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DATA BASE OF COUNTRY INDUSTRIAL DEVELOPMENT REVIEW SERIES

1985

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DATA BASE OF COUNTRY INDUSTRIAL DEVELOPMENT REVIEW SERIES

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Performance of the manufacturing sector
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Investment
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Foreign trade
Balance of payments

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Wages and salaries
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May vary according to availability of data and analytical requirements. For most of the variables, however, time-series starting from 1970 would be preferred.

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1/ Monthly Bulletin of Statistics, publication of the UNSO.

DATA BASE OF COUNTRY INDUSTRIAL DEVELOPMENT REVIEW SERIES

The Review

One of the functions of the Regional and Country Studies Branch (REG) of the Division for Industrial Studies, UNIDO is to prepare industrial development review of developing countries. The Review is intended to provide a survey and brief analysis of the structure and performance of the manufacturing sector, so as to serve as a broad guide and ready source of information to those within UNIDO and other international and national organizations which are concerned with formulation and evaluation of industrial policies, planning, project development and implementation. The category of users of Industrial Development Review Series also includes industrial and financial enterprises, research institutions and aid agencies in developed countries.

To serve such a wide range of users it becomes imperative that the Review should be reasonably broad-based. It should shed light on all essential features of the manufacturing activity - employment, production, investment, productivity, growth potential, trade in manufactures, competitive capability, etc. For proper appreciation of the role of manufacturing sector in economic development of the country the Review should also present some basic characteristics of the economy.

The review would essentially draw on quantitative analysis for which necessary data base has to be laid. Development of data base however involves consideration of certain basic issues relating to specification of (i) features of the economy and the manufacturing sector which are to be highlighted in the Review and (ii) variables that will provide quantitative description of the features. Other related issues are drawing-up of statistical tables to provide framework for collection and compilation of data; sources of data, currency of valuation; time frame; and base year of constant prices.

Features to be included

The nature of the Industrial Development Review immediately suggests that regarding the economy and the manufacturing activity it should include the following features:

Structure of the economy
Performance of the economy
Foreign trade
Structure of the manufacturing sector
Structural change in manufacturing
Performance of the manufacturing sector
Profitability of manufacturing
Labour productivity in manufacturing
Foreign trade in manufactures
Revealed comparative advantage of manufactured exports
Sources of growth of manufacturing value added
Resource availability

The Variables

The variables required to provide a quantitative description of the ennumerated features would be:

A. For the economy

Area
Population
Population density
Labour force
GDP
GNP
Investment
Inflation rate - prices
Currency exchange rate
Foreign reserves
Transport and traffic
Foreign trade
Balance of payments

B. For the manufacturing sector

No. of establishments
Employment
Wages and salaries
Gross output
Value added
Operating surplus - gross profit
Labour productivity
Index of industrial production
Index of industrial employment
Exports of manufactured goods
Imports of manufactured goods

Statistical Tables

The basic data on the variables would have to be processed according to analytical requirements and presented in the Industrial Development Review in meaningful form. A Set of 42 tables is suggested for the purpose.

Basic indicators - economy	3
Basic indicators - manufacturing	3
Standard tables - economy	2
Standard tables - manufacturing	17
Appendix tables - economy	4
Appendix tables - manufacturing	13

The tables on basic indicators are intended to project an overview of the economy and the manufacturing sector. Standard tables will provide the analytical base to the Review, while details are relegated to Appendix Tables. Description of structure of the tables is at the Annex.

Period to be covered

The analytical requirements of the Review demand that data on many variables should be in long time-series. The period of the time-series may vary from country to country or even for variables, depending upon availability of data and analytical requirements. The time-series may generally start from 1970.

On some variables and indicators, especially those appearing in tables of basic indicators data are to be presented for a single year.

Currency of valuation

National currency, excepting the table on Basic Indicators 6 which presents inter-country comparison. This table should be compiled, using values expressed in US dollar.

Concept of price

Two concepts of price - factor price and producers' price (market price) - are used mostly. For national accounts statistics expenditure on GDP is generally compiled at producers' prices, while many countries follow factor price concept in compilation of GDP by sector of origin. Indirect taxes and subsidies account for the difference in the two concepts.

For purpose of comparison or aggregation across countries, data expressed in uniform prices would be more desirable. However, uniformity of price concepts is not necessary for preparation of Industrial Development Reviews, as each one deals with a single country. In fact, structure of the economy is better represented technically, if shares of production-sectors are worked out from data in factor prices. However, conversion of data from one price system to another will be extremely difficult. Therefore, the price system as followed by the country is to be used.

The same applies to industrial statistics where also countries use different price systems.

Base year of constant prices

For compilation of national accounts statistics at constant prices countries have adopted different base years. Here again, it is not necessary to secure uniformity, i.e. to bring data to some common base-year prices.

Industrial statistics are generally compiled in current prices. Constant price data on value added can be worked out by using base-year values and index of industrial production. The base year of the present series of the index reported by the UN Statistical Office is 1980 for all countries. Thus,

for the Industrial Development Review Series as well, 1980 should be adopted as the price base. It may be noted however that for their national series of index of industrial production all countries do not necessarily use 1980 as the base year.

Sources of data

The data needed for the Industrial Development Review mostly belong to three disciplines of statistics:

National accounts statistics,
Industrial Statistics, and
Foreign trade statistics

Some of the statistical series would be available from national sources only. This is particularly true of industrial statistics. Examples are data on production capacity; foreign investment in manufacturing; small-scale manufacturing sector; manufacturing activity of transnational corporations; size distribution of manufacturing establishments, employment, output and value added; and foreign collaboration in the manufacturing sector. UNIDO should secure close cooperation of national agencies and evolve a mechanism for the purpose. The SSU is understood to have already taken steps to establish rapport with national agencies and fuller use of Units' resources should be made to extend and strengthen the data base of Industrial Development Review.

Most of the other statistical series are reported by both national agencies as well as international organizations. The sources have their own merits. For instance, international sources generally report data in the form of long time-series, securing consistency and comparability as much as possible. On the other hand, time lag involved in reporting data by national agencies is often much less, compared with international organizations. However, access to national sources would not be easy, especially if the country has not adopted a centralized statistical system or does not operate a data bank. It will be beyond the REG's resources to build up the entire data base from national sources. The best course would be to draw primarily on

international sources. Their data series should be up-dated and possibly extended with the help of data of more recent years to be derived from national sources.

Almost all international organizations reporting statistics operate data banks. For each of the statistical disciplines generally, more than one data bank, are available. The choice is to be made on considerations of (i) extent of time lag involved in availability of data, (ii) suitability of concepts, definitions and classifications followed, and (iii) adequacy of data, i.e. coverage of variables, span of time-series, etc. Brief appraisal of international data banks, therefore, becomes necessary. This is done below.

International data banks - brief appraisal

(i) National accounts statistics.

The data banks of the following international organizations store national accounts statistics:

United Nations Statistical Office (UNSO), New York
United Nations Office for Development Research and Policy Analysis (DRPA), New York
Statistics and Survey Unit (SSU) of UNIDO, Vienna
Global and Conceptual Studies Branch (GLO) of UNIDO, Vienna
International Monetary Fund (IMF), Washington
World Bank (WB), Washington

They are taken up for appraisal in that order, except the GLO data bank which is considered in the last in all its aspects.

UNSO Data Bank

In the UN system the primary responsibility for compilation of national accounts statistics rests with UNSO. The Organization collects data annually from national statistical services and after adjusting the figures, wherever possible, so as to bring them closer to international concepts, definitions, and classifications releases the statistics in the form of an annual publication entitled "National Accounts Statistics: Main Aggregates and

Detailed Tables".[1] Of all the international organizations UNSO provides the most comprehensive national accounts data. The current edition (1982) of the publication shows detailed national accounts estimates for 159 countries and areas. Estimates cover an extensive range of subjects; the ones that are of direct interest to the REG are described below. Data are provided for some or all of the years 1970, 1972 through 1982, where available.

Part 1. Summary information

Expenditure on GDP (current prices)
Expenditure on GDP (constant prices)
GDP by kind of activity[2] (current prices)
GDP by kind of activity[2] (constant prices)
Relation among national accounting aggregates

Part 2. Final expenditures of GDP: detailed breakdown and supporting tables

Gross capital formation by kind of activity of owner, ISIC major divisions (current prices)

Gross capital formation by kind of activity of owner, ISIC major divisions (constant prices)

Gross fixed capital formation by kind of activity of owner, ISIC divisions (current prices)

Gross fixed capital formation by kind of activity of owner, ISIC divisions (constant prices)

The long time taken by UNSO in releasing data however impairs their utility. National accounts statistics are published with a time lag of more than two years. For instance, the latest issue of "National Accounts Statistics" published in 1985 pertains to 1982. For many developing countries it presents data up to 1981 or even 1980.

1/ formerly known as Yearbook of National Accounts Statistics.

2/ It may be noted that the 'national accounting concept of value added' is somewhat different from the 'census value added concept of industrial statistics'. Therefore, the two sets of value added figures - one from national accounts statistics and another from industrial statistics - would not be strictly comparable. MVA for Tables on Basic Indicators 1 & 6, Standard Table 1 and Appendix Tables 1 & 2 should be taken from national accounts sources; everywhere else from industrial statistics sources.

With the aim of minimizing time lag the SSU is understood to have arranged with UNSO for supply of computer tapes. A tape containing national accounts statistics for 1970 through 1983, wherever available, at current and constant prices is expected soon. Another tape which UNSO expects to supply in January 1986 will provide GDP by sector of origin at constant prices of common base year 1980, incorporating 1984 figures.

UNSO Data Bank for Monthly Bulletin of Statistics

This part of the UNSO data bank covers the following national accounts variables:

National income, gross domestic product and net material product (current national currency)

National income in market prices
Gross domestic product in purchasers' values
Net material product

Expenditure on gross domestic product and net material product by use (current national currency)

Gross domestic product/ net material product
Government final consumption expenditure
Private final consumption expenditure
Increase in stocks
Gross fixed capital formation
Exports of goods and services
Imports of goods and services

Cost components of the gross domestic product (current national currency)

Gross domestic product
Compensation of employees
Operating surplus
Domestic factor income
Indirect taxes, net of subsidies
Consumption of fixed capital

Gross domestic product and net material product by kind of economic activity (current national currency)

Gross domestic product/ net material product
Agriculture, hunting, forestry and fishing
Mining and quarrying
Manufacturing
Electricity, gas and water

Construction
Wholesale and retail trade, restaurants and hotels
Transport, storage and communication
Other

Gross domestic product and net material product at constant prices (national currency)

For the first and the last variable data are provided in the form of a time series, starting from 1970. The latest Bulletin[1/] (July 1985) covers 1984 for some countries and 1983 or 1982 for others. For some developing countries the time lag is even more. The coverage of period for other variables is the last three years of the time-series.

In concepts, definitions and classifications the Bulletin data are closely comparable with national accounts statistics of the yearbook. They can therefore be used directly to extend the relevant time-series data.

National accounts statistics as reported in the Monthly Bulletin, however, carries certain drawbacks. Some countries compile GDP by sector of origin at factor price (or at a close concept) and communicate the figures as such to the UNSO. The Organization adjusts total GDP to market prices without making corresponding adjustment in sector's GDP. The balance is secured by carrying the difference between market price GDP and factor price GDP to the Sector 'other'. Also the Monthly Bulletin does not provide GDP by sector of origin at constant prices.

DRPA Data Bank of World Development Statistics

The DRPA data bank of world development Statistics is another source of national accounts statistics. It covers the following subjects:

In current prices -

Expenditure on GNP, saving and foreign investment
Sectoral origin of GDP
Cost structure of GDP, domestic factor income, national income, and per capita GDP

1/ National accounts statistics are released in the February and July issues.

In constant prices -

Expenditure on GNP, saving and foreign investment
Sectoral origin of GDP
Per capita GDP

In addition, the bank also stores data on US dollar exchange rate, total population, total labour force and labour force in agriculture.

The UNSO constitutes the main source of data to DRPR. Before entering the figures into its bank the DRP brings (1) all data expressed in national currencies to US dollar, and (ii) data in constant prices of different base years as followed by the reporting countries to common price base, namely, 1975. This facilitates comparison across countries.

SSU Data Bank

SSU data bank is mainly composed of data communicated to it by the DRPA. The Unit however performs additional computations. Many countries report GDP by sector of origin in factor values. They are converted into market prices. This greatly helps aggregation of data across countries.

The SSU received the tape from the DRPA last time in May, 1984. The tape contained time-series data from 1960 through 1981. An up-dated computer print-out incorporating revisions and extending the time-series to 1983 for some countries and to 1982 for others was received in October 1985. An element of uncertainty seems to have arisen lately about the continuation of the DRPA data bank. To meet its requirements of national accounts statistics the SSU is understood to be exploring other international data banks, namely, the World Bank and the UNSO.

IMF Data Bank for International Financial Statistics

The IMF data bank is primarily devoted to financial statistics which are released every month in the publication entitled "International Financial Statistics". The bank inter alia stores data on some of the more important national accounts aggregates. The aggregates covered are:

Gross domestic product and expenditure (current local currency)

Government consumption
Gross fixed capital formation
Increase in stocks
Private consumption
Net factor income from abroad
GNP
National income at market prices
Exports
Imports

GDP in constant (1980) national currency

The SSU obtains tape every month. It contains data in the form of time-series starting from 1978. The latest tape provide figures for 1984 for some countries and 1983 or 1982 for others. From the view point of Industrial Development Review, however, IMF data on national accounts variables will have very limited use because of their partial coverage of variables. For instance, the IMF does not provide information on structure of the economy in terms of contribution to GDP by production sectors, either at current prices or at constant prices. It should also be noted that scope of data on exports and imports under the head 'national accounts' conforms to broader concepts which include purchases of foreign tourist in the domestic market and purchases of normal residents of the country in foreign markets. Thus, data are not comparable with foreign trade statistics.

National accounts statistics of the IMF may however be used to up-date and extend the time-series data as available from other international data banks. For the purpose growth rates computed from IMF data should be used.

The WB Data Bank

The World Bank provides yet another comprehensive source of national accounts statistics. Its data bank stores information on the following variables:

Gross Domestic Product by Industrial Origin and Expenditure (Current Local Prices)

Gross Domestic Product at Factor Cost
Agriculture
Mining

Construction
Manufacturing
Electricity, Gas and Water
Transportation and Communications
Trade
Banking, Insurance, and Real Estate
Ownership of Dwellings
Serivces
Public Administration and Defense
Other Branches
Statistical Discrepancy
Total Resources
Private Consumption
General Government Consumption
Gross Domestic Investment
Increase in Stocks
Statistical Discrepancy in Gross Domestic Fixed Investment
Exports of Goods and Non-Factor Services
Imports of Goods and Non-Factor Services
Net Exports of Goods and Non-Factor Services
Statistical Discrepancy in Gross Domestic Product
Gross Domestic Product at Market Prices
Gross National Product at Market Prices
Net Factor Income from Abroad
Net Indirect Taxes

Gross Domestic Product by Industrial Origin and Expenditure (Constant Local Prices)

Gross Domestic Product at Factor Cost by Branch
Agriculture
Mining
Construction
Manufacturing
Electricity, Gas, and Water
Transportation and Communications
Trade
Banking, Insurance, and Real Estate
Ownership of Dwellings
Services
Public Administration and Defense
Other Branches
Statistical Discrepancy
Total Resources
Private Consumption
General Government Consumption
Gross Domestic Investment
Increase in Stocks
Gross Fixed Investment
Exports of Goods and Non-Factor Services
Imports of Goods and Non-Factor Services
Net Exports of Goods and Non-Factor Services
Statistical Discrepancy in Gross Domestic Product
Gross Domestic Product at Market Prices
Gross National Product at Market Prices

Population, Exchange Rates, Indices, and Savings

Population Mid-Year
Gross Domestic Product at Market Prices Deflator
Agriculture Production Index (Total)
Manufacturing Production Index
Wholesale Price Index
Retail (Consumer/Cost of Living) Price Index
Gross National Savings
Gross Domestic Savings
Foreign Exchange Rate (Annual Average per US$)

Generally, data are available with a time lag of two years; the present tape covers the period 1970-1983 for a number of countries. The revised and up-dated tape, incorporating revisions and extending the time-series is expected to be ready by mid 1986. Like UNSO, the World Bank also stores and reports country data in national currencies. For constant price series the price base as followed by the country is retained.

(ii) Industrial Statistics

UNSO Data Bank

The only comprehensive source of industrial statistics is the data bank of the UNSO. The bank is based on the data which are communicated to the United Nations every year by official national sources. UNSO publishes the data in the "Industrial Statistics Yearbook". The Yearbook consists of two volumes, Volume I: General Industrial Statistics and Volume II: Commodity Production Statistics. Volume I is divided into two parts; the first part contains the basic data for each country or area and the second part gives a selection of indicators showing global and regional trends in industrial activity.

The present edition (1982) of the Yearbook, Volume I was released in 1985. It covers the five-year period from 1978 through 1982. For many developing countries, however, the last reporting year is 1981, or even 1980. The Volume provides data on the following subjects:

Number of establishments
Number of persons engaged

Number of employees
Wages and salaries of employees
Supplements to wages and salaries (for industrialized countries)
Number of operatives
Wages and salaries of operatives[1/]
Quantity of electricity consumed
Output
Value added
Gross fixed capital formation - Total
Gross fixed capital formation - machinery and equipment (for industrialized countries)
Index of industrial production
Value of stocks - Total (for industrialized countries)
Index of industrial production (1975 = 100)

The classification of industrial activity follows the three-digit or major group level of the present version[2/] of ISIC, supplemented by a number of selected four-digit groups. The measure of value added normally used is the "census value added" concept. This is defined as the value of output, excluding receipts for "non-industrial services" less inputs, excluding cost of non-industrial services. The valuation of both, output and value added is in factor values or in producers' prices (market prices). The data are reported in current prices only, expressed in national currency.

Volume II contains detailed information on production of industrial commodities. A standard list of about 530 commodities has been adopted for the publication of production data and estimates for most of these commodities are published for about 200 countries or areas. The 1982 edition of Volume II was also brought out in 1985. It covers the period 1973-1982. Here again, data of many developing countries lag behind.

SSU Data Bank

The SSU draws mainly on data tapes communicated to it by the UNSO. They are supplemented from sources that include industrial censuses, statistics supplied by national and international organizations, unpublished data

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1/ Very few developing countries report on the subject.

2/ International Industrial Classification of All Economic Activities (ISIC), United Nations Publication, Sales No. E.68.XVIII.8.

collected in the field by UNIDO as well as estimates prepared by the Unit. The SSU takes great pains to ensure consistency of the data and their comparability over time and across countries. In fact, substantial resources of the Unit are devoted to accomplish this task. The subjects, on which basic data are stored in the bank are:

Number of employees/persons engaged
Wages and salaries of employees
Output
Value added
Gross fixed capital formation
Index of industrial production
Production of selected commodities

In addition, value added figures which formed the basis of calculation of weights of the index of industrial production (1975 = 100) are stored in the data bank. For most of the variables the time-series start from 1960. On the basis of the revised and up-dated tape received from the UNSO the period of the time-series has been extended to 1983.

GLO data bank

Following variables are supported in the GLO data base:

(i) General variables

Midyear population	1960-1981
Midyear population from Monthly Bulletin of Statistics for more recent years	1982-1984
Total labour force	1960-1981
Exchange rate National currency equivalent of 1 U.S. dollar	1960-1982

(ii) National Account variables

in current U.S. dollars:

Gross domestic product	1960-1981
Gross national product	1960-1981
Gross capital formation	1960-1981
Exports of goods and non-factor services	1960-1981
Imports of goods and non-factor services	1960-1981

Value added originating in Agriculture	1960-1981
Value added originating in Mining	1960-1981
Value added originating in Manufacturing	1960-1981
Value added originating in Utilities (electricity, gas)	1960-1981
Value added originating in Construction	1960-1981
Value added originating in Services (and stat. descrep.)	1960-1981

in constant 1975-U.S. dollars:

Gross domestic product/NMP including projectios	1960-1986
Gross domestic product/NMP including projections aggregated into UNITAD-regions	1960-1986
Gross national product	1960-1981
Gross capital formation	1960-1981
Exports of goods and non-factor services	1960-1981
Imports of goods and non-factor services	1960-1981
Value added originating in Agriculture	1960-1981
Value added originating in Mining	1960-1981
Value added originating in Manufacturing incl. project.	1960-1986
Value added originating in Manufacturing incl. project. aggregated into UNITAD-regions	1960-1986
Value added originating in Utilities (electricity, gas)	1960-1981
Value added originating in Construction	1960-1981
Value added originating in Services (and stat. descrep.)	1960-1981
Value added originating in Manufacturing sectors (total manufacturing and 28 branches) derived by multiplying base year 1975 $-values prepared by UNSO by index numbers of industrial production	1960-1983

in national currencies:

Gross fixed capital formation by manufacturing sector	1970-1982
Gross fixed capital formation by manufacturing sector in constant prices	1980-1982

(iii) Industrial Statistics
total manufacturing and 28 branches (3-digit-ISIC's)

from UNIDO-data base[1/]

1/ Refers to SSU data bank.

Average number of employees (yearly average)	1963-1984
Wages and salaries of employees	1963-1984
Value added	1963-1984
Gross output	1963-1984
Gross fixed capital formation done by branch	1963-1982
Index numbers of industrial production	1960-1983
"Value added constant" - industrial statistics concept base year (1975) figures from vad$ (or from vadc$ if not available in vad$) multiplied by index numbers of industrial production	1960-1983

collected or generated by Global and Conceptual Branch

Average number of employees per year (yearly aver.)	1982-1984
Wages and salaries of employees in curr. nat. prices	1982
Value added in current national prices	1982
Value added in constant national prices	1975-1982
Gross output in current national prices	1982
Gross fixed capital formation in current nat. prices	1970-1982
Index numbers of industrial production - enhancement	1970-1984

combined and converted series with automatic splitts and interpolations

Average number of employees (yearly average)	1963-1984
Average number of employees per year aggregated into 14 UNITAD regions	1963-1983
Wages and salaries of employees in current U.S.$	1963-1984
Gross output in current U.S. dollars	1963-1984
Gross fixed capital formation in current U.S. dollars	1970-1982
Value added originating in Manufacturing sectors improved version of VADC$. INDSTAT in constant 1975-U.S. dollars	1960-1983

(iv) Commodity Trade Statistics

reclassified according to an improved SITC-ISIC concordance

Manufacturing imports according to 28 branches	1962-1984
Manufacturing exports according to 28 branches	1962-1984
Manufacturing imports according to 88 groups	1970,75,80-84
Manufacturing exports according to 88 groups	1970,75,80-84

(v) International Financial Statistics by IMF

Reserves minus gold	1960-1985
Reserves in foreign exchange	1960-1985
GDP in U.S. dollars	1960-1985

GDP constant recalculated into 1975 U.S. dollars	1960-1985
GDP in national currencies	1960-1985
GDP national currencies recalculated into 1975-prices	1960-1985

(vi) Country input-output tables

The data base of the GLO is by and large composed of data derived from the SSU data bank. The Branch has however effected improvements in some of the existing data series and has also developed some additional series. The improvement and additions are:

(i) national accounts statistics

Projections of GDP and MVA so as to extend the time-series data to 1986. Projections cover 180 countries for GDP and 133 countries for MVA.

(ii) industrial statistics - manufacturing sector

Improvements by way of interpolation or spliting of combined ISIC branch and projections to carry the time series to 1984. The variable covered are:

Number of employees
Wages and salaries of employees
Gross output
Value added at current prices
Value added at 1975 prices
Gross fixed capital formation

(iii) foreign trade statistics

Following the concordance between SITC and ISIC, data on manufactured exports and imports has been processed into 28 manufacturing branches (3-digit level of ISIC), covering more than 150 countries and also into 88 detailed groups (4-digit level of ISIC), covering 54 countries.

(iv) GDP from IMF data bank has been recalculated into 1975 prices, both in national currency and U.S. dollar and stored together with current price GDP derived from the same source. The data are generally used to up-date and exten the time-series available from the SSU data bank.

Thus, the GLO data base should be a potential source of most up-date information. However, not all additions made by the Branch will be useful to

the REG for its country reviews. Examples are commodity trade data series and the recalculated series of GDP based on the IMF data. In the former case the series have been developed on the basis of concordance in which a large number of SITC items, even at 5-digit level has been allocated to manufacturing branches and groups employing certain proportions. These proportions are understood to have been worked out by the World Bank and the OECD from the trade data of EEC countries of 1975. They would, therefore, hardly represent the current trade pattern of developing countries and that too, at the country level. Similarly, the GDP series recalculated to 1975 prices are useful when countries are to be compared or aggregated.

Development of data base is a continuous process; figures are revised and replaced quite frequently. The GLO does not seem to have evolved a mechanism which would automatically transmit revisions and replacements in the SSU data base to its own data bank. Transmission might entail long delays. Nevertheless the GLO data bank offers some new information which should be fully exploited to effect improvements in the data before they are included in the Development Review.

(iii) Foreign Trade Statistics

UNSO Data Bank

The UNSO is perhaps the only comprehensive source of foreign trade statistics. Its bank is composed of data communicated to the United Nations by national sources, together with estimates prepared by the organization for some countries. Data are compiled at 5-digit level of SITC and are stored in the tape for all countries for a single year. The time lag is generally three years and more. The tapes starting from 1963 are available with the SSU. The last tape pertains to 1982.

The appraisal suggests that data base of the Industrial Development Review should primarily draw on WB data bank for national accounts statistics, SSU data bank for industrial statistics, and UNSO data bank for foreign trade statistics. Statistical series from these sources would have to be

supplemented by data from other international data banks and national agencies. Data on variables like production of agriculture crops, energy production, transport and balance of payments and financial statistics are reported by FAO, UNSO and IMF.

Primary sources of data by variable/table

With a view to shedding more light on linkages of primary sources of data and variables and standard and appendix tables detailed distribution is shown below:

Tables on Basic Indicators

Variable/table No.	Discipline of statistics	Primary source of data
Basic Indicators 1		
Area	General	UNSO
Population	Demography	UNSO
Population density	-	Derived Statistics
GDP, GDP by sector of origin, growth rate, GNP, gross investment	National accounts	WB
GDP per capita & growth rate	National accounts	Derived Statistics
Inflation rate	Price	To be derived from GDP in Current & Constant prices
Currency exchange rate	Financial	IMF
Basic Indicators 2		
Resources	Agriculture, mining & energy	FAO/UNSO/National
Transport	Transport	UNSO/National
Basic Indicators 3		
Exports, imports, balance of payments	Balance of Payments	IMF
Foreign debt, net resources, debt service	Financial	IMF
Basic Indicators 4	Industrial statistics & foreign trade	SSU
Basic Indicators 5	Foreign trade	SSU
Basic Indicators 6	-	To be compiled from other tables

Variable/table No.	Discipline of statistics	Primary source of data
	Standard Tables	
1,2	National accounts	WB
3,7,8,9,10,12	Industrial statistics	SSU
4,5,6	Industrial statistics	National
11	Derived statistics	GLO
13	Industrial statistics	Derived table
14,16	Foreign trade	SSU
15	Foreign trade	SSU/National
17	Derived statistics	Appendix Table A-16
18	Agriculture	FAO/UNSO/National
19	Forestry & mining	FAO/UNSO/National
	Appendix Tables	
1,2	National accounts	WB
3	Industrial statistics	National
4,5,6	Industrial statistics	SSU
7	Financial statistics	National
8,9,10	Industrial statistics	National
11,12,13,14	Foreign trade	SSU
15	Foreign trade	UNSO/National
16	Industrial Statistics & foreign trade	SSU

Note: Main international publications which will be useful in building up data base are:

Monthly Bulletin of Statistics - UNSO
Balance of Payments Statistics - IMF
International Financial Statistics - IMF
Labour Force - ILO
Yearbook of Labour Statistics - ILO
Monthly Bulletin of Statistics - FAO
yearbook of Fishery Statistics - FAO
Yearbook of Forest Products - FAO

During compilation of tables many data gaps will come to notice. The REG should contribute to plug some of these gaps. Efforts may particularly be directed to estimate some missing data that would be needed to up-date tables on Basic Indicators. These tables are supposed to present picture of the economy and the manufacturing sector for a year as close to the current year as possible. Developing economies are primarily agro-based, i.e. bulk of GDP is contributed by the agriculture sector. Many developing countries bring out preliminary/ quick estimates of production of major agricultural crops. Liason with FAO may help access to such estimates. Similarly, many countries compile index of industrial production on monthly, quarterly or six-monthly basis with a time lag of few months only. The two variables together, namely, agricultural and industrial production are expected to provide a satisfactory base for estimation of GDP at constant prices. Estimate of GDP at current prices may be derived with the help of wholesale price index.

Data Base and the Bank

The data bank of the REG should operate three main files:

(i) to store raw data composed of (a) data on variables which are included only in Tables on Basic Indicators. These variables are area, population, labour force, and currency exchange rate of Basic Indicators 1; energy production, railway track length, freight and passenger traffic, international sea-bourne shipping, and civil aviation traffic of Basic Indicators 2; value of exports, value of imports, balance of payment (current account), foreign debt, net reserves, debt service of Basic Indicators 3

(b) data from national sources which are required to compile Standard Tables 4, 5 and 6 and Appendix Tables A-7, A-8, A-9 and A-10; data from international/national sources required to compile Standard Tables 18 and 19 and Appendix Tables A-17.

(c) data from international/national sources which will help up-dating and possibly extention of national accounts statistics series of the World Bank and industrial statistics series of the SSU. The likely international sources of data for this purpose are the GLO data bank, the UNSO (Monthly Bulletin of Statistics) and the IMF (International Financial Statistics). Among the national official sources Central

Statistical Office, Planning Ministry, Finance Ministry, Commerce Ministry, Industry Ministry and Central Bank may provide useful information.

Some of the information, especially that required for compilation of Tables on Basic Indicators is available on computer tapes of concerned international organizations like FAO, ILO, IMF and UNSO. However, the amount of data will not justify the cost involved in procurement and retrieval of information. Instead, data should be extracted from the publications and entered into the data file.

(ii) to store (a) national accounts, industrial statistics and foreign trade statistics. Data series are already available on computer tapes from the data banks of the World Bank, the SSU and the UNSO. There is no need to enter these data series into the file. Specified Standard and Appendix Tables should be generated first from the available tapes, up-dated, wherever possible, on the basis of data available from the previous file and stored.

(b) Tables on Basic Indicators - These tables are to be compiled from information stored in the previous file and Standard and Appendix Tables of this file.

(c) graphs and charts.

(iii) Analysis of the economy.

In fact, the file would provide complete data base for the Review.

Time Interval for up-dating the data base

The whole question of revision and up-dating of data base is linked with the frequency with which a country is to be taken up for review. An up-dated edition of the Country Review would always need up-dating of its data base. Preparation of a country review is an elaborate exercise and so is the case with its revision and up-dating. The country cannot possibly be repeated every year. On the other hand, long interval, say a period of five years, would impair the utility of a country's review. The REG may consider yearly up-dating of Tables on Basic Indicators and releasing them in the form of a supplement to the Review, shile full exercise may be undertaken at an interval

of five years. In other wirds, Tables on Basic Indicators of all the countries and data base of some twenty-five to thirty countries would be up-dated every year.

ANNEX

STATISTICAL TABLES OF THE DATA BASE

BASIC INDICATORS 1
The Economy

Area					
Population					
Population density					
Labour force					
GDP					
Annual growth rate of GDP (per cent)	1970-1980	1981	1982	1983	1984
GDP by sector of origin					
Agriculture					
Industry					
Manufacturing					
Services					
GDP per capita					
Annual growth rate of GDP per capita (per cent)	1970-1980	1981	1982	1983	1984
GNP					
Gross investment rate[1/]					
Inflation rate (per cent per year)	1970-1980	1981	1982	1983	1984
Currency exchange rate (national currency equivalent to US$ 1)					

Source: WB/National/MBS[2/]/IMF

1/ Gross domestic capital formation as percentage of GDP.
2/ Monthly Bulletin of Statistics of the United Nations Statistical Office.

Notes: (1) GDP, GDP per capita and GNP should preferably be at producers' prices.
(2) Growth rates of GDP and GDP per capita should be computed from constant price data.
(3) Distribution of GDP by sector of origin should be worked out from data at factor prices.
(4) The time interval 1970-1980, may be changed according to availability of data as well as analytical requirements.
(5) Wherever period is not indicated, figures for the latest year available from national/international sources (actuals or estimates) are to be presented. The rule will apply to all basic indicator tables.

BASIC INDICATORS 2
Resources and Transport Infrastructure

Resources

- Cash crops
- Livestock
- Fisheries
- Forestry
- Mining

- Energy sources
  - Production by major source

Transport

- Roads
- Railways
  - Track length
  - Freight net ton - Km
  - Passenger - Km

- Shipping
  - Ports
  - Vessels
  - International sea-borne shipping
    - Goods loaded in external trade
    - Goods unloaded in external trade

- Civil aviation
  - Ports
  - Traffic -
  - Passenger - Km
  - Cargo net ton - Km

Source: National/FAO/MBS/UNSO

BASIC INDICATORS 3
Foreign Trade and Balance of Payments

Exports

Total value (fob)
Main goods
Main destinations

Imports

Total value (cif)
Main goods
Main origins

Balance of payments
(current account surplus/deficit)

Foreign debt
Total
Percentage of GNP

Net reserves

Debt service
Percentage of GNP
Percentage of total exports

Source: National/MBS/IMF

Note: IMF data on exports and imports are not strictly comparable with MBS data because of certain differences of concepts and methods. Similarly, national accounts statistics follow somewhat different concept. To ensure consistency and comparability with balance of payments it would be desirable to compile the table from IMF data.

BASIC INDICATORS 4
The Manufacturing Sector

Gross output

Manufacturing value added (MVA)

MVA per capita

Composition of MVA by end-use (per cent)
- Mainly consumer goods
- Mainly intermediate goods
- Mainly consumer durables and capital goods

MVA at 1980 prices

Annual growth rate of MVA	1970-1980	1981	1982	1983	1984

Employment in manufacturing
- Total
- Percentage of labour force

Trade in manufactures	SITC Sec 5-8 (less 68)	SITC Div 68	Other manufactures	Total manufactures 1/
Total value - exports (fob)				
- imports (cif)				
Share of manufactured exports in total exports (per cent)				
Share of manufactured imports in total imports (per cent)				
Manufactured exports as percentage of gross output				

Source: SSU/National/MBS

1/ The definition of trade in manufactures used here covers a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods. SITC 5-8 (less 68) cov rs items which are recognized as exclusively manufactured goods i.e. with a high level of manufacturing content. SITC Division 68 pertains to trade in 'non-ferrous metals'.

BASIC INDICATORS 5
Trade in Manufactures

Manufactured exports
Total value

Principal manufactured exports (per cent of total)	Destination (per cent)		
	Devg Countries	Devd market economies	Centrally planned devd economies
1.			
2.			
3.			
:			
:			
:			

Manufactured imports
Total value

Principal manufactured imports (per cent of total)	Origin (per cent)		
	Devg Countries	Devd market economies	Centrally planned devd economies
1.			
2.			
3.			
:			
:			
:			

Sources: SSU

Note: Based on comprehensive definition of trade in manufactures.

BASIC INDICATORS 6
Inter-country Comparison of Selected Indicators

I. Demographic indicators

Area
Population
Population density
Population growth rate

II. Economic indicators

GDP
GDP growth rate
GDP per capita
Growth rate of GDP per capita

Sectoral composition of GDP (percentage)
- Agriculture
- Industry
- Manufacturing
- Services

Gross investment rate
Exports (per cent of GDP)
Imports (per cent of GDP)
Foreign debt (per cent of GNP)

III. Industrial indicators

MVA
Share in world MVA
Growth rate of MVA
MVA per capita
Share of manufactured exports in -
- Gross output
- Total exports

Balance of trade in manufactures (exports - imports) as per cent of gross output

STANDARD TABLES

Structure of the Economy

Table 1: GDP by sector of origin
(percentage distribution)

Year	Agriculture	Mining and quarrying	Manufacturing	Utilities	Constr	Services

Source: WB

Performance of the Economy

Table 2: Growth rates of GDP and GDP per capita

Year	GDP (in constant prices)	Annual growth rate of GDP (per cent)	GDP per capita (in constant prices)	Annual growth rate of GDP per capita (per cent)

Source: WB

Note: Structure of the economy should be worked from data at constant prices.

Structure of the Manufacturing Sector

Table 3: Gross output and value added in manufacturing, 1970, 1980 and 1984

ISIC branch	Gross output			Value added			Value added coefficient 1/		
	1970	1980	1984	1970	1980	1984	1970	1980	1984
Total Manufacturing									
Food products (311/12)									
:									
:									
:									
:									
:									
:									
:									
:									
:									
:									
:									
:									
Other manufactures (390)									

Source: SSU

1/ Defined as ratio of value added and gross output.

Note: Structure, performance and structural changes may also be analysed, using another classification, namely, light manufacturing and heavy manufacturing. Light manufacturing comprises ISIC branches 31-33, 342, 355-56 and 39, while remaining branches belong to heavy manufacturing.

Table 4: Geographical distribution of manufacturing establishments, employment gross output and value added

Source: National

Table 5: Size distribution of manufacturing establishments, employment and value added

No. of workers	No. of establishments	Employment	Value added
0-4			
5-10			
11-50			
51-100			
101+			

Source: National

Note: The intention is to highlight the role of small-scale and household manufacturing. In most of the developing countries this subsector of manufacturing accounts for bulk of the manufacturing employment. Many countries have conducted at one time or the other surveys of small-scale and household manufacturing. However, data from these surveys may not be entirely comparable with regular industrial statistics. In that case the table may be split into two - one, depicting the picture of small-scale and household manufacturing and the other highlighting size distribution from regular industrial statistics. As different countries follow different criteria to define small-scale and household manufacturing - standardization would be difficult.

Table 6: Distribution of manufacturing establishments, employment, gross output and value added by ownership, 1970, 1980 and 1984

Ownership	No. of establishments	Employment	Gross output	Value added
1. Public				
2. Private				
2.1 Wholly local				
2.2 Wholly foreign				
2.3 Joint - local & foreign				
3. Joint - public & private				
3.1 Public & local				
3.2 Public & foreign				
3.3 Public & local & foreign				
4. Cooperative organizations				
5. Others				

Source: National

Note: Period may be changed according to data availability.

Structural change in manufacturing

Table 7: Branch share of MVA at constant prices, 1970, 1975, 1980 and 1984
(per cent)

Mainly consumer goods
Food products
:
:
:
Paper

Mainly intermediate goods
Printing
:
:
:
Other non-metallic products

Mainly consumer durables and capital goods
Iron and steel
:
:
:
Other manufactures

Source: SSU

Table 8: Branch share of manufacturing employment, 1970, 1975, 1980 and 1984
(per cent)

Mainly consumer goods
Food products
:
:
:
Paper

Mainly intermediate goods
Printing
:
:
:
Other non-metallic products

Mainly consumer durables and capital goods
Iron and steel
:
:
:
Other manufactures

Sources: SSU

Performance of the Manufacturing Sector

Table 9: Growth rates of manufacturing value added and employment

ISIC branch	Annual growth rate of MVA (per cent) 1970-1980	1981	1982	1983	1984	Annual growth rate of employment (per cent) 1970-1980	1981	1982	1983	1984
TOTAL MANUFACTURING										
Food products (311/12)										
:										
:										
:										
:										
:										
:										
:										
Other manufactures (390)										

Source: To be computed from data compiled for Tables 7 and 8.

Table 10: Indicators of manufacturing performance, 1970-1984

Year	Gross output	Value added	Wages 1/	Gross profit 2/	GFCF 3/	Value added coefficient	Wages per cent of value added	Gross profit as per cent of value added	GFCF as per cent of gross profit
1970									
1975									
1980									
1981									
1982									
1983									
1984									

Source: SSU

1/ Refer to wages and salaries of employees.
2/ Refers to operating surplus, that is, value added minus wages.
3/ Gross fixed capital formation.

Table 11: Direct import coefficient of manufacturing

Source: Input-output table

Table 12. Profitability by manufacturing branch, 1984

ISIC branch	Value added-gross output ratio	Gross profit as percent of value added
TOTAL MANUFACTURING		
Food products (311/12)		
:		
:		
:		
:		
:		
:		
:		
:		
:		
Other manufactures (390)		

Source: SSU

Table 13: Trends in labour productivity in manufacturing, 1970-1984

ISIC branch	Value added per person engaged/per employee			Annual growth rate 1970-1984
	1970	1980	1984	

Source: To be derived from value added at constant prices and employment figures complied for Tables 7 and 8.

Foreign Trade in Manufactures

Table 14: Growth of trade in manufactures, 1970-1984

Category	Manufactured exports: Annual growth rate 1970 - 1984	Manufactured exports: Share in total exports 1970	Manufactured exports: Share in total exports 1984	Manufactured exports: change	Manufactured imports: Annual growth rate 1970 - 1984	Manufactured imports: Share in total imports 1970	Manufactured imports: Share in total imports 1984	Manufactured imports: change
Total manufacturers								
Mainly consumer goods								
Mainly intermediate goods								
Mainly consumer durables & capital goods								

Source: SSU

Table 15: Exports and imports of selected manufactures, 1970 and 1984

I. Exports

Item	1970	1984	Annual growth rate 1970 - 1984

II. Imports

Source: SSU/National/MBS

Revealed Comparative Advantage of Exports

Table 16: Branch share of manufactured exports

Branch	Share of country's total manufactured exports 1970-1971	1975-1976	1983-1984	Share of world's total manufactured exports 1970-1971	1975-1976	1983-1984
Mainly consumer goods						
Mainly intermediate goods						
Mainly consumer durables and capital goods						
Others 1/						

Source: SSU

Note: (i) The index of revealed comparative advantage (RCAij) may be computed, following the definition:

$$RCAij = (Xij/Xit)\ (Xwj/Xwt)$$

where Xij is country i's exports of j and Xit is country i's total manufactured exports. "w" refers to world.

The value of RCA will depend on the definition and scope of foreign trade in manufactures. As SSU will be the main source of data comprehensive definition of trade in manufactures may be followed for compilation of the table. Averages over two years will give more stable RCA.

(ii) Index of revealed comparative advantage may also be computed for exports of (a) processed goods for forther processing and (b) processed goods for final use (reference Appendix Table A-11).

(iii) Further analysis of revealed comparative advantage may be undertaken on the basis of data in Appendix Table A-12. Analysis of revealed comparative advantage by destination of exports may also be useful (reference Appendix Table A-13).

1/ Refer to manufactured items which can not be assigned to specified branches.

Source of Growth of Manufacturing

Table 17: Source of growth of manufacturing value added, 1975-1980 and 1980-1984

Branch	Percentage of total growth due to	1975-1980 Domestic demand[1]	Export growth	Import substitution	Value added coefficient[2]	Total change	1980-1984
Mainly consumer goods							
Mainly intermediate goods							
Mainly consumer durables & capital goods							
Others[3]							
Total manufacturing							

Source: Appendix Table A-16.

1/ Refers to apparent consumption, i.e. domestic production plus imports minus exports.

2/ Refers to value added - gross output ratio.

3/ The category is explained in the footnote to Table 16. This Table should be included in the review only if the category 'others' forms a small proportion of total manufacturing output and value added.

Note: Example elaborating the concept and computational steps is given at the end.

Resources for Industrial Development

Natural Resources

Table 18: Production and exports of major agricultural crops

	Production	Exports
Agricultural crops		
1.		
2.		
:		
:		
Livestock products		
1.		
2.		
:		
:		
Fishery		

Source: National/FAO

Table 19: Production and exports of selected natural resources

Item	Production	Exports
Forestry		
1.		
2.		
:		
:		
Minerals		
1.		
2.		
:		
:		

Source: National/FAO/MBS

Appendix

Table A-1: GDP by sector of origin at constant prices, 1970-1984

Note: The format of the table will be similar to that of Table 1

Source: World Bank

Table A-2: Growth rates of GDP by sector of origin, 1963-1984

Note: To be computed from data at constant prices

Source: World Bank

Table A-3: Capacity, production and employment - selected manufactures, 1980 and 1984

Item	No. of Establishments	Capacity	Production	Employment

Source: National

Table A-4: Indices of industrial production, 1970, 1975, 1980, 1981 1982, 1983 and 1984

Grouping/branch	Share of value added in base year	1970	1975	1980	1981	1982	1983	1984
Mainly consumer goods								
Mainly intermediate goods								
Mainly consumer durables and capital goods								
Food products (311/12)								
:								
:								
:								
:								
Other manufactures (390)								

Source: SSI

Note: Industrial production by end-use category can be computed from branches of manufacturing.

Table A-5: Selected industrial indicators by branch of manufacturing, 1975 and 1984

ISIC branch	Value added per employee	Wages per employee	Value added/ gross output ratio	Share of wages in value added
Food products (311/12)				
:				
:				
:				
:				
:				
Other manufactures (390)				

Source: SSU

Table A-6: Apparent consumption of selected manufactures, 1975 and 1984

Item	Unit	Production	Imports	Total supply	Exports	Apparent consumption	Share of production in total supply

Source: SSU

Table A-7: Foreign capital employed in the manufacturing Sector - selected commodities

Item	Local capital	Foreign capital	Total

Source: National

Table A-8: Foreign collaboration in the manufacturing sector

Nature of foreign collaboration	No. of establishments/ firms/companies	Items Manufactured

Source: National

Table A-9: Manufacturing activity in export promotion/free trade zones

Zone	No. of establishments	Employment	Items

Source: National

Table A-10: Transnational corporations in the manufacturing sector

Corporation	Items manufactured	Employment	Output	Exports

Source: National

Table A-11: Shares of exports and imports classified according to level of processing, 1975 and 1984 and trend growth rates 1975-1984

Class	Exports			Imports		
	Share in total		growth rate	Share in total		growth rate
	1975	1984	1975 - 1984	1975	1984	1975 - 1984
A. Non-processed goods for further processing						
B. Processed goods for further processing						
C. Non-processed goods for final use						
D. Processed goods for final use						
Total trade SITC 0-9						

Source: SSU

Note: Sum of classes B and D will constitute trade in manufactures. The data in the table open vista for analysis of sources of growth of manufacturing sector due to foreign trade. Computations are to draw on the identity:

Gross output = Domestic demand + Export of processed goods for further processing + Export of processed goods for final use - Import of processed goods for further processing - Import of processed goods for final use.

Table A-12: Product mix of traded manufactured goods, 1975 and 1984

SITC	Exports: Percentage share of total manufactured exports 1975	Exports: Percentage share of total manufactured exports 1984	Imports: Percentage share of total manufactured imports 1975	Imports: Percentage share of total manufactured imports 1984

Source: SSU

Table A-13: Destination of manufactured exports, 1984

SITC	World total	Devg countries	Devd market economies (percentage distribution) Total	USA	EEC	Japan	Centrally planned devd economies

Source: SSU

Table A-14: Origin of manufactured imports, 1984

SITC	World total	Devg countries	Devd market economies (percentage distribution) Total	USA	EEC	Japan	Centrally planned devd economies

Source: SSU

Table A-15: Index number of quantum and unit value of exports and imports

	Quantum index	Unit value index
Exports		
Imports		

Source: MBS/National

Table A-16: Output, value added, exports and imports of manufactured goods

Category	Gross output			Value added			Exports			Imports		
	1975	1980	1984	1975	1980	1984	1975	1980	1984	1975	1980	1984
Mainly consumer goods												
Mainly intermediate goods												
Mainly consumer durables & capital goods												
Others 1/												
Total manufacturing												

Source: SSU

1/ See footnotes to Standard Tables 16 and 17. Gross output and value added of this category is to be obtained as residuals, i.e. total manufacturing minus the sum of the specified categories. It should also be noted that scope of the specified categories in this table is not strictly comparable with Table A-4. This table should be included in the Review only if Category 'others' forms a small proportion of total manufacturing gross output and value added.

Table A-17: Indicators of development

1. Expectation of life at birth
2. Per cent urban pupulation
3. Newspaper circulation per 1000 population
4. Combined primary and secondary enrolment
5. Electricity consumption, KWh per capita
6. Steel consumption, Kg. per capita
7. Energy consumption, Kg of coal equivalent per capita
8. National income per capita (total)
   (i) Rural
   (ii) Urban
9. Growth rate of national income per capita
10. Private final consumption expenditure per capita (total)
    (i) Rural
    (ii) Urban
11. Per cent population below average national income per capita
12. Per cent population below average private final consumption expenditure per capita
13. Per cent GDP derived from manufacturing
14. Gross investment per capita
15. Gross investment rate
16. Foreign trade per capita
17. Percent manufactured exports in total exports
18. Value added per employee in manufacturing

GRAPHS AND CHARTS

1. Line-Graphs

   (a) Economic trends
   Composition of GDP by economic sector
   Growth of GDP and economic sectors

   (b) Manufacturing trends
   Manufacturing value added by end use
   Growth of MVA by end use
   Growth of light and heavy manufacturing
   Index of production - annual percentage changes
   Trend in labour productivity (the graph will show value added, employment and labout productivity)

2. Bar-Charts

   Annual rates of growth of GDP and MVA
   Share of light and heavy manufacturing in MVA
   Composition of MVA by main branches

3. Pie-Charts

   Share of manufactures in total exports/imports
   Composition of manufactured exports/imports
   (Charts should be designed so as to project a comparative picture for the latest year and some past year)

Note: The graphs and charts should better be presented before the tables on Basic Indicators.

Sources of Growth of Manufacturing Value Added
Computation and interpretation of data

Example

The manufacturing sector is composed of two branches, A and B. The structure and disposition of output of the two branches in two different periods 1 and 2 is given in Table below.

Table I: Value added, gross output, domestic demand, exports and imports

Branch A

	Value added (VA)	Gross output (GO)	Domestic demand (DD)	Exports (EX)	Imports (IM)	Value added coefficient (VC)
Period 1	40	100	120	10	30	0.4
Period 2	100	200	160	60	20	0.5
Increase	60	100	40	50	(-)10	0.1

Branch B

Period 1	51	85	100	5	20	0.6
Period 2	72	120	140	5	25	0.6
Increase	21	35	40	-	5	-

By definition, $GO \equiv DD + EX - IM$ ..... (i)

Thus, $\Delta GO \equiv \Delta DD + \Delta EX - \Delta IM$ ..... (ii)

On the basis of equation (ii) a table may be compiled showing sources of growth of output by branch.

Table II: Sources of growth of output by branch
(percentage distribution)

	DD	EX	IM	Total change
Branch A	40.0	50.0	10.1	100.0
Branch B	114.3	-	(-)14.3	100.0
Manufacturing total	59.3	37.0	3.7	100.0

In case of value added there is one more source of growth, namely, value added coefficient, i.e. value added component of gross output. The steps involved in computing growth of value added by sources are explained below:

$VA = GO \times VC$, and

growth of value added $\Delta VA = GO_2 \times VC_2 - GO_1 \times VC_1$

$= GO_2 \times VC_2 - GO_1 \times VC_1 + GO_2 \times VC_1 - GO_2 \times VC_1$

Rearrangement of terms on the right hand side of the equation will give

$$\Delta VA = VC_1(GO_2 - GO_1) + GO_2(VC_2 - VC_1) \quad \ldots\ldots\ldots \quad (iii)$$

The first term on the right hand side of equation (iii) represents growth of value added due to increase in gorss output and second term signifies growth of value added due to increase in value added coefficient. Replacing values of GO in the first term of equation (iii) from identity (i), we get

$$\Delta VA = VC_1[(DD_2-DD_1)+(EX_2-EX_1)-(IM_2-IM_1)]+GO_2(VC_2-VC_1) \quad \ldots\ldots\ldots\ldots \quad (iv)$$

Each term on the right hand side of equation (iv) represents source of growth of value added and a corresponding table may be compiled.

Table III. Increase in value added by sources of growth

	DD	EX	IM	VC	Total increase
Branch A	16	20	4	20	60
Branch B	24	-	(-)3	-	21
Manufacturing total	40	20	1	20	81

Percentage distribution of growth of value added by source is given in Table IV.

Table IV: Sources of growth of value added - percentage distribution

	DD	EX	IM	VC	Total increase
Branch A	19.8	24.7	5.0	24.7	74.1
Branch B	29.6	-	(-)3.7	-	25.9
Manufacturing total	49.4	24.7	1.3	24.7	100.0

Interpretation - Table II which provides percentage distribution of sources of growth of output by branch is easy to interpret. It says that of the total growth of manufacturing output 59.3 per cent is attributable to growth of domestic demand, 37.0 per cent to growth of exports and 3.7 per cent to import substitution. Similarly, growth of Branch A output is accounted for by growth of domestic demand (40.0 per cent), growth of exports (50.0 per cent) and import substitution (10.1 per cent). In the case of Branch B imports increased and affected the growth of output adversely.

Data in Table IV offer more interesting interpretation. Branch A contributed 74.1 per cent of growth of total manufacturing value added and Branch B only 25.9 per cent. Of the total growth of the Sector's value added 49.4 per cent is attributed to growth of demand, 24.7 per cent to growth of exports, 1.3 per cent to import substitution and 24.7 per cent to increase in value added coefficient. Branch A experienced substantial increase in its value added coefficient which contributed substantially to the growth of the branch's value added. Branch B could increase neither its exports nor value added coefficient.