13078 |
| 33 | Chemical Machinery |  |  | ., | Rs. Mill. | 740 | 1200 | 8.0 | 5920 | 9600 |
| 34 | Metallurgical Machinery |  |  | , | Rs. Mill. | 405.8 | 820 | 28.4 | 11525 | 23288 |
| 35 | Mining Machinery | - | - | . | Rs. Mill. | 242.7 | 450 | 104 | 25241 | 46800 |

Table 7.7 -contd.
Steel consumption in principal industries in organised sector 1979-80 (estimated) and 1984-85 (projected)

| Serial No. | Consuming Industry |  |  | Unit of Output |  | Output |  | Consum-ptionnorm(Tons/Unit) | Consumption (Tonnes) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  | 1979-80 | 1984-85 |
| (0) | (1) |  |  |  | (2) | (3) | (4) | (5) | (6) | (7) |
| 36 | Textile Machinery |  |  | . | Rs. Mill. | 2100.0 | 2950 | 25 | 52500 | 73750 |
| 37 | Cement Machinery | . |  | . | Rs. Mill. | 253.0 | 600 | 119.3 | 30183 | 71580 |
| 38 | Sugar Machinery .. |  |  | . | Rs. Mill. | 320.0 | 700 | 30.4 | 9728 | 21280 |
| 39 | Paper Machinery | 1. |  | 1 | Rs. Mill. | 321.0 | 420 | 37.3 | 11973 | 15666 |
| 40 | Dairy Machinery .. | . |  | , | Rs. Mill. | 90.0 * | 132 | 47.3 | 4257 | 6244 |
| 41 | Printing Machinery | . |  | - | Rs. Mill. | 73 | 135 | 96.3 | 7030 | 13001 |
| 42 | Conveying Machinery | . |  | . | Rs. Mill. | 600* | 880 | 38 | 22800 | 33440 |
| 43 | Weighing Machinery | . | .. | .. | Rs. Mill. | 60* | 88 | 96.6 | 5796 | 8501 |
| 44 | Crawler Tractors | . |  | $\cdots$ | Nos. | 330* | 450 | 19.4 | 6402 | 8730 |
| 45 | Dumper \& Scrappers | . | . | . | Nos. | 510* | 685 | 22.2 | 11322 | 15207 |
| 46 | Excavators | . |  | . | Nos. | 175* | 235 | 18.5 | 3238 | 4348 |
| 47 | Road Rollers | - | . | .. | Nos. | 823 | 1100 | 7.7 | 6337 | 8470 |
| 48 | Agricultural Tractors | . |  | . | Thou. Nos. | 62.5 | 90 | 475 | 29688 | 42750 |
| 49 | Industrial Furnaces | . | - | . | Rs. Mill. | 150* | 220 | 29.8 | 4470 | 6556 |
| Sub-total (Industrial Machinery) : |  |  |  | . |  |  |  |  | 401266 | 645268 |
| 50 | Typewriters | $\cdots$ |  | - | Thou. Nos. | 90.85 | 182 | 18.9 | 1717 | 3440 |
| 51 | Sewing Machines | . | . | . | Thou. Nos. | 385 | 500 | 5.1 | 1964 | 2550 |
| 52 | Steel Furniture | . | - | .. | Th. Tonnes | 25* | 32 | 1125 | 28125 | 36000 |
| 53 | Wire Ropes | . | . | - | Th. Tonnes | 30.4 | 55 | 1100 | 33440 | 60500 |
| 54 | Welding Electrodes | - | . |  | Mill. r. meters | 560.8 | 787 | 112 | 62810 | 88144 |
| 55 | Lifts | . | . | $\cdots$ | Nos. | 847.0 | 970 | 4.5 | 3812 | 4365 |
| 56 | Reduction Gears | - | . | . | Rs. Mill. | 190* | 280 | 161.6 | 30704 | 45248 |
| 57 | Enamel Wares | - | . | - | Mill. Nos. | 15* | - 18 | 634 | 9510 | 11412 |
| 58 | Bolts, nuts \& rivets | - | . | . | Th. Tonnes | . 25.73 | 31 | 1180 | 30361 | 36580 |
| 59 | Hurricane Lanterns | - | - | - | Mill. Nos. | 2.20 | 3 | 978.5 | 2153 | 2939 |
| 60 | Ball \& roller bearings | - | . | - | Mill. Nos. | 28.18 | 48 | 120 | 3382 | 5760 |
| 61 | Fabricated Structurals | . | . | .. | Th. Tonnes | 105.2 | 178 | 1200 | 126240 | 213600 |
| 62 | Transmission Towers |  | . | $\cdots$ | Th. Tonnes | 95.9 | 162 | 1100 | 105490 | 178200 |
| 63 | Black \& Galvanised St | 1 Pipes | $\cdots$ | . | Th. Tonnes | 615.6 | 1040 | 1150 | 707940 | 1196000 |
|  | Sub-total (other metal manufactures) |  |  | . |  |  |  |  | 1147648 | 1884735 |

Total engineering equipment \& goods organised
sector : .. .. .. .. .. .. .. 2472340 4106772
Notes : Tonnes/Mill Rs. norms are at 1979-80 prices.
*Estimated.

Finished Steel (Plain Carbon)—Correspondence between Material Balance \& Input-Output secteral prajectiens

|  | Unit | DEMAND |  |  |  |  |  |  | SUPPLY |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Inter-Industry Use |  |  |  |  | Construc- Total use ${ }^{\text {s }}$ tion works inter ind. (Net ofuseimports) |  | Output | Average utilisation | Cap. at the end of the year | Plant |
|  |  | Transport equipment | eiectrical equipment | industrial machinery |  | Other steel consu ming inds. |  |  | (Actual/ <br> Target) $\begin{aligned} & (9+10= \\ & 12 \times 13) \end{aligned}$ |  |  |  |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) (10) | (11) | ) (12) | ) (13) | (14) |
| 1979-80 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actual/Estimated ${ }^{1}$.. | Mill. Tcnnes | 0.835 | 0.289 | e. 589 | 1.915 | 0.872 | 3.560 | $8 . C C O(-) 0.650$ | 7.31 | $0.665{ }^{\text {c }}$ | $11.0^{5}$ |  |
| 1984-85 |  |  |  |  |  |  |  |  |  |  |  |  |
| Material Balance Projections | Mill. Tonnes | 1.415 | 0.509 | 0.946 | 3.154 | 1.448 | 5.400 | $12.872(-) 1.472^{3}$ | 11.40 | 0.7974 | $14.3 \mathrm{C}^{5}$ | All Indus tries. |
|  |  |  |  |  |  |  |  |  |  | 0.838 | 3.15 | Bhilai |
|  |  |  |  |  |  |  |  |  |  | 0.807 | 1.24 | Durgapur |
|  |  |  |  |  |  |  |  |  |  | 0.959 | 1.21 | Rourkela |
|  |  |  |  |  |  |  |  |  |  | 0.848 | 3.15 | Bokaro |
|  |  |  |  |  |  |  |  |  |  | 0.850 | 0.80 | IISCO |
|  |  |  |  |  |  |  |  |  |  | 0.920 | 1.74 | TISCO |
|  |  |  |  |  |  |  |  |  |  | 0.600 | 3.00 | Minis. |
| I-O Model Projection ${ }^{\text {6 }}$ | Rs. Mill ${ }^{\text {a }}$. | 3402 | 1337 | 3203 | 8744 | 3600 | 19506 | $39792(-) 5108$ | 34684 |  |  |  |

${ }^{1}$ Inter-industry use includes requirements of small scale industries in the respective sectors and adjustments for processing losses.
Rs. Million factor cost at 1979-80 prices.
r[(Exports : 0.300 million tonnes)- (Imports : 1.772 million tonnes)]
'Losses in processing Semi-finished steel into finished steel have been provided for in indicating 'All Industry' capacity utilisation.
In terms of ealeable steel i.e. finished steel + semi-finished steel.
(Consumption + Changes in stocks + Export-Import)
The input-output sector includes besides mild steel, pig iron, ferro-alloys and alloy and special steels.

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Table 7.9
Material Balance : Electricity, 1978-79, 1979-80 and 1984-85
(In Million KWH)


Note : Figures for sectoral consumption of electricity for 1978-79 and 1979-80 are provisional.

Table 7.10
Electricity consumption by major imdustries in 1979-80 and 1984-85

| sl. Consuming Industry No. |  |  | Unit of production | Production |  | Norm of consumption | Electrcity requirement (M KWH) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 1979-80 | 1984-85 |  | 1979-80 | 1984-85 |
| (0) | (1) |  | (2) | (3) | (4) | (5) | (6) | (8) |
| A. Mining |  |  |  |  |  |  |  |  |
| 1 | Coal | $\cdots$ | Million tonnes | 103.96 | 165.0 | 15 | 1559.4 | 2475 |
| 2 | Lignite .. | -• | " | 3.12 | 8.0 | 15 | 46.8 | 120 |
| 3 P | Petroleum Crude | . | " | 11.77 | 21.6 | 20 | 235.4 | 432 |
| 4 | Iron Ore .. .. | . | " | 39.02 | 55.0 | 15 | 585.3 | 825 |
| 5 | Iron Ore Concentrates | -• | , | . | 5.0 | 55 | ** | 275 |
| 6 | Manganese Ore .. | . | " | 1.72 | 2.0 | 15 | 25.8 | 30 |
| 7 | Copper Ore .. .. | $\cdots$ | " | 1.99 | 5.1 | 25 | 50.0 | 127.5 |
| 8 | Bauxite .. .. | . | " | 1.83 | 2.7 | 25 | 45.75 | 67.5 |
| 9 | Dolomite .. .. | - | " | 1.97 | 2.7 | 25 | 49.25 | 67.5 |
| 10 | Zinc-Lead Ore | - | " | 1.03 | 1.9 | 25 | 25.75 | 47.5 |
|  | Sub-Total Mining .. | -* | - |  |  |  | 2623.45 | 4467.0 |
|  |  |  |  |  |  |  | (for other | $\begin{aligned} & +1134.3 \\ & \text { qerals) } \end{aligned}$ |

Table 7.10-contd (ii)


TAblef 7.10-Concld.

| 0 | 1 |  |  | 2 | 3 | 4 | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 55 | Synthetic Rubber | . |  | Th. Tonnes | 30.3 | 45 | 700 | 21.21 | 37.1 |
| 56 | Rayon Filament | . . | . | " | 41.8 | 50 | 6800 | 284.24 | 340 |
| 57 | Silk Textiles .. | . . |  | M.M. | 1140 | 1650 | 0.33 | 376.15 | 544.5 |
| 58 | Staple Fibre .. | - |  | Th. Tonnes | 84.5 | 130 | 1820 | 153.97 | 236.6 |
| 59 | Nylon Yarn Cord | . . | . | " | 28.8 | 21 | 6670 | 192.10 | 140.1 |
| 60 | Chemical Pulp | - |  | , | 71.1 | 210 | 1.000 | 71.1 | 210.0 |
| 61 | Vegetable Oil | . | . $\cdot$ | , | 350 | 450 | 140 | 49 | 63 |
| 62 | Vanaspati | - |  | " | 626 | 900 | 220 | 137.74 | 202.4 |
| 63 | Paints \& Varnishes | . |  | ', | 76.7 | 130 | 35 | 2.68 | 4.6 |
| 64 | Soap |  | . | " | 300.8 | 433 | 200 | 60.16 | 86.6 |
| 65 | Match Boxes | . |  | M. Boxes | 3980 | 6890 | 0.004 | 15.92 | 26.4 |
| 66 | Glass | - | $\ldots$ | Th. Tonnes | 602.9 | 750 | 90 | 54.26 | 67.5 |
| 67 | Refractories | - |  | " | 927.9 | 1250 | 44 | 40.83 | 55 |
| 68 | Cement |  |  | M. Tonnes | 17.18 | 34.5 | 125 | 2121.6 | 4312.5 |
| 69 | Diesel Engine (St.) | . |  | Th. Nos. | 142.3 | 150 | 75 | 10.67 | 11.3 |
| 70 | Sewing Machine | - |  | " | 385 | 490 | 60 | 23.1 | 29.4 |
| 71 | Referigerators | . $\cdot$ | . | , | 222.5 | 250 | 110 | 24.27 | 27.5 |
| 72 | Electric Lamps | . |  | " | 227.8 | 387 | 0.15 | 34.2 | 58.1 |
| 73 | Electric Fans . . | . | . | " | 3850 | 4500 | 15 | 57.75 | 67.5 |
| 74 | Radio Receivers | - | . | , | 2059 | 3700 | 18 | 37.06 | 66.5 |
| 75 | Automobiles | - | $\cdots$ | " | 104.6 | 158 | 1200 | 125.52 | 189.6 |
| 76 | Bicycles | - |  | M. Nos. | 3.84 | 6.3 | 15 | 57.6 | 94.5 |
| 77 | Steel Pipes \& Tubes |  |  | Th. Tonnes | 615.6 | 780 | 105 | 64.64 | 81.9 |
| 78 | Machinery .. | - | $\cdots$ | Rs. Crores | 3300 | 4500 | 1000 | 3300.00 | 4500.00 |
|  |  |  |  |  |  |  |  | 12674.99 | 19451.5 |
| Total Major Industrial Consumption |  |  |  |  |  |  |  | 34728.05 | 56707.5 |

Table 7.11
Estimates of domestic and commercial consumption of electricity in 1984-85 (in Million KWH) (Base Year 1975-76)

| S. Region/ State No. |  | Domestic Consumption |  |  | Commercial Consumption |  |  | Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Base year cons. | $\begin{aligned} & \text { Growth } \\ & \text { rate } \\ & \% \end{aligned}$ | $\begin{aligned} & \text { Estimated } \\ & \text { consump- } \\ & \text { tion } 84-85 \end{aligned}$ | Base year cons. | Growth rate \% | Estimated cons. 1984-85 |  |
| 0 1 |  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| A. Northern Region |  |  |  |  |  |  |  |  |
| 1. Punjab | . | 250.18 | 13.80 | 797.39 | 155.50 | 13.00 | 463.94 |  |
| 2. Haryana | . | 117.96 | 14.91 | 410.28 | 86.18 | 12.94 | 368.32 |  |
| 3. Himachal | .. | 42.40 | 15.00 | 148.51 | 27.27 | 15.00 | 95.25 |  |
| 4. Jammu \& Kashmir | . | 103.25 | 10.00 | 242.40 | 29.30 | 15.00 | 102.34 |  |
| 5. Delhi .. | . | 468.54 | 10.32 | 1129.17 | 285.14* | 11.36 | 924.69 | $\begin{aligned} & \text { *Base Year } \\ & \text { 1973-74 } \end{aligned}$ |
| 6. Chandigarh | - | 32.46 | 11.50 | 86.08 | 22.56 | 11.50 | 59.65 |  |
| 7. U. P. .. | $\cdots$ | 579.88 | 9.94 | 1354.81 | 122.61* | 10.00 | 420.30 | $\begin{aligned} & { }^{*} \text { Base Year } \\ & 1971-72 \end{aligned}$ |
| 8. Rajasthan .. | $\cdots$ | 119.83 | 13.00 | 358.54 | 93.73 | 12.30 | 264.37 |  |
|  |  |  |  | 4527.18 |  |  | 2698.86 |  |

Table 7.11-Concld.

| 1 |  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| B. Western Region |  |  |  |  |  |  |  |  |
| 9. Gujarat | $\ldots$ | 415.31 | 11.98 | 1144.95 | 171.19 | 13.20 | 518.81 |  |
| 10. Maharashtra | $\ldots$ | 1049.47 | 9.32 | 2339.35 | 745.26 | 8.53 | 1545.80 |  |
| 11. Madhya Pradesh | $\ldots$ | 198.97 | 10.30 | 478.73 | $186.40^{*}$ | 15.00 | 748.75 |  |
| *Base Year |  |  |  |  |  |  |  |  |
| 12. Goa, Daman \& Diu | 16.63 | 12.00 | 45.91 | 8.04 | 12.00 | 22.13 |  |  |
|  |  |  |  |  | 3999.94. |  |  | 2835.49. |

C. Southern Region

| 13. Andhra Pradesh | . | 283.94 | 11.00 | 723.26 | 298.78 | 13.94 | 960.20 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 14. Karnataka |  | 402.48 | 12.13 | 1123.00 | 114.75 | 13.14 | 346.10 |  |
| 15. Kerala |  | 211.03 | 9.00 | 456.36 | 113.69 | 12.00 | 313.04 |  |
| 16. Tamil Nadu | . | 501.14 | 7.70 | 960.14 | 477.62* | 10.00 | 1230.06 | *Base Year 1974-75 |
| 17. Pondicherry | . | 11.11 | 13.60 | 34.85 | 6.08* | 6.20 | 12.40 | *Base Year |
|  |  |  |  | 3297.61 |  |  | 2861.18 |  |

D. Eastern Region

| 18. West Bengal | . . | 781.16 | 6.00 | 1314.07 | 397.01 | 7.94 | 784.04 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 19. Bihar | - | 129.75 | 7.66 | 251.04 | 113.79 | 10.40 | 275.25 |
| 20. Orissa | ** | 61.83 | 9.00 | 133.70 | 54.71 | 11.90 | 153.42 |
|  |  |  |  | 1698.81 |  |  | 1212.71 |

E. NORTH EASTERN REGION

$$
85.30 \quad 15.00 \quad 300.00
$$

78.43*
15.00


Taple 7.12
Electricity-Correspondence between Material Balance and Input-Output sectoral projections.


[^17]Table 7.13
Sector-wise demand for petroleum products 1977-78, 1978-79, 1979-80 and 1984-85
(Million Tonnes)

| (Million Tonnes) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sl. <br> No. | Sector |  | 1977-78 <br> (Actuals) | 1978-79 <br> (Actuals) | $\begin{aligned} & 1979-80 \\ & \text { (Provi- } \end{aligned}$ | Growth <br> Rate | Demand pattern 1979-80 (\%) | $\begin{gathered} 1984-85 \\ \text { (Projected) } \end{gathered}$ | Growth <br> Rate | Demand pattern 1984-85 (\%) |
|  |  |  |  |  |  | 1979-80 |  |  | 1984-85 |  |
|  |  |  |  |  |  | $\begin{aligned} & 1977-78 \\ & (\% \text { p. a. }) \end{aligned}$ |  |  | 1979-80 |  |
| 0 | 1 |  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | Transport |  | 9.868 | 10.740 | 9.564 | 8.67 | 32.39 | 18.230 | 10.18 | 34.18 |
|  | a. Road | . | 7.554 | 8.347 | 7.110 | 10.36 | 24.08 | 11.800 | 10.66 | 25.93 |
|  | b. Air | . | 1.041 | 1.154 | 1.140 | 4.65 | 3.86 | 1.930 | 11.10 | 4.24 |
|  | c. Rail | . | 0.832 | 0.851 | 0.919 | 5.10 | 3.11 | 1.290 | 7.02 | 2.84 |
|  | d. Water | . | 0.441 | 0.388 | 0.395 | - | 1.34 | 0.510 | 5.24 | 1.12 |
| 2 | Fertilizers \& chemicals ${ }^{2}$ | . | 3.595 | 3.981 | 4.175 | 7.77 | 14.14 | 6.965 | 10.78 | 15.31 |
| 3 | Household ${ }^{3}$ | . | 3.950 | 4.282 | 4.198 | 3.09 | 14.22 | 6.540 | 9.27 | 14.37 |
| 4 | Agriculture | -• |  |  | 2.800 |  | 9.48 | 3.650 | 5.45 | 8.02 |
| 5 | Industry ${ }^{\text {a }}$ | $\cdots$ | 1.913 | 2.170 | 2.265 | 8.81 | 7.67 | 2.890 | 4.99 | 6.35 |
| 6 | Power generation ${ }^{5}$ | - | 1.919 | 2.253 | 2.198 | 7.02 | 7.44 | 2.610 | 3.50 | 5.74 |
| 7 | Others ${ }^{8}$ | . | 4.294 | 4.815 | 4.326 | 8.30 | 14.65 | 8.265 | 11.08 | 16.08 |
| 8 | Total .. | -• | 25.539 | 28.241 | 29.526 | 7.52 | 100.00 | 45.500 | 9.03 | 100.00 |

${ }^{1}$ Includes private road transport demand for mogas, HSD and fuel oil demand for road, rail and water transport and ATF demand for air transport.
${ }^{2}$ Includes naphtha demand for fertilizers and petrochemicals and fuel oil for fertilizers as well as for chemical and allied industries.
${ }^{\text {a }}$ Includes LPG and kerosene for domestic use.
${ }^{4}$ Includes fuel oil and LPG demand for industry excluding fertiliser and chemicals.
${ }^{\text {s }}$ Includes fuel oil and LDO demand for power generation.
${ }^{\text {a }}$ Includes bitumen requirements for road maintenance and construction of rural link roads, agriculture, small scale industries lubes and greases, wax and miscellaneous demand.

Table 7.14
Material Balance : Petroleum Products 1978-79, 1979-80 and 1984-85
(Million tonnes)

| Sl. No. | Product category | 1978-79 (Actuals) |  |  |  | 1979-80 (Provisional) |  |  |  | 1984-85 (Projected) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production | Import | Export incl. Re. exp | Demand | Produc tion | Import | Export incl. <br> Re. Exp. | Demand | Pro-duction | Import | Expor | Demand |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | Light distillates | 4.295 | 0.319 | 0.036 | 4.583 | 4.460 | 0.168 | 0.088 | 4.456 | 7.690 | - | 0.640 | 7.050 |
| 2 | Middle distillates | 12.476 | 2.593 | - | 15.172 | 13.080 | 3.504 | - | 16.191 | 19,430 | 6,490 |  | 25.92 |
| 3 | Heavy ends | 7.422 | 0.966 | 0.008 | 8.486 | 8.286 | 0.806 | - | 8.879 | 8.220 | 4.310 |  | 12.53 |
| 4 | Total : Petroleum |  |  |  |  |  |  |  |  |  |  |  |  |
|  | products | 24.193 | 3.878 | 0.044 | 28.241 | 25.826 | 4.478 | 0.088 | 29.526 | 35.340 | 10.800 | 00.640 | 45.500 |

Table 7.15
Petroleum Products－Correspondence between Material Bulance and Input－Output sectoral projections

|  |  | DEMAND |  |  |  |  |  |  |  |  |  |  | SUPPLY |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Inter Industry use |  |  |  |  |  |  | Final Use |  |  |  |  |  |  |  |
|  | Unit |  | $\begin{aligned} & \text { 듬 } \\ & \text { 呂 } \\ & \text { H } \\ & \text { H } \\ & \text { © } \end{aligned}$ | $\begin{aligned} & \text { 急 } \\ & \text { 号 } \\ & \text { 最 } \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & \text { 吂 } \\ & \text { 品 } \\ & \text { 臬 } \end{aligned}$ |  |  |  | นо!̣вS!!! |  | $\begin{aligned} & \text { 苞 } \\ & \text { 岕 } \\ & \underset{\sim}{0} \end{aligned}$ |
| （1） | （2） | （3） | （4） | （5） | （6） | （7） | （8） | （9） | （10） | （11） | （12） | （13） | （14） | （15） | （16） | （17） |
| $\begin{aligned} & \text { 1979-80 } \\ & \text { Actual/ } \\ & \text { Estimated } \end{aligned}$ | Mill Tonnes | 8.65 | 0.92 | 2.80 | 4.18 | 6.59 | 2.20 | 25.34 | 4.88 | 0.09 | 4.48 | 0.49 | $\begin{aligned} & 25.83 \\ & 1.64 \\ & 27.47 \end{aligned}$ | 0.86 | 31.80 | Refining Losses Throughput |
| $1984-85$ <br> Material Balance Projections | Mill Tonnes | 14.24 | 1.29 | 3.65 | 6.96 | 10.21 | 2.61 | 38.96 | 6.54 | 0.64 | 10.80 | （－） 3.62 | $\begin{aligned} & 35.34 \\ & 2.66 \\ & 38.00 \end{aligned}$ | $\begin{aligned} & 0.83^{\mathrm{a}} \\ & 0.90 \\ & 0.90 \\ & 0.90 \\ & 0.90 \\ & 0.86 \\ & 0.87 \\ & 0.59 \\ & 0.90 \\ & 0.68 \\ & 0.90 \\ & 0.90 \\ & 0.90 \end{aligned}$ | 45.55 0.85 3.30 7.30 2.50 6.00 3.50 4.50 4.50 5.60 1.00 0.50 6.00 | Refining Losses <br> Throughput <br> Gauhati <br> Barauni <br> Koyali <br> Haldia <br> Bombay（BPCL） <br> Bombay（HPCL） <br> Vizag－CORIL <br> Cochin <br> Madras <br> BRPL <br> P．Sector（Assam） <br> Mathura |
| I－O Model Projections ${ }^{1}$ | Rs．Million ${ }^{\text {a }}$ | 15588 | 1587 | 10532 | 761 | 12602 | 2384 | 43454 | 15339 |  | 370 | 5031 | 38423 |  |  |  |

## Notes：－

${ }^{1}$ Unit Prices of pertoleum products are not uniform over different end uses because of the variation in the type of product used． ${ }^{2}$ At factor cost at 1979－80 prices．
${ }^{3}$ Capacity utilisation is low in $1984-85$ because the secondary processing facilities for producing the desired product－mix in favour of middle distillates may not be fully installed by then．

Table 7.16
Supply-demand balance for crude petroleum, 1979-80 \& 1984-85.
(Million Tonnes)

${ }^{1}$ Excluding changes in stocks.
${ }_{2}^{2 P r o v i s i o n a l . ~}$

Table 7.17
Crude oil-Correspondence between Material balance and Input-Output sectoral projections


[^18]Table 7.18
Norms"used for different varieties of cloth

|  |  |  | Meter of cloth per kg . of yarn |  | Extent of wastage in conversion of fibre to yarn | Quantity of cloth targeted 1984-85 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Mill. Mts. |
| (1) |  |  |  | (-) |  | (3) | (4) |
| A. Pure cotton cloth |  |  |  |  |  |  |
| 1. Mill sector .. | - | . | . | 8 | 18\% | 3300 |
| 2. Decentralised sector | .. | . | . | 10 | 18\% | 5340 |
| B. Blended /mixed cloth |  |  |  |  |  |  |
| 1. Polyester-cotton (67-33) | -• | -• | . | $10 \text { (Poly) }$ | $\begin{array}{r} 5 \% \\ 27 \% \end{array}$ | $\begin{aligned} & 315 \\ & 705 \end{aligned}$ |
| 2. Polyseter-viscose (80-20) | . | .. | .. | 10 | 5\% |  |
| 3. Polyester spun | . | . | . | 12 | 5\% | 270 |
| 4. Cotton spun viscose | - | - | - | 8 (Cotton) (Viscose) | 18\% 5\% | 1080 |
| 5. Cotton-others | . | .. | . | 8 | 5\% | 120 |
| C.1. Pure art Silk | - | -• | . |  |  | $1900{ }^{\circ}$ |
|  |  |  |  | Total |  | 13030 |

The raw cotton bale of 170 kgs . with $18 \%$ wastage will therefore produce 139.4 kgs . of yarn.
Table 7.19
Supply demand balance for cotton yarn, 1979-80 and 1984-85

| Sl No. | Item |  |  |  |  | Cloth production (Mill. Mts.) |  | Yarn requirement (Mill. Kg ) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | 1979-80 | 1984-85 | 1979-80 | 1984-85 |
| (0) | (1) |  |  |  |  | (2) | (3) | (4) | (5) |
| 1 | Cotton Cloth | $\cdots$ | . | - | . | 7534 | 8640 | 834 | 940 |
|  | (a) Mill Sector | . | $\cdots$ | - | - | 3230 | 3300 | 404 | 412 |
|  | (b) Decentralised | Sector |  | - | $\cdots$ | 4304 | 5340 | 430 | 534 |
| 2 | Blended \& Mixed Fabrics Cotton part of blended/ mixed fabrics to mill/decentralised sectors |  |  |  |  | 1519 | 2490 | 95 | 130 |
| 3 | Yarn for Hosiery and Export |  |  | . | .. |  | - | 50 | 80 |
| 4 | Total Demand | - | . | - | - |  | - |  | 1156 |
| 5 | Total Production | -• | - | . | -• |  | - |  | 1156 |

Table 7.20
Supply demand balance for cotton fibres (Raw Cotton), 1979-80 and 1984-85


Table 7.21
Cotton-Correspondence between Material Balance and Input-Output projections

|  | Unit | Inter Industry use |  |  | Final use |  |  |  |  | Average Capacity Utilis- at the ation end ofthe year |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Textiles (yarn, khadi \& other textile requirements) | Other uses (Cotton seed oil, chemicals and misc industries) | Total InterIndustry use s | Con- sumption, Invest-- ment and changes in stocks | Export | Import | Final use (Net of Imports) ( $6+7$ 8) | Output <br> (Actual/ <br> ( Target) <br> $5+9=$ <br> $11 \times 12$ |  |  |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| $\begin{aligned} & \text { 1979-80 } \\ & \text { Actual/Estimated } \end{aligned}$ | Lakh Bales | 72.5 | 2.5 |  | (-)1.9 | 3.9 | - | 2.0 | 77 |  |  |
| 1984-85 |  |  |  |  |  |  |  |  |  |  |  |
| Material Balance |  |  |  |  |  |  |  |  |  |  |  |
| Projections <br> I-O Model Pro- | Lakh Bales | 86 | 3 |  | negligible | 3 | - | 3.0 | 92 |  |  |
| ections .. | Rs. Million | 16218 | 105 | 16323 | 45 | 631 | - | 676 | 16999 |  |  |

Table 7.22
Supply demand balance for jute manufacture, 1979-80 and 1984-85


[^19]Table 7.23
Jute manufactures-Correspondence between Material Balance and Input-Output sectoral projections

|  | Unit | Inter-industry use |  |  |  |  |  |  | Final use |  |  |  |  | Arerage CapacityUtilisation at the endof the year |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Cement | Sugar | Flour | Fertilizers | Cloth Foodgrains Salt \& others |  | S. Total In- <br> Consumter Indus- ption, try use investment \& changes in stock |  | Export | Import | Final use (Net of Imports). | Out-put (actual/ target) |  |  |
| (1) | (2) | (3) | (4) | 5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| 1979-80 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Actual /Estimated ${ }^{1}$ | Thous. Tonnes | 88.70 | 42.12 | 26.91 | 90.00 | 24.44 | 378.53 | 650.70 | 195.30 | 450.00 | - | 645.30 | 1336.00 | 101 | 1325 |
| 1984-85 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { Material } \\ & \text { Projections } \end{aligned} \text { Balance }{ }^{1}$ | Thous. Tonnes. | 166.15 | 82.00 | 33.89 | 168.13 | 30.15 | 509.68 | 990.00 | 0-40 | $\stackrel{510}{550}$ | - | $510-590$ | $\begin{gathered} 1500 \\ 1540 \end{gathered}$ | $\begin{aligned} & 100- \\ & 103 \end{aligned}$ | 1500 |
| I-O Model projections | Rs. Mill. | 990 | 701 | 224 | 748 | 252 | 3713 | 6628 | 321 | 2992 | 2 - | 3313 | 9941 |  |  |

[^20]Table 7.24
Supply demand balance for jute fibres : 1979-80 and 1984-85


Table 7.25
Jute Fibres-Correspondence between Material Balance and Input-output sectoral projections

|  | Unit | Inter Industry use |  | Final use |  |  |  | Output Arerage (Actual utiliTarget) sation$\begin{aligned} & (4+8= \\ & 10 \times 11) \end{aligned}$ |  | Capacity at the end of the year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Jute goods | Total Inter [ndusttry use |  | $\begin{aligned} & \text { 3- Export } \\ & \text { ion } \\ & \text { t- } \\ & \text { \& } \\ & \text { ges } \\ & \text { ocks } \end{aligned}$ | Import | Final use (Net of Imports) (5+67) |  |  |  |
| (1) | (2) | (3) | (4) |  | (6) | (7) | (8) | (9) | (19) | (11) |
| $\begin{aligned} & \text { 1979-80 } \\ & \text { Actual/Estimated } \end{aligned}$ | Lakh bales | S 78.1 | 78.1 |  | 2.2 | - | 2.2 | 80.3 |  |  |
| 1984-85 |  |  |  |  |  |  |  |  |  |  |
| Material Balance Projections Lakh |  | 87.0 to | 87.0 to negl89.3 |  | 1.7 to | 一 | $\begin{aligned} & 1.7 \text { to } \\ & 3.0 \end{aligned}$ | 91 |  |  |
|  | Bales | 89.3 |  |  | 3.0 |  |  |  |  |  |
| 1-0 Model Projections | $\text { Rs. Mil- } 2566$ |  | 2566 | 1 | 37 | - | 38 | 2604 |  |  |

Table 7.26
Man-made fibres demand for the blended/mixed and pure art silk fabrics 1984-85

| Sl. No. | Type of Fabric | Output 1984-85 (mill. metres) | Conversion norms metres Kg. | Totalfibre demand including wastage | Requirement of individual fibres |  |  |  |  |  | Total for manimade fibres Col. 7 to 12 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Cotton | VSF | VFY | PSF | PFY | NFY |  |  |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 2 | 13 |
| A. | Blended/Mixed |  |  |  |  |  |  |  |  |  |  |  |
|  | 1. Polyster Cotton . . (67:33) | 315 | 10 | 36.4 | 14.2 | - | - | 22.2 | - | - | - | 22.2 |
|  | 2. Polyester Viscose'. (80:20) | 705 | 10 | 74.2 | - | 14.8 | - | 59.4 | - | - | - | 74.2 |
|  | 3. Polyster Spun . | 270 | 12 | 23.7 | - | - | - | 23.7 | - | - | - | 23.7 |
|  | 4. Cotton Viscose (80-20) | 1080 | 8 | 160.1 | 131.7 | 28.4 | - | - | - | - | $=$ | 28.4 |
|  | 5. Cotton Others (80:20) | 120 | 8 | 17.8 | 14.6 | - | - | - | - | - | 32 | 3.2 |
|  | Total (A) .. | 2490 |  | 312 | 160.5 | 43.2 | - | 105.3 | - | - | 3. 2 ? | 151.7 |
| B. | Art Silk |  |  |  |  |  |  |  |  |  |  |  |
|  | 6. Viscose Spun . | 570 | 8 | 75.0 | - | 75.0 | - | - | - | - | - | 75.0 |
|  | 7. Viscose Filament . . | 364 | 9 | 42.6 | - | - | 42.6 | - | - | - | - | 42.6 |
|  | 8. Nylon Filament .. | 560 | 14 | 42.1 | - | - | - | - | - | 42.1 | - | 42.1 |
|  | 9. Polyester Filament | 406 | 14 | 29.6 | - | - | - | - | 29.6 | - | - | 29.6 |
|  | Total (B) .. | 1900 |  | 189.3 |  | 75.0 | 42.6 | - | 29.6 | 42.1 | - | 189.3 |
| C. | Hosiery, Wool \& Other uses Grand Totai (A), (B) \& |  |  | 9.9 |  | 1.8 | 0.4 | 5.0 |  | 0.9 | 18 | 9.0 |
|  | (C) $\quad$ - |  |  | 511.4 | 160.5 | 120.0 | 43.0 | 110.3 | 29.6 | 43.0 | 50 | 350.9 |

[^21]Table 7.27
Man-made fibres : Demand-supply balance, 1984-85


Table 7.28
Man-made fibres - Correspondence between Material Balance and Input-Output sectoral projections

| Uni |  | DEMAND |  |  |  |  | SUPPLY |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Inter | Industry | y use |  | Total Finai use ${ }^{\text {a }}$ | Output (Target) (647) $9 \times 10$ ) | Average utilisation | ```Capacity at the end of the year``` |
|  |  | Silk \& Misc. textile manufacture | Chemicals and non-metalic manufacture | Cotton Textiles, Leather Textiles and other non textile uses | Total InterIndustry use |  |  |  |  |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| 1984-85 |  |  |  |  |  |  |  |  |  |
| Material Balance Projections | Thou.Tonnes | 189.3 | 10.0 | 151.7 | 351 | (-)87 | 264 | 0.88 | 301 |
| I-O Model Projections | Rs. Million ${ }^{1}$ | 8277 | 243 | 4566 | 13086 | (-)705 | 12381 |  |  |

${ }^{1}$ Rs. million at factor cost at 1979-80 prices.
${ }^{2}$ (Consumption + changes in stocks + Export-import)

Tabla 7.29
Commodity wise Production \& Originating Traffic for Railways in 1979-80 and Projections for 1984-85
(Mill. Tonnes)


K-Kudremukh.

Table 8.1
Components of Gross Domestic Expenditure in 1984-85 under different scenarios
(Rs. million)

| $\begin{aligned} & \text { Sl. } \\ & \text { No. } \end{aligned}$ | Scenario |  | Consumption | Investment (Total) | Exports | Imports Gross (Excluding Domestic contingen- Expendicy of Rs. ture 1000 crores) |  | Aggregate Growth | $\begin{gathered} \text { GDP } \\ \text { Rate } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | Sixth Plan | Perspective $\mathrm{Pla}^{\mathrm{n}}$ |
| 0 | 1 |  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Reference Case (Preferred Scenario) | Plan | 1112650 | 367970 | 113280 | 128500 | 1465400 | 5.2 | 55 |
| 2 | Lower Agricultural Prodn.. | . | 1089042 | 369463 | 113280 | 130000 | 1441785 | 4.8 | 5.5 |
| 3 | Lower Export Performance | - | 1100794 | 367871 | 88358 | 103578 | 1453545 | 5.0 | 5.5 |
| 4 | Higher Population | . | 1122078 | 336341 | 113280 | 118154 | 1453545 | 5.0 | 5.0 |
| 5 | Higher oil price | . | 1124907 | 326843 | 113280 | 117373 | 1447656 | 4.9 | 4.9 |

Table 8.2
Growth profiles in value added and output in Sixth Plan under different scenarios

| $\begin{gathered} \text { Sb } \\ \text { to. } \end{gathered}$ | Sector |  |  | Rates of growth in value added \% |  |  |  |  | Rates of growth in value of output \% |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Reference | Lower Agri. Prod. | Lower Exports | Higher Population | Worse ned Terms of Trade | Reference | Lower Agricultural prod. | Lower Exports | Higher Population |  |
| (0) | (1) |  |  | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|  | Agriculture | . |  | 3.83 | 3.22 | 3.19 | 3.75 | 3.77 | 5.20 | 4.73 | 4.75 | 5.29 | 5.32 |
| 2. Miping and Manufacturing <br> $\begin{array}{llllllllll}6.90 & 6.57 & 7.60 & 6.79 & 6.58 & 7.76 & 7.34 & 7.97 & 7.50 & 7.35\end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (A) Mining | - |  | 11.25 | 9.91 | 16.23 | 12.28 | 12.10 | 11.50 | 10.15 | 16.24 | 12.46 | 12.29 |
|  | (B) Manufact | uring |  | 6.50 | 6.27 | 6.74 | 7.31 | 6.06 | 7.62 | 7.24 | 7.65 | 7.31 | 7.16 |
|  | (i) Food Prod | cts |  | 4.35 | 4.72 | 4.55 | 5.29 | 5.22 | 6.20 | 5.68 | 5.43 | 6.29 | 6.31 |
|  | (ii) Textiles | - |  | 3.61 | 4.15 | 3.03 | 4.44 | 4.36 | 4.40 | 4.58 | 3.72 | 4.96 | 4.96 |
| (iii) Wood \& Paper production |  |  |  | 5.30 | 5.28 | 5.15 | 4.77 | 4.46 | 6.80 | 6.58 | 6.69 | 6.31 | 6.10 |
| (iv) Leather and rubber products |  |  |  | 6.33 | 11.74 | 11.25 | 11.25 | 10.99 | 6.50 | 5.38 | 4.57 | 5.00 | 4.81 |
|  | (v) Chemical | produ | cts . | 9.33 | 8.35 | 9.49 | 9.09 | 9.00 | 11.00 | 10.39 | 11.26 | 11.07 | 11.04 |
| (vi) Coal and petroleum pro- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (vii) Non-metallic Meneral |  |  |  | 5.15 | 5.08 | 4.88 | 4.13 | 3.70 | 6.50 | 6.24 | 6.08 | 5.31 | 4.93 |
|  | (viii) Basic. M | Metals | - | 8.75 | 6.84 | 9.34 | 6.51 | 6.07 | 10.40 | 10.08 | 11.65 | 9.45 | 9.01 |
|  | (ii) Metal pr | oducts | - | 8.09 | 6.33 | 7.50 | 6.38 | 6.22 | 8.20 | 7.48 | 7.68 | 7.16 | 6.95 |
| (x) Non-metallic Engg. Products |  |  |  | 9.11 | 10.99 | 913.22 | 9.91 | 9.43 | 11.20 | 13.39 | 14.93 | 12.05 | 11.56 |
| (xi) Electrical Engineering Products .. . |  |  |  | 8.70 | 7.59 | 9.71 | 6.96 | 6.55 | 10.02 | 9.86 | 11.13 | 8.80 | 8.35 |
| (xii) Transport Equipment |  |  |  | 9.00 | 8.75 | 9.18 | 8.19 | 7.88 | 10.15 | 10.63 | 10.74 | 9.86 | 9.54 |
| (xiii) Miscellaneous Industries |  |  |  | 4.60 | 2.28 | 1.95 | 2.74 | 2.70 | 4.20 | 2.86 | 2.49 | 3.31 | 3.28 |
| 8. | Electricity | . $\cdot$ | . | 7.15 | 8.17 | 8.52 | 8.37 | 8.19 | 11.25 | 10.55 | 10.97 | 10.80 | 10.69 |
| d. | Construction | . | . | 5.10 | 4.22 | 3.80 | 2.99 | 2.53 | 7.10 | 7.13 | 6.74 | 5.90 | 5.45 |
| i. | Transport | -• | . | 5.46 | 4.82 | 4.61 | 4.82 | 4.67 | 6.70 | 6.41 | 6.32 | 6.46 | 6.35 |
| i. | Services | . | -• | 5.44 | 5.23 | 5.27 | 5.33 | 5.23 | 6.00 | 5.92 | 5.94 | 6.07 | 5.99 |
|  | Total | - |  | 5.20 | 4.80 | 5.00 | 5.00 | 4.90 | 6.72 | 6.36 | 6.57 | 6.49 | 6.38 |

Table 8.3
Impact of higher crude price on import bill for the Sixth Pkan : 1980-85.
(Rs. crores ${ }_{\text {}}$ )

*Prices based on the Report of the Working Group on Balance of Payments.
** On the assumption that crude price will rise to $\$ 60$ per barrel by 1984-85 as against around $\$ 46$ per barrel assumed by the working group on Balance of Payments.

TABLE-A1.1
Estimates of ICOR by conventional method_-Planwise

| Plan |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |

GCF $=$ Gross Domestic Capital Formation.

TABLE-A1. 2
Estimates of ICOR by conventional method for few selected sectors (GDP at factor cost and GCF at market prices at 1979-80 prices)

*However, calculated between 1961-62 to 1964-65 it comes to 2.32.
** Excluding storage.

Table A 3.1
Percentage of people Below Poverty Line/Modest Poverty Line

| S.No. | Year |  |  |  |  |  | Percentage of People Below |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Poverty Line |  | Modest Poverty Line |  |
|  |  |  |  |  |  |  | Rural | Urban | Rural | Urban |
| (0) | (1) |  |  |  |  |  | (2) | (3) | (4) | (5) |
| 1 | 1972-73 | *+ | - | . | $\cdots$ | +. | 50.5 | 40.1 | 27.9 | 19.9 |
| 2 | 1977-78 |  | . | - | - | -. | 51.5 | 38.2 | 28.2 | 18.8 |
| 3 | 1979-80 | . | . | . | . | . | 50.7 | 40.3 | 30.8 | 23.7 |
| 4 | 1984-85 |  | $\cdots$ | ' | - | - | 40.5 | 33.7 | 22.4 | 18.7 |

1. 1972-73 and 1977-78 estimates are derived from NSS Consumption expenditure distribution as provided in 27th and 32nd Rounds of NSS Consumer expenditure data respectively. Percentage of people below the poverty line estimated for these two years differ slightly than the one quoted in the Sixth Plan document as these are estimated from the all India Samples provided by the NSS in their respective Rounds of Consumer expenditure data, while the one quoted in Sixth Plan are weighted estimates of Statewise poverty.
2. 1979-80 and 1984-85 estimates are based on the assumption that monthly per capita consumer expenditure (separately in rural and urban areas) follows log normal distribution with the assumption that the inequality parameter remains the same as in 1977-78, depicted by NSS data on consumer expenditure, 32nd Round.

Table A 3.2
Share of consumption of bottom halj of the population
(Percent)

| $\begin{aligned} & \text { s. } \\ & \text { No. } \end{aligned}$ | Yea |  |  |  |  |  |  |  | Rural | Urban |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (0) | (1) |  |  |  |  |  |  |  | (2) | (3) |
| 1 | 1960-61 | . |  |  |  |  | .. | . | 28.43 | 26.59 |
| 2 | 1961-62 | . |  |  |  |  | . | . | 29.08 | 26.35 |
| 3 | 1963-64 | . |  |  |  |  | . |  | 30.07 | 26.17 |
| 4 | 1964-65 | . |  | . | . |  | . | . | 30.38 | 26.72 |
| 5 | 1965-66 | . |  |  | $\cdots$ |  | . | . | 29.97 | 27.30 |
| 6 | 1966-67 | . |  | . | . | . | . | . | 30.13 | 27.42 |
| 7 | 1967-68 | - |  | . | . | . | . | . | 30.16 | 27.41 |
| 8 | 1968-69 | $\cdots$ |  | . | $\cdots$ | . | . | . | 29.47 | 27.62 |
| 9 | 1969-70 | . |  |  | . | . | .. | . | 30.28 | 26.98 |
| 10 | 1970-71 | . |  | . | . |  | . | - | 30.93 | 27.35 |
| 11 | 1972-73 | . |  | . | . | . | . | . | 30.38 | 27.56 |
| 12 | 1973-74 | $\cdots$ |  | $\cdots$ | . | . | . | . | 31.39 | 29.80 |
| 13 | 1977-78 | . |  | .. | . | . | $\cdots$ | . | 29.60 | 27.51 |
| Rate of Growth@ (Per cent per annum) Bottom 50 per cent Top 50 per cent |  |  |  |  | - | . | . | . | 0.28 | 0.44 |
|  |  |  |  | . | * | $\cdots$ | . | $\cdots$ | $-0.12$ | $-0.17$ |

@. Estimated using exponential time function

$$
S_{t}=a e^{b t}
$$

where $S_{t}=$ share of consumption (percent) for bottom/top $50 \%$ of the population in period $t$.
N.B. These are estimated using various Rounds of NSS data on Consumer expenditure.

Talbe-A 1.3
Estimates of ICOR by industry of origin (1970-71 prices)
Equation Used : GCF $(t)=\mathrm{a}+\mathrm{b}(\mathrm{V}(t+\mathrm{L})-\mathrm{V}(t)) / \mathrm{L}$


Symbols Used :
GCF (t)=Gross Domestic Capital Formation in year tin Rs. crores at market prices.
$V(t)=G r o s s$ value added in year $t$ in Rs. crores at factor cost.

Table-Al. 4.
ICOR : Used in Plan Model (1979-80 prices)


[^22]81-L/P(D)359PC New Delhi-3,000 27-11-81--GIPS

Table A 3.3
Rural-urban Lorenz ratios

|  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. |  |  |  |  |  |  |  |  | Rural | Urban |
|  | (1) |  |  |  |  |  |  |  | (2) | (3) |
| 1 | 1960-61 | . |  |  | $\cdots$ |  | . | . | . 3205 | . 3477 |
| 2 | 1961-62 | .. | . | $\cdots$ | . | $\cdots$ | $\cdots$ | . | . 3130 | . 3566 |
| 3 | 1963-64 | . | . | $\cdots$ | .. | - | .. |  | . 2974 | . 3596 |
| 4 | 1964-65 | $\cdots$ | . | . | .. | $\cdots$ | . | $\cdots$ | . 2936 | . 3492 |
| 5 | 1965-66 | - | $\cdots$ | $\cdots$ | . | $\cdots$ | .. | . | . 2972 | . 3385 |
| 6 | 1966-67 |  | . | . | . | . | . | . | . 2934 | . 3368 |
| 7 | 1967-68 | .. | . | . | .. | . | . | $\cdots$ | . 2908 | . 3324 |
| 8 | 1968-69 | . | . | . | . | . | . | .. | . 3051 | . 3292 |
| 9 | 1969-70 | . | . | . | . | . | . | . | . 2928 | . 3403 |
| 10 | 1970-71 | . | . | . | . | . | . | .. | . 2831 | . 3265 |
| 11 | 1972-73 | .. | . | . | .. | . | . | . | . 2993 | . 3410 |
| 12 | 1973-74 | . | . | . | . | . | . | . | . 2758 | . 3013 |
| 13 | 1977-78 |  | .. | . | .. | . | . |  | . 3053 | . 3349 |
| Rate of Decline@ (per cent per annum) |  |  |  | $\cdots$ | $\cdots$ | . | . | . | . 38 | . 59 |

N.B. Estimated from various Rounds of NSS Consumer expenditure data. @ Estimated using exponential time function
$L_{t}=a e^{b t}$
where $L_{t}=$ Lorenz Ratio in period $t$.
$\mathrm{t}=$ time.

Table A 4.1
Gross investment by private \& public sectors : 1980-85
(Rs. crores at 1979-80 prices)


Table A 4.2
Share of private sector in Gross Domestic Product in the sixth Plan (at 1979-80 prices)


Table A 4.3
3-ectoral capital flows : 1199880——85
(s.crores at 1979-80 priccess))

| $\begin{gathered} \text { Sl. } \\ \text { So. } \end{gathered}$ | Iten | Public Sector | Private sseector |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Corporatte: $8 \&$ Coop. Stectcorr | Hiosusehold sector |  |  |
|  |  |  |  | Finaamcial Saviing | Physical assets |  |
| (0) | (1) | (2) | (3i) | (44)) | (5) | (6) |
| 1 | Own Saving .. | $\begin{array}{r} 34200 \\ (40.71) \end{array}$ | $\begin{array}{r} 1015883 \\ (54.077)) \end{array}$ | 4997731 | $\begin{array}{r} 55128 \\ (100.00) \end{array}$ | $\begin{aligned} & 149647 \\ & (94.29) \end{aligned}$ |
| 2 | Transfers fron other domestic sctors | $\begin{array}{r} 38871 \\ (46.28) \end{array}$ | $\begin{array}{r} 8(99941 \\ (455 . .913)) \end{array}$ | (-)4178865 | - | - |
| 3 | Infiow from est of the world | $\begin{array}{r} 10929 \\ (13.01) \end{array}$ | - | $(-){ }^{(18866}$ | - | $\begin{array}{r} 9063 \\ (5.71) \end{array}$ |
| 4 | Investment .. | $\begin{array}{r} 84000 \\ (100.00) \end{array}$ | $\begin{array}{r} 1995822 \\ (1010 . .010)) \end{array}$ | - | $\begin{array}{r} 55128 \\ (100.00) \end{array}$ | $\begin{array}{r} 158710 \\ (100.00) \end{array}$ |

Figures within brickets represent peoshre to total investmemtt.

Table A 4.4
Veflov from the rest of the wworridd ito public sseector
(Rs. crores at 1979-800 prices))


Table A 4.5
Flow off" fumds firomn : hoonusehold sector to the theorrs
(IRIs.. 'Crores at 1979-80 pice

| $\begin{aligned} & \text { Sl. } \\ & \text { No. } \end{aligned}$ | Item |  |  |  |  |  | Funds with households sector | $F$ o funds to |  |  | Residual with the household sector |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Public Sector | Ft. Corpo- Rest of ree \& coop word ector setor |  |  |
| (1) |  |  | (2) |  |  |  |  | (3) | (4 | (5) | (6) | (7) |
| 1 Increase in deposits |  |  |  |  |  |  |  |  |  |  |  |
|  | (i) | Seheduled | Banks |  | .- |  | 29164 | 1094 | 6544(E) | - | 12896 |
|  | (i) | Co-operat | tive Ins | titutions | s |  | 2116 | 86 |  |  |  |
|  | (iii) | Non-Bank | king Co | mpanies | s |  | 1150 | - | 1150 | - | - |
| 2 | Curren | ency | . | .. | .. |  | 4734 | 4096 | - | - | 725 |
| 3 | Life I | Insurance | Funds |  | ... |  | 5577 | $270 *$ | - | - | 879 |
| 4 Provident Funds 190 |  |  |  |  |  |  |  |  |  |  |  |
|  | (i) | State Pro | vident | Funds | $\ldots$ |  | 3702 | 372 | - | - | - |
|  | (ii) | Employee | es Provi | ident Fu | umds | , , | 8646 | 340 | - | - | 5196 |
|  | (iii) | Other Pro | ovident | Funds | $\cdots$ |  | 3300 | 130 | - | - | 1980 |
| 5 | Privat Deb | te Corpor entures and | rate/Co <br> and Uni | operativ ts of the | ve: Share he IUTII. | S 184 | 1400 | 10 | 1300 | - | - |
| 6 | Net Deprosi | Claims on sits etc.). | Govt. | (Small | Sawiings, | Deebbt, | 1245 | 648 | - | - | (-)5218 |
| 7 | Financ | acial Liabi | ilities |  |  |  | ((-)11303 | - | - | - | (-)11303 |
| 8 | Transf tutio | fer from $P$ ns' Saving | Public S gs. | Sector, | Finnamcial | Insstii-- | 2525 | 84f | - | 186 | (-)155 |
| 9 | Uncov | vered Gap |  | -• | . . | .... | - | 500 | - | - | (-)5000 |
| 10 | Total |  | . | -• | - | .... | 52256 | 4139 | 8994 | 186 | - |

(E)-Estimated.
*Rs. 2790 crores relates to Centrrall Govt. . \& ERs. 1908 crores to Satàot. @relates to misc. capital receipt ((nuett).
£ repregents term loans to states ffrom finæmociaal institutions excludiny I $\mathcal{C}$ India.

Table A 4.6
Estimatess cof nuet infllonw' ffroom the rest of the word triute sector
(IRis. CSrores at 1979-80 prics)


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[^0]:    1 For details see Chapter II, equation system $A$ to $Q$.

[^1]:    ${ }^{1}$ Or six months, if the time poriods are on annual basis.
    ${ }^{2}$ The ratio between ICORs estimated without and with lags can be shown to be equal to $(1+r)^{l}$ where $r$ is the rate of growth of output and $L$ is the gestation lag.

[^2]:    1. The details of the estimation methodology are given in Annexurre $I$.
    2. The details of methodology for estimation by end uses have beeen discussed in chapter 10 of National Accounts Statistics-Sources and Methods, C.S.O., 1980.
[^3]:    ${ }^{1}$ These would exclude very long gestation sectors like coal, power,, rrailway, steel, irrigation etc.,

[^4]:    ${ }^{1}$ Extensive use has teen made of different sub--groups reports of the Working Group on Financial Resources set up by the Planning Commission, in preparation of this cthapter.

[^5]:    ${ }^{1}$ This section has benefted largely from Prof. Rat Krishna's workon employ ne it in the earlier Draft Sixth Plan (1978-83) 81-L/P(D)359PCNew D3lhi-4(a)

[^6]:    ${ }^{1}$ In case of 1971, census data as adjusted by Planning Commiisssion have been taken.

[^7]:    ${ }^{1}$ All material balance tables have been presented with the other tables under TABLES at the end of the book.

[^8]:    ${ }^{1}$ The ratio between ICORs, without and with lags can be shown to be equal to $(1+\mathrm{r}) \mathrm{r}$, where r represents rate of growth of output and $L$ represents gestation Jag.
    ${ }^{\text {²Vijay L. Kelkar "India and World Economy : Search for Self Reliance," Economic and Political Weekly, Vol. 15, Annual }}$ Number 1980.

[^9]:    ${ }^{1}$ The value of $L$ will vary from sector to sector.

[^10]:    ${ }^{1}$ For various rationales of varying parameter model, see Annals of Economic and Social Measurement, Oct., 1973 National Bureau of Economic Research.

[^11]:    ${ }^{1}$ For details, see National Accounts Statistics-Sources \& Methods, Central Statistical Organisation, Government of India April, 1980.

[^12]:    ${ }^{1}$ Details of RAS method have been discussed in "By proportional Matrices and Input-Output Change" by M. Bachaarch Cambridge University Press, 1970
    81-L/P(D)359PCDelhi-a

[^13]:    1 Based on constant price sorios from 1950-51 to 1977-78 oomputed from C.S.O. estimates and independent estimates given by Dr. K. N. Lal in the publication "Capital Formation and its Finanoing in India" (1977).

[^14]:    81-L/P(D)359P.C.Delhì--8

[^15]:    *Provisional estimates.
    $\dagger$ INcludes cereal crops.
    $\ddagger$ The DGCI\&S have revised the total figure to Rs. 6449 crores in March. 1981. Details are not available.
    81-L/P(D)359PCDelhi-9

[^16]:    ${ }^{1}$ Consumption norm for $1979-80$ on the basis of actuals works out to 0665 Kg per Kwh. . This is expected to decline unarginally during the Plan period due to greater share of larger size units and reduced handling losses due to pit head location of some plants.

    - Raw coal equivalent of 0.94 of imported Coking Coal of prime quality (washed).

[^17]:    ${ }^{1}$ Rs. Million at factor Cost at 1979-80 Prices.
    ${ }^{2}$ Besides electricity the input-output sector includes Gas and Water Supply also.
    ${ }^{3}$ Excludes the estimated public consumption, whioh is included in column (9).

[^18]:    1 factor cost at 1979-80 prices.

[^19]:    @Economic Survey 1980-81

[^20]:    ${ }^{1}$ Overall allowance for substitution has been distributed across sectors.

[^21]:    On the basis of $27 \%$ wastage in case of cotton in item $1,18 \%$ in items $4 \& 5$ and in the case of man-made ibrres in items 1 to $8 \& 2.5 \%$ in item 9.

[^22]:    *GDP is valued at factor cost and capital formation at market prices.

